Annual Information Return 2018

for

Public Domain

Table of Contents

Section 1 – The Board's Overview

Section 2 – The Annual Information return

Key outputs

Bad debt

Non financial measures

Sewerage explanatory factors

Regulatory accounts - historical cost accounting

Regulatory accounts - current cost accounting

Financial measures

30 Capital Investment – Summary Report and General Guidance
32 Analysis of fixed asset additions and asset maintenance by asset type
33 Depreciation charge by asset type
34 Analysis of non-infrastructure fixed asset additions by life categories
35 Capital investment – public expenditure statement
36 Capital investment – gross capital investment summary
36a Capital investment – expenditure comparison by service and purpose
37 Capital investment – capital grants and contributions
38 Capital investment – additional opex from capex
40 Capital Investment Monitoring

Outputs

40a Nominated outputs delivered by PC13 capital projects and programmes of work

Health and safety

41 Health and safety – policy and performance

PPP

42 PPP costs and activity
43 PPP reporting - operational costs

Overall performance assessment (OPA)

44 OPA input data

Carbon accounting

45 Energy consumption and greenhouse gas accounting

Serviceability

46 Serviceability return

Development Outputs

47 Development Outputs

Social and Environmental Guidance priorities for Water and Sewerage Services (2015-21)

48 Social and Environmental Guidance priorities for Water and Sewerage Services (2015-21)

Section 3 – Level of Service Methodologies

DG2 Low Pressure
DG3 Supply Interruptions
DG5 Flooding
DG6 Response to Billing Contacts
DG7 Response to Written Complaints
DG8 Bills for Metered Customers
DG9 Telephone Contact

Section 4 – Customer Research Appendix

Annual Information Return 2018

Section 1

Board's Overview

Board's Statement

In support of Northern Ireland Water's Annual Information Return (AIR), its board of directors is required by the Utility Regulator to prepare a statement on the compilation of 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 2017/18. 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 (UK Generally Accepted Accounting Practice) 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 the 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 functional working groups;
2. coordination of cross-functional working groups;
3. adherence to the AIR submission programme;
4. 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 line 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 the AIR submission, namely:

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

Population of data tables and drafting of associated company commentaries was 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.

Authors, reviewers and approvers of line methodologies, data tables and company commentaries were designated for all data in the AIR submission. 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 Reporter Protocol and AIR reporting requirements, and was agreed with 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 the tables and commentaries where appropriate.

The complete AIR was endorsed by NI Water's Executive Committee and Board on 16th and 24th July 2018 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 2018;
- 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 the 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.
- Every item of financial data is reviewed against the Utility Regulator's guidance by a separate individual to the preparer and reviewer. This includes undertaking cross-checks of tables to ensure consistency.
- 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. P. 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 2012-13	2 REPORTING YEAR 2013-14	3 REPORTING YEAR 2014-15	4 REPORTING YEAR 2015-16	5 REPORTING YEAR 2016-17	6 REPORTING YEAR 2017-18	7 REPORTING YEAR 2018-19	8 REPORTING YEAR 2019-20	9 REPORTING YEAR 2020-21
A	**Consumer Service**											
1	DG2 Properties at risk of low pressure removed from the risk register by company action	nr	0	297	132	186	171	40	175			
2	DG2 Properties receiving pressure below the reference level at end of year	nr	0	1420	1257	1082	900	862	711			
3	DG3 Supply interruptions > 12hrs (unplanned and unwarned)	%	2	0.32	0.14	3.10	0.10	0.06	0.10			
4	DG3 Supply interruptions (overall performance score)	nr	2	1.98	0 97	11.72	1.14	0.66	0.81			
5	DG6 % billing contacts dealt with within 5 working days	%	2	100.09	99 92	99.97	99 96	99.98	99.97			
6	DG7 % written complaints dealt with within 10 working days	%	2	99.78	99.72	99.96	99 87	100.00	99.87			
7	DG8 % metered customers received bill based on a meter reading	%	2	98.73	99.11	99.11	99 23	99.52	99.67			
8	Call Handling Satisfaction	nr	2	4.54	4 63	4.65	4 59					
9	DG9 % calls not abandoned	%	2	98.45	98.40	97.99	99.43	99.54	99.51			
10	DG9 % calls not receiving the engaged tone	%	2	100.00	100 00	99.99	99 92	99.97	99.99			
11	Overall Performance Assessment (OPA) score (11 Measures)	nr	0	198	216	206	230	228	236			
12	Total Leakage	Ml/d	0	162	167	166	162	163	162			
13	Security of supply index	nr	0	100	100	100	100	100	100			
14	Percentage of NI Water's power usage derived from renewable sources	%	1	13.4	33.1	51.4	39.8	35.5	36 9			
B	**Quality Water**											
15a	% overall compliance with drinking water regulations	%	2	99.77	99 81	99.86	99 83	99.86	99.88			
15b	% compliance at consumers tap	%	2	99.63	99.74	99.78	99.74	99.77	99.81			
16	% iron compliance at consumers tap	%	2	97.25	98 08	98.95	98.40	98.66	98.85			
17	% Service Reservoirs with coliforms in >5% samples	nr	2	0.00	0 00	0.00	0 00	0.00	0.00			
C	**Water Outputs**											
18	Water mains activity - Length of new, renewed or relined mains	km	0	326	226	223	117	172	126			
19	Completion of nominated trunk main schemes	nr	0	2	0	1	2	1	0			
20	Completion of nominated water treatment works schemes	nr	0	0	0	3	1	0	0			
21	Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks	nr	0	1	0	1	0	0	1			
D	**Serviceability**											
22	Water infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable			
23	Water non-infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable			
E	**New Output Measures**											
24	Number of Catchment Management Plans	nr	0		3	5	3	7	3			
25	Number of lead communication pipes replaced under the proactive lead replacement programme	nr	0		0	401	1922	1867	1767			
26	Number of school visits	nr	0	138	150	209	277	257	219			
27	Number of other education events	nr	0	35	38	59	65	64	62			
28	% Service Reservoirs where sample taps have been assessed and are to required	%	1				0.0	0.0	72 9			

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 2012-13	2 REPORTING YEAR 2013-14	3 REPORTING YEAR 2014-15	4 REPORTING YEAR 2015-16	5 REPORTING YEAR 2016-17	6 REPORTING YEAR 2017-18	7 REPORTING YEAR 2018-19	8 REPORTING YEAR 2019-20	9 REPORTING YEAR 2020-21
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	66	11	28	7	7	17			
2	DG5 Properties on the 2 in 10, 1 in 10 and 1 in 20 risk register at the end of the year	nr	0	193	190	179	160	156	134			
B	**Quality Sewerage**											
3	% of WwTWs discharges compliant with numeric consents	%	1	93.3	92.0	92.4	92 8	93 6	93 5			
4	% of total p.e. served by WwTWs compliant with numeric consents excluding upper tier failures	%	1	98.8	98.0	98.4	98 6	98 9	98.7			
5	Small WwTW compliance (works greater than or equal to 20p e. but less than 250p.e.)	%	2				80.72	83 99	87.21			
6	Number of high and medium pollution incidents attributable to NI Water	nr	0	18	26	25	21	22	20			
C	**Sewerage Outputs**											
7	Sewerage activity - Length of sewers replaced or renovated	km	0	24	25	21	17	9	15			
8	Delivery of improvements to nominated UIDs as part of a defined programme of work	nr	0	38	11	17	26	11	11			
9	Delivery of improvements to nominated WwTWs as part of a defined programme of work	nr	0	12	17	16	3	2	3			
10	Small wastewater treatment works delivered as part of the rural wastewater investment programme	nr	0	14	7	18	4	8	4			
D	**Serviceability**											
11	Sewerage infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable			
12	Sewerage non-infrastructure serviceability	Text		Stable	Stable	Stable	Stable	Stable	Stable			
E	**New Output Measures**											
13	CSO and EO discharges at which event and duration monitoring equipment has been installed	nr	0				0	0	0			
14	WwTWs upgraded to comply with PPC Regulations	nr	0				0	0	0			
15	Impermeable surface water collection area removed from the combined sewerage network	m^2	0				28,560	54,864	119,200			
16	Number of sustainable WwTW solutions delivered (p.e. ≥ 250)	nr	0				1	1	1			
17	Number of sustainable WwTW solutions delivered (p.e. < 250)	nr	0				0	1	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 2012-13	2 REPORTING YEAR 2013-14	3 REPORTING YEAR 2014-15	4 REPORTING YEAR 2015-16	5 REPORTING YEAR 2016-17	5 REPORTING YEAR 2017-18	6 REPORTING YEAR 2018-19	7 REPORTING YEAR 2019-20	8 REPORTING YEAR 2020-21
A	**TOTAL EXPENDITURE**											
1	Total operating expenditure - water service (NI Water only)	£m	3	71.882	70.914	69.932	76 947	80.362	84.765			
1a	Total operating expenditure (PPP) - water service	£m	3	1.845	8 234	8.431	8 225	9.062	9 323			
2	Total capital expenditure (excl. adopted and nil cost assets) - water service	£m	3	69.303	71.809	86.920	63.796	67.719	62 807			
3	Total operating expenditure - sewerage service (NI Water only)	£m	3	72.113	73.300	71.330	73.126	71.950	74.758			
3a	Total operating expenditure (PPP) - sewerage service	£m	3	26.488	24.896	24.323	25 096	25.377	25 693			
4	Total capital expenditure (excluding adopted and nil cost assets) - sewerage service	£m	3	92.709	95.548	71.881	79 692	86.551	89.721			
B	**CURRENT COST ACCOUNTS - PROFIT & LOSS**											
5	Total Turnover	£m	3	366.398	361.313	364.407	367 287	372.854	381 099			
	Lines 6 & 7 not used											
C	**CAPITAL BASE & POST TAX RETURN**											
8	Capital Value Year - End (outturn)	£m	3	1,812.80	1,948.80	2,045 50	2,133.30	2,244 90	2,396.10			
9	Total net debt	£m	3	868.158	909.323	946.748	980 545	1010.647	1079 329			
10a	Post tax return on capital	%	2	1.12	1.05	2 96	2.57	2.60	4.59			
10b	Pre tax return on capital	%	2	1.12	1.05	2 96	2.57	2.60	4.59			
D	**KEY FINANCIAL INDICATORS**											
11	Cash interest cover (funds from operations; gross interest)	ratio	2	3 34	3.60	3 52	3.38	3.45	3.50			
12	Adjusted cash interest cover (funds from operation less capital charges; gross interest)	ratio	2	-0 03	0.27	0 91	0.83	0.91	1.98			
13	Adjusted cash interest cover (funds from operation less capital maintenance; gross interest)	ratio	2	1.70	1.67	2 00	1.76	1.58	1.74			
14	Funds from operations: debt	ratio	2	0.15	0.13	0.13	0.12	0.12	0.12			
15	Retained cash flow: debt	ratio	2	0.12	0.12	0.12	0.09	0.10	0.07			
16	Gearing: D/RCV	%	2	47 89	46.66	46.74	46.24	47.46	45.86			
17	Gearing: D/RCV (adjusted for PPP liability)	%	2		49.12	49 09	48.47	49.45	47.78			

Chapter 1
PC15 Outputs
Tables A and B

1.1 Improvements to Drinking Water and Environmental Quality

Drinking Water

Delivery of clean, safe drinking water is central to what we do. It underpins the public health and economy of Northern Ireland. Being able to rely on and have confidence in the quality of water that we supply is a fundamental expectation of our customers. Every day we produce more than 570 million litres of clean safe drinking water in order to supply 860,000 households and businesses.

We measure the quality of drinking water at water treatment works, service reservoirs and consumers' taps across Northern Ireland. Every year we undertake more than 200,000 water quality tests and delivered our best ever drinking water quality in 2017.

The water leaving our water treatment works and in the distribution systems contains only trace amounts of lead. Over the PC15 period, we have committed to proactive replacement of over 11,000 lead communications pipes at consumer properties in addition to lead pipe replacement under water main rehabilitation and in response to sample failures. In the first three years of PC15 we have delivered 5,556 lead pipe replacements under the proactive replacement programme against a target of 5,532.

Water Supply

We look after a water supply network extending to over 26,000km in length – the same length as Northern Ireland's entire road network. Ensuring that customers receive a near uninterrupted supply of clean safe drinking water is paramount. We achieved our targets for supply interruptions in 2017/18 despite summer flooding which caused significant damage to infrastructure in the North West and adverse winter weather conditions which caused higher levels of bursts across our network. In that context, we are pleased that no customers experienced an unplanned interruption to their supply greater than 24 hours.

At the end of February and into early March, we experienced sub-zero temperatures and snow storms. The amount of water input to the water distribution system increased by 15%. Our teams were engaged in leakage detection and repairs as well as tankering water supplies to mitigate impacts on customers. In spite of this, we managed to achieve our supply interruption targets.

NI Water experienced an increase in leakage in 2017/18 - primarily caused by this year's bad weather from December to March. As a result, we failed to meet the PC15 target level of 159 Ml/d. Leakage reduction will continue to be given a high priority in 2018/19 to achieve the PC15 target of 153 Ml/d by 2021.

We are continuing to invest in laying new water mains to improve water supply and drinking water quality. We are also looking at new initiatives to reduce the impact of supply interruptions and improve asset serviceability.

One such initiative is the construction of a 'calm' network facility at our bespoke learning and development centre in Antrim, where we train our staff and contractors in best practice techniques for managing water networks. The approach aims to deliver a calmer water network that provides a reliable and resilient service through a reduction in bursts, leaks, low pressure and interruptions to supply, while improving serviceability and water quality.

Wastewater

Overall wastewater compliance is at near record levels. We completed construction of a new wastewater treatment works at Ballycastle, Co Antrim, which recycles wastewater and safely returns it to the environment. The new plant now underpins growth in the tourism industry and development of Ballycastle town.

We deal with around 15,000 blockages in the sewer network each year, at a cost of around £2.5 million. It is estimated that 75% of blockages are caused by inappropriate items being put into the sewers. As part of our involvement with the 2018 Year of Infrastructure we relaunched our 'Bag it and Bin it' and 'Fats, Oils and Grease' campaigns to highlight the damage caused by disposing of inappropriate items in the sewers.

We are committed to reducing pollution incidents. Our Pollution Reduction Strategy and Action Plan has informed the development and implementation of a wide range of activities ranging from proactive sewer de-silting to focused customer education campaigns.

There is ongoing tracking and monitoring of all reported pollution incidents, with root cause investigations undertaken in each instance. Weekly updates on Pollution Incidents are carried out with the Executive Committee through the EC Performance Hub and the situation is reviewed in detail through monthly meetings of NI Water's cross-directorate Pollution Incidents Group. In addition to in-house monitoring, there are quarterly meetings held with our Environmental Regulator, NIEA.

1.2 Delivering Service to Customers

We have been laying the foundations for a digital revolution. We have also made improvements to our website and increased our social media presence.

As part of our digital programme, over the remainder of PC15 we are investing in smart meters and smart assets to provide better information to forecast demand, predict weather events, optimise energy usage and real time monitoring of our asset performance to make remote interventions.

We will be starting to digitalise our processes such as electronic billing and online applications for developers. Communication channels for our customers will also be broadened with the introduction of 'chatbots' and social media customer apps.

Keeping customers informed

Over 2017/18, we introduced new ways to keep customers informed and reduce the need for customers to telephone our contact centre. More timely and accurate information is available on our website regarding planned and unplanned supply interruptions.
This keeps customers more informed on the nature of the repair work and the estimated restoration time for supply.

We have also introduced proactive text message notification and updates to customers impacted by unplanned supply interruptions. Feedback from a sample of customers who have received the text messages has been positive.

We plan to increase the number of customers we survey to around 10,000 each year from 2018/19. Customers will be selected at random, soon after they contact us, so we can gather near real-time feedback about their experience – what we did well and where we can improve. We will use this data across the business to help us further improve the service we provide to all our customers.

Getting smarter
Our ambition is to become one of the leading utilities in the UK in the use of smart metering. Smart metering technology presents an opportunity to reduce customer contacts, complaints and improve our reputation, and ultimately assist in the transformation into a next generation utility company.

The technology forms part of our digital strategy and has been piloted over 2017/18. We obtained great customer feedback, particularly from the Education Authority, which has responsibility for education and youth services throughout Northern Ireland.

Over 2018/19 we will be introducing further functionality that will allow those customers with smart meters to obtain high consumption alarms to mitigate leakage. Customers will also be able to sign up for direct debit payments.

1.3 Delivering Sustainable Services

Carbon Footprint
NI Water is directly affected by all the main impacts of climate change: temperature change, more intense rainfall, changing rainfall patterns, and sea level rises. Some of the impacts are obvious: more frequent and severe cold weather and floods, for example. Others are more subtle, such as changes to peak demand, and lower dilution of discharges to watercourses in times of drought, which require higher levels of treatment and the associated extra energy use.

For these reasons, we need to continuously adapt and will reduce our carbon footprint. The majority of our carbon emissions are from grid electricity, with the remaining emissions being attributed to areas such as sludge emissions and transport.

The annual carbon emissions resulting from activities of the company have decreased by 10%, decreasing from 118,783 t/CO_2e in 2016/17 to 106,816 t/CO_2e in 2017/18. This equates to 0.176 tonnes of carbon dioxide equivalent per million litres of treated water in 2017/18 (2016/17: 0.207 tCO_2e/Ml) and 0.611 tonnes of carbon dioxide equivalent per million litres of treated wastewater in 2017/18 (2016/17: 0.574 tCO_2e/Ml). The annual carbon emissions resulting from the purchase of electricity have decreased by 13%, decreasing from 118,269 t/CO_2e in 2016/17 to 103,307 t/CO_2e in 2017/18.

Renewable Energy
Our business operations are relatively intensive, requiring large amounts of energy for pumping, water treatment and wastewater treatment. Renewable energy generation helps

offset the impacts of increased energy prices, lowers our carbon footprint and increases revenue by reselling renewable energy to the grid.

As the largest user of electricity in Northern Ireland, we are committed to increasing our electricity consumption from renewable sources from around 13% currently to 40% in 2020/21.

We completed our first solar farm to supply electricity to the Dunore water treatment works in South Antrim. Dunore is our third largest site in terms of energy consumption, accounting for 7% of the company's annual usage. The £7m project involved work on a 33 acre site and produces a peak output of 5 megawatts (enough electricity to power 1,500 homes). The solar farm saves over £0.5m annually in our energy costs and reduces our carbon footprint by 2,000 tonnes. As well as meeting the energy needs of the Dunore treatment works, the farm also enables us to contribute spare capacity to the grid.

'Source to Tap' INTERREG VA Project
A major €5.3M cross-border project was launched in December to improve water quality in rivers and lakes in the Erne and Derg catchment areas. These provide water that serves parts of counties Fermanagh, Tyrone, Donegal, Cavan, Leitrim and Longford.

The Derg and Erne drinking water catchments are predominantly rural in nature. The main land uses are forestry, farming and peatland. Certain types of land use management can cause materials such as sediments and herbicides to run off the land and drain into the raw water which NI Water abstracts for drinking water.

High concentrations of herbicides and variations in colour and turbidity cause increased capital and operational costs to treat and remove these materials. Therefore, it is more cost effective for us to identify these pressures at source and keep our rivers and lakes clean.

NI Water secured the funding from the European Union's INTERREG VA Programme, the Department for Agriculture, Environment and Rural Affairs (DAERA) in Northern Ireland and the Department for Housing, Planning and Local Government (DHPLG) in Ireland. The funding is managed by the Special EU Programmes Body (SEUPB) and will run from 2017 to 2021.

NI Water is leading a partnership, which includes Irish Water, The Rivers Trust, Ulster University, Agri Food and Bioscience Institute (AFBI) and East Border Region. The partners will work together to test pilots for how to protect raw water quality at source across both jurisdictions.

Cooperation Across Borders for Biodiversity (CABB) INTERREG VA Project
NI Water has been working in partnership with the Royal Society for the Protection of Birds and Moors for the Future on the CABB Project. The project is supported by the European Union's INTERREG VA Programme, managed by the Special EU Programmes Body.
The objective of CABB is to bring about the recovery of protected habitats (raised and blanket bog) and priority species (breeding waders and marsh fritillary) on a cross-border and cross-country basis. The project has been awarded €4.6m of EU funding for projects

in Scotland, N Ireland and the Republic of Ireland. CABB will contribute to delivering the EC Birds and Habitats Directives and Biodiversity Strategies in each of the three countries.

The NI Water aspect of the project will restore the entire Dungonnell catchment, a special area of conservation which has been damaged by artificial drainage channels and overgrazing. Altogether, 444ha of blanket bog will be restored through grazing management and by blocking 38.4km of artificial drains. This will contribute to improving the blanket bog habitat to support biodiversity while improving the quality of raw water supplied to Dungonnell WTW. The requirement for chemical treatment to remove colour from peat stained raw water will be reduced, leading to cost and energy savings.

1.4 Health and Safety

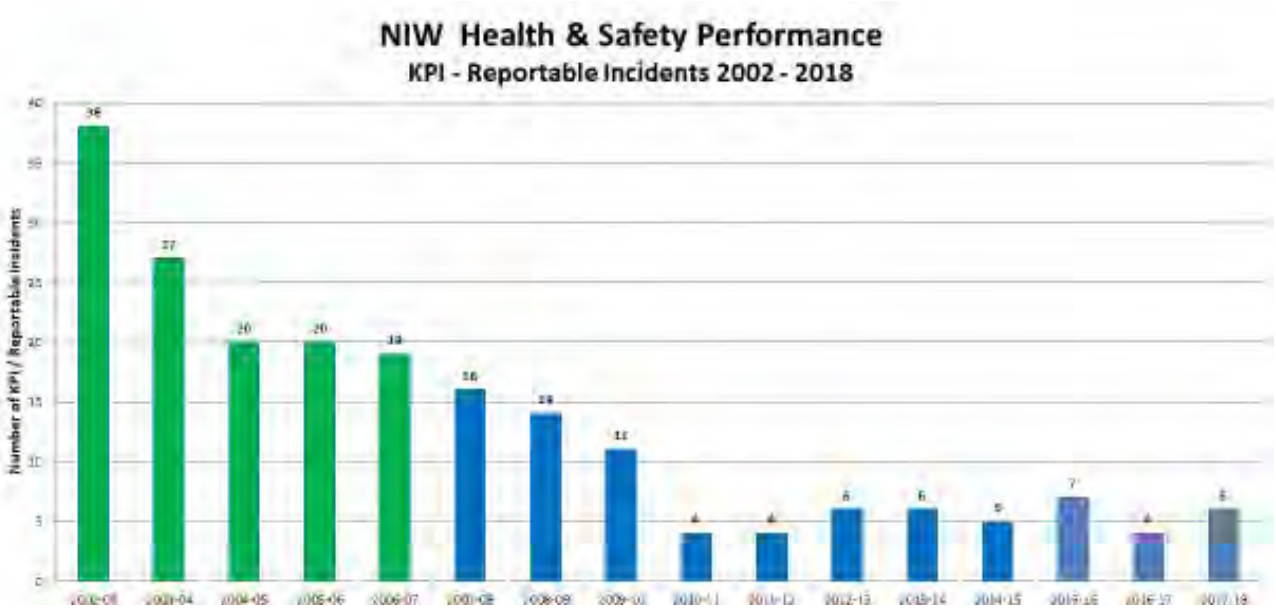
We focus on 'Zero Harm', through appropriate training, strong management, senior management safety visibility and good contract management. This includes demonstration of and commitment to best practice not only by those within NI Water but also by our contractor partners.

We plan to develop and improve safety health and wellbeing in the workplace with introduction of possible new IT and technical solutions which will assist all staff in assessing, monitoring and managing risk, thereby keeping our staff, contractors and customers safe.

During 2017/18, we had six reportable incidents which resulted in more than three days' absence from work, and this was within our corporate H&S target of not more than seven incidents. Each lost time incident at NI Water is reviewed by both our SHE Team and our Health & Safety Focus Group with a view to seeking new learning and safety improvement.

In early 2018 NI Water was awarded 'Commended in the Water Industry' in one of the Competitive Sector categories of the annual ROSPA Occupational Safety & Health Awards. This was a most encouraging result, reflecting continual business and safety improvement across our business.

The table below indicates our annual safety performance on 'Reportable Incidents' since 2002.



1.5 PC15 Funding

NI Water has been subject to public expenditure capital budget reductions in the first three years of PC15. The Project Alpha acquisition in 2017/18 further reduced gross capital expenditure. Although the impact of these budget adjustments has been somewhat mitigated by lower than expected inflation, there has been a budget reduction in real terms.

At the end of 2017/18 the cumulative gross capital expenditure is approximately £6.4m less than the Final Determination allocated for the delivery of defined PC15 outputs.

This real terms gross capital budget reduction in the first three years of PC15 has led to some delay to capital output delivery.

NI Water continues to make the case for certainty of funding and a medium-term financial settlement to enable price limits and service targets/outputs set in the PC15 Final Determination to prevail. If funding levels drop below the minimum required to deliver all of the defined PC15 outputs within the PC15 period, a further process will be undertaken to agree changes to PC15 Final Determination targets.

1.6 PC15 Targets for 2017/18

Due to funding uncertainty at the start of 2017/18 and the then upcoming PC15 Mid-Term Review, adjusted outputs for 2017/18 were not formally agreed with the Utility Regulator and other key stakeholders.

NI Water shared draft adjusted outputs with the Utility Regulator on 14 September 2017 based on DfI's indicative allocation – these outputs formed the basis of 2017/18 annual targets reflected in Q1 update to ORG. Outputs were adjusted further at January Monitoring Round (Oct/Nov 2017) when our 2017/18 budget allocation was confirmed and account was taken of Project Alpha acquisition and Dunore Solar Farm. This formed the basis of further quarterly updates to ORG.

In the PC15 Mid-Term Review (Feb 2018), the Utility Regulator stated:

- *Based on reasonable forward planning scenarios for capital investment, NI Water should have sufficient capital budget to deliver all of its defined PC15 outputs within the PC15 6 year period. But it is unlikely to allow investment in additional necessary quality improvements, which may need to be deferred to the PC21 period. The reduction in expenditure in line with inflation is being passed on to consumers through RPI+K price cap regulation and the PC15 outputs are being delivered.*
- *Our overall conclusion is that the PC15 Final Determination targets remain valid and should be used for planning and performance reporting for the rest of the PC15 period… We expect NI Water to continue to focus on the delivery of these priority requirements, notwithstanding the variations to annual budgets which may occur.*

Tables 1.1 and 1.2 below which provide a tabular summary of NI Water's delivery of services and outputs. Since adjusted outputs were not formally agreed with the Utility Regulator for 2017/18, the PC15 Year 3 Final Determination targets are also included.

As can be seen, the real terms gross capital budget reduction in the first three years of PC15 has led to some delay to capital output delivery. However, NI Water still achieved or outperformed against the majority of PC15 final determination targets for 2017/18. Subject to funding, NI Water anticipates meeting all targets by the end of PC15.

All adjusted output targets (which take account of budget reductions) have been achieved, with the exception of two targets:

1. **Leakage:**
   NI Water experienced an increase in leakage in 2017/18 - primarily caused by this year's bad weather from December to March. As a result, we failed to meet the PC15 target level of 159 Ml/d. Leakage reduction will continue to be given a high priority in 2018/19 to achieve the PC15 target of 153 Ml/d by 2021.

2. Installation of CSO and EO monitoring equipment:

Our initial adjusted target to install discharge monitoring equipment at 58 CSOs/EOs in 2016/17 was not achieved, which has resulted in the 2017/18 cumulative target also being missed.

NI Water has adopted a cautious approach to the installation of new technology which has first to be proven to function adequately. To this end, during 2016/17 we identified and procured equipment necessary for trials at 10 CSOs and 20 wastewater pumping stations. These trials concluded in 2017/18 and we plan to install all necessary monitoring equipment in the PC15 period.

Table 1.1 – 2017/18 Targets and Outputs: Customer Service and Water

	Units	Adjusted Outputs Target	FD Target	2017/18 Outturn
DG2 Properties at risk of low pressure removed from the risk register by company action *	nr	357	357	386
DG2 Properties receiving pressure below the reference level at end of year	nr	775	775	711
DG3 Supply interruptions > 12hrs (unplanned and unwarned)	%	0.17	0.17	0.10
DG3 Supply interruptions (overall performance score)	nr	1.03	1.03	0.81
DG6 % billing contacts dealt with within 5 working days	%	99.90	99.90	99.97
DG7 % written complaints dealt with within 10 working days	%	99.50	99.50	99.87
DG8 % metered customers received bill based on a meter reading	%	99.00	99.00	99.67
DG9 % Calls not abandoned	%	99.00	99.00	99.51
DG9 % calls not receiving the engaged tone	%	99.90	99.90	99.99
Overall Performance Assessment (OPA) score (11 Measures)	nr	224	224	236
Total Leakage	Ml/d	159	159	162
Security of supply index	nr	100	100	100
Percentage of NI Water's power usage derived from renewable sources	%	30.0	30.0	36.9
% overall compliance with drinking water regulations	%	99.79	99.79	99.88
% compliance at consumers tap	%	99.69	99.69	99.81
% iron compliance at consumers tap	%	97.10	97.10	98.85
% Service Reservoirs with coliforms in >5% samples	%	0.00	0.00	0.00
Water mains activity - Length of new, renewed or relined mains *	km	357	403	415
Completion of nominated trunk main schemes *	nr	3	2 [1]	3
Completion of nominated water treatment works schemes *	nr	1	1	1
Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks *	nr	1	2 [2]	1
Water infrastructure serviceability	Text	Stable	Stable	Stable
Water non-infrastructure serviceability	Text	Stable	Stable	Stable
Number of Catchment Management Plans *	nr	13	20	13
Number of lead communication pipes replaced under the proactive lead replacement programme *	nr	5,432	5,532	5,556
Number of school visits *	nr	528	528	753
Number of other education events *	nr	171	171	191
% Service Reservoirs where sample taps have been assessed and are to required standard *	%	70	100	73

* PC15 cumulative target / outturn

[1] Includes 1 PC13 carry-over trunk main (Castor Bay – Belfast) added to Final Determination target
[2] Includes 1 additional SR (Monaclough) added to Final Determination target via Change Control

Table 1.2 – 2017/18 Targets and Outputs: Sewerage

	Units	Adjusted Outputs Target	FD Target	2017/18 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	31	38	31
DG5 Properties on the 2 in 10, 1 in 10 and 1 in 20 risk register at the end of the year	nr	155	130	134
% of WwTWs discharges compliant with numeric consents	%	93.2	93.2	93.5
% of total p.e. served by WwTWs compliant with numeric consents excluding upper tier failures	%	98.3	98.3	98.7
Small WwTW compliance (works greater than or equal to 20p.e. but less than 250p.e.)	%	86.60	89.58	87.21
Number of high and medium pollution incidents attributable to NI Water	nr	26	26	20
Sewerage activity - Length of sewers replaced or renovated *	km	32	34	41
Delivery of improvements to nominated UIDs as part of a defined programme of work *	nr	47	67 [1]	50 [2]
Delivery of improvements to nominated WwTWs as part of a defined programme of work *	nr	8	14 [3]	9 [4]
Small wastewater treatment works delivered as part of the rural wastewater investment programme *	nr	13	21 [5]	16
Sewerage infrastructure serviceability	Text	Stable	Stable	Stable
Sewerage non-infrastructure serviceability	Text	Stable	Stable	Stable
CSO and EO discharges at which event and duration monitoring equipment has been installed *	nr	58	173	0
WwTWs upgraded to comply with PPC Regulations *	nr	0	0	0
Impermeable surface water collection area removed from the combined sewerage network *	m^2	87,000	90,000	202,624
Number of sustainable WwTW solutions delivered (p.e. ≥ 250) *	nr	2	2	3
Number of sustainable WwTW solutions delivered (p.e. < 250) *	nr	1	0	1

* PC15 cumulative target / outturn

[1] Includes 19 UIDs (net) added to 2017/18 Final Determination target via Change Control
[2] Includes 2 PC15 UIDs completed in PC13
[3] Includes 3 WwTW added to Final Determination target: 2 PC13 carry-over (Artigarvan, Castle Archdale) + Loup (via Change Control)
[4] Includes Annacloy WwTW: delivered in PC13
[5] Excludes 1 WwTW (Loup) removed from Final Determination target via Change Control

Chapter 2
Financial Performance Measures
Table C

2.1 Financial Performance

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

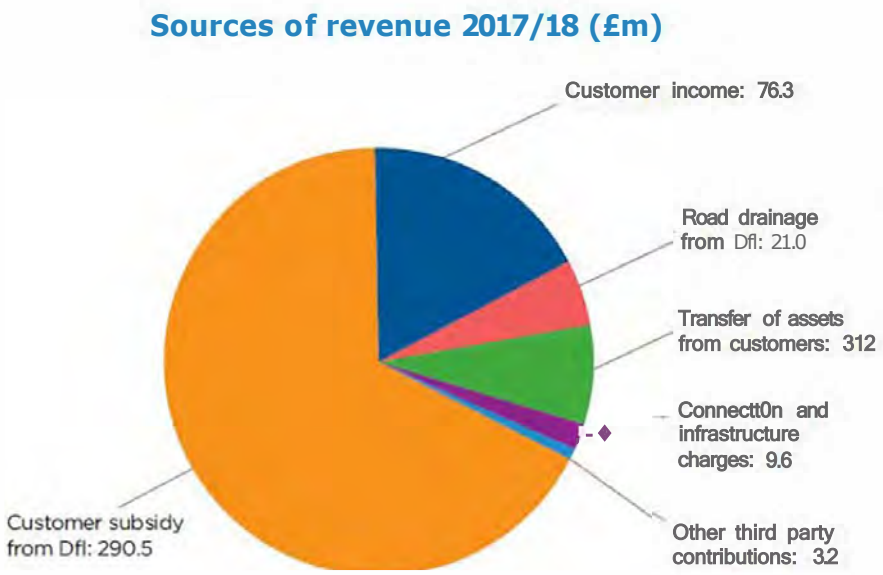
Summary Statement of Comprehens1ve Income

	Year to 31 March 2018 (£m)	**Year to** 31 March 2017 (£m)
Revenue	**431.8**	422.4
Results from operating activities	**156.6**	166.4
Net finance charges	**(62.1)**	(63.5)
Profit before income tax	**94.5**	102.9
Income tax expense	**(18.1)**	(6.6)
Profit for the year	**76.4**	96.3
Other comprehensive income/(expenditure) net of income tax	**41.2**	(46.6)
Total comprehensive income for the period	**117.6**	49.7

Revenue

Domestic consumers are not charged directly for water and sewerage services. As a result, NI Water is dependent on Government subsidy for around 67% of its funding. The customer subsidy from Government covered the full domestic charge and this arrangement will remain in place in 2017/18.

Revenue was £431.8m for the year to 31 March 2018 (2017: £422.4m). Included in revenue was £311.5m (2017: £305.0m) received from DfI, being subsidy of £290.5m (2017: £284.4m) and road drainage charges of £21.0m (2017: £20.6m).

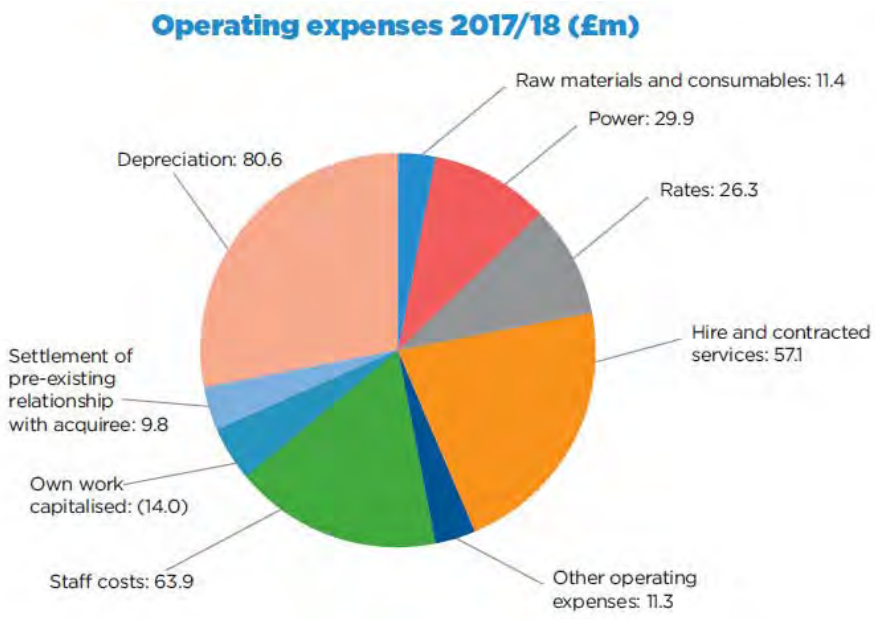


2.2 Costs (capital and operating) against expectations

Operating activities

Operating expenses in 2017/18 of £276.2m (2017: £256.8m) increased from last year. The increase primarily resulted from higher costs of staff and power offset in part by lower hired and contracted services. In addition in 2017/18 there was a write-down on acquisition of £9.8m to recognise the effective settlement of the pre-existing PPP contract between NI Water Limited and Dalriada Water Limited.

Results from operating activities before interest for the year was £156.6m (2017: £166.4m).



Finance income and costs

The net finance costs are primarily due to interest on our borrowings of £44.7m (2017: £43.6m) and on our Public Private Partnership (PPP) liabilities of £17.0m (2017: £19.8m) and net finance costs on the pension fund of £1.6m (2017: £0.2m) partly offset by £1.1m fair value increase of derivatives and bank interest received of £0.1m (2017: £0.1m). The effect of the consolidation of Group reduced net finance costs by £1.3m in 2018.

Taxation

The tax charge for the year was £18.1m (2017: £6.6m arising from reduction in corporation tax rate). The effective tax rate for the year to 31 March 2018 was (£19.1m) (2017: 6.4%).

Distributions

The Board will consider a proposal to declare a dividend of £26.5m in July 2018 (2017: £24.5m).

Capital Structure

The Statement of Financial Position at 31 March 2018 is summarised below.

- Total assets increased by 5.0% to £3,074m (2017: £2,928m).
- Our net debt figure was £1,283.6m at 31 March 2018 (2017: £1,218.6m).
- Gearing (the ratio of net debt to equity and net debt) was 47.9% (2017: 48.4%).

Summary Statement of Financial Position

	Yearto 31 March 2018 (£m)	Year to 31 March 2017 (£m)
Total non-current assets	**3,022.6**	2,887.3
Total current assets	**51.9**	**41.0**
Total Assets	**3,074.5**	2,928.3
Equity	**1,393.9**	**1,300.8**
Total non-current liabilities	**1,543.5**	**1,484.4**
Total current liabilities	**137.1**	**143.1**
Total liabilities	**1,680.6**	**1,627.5**
Total equity and liabilities at 31 March	**3,074.5**	**2,928.3**

Liquidity

Operating activities generated a net cash inflow of £201.8m (2017: £212.6m). Net cash outflows of £168.9m (2017: £147.8m) related to investing activities. Net financing activities created a cash outflow of £24.2m (2017: £64.3m).

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 £160.9m (2017: £149.0m), acquisition of subsidiaries net of cash acquired of £9.7m (2017: £nil), proceeds from the sale of property, plant and equipment of £1.5m (2017: £1.1 m) and interest received of £0.1 m (2017: £0.1 m).

Pension funding

The pension scheme was valued at a liability of £22.8m at 31 March 2018 (2017: liability of £66.0m). This was made up of a total market value of assets of £233.4m (2017: £239.7m) less actuarial value of liabilities £256.2m (2017: £305.7m). The decrease in the liability has been driven primarily by the effects of changes to demographic and financial assumptions including lower inflation.

Capital

We have invested £2.1 billion in Northern Ireland's water and sewerage infrastructure since our formation in 2007/08.

Around £153m of capital investment was delivered during 2017/18. The company spent around £92m in 2017/18 on maintaining the current assets. Around a further £61m was spent to deliver quality enhancements, improve service and accommodate growth. Investment of £163m is planned for 2018/19.

2.3 PPP contracts

Kinnegar Wastewater Treatment Works

A contract with Coastal Clear Water Ltd was signed on 30 April 1999 for the provision of sewage treatment, which covered the upgrading of the Kinnegar WwTW 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 2018 is £12.0m and £5.56m respectively (2017: £12.0m and £5.91m). The amount included in PPP Creditors at 31 March 2018 is £3.02m (2017: £3.38m).

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 2018 is £120.36m and £87.24m respectively (2017: £119.24m and £89.79m). The amount included in PPP Creditors at 31 March 2018 is £88.00m (2017: £90.38m).

On 20 November 2017, the Group subscribed 100% of the shares and voting interests in NI Water Clear Limited, which acquired 100% of the shares and voting interests in both Dalriada Water Holdings Limited (dormant) and NI Water Alpha Limited. Dalriada Water Holdings Limited owns 100% of the shares and voting interests in Dalriada Water Limited.

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 2018 is £144.99m and £106.78m respectively (2017: £142.08m and £108.03m). The amount included in PPP Creditors at 31 March 2018 is £112.69m (2017: £114.49m).

On Balance Sheet ***Alpha***	**£k**
Opex	9,323
Interest	6,406
Total P&L Impact	**15,729**
Capital Repayment	2,376
Life Cycle Maintenance	1,516
Total Balance Sheet Impact	**3,892**
Total PPP Payments	**19,621**
Effective Interest Rate used to calculate Alpha finance charge	**3.57%**

Off Balance Sheet	***Omega (£k)***	***Kinnegar (£k)***
Opex	23,464	2,229
Residual Interest	3,454	282
Total PPP Payments	**26,918**	**2,511**

Estimated Residual Value at End of Contract

Alpha	£84m
Omega	£113.5m
Kinnegar	£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 2017/18 are therefore consistent with figures contained within the Water and Sewerage Service Price Control 2015-2021 (PC15) published by the Utility Regulator in December 2014.

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 31 March 2018 £m	At 31 March 2017 £m
Prior Year Closing RCV	**2,244.9**	2,133.3
Indexation and other adjustments	**84.0**	45.7
Opening RCV	**2,328.9**	2,179. 0
Capital expenditure	**132.8**	129.3
Infrastructure renewals expenditure	**25.7**	25.0
Infrastructure renewals charge	**(25.7)**	(25.0)
Grants & contributions	**(6.5)**	(6.3)
Depreciation (including capital grants)	**(57.8)**	(55.9)
Disposal of assets	**(1.3)**	(1.2)
Closing RCV (pre regulatory adjustments)	**2,396.1**	2,244.9
Regulatory adjustments	**-**	-
Closing RCV	**2,396.1**	2,244.9
Average RCV	**2,320.5**	2,189.1

Chapter 3
Efficiencies

The PC15 period will see NI Water close the remaining gap to the most efficient companies by 80%. We have made good progress so far and are on track to meet this target. We believe our strong performance to date greatly reduces the scope for further efficiency in PC21.

The current arrangements for the governance of NI Water as both a regulated Government Company and a Non-Departmental Public Body bring with it certain challenges, such as the short, medium and longer-term operational and capital funding requirements. The current system of setting the capital programme within the Utility Regulator's price setting process does not align with the annual cycle of public sector funding.

We have had to adjust PC15 Final Determination output targets to reflect a shortfall in public expenditure in the first three years of PC15. NI Water is an asset intensive business and long-term planning is essential to improve services for customers today while investing to safeguard services for future customers. The uncertainty over medium term investment planning adds complexity and inefficiency to capital investment delivery and makes it increasingly difficult for us to maintain momentum to complete our programmes of work.

The Company is continuing to work closely with DfI and the Utility Regulator to make the case for certainty of funding and a medium term financial settlement to underpin the six-year PC15 Final Determination. In the meantime, NI Water ensures that the implications on the delivery of our services as a consequence of funding constraints, are fully analysed, managed, delivered and communicated to the public in a clear and responsive manner.

Some of the measures we have taken over 2017/18 to deliver a reduction in day to day running costs are set out below.

Dunore Solar Farm
As noted in Chapter 1, we completed our first solar farm to supply electricity to the Dunore water treatment works. Dunore is our third largest site in terms of energy consumption, accounting for 7% of the company's annual usage.

The £7m project produces a peak output of 5MW, saving over £0.5m annually in energy costs. As well as meeting the energy needs of the Dunore treatment works, the farm also enables us to contribute spare capacity to the grid.

Alpha PPP Acquisition
Project Alpha was a 25 years Design, Build, Finance and Operate (DBFO) contract to provide bulk drinking water supplies of up to 396 Ml/d (60% of NI Water's demand) until May 2031.

It is anticipated that the acquisition of the Alpha companies in 2017/18 will deliver a number of important financial benefits over the remaining 14 years of the contract period. We estimate that non-domestic customers will pay £11.5m less in water charges, while the amount of subsidy required by NI Water will reduce by £45.5m. It will also secure £48.5m in Resource DEL savings, £13.8m of which will be realised over the next 4 years.

Instrumentation, Automation and Telemetry (ICAT)
NI Water has commenced implementation of its Instrumentation, Automation and Telemetry (ICAT) strategy, with new technology already installed at over 30 service reservoirs during 2016/17 and a further 39 sites during 2017/18.

Whilst this programme of work is primarily focused on improving service reservoir resilience, we also anticipate operational savings.

Business Improvement Initiatives

1. **Production Lines**
    a. The second phase of the Customer Service Centre design was implemented to align the Bretland and Gelvin Grange sites with our Water and Wastewater operations to improve service and lower employee/contractor costs.
    b. Detailed analysis of expenditure by activity has enabled greater control of Meridian contractor expenditure and increased levels of capitalisation.
    c. In addition to the Dunore Solar Farm, actions to drive lower energy costs and higher income have resulted from the optimisation of a number of major Wastewater Treatment Works, investment in small scale solar at a total of 55 sites and new commercial arrangements for access to NI Water's standby generators at periods of peak demand.

2. **Capital Efficiencies**
    a. Of a range of initiatives to deliver enhanced levels of efficiency the most impactful has been the creation of the Capital Programme Management Office (CPMO). This has proved highly effective in managing risk to lower project expenditure.
    b. Network modelling which was previously undertaken by expensive external resources on a consultancy basis has now been insourced to enhance NI Water's capability and realise savings.
    c. Work to ensure the creation of the planned Integrated Partnerships, essential for the next phase of capital efficiencies, has made strong progress with the procurement process now underway.

3. **Customer Experience / Digital**
    a. Delivering a channel of choice for NI Water's customers has been identified as a priority and the investment in digital to reduce telephone contacts has gathered momentum throughout the last year and is now extending. This has and will continue to see service standards increase and costs for call handling reduce as more customers opt to transact quickly and easily via the web and Interactive Voice Response (IVR).
    b. Digital technology now underpins the Situational Awareness capability that enables the Customer Service Centre to more effectively and efficiently manage "grouped events" to drive service and lower costs by reducing the number of truck rolls.

4. **Commercial**
    a. The use of Category Management in the procurement of goods and services in new areas such as Fleet and Chemicals is proving effective at delivering better value. Building on the successes of this year, further training and mentoring of staff in these new ways of working has already begun in anticipation of the scope of Category Management widening.

Innovation Day
Innovation was the topic of the day at the first innovation event run in Northern Ireland for the water sector in September 2017. NI Water created an opportunity for companies and entrepreneurs to have a chance to pitch their ideas to key influencers in the water industry. The informative and interactive event was attended by many industry experts such as John Joyce, Chief Economist at the Stockholm Water Institute and Richard Kirk from the Institution of Civil Engineers.

Innovation is key to driving efficiency and improving service and our customers and stakeholders both demand and expect it. The quality and creativity of the presentations were first class, showcasing the wealth of talent and expertise available to drive forward the Northern Ireland economy. The event focused on smart networks, lowering total asset lifecycle costs and advanced information technology. Three companies were selected to work with NI Water with the view to furthering their idea or product, which will be subject to the full tendering process.

Supply Chain Efficiencies
NI Water is moving to a more collaborative approach with our supply chain via the creation of a number of integrated partnerships to supersede the existing frameworks for delivering our capital investment programme.

The partnering approach focuses on appointing a reduced number of key framework contractors who will work more closely with NI Water, be involved earlier in the scoping and design stages of solution development, and share greater risk and reward.

We held an open day to brief interested parties on the procurement process, which was attended by over 100 representatives from the supply chain. Briefings have also been held with the Construction Employers Federation and the Association for Consultancy and Engineering.

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 2018

Section 2

Tables and Commentary

Chapter 1 - Promoting the Efficient Use of Water

This report examines a range of water efficiency activities undertaken by the 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.

These efforts have included using the methods that have been successful to date i.e. education schemes, distribution of water saving devices and working in partnership with other organisations on new projects, and by designing and introducing new strategies.

The Water Education Team (WET) consists of two full time employees who visit schools, community and specialist groups and organisations, and work in partnership with stakeholders and other partners. 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
d) selecting water saving option on appliances
e) use of shower rather than bath, and using shower timer to reduce time spent in the shower
f) 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) encouraging use of 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
f) plant drought resistant plants

WET have attended a variety of external public events:-

- Balmoral Agricultural Show (May)
- Coleraine 50+ forum (July)
- Music on the Park-Silent Valley (July)
- Men's SHED, Limavady (August)
- Men's SHED-Dungiven (August)
- Men's SHED-Ballykelly (August)
- Music on the Park-Silent Valley (August)
- Millisle Community Group (September)
- Irish Football Association event (October)
- Girdwood Community Hub (October)
- Banbridge Senior Citizens Club (October)
- Chest, Heart & Stroke events (October and January)
- Ballylagan Men's Group (November)
- Randalstown Seniors Group (November)
- Beersbridge Elim Church Winter Even (December)

- Consumer Parliament (March)
- Glenbrook Sure Start (March)

Events that were attended on request:

- Northern Ireland Environment Agency event (August)
- Invest NI Innovation day (September)
- W5 Lego STEM event (December)
- Winter Information Event – Belfast City Council (December)
- LACP Event (December)

Staff who attended these events promoted the practice of water conservation by means of distributing leaflets, promotional items and giving advice on using water wisely.

Staff who attended these events promoted the practice of water conservation by means of distributing leaflets, promotional items and giving advice on using water wisely.
During this reporting year, NI Water treatment sites have been utilised as an academic resource by Queens University Belfast, Ulster University, South Eastern Regional College, Northern Regional College and North West Regional College. These visits provide students with an insight into the water treatment processes.

NI Water attended and participated in the global LEGO STEM Event. NI Water staff were involved as judges at this prestige event judging on creative ways of saving water. Eco schools from around Northern Ireland had taken part as the event promoted the importance of water conservation and how our future water users can play a major role in preserving this valuable resource through imaginative initiatives.

The WET promotes water efficiency at NI Water's Education Centres at the Heritage Centre and Silent Valley where sessions take place in alternating weeks. Specific classroom talks on conservation are given to primary school children supporting the Eco Schools initiative or at their request. Monthly educational visits to the Wastewater and Water Treatment Centres for both schools and the general public are organised by the team.

We have seen demand continue for Key Stage 3 classroom visits, through the Home Economics, Geography and science departments over the last reporting period. We do expect this growth to continue into the new school term.

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

- Water-butt leaflets
- Waterwise Leaflet
- Promotional and educational leaflets
- School water audits
- Interactive games encouraging conservation
- Save-a-Flush
- Shower timers (5mins)
- Water cycle poster (teacher's aide)

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

Household

1. Cistern Displacement Devices (CDD's)

These can be requested by the customer directly through NI Water's Customer Service Centre (CSC) or from the Education Team. For 2017/18 NI Water has distributed 778 CDD's at school visits, community talks, shows and at the request of an organisation. All teachers were also issued with a sample. Community Groups receiving presentations on conservation also received a save-a-flush.

The calculation for the water savings achieved in 2017/18 report 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 CDD's 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 CDD 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*(778*0.7) = 17,018.75 l/per day = 0.0170187 Ml/d

2. Distribution of Water Butts

During this reporting period, NI Water distributed water butts to community groups, schools and allotment groups. The total for this year is 34.

The calculation for the water savings achieved in 2017/18 report 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 (190L) is company based (NI Water) and the fills per year is estimated at 6 and the installation rate is 100%.

Calculation:

190*6*1*34 = 38,760 l per year:

38,760/365 days = 106.19178 l per day = 0.0001061 Ml/day

3. Household Water Audits

During 2017/18 the self-water audit for domestic households, which can be accessed through the company's website, have been 261 hits to the online audit. 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.

Domestic Self-Water Audit Packs

Over the report year 2017/18 WET continued its conservation campaign “Spread the Word” to distribute self-audits to the parents of schoolchildren. There were 602 audits disseminated during all schools visited by the Team, the Principal then forwarded these NI Water Domestic Water Audits to the families of the children. A school returning 75% completed audits received a water saving pack including a water butt. The school with the highest percentage of returns also receive a cash prize.

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 to be 70%. It has been assumed that completed audit achieved savings of 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.

From the figures supplied by IT division of the Corporate Affairs Team, 261 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:

Calculation: 261* 0.10* 10 = 261 l/per day = 0.000261 Ml/d

The number of audits distributed was 602 through Spread the Word

Calculation:

602* 0.70*10 = 4214 l/per day = 0.004214 Ml/d

4. Shower Timers

Over the reporting year, 2696 shower timers were distributed at schools, shows, events and presentations by NI Water staff. 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 2017-18 report 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: 2696* 0.23* 5 = 3100.40 l/per day = 0.0031004 Ml/d

D*I *S= Savings in litres

5. Gel Bags

35 gel bags were 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 the savings achieved in 2017/18 report 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 35*0.25*0.1= 0.875 l/per day= 0.0000008 Ml/d

6. Trigger Guns

Nine trigger guns were distributed through allotment talks and at staff water efficiency stands.

Using the Ofwat Water Efficiency Targets a saving of 2 litres per property per day can also be assumed and 100% installation if requested i.e. at staff stands or through CRC.

The calculation for the savings achieved in 2017/18 report year is as follows:

D*I *S= Savings in litres

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

Calculation 9*1* 2 = 18 l/per day= 0.000018 Ml/d

7. Water Audits Completed by Company

No audits were completed in the homes of customers 2017/18

Presently in Northern Ireland domestic customers do not pay for their water and wastewater services and 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, for example by reducing, the number of showers they have in a week or having a shower instead of a bath or the number of times the washing machine and or dishwasher is used.

Non-household

NI Water operates a larger 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.

8. Water Audits

During 2017/18 reporting period, 602 Water Audits for Schools were distributed by WET through Teachers Packs.

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: 602*0.20*10 = 1204 l/per day = 0.001204 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 be then charged to the customer.

Water Efficiency Methods

The majority of NI Water’s other Water Efficiency Methods are education based. As already mentioned NI Water has a dedicated Water Education Team (WET) consisting of two full time employees. These Education Officers deliver presentations to a variety of community and youth groups, organise/attend external events as well as attending educational establishments at all levels. Conservation classroom presentations are delivered weekly and we work in conjunction with the Eco Schools Award scheme. The double decker Waterbus, a mobile education classroom provides presentations, displays, experiments, quiz, demonstrations, multimedia and computer facilities. This mobile classroom aims to make children aware of a range of water issues such as the water cycle, water for health, water sources, water/wastewater cleaning and water efficiency. The Waterbus programmes has been designed for Key Stage 2 (P5-P7) and we work closely within the revised curriculum. The service has been well received by Education Authority (EA) and we have reached 18,863 pupils during 2017-18 delivering NI water’s key message on water conservation. NI Water has a Wastewater Heritage Centre site at Duncrue Street, Belfast. This location provides an insight into the history of water supply and removal of waste along with the importance and techniques of wastewater management. We consider contact with schoolchildren to be the vital link with parents, bringing news and promotional items home and encouraging them to become water efficient and to be aware of the value of water

management. Key Stage 3 talks by NI Water's Education Team have also continued during this reporting period. One of the recommendation from last year's report was for NI Water to consider an additional resource to assist with expanding the educational programme and promoting the efficient use of water including the KS3 area. At present this is being considered and in the meantime we are availing of other resources within NI Water such as Environmental Champions to help assist in meeting the ever increasing demand.

New interactive Education & the Community section on NIWater.com

Education And The Community - Northern Ireland Water

We have launched an updated Education & Community section with rich, informative content focused on informing water users about our key messages.

The extensive new interactive content is used to not only educate users but also to position NI Water as a key stakeholders 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**

Bag it And Bin it - Northern Ireland Water

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?**

Why Save Water? - Northern Ireland Water

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

- **Silent Valley**

Silent Valley - Northern Ireland Water

This sub section sells 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
- Visitor information, downloads, podcasts.

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 houses and business, which would help them to be more efficient in the future.

NI Water's Winter Preparation Campaign generated **84** media items between 1 September 2017 and the 28 February 2018 NI Water has highlighted throughout this past year the issue of water efficiency and in particular the potential for frozen pipes as part of its winter preparation campaign.

The **Frozen Pipes Can Flood Homes / Insulate Your Pipes** message featured in **32** articles and generated a PR Value of **£ 37,796.15**. Sixty nine percent of these articles were classed as Prime Positive. This message was very prominent throughout the period, with the phrases (or parts of the phrases) featuring in a significant number of headlines. In addition to these references within the text of articles the **Insulate Your Pipes** message also registered visually with the phrase appearing on a sign held up by some of the participants at the launch of the Winter Campaign.

The message **"water continues to 'flo' freely through our pipes all winter long"** featured in **30** articles and generated a PR Value of **£35,441.27**. All these articles were classed as Prime Positive. This message was very prominent throughout the period, with the word "flo" featuring in number of headlines.

The NI Water **character "Flo"** was mentioned in 30 articles (36% of the total).

The **Winter Campaign Launch** resonated strongly in the media, totalling **22** articles and producing a PR Value of **£28,969.52**. This was four more articles than last year and produced a PR Value that was 28% higher. All this coverage drew on the press release which contained quotes from the Lord Mayor of Belfast Nuala McAllister and NI Water's Sara Venning. A photograph of the two (with other stakeholder representatives) at the launch at Belfast City Hall also featured in most of the articles.

The **freezing weather conditions** were the subject of **22** articles and produced a PR Value of **£43,090.54**. Most of these articles covered the warnings issued by various public bodies in relation to the Beast from the East snow storm. Several articles also covered the appeal from NI Water for people to be on the lookout for burst pipes in the wake of the freezing conditions.

Protecting pipes appeared in **19** items and produced a PR Value of **£13,474.88**. Among these items were two articles on the upgrade of facilities in the Newry region which featured quotes from Ronan Larkin of NI Water.

Education Visits were the subject of **12** articles and produced a PR Value of **£8,870.47**. These articles featured various NI Water representatives visiting schools and community groups and continued quotes and/or photographs.

The **Utilities Winter Readiness Campaign** was the subject of **9** articles and produced a PR Value of **£6,762.34**. Much of this coverage was driven by a press release which contained quotes from John McKinstry, Chair of the Joint Utilities Working Group. An accompanying photograph of Sara Venning of NI Water with representatives of other utility companies was included in most of the articles. These articles were classed Significant Positive as NI Water was featured prominently but not exclusively.

The **Watersafe website address** featured in 30 articles (36% of the total).

This media coverage generated a PR Value of **£101,167.75**. All the coverage was positive, of which 52% was Prime Positive.

Efficiency Method	Total	Cost	Savings per Ml/ day
Household			
Measurable Methods			
Cistern Devices (0.57p each)	778	443.46	0.0170187
Water butts (£38.16 each)	34	1,297.44	0.0001061
Self-audit (Spread the Word)(0.04p each)	602	24.08	0.0042140
Self-audit (On Line)	261		0.0002610
Total		**1,764.98**	**0.0215998**
Other Measurable Methods			
Shower timers (£1.10 each)	2696	3,100.40	0.0031004
Gel Bags (£4.75 each)	35	166.25	0.0000008
Trigger Guns (£4.83 each)	9	43.47	0.0000180
Shower Heads (£27.90 each)	0	0.00	0.0000000
Education Depart (UKWIR)		56,759.16	0.4795450
Total		**60,069.28**	**0.4795450**
Leaflets			
How water wise are you (0.10peach)	14570	1,457.00	
Freezing Pipe (0.017p each)	7544	1,282.48	
Total leaflets		**2,739.48**	
PR items			
Bookmark- “Flo” kids (0.07p each)	17491	1224.37	
Game: Snakes and Ladders (0.18p each)	594	106.92	
Stop Tags (0.43p each)	23416	10,068.88	
Tap cover (£4.66 each)	0	0.00	
Ice scraper (0.73p each)	581	424.13	
Thermometer (0.76p each)	734	557.84	
Total PR		**12,382.14**	
Non Household			
School Audits(0.19p each)	602	114.38	0.001204
Total			**0.5023488**

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 £2,739.48

The calculation of costs due to staffing has been calculated using accepted methodology from the AIR12 return.

Assumed Savings

Household-Water Efficiency Methods	=	0.0215998
Other Water Efficiency Methods	=	0.4795450
Non Household-Water Efficiency Methods	=	0.0012040

The total recorded savings are **= 0.5023488 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	0.476
Medium	0.029
Totals	**0.505**

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 M/l day
2012/13	0.227 M/l 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

NI Water as in previous years concentrated on the activity of the Waterbus which attributes to a continued high level of engagement and also a high level of savings for this element.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

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

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	DG2 PROPERTIES RECEIVING PRESSURE/FLOW BELOW REFERENCE LEVEL																				
1	Total connected properties at year end	000	1	818.0	A2	825 0	B2	828.1	A2	839.7	A2	852.4	A2	863.0	A2						
2	Properties below reference level at start of year	nr	0	1,748	B3	1,420	B3	1,257	B3	1,082	B3	900	B3	862	B3						
3	Properties below reference level at end of year	nr	0	1,420	B3	1,257	B3	1,082	B3	900	B3	862	B3	711	B3						
4	Properties receiving low pressure but excluded from DG2	nr	0	0	B3	0	B3	0	B3	0	B3	0	B3	0	B3						
4a	DG2 Properties with pressure below a surrogate level of 7.5m at end of year	nr	0	176	B2	169	B2	137	B2	126	B2	124	B2	103	B2						
4b	DG2 Properties at risk of low pressure removed from the risk register by company action	nr	0	297	B3	132	B3	186	B3	171	B3	40	B3	175	B3						
4c	Average capex cost of permanent solutions to DG2 problems	£000/prop	1	0.8	C4	9.1	C4	8.2	B2	13.9	B2	26 8	B2	9.8	B2						
B	DG3 PROPERTIES AFFECTED BY SUPPLY INTERRUPTIONS																				
	(i) UNPLANNED INTERRUPTIONS																				
5	More than 3 hours	nr	0	53,458	B3	41,412	B3	112,653	B3	105,235	A3	90,094	A3	108,386	A3						
6	More than 6 hours	nr	0	10,487	B3	6,742	B3	43,767	B3	8,699	A3	5,128	A3	6,097	A3						
7	More than 12 hours	nr	0	2,607	B3	1,195	B3	25,693	B3	841	A3	494	A3	861	A3						
8	More than 24 hours	nr	0	1,554	B3	12	B3	13,788	B3	32	A3	0	A3	0	A3						
	(ii) PLANNED AND WARNED INTERRUPTIONS																				
9	More than 3 hours	nr	0	50,096	B3	35,468	B3	47,216	B3	33,929	A3	35,484	A3	38,225	A3						
10	More than 6 hours	nr	0	20,674	B3	18,454	B3	19,127	B3	13,767	A3	13,247	A3	14,809	A3						
11	More than 12 hours	nr	0	0	B3	0	B3	44	B3	0	A3	0	A3	0	A3						
12	More than 24 hours	nr	0	0	B3	0	B3	0	B3	0	A3	0	A3	0	A3						
	(iii) INTERRUPTIONS CAUSED BY THIRD PARTIES																				
13	More than 3 hours	nr	0	1,778	B3	2,452	B3	4,710	B3	4,739	A3	12,691	A3	4,078	A3						
14	More than 6 hours	nr	0	561	B3	121	B3	974	B3	476	A3	842	A3	1,145	A3						
15	More than 12 hours	nr	0	1	B3	33	B3	1	B3	0	A3	30	A3	193	A3						
16	More than 24 hours	nr	0	0	B3	0	B3	0	B3	0	A3	0	A3	0	A3						
	(iv) UNPLANNED INTERRUPTIONS (OVERRUNS OF PLANNED INTERRUPTIONS)																				
17	More than 6 hours	nr	0	311	B3	1,004	B3	2,521	B3	1,141	A3	1,611	A3	1,630	A3						
18	More than 12 hours	nr	0	60	B3	20	B3	16	B3	159	A3	417	A3	1,107	A3						
19	More than 24 hours	nr	0	0	B3	5	B3	0	B3	140	A3	0	A3	0	A3						
C	POPULATION																				
20	Population (winter) (total)	000	2	1,842.61	C2	1,850.54	C2	1,862.72	C2	1,874.73	C2	1,887.10	C2	1,896.46	C2						
D	DG4 RESTRICTIONS ON USE OF WATER																				
21	% population - hosepipe restrictions	%	1	0.0	A1	0 0	A1	0.0	A1	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	A1	0 0	A1	0.0	A1						
23	% population - sprinkler/unattended hosepipe restrictions	%	1	0.0	A1	0 0	A1	0.0	A1	0.0	A1	0 0	A1	0.0	A1						

Table 2 – Key Outputs - Water Service 2

Line 1- Total Connected Properties at Year End

Northern Ireland Water's (NIW) property data is provided via a data download of the property database tables held within the RapidXtra billing system. The data is then manipulated within Microsoft SQL to produce the Rapid Property Summary Report.

Our AIR18 methodology has remained consistent with previous years – using the automated tool to populate Table 2 figures (this was first introduced in AIR12 - Rapid Property Summary as the input).

The difference between the AIR17 and the AIR18 figures is 10,589. The breakdown can be explained as follows:

1) New Connections during the 2017/18 reporting year
2) Added as a result of a customer contact. i.e. septic tank empty request, no water complaint, blocked sewer etc.
3) Removal of duplicates/properties as a result of data quality initiatives

In addition to the above, further data quality requirements have been built into the new CBC Contract. They cover all aspects of the property life cycle (creating, amending and demolishing properties) and data degradation will be monitored/measured throughout. These system validations have been split into 4 delivery phases. The functionality for Phases 1-3 have been delivered, with the functionality for the Post Phase 3 data validations due to be delivered within the next database release/upgrade in August 2018. Off-system data cleanse is required before some of the system validation rules can be applied.

Annex A details the Line Methodology followed for each of the figures calculated in Table 2.

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 862, as reported in line 3 of the AIR17 submission.

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

As per the regulatory guidance, as issued and directed by NIAUR, this line includes properties within a 10m height of service reservoirs, there are currently 79 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 711.

The year-end figure is the direct result of removals due to Company Action and better information as well 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.

The reductions arising from capital schemes are captured within reports received following the completion of water main rehabilitation or infrastructure improvements. In total NI Water processed 4 DG2 investigation (DIR) reports resulting in 175 properties being removed from the DG2 register due to company action in AIR18, see Table 1 and scheme summaries below.

Regular updates of DG2 properties continue to be uploaded onto the CARtoMAP system ensuring that this information is readily available throughout the company. This has proved to be of particular benefit to the Contact Centre to assist in the handling of low pressure complaints.

Table 1

Company Action Removal Scheme	DG2 Properties Removed
Omagh phase 2	26
MIMP South – DIR1	111
Isabella/Loughrans Tower	14
Lough Ross	24
Total	**175**

Omagh DIR – Omagh Phase 2 work package consists of a total area of 324km^2 within the town of Omagh and the surrounding Mid Tyrone Area. The area contained 33 DG2 properties. As a result of low pressure a number of mains lengths were rehabilitated, Of the DMA's where properties were removed the main length was in the region of 301km. This Rehab resulted in the removal of 26 properties from the register.

Isabella DIR – This work package covers a small area of 1.5km^2 in Co. Down, South East of Downpatrick, on the coast. Property numbers supplied are around 241 and there is in the region of 6km of water mains length.
Following successful Water mains rehabilitation this allowed the removal of all 5 properties from the register.

Loughrans Tower DIR – This DMA is located in Co. Down. There are around 338 properties in the DMA with 9 DG2 properties. The water mains length is in the region of 5 km and the DMA area is approximately 0.3km^2. Following a successful rehab operation a total of 9 properties were removed from the register.

Lough Ross DIR –This work package covers an area of around 256km², mainly to the south west of the country in Co. Armagh. There are 13 DMAs within the package area with a total of 7962 properties supplied from a total of 600km of mains. Following successful Water Mains Rehabilitation in the area a total of 24 properties were removed from the register.

Southern Work Packages – As a result of network modelling and associated rehabilitation schemes since 2010 a number of DG2 properties were removed from the register. Recent analysis and logging of the remaining DG2 properties in the area determined that a further 111 properties from 117 on the register could be removed. After investigation it was established that there were 8 DMAs affected with a total area of 87km^2 and mains length of 260km. A review of the network and supply regime to these DMAs indicate that no further network or infrastructure changes have been made since the completion of these rehabilitation schemes. It is therefore concluded that the removal of 111 properties from the register can be attributed to Company Action.

During AIR18 there were no instances of DG2 Properties being removed as a result of Better Information following investigation and logging, meaning all removals were completed as a result of operational improvements in the network.
There were a number of additions made to the register this year following information received from colleagues regarding a total of 24 properties suffering from low pressure within multiple DMA's to the East and South of the country. The DMAs affected are Ballyvaston,

Blaney Road, Cairn Hill, Trunk Ballysillan Lower Outlet and Trunk Carran Hill Outlet. These DMAs cover an area of 124km^2 and have a mains length of 45km in total. Following logging the 24 properties were added to the register.

The total DG2 movements during the year are summarised in Table 3 below.

Table 3

Year Start	**862**
Additions due to Better Information	24
Removals due to Company Action	175
Removals due to Better Information	0
DG2 Properties Remaining	**711**

Line 4 – Properties receiving low pressure but excluded from DG2
As per NIAUR direction, 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 current guidance notes.
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 103 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 Rehabilitation schemes and Infrastructure improvements.

Table 4

Removals Due to Company Action	**Number**
Rehabilitation Schemes	175
Infrastructure Improvements	0
Total	**175**

The final number of properties removed due to Company Action is recorded in Table 4 above as 175. This number alongside an exceedance of 11 on the AIR17 target means that NIW has surpassed the cumulative PC15 Target of 357 by 29.

Lag in Confirming Removal from Register
There is a time lag of approximately one year between the completion of the construction phase of a Work Package and confirmation that properties can be removed from the register, in general. There will be a longer lag in areas where there are multiple phases in a Work Package under construction, or a neighbouring Work Package that has a significant effect on the normal operation of the system. In general, the PPRA report for a multi-phase Work Package will be completed one year after the final phase of the Work Package is constructed.

Work Packages awaiting PPRA
Documentation listing the Work Packages awaiting the completion of PPRA reports identifies a number of DG2 properties to be removed during 2017/18 using predicted

pressure from Hydraulic Modelling. The actual pressure will be confirmed by logging before formal removal of properties from the register. Table 5 below lists the Work Packages and the predicted number of properties identified for removal.

Table 5

Work Package Name	No. of Props to be Removed
Killylane	7
Ballyhoy Armagh	44
Portavoe	33
Corvanaghan	1
Total	**85**

Removals Pending
The total number of properties planned for removal during the 18/19 reporting year from work packages awaiting PPRA is 85.

Work Packages Outstanding

Table 6

Work Packages Outstanding	No. of Props to be Removed
WPS Schemes	73
Total	**73**

There are currently outstanding Work Packages to be completed with the possibility of removal in the 18/19 reporting year. This includes the implementation of a number of Water Pumping Stations detailed in table 6. The completion of these packages would bring the total removals during the 18/19 year to 158. Any removals (Planned or outstanding) however are subject to the completion of rehabilitation works, collation of pressure data and submission of completed reports.

The cumulative PC15 target going into 18/19 is 516; minus the 29 which had has surpassed that target to date means an AIR18 removal target of 130.

Line 4c - Average Capex Cost of Permanent Solutions to Removing DG2 Properties from the Register
Over the 3 years of the PC 15 period the total target removals were 357 properties and NIW has proactively removed 390 properties from the DG2 register, which means we are 33 ahead of the PC 15 target
This is broken down as follows:-

2015-16
Target removal 92. Actual number removed 171 (which was a combination of 2 Killylane, 32 Lisburn, 37 Ballintemple, 69 Altmore, 21 Castledona and 10 The Glens).
This left a carryover into 2016-17 of 79

2016-17
Target removal 108. There were 79 carried forward and a further 44 removed (22 Ballygowan, 10 South Ph1, 5 Ballysillan, 3 MIMP south and 4 Rasharkin.)
This left a carryover into 2017-18 of 15.

2017-18
Target removal 157. There were 15 carried forward and a further 175 removed. (26 Omagh, 24 Lough Ross, 5 Isabella, 9 Loughrans Tower, 4 Rathfriland, 5 Royal Ascot, 35 Loughgall, 4 Drumadd, 9 Eagralougher, 17 Rathmore Rd, 27 Belfast Rd and 10 Moyglass Enniskillen.)
This has given a carryover into 2018-19 of 33.

This is the seventh year that the company has reported this figure and it will allow the benchmarking of NI Water costs. The UR Final Determination Document indicated an average cost per property removed, which appears to be based on historic figures from England and Wales, but the appropriateness of this comparison without a factor to account for the much longer length of main per property in Northern Ireland needs further discussion.

The variability of cost per property removed as outlined in the table below is reflective of:

a) The method of delivery of the Water Mains Rehabilitation Programme. Work packages have multiple drivers and assignment of costs to DG2 removal may rely on the use of the Enhancement part of the CIDA allocation for the schemes below rather than directly attributable costs.

   The scheme costs and number of properties removed from the register are reported for each WP where a PPRA report was produced. The costs 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 CIP A1 stage where the CIDA application is applied using the primary driver for each scheme.

b) Individual projects designed solely to remove DG2 properties have been focused on and identified by NIW. These Projects are easier to analyse and cost due to the fact that they are focused solely on DG2 removal.

PPRA reports covering Lough Ross, Omagh Phase2, Loughrans Tower, Isabella, Royal Ascot, Rathfriland, Loughgall, Drumadd, Eagralougher, Rathmore Rd Bangor, Belfast Rd Bangor and Moyglass Enniskillen were produced during 2017-18 which removed a total of 175 properties from the register. These are detailed in the Table below.

Table 7

WP Title	DG2 Properties Removed	Total Cost	Cost Per Removal
Lough Ross	24	£306,624.42	£12.78K
Omagh Phase 2	26	£323,477.90	£12.44K
Loughrans Tower	9	£22,494.09	£2.50K
Isabella	5	£69,632.52	£13.93K
Royal Ascot	5	£45,979.89	£9.19K
Rathfriland	4	£46,852.15	£11.71K

WP Title	DG2 Properties Removed	Total Cost	Cost Per Removal
Loughgall (MIMP South Workpackage)	35	Incl below	
Drumadd (MIMP South Workpackage)	4	Incl below	
Eagralougher (MIMP South Workpackage)	9	£688,432.16	£19.67
Rathmore Road Bangor	17	£85,473.49	£5.03K
Belfast Road Bangor	27	£87,615.10	£3.24K
Moyglass Enniskillen	10	£40,647.91	£4.06K
Carried Forward Surplus from 2016-2017	15		
TOTAL Pro Active NIW DG2 Removals 2017-2018	**190 against 157 target**	**£1,717,229.91**	
Average Cost per DG2 Removal		**£9,812.74**	

Therefore the average overall cost of removing a DG2 property from the register is obtained by dividing the total cost £1,717,229.5 **by** the total number of properties 175 removed in total (This means a total of 190 declared /accumulated for this year, utilising the Asset Delivery Capital Budget as there was 15 carried forward from last year).

Average cost per DG2 removal in the AIR 18 Reporting Period is = £9,812.74
Comment -The reduced figure for this year may be because of the extra analysis work carried out in May 2018 by the Asset Performance Team to further clarify the elements of Workpackages that were focused on DG 2 removal.
Confidence Grade is B2 as this involved a process of some retrospective allocation of costs to the DG2 removals from some Workpackages with multiple drivers.

Workpackage Descriptions

Lough Ross WP 71
The Lough Ross work package is split into two distinct areas which cover predominately rural areas in South Armagh, including the towns of Crossmaglen and Cullyhanna. Together the work package boundaries cover a total area of 270km² with approximately 7,697 properties and over 505km of water mains. The work package consists of 11 DMAs, 10 of which involved pipework rehabilitation under WMRF.

Omagh Phase 2
JN512 Omagh Phase 2 Work Package consists of a total area of 324km2 within the town of Omagh and the surrounding mid-Tyrone area. According to the most recent NI Water DG2 register the area contains 33 DG2 properties; in response a number of mains were rehabilitated as part of the Omagh Phase 2 Work Package. Proposed work includes 32.6km of new mains and 3.7km of abandoned mains

Loughrans Tower and Isabella
Loughrans Tower and Isabella were completed as part of South Down Zone which consists of mainly rural and some small settlements between the towns of Castlewellan and Strangford covering a total area of 153km2. The area supplies an estimated 6,879 properties and contains 328.3km of mains. . Proposed works includes 51km of new mains and 12km of abandoned mains.

Royal Ascot
Royal Ascot was part of JT252 Lisburn North Rural Phase 2 Zone. This Zone consists mainly of Lisburn and the surrounding areas to the east and north-west, covering a total area of 31.3km².The area supplies an estimated 9,761 properties and contains 132.7km of mains. Proposed work includes 18.1km of new mains and 1.2km of abandoned mains.

Rathfriland

Rathfriland was completed as part of South Down Zone which consists of mainly rural and some small settlements between the towns of Castlewellan and Strangford covering a total area of 153km2. The area supplies an estimated 6,879 properties and contains 328.3km of mains. . Proposed works includes 51km of new mains and 12km of abandoned mains.

Loughgall, Drumadd and Eagralougher

Loughgall, Drumadd and Eagralougher were all completed as part of MIMP South Zone. MIMP South Zone extends across the southern part of Northern Ireland, incorporating the towns of Newry, Banbridge, Armagh, Craigavon and Dungannon. The work package comprises mains which burst during the 2 freeze thaw periods and single source schemes to improve security of supply. The zone covers a total area of 2,702km2. The area impacted by proposed works covers several DMA's across the zone. Proposed works includes 23.3km of new mains and 2.3km of abandoned mains.

Rathmore Road Bangor and Belfast Road Bangor

These two areas were completed as part of the JS219 North Down Work Package.

Moyglass Enniskillen

This was completed as part of the JP680 South Phase 1 Zone. The zone encompasses a total area of 714 km² to the north and west of Enniskillen Town and its surrounding environs in County Fermanagh. Proposed work includes 23.1km of new mains.

Further Work Packages to be reviewed next year

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 2018/19 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 with further investigation throughout the year)

Table 8

Work Package Name	No of properties to be removed
Portavoe Tower	33
Ballyhoy Armagh	44
Killylane	7
Clonvaraghan Rd Castlewellan	1
WPS Schemes	73
TOTAL	**158 against 159 target**

Removals Pending

It should be noted that there are currently 158 properties identified for removal from the register in 2018/19 to a target of 159 in the plan following the submission of PPRA Reports.

However the 2017/18 target was for the removal of 157 DG2 properties and the actual achieved removals surpassed this figure leaving NIW 33 DG2 removals ahead of last year's target.

The totals therefore are 158 planned for next year against a 126 (i.e. 157 – 33) target to get NIW up to the planned cumulative target for end of next year.

These removals are subject to the completion of: rehabilitation work, identification of specific DG2 schemes, and collation of pressure data and submission of completed reports. In previous years, .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 The Asset Delivery Team and the Asset Performance Team working together to improve the granularity of the returns and to improve the accuracy of the methodology and figures, and taking cognisance of guidance from the reporter.

This output was achieved by making use of the scheme approval analysis that identifies the contribution from each of the investment drivers (structural improvements, water quality, operational issues (leakage) and hydraulic drivers (DG2).Also there are several dedicated DG2 schemes that are more easily analysed as the purpose of these schemes is DG2 removal only.

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 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 **862,988** as confirmed by CSD Services in AIR18 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	2015/16	2016/17	**2017/18** (inc. Aug severe flooding)	**2017/18** (exc. Aug severe flooding)
Table 2: Line 5	More than 3 hours	105,235	90,094	**108,386**	**104,696**
Table 2: Line 6	More than 6 hours	8,699	5,128	**6,097**	**4,643**
Table 2: Line 7	More than 12 hours	841	494	**861**	**190**
Table 2: Line 8	More than 24 hours	32	0	**0**	**0**

The 2017/18 outturns in the above table are reported, including and excluding the impact of the severe flooding event of August 2017. The event is discussed in detail in the section of the commentary dealing with Major Incidents in the Report Year. With the impact of the flooding event included, all outturns have increased except for the ‘more than 24 hours’ outturn. With the impact of the flooding event excluded, only the ‘more than 3 hours’ outturn has increased.

In 2017/18, 108,386 properties experienced an unplanned, unwarned interruption that lasted more than 3 hours, 18,292 *(20%)* more properties than the previous year. This increase was due in part to the severe flooding event but also, to the cold weather experienced at the start of March 2018, to the winter weather experienced in December 2017 and to several events that occurred outside normal working hours in May 2017. The following table provides a summary of the events that affected performance.

DG3 ID	Location	Date	>3hrs
118754	Burst main, [redacted] Newtownards	11/05/17	1,979
128801	Burst main, [redacted], Feeny	18/05/17	452
138869	Two non–concurrent bursts, [redacted] Hillsborough	27/05/17	1625
138942			875
Various	Severe Flooding Event	22/08/17	3,690
Various	Winter weather	December 2017	*6,794*
Various	Cold Weather Event	March 2018	*7,937*
		TOTAL	**23,352**

The six events in the table account for 23,352 properties, 21.5% of the total outturn for this measure. Had it not been for the six events, the outturn would have been less than the 2016/17 outturn of 90,094 and less than the 2015/16 outturn of 105,235.

The impact of the adverse weather of March 2018 (7,937 properties) was estimated by ignoring all unplanned interruptions for the period 2nd to 9th March and using a typical value in their place, based on average performance in 2014/15, 2015/16 and 2016/17.

The impact of the adverse weather of December 2017 (6,794 properties) was estimated by ignoring all unplanned interruptions for the period 1st to 31st December and using a typical value in their place, based on average performance in 2014/15 and 2015/16.

Month	'No Water' Complaints	Unplanned, Unwarned >3hrs (Props)
Dec 17	**1,904**	**14,299**
Dec 16	1,473	6,811
Dec 15	1,452	7,504
15/16 & 16/17 Ave.	1,463	7,158
Percentage Increase	30%	100%

When compared to the average for the previous two years, December 2017 saw a 30% increase in 'no water' complaints received and a 100% increase in properties affected by unplanned, unwarned interruptions greater than 3 hours.

All three May events occurred outside normal working hours. The [redacted] event occurred at 05:02 and affected properties in Cloughey DMA. For further details of the remaining May events and the adverse weather event of March 2018, please refer to the section on Major incidents in the Report Year.
In 2017/18 and with the impact of the severe flooding event included, 6,097 properties experienced an unplanned, unwarned interruption that lasted more than 6 hours. With the impact of the flooding event excluded, the outturn reduced to 4,643 properties and would have been the lowest for this measure since the Company began making regulatory returns in 2007/08.

A total of 1,369 properties in Londonderry were affected by the flooding event, 22.5% of the total outturn for this measure. A further 69 properties in Omagh and 16 properties in Magherafelt were affected by the incident.

In 2017/18 and with the impact of the August severe flooding event included, 861 properties experienced an unplanned, unwarned interruption that lasted more than 12 hours. With the impact of the flooding event excluded, the outturn reduced to 190 properties and would have been the lowest for this measure since the Company began making regulatory returns in 2007/08.

A total of 645 properties in Londonderry were affected by the flooding event, 75% of the total outturn for this measure. A further 26 properties in Omagh were affected by the incident.

For the second year in succession, no properties experienced an unplanned, unwarned interruption that lasted more than 24 hours.

Planned and Warned Interruption Events

DG3 Interruption Events	2015/16	2016/17	2017/18
More than 3 hours	289	450	354
More than 6 hours	129	221	108
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 2017/18, 354 planned and warned interruptions lasted more than 3 hours of which 168 related to the Water Mains Rehabilitation Programme (WMRP). During the same period, 108 planned and warned interruptions lasted more than 6 hours of which 81 were associated with mains rehabilitation.

The decrease in outturns over the last year under the Water Mains Rehabilitation Programme reflects the Company's policy to minimise interruption to its customers' water supply and is also consistent with a decrease in the meterage installed under the WMRP, i.e. the water main distribution meterage installed in 2017/18 was 126km compared to 163km in 2016/17 and 112km in 2015/16.

Properties Affected by Planned and Warned Interruption Events

AIR	DG3 Properties Affected	2015/16	2016/17	2017/18
Table 2: Line 9	More than 3 hours	33,929	35,484	38,225
Table 2: Line 10	More than 6 hours	13,767	13,247	14,809
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.

This year's increases in the overall numbers of properties affected by NI Water cannot be attributed to the ongoing Water Mains Rehabilitation Programme, as the table below indicates the WMRP has had a continuous decrease in properties interrupted for more than 3 and 6 hours. This is due to continuous improvement in planning, control and reporting of the WMRP to minimise interruption to our customers' water supply.

Properties Affected by Planned and Warned Interruption Events Attributed to WMRP

Time Band		2015/16	2016/17	2017/18
More than 3 hours	Properties	23,663	20,828	14,863
	Events	188	332	168
	Properties per Event	126	63	88
More than 6 hours	Properties	11,136	10,119	7,076
	Events	106	202	81
	Properties per Event	105	50	87

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

This year's increase in the number of properties affected per event for planned and warned interruptions lasting more than 3 hours and more than 6 hours is related to interruptions associated with the completion of work packages under the old Water Main Rehabilitation Framework (WMRF) in densely populated urban areas.

For the third year in succession, no properties experienced a planned and warned interruption lasting more than 12 hours. Whenever possible, NI Water tries to avoid planned and warned interruptions exceeding 12 hours.

No properties have been affected by a planned and warned interruption lasting more than 24 hours since the Company began making regulatory returns in 2007/08.

Interruptions caused by Third Parties

AIR	DG3 Properties Affected	2015/16	2016/17	2017/18
Table 2: Line 13	More than 3 hours	4,739	12,691	4,078
Table 2: Line 14	More than 6 hours	476	842	1,145
Table 2: Line 15	More than 12 hours	0	30	193
Table 2: Line 16	More than 24 hours	0	0	0

Last year, NI Water reported a sharp rise in the number of properties affected by an unplanned interruption caused by a third party lasting more than 3 hours. The rise was consistent with an increase in the number of events informing this measure, 42 in 2016/17 compared to 25 in 2014/15 and 34 in 2015/16.

This year's outturn of 4,078 is similar to the 2015/16 outturn of 4,739. The outturn number of 30 events is also similar.

Two events in the year involved more than 500 properties, accounting for 1,205 properties *(29.5%)* of the outturn. The most significant event occurred on 20 July 2017 when a gas contractor damaged a main in Portadown. 666 properties in Ballyoran DMA were affected by the incident.

The AIR18 outturn for properties affected by an unplanned interruption lasting more than 6 hours caused by a third party was 1,145 properties, 303 properties *(36%)* higher than the AIR17 outturn. The associated number of events was 6 in 2017/18 compared to 11 in 2015/16 and 6 in 2016/17. The most significant event occurred in March 18 when a building contractor damaged a main in Ballyclare. 477 properties were affected by the incident.

In 2017/18, 193 properties experienced an unplanned interruption lasting more than 12 hours caused by a third party compared to 30 in 2016/17 and 0 in 2015/16. This year's outturn was related to a burst HPPE trunk main at [redacted] on 10th August. The incident was the subject of Upward Report 018.

For the seventh year in succession, no properties experienced an unplanned interruption lasting more than 24 hours caused by a third party.

Unplanned Interruptions (Overruns of Planned Interruptions)

AIR	DG3 Properties Affected	2015/16	2016/17	2017/18
Table 2: Line 17	More than 6 hours	1,141	1,611	**1,630**
Table 2: Line 18	More than 12 hours	159	417	**1,107**
Table 2: Line 19	More than 24 hours	140	0	**0**

This year, the outturn number of properties affected by an overrun of a planned and warned interruption lasting more than 6 hours (1,630) was similar to the 2016/17 outturn of 1,611. However, there was a decrease in the number of interruption events informing this measure, 18 in 2016/17 compared to 11 in 2017/18.

Of the 11 events, the most significant involved an overrun of planned and warned mains rehabilitation work to a 315mm trunk main in Antrim in December 2017. The work was planned to take place during an eleven-hour period from 20:00 to 07:00 to minimise disruption but the supply was not restored until 09:45. The work was carried out during a period of wintery weather. A total of 1,104 properties experienced the overrun.

	2015/16			2016/17			2017/18		
	Planned >6hrs	Planned Which Overran	%	Planned >6hrs	Planned Which Overran	%	**Planned >6hrs**	**Planned Which Overran**	%
Events	141	12	8.51	238	18	7.14	**390**	**11**	**2.82**
Properties	14,908	1,141	7.65	14,858	1,611	10.84	**16,439**	**1,630**	**9.92**

The table above provides a summary of the outturn numbers of planned and warned interruption events in the last 3 years, including those that overran and the corresponding numbers of affected properties. The change in outturns reflects a decrease in the percentage of events that overran although the overall number of properties affected by an overrun has remained the same.

In 2017/18, 1,107 properties experienced an overrun of a planned and warned interruption lasting more than 12 hours. Three events were responsible although two of the events involved only one and two properties respectively. As described above, the remaining event related to an overrun of planned and warned mains rehabilitation work to a 315mm trunk main in Antrim in December 2017. A total of 1,104 properties experienced the overrun.

For the second year in succession, no properties experienced an overrun of a planned and warned interruption lasting 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	15/16 Outturn		15/16 KPI Target		16/17 Outturn		16/17 KPI Target		**17/18 Outturn**		**17/18 KPI Target**	
	(Props)	(%)	(Props)	(%)	(Props)	(%)	(Props)	(%)	**(Props)**	**(%)**	**(Props)**	**(%)**
>6 hrs	8,699	1.04	7,223	0.860	5,128	0.602	7,148	0.839	**6,097**	**0.706**	**7,073**	**0.820**
>12 hrs	841	0.10	1,500	0.179	494	0.058	1,450	0.170	**861**	**0.100**	**1,400**	**0.162**
>24 hrs	32	0.004	80	0.010	0	0.000	80	0.009	**0**	**0.000**	**80**	**0.009**

Note 1: Percentage outturns are based on total connected properties as follows: 839,710 (AIR16); 852,399 (AIR17); 862,988 (AIR18)

The outturns for properties affected by unplanned, unwarned interruptions confirm that NI Water has achieved all three DG3 KPI targets, despite some very challenging circumstances during the 2017/18 reporting year. In August 2017, heavy rainfall in the North West of the province caused the River Faughan to overflow its banks. A number of NI Water sites were flooded and there was significant damage to infrastructure. Bridges collapsed and roads and water mains were washed away. This winter, heavy snowfall and cold temperatures in various parts of Northern Ireland caused an increased number of burst mains. The >6hr outturn of 0.706% (6,097 properties) was 0.113% (976 properties) within the full year target. The >12hr outturn of 0.100% (861 properties) was 0.062% (539 properties) within the full year target. No properties experienced an unplanned interruption lasting more than 24 hours.

In 2016/17, NI Water also achieved all three DG3 KPI targets.

In 2015/16, the DG3 >6hr KPI target was missed. There were a number of contributory factors including a trunk main burst in November which was difficult to locate and repair due to poor weather conditions and health and safety considerations. In January, there were a number of difficult repairs in rural areas with no options to rezone.

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: For the purposes of reporting on this requirement of the commentary, NI Water has considered only those interruptions lasting longer than 3 hours and has assumed that 'night' falls between the hours of 12 midnight and 7am.

The following table provides a summary of those interruption records in 2017/18 whose Interruption Start Date/Time and Supply Restored Date/Time fell within the hours of 12 midnight and 7am.

	Interrupt Type	Interrupt No.	Interruption Start		Supply Restored		Duration	Properties Affected		
			Date	Time	Date	Time		>0 hrs	>3 hrs	>6 hrs
1	Unplanned	Event 231753; DG3 169992	25/10/17	00:05	25/10/17	03:45	3 Hrs 40 Mins	5	5	0
2	Unplanned	Event 180655; DG3 139148	05/07/17	01:00	05/07/17	05:00	4 Hrs 0 Mins	32	32	0
3	Unplanned	Event 231133; DG3 169526	24/08/17	01:55	24/08/17	06:30	4 Hrs 35 Mins	169	169	0
4	Planned	CAD005	06/10/17	01:00	06/10/17	04:45	3 Hrs 45 Mins	11	11	0
5	Unplanned	Event 233392; DG3 171263	10/03/18	00:30	10/03/18	04:15	3 Hrs 45 Mins	52	52	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.

4 unplanned interruption records and 1 planned and warned interruption record have been identified where customers would not have noticed the loss of service because it occurred at night. All 5 of the interruptions lasted 6 hours or less. The number of properties affected by unplanned interruptions was 258 representing 0.24% of the total number of properties that experienced an unplanned interruption lasting more than 3 hours in 2017/18. The number of properties affected by planned and warned interruptions was 11 representing 0.03% of the total number of properties that experienced a planned and warned interruption lasting more than 3 hours in 2017/18.

Unplanned: (258 / 108,386) x 100 = **0.24%**
Planned and Warned: (11 / 38,225) x 100 = **0.03%**

NI Water reported in its AIR17 commentary that there were 7 unplanned interruptions and 1 planned and warned interruptions where customers would not have noticed the loss of service because it occurred at night. The number of properties affected by unplanned interruptions was 538 representing 0.6% of the total number of properties experiencing unplanned interruptions lasting more than 3 hours in 2016/17. The number of properties affected by planned and warned interruptions was 1,925, representing 5.42% of the total number of properties experiencing planned and warned interruptions lasting more than 3 hours in 2016/17.

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 2017/18.

	Interrupt. No.	Month	Duration	Properties Affected		Duration Of Overrun
				> 0 hrs	> 3 hrs	
1	EP024	Apr 17	3 Hrs 40 Mins	2	2	0 Hrs 40 Mins
2	Event 170221; DG3 ID 128825	May 17	3 Hrs 30 Mins	58	58	2 Hrs 15 Mins
3	Event 170258; DG3 ID 138874	May 17	3 Hrs 55 Mins	29	29	0 Hrs 20 Mins
4	CAD003	Feb 18	5 Hrs 35 Mins	102	102	0 Hrs 5 mins
5	Event 243605; DG3 ID 171441	Mar 18	5 Hrs 30 Mins	4	4	0 Hrs 30 Mins

In 2017/18, there were **5** overruns of planned and warned interruptions lasting between 3 and 6 hours. The number of properties affected by these interruptions was:
2 + 58 + 29 + 102 + 4 = **195**

This number is small compared to the number of properties that experienced a planned and warned interruption of between 3 and 6 hours (23,310).

T2: L9 = 38,107; T2: L10 = 14,797; 38,107 - 14,797 = **23,310**

NI Water reported in its AIR17 commentary that there were 10 overruns of planned and warned interruptions lasting between 3 and 6 hours. The number of properties affected by these overruns was 298.

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

Interrupt. No.	Date of Incident	Duration	Properties Affected					Interruption Type	Comments
			> 0 Hrs	> 3 Hrs	> 6 Hrs	> 12 Hrs	> 24 Hrs		
Event 159794; DG3 ID 118517	07/04/17	6 Hrs 0 Mins	18	18	0	0	0	Planned & Warned	Planned power outage
Event 159850; DG3 ID 118521	07/04/17	3 Hrs 24 Mins	14	14	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 160085; DG3 ID 118716	07/05/17	5 Hrs 17 Mins	30	30	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 160140; DG3 ID 118790	17/05/17	7 Hrs 45 Mins	38	38	38	0	0	Planned & Warned	Planned power outage
Event 180493; DG3 ID 139025	17/06/17	3 Hrs 43 Mins	473	473	0	0	0	Unplanned, Unwarned	Power outage
Event 180486; DG3 ID 139022	17/06/17	3 Hrs 15 Mins	376	376	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 200753; DG3 ID 139229	18/07/17	3 Hrs 38 Mins	93	93	0	0	0	Unplanned, Unwarned	Power outage
Event 231192; DG3 ID 169584	04/09/17	8 Hrs 0 Mins	6	6	6	0	0	Planned & Warned	Planned power outage
Event 231272; DG3 ID 169620	08/09/17	4 Hrs 50 Mins	201	201	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 231559; DG3 ID 169861	10/10/17	5 Hrs 45 Mins	14	14	0	0	0	Planned & Warned	Planned power outage
Event 231642; DG3 ID 169909	16/10/17	6 Hrs 24 Mins	3	3	3	0	0	Unplanned, Unwarned	Electricity supply failure
Event 231647; DG3 ID 169910	17/10/17	5 Hrs 0 Mins	4	4	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 231654; DG3 ID 169917	17/10/17	3 Hrs 7 Mins	333	333	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 231793; DG3 ID 170035	01/11/17	8 Hrs 23 Mins	21	21	21	0	0	Planned & Warned	Planned power outage
Event 231783; DG3 ID 170037	01/11/17	11 Hrs 5 Mins	8	8	8	0	0	Planned & Warned	Planned power outage
Event 231869; DG3 ID 170089	08/11/17	3 Hrs 50 Mins	38	38	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 232261; DG3 ID 170385	08/12/17	4 Hrs 12 Mins	33	33	0	0	0	Unplanned, Unwarned	Planned power outage
		6 Hrs 36 Mins	1	1	1	0	0	Unplanned, Unwarned	Planned power outage
Event 232924; DG3 ID 170901	04/02/18	3 Hrs 10 Mins	480	480	0	0	0	Unplanned, Unwarned	Electricity supply failure
Event 243575; DG3 ID 171417	28/03/18	5 Hrs 0 Mins	21	21	0	0	0	Planned & Warned	Planned power outage
Event 243591; DG3 ID 171431	29/03/18	5 Hrs 0 Mins	15	15	0	0	0	Planned & Warned	Planned power outage
Event 243605; DG3 ID 171441	30/03/18	5 Hrs 30 Mins	4	4	0	0	0	Overrun of Planned & Warned	Planned power outage

The table on the previous page provides a summary of the 9 records in 2017/18 relating to unplanned, unwarned water supply interruptions caused by electricity supply failures lasting more than 3 hours. Also included are 13 records relating to planned electricity supply outages, 11 of which resulted in planned and warned water supply interruptions and 2 of which resulted in unplanned water supply interruptions, each with durations of more than 3 hours.

No incidents were of particular significance in terms of duration and no properties experienced an interruption of more than 12 hours.

The most significant incident in terms of numbers of properties affected was when an electricity supply failure at Killaney Lower Water Pumping Station on 4th February 2018 caused 480 properties in Clogher to lose their water supply for 3 hours 10 minutes.

On 17th June 2017, 376 properties in Lurganville experienced an interruption of 3 hours 15 minutes as a result of power outages in Greater Belfast, Lisburn and Ballynahinch areas.

On 16th October 2017, the Met Office issued an Amber Warning for strong winds associated with Storm Ophelia throughout Northern Ireland. 340 properties experienced an interruption of more than 3 hours.

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	1,479	3	0	0
Number of Properties Affected by Unplanned, Unwarned Interruptions	108,386	6,097	861	0
Percentage Impact	1.36%	0.05%	0.00%	0.00%

The impact of the electricity supply failures was greatest on the >3hr outturn, accounting for 1.36% of the total number of properties affected by unplanned interruptions. The 2016/17 percentage was 3.86%.

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

	>6 Hrs	>12 Hrs	>24 Hrs
Percentage of Connected Properties Affected by Electricity Supply Failures	0.000%	0.000%	0.000%
KPI Target	0.820%	0.162%	0.009%
Percentage of Annual Target	0.000%	0.000%	0.000%

The impact of the electricity supply failures on KPI target compliance was negligible. The 2016/17 percentage was 0.881% of the >6hr annual target.

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

The following table provides a summary of the **39** supply interruption incidents during 2017/18 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 159911; DG3 118582	13/04/17	Burst main, [redacted], Stewartstown	3 hrs 50 mins	68	68	0	0	0	3
002	Event 159902; DG3 118568	12/04/17	Burst main, [redacted], Cookstown	5 hrs 30 mins	162	162	0	0	0	3
003	Event 159934; DG3 118593	19/04/17	Burst main, [redacted], Enniskillen	5 hrs 10 mins	175	175	0	0	0	3
004	Event 159954; DG3 118614	19/04/17	Replacement fitting, [redacted] Dungiven	4 hrs 5 mins	97	97	0	0	0	3
005	Event 160013; DG3 118663	28/04/17	Burst main, [redacted], Irvinestown	15 hrs 35 mins	18	18	18	18	0	3
				11 hrs 20 mins	243	243	243	0	0	
				4 hrs 35 mins	1,021	1,021	0	0	0	
006	Event 160074; DG3 118709	05/05/17	Burst main, [redacted], Cookstown	4 hrs 29 mins	68	68	0	0	0	3
007	Event 160099; DG3 118725	08/05/17	Burst main, [redacted] Armoy	4 hrs 53 mins	457	457	0	0	0	3
008	Event 160112; DG3 118735	09/05/17	Burst main, [redacted] Cookstown	3 hrs 20 mins	100	100	0	0	0	3
009	Event 160135; DG3 118756	11/05/17	Burst main due to vandalism, [redacted] Cookstown	3 hrs 35 mins	30	30	0	0	0	3
010	**Event 170194; DG3 128801**	**19/05/17**	**Burst main, [redacted], Feeny**	**Max. 13 hrs 15 mins**	**460**	**452**	**452**	**25**	**0**	**3**
011	**Event 170279; DG3 138869**	**27/05/17**	**Water supply failure, [redacted], Hillsborough**	**Max. 11 hrs 45 mins**	**1,675**	**1,625**	**153**	**0**	**0**	**3**
	Event 180379; DG3 138942			**Max. 9 hrs 20 mins**	**1,260**	**875**	**213**	**0**	**0**	

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
012	Event 180279; DG3 138873	28/05/17	Burst main, [redacted] Hillsborough	5 hrs 30 mins	38	38	0	0	0	3
				5 hrs 25 mins	77	77	0	0	0	
013	Event 180582; DG3 139087	25/06/17	Burst main, [redacted], Enniskillen	11 hrs 5 mins	6	6	6	0	0	3
				5 hrs 5 mins	309	309	0	0	0	
014	Event 180652; DG3 139147	04/07/17	Burst main caused by third party, [redacted] Carrickfergus	10 hrs 20 mins	122	122	122	0	0	3
015	Event 200735; DG3 139214	15/07/17	Burst main, [redacted], Donaghadee	10 hrs 35 mins	9	9	9	0	0	3
				7 hrs 18 mins	3	3	3	0	0	
				5 hrs 52 mins	61	61	0	0	0	
				5 hrs 2 mins	3	3	0	0	0	
				5 hrs 1 min	165	165	0	0	0	
016	Event 200739; DG3 149360	16/07/17	Burst main, [redacted], Dromara	5 hrs 15 mins	15	15	0	0	0	3
	Event 200737; DG3 149361	16/07/17	Burst main, [redacted], Dromore	4 hrs 16 mins	17	17	0	0	0	3
017	Event 200745; DG3 139223	17/07/17	Burst main, [redacted] rtikelly	3 hrs 56 mins	89	89	0	0	0	3
018	Event 210985; DG3 149413	10/08/17	Burst main caused by third party, [redacted] Antrim	14 hrs 14 mins	193	193	193	193	0	3
				7 hrs 30 mins	31	31	31	0	0	
019	Event 210999; DG3 149419	12/08/17	Burst main, [redacted] Dungannon	3 hrs 50 mins	212	212	0	0	0	3
020	Event 211032; DG3 149444	15/08/17	Burst main, [redacted]	5 hrs 10 mins	26	26	0	0	0	3
021	**10 events**	**22/08/17**	**Londonderry events**	**14 hrs 11 mins**	**2,783**	**2,501**	**1,369**	**645**	**0**	**3**
	7 events		**Omagh events**	**12 hrs 57 mins**	**1,173**	**1,173**	**69**	**26**	**0**	
	1 event		**Magherafelt events**	**10 hrs 36 mins**	**16**	**16**	**16**	**0**	**0**	
	18 events in total		**Severe flooding event (All areas)**	**See above for max. durations**	**3,972**	**3,690**	**1,454**	**671**	**0**	
022	Event 231418; DG3 169724	21/09/17	Burst main, service reservoir, [redacted] Bessbrook	4 hrs 17 mins	100	100	0	0	0	3

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
023	Event 231459; DG3 169761	28/09/17	Burst main, [redacted] Breen, Armoy	4 hrs 0 mins	444	444	0	0	0	3
				1 hr 33 mins	15	0	0	0	0	
024	Event 231460; DG3 169762	28/09/17	Burst main, [redacted], Lisburn	5 hrs 15 mins	20	20	0	0	0	3
025	Event 231457; DG3 169765	28/09/17	Burst main, [redacted] Hilltown	11 hrs 0 mins	247	247	247	0	0	3
026	Event 231643; DG3 169905	16/10/17	Strong winds throughout Northern Ireland Electricity supply failure, Stonebridge DMA	1 hr 12 mins	931	0	0	0	0	1
	Event 231642; DG3 169909		Electricity supply failure [redacted] Lisburn	6 hrs 24 mins	3	3	3	0	0	
	Event 231647; DG3 169910		Electricity supply failure, [redacted], Forkill	5 hrs 0 mins	4	4	0	0	0	
	Event 231650; DG3 169913		Electricity supply failure, [redacted], Hilltown,	2 hrs 55 mins	52	0	0	0	0	
	Event 231654; DG3 169917		Electricity supply failure, [redacted] Moira	3 hrs 7 mins	333	333	0	0	0	
027	Event 231734; DG3 169973	24/10/17	Burst main, [redacted], Antrim	3 hrs 30 mins	15	15	0	0	0	3
				3 hrs 15 mins	7	7	0	0	0	
028	Event 231737; DG3 169979	25/10/17	Burst main, [redacted] Limavady	4 hrs 37 mins	23	23	0	0	0	3
029	Event 231939; DG3 170135	14/11/17	Burst main, [redacted] Ballymena	6 hrs 51 mins	1,140	1,140	1,140	0	0	3
030	Event 231941; DG3 170140	15/11/17	Burst main, [redacted], Hilltown	8 hrs 15 mins	177	177	177	0	0	3
031	Event 232073; DG3 170239	26/11/17	Burst main, [redacted], Templepatrick	4 hrs 34 mins	97	97	0	0	0	3
	Event 232078; DG3 170245	26/11/17	Burst main, [redacted] Templepatrick	2 hrs 25 mins	222	0	0	0	0	

Ref	Interrupt No.	Date	Description of Incident	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs	Category
032	Event 232094; DG3 170258	27/11/17	Burst main, [redacted] Ballymoney	5 hrs 41 mins	2,224	2,224	0	0	0	3
033	Event 232377; DG3 170477	16/12/17	Burst main, [redacted] Enniskillen	8 hrs 12 mins	333	333	333	0	0	Precautionary
034	Event 232468; DG3 170558	27/12/18	Burst main, [redacted]d, Poyntzpass	4 hrs 13 mins	20	20	0	0	0	3
035	Event 233021; DG3 170984	08/02/18	Burst main, [redacted] Armagh	5 hrs 55 mins	90	90	0	0	0	3
036	Event 233012; DG3 170975	10/02/18	Burst main, [redacted] Newcastle	5 hrs 57 mins	360	360	0	0	0	Precautionary
037	Event 233070; DG3 171028	15/02/18	Burst main, [redacted] Antrim	8 hrs 31 mins	118	118	118	0	0	3
				6 hrs 45 mins	181	181	181	0	0	
038	Event 233176; DG3 171096	26/02/18	Burst main, [redacted], Belfast	3 hrs 50 mins	1,736	1,736	0	0	0	3
039	**Various**	**28/02 to 09/03/18**	**Cold Weather Event**	**Various**	**10,431**	**10,431**	**76**	**3**	**0**	

In previous years, 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 recent 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 2017/18 KPI targets are listed below as percentages and numbers of total connected properties, together with the corresponding monthly target allowances.

KPI	2017/18 Target		Monthly Target Allowance Apr to Mar	
	%	Properties	%	Properties
>6hrs	0.820	7,073	0.068	589
>12hrs	0.162	1,400	0.014	117
>24hrs	0.009	80	0.001	7

In order to determine the unplanned interruption events that had the greatest negative impact on performance in 2017/18, the Company compared the monthly actuals with the three KPI target profiles and identified **3** instances where a target was exceeded *(including and excluding the severe flooding event of August 2017)*. These instances are highlighted in bold text in the table below.

		May	Aug (inc. flooding event)	Aug (exc. flooding event)
>6 hour	Actual	**1,274**	**2,125**	**671**
	Target	589	589	589
>12 hour	Actual	100	**740**	**69**
	Target	117	117	117
>24 hour	Actual	0	0	0
	Target	7	7	7

The Company then reviewed its DG3 Register and identified the incidents responsible for the underperformance. The incidents are summarised below.

Major Incidents

In May 2017, the >6hr in-month actual was 1,274 properties compared to an in-month target of 589. Although the overall number of unplanned interruption events exceeding 6 hours was not particularly high *(10 in total)*, 5 of the events occurred outside normal working hours and accounted for the majority of properties affected.

Of the 10 events that accounted for May's underperformance, the 2 events described below were the most significant.

Burst main, [redacted], Feeny

(Ref: IMS Event ID 170194; DG3 ID 128801)

The first incident related to a burst trunk main at [redacted], Feeny on 18th May. The event occurred at 22:30 and although rezoning was possible, it was 12:15 the following day before all properties had their supplies restored. As a result of this incident, 427 properties in Fincairn, Claudy and Trunk Caugh Hill Ardinarive DMAs experienced an unplanned interruption of more than 6 hours and a further 25 properties experienced an unplanned interruption of more than 12 hours. This incident was the subject of **Upward Report 010**.

The impact of this incident in terms of percentages of connected properties affected was 0.052% >6hrs and 0.003% >12hrs.

Two non-concurrent bursts on 12" main, [redacted]ad, Hillsborough

(Refs: IMS Event ID 170279; DG3 ID 138869 and IMS Event ID 180379; DG3 ID 138942)

The second incident involved two non-concurrent bursts on a 12" main [redacted] - in Hillsborough on Saturday 27th May. Notification of the first burst was received at 05:22 in the morning and the road had to be closed to enable the burst to be located. The repairs were extensive and prolonged. Some properties affected by the second burst did not have their supplies restored until 02:00 on Sunday 28th. As a result of this incident, 366 properties in Legacurry OMA experienced an unplanned interruption of more than 6 hours. This incident was the subject of **Upward Report 011.**

The impact of this incident in terms of percentages of connected properties affected was 0.042% >6hrs.

In August 2017, the >6hr in-month actual was 2,125 properties compared to an in-month target of 589. The >12hr in-month actual was 740 compared to an in-month target of 117.

August 2017 - Category 2 Major Incident - Severe Weather & Flooding in North West of Northern Ireland

According to the Met Office, 'August 2017 was a rather wet month in the west of the province, with 128% of average rainfall overall. On 22nd, it turned very wet in the afternoon with heavy rain and thunderstorms producing a total of 61.6 mm at Lough Fea (County Londonderry).'

On 22nd August, torrential rainfall, coupled with extended thunder and lightning storms, led to flash flooding and power outages across large parts of Northern Ireland. The North West of the province bore the worst of the weather with Londonderry, Omagh and Magherafelt Field Manager areas all experiencing interruptions relating to the incident.

The River Faughan overflowed its banks causing major damage to infrastructure. Bridges, roads and water mains were washed away and some NI Water sites were flooded. NI Water worked quickly to restore supplies to customers by rezoning affected areas and by laying 'overland pipes'. Alternative water supplies (bottled water) was delivered to Critical Care Customers and to the two Council Incident Centres in Eglinton and Drumahoe.

Many WTW's were initially affected by the storms but the power was quickly restored. Flooding caused extensive damage to Faughan Raw Water Pumping Station (RWPS), which is the sole source of raw water to Carmoney WTW outside Eglinton village. As emergency repairs were undertaken to the RWPS, the raw water quality was poor and would have presented a serious challenge to the treatment process. Contingency plans were activated to supplement supplies from Caugh Hill and Ballinrees. An old landfill site at Mobuoy, adjacent to the River Faughan, was also flooded. NI Water and NIEA increased raw water monitoring to check for any risk of contamination.

This incident was the subject of **Upward Report 021.**

The following table provides a summary of the individual interruptions that occurred and the associated numbers of properties affected by the severe flooding incident.

Event ID	DG3 ID	FM Area	Duration	>0hrs	>3hrs	>6hrs	>12hrs	>24hrs
231113	169505	Omagh	5 Hrs 2 Mins	113	113	0	0	0
231121	169508	Omagh	11 Hrs 53 Mins	18	18	18	0	0
			3 Hrs 48 Mins	60	60	0	0	0
231117	169509	Omagh	4 Hrs 41 Mins	65	65	0	0	0
231124	169510	Omagh	3 Hrs 52 Mins	168	168	0	0	0
231119	169513	Omagh	4 Hrs 10 Mins	81	81	0	0	0
231116	169516	Omagh	12 Hrs 57 Mins	26	26	26	26	0
			10 Hrs 19 Mins	25	25	25	0	0
			3 Hrs 41 Mins	447	447	0	0	0
231128	169521	Omagh	4 Hrs 54 Mins	170	170	0	0	0
231165	169544	Magherafelt	10 Hrs 36 Mins	16	16	16	0	0
231402	169707	Londonderry	1 Hr 58 Mins	282	0	0	0	0
231403	169708	Londonderry	10 Hrs 56 Mins	186	186	186	0	0
231405	169709	Londonderry	4 Hrs 55 Mins	105	105	0	0	0
231408	169711	Londonderry	14 Hrs 11 Mins	272	272	272	272	0
			11 Hrs 10 Mins	206	206	206	0	0
			5 Hrs 50 Mins	152	152	0	0	0
231409	169712	Londonderry	5 Hrs 19 Mins	248	248	0	0	0
231461	169759	Londonderry	13 Hrs 11 Mins	373	373	373	373	0
231487	169777	Londonderry	3 Hrs 38 Mins	387	387	0	0	0
231488	169778	Londonderry	8 Hrs 27 Mins	332	332	332	0	0
231490	169780	Londonderry	3 Hrs 28 Mins	123	123	0	0	0
231494	169783	Londonderry	5 Hrs 51 Mins	117	117	0	0	0
				3,972	**3,690**	**1,454**	**671**	**0**

The impact of this incident in terms of percentages of connected properties affected was 0.168% >6hrs and 0.078% >12hrs.

With the impact of the severe flooding event excluded, the percentages would have been 0.078% >6hrs and 0.008% >12hrs and >6hrs performance would still have been outside the in-month target forecast of 0.068%.

August's underperformance was also attributed to a separate incident involving a burst main. The incident is described below.

Burst main, [redacted] Claudy
(Ref: IMS Event ID 210970; DG3 ID 149406)
The incident related to a burst main at [redacted], Claudy on 10th August. The burst was difficult to locate and two 9-metre lengths of asbestos cement pipe had to be replaced. As a result of this incident, 357 properties experienced an unplanned interruption of more than 6 hours and a further 69 properties experienced an unplanned interruption of more than 12 hours.

The impact of this incident in terms of percentages of connected properties affected was 0.049% >6hrs and 0.008% >12hrs.

Although NI Water does not have a KPI target relating to unplanned interruptions lasting more than 3 hours, it is apparent from the 2017/18 outturn that the severe winter weather of March 2018 had a significant impact on performance relating specifically to the >3hrs time band.

28th February to 9th March 2018 – Major Incident – Cold Weather Event

According to the Met Office, 'March 2018 began with an exceptionally cold easterly flow and widespread snow showers, and daytime temperatures failed to reach freezing in some places. It was bitterly cold and very windy on the 1st, with an overnight minimum of -7.0 °C at Trassey Slievenaman (County Down), and a maximum of only -1.0 °C at Killylane (County Antrim). Trassey Slievenaman recorded 30 cm of lying snow on the 3rd and 4th. The mean temperature for March was provisionally 1.9 °C below the long-term average.'

	Max. Temp. °C	Min. Temp. °C	Mean. Temp. °C	Days Air Frost
Mar 18	7.3	0.6	3.9	11
Mar 17	11	3.5	7.2	4.5
Mar 16	9.7	2.4	6	4.3

During the period 28th February to 9th March 2018, Northern Ireland experienced a prolonged period of cold weather. Initially, there was widespread snow, particularly on high ground with temperatures not rising too much above freezing during the day. From 2nd to 9th March, there was a significant increase in the numbers of interruptions caused by burst mains as the impact of the thaw took hold. The following table shows the figures for February and March.

Properties Affected by Unplanned Interruptions for More than 3 hours

Cause of Interruption	1st to 27th Feb	28th Feb	1st Mar	2nd Mar	3rd to 9th Mar	10th to 31st Mar
Airlock in Main	36	0	0	0	439	0
Broken/Jammed/Misaligned Fitting	0	0	0	0	38	0
Bursts Main/Main Repair	13,640	95	95	151	8,686	4,705
Electricity Supply Failure	480	0	0	0	0	0
Low SR	0	0	0	15	0	0
New Mains Tie In	198	0	0	0	0	0
Other	686	0	0	265	826	764
PRV Maintenance	0	0	0	0	0	2,127
Pump Equipment Failure	0	0	0	0	21	287
Replacement Fitting	101	0	0	0	38	53
Service Pipe Repair	15	0	0	0	0	0
Water Supply Failure	0	0	0	0	0	32
TOTAL	**15,156**	**95**	**95**	**431**	**10,010**	**7,968**
2016/17 TOTALS	4,572		6,741			

Unplanned Interruption Events lasting More than 3 hours

Cause of Interruption	1st to 27th Feb	28th Feb	1st Mar	2nd Mar	3rd to 9th Mar	10th to 31st Mar
Airlock in Main	1	0	0	0	1	0
Broken/Jammed/Misaligned Fitting	0	0	0	0	1	0
Bursts Main/Main Repair	56	2	2	4	31	44
Electricity Supply Failure	1	0	0	0	0	0
Low SR	0	0	0	1	0	0
New Mains Tie In	1	0	0	0	0	0
Other	5	0	0	1	3	2
PRV Maintenance	0	0	0	0	0	1
Pump Equipment Failure	0	0	0	0	1	1
Replacement Fitting	2	0	0	0	0	3
Service Pipe Repair	1	0	0	0	0	0
Water Supply Failure	0	0	0	0	0	1
TOTAL	**68**	**2**	**2**	**6**	**37**	**52**
2016/17 TOTALS	55		48			

Only 76 properties experienced an interruption of more than 6 hours during this time.

Only 3 properties experienced an interruption of more than 12 hours during this time.

This incident was the subject of **Upward Report 039**.

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. In 2015/16, NI Water increased its DG3 confidence grade from 'B3' to 'A3' because it was the first full year in which the Incident Management System (IMS) had been used by the Company in place of the Operations Management Information System (OMIS) to capture data relating to supply interruptions. The new system has now captured three complete years' worth of data and again, the decision has been taken to assign a confidence grade of 'A3' across all lines relating to DG3.

In September 2016, the Company tested and implemented an updated version of IMS, the first major update of the system since its launch on 4 July 2014. The modifications improved the usability and functionality of the system and enabled more time to be spent on improving the accuracy of the information. In 2017/18, the system underwent a further series of upgrades.

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'

The 'no water' complaints are an invaluable, independent source of information that when compared with the numbers of properties affected by unplanned, unwarned interruptions, can be used to validate and verify associated annual trends.

A relationship exists between the number of properties affected by a supply interruption event and the number of 'no water' complaints received, with more affected properties than complaints because not everyone complains. In 2015, the Company looked at a sample of 23 unplanned interruption events that had lasted more than 6 hours and found that although the ratio of 'no water' complaints to affected properties varied for each event, 10% of customers on average tended to complain.

The following table lists the outturn numbers of 'no water' complaints for the last four years, together with the numbers of properties affected by unplanned interruptions lasting more than 3 hours, including those caused by a third party.

	2013/14	2015/16	2016/17	2017/18
'No Water' Complaints	28,128	21,775	22,066	21,711
Properties Affected	43,864	109,974	102,785	108,774
Complaint Percentage	64.1%	19.8%	21.5%	20.0%

When the call data and OMIS data for 2013/14 is compared, i.e. 28,128 complaints versus 43,864 properties affected by unplanned interruptions lasting more than 3 hours, including those caused by a third party, the complaint percentage is 64%. This percentage is much higher than the percentage derived from the sample and points to a shortfall in the number of properties affected and hence, an inaccuracy in the OMIS data.

When the call data and IMS data for 2015/16 and 2016/17 is compared, the complaint percentages are 20% and 21% respectively. These percentages are more consistent with the percentage derived from the sample but are higher because interruption events with a duration of 3 hours or less are excluded. The analysis proves that the IMS data is more accurate than the OMIS data.

When the call data and IMS data for 2017/18 is compared, i.e. 21,711 complaints versus 108,774 properties, the complaint percentage is 20%. This percentage is similar to the 2015/16 and 2016/17 percentages and confirms that the accuracy of the IMS data is consistent.

The conclusion is that the accuracy of the data has improved with the introduction of IMS and that the outturns are now more reflective of the actual numbers of properties affected by unplanned interruptions lasting more than 3 hours.

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, Networks Water generated a total of 1,217 records of interruptions lasting more than 3 hours (some relating to the same events). All records were checked for accuracy and completeness by the Customer Field Managers. Following the extraction of data to spreadsheets, checks were carried out by CSD 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 186 records of interruptions lasting more than 3 hours compared to 362 records in 2016/17. A random sample of 48 records, averaging 4 per month, was checked against the corresponding Interruption Record Sheets to ensure that the details had been accurately transcribed. This represents 26% of records.

Throughout 2017/18, 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.

AIR17 Reporter Recommendation

Following AIR17, the Reporter made the following recommendation in relation to DG3:

We recommend the Company continues to monitor the warning notification process by its contractors for planned and warned interruptions.

Throughout 2017/18, NI Water continued to carry out sample checks to confirm that its Mains Rehab contractors were providing customers with at least 48 hours warning in advance of planned and warned interruptions to supply.

The Company also undertook an additional audit process which involved a review of a random sample of Loss of Supply (LoS) notices, generated by Water Distribution contractors and returned to NI Water by Royal Mail.

During 2017/18, a random sample of 700 LoS notices were reviewed. In the majority of cases, the difference between the date of non-delivery (as confirmed by Royal Mail) and the planned start date on the associated LoS notice was at least 2 days. Where the difference was less than 2 days, in all but two cases there was evidence that other properties associated with the same interruption had received sufficient warning and the non-delivery date may not therefore have represented the first attempt by Royal Mail to deliver the LoS notice. Of the two remaining cases, the properties were demolished according to the Company’s metering and billing system and would not have had an associatedurs.

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.

The following table provides a summary of the numbers of bed-spaces sold per month for hotel, guesthouse and B&B establishments in Northern Ireland from January to December 2017. The information was derived from Table 1.3 of the NISRA publications *'Hotel-excel-dec'* and *'GH-BB-excel-dec'*, available as downloads from the Northern Ireland Statistics and Research Agency *(NISRA)* website.

NI Water has used the information to calculate the percentages of bed-spaces sold per month in 2017.

MONTH	HOTEL BED-SPACES SOLD	GUESTHOUSE & B&B BED-SPACES SOLD	TOTAL BED-SPACES SOLD	PERCENTAGE OF BED-SPACES SOLD IN 2017
Jan-17	236,555	26,947	263,502	6.06%
Feb-17	241,061	37,241	278,303	6.40%
Mar-17	260,137	42,822	302,959	6.97%
Apr-17	298,782	65,612	364,394	8.38%
May-17	306,772	79,918	386,690	8.89%
Jun-17	331,694	82,746	414,441	9.53%
Jul-17	368,357	88,973	457,329	10.51%
Aug-17	394,551	105,671	500,222	11.50%
Sep-17	330,286	80,154	410,440	9.44%
Oct-17	311,557	54,594	366,151	8.42%
Nov-17	261,836	40,023	301,859	6.94%
Dec-17	266,006	37,188	303,194	6.97%
Total	**3,607,593**	**741,889**	**4,349,483**	**100.00%**

The following statistics were derived from the table entitled *'Estimated Overnight Trips taken in Northern Ireland by Country of Residence, Q1 2011-Q3 2017 (provisional)'* in the NISRA publication *'Microdata for online Q1 2011 to Q3 2017'*, available as a download from the NISRA website.

	Visitor Nights (Q1 to Q3)
GB Visitors	4,343,852
RoI Visitors	771,425
Visitors from outside UK & RoI	4,081,803
All Visitors (excluding NI)	**9,197,080**

Based on the table of percentages of bed-spaces sold per month in 2017, the percentage of bed spaces sold (Q1 to Q3) was

$$6.06 + 6.40 + 6.97 + 8.38 + 8.89 + 9.53 + 10.51 + 11.50 + 9.44 = 77.67\%$$

The number of visitor nights (Q1 to Q3) was 9,197,080.

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

The estimated number of non-resident visitor nights in 2017 =

(9,197,080 / 77.67) x 100 = **11,841,100**

The above estimate has been used in place of an accurate alternative.

Assumption: The regulatory guidance for AIR Table 2 Line 20 does not define the meaning of *'winter'*. For the purposes of this calculation, the winter months are deemed to be the six months in the year with the lowest percentage bed-spaces sold i.e. January, February, March, April, November and December. The percentage bed-spaces sold during the winter is the summation of the percentages for these six months.

Based on the table of percentages of bed-spaces sold per month in 2017, the percentage of bed spaces sold during the winter was

6.06 + 6.40 + 6.97 + 8.38 + 6.94 + 6.97 = 41.71%

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

The estimated number of non-resident winter visitor nights in 2017 =

(11,841,100 / 100) x 41.71 = **4,939,035**

According to AIR18: Table 7: Line 17, the baseline resident population was 1,869.17 x 10^3.

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

Estimated average non-resident winter visitors per night =
4,939,035 / (31 + 28 + 31 + 30 + 30 + 31) = 27,287

Population (winter) = 1,869,170 + 27,287 = **1,896,457**.

Changes in Methodology

In order to calculate the **winter population**, the annual number of visitor nights is required for the year in question. NI Water normally bases the calculation of winter population on a calendar year because of known delays in the publication of tourism statistics and the non-availability of data for Q4 of the financial year around the time that AIR is completed.

The AIR18 calculation was due to have been based on the 2017 calendar year. However, according to NISRA's publication schedule, the 2017 NI Annual Tourism Statistics Report was not due to be published until 7th June 2018 *(at the latest)* and the only available information at the time of completing AIR was the number of visitor nights in Q1 to Q3.

When this issue has arisen in the past, an alternative methodology has been used involving the assumption that there is a direct relationship between the occupancy of hotels and guesthouses/B&Bs and visitor nights. As the number of bed spaces sold was available for all twelve months of 2017, then knowing the percentage of total bed spaces sold in Q4 of 2017, the number of visitor nights in Q1 to Q3 was factored up accordingly.

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

AIR16	Confidence Grade	AIR17	Confidence Grade	AIR18	Confidence Grade
1,874.73 x 10^3	C2	1,887.10 x 10^3	C2	**1,896.46 x 10^3**	**C2**

Last year, the Company reported a Table 2 Line 20 outturn of 1,887.10 x 10^3. The Company also recalculated the AIR16 outturn as 1,865.06 x 10^3 using updated data for the entire twelve-month period of 2016.

Based on the AIR17 outturn, the estimated winter population has increased by 9.36 x 10^3 *(0.50%)*. This slight increase can be attributed to changes in the component figures that make up this figure.

The estimated number of hotel bed-spaces sold in 2017 *(3,607,593)* was higher than the estimate for 2016 *(3,470,444)*. The estimated number of guesthouse and B&B bedspaces sold in 2017 *(741,889)* was higher than the revised estimate for 2016 *(669,819)*. And the estimated number of non-resident visitor nights in 2017 *(11,841,100)* was higher than the estimate for 2016 *(11,365,623)*.

Despite the absence of information relating to Q4 of 2017, a comparison of the Q1 to Q3 statistics for 2016 and 2017 reveals an increase in tourism and hence, an increase in winter population.

	Visitor Nights (2016 - Q1 to Q3)	Visitor Nights (2017 - Q1 to Q3)
GB Visitors	4,339,966	4,343,852
RoI Visitors	642,814	771,425
Visitors from outside UK & RoI	3,558,930	4,081,803
All Visitors (excluding NI)	**8,541,710**	**9,197,080**

The statistics show that external visitors are on average staying longer, leading to an increase in overall visitor nights in the first nine months of 2017. The increase has been driven largely by increases in visitors from Republic of Ireland and overseas.

Confidence Grade

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

1. The NISRA publications '*Hotel-excel-dec*' and '*GH-BB-excel-dec*' 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 *'Microdata for online Q1 2011 to Q3 2017'* 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 only be 38,133 *(+2.01%)*. *(See calculation below)*

11,841,100 / (31 + 28 + 31 + 30 + 30 + 31) = 65,420 non-resident visitors
1,869,170 + 65,420 = 1,934,590 residents + non-resident visitors
1,934,590 - 1,896,457 = 38,133
(38,133 / 1,896,457) x 100 = 2.01%

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 hand held 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 in 2017/18 and therefore, the percentage population experiencing DG4 Restrictions on Use of Water is 0.0% for Lines 21, 22 and 23.

Therefore, no timetables for hosepipe restrictions have been prepared and the recording template has a Nil return.

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 no orders were made during the reporting year.

Future Reporting

Northern Ireland Water has now developed a series of revised DG4 procedures which clarifies the reporting requirements and definitions and the responsibilities of those involved in the reporting process. The following documents outline in more detail the monitoring and recording processes that are now applied:

1. NIW – DG4 Procedures May 2018
2. Drought Order Process Guidelines v.9
3. DG4 – Recording of Affected Populations and Durations for AIR 18.

Annex A - Line Methodology for Table 2

Line 1 - Total Connected Properties at Year End

The total number of properties (domestic and non-domestic) connected to the distribution system at the end of the 2017/2018 reporting year. This includes properties which are connected but not billed (for example, temporarily unoccupied) but excludes properties which have been permanently disconnected (for example logical demolitions).

This figure is calculated from the Rapid Property Summary for AIR18 (dated 3 p t March, 18) as attached.

RPS March YE 2018.xlsx

Total Connected properties at Year End	AIR18
Extant Property Total	895331
less	
Domestic no water / well water	9973
Domestic sewerage only	6
Non-domestic no water/ well water	9274
Non-domestic sewerage only	19
Non-domestic measured - not charged (test meters)	477
Non-domestic site meters	14852
Non-domestic trade effluent	81
Non-domestic unmeasured - not charged	652
Invalid Classification	9
Total Connected Properties at Year End	**862988**

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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**DG5 ANNUAL FLOODING SUMMARY**																				
1	Number of domestic properties connected to sewerage system	000	1	623 3	A2	628.3	B2	630.03	A2	638.1	A2	648.6	A2	657 9	A2						
	(I) OVERLOADED SEWERS																				
2	Properties flooded in the year (overloaded sewers)	nr	0	189	B3	6	B2	28	B2	3	B2	3	B2	0	B2						
3	Flooding incidents in the year (overloaded sewers)	nr	0	189	B3	6	B2	29	B3	4	B2	3	B2	0	B2						
4	Flooding incidents (overloaded sewers attributed to severe weather)	nr	0	181	B3	5	B2	3	B4	1	B2	2	B2	0	B2						
4a	Properties flooded in the year attributed to severe weather	nr	0	181	B3	5	B2	3	B5	1	B2	2	B2	0	B2						
5	Props. where flooding limited to uninhabited cellars only (o/loaded sewers)	nr	0	0	B3	0	B2	0	B6	0	B2	0	B2	0	B2						
	(ii) OTHER CAUSES																				
6	Properties flooded in the year (other causes)	nr	0	41	B3	55	B2	52	B2	38	B2	47	B2	33	B2						
7	Properties which have flooded more than once in the last ten years (other causes)	nr	0	15	B3	26	B2	8	B2	11	B2	21	B2	20	B2						
8	Flooding incidents (other causes - equipment failures)	nr	0	15	B3	14	B2	2	B2	1	B2	1	B2	0	B2						
9	Flooding incidents (other causes - blockages)	nr	0	22	B3	36	B2	38	B2	34	B2	38	B2	26	B2						
10	Flooding incidents (other causes - collapses)	nr	0	4	B3	5	B2	12	B2	3	B2	8	B2	7	B2						
11	Props. where flooding limited to uninhabited cellars only (other causes)	nr	0	0	B3	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	30	B3	62	B2	60	B2	59	B2	61	B2	57	B2						
13	1 in 10 register at end of year	nr	0	10	B3	8	B2	8	B2	7	B2	6	B2	4	B2						
14	Total 1 in 10 and 2 in 10 properties on the register at end of year	nr	0	40	B3	70	B2	56	B2	66	B2	67	B2	61	B2						
15	1 in 20 register at end of year	nr	0	153	B3	120	B3	108	B2	94	B2	89	B2	73	B2						
15a	Potential risk of property flooding identified requiring further investigation to assess at risk category	nr	0	0	B2	0	B2	0	B2	1	B2	2	B2	0	B2						
16	Props. on the register which have not flooded in the past 10 yrs (excl. severe weather)	nr	0	32	B3	33	B3	23	B2	22	B2	27	B2	26	B2						
17	Properties which have not flooded internally but suffer restricted toilet use (RTU)	nr	0	0	B2	0	B2	0	B2	0	B2	0	B2	0	B2						
	(iii) ANNUAL CHANGES TO 2 IN 10 & 1 IN 10 REGISTERS																				
22	Removed by company action	nr	0	1	B3	3	B2	18	B2	3	B2	3	B2	6	B2						
23	Removed because of better information	nr	0	2	B3	0	B2	0	B2	2	B2	1	B2	0	B2						
24	Added because of better information (actually flooded)	nr	0	16	B3	33	B2	0	B2	3	B2	3	B2	0	B2						
25	Added because of better information (modelled)	nr	0	0	A1	0	B2	4	B2	0	B2	2	B2	0	B2						
26	Average capex cost of permanent solutions to 1 in 10 & 2 in 10 DG5 problems	£000/prop	1	168 8	B3	233.7	B2	68 5	B2	230.0	B2	32.8	B2	184 5	B2						
	(v) ANNUAL CHANGES TO THE 1 IN 20 REGISTER																				
30	Removed by company action (1 in 20)	nr	0	65	B3	8	B2	10	B2	4	B2	4	B2	11	B2						
31	Removed because of better information (1 in 20)	nr	0	24	B3	45	B2	16	B2	11	B2	1	B2	5	B2						
32	Added because of better information (actually flooded - 1 in 20)	nr	0	53	B3	3	B2	25	B2	1	B2	0	B2	0	B2						
33	Added because of better information (modelled - 1 in 20)	nr	0	0	A1	17	B3	4	B2	0	B2	0	B2	0	B2						
34	Average capex cost of permanent solutions to 1 in 20 DG5 problems	£000/prop	1	45.1	B3	143.6	B2	80 9	B2	272.9	B2	38.8	B2	216 6	B2						

Table 3 - Key Outputs – Sewerage Service – Internal Flooding

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

Northern Ireland Water's (NIW) property data is provided via a data download of the property database tables held within the RapidXtra billing system. The data is then manipulated within Microsoft SQL to produce the Rapid Property Summary Report.

Our AIR18 methodology has remained consistent with previous years – using the automated tool to populate Table 3 figures (this was first introduced in AIR12 - Rapid Property Summary as the input).

The difference between the AIR17 and the AIR18 figure is 9309. The breakdown can be explained as follows;

1) New Connections during the 2017/18 reporting year
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 and the adding of duplicates as the customers address could not be found on Rapid. For example, 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
    (b) Another scenario - The street name may 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 of duplicates/properties as a result of data quality initiatives

In addition to the above, further data quality requirements have been built into the new CBC Contract. They cover all aspects of the property life cycle (creating, amending and demolishing properties) and data degradation will be monitored/measured throughout. These system validations have been split into 4 delivery phases. The functionality for Phases 1-3 have been delivered, with the functionality for the Post Phase 3 data validations due to be delivered within the next database release/upgrade in August 2018. Off-system data cleanse is required before some of the system validation rules can be applied.

Annex A details the methodology followed for the figure calculated in 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 regulators instructions, an end-to-end review of the internal flooding process has been carried out. This process went live in April 2012. 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.

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 AIR17, 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 & 17

Data gathering and calculation is as described below.

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 2017 to March 2018 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 16 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 which have not been fully investigated and categorized i.e. 2 for 2015/16.
8. The required information to populate Line 17 is extracted directly from the monthly spreadsheet completed by the contractor.

Changes in Methodology over the Previous Year

The FIR has been amended (February 17) as result of on-going meetings with MUL contractors, a completed copy is included (see appendix A.) 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.

Confidence Grading for Table 3 lines 2 - 11, 15a and 17

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. 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 and 17 is deemed to be B2.

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

PC15 Outputs Year 3

The PC15 Business Plan included a target for removal of properties from the DG5 Internal Flooding Register by company action, which was 62:

The number of removals achieved in 17/18 was 17.

- [redacted] (1in10)
- [redacted] (1 in 20)

- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (2 in 10)
- [redacted] (2 in 10)
- [redacted] (2 in 10)
- [redacted] (2 in 10)
- [redacted] (1 in 10)
- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)

It should be noted 5 properties were also removed due to better information, giving a total of 22 properties being removed from the DG5 Register.

- [redacted] (1 in 20)
- [redacted] (1 in 20)
- [redacted] EQ (1 in 20)
- [redacted] (1 in 20)
- [redacted] (1 in 20)

Additions to the Register

In year 17/18, no properties where added to the flooding register.

Repeat Flooding

There has been no repeat flooding at any properties on the internal flooding register this year 17/18.

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 out by the Internal DG5 Panel.

There were no cases of 'Unknown cause' of flooding of internal flooding being added to the DG5 Register in 17/18.

Confidence grades

Confidence grades for lines 12-16, 22-26 and 30-34 remain at 82.

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 2018).

This figure is based on the 31st March 2018 Rapid Property Summary for AIR18, as attached.

RPS March YE 2018.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 2018
Total Gross Household Sewerage Properties	**657,882**

Annex B – Incident Report Form Contractor

Northern Ireland Water – Flooding Incident Report

Work Order Ref No: 05471378 Name: [redacted]

Location: [redacted]

Date: 23/08/2017 Arrival time: 07:30:00

1) Conversation with Home Occupier: No Access Refused: No

2) Photographs Taken: No

3) Internal Flooding: No

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	☐

4) External Flooding: No

Main Sewer	☐	Lateral Sewer	☐
Public road/footpath	☐	Public area	☐
Agricultural land	☐	Curtilage	☐
Detached garage flooded	☐	Detached shed or store flooded	☐

5) Comments on cause of reported incident: (Select only one category below)

Blockage	☐	Collapsed sewer	☐
Defective road gulley	☐	Defective private drain	☐
M&E equipment failure	☐	Further investigation by NIW required	☐
Other: ☒			

6) Clean up operations:

Not Required ☒ Further Action Required ☐ Completed ☐

7) Previous History:

Yes ☐ No ☒ Not Aware ☐

8) Weather Conditions:

Dry ☒ OR Wet ☐: Heavy ☐ Medium ☐ Light ☐

Comments: Especially for Flooded jobs or Follow on jobs

Major flooding incident capacity issue. River burst banks - rivers agency issue.

Northern Ireland Water – Flooding Incident Report

Work Order Ref No: 05637616 Name: [redacted]y

Location: [redacted]

Date: 10/12/2017 Arrival time: 15:45:00

9) Conversation with Home Occupier: Yes Access Refused: No

10) Photographs Taken: Both

11) Internal Flooding: Yes

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	☐

12) External Flooding: No

Main Sewer	☐	Lateral Sewer	☐
Public road/footpath	☐	Public area	☐
Agricultural land	☐	Curtilage	☐
Detached garage flooded	☐	Detached shed or store flooded	☐

13) Comments on cause of reported incident: (Select only one category below)

Blockage	☒	Collapsed sewer	☐
Defective road gulley	☐	Defective private drain	☐
M&E equipment failure	☐	Further investigation by NIW required	☐

Other:

14) Clean up operations:

Not Required ☐ Further Action Required ☐ Completed ☒

15) Previous History:

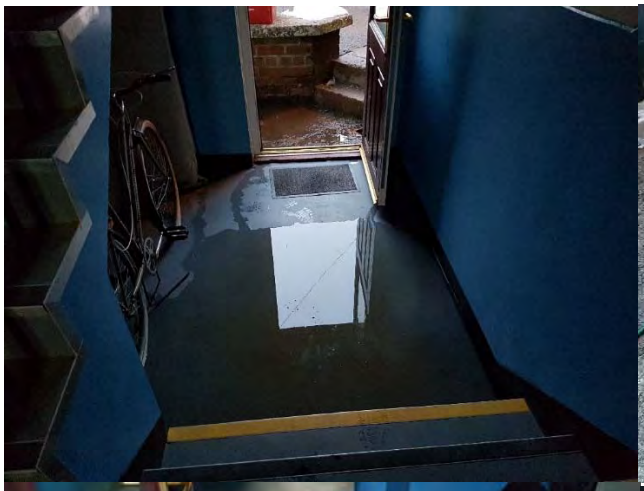
Yes ☐ No ☒ Not Aware ☐

16) Weather Conditions:

Dry ☒ OR Wet ☐: Heavy ☐ Medium ☐ Light ☐

Comments: Especially for Flooded jobs or Follow on jobs

Cleared-excessive wipes being used-internal flooding in hallway-clean up [redacted]




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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**ANNUAL FLOODING SUMMARY**																				
	(I) OVERLOADED SEWERS																				
1	Areas flooded externally in the year (overloaded sewers)	nr	0	225	D6	92	D6	117	D6	23	D6	20	D6	15	D6						
2	Curtilege flooding incidents in the year (overloaded sewers)	nr	0	97	D6	70	D6	86	D6	17	D6	16	D6	11	D6						
3	Highway flooding incidents (overloaded sewers)	nr	0	32	D6	23	D6	26	D6	6	D6	4	D6	4	D6						
4	Other flooding incidents (overloaded sewers)	nr	0	96	D6	22	D6	20	D6	0	D6	0	D6	0	D6						
5	Total flooding incidents (overloaded sewers)	nr	0	225	D6	115	D6	132	D6	23	D6	20	D6	15	D6						
6	External flooding incidents (overloaded sewers attributed to severe weather)	nr	0	29	D6	1	D6	14	D6	6	D6	3	D6	3	D6						
6a	Areas flooded externally attributed to severe weather	nr	0	29	D6	1	D6	14	D6	6	D6	3	D6	3	D6						
	(ii) OTHER CAUSES																				
7	Areas flooded externally in the year (other causes)	nr	0	3,212	D6	3,348	D6	4,379	D6	3,889	D6	3,819	D6	3,466	D6						
8	Areas which have flooded more than once in the last 10 years (other causes)	nr	0	N/C		N/C		N/C		N/C		N/A		N/C							
9	Flooding incidents (other causes - equipment failure)	nr	0	19	D6	23	D6	25	D6	19	D6	8	D6	3	D6						
10	Flooding incidents (other causes - blockages)	nr	0	3,526	D6	3,293	D6	4,269	D6	3,773	D6	3,543	D6	3,155	D6						
11	Flooding incidents (other causes - collapses)	nr	0	31	D6	73	D6	85	D6	97	D6	268	D6	308	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	0	D6	190	D6	212	D6	226	D6	232	D6	237	D6						
13	1 in 10 register at end of year	nr	0	213	D6	7	D6	20	D6	20	D6	20	D6	20	D6						
14	1 in 20 register at end of year	nr	0	0	D6	16	D6	84	D6	86	D6	87	D6	87	D6						
15	Total on the 1:10, 2:10, 1:20 register at end of year	nr	0	213	D6	213	D6	316	D6	332	D6	339	D6	344	D6						
15a	Potential risk of property flooding identified requiring further investigation to assess at risk category	nr	0	N/C		0	D6	N/C		N/C		N/A		N/C							
	(iii) ANNUAL CHANGES TO 1:10, 2:10, 1:20 REGISTER																				
20	Removed by company action (external only)	nr	0	0	A1	0	A1	0	A1	0	A1	1	A1	0	B2						
21	Removed by company action (external linked)	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	2	B2						
22	Removed because of better information	nr	0	0	A1	113	A1	0	A1	0	A1	0	A1	2	B2						
23	Added because of better information (actually flooded)	nr	0	213	A1	113	A1	103	A1	16	A1	7	A1	9	B2						
24	Added because of better information (modelled)	nr	0	0	A1	0	A1	0	A1	0	A1	1	A1	0	B2						
25	Transferred from external to internal register	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	B2						

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

Introduction

The processing of external flooding incidents has continued as it did in year 2016-17. 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 2017-18'; the figures within Table 3a have been transferred from that spreadsheet.

The total number of 'overloaded sewers' incidents for the year 2017-18 was 15

The total number of 'other causes' incidents has decreased from 3819 in 2016/2017 to 3466, in 2017/2018.

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 five years.

Lines 12-25 - At Risk Register

The total number of areas, on the Register at the start of year 2017/18 was 339.

The processing of external flooding incidents has continued as it did in year 2016/17, resulting in 9 areas being added to the Register, in the assigned categories (2 in 10, 1 in 10, 1 in 20).
Four areas have been removed by company action under an operations scheme.
This brings the total number of areas on the Register to 344.

Capital schemes which address external flooding only, are in general, not funded – hence only 2 properties were removed by company action.

- 18 Kenmare Park, Londonderry BT48 0DE (2 in 10)
- 17 Killary Road, Londonderry BT48 0DE (2 in 10)

Two properties were also removed because of better information.

- 16 Kenmare Park, Londonderry BT48 0DE (2 in 10)
- 19 Kenmare Park, Londonderry BT48 0DE (2 in 10)

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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	DG6 RESPONSE TO BILLING CONTACTS - GENERAL																				
1	Total billing contacts	nr	0	77,051	B2	78,463	B2	75,545	B2	75,490	B2	77,698	B2	71,409	B2						
2	Number dealt with within 5 working days	nr	0	77,118	B2	78,398	B2	75,520	B2	75,462	B2	77,679	B2	71,386	B2						
3	Number dealt with in more than 10 working days	nr	0	26	B2	30	B2	9	B2	11	B2	4	B2	5	B2						
4	DG6 Percentage dealt with within 5 working days	%	2	100 09	B2	99.92	B2	99 97	B2	99.96	B2	99 98	B2	99.97	B2						
5	Percentage dealt with in more than 10 working days	%	2	0.03	B2	0.04	B2	0.01	B2	0.01	B2	0 01	B2	0.01	B2						
B	CONNECTED PROPERTIES																				
6	Number of properties connected for water supply only	nr	0	152,771	A2	155,064	B2	157,260	A2	160,991	A2	163,246	A2	164,695	A2						
7	Number of properties connected for water and sewerage services	nr	0	665,189	A2	669,910	B2	670,800	A2	678,719	A2	689,153	A2	698,293	A2						
8	Number of properties connected for sewerage services only	nr	0	25	A2	24	B2	25	A2	24	A2	25	A2	25	A2						

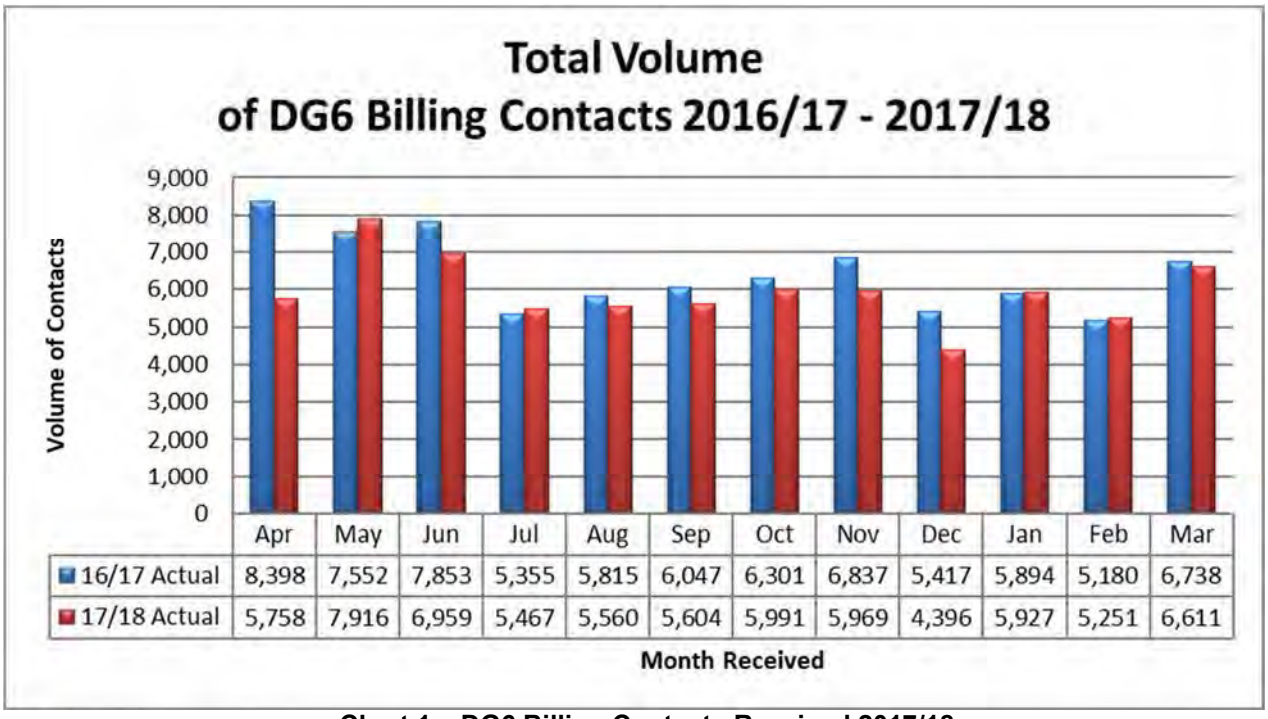
Table 4 – Customer Service 1

Lines 1 - 5 - DG6 – Response to Billing Contacts

This was the eleventh year of non-domestic billing by Northern Ireland Water (NIW). Following decision of Northern Ireland Executive, domestic charges continued to be deferred for 2017/18 charging year.

No material changes, other than tariff changes, were made to billing in 2017/18.

The chart below shows the DG6 received volumes during 16/17 – 17/18.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
16/17 Actual	8,398	7,552	7,853	5,355	5,815	6,047	6,301	6,837	5,417	5,894	5,180	6,738
17/18 Actual	5,758	7,916	6,959	5,467	5,560	5,604	5,991	5,969	4,396	5,927	5,251	6,611

Chart 1 – DG6 Billing Contacts Received 2017/18

The increased volume during quarter one was due to the annual bill run whereby unmeasured bills were issued for the start of April with recovery notices being issued as per policy, 28 days later where bills remained unpaid. This reflects the normal profile expected following the annual bill run.

Top Reasons for Customer Contact

Table 1 lists the top 5 reasons for billing contacts in 2016/17

Debit / Credit Card Payment	28%
Promise Of Payment	9%
Checking Payment Recd	7%
High Cons Advice Given	5%
Disputd Liab Supply	5%

Table 1 – Top 5 DG6 contact types 2017/18

Debit/credit card payments and promises to pay remain the top reasons for billing contacts due to continued focus on debt collection activities during the year. These would be seen as “wanted” contacts.

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 NIW 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 NIW Account Services 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 that 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.

No current plans to reduce the holding response period during AIR 18.

NB The majority of DG6 contacts that cannot be resolved within 5 days require a site visit by a Meter Query Technician (MQT). It is not unusual that the requirement for remedial meter maintenance work is identified during these site visits. The 40 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 40-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, **"Account Services - 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 & 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 Account Services 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 MI & Data Team within CSD Services 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 NIWs 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 that require re-categorisation are updated on Rapid.

Email and Faxes

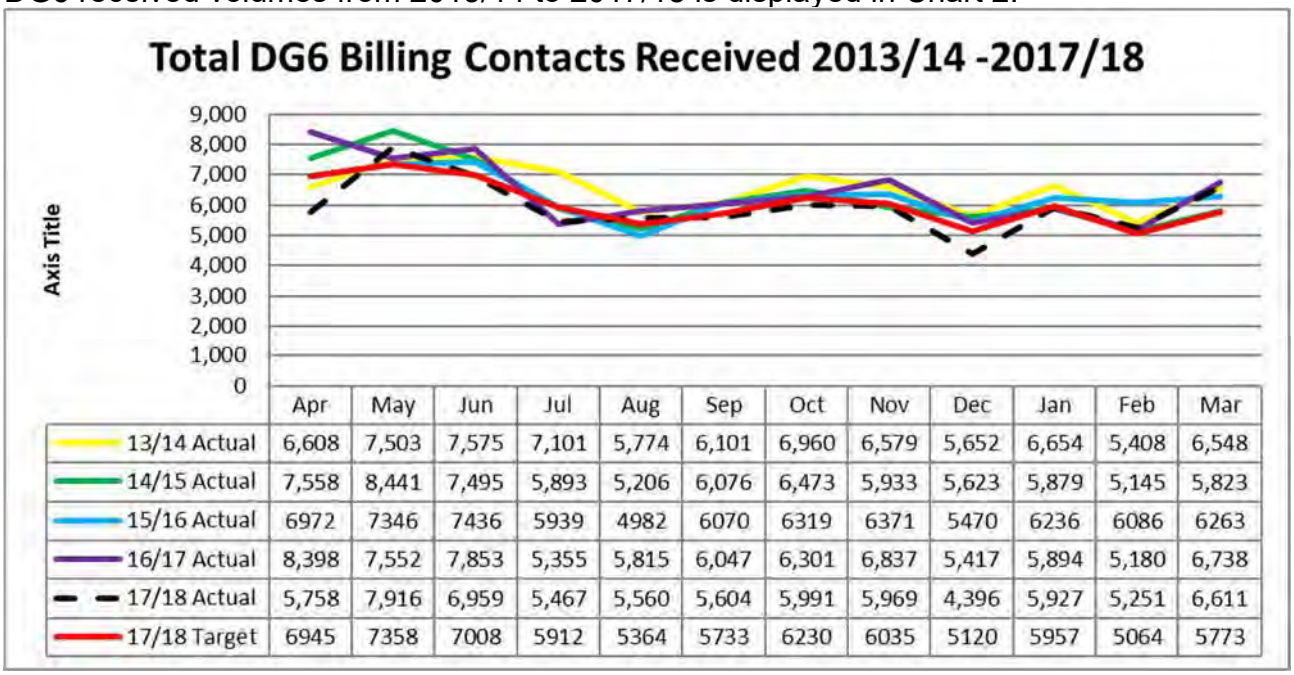
Systems remained in place to ensure that the receipt date of email/fax contacts is recorded as the date it is delivered to the company with the following working day being recorded as Day 1.

Payment Cards

NIW does not issue payment cards to non-domestic customers.

DG6 Volumes Year-on-year

DG6 received volumes from 2013/14 to 2017/18 is displayed in Chart 2.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
13/14 Actual	6,608	7,503	7,575	7,101	5,774	6,101	6,960	6,579	5,652	6,654	5,408	6,548
14/15 Actual	7,558	8,441	7,495	5,893	5,206	6,076	6,473	5,933	5,623	5,879	5,145	5,823
15/16 Actual	6972	7346	7436	5939	4982	6070	6319	6371	5470	6236	6086	6263
16/17 Actual	8,398	7,552	7,853	5,355	5,815	6,047	6,301	6,837	5,417	5,894	5,180	6,738
17/18 Actual	5,758	7,916	6,959	5,467	5,560	5,604	5,991	5,969	4,396	5,927	5,251	6,611
17/18 Target	6945	7358	7008	5912	5364	5733	6230	6035	5120	5957	5064	5773

Chart 2 - DG6 received 2013/14 to 2017/18

The total received volume for 2017/18 is 71,409. This is a decrease of 6,289 on 2016/17 total.

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

Based on data extracted on 11.04.18

- 205 DG6 contacts received during 17/18 were open;
- the oldest open DG6 contact received during 17/18 was 49 working days old;

- 204 DG6 contacts received during 17/18 were open for more than 5 working days, each pending completion of agreed actions as outlined in substantive holding responses;
- The average age of an open DG6 contact received during 17/18 was 29 working days.

Self Service Platform

On 9th February 2015, NIW announced the provision of additional 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-sludge'.

Once registered, customers are able to:

- view their account balance;
- view the payment plan of individual schedules;
- view bill and payment history;
- view desludging request history;
- process a new desludging request;
- pay a bill; and
- Manage their account details.

Northern Ireland Water's (NIW) property data is taken from the RapidXtra billing system and manipulated within Microsoft SQL to produce the Rapid Property Summary Report.

Line 6 – Number of Properties Connected for Water Supply Only

AIR17 figure - 163246
AIR18 figure - 164695

There has been a net increase of circa 1449 properties during the 17/18 year, which are connected only for water.

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 2017/18 reporting year. The figures are based on a report received from the Customer Connections Team
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 and the adding of duplicates as the customers address could not be found on Rapid. For example, 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
    (b) Another scenario - The street name may 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 of duplicates as a result of data quality initiatives

In addition to the above, further data quality requirements have been built into the new CBC Contract. They cover all aspects of the property life cycle (creating, amending and demolishing properties) and data degradation will be monitored/measured throughout.

These system validations have been split into 4 delivery phases. The functionality for Phases 1-3 have been delivered, with the functionality for the Post Phase 3 data validations due to be delivered within the next database release/upgrade in August 2018. Off-system data cleanse is required before some of the system validation rules can be applied.

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

AIR17 figure – 689153
AIR18 figure – 698293

There has been a net increase of circa 9140 properties connected for water and sewerage services during the 17/18 year – refer to Line 6 commentary for further detail.

Line 8 - Number of Properties Connected for Sewerage Services Only

AIR17 figure – 25
AIR18 figure - 25

The number of properties connected for sewerage only has remained the same during the 17/18 reporting year.

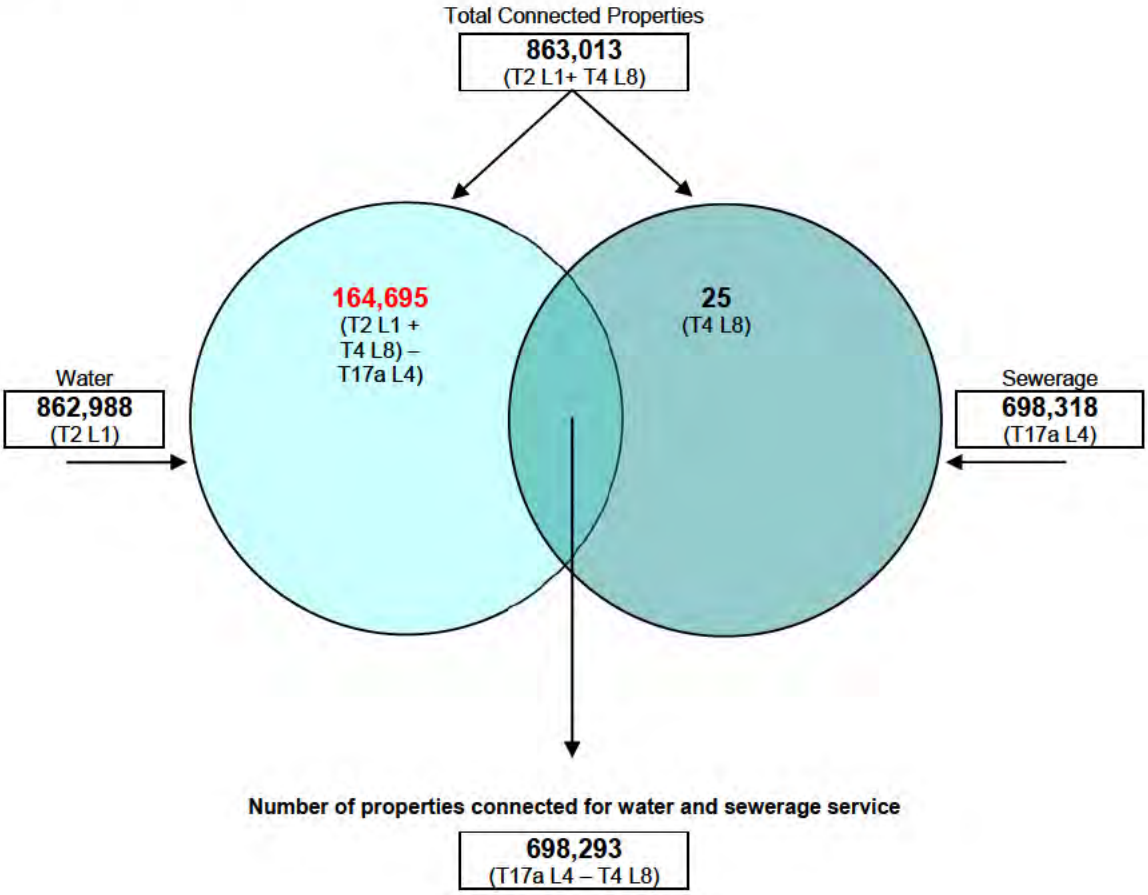
Annex A details the methodology followed for the figures calculated in Table 4 Lines 6-8.

Annex A – Line Methodology for Table 4

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 AIR18 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 AIR18 and is displayed in the diagram below:



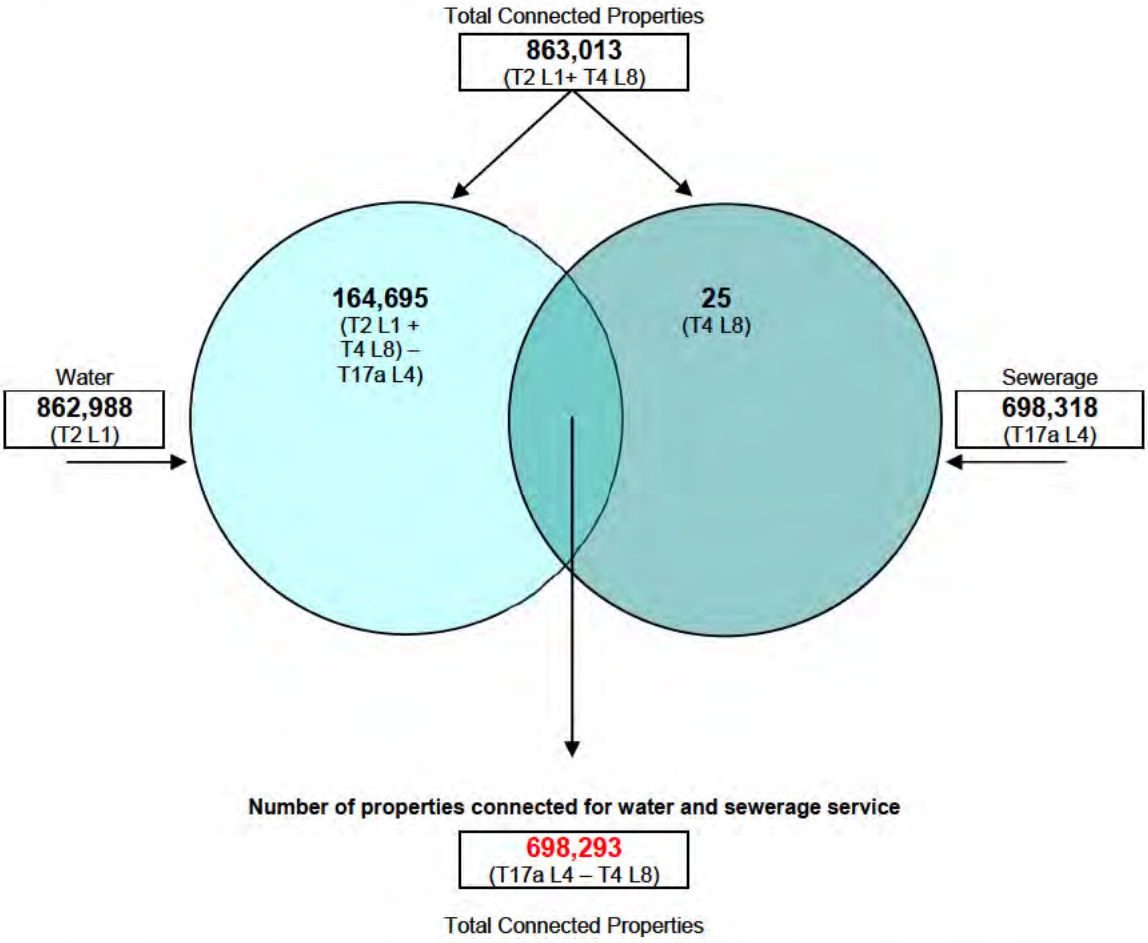
Therefore:-

	End March 2018
Total Connected Properties (T2 L1 + T4 L8)	863013
less	
Total Connected Properties for Sewerage (T17a L4)	698318
Total Connected for Water Only	**164,695**

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 AIR18 and is displayed in the diagram below:



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 AIR18.

	End March 2018
Domestic sewerage only	6
plus	
Non-domestic sewerage only	19
Total Properties Connected for Sewerage Only	**25**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

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

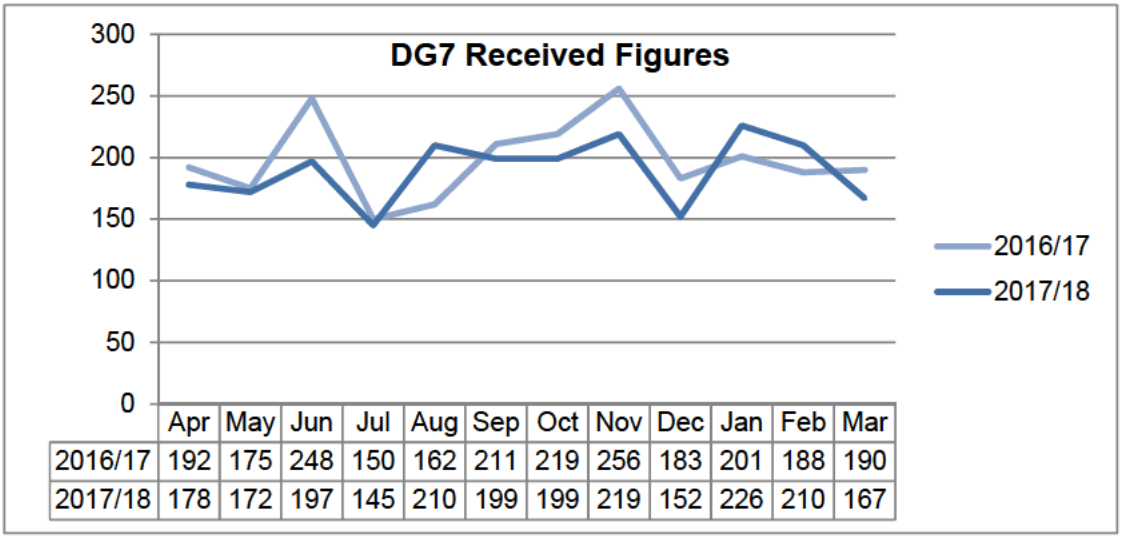
	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	DG7 RESPONSE TO WRITTEN COMPLAINTS																				
1	Total written complaints	nr	0	3,173	B2	2,505	B2	2,364	B2	2,269	B2	2,375	B2	2,274	B2						
2	Number dealt with within 10 working days	nr	0	3,166	B2	2,498	B2	2,363	B2	2,266	B2	2,375	B2	2,271	B2						
3	Percentage dealt with within 10 working days	%	2	99.78	A1	99.72	A1	99.96	A1	99.87	A1	100.00	A1	99.87	B2						
4	Number dealt with in more than 20 working days	nr	0	1	B2	2	B2	0	B2	2	B2	0	B2	3	B2						
5	Percentage dealt with in more than 20 working days	%	2	0.03	A1	0.08	A1	0.00	A1	0.09	A1	0 00	A1	0.13	B2						
B	DG8 BILLS FOR METERED CUSTOMERS																				
6	Total metered accounts	nr	0	110,164	A1	115,227	A1	118,732	A1	123,763	A1	127,807	A1	128,705	A1						
7	Metered accounts excluded from indicator	nr	0	42,688	A1	47,784	A1	51,214	A1	55,875	A1	59,428	A1	60,060	A1						
	(I) NO. OF CUSTOMERS WITH METERED ACCOUNTS RECEIVING AT LEAST ONE BILL DURING YEAR BASED ON METER READING																				
8	Company readings	nr	0	66,557	A1	66,775	A1	66,855	A1	67,319	A1	68,025	A1	68,400	A1						
9	Company or customer readings (or both)	nr	0	66,622	A1	66,840	A1	66,916	A1	67,366	A1	68,051	A1	68,420	A1						
	(ii) NUMBER OF CUSTOMERS WITH METERED ACCOUNTS RECEIVING																				
10	Estimated bills only	nr	0	550	A1	433	A1	548	A1	426	A1	270	A1	184	A1						
11	No bills received during the report year	nr	0	304	A1	170	A1	54	A1	96	A1	58	A1	41	A1						
12	Unread by company for 2 years	nr	0	310	A1	186	A1	164	A1	207	A1	173	A1	90	A1						
C	DG9 TELEPHONE CONTACT																				
13	Total calls received on customer contact lines	nr	0	219,399	A2	226,881	A2	230,847	A2	210,487	A2	217,023	A2	212,095	A2						
14	All lines busy	nr	0	0	A2	0	A2	32	A2	159	A2	63	A2	18	A2						
15	Total of calls not abandoned	nr	0	216,006	A2	223,256	A2	226,204	A2	209,284	A2	216,015	A2	211,061	A2						
16	Call Handling Satisfaction	nr	2	4.54	A1	4.63	A1	4.65	A1	4.59	A1										
17	Total telephone complaints	nr	0	73,158	A2	74,316	A2	76,536	A2	61,316	A2	62,866	A2	57,940	A2						
D	SPECIAL ASSISTANCE REGISTER																				
18	Customers on the special assistance register	nr	0	2,675	A2	2,903	A2	3,084	A2	3,163	A2	2,017	A1	2,096	A1						
E	CUSTOMER SATISFACTION MEASURES																				
19	Total contacts	nr	0									257,866	A2	250,753	A2						
20	Unwanted contacts	nr	0									110,197	A2	105,964	A2						
21	Unwanted contacts as a % of total contacts	%	2									42.73	A2								
22	First Point of Contact Resolved (FPOCR)	%	1									66.5	A2	65 8	A2						
23	Customer advocacy measure	nr	0									27	A1	31	A1						
24	Omnibus survey question 1	nr	1									80.3	A1	92.4	A1						
25	Omnibus survey question 2	nr	1									11.2	A1	8 2	A1						

Table 5 – Customer Service 2

Lines 1-5 - DG7 Response to written complaints

DG7 Received Volumes

The chart below shows the DG7 received volumes during 16/17 and 17/18.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2016/17	192	175	248	150	162	211	219	256	183	201	188	190
2017/18	178	172	197	145	210	199	199	219	152	226	210	167

The chart shows a decrease in the overall volume of written complaints received in 17/18 compared to the previous year; 2,274 in total received in 17/18 compared with a total of 2,375 received in the previous reporting period.

When comparing with average monthly received figures based on the data for the past 3 years, received volumes in 17/18 were above average monthly received figures in 4 of the 12 months.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
15/16	173	211	248	223	222	168	180	207	137	146	179	175
16/17	192	175	248	150	162	211	219	256	183	201	188	190
17/18	178	172	197	145	210	199	199	219	152	226	210	167
Average	***181***	***186***	***231***	***173***	***198***	***193***	***199***	***227***	***157***	***191***	***192***	***177***

The most notable of these above-average monthly volumes was received during January 2018. This can, in part, be attributed to malodour complaints from residents of Belfast Road, Comber of which there were 20 received in the month. A further 4 were received in February 18.

As in previous years, the number of written complaints in the Charges & Billing category was highest, representing 31% of the total received across the reporting period. This however represents a significant decrease in percentage terms when compared to previous years.

For example, 41% of the total received in 2016/17 fell within this category.

There are a number of factors which may have influenced a lower number of Charges & Billing complaints. These include:

- the ongoing work being undertaken as part of the Metering & Billing project which seeks to improve metering data;
- the appointment of a Customer Service Manager within the Metering & Billing function who seeks to proactively resolve issues likely to escalate; and
- the change to the retrospective billing policy which reduced the typical backdated bill period from 6 six years to 18 months.

However, the reduction in complaints within this category cannot be categorically attributed to any single factor.

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:

- Over three hundred complaints were recorded as being from customers disputing liability for charges.
- Over one hundred 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 3 May 2018, no DG7 contacts received during 17/18 complaints remained open.

Petitions

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

CCNI Written Complaints Assessment

There was no formal CCNI Written Complaints Assessment held during the reporting period.

E-mail and Faxes

Systems remained 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.

1,819, or 79.99%, of the total DG7 received volume were recorded with a document type of “email”.

1 DG7 contact was 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://selfservice.Nothern Ireland Waterater.com/ContactForm#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 17/18.

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

Complaints about HVCA

There was 1 written complaint recorded as being related to the High Volume Call Answering system.

NI Direct

There were no 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 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 will be scanned, logged and indexed on the next working day. The date of receipt recorded will match the actual date of receipt.

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 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.

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 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 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 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:

- Agent Review - it is the responsibility of the Complaints & Executive Mail Team Agent 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 Rapid accordingly. If unsure, they should seek guidance from their line manager.
- MI & Data Team Sampling – the MI & Data Team within CSD Services performs monthly sampling on closed DG6, DG7 and non-reportable contacts. The sampling results are sent to the Customer Service Delivery Manager, Complaints & Executive Mail Team Manager & Supervisor for review. It is the responsibility of the Complaints & Executive Mail Team Manager & Supervisor to ensure that any agreed exceptions which require re-categorisation are retrospectively updated on Rapid.
- Line Management checks – 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 Rapid.

Exclusions

A total of 167 written customer complaints have been excluded from DG7 reporting during 17/18 for a variety of exclusion reasons as per the Level of Service Methodology.

Activity linked to one specific campaign greatly contributed to this volume:

- Portavoe Reservoir – 139 complaints generated in relation to objections to the sale of one of Northern Ireland Water's assets; the disused Portavoe Reservoir. The complaints are mainly identical in content with the exception of the name and email address – these were sent by email to Sara Venning (CEO) and Len O'Hagan (Chairman), generated by a campaign website. It is noteworthy that a further 657 of these complaints were received in the previous reporting year.

The Utility Regulator was sighted on this campaign and the associated complaints. Agreement was reached that these should be excluded from DG7 reporting.

Confidence Grades

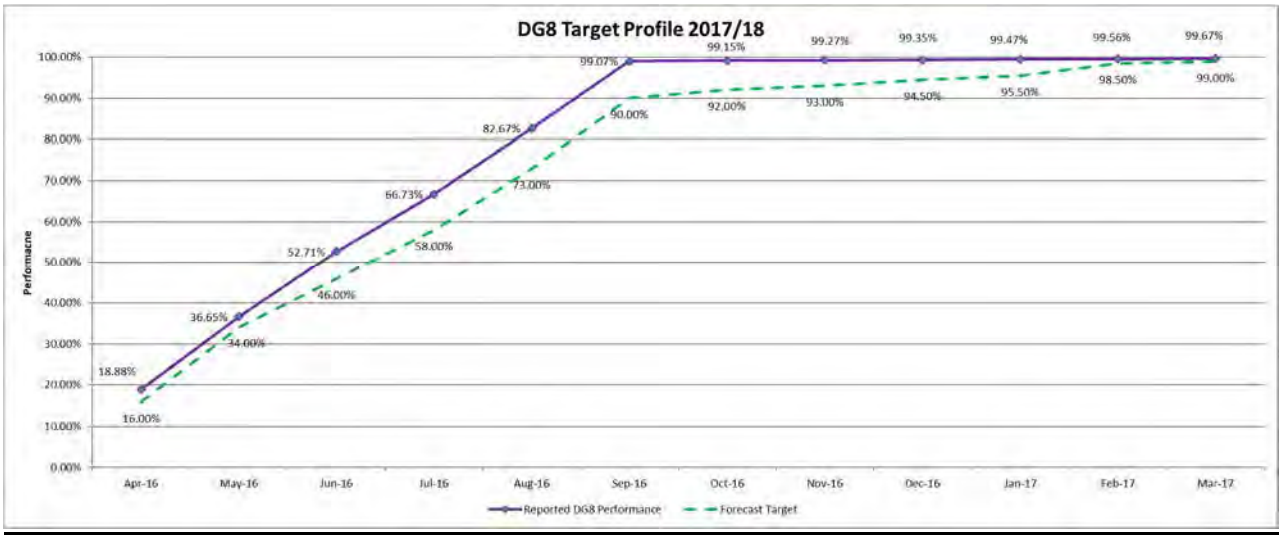
The confidence grades assigned to lines 1, 2 and 4 as shown below, remain the same as those assigned to the 2016/17 performance figures. The confidence grades assigned to lines 3 and 5 have been changed from A1 to B2 as they are based on Lines 2 and 4 respectively which themselves have confidence grades of B2.

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

The 17/18 outturn for DG8 was 99.67% of meters read and billed. This was against a target of 99%. Although the company was well ahead of target within the first 6 cycles, achieving the target of 99%. The target for 17/18 remains fixed at 99%.

DG8 Meters Read and Billed Performance (%)



Cumulative increase in DG8 reads throughout the course of the 17/18 year. The graph is based on actual meter reads out of the total meter stock base.

As can be seen from graph 1.0, within the first read cycle, 99.07% of the meters contributing to the DG8 target were read, against an internal company target of 90.00%. Within the second half of the year the continuing targeted approach and skip management has resulted in a significant improvement in the number of skips of 114 for 2017/18 from 328 for 2016/17, this has been due to a number of factors including;

- Continued focus on reducing skips by managing in month, with proactive management of meter maintenance to ensure meters are replaced asap.
- Proactive engagement with customers to get access to meters to get actual read.
- Proactive identification of in month new meter uploads which are required to be read and billed.

As part of the metering strategy pilot of 1200 AMR's and 26 eloggers have been installed on meters during 17/18. This technology will monitored over the coming year to ensure it is fit

for purpose and meets business requirements. The results will help inform future metering strategy.

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 4th April 2018 from Rapid Xtra:

- 60, 060 Meters were excluded in 17/18.

The Exclusions base report which is run directly from Rapid Xtra over reports the total by 1. The figure shown on this report is 60,061 but the actual Exclusion total is 60,060. This is a known fault with the report which was identified prior to the 16/17 audit and was reported directly to Rapid on 28/06/2017. It was requested that Rapid build a data fix for the DG8 Exclusion report, as it is showing an Excluded meter (M1150975) which does not exist, when searched on the Rapid system it returns 0 results. The latest update from Rapid was that the fix was in the testing phase and all being well it would be included within the next patch hf20, so this is set to go live within the next few months which will see this invalid meter reference removed from the report.

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 17/18:

Reason for Exclusion	Count of Exclusions	% of total Exclusions
Charged on another basis	57249	95.32%
New Property	284	0.47%
Occupied <181 consecutive days	112	0.19%
Void Property/ No Occupier	2415	4.02%
Grand Total	**60060**	**100%**

For 17/18 the total meters excluded has risen by 633 compared to the total exclusion reported in 16/17.

Confidence Grades

The confidence grade is assigned based on the system driven DG8 summary reports extracted from RapidXtra, the reports are analysed in Rapid to create DG8 Meter Summary Analysis reports and does not require any manual manipulation. Rapid 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 2016/17 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

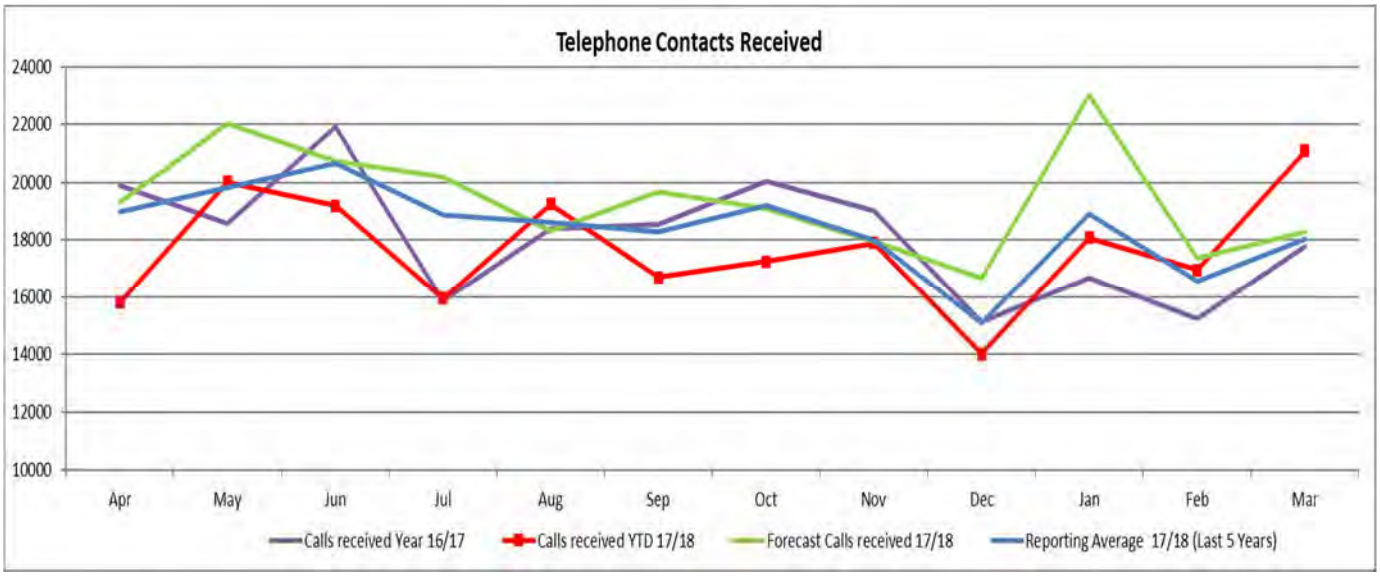
Lines 13 – 17- DG9 Telephone Contact

DG9 Introduction

During the reporting year a total of 212,095 calls were made to the advertised Company telephone numbers.

Graph 1 shows a comparison against the previous year (2016/17) and against our target level of calls for the year and the 5 year average.

Telephone Contacts Received



The deployment of an High Volume Call Answering (HVCA) 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. Power NI. HVCA was available to handle overflow calls for customers reporting faults on the Waterline.

Calls received in the winter period were lower in comparison to previous years, due mainly to milder weather conditions.

Line 14 - All Lines Busy

There were 18 instances of All lines busy during the reporting year 17/18. A considerable reduction in the number received during 16/17, due to an investigation by BT which determined that the vast majority of engaged calls coming through were due to network congestion. BT now remove any engaged calls they deem not to be legitimate from the monthly upload.

HVCA

The High Volume Call Answering (HVCA) system was driven from the events in winter 2010-11, where prolonged sub-zero temperatures during December 2010, followed by a sudden thaw on 26th December 2010, caused extensive disruption of supplies (due mainly to bursts on customer supply pipes) and huge increase in customer contacts to the NI Water Customer Relations Centre.

Since the 5th March 2013 the HVCA system has been deployed in Agent First Mode, which means all calls to the Waterline are still diverted to the Cable and Wireless Network IVR system. 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 HVCA call routing plan to have their issue logged.

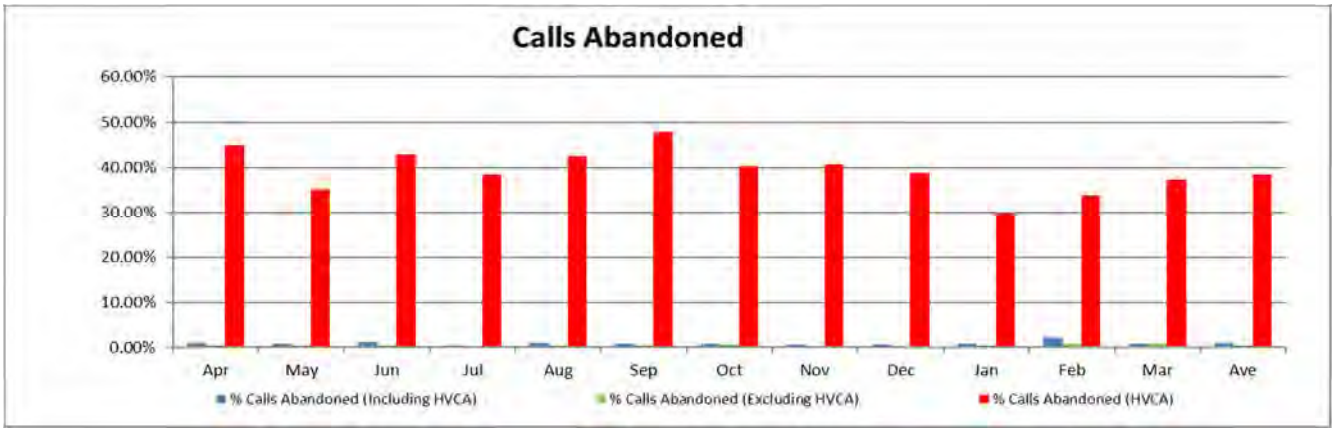
Lines 15 - Calls Abandoned

There were 1,034 calls abandoned on the CallMedia system during the year leading to a reportable Company performance of 99.51% of ‘calls not abandoned’, which exceeded the 99% target set for the year.

All calls abandoned on HVCA 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 HVCA 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 HVCA has 226 distinct hang up locations allowing for detailed analysis of where the customer call ended and what messages the customer was presented with. There were an additional 994 abandoned on the HVCA system and the details on calls abandoned, including and excluding the HVCA system, are set out in Table 1 in Annex A.

As reported previously to the Regulator, 38.57% of all calls transferred to the HVCA system are being abandoned due primarily to customers hanging up on hearing the automated system and redialling in the likelihood that they will be answered by an agent.

Calls Abandoned 2017 – 2018



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 have decreased to 57,940, a slight decrease compared with the 62,866 received during 2016/17 reporting period. This reduction can mainly be attributed to the new text messaging pilot which proactively sends SMS messages to customer who had the potential for a supply interruption, this message also included an estimated time of restoration for the interruption.

There has also been a drive with the Customer Relations Centre to reduce call volumes, an initiative from this was the addition of the ‘Estimated time of restoration’ for supply interruptions to the NI Water website.

Line 18 – Customers on the Critical Care Register

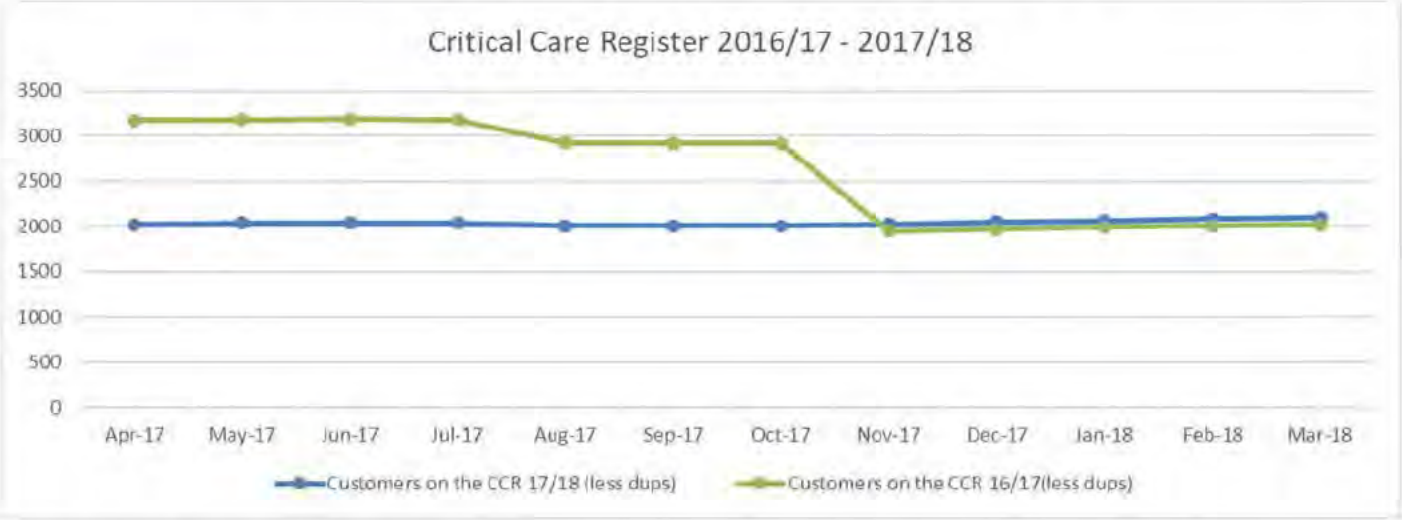
The Critical Care Register offers a range of free additional services to customers who are older, have a disability, a serious medical condition or require extra help when experiencing an interruption to their Water Supply.

A bespoke CorVu report has been created in conjunction with NI Water code of Practice - “Priority Services for Domestic Services” to report on Critical 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 17/18 reporting year 2,096 customers were registered on the Critical Care Register, this has increased slightly compared to the reported 2,017 for 16/17.



Graph 4 – Critical Care Register

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. A follow up call is then made to any non responders. In the event that there is still no contact after the second outbound call, a letter (draft example embedded below) is sent proactively asking for confirmation of details by a set date. The customer will be given a period of 4 weeks to respond. After the agreed deadline some contacts may be removed, this step is important to ensure accurate information before Water supply delivery. Based on the half yearly review the annual Newsletter is sent out by the end of October and this advises of the expectation of the delivery of bottle water in preparation for winter.

Draft - CCR Update Request Letter 2017 (

The initiative is intended to build a relationship with those customers on the CCR and also to confirm the validity of the contact details recorded.

During presentations in 2017 to all the new eleven "super" councils NI Water took the opportunity to promote our customer care scheme. NI Water also continue to work closely with other Utilities through CCNI and NIAUR to ensure a common approach to promoting Customer Care schemes.

An annual Newsletter is produced every November and is sent out to customer currently on the Critical Care Register, to remind customers of the service available and also for them to inform other potential critical customers of the service available. It is worth noting that requests to be added or removed from the register can be received following the distribution of this newsletter.

Customer Satisfaction Measures

Lines 19 to 21 – Total Contacts and Unwanted Contacts

Total contacts refers to the number of Telephone (Billing) and Operational telephone contacts the company has received from Customers during the reporting year 17/18. During the reporting year 250,753 telephone contacts where received. The figure is obtained from the all received and calculated using the original CMS contacts logged within Rapid.
The table below illustrates the monthly breakdown of the total telephone contacts received for 2017/18:

Month Recd	Grand Total
April	18698
May	25195
June	22501
July	18896
August	22577
September	19992
October	20313
November	21548
December	16206
January	21145
February	19436
March	24246
Grand Total	**250753**

During the reporting year 17/18 a total of 250,753 contacts where received, 105,964 of those contacts where unwanted.

An Unwanted phone contact definition is the number of phone contacts received from customers that are ‘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). It also includes repeat or chase calls by the customer to the company. This is determined by the subject matter of the call.

The table below illustrates the breakdown of Wanted and Unwanted contacts received in 17/18:

Month Recd	Unwanted	Wanted	Grand Total
April	7655	11043	18698
May	10376	14819	25195
June	9360	13141	22501

Month Recd	Unwanted	Wanted	Grand Total
July	7556	11340	18896
August	9791	12786	22577
September	7697	12295	19992
October	7661	12652	20313
November	8965	12583	21548
December	7371	8835	16206
January	9356	11789	21145
February	8884	10552	19436
March	11292	12954	24246
Grand Total	**105964**	**144789**	**250753**

Based on the total unwanted telephone contacts received by the company, 24,205 are relating to Sewerage Services and 46,813 are relating to Water Services.

The top Sewerage Service unwanted contact for 17/18 is *'Blocked Sewer Inc Cleanup & Disinfect',* with a total of 12,815 (12%) of unwanted customer contacts.

The top Water Service unwanted contact for 17/18 is '*No Water Complaint',* with a total of 21,706 (20%) of unwanted customer contacts.

Following AIR 17 there was a recommendation for a sample to be taken of Wanted & Unwanted Contacts to confirm that these were being logged correctly. A sample of 50 Wanted & 50 Unwanted closed contacts is currently taken at month end, any anomalies in the categorisation is fed back to the relevant team for training purposes.

Line 22 – First Point of Contact

During the reporting year 65.76% of contacts where resolved at First Point of Contact, this is a slight reduction compared to 66.52% reported for 16/17.
When a contact requires an action and this action is completed at first point of contact and there is no repeat contact from the same property on the same issue within a 90 day period then it shall be counted as 'First Point of contact resolution'.
First point of contact resolution is reported as a percentage derived from the expression of FPOCR against the number of Contacts. The dataset is an analyses of Original CMS code data from the Diamond and CorVu reports, the following will be excluded from the count:

- Outbound CMS
- Non – Reportable
- CMS logged to Switchboard customer Numbers

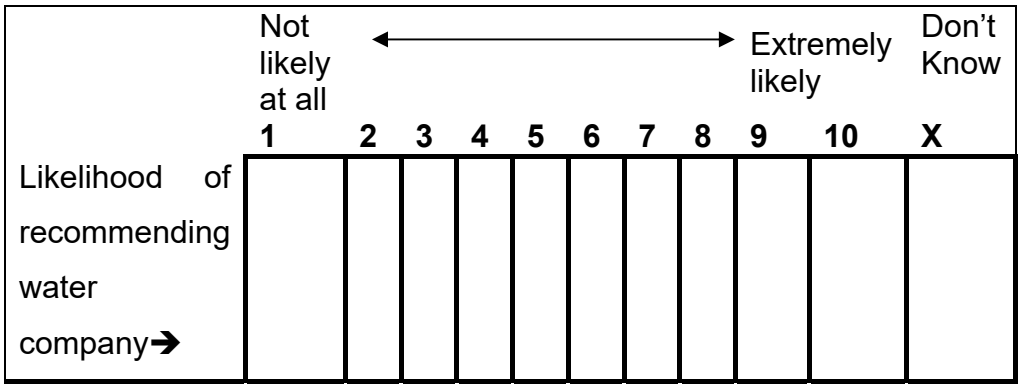
A total of 267,060 contacts where resolved at FPOC:

FPOCR Category	Count
Metering & Billing	87870
Other Activities	27916
Sewerage Services	79732
Water Services	71542
Grand Total	**267060**

Line 23 – Customer Advocacy measure

Customer advocacy is an annual satisfaction score assessed by Allto (McCallum Layton), an independent market research company. Allto carry out quarterly surveys (Waves) of customers who have contacted the company for any reason. The objective of the research

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 "*Likelihood of recommending Northern Ireland Water 1-10?"*
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'.



Customer Advocacy is calculated: Promoter % - Detractor %

The survey is based on a sample of resolved contacts only (from telephone and written channels) in relation to both billing and operational areas. Allto will issue an email in advance to notify which week's data will be required. The sample data set is obtained from a bespoke CorVu report entitled 'SIM Resolved Contacts Query LIVE with date prompt' which was created by NIW

.

Due to field configuration and system limitations within Rapid, there is no current field that will report the 'Resolution Date'. The closed date field is often populated with the date a holding letter is issued, which is typically within 5/10 working days and aligns with DG6/7 SLAs, however the contact may have been open for longer. The actual closed date field can include the last date a contact was amended, therefore not necessarily the actual date of resolution. The Closed Date and Actual Closed Date are aligned to give the Resolution Date.

PC15 Interim Customer Views Research

For 17/18 in place of the Omnibus Survey, an Interim PC15 Research Customer Views Survey was carried out, as part of the regulatory requirement to return at mid-point of Price Control 15 (PC15) to determine if customer views and priorities had changed.

Research specification

NI Water sought to commission a research study to confirm if the customer priorities in relation to the services provided by NI Water remain valid or if there are any significant changes to be considered at midpoint of PC15 period (31st March 2018).

According to the terms of reference, the objectives of the project were as follows:

- To investigate consumer views of water, sewerage and customer services and the areas they want NI Water to prioritise and improve;
- To provide qualitative, quantitative and actionable data that can be used to inform and prioritise NI Water's investment planning;
- To understand how consumers think service delivery can be improved and by when;
- To assess levels of satisfaction and opinion of NI Water, possibly repeating questions that have previously been used where continuity may add further value;

- To provide views and actionable data to inform NI Water's strategic direction for Customer Services;
- To use existing intelligence on customer complaint/contact information, regulatory annual information returns.

Methodology

Following a formal tendering process Kantar Millward Brown was commissioned in June 2017 by Northern Ireland Water to carry out research to assess current views relating to water services. 1,000+ domestic consumers and 250 non-domestic consumers throughout Northern Ireland participated in this research programme.

Research was conducted amongst both Northern Ireland consumers and businesses. The methodology consisted of the following elements:

Domestic customer research

- Ad hoc survey amongst 1026 households.

Non-domestic customer research

- Ad hoc survey conducted amongst 250 businesses.

Domestic customer research

In order to access a robust and fully representative sample of consumers, we deployed a face-to-face ad hoc household survey.

All interviews were conducted face-to-face amongst a sample of 1026 adults aged 16+. In total 60 sampling points (spread over 100 electoral wards) were drawn using a stratified random sampling method to ensure that the sample was fully representative in terms of region. Within each sampling point, demographic quotas are set on the basis of age and social class characteristics for males and females. All fieldwork was conducted between the 5th July and 3rd August 2017 by executive interviewers using specialist Handheld Assisted Personal Interviewing (HAPI) devices. The HAPI system ensures that data is collected in an effective and precise fashion.

Non-domestic customer research

A telephone methodology was also implemented for the main body of research with businesses. This approach was considered the most economical and efficient method of conducting research amongst large numbers of businesses in Northern Ireland.
All interviewing was carried out by Millward Brown's executive telephone interviewers from their dedicated in-house CATI telephone centre. Every business in Northern Ireland had an equal opportunity of being contacted for interview. Quota controls were put in place to ensure that the sample was fully representative of the marketplace in terms of company size, location and industry sector. To accurately reflect the demographic profile of small Northern Ireland businesses the sample was weighted at analysis stage using the latest Inter Departmental Business Register (IDBR) data.

Line 24 Omnibus survey question 1

As was done previously in the benchmark survey conducted in 2014, consumers were asked about their '**satisfaction with the services**' provided by NI Water, their opinion of NI Water and levels of trust that NI Water is being effectively monitored.

Overall satisfaction with NI Water has significantly improved amongst domestic consumers, increasing from 80% in 2014 to 93% in 2017. Uplift can similarly be seen, and indeed is more stark, amongst the non-domestic market, increasing from 58% to 90% in the same period.

In terms of favourability non-domestic consumers have a more positive impression, although both customer groups increase significantly compared to 2014. Over four fifths (81%) of domestic consumers and almost 9 in 10 (88%) of non-domestic consumer said they have a favourable impression of NI Water. This compares to 63% and 51% seen respectively in the benchmark wave.

Almost four fifths of households (78%) and businesses (82%) trust that NI Water is being effectively monitored. This represents a significant improvement on this metric since the 2014 benchmark when domestic and non-domestic customers scored 65% and 45% respectively.

Amongst the domestic consumer sample, views in relation to satisfaction with services tend not to vary by gender or socio-economic group, but to improve with age of respondent with the 65+ age group being most satisfied (see Figure 4.1.2 where this sub-sample scores a net satisfaction1 figure of 95%).

Satisfaction with services too varies little by area, however those in urban locations (44%) [Particularly Belfast, 47%] were more likely to ‘strongly agree’ that they are satisfied with the services they receive. Those with a disability were slightly less likely to express satisfaction overall with water services, scoring a net satisfaction figure of 85% compared to 91% amongst those without a disability.

There was little difference in satisfaction by housing tenure, although the most favourable top box score (‘strongly agree’) can be seen amongst those residing in Northern Ireland Housing Executive properties (45%).

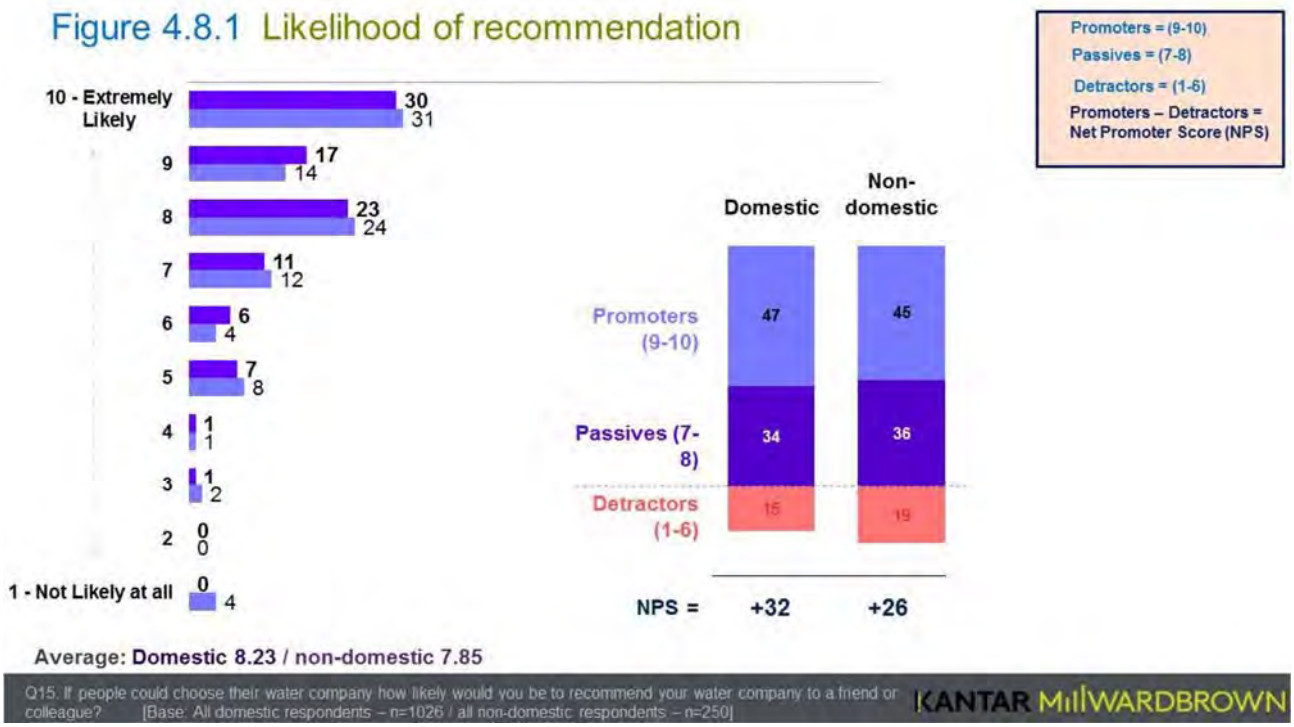
Amongst the non-domestic sample larger businesses were more likely to agree that they are satisfied with services received from NI Water, where businesses with 11+ employees score in excess of 90% in terms of net satisfaction. Moreover, manufacturing/construction businesses were typically more satisfied (net satisfaction 88% compared with 81% amongst service industry businesses).

The overall score achieved was 92.4.

Line 25 Omnibus survey question 2

In place of the Omnibus Survey, an Interim PC15 Research piece was carried out by Millward Brown, as previously agreed with the regulator. The question within the research for this line remained the same in that Customers were asked ‘**how likely they would be to recommend NI Water Company to a friend or colleague if they could choose a different provider’**.

As per the table below the score was calculated based on the overall average which returns a score between 0-10. Of the 1026 domestic customers surveyed the average was 8.23 and of the 250 commercial customers surveyed the average was 7.85. The overall score achieved was 8.2.



NI Direct Flood Line

NI Direct Floodline (FIL) was launched on 30 January 2009, as a single contact telephone number for customers in the event of a flooding incident. This telephone number is not one of NIW's advertised PACC numbers and is provided through a separate Call Centre managed by NI Direct.

NI Direct operate as a 'triage' service, taking the details of the incident from the customer and directing their issue to the relevant agency for appropriate action. Following a change in supplier within NI Direct during 2012/13, the integrated interface between FIL and NI Water systems was severed creating a gap in the process which NI Water were forced to bridge. This resulted in FIL contacts being received by e-mail and manually logged onto the NI Water CRC system by agents.

The new FIL contract went live on 1st December 2012, and following some initial manual logging the automated connection went live on 9th July 2013 between the FIL CRM and Rapid, in order to ensure that customer contacts relevant to NIW are logged on Rapid and work orders processed via Ellipse where necessary.

During the reporting period circa 428 work orders were received by the Company from FIL.

Confidence Grades

Call volume data is derived using a combination of telephony systems, the HVCA system for automated calls and Call Media that draws information from the Avaya system for agent handled calls.

In March 2014, the Telephony supplier changed from Cable & Wireless to BT. This switch was relatively seamless, with only a minor impact on lines busy due to the technical handover and these calls were excluded for reporting purposes

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 HVCA; however the confidence grade assigned to the data remains at 'A2', as per the AIR guidance.

Call Handling Satisfaction retains the confidence grade of ‘A2’ as it is conducted independently and the results are provided to NI Water by Allto.

Table 1: HVCA (2017/18) Annex A

Calls received/answered to HVCA

Details	YTD	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
Total calls received (HVCA)	**2577**	142	230	288	52	235	167	144	130	113	147	613	316
Total calls answered (HVCA)	**1583**	78	149	164	32	135	87	86	77	69	103	405	198
% Calls transferring to HVCA based on total calls received	**Ave 1.10%**	0.82%	0.98%	1.38%	0.30%	1.11%	0.91%	0.76%	0.64%	0.74%	0.73%	3.30%	1.38%

Abandoned on HVCA

Details	YTD	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
Total of Abandoned Calls (Call Media)	**1034**	86	99	102	43	105	70	97	56	39	89	152	96
Total of Abandoned Calls (HVCA)	**994**	64	81	124	20	100	80	58	53	44	44	208	118
Total of Abandoned Calls	**2028**	150	180	226	63	205	150	155	109	83	133	360	214
% Calls Abandoned (Including HVCA)	**Ave/Total 0.96%**	0.95%	0.90%	1.18%	0.40%	1.07%	0.90%	0.90%	0.61%	0.59%	0.74%	2.12%	0.74%
% Calls Abandoned (Excluding HVCA)	**Ave/Total 0.49%**	0.54%	0.49%	0.53%	0.27%	0.55%	0.42%	0.56%	0.31%	0.28%	0.49%	0.90%	0.90%
% Calls Abandoned (HVCA)	**Ave/Total 38.57%**	45.07%	35.22%	43.06%	38.46%	42.55%	47.90%	40.28%	40.77%	38.94%	29.93%	33.93%	37.34%

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 5A KEY OUTPUTS

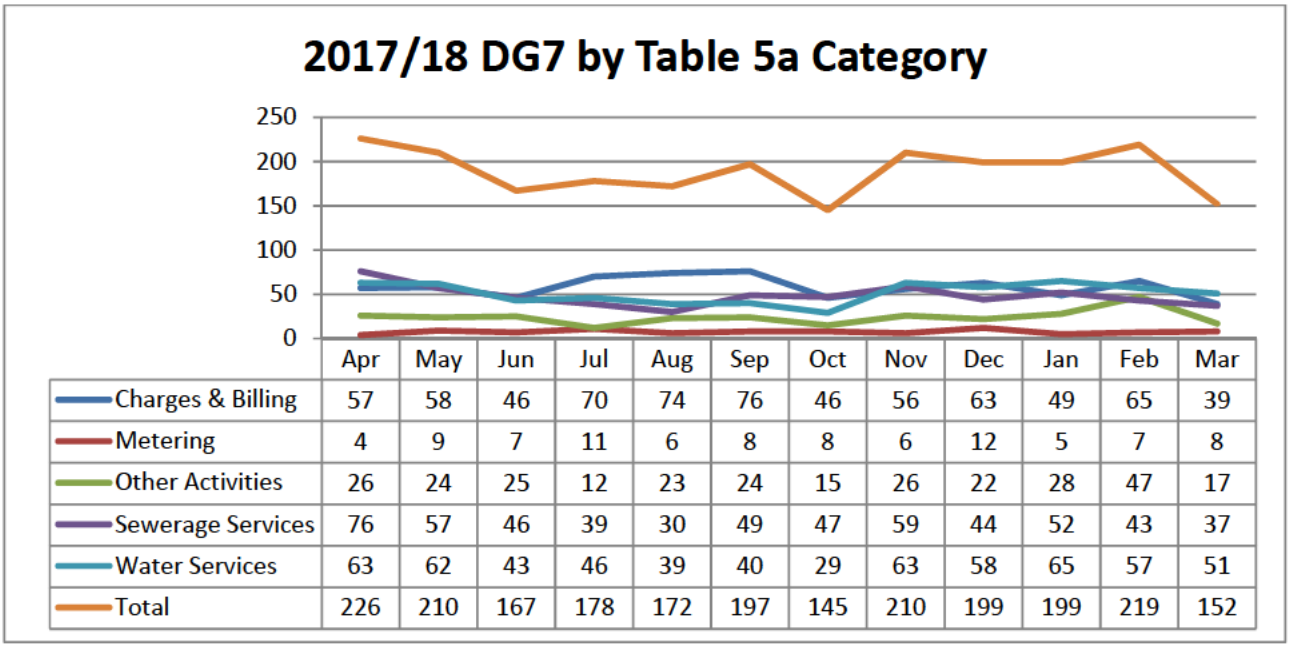
CUSTOMER COMPLAINTS DATA FOR CONSUMER COUNCIL FOR NORTHERN IRELAND (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**TOTAL WRITTEN COMPLAINTS**																				
1	Total written complaints	nr	0	3,173	B2	2,505	B2	2,364	B2	2,269	B2	2,375	B2	2,274	B2						
2	Number dealt with within 10 working days	nr	0	3,166	B2	2,498	B2	2,363	B2	2,266	B2	2,375	B2	2,271	B2						
3	Number dealt with in more than 20 working days	nr	0	1	B2	2	B2	0	A1	2	B2	0	B2	3	B2						
B	**CATEGORY OF WRITTEN COMPLAINTS**																				
	(i) Charges and Bills																				
4	Total written complaints about charging and billing issues	nr	0	1,567	B2	839	B2	906	B2	890	B2	935	B2	699	B2						
5	Total written complaints about charging and billing issues escalated to second stage review	nr	0	381	B2	149	B2	124	B2	92	B2	87	B2	72	B2						
	(ii) Water Service																				
6	Total written complaints about water service issues	nr	0	448	B2	552	B2	555	B2	505	B2	600	B2	616	B2						
7	Total written complaints about water service issues escalated to second stage review	nr	0	71	B2	52	B2	52	B2	33	B2	29	B2	51	B2						
	(iii) Sewerage Service																				
8	Total written complaints about sewerage service issues	nr	0	689	B2	493	B2	434	B2	487	B2	533	B2	579	B2						
9	Total written complaints about sewerage service issues escalated to second stage review	nr	0	82	B2	42	B2	31	B2	29	B2	43	B2	73	B2						
	(iv) Metering																				
10	Total written complaints about metering issues	nr	0	123	B2	133	B2	107	B2	104	B2	75	B2	91	B2						
11	Total written complaints about metering issues escalated to second stage review	nr	0	25	B2	28	B2	11	B2	4	B2	5	B2	9	B2						
	(v) Other activities																				
12	Total written complaints about other service issues or activities	nr	0	346	B2	488	B2	362	B2	283	B2	232	B2	289	B2						
13	Total written complaints about other service issues or activities escalated to second stage review	nr	0	82	B2	124	B2	51	B2	18	B2	14	B2	22	B2						
C	**OTHER CUSTOMER RESPONSE MEASURES**																				
14	Number of holding responses issued	nr	0	695	B4	351	B4	294	B4	413	B2	326	B4	286	B4						
15	Consumer Council investigations	nr	0	27	B2	40	B2	28	B2	34	B2	30	B2	23	B2						

Table 5a – DG7 Response to Written Complaints

DG7 Received Annual Profile & Explanation

The volume of DG7 complaints received each month during 17/18 by type is shown in the chart below.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Charges & Billing	57	58	46	70	74	76	46	56	63	49	65	39
Metering	4	9	7	11	6	8	8	6	12	5	7	8
Other Activities	26	24	25	12	23	24	15	26	22	28	47	17
Sewerage Services	76	57	46	39	30	49	47	59	44	52	43	37
Water Services	63	62	43	46	39	40	29	63	58	65	57	51
Total	226	210	167	178	172	197	145	210	199	199	219	152

In line with previous years, those falling into the Charges & Billing category remain the principal written complaint type. However, in percentage terms, there has been a marked decrease in this category when compared with the previous reporting period. In 17/18, 31% of the total received fell within the Charges & Billing category compared to 41% in the previous reporting period.

There are a number of factors which may have influenced a lower number of Charges & Billing complaints. These include:

- the ongoing work being undertaken as part of the Metering & Billing project which seeks to improve metering data;
- the appointment of a Customer Service Manager within the Metering & Billing function who seeks to proactively resolve issues likely to escalate; and
- the change to the retrospective billing policy which reduced the typical backdated bill period from 6 six years to 18 months.

However, the reduction in complaints within this category cannot be categorically attributed to any single factor.

25 complaints received in Q4 (30 in total during 17/18) are linked to malodour complaints from residents of Belfast Road, Comber; these fall within the Sewerage Services category.

Second Stage Complaints

Systems remained in place to enable the reporting of complaints escalated to second stage review throughout 17/18.

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

Within the PC10 Final Determination, stakeholders agreed to introduce monitoring systems 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 17/18.

System-based report data was used to derive the number of holding responses issued between 01/04/17 and 31/03/18.

The figure reported in Line 14 is the total recorded number of holding responses issued to customers during 17/18 owing to pending investigations linked to open DG7 contacts which were received in 17/18. It does not include holding responses issued within 17/18 in relation to DG7 contacts received in the previous reporting year.

The reported figure does not represent the number of singular 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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	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	7.972	A2	8.260	A2	8.739	A2	7.220	A2	7.305	A2	7.009	A2						
30	Number of measured non households with outstanding revenue < 48 months	nr	0	15,348	A2	14,570	A2	14,645	A2	17,091	A2	11,715	A2	11,517	A2						
31	Revenue outstanding < 3 months (measured non households)	£m	3	6.891	A2	7.189	A2	7.525	A2	5.530	A2	5.376	A2	5.611	A2						
32	Number of measured non households with outstanding revenue < 3 months	nr	0	10,588	A2	10,053	A2	10,415	A2	10,405	A2	7,992	A2	8,576	A2						
33	Revenue outstanding 3 - 12 months (measured non households)	£m	3	0.952	A2	0.928	A2	0.960	A2	0.758	A2	1.100	A2	0.629	A2						
34	Number of measured non households with outstanding revenue 3 - 12 months	nr	0	2,925	A2	3,108	A2	2,815	A2	4,889	A2	2,368	A2	1,906	A2						
35	Revenue outstanding 12 - 24 months (measured non households)	£m	3	0.012	A2	0.039	A2	0.088	A2	0.435	A2	0.446	A2	0.362	A2						
36	Number of measured non households with outstanding revenue 12 - 24 months	nr	0	1,049	A2	911	A2	992	A2	1,142	A2	922	A2	737	A2						
37	Revenue outstanding 24 - 36 months (measured non households)	£m	3	0.117	A2	0.104	A2	0.166	A2	0.497	A2	0.383	A2	0.407	A2						
38	Number of measured non households with outstanding revenue 24 - 36 months	nr	0	786	A2	498	A2	423	A2	656	A2	433	A2	298	A2						
39	Revenue outstanding 36 - 48 months (measured non households)	£m	3			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							
41	Revenue outstanding > 48 months (measured non households)	£m	3			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							
D	**REVENUE OUTSTANDING - UNMEASURED NON HOUSEHOLDS**																				
43	Total revenue outstanding < 48 months (unmeasured non households)	£m	3	0.402	A2	2.627	A2	2.566	A2	2.604	A2	2.647	A2	2.600	A2						
44	Number of unmeasured non households with outstanding revenue < 48 months	nr	0	1,542	A2	10,114	A2	9,302	A2	9,664	A2	8,881	A2	8,679	A2						
45	Revenue outstanding <3 months (unmeasured non households)	£m	3	0.111	A2	2.349	A2	2.350	A2	2.282	A2	2.351	A2	2.211	A2						
46	Number of unmeasured non households with outstanding revenue < 3 months	nr	0	155	A2	8,826	A2	8,591	A2	8,224	A2	8,102	A2	8,056	A2						
47	Revenue outstanding 3 -12 months (unmeasured non households)	£m	3	0.025	A2	0.165	A2	0.070	A2	0.154	A2	0.132	A2	0.203	A2						
48	Number of unmeasured non households with outstanding revenue 3 - 12 months	nr	0	256	A2	697	A2	195	A2	190	A2	256	A2	160	A2						
49	Revenue outstanding 12-24 months (unmeasured non households)	£m	3	0.241	A2	0.005	A2	0.116	A2	0.113	A2	0.116	A2	0.126	A2						
50	Number unmeasured non households with outstanding revenue 12 - 24 months	nr	0	894	A2	184	A2	448	A2	662	A2	366	A2	326	A2						
51	Revenue outstanding 24-36 months (unmeasured non households)	£m	3	0.025	A2	0.108	A2	0.030	A2	0.055	A2	0.048	A2	0.060	A2						
52	Number of unmeasured non households with outstanding revenue 24 - 36 months	nr	0	237	A2	407	A2	68	A2	588	A2	157	A2	137	A2						
53	Revenue outstanding 36 -48 months (unmeasured non households)	£m	3			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							
55	Revenue outstanding >48 months (unmeasured non households)	£m	3			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							
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	1.094	A2	0.844	A2	0.666	A2	1.237	A2	0.341	A2	0.474	A2						
58	Amount of revenue written off from unmeasured households	£m	3																		
58a	Amount of revenue written off from unmeasured non-households	£m	3	0.173	A2	0.094	A2	0.110	A2	0.083	A2	0.045	A2	0.056	A2						
F	**CUSTOMER SERVICES OPERATING EXPENDITURE**																				
59	General customer services operating expenditure Total	£m	3	6.418	A2	6.767	A2	6.284	A2	6.337	A2	6.898	A2	6.453	A2						
i	Employment costs	£m	3	3.673	A2	3.408	A2	3.188	A2	3.501	A2	3.972	A2	3.933	A2						
ii	Hired and contracted costs	£m	3	3.139	A2	3.392	A2	3.188	A2	3.018	A2	2.876	A2	2.593	A2						
iii	Other	£m	3	0.611	A2	0.739	A2	0.819	A2	0.738	A2	0.985	A2	0.951	A2						
iv	Adjustments	£m	3	-1.005	B3	-0.772	B3	-0.911	B3	-0.920	B3	-0.935	A2	-1.024	A2						
60	Outstanding revenue collection operating expenditure (households)	£m	3																		
60a	Outstanding revenue collection operating expenditure (non households)	£m	3	2.118	DX	2.269	DX	2.242	DX	1.934	DX	1.950	A2	2.098	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	8.536	A2	9.036	A2	8.526	A2	8.271	A2	8.848	A2	8.551	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 2018 NI Water had no actual revenue from households as this is received by way of a subsidy from Department for Infrastructure ("DfI"). There was £1.57m due to NIW from DfI for subsidy at 31 March 2018. This figure varies to the Statutory Accounts as Septic Tank subsidy is not reported in AIR as it is classified as non-appointed income under UKGAAP.

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 2018.

At 31 March 2018 the closing trade debtor balance was £7.009m. 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 £2.156m and is made up of the following:

- £0.173m for debt over 4 years
- £0.097m for debt 3 - 4 years
- £0.324m for debt 2 – 3 years
- £0.748m for debt 1 – 2 years
- £0.683m for debt 90 – 365 days
- £0.131m 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. £2.1m less than the detailed debtors listing provided by Echo. This was due to the following:

- Future system adjustments (£1.7m)
- Other adjustments (£0.4m)

Row 29 – Total Revenue Outstanding < 48 months - Measured Non Households

The total amount of revenue at the end of 2017/18 outstanding from measured non households for less than 48 months. Balance as at 31 March 2018 was £7.009m.

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 2018 was 11,517. 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 £2.1m. The £2.1m is approximately 15% of total outstanding debtors at 31 March 2018 of £13.9m. An assumption was made to apply a 15% 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 2017/18 that has been outstanding from measured non households for less than 3 months. Balance as at 31 March 2018 was £5.611m.

Row 32 – Number of Measured Non-Households with Outstanding Revenue < 3 months

The number of measured non households at end of 2017/18, with revenue outstanding for less than 3 months. As at 31 March 2018 this totalled 8,576.

Row 33 – Revenue Outstanding 3-12 months (Measured Non Households)

The total amount of revenue at the end of 2017/18 that has been outstanding from measured non households for at least 3 months but less than 12 months. Balance as at 31 March 2018 was £0.629m.

Row 34 – Number of Measured Non-Households with Outstanding Revenue 3-12 months

The number of measured non households at end of 2017/18 with revenue that has been outstanding for at least 3 months but less than 12 months. At 31 March 2018 this totalled 1,906.

Row 35 – Total Revenue Outstanding 12-24 months (Measured Non Households)

The total amount of revenue at the end of 2017/18 outstanding from measured non households for at least 12 months but less than 24 months. At 31 March 2018 this totalled £0.362m.

Row 36 – Number of Measured Non-Households with Outstanding Revenue 12-24 months

The number of measured non households at end of 2017/18 with revenue that has been outstanding for at least 12 months but less than 24 months. At 31 March 2018 this totalled 737.

Row 37 – Total Revenue Outstanding 24-36 months (Measured Non Households)

The total amount of revenue at the end of 2017/18 outstanding from measured non households for at least 24 months but less than 36 months. At 31 March 2018 this totalled £0.407m.

Row 38 – Number of Measured Non-Households with Outstanding Revenue 24-36 months

The number of measured non households at end of 2017/18 with revenue that has been outstanding for at least 24 months but less than 36 months. At 31 March 2018 this totalled 298.

Row 39 – Number of Measured Non-Households with Outstanding Revenue 36-48 months

The number of measured non households at end of 2017/18 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 2018 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 2018.

- At 31 March 2018 the closing trade debtor balance was £2.600m (31 March 2017, £2.647m).

The debtor balance reported figure is made up of unmeasured water and sewerage debtors less bad debt provision. The bad debt provision is £0.086m and is made up of the following:

- £0.007m for debt over 4 years
- £0.004m for debt 3 - 4 years
- £0.013m for debt 2 – 3 years
- £0.030m for debt 1 – 2 years
- £0.027m for debt 90 – 365 days
- £0.005m 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 2017/18 outstanding from unmeasured non households for less than 48 months. Balance at 31 March 2018 was £2.600m.

Row 44 – Numbers of Unmeasured Non-Households with Outstanding Revenue < 48 months

The number of unmeasured non households at the end of 2017/18 with revenue that has been outstanding for less than 48 months. Total at 31 March 2018 was 8,679.

Row 45 – Revenue Outstanding < 3 months - Unmeasured Non Households

The total amount of revenue at the end of 2017/18 outstanding from unmeasured non households for less than 3 months. Balance at 31 March 2018 was £2.211m.

Row 46 – Numbers of Unmeasured Non-Households with Outstanding Revenue < 3 months

The number of unmeasured non households at the end of 2017/18 with revenue outstanding for less than 3 months. Total at 31 March 2018 was 8,056.

Row 47 – Revenue Outstanding 3-12 months - Unmeasured Non Households

The total amount of revenue at the end of 2017/18 outstanding from unmeasured non households for at least 3 months but less than 12 months. Balance at 31 March 2018 was £0.203m.

Row 48 – Numbers of Unmeasured Non-Households with Outstanding Revenue 3-12 months

The number of unmeasured non households at end of 2017/18 with revenue outstanding for at least 3 months but less than 12 months. Total at 31 March 2018 was 160.

Row 49 – Revenue Outstanding 12-24 months - Unmeasured Non Households

The total amount of revenue at the end of 2017/18 outstanding from unmeasured non households for at least 12 months but less than 24 months. Balance at 31 March 2018 was £0.126m.

Row 50 – Numbers of Unmeasured Non-Households with Outstanding Revenue 12-24 months

The number of unmeasured non households at end of 2017/18 with revenue outstanding for at least 12 months but less than 24 months. Total at 31 March 2018 was 326.

Row 51 – Revenue Outstanding 24-36 months - Unmeasured Non Households

The total amount of revenue at the end of 2017/18 outstanding from unmeasured non households for at least 24 months but less than 36 months. Balance at 31 March 2018 was £0.060m.

Row 52 – Numbers of Unmeasured Non-Households with Outstanding Revenue 24-36 months

The number of unmeasured non households at end of 2017/18 with revenue outstanding for at least 24 months but less than 36 months. Total at 31 March 2018 was 137.

Row 53 – Revenue Outstanding 36-48 months - Unmeasured Non Households

The total amount of revenue at the end of 2017/18 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 2018 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 £0.530m (2016/17, £0.386m).

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/DfI * (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 DfI 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.

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-Households

Bad debts written off are calculated on a monthly basis and include trade effluent. The total for 2017/18 was £0.474m (2016/17, £0.341).

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 2017/18 was £0.056m (2016/17, £0.045m).

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. The company view this methodology as providing an appropriate estimate of the provisioning required and reflects the current economic climate. 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
High	5%	5%	10%	10%	35%	65%	80%	100%	100%	100%	100%
Medium	2%	2%	2%	2%	20%	35%	65%	100%	100%	100%	100%
Low	1%	1%	1%	1%	10%	20%	30%	50%	75%	100%	100%

Allocation of High, Medium and Low

A review of the total debtors (debit balances) was carried out in March 2018. Account balance and aged debt taken into consideration when applying risk of default. Data was filtered by VAT SIC code and the following steps were taken:

- Top customers were reviewed by name.
- All public sector accounts reviewed e.g. Health Trusts, Education Boards, Schools - <30 days Low; if >30days, Med.
- 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 MED if <180 days. DD customers low.
- Retail customers grouped and reviewed.
- Hotels, bars and restaurants reviewed - Final account no forwarding address – high risk.
- Charities, voluntary groups, housing associations, churches grouped and reviewed.
- Construction companies, quarries grouped and reviewed.
- Accounts with STD VAT code reviewed individually, direct debit payers on MED (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 MED.
- Banks all at MED risk.
- All final accounts classified as HIGH risk.
- VAT code:
  1 Energy as low unless debt greater than £180 days then med.
  2 Minerals - <30 days med. > 30 days high.
  3 Metal Goods and Engineering - DD - Low. >180 days High
  4 Other manufacturing - >180 days high if not Key account or DD.
  5 Construction < 30 days med. > 30 days high
  6 Distribution/Catering <30 days Med. > 30 days High
  7 Transport > 60 days High. <60 days med
  8 Banking & Finance - DD Low
  9 Other services:-
    - DD Low, >£1k, Med
    - Std Vat Rate unknown > 180 days high.
    - DD Med unless final a/c <180 days, if >£1k high.
    - Domestic Property - > 180 days high, <180days and <£100 low.
    - Redundant zero Vat - Med.
- 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 £1.7m of future system adjustments.

Bad Debt Provision Summary

The following is a summary of the bad debt provision at 31 March 2018 and 31 March 2017:

	2018	**2017**
	£m	**£m**
Measured water & sewerage	1.821	2.455
Unmeasured water & sewerage	0.086	0.350
Trade effluent	0.335	0.169
Total	**2.242**	**2.974**

Subsidy

NI Water received £270.6m subsidy in relation to household customers in 2017/18 with nothing outstanding from DfI at 31 March 2018.

NI Water received £15.59m subsidy in relation to non-household customers and at 31 March 2018 an amount of £1.57m was outstanding from DfI. The total subsidy for non-households for the year ended 31 March 2018 was £17.16m. This figure varies to the Statutory Accounts as Septic Tank subsidy is not reported in AIR as it is classified as non-appointed income under UKGAAP.

Lines 59 to 63 – Customer Services Operating Expenditure

Line 59 – General customer services operating expenditure

The line 59 total of £6.453m in AIR18 is a £0.45m decrease (6.45%) against the costs of £6.898m in AIR17. This arises for the following reasons:

- Employment costs (decrease of £0.04m (1%)).
- Hired and contracted costs (decrease of £0.28m (9%)).
- Other costs (decrease of £0.03m (4%)).

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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	PROPERTIES																				
1	Household properties connected during the year	000	3	4.154	B2	3.611	B2	4 224	B2	5.461	B2	6.327	B2	7.267	B2						
2	Non-household properties connected during the year	000	3	0.195	B2	0.204	B2	0.26	B2	0.366	B2	0.319	B2	0.349	B2						
B	BILLING																				
3	Households billed unmeasured water	000	3	681.095	A2	688.832	B2	694 934	A2	703.772	A2	717.015	A2	729.388	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						
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						
6	Households billed water	000	3	681.095	A2	688.832	B2	694 934	A2	703.772	A2	717.015	A2	729.388	A2						
7	Household properties (water supply area)	000	3	721.698	A2	729.182	B2	734 976	A2	743.090	A2	755.769	A2	767.888	A2						
8	Non-households billed unmeasured water	000	3	10.896	A2	10.271	A2	9 589	A2	8.861	A2	8.602	A2	8.623	A2						
9	Non-households billed measured water	000	3	69.158	A2	69.567	A2	69 645	A2	69.813	A2	70.150	A2	70.417	A2						
10	Non-households billed water	000	3	80.054	A2	79.838	A2	79 234	A2	78.674	A2	78.751	A2	79.040	A2						
11	Non-household properties (water supply area)	000	3	92.466	A2	92.286	A2	91 541	A2	90.796	A2	90.286	A2	89.806	A2						
12	Void properties	000	3	53.015	A2	52.798	B2	52 350	A2	51.439	A2	50.288	A2	49.266	A2						
C	POPULATION																				
13	Population - households billed unmeasured water	000	2	1,709.66	B2	1,718.73	B2	1,731.65	B2	1,747.72	B2	1,759.07	B2	1,766.56	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						
15	Population - non-households billed unmeasured water	000	2	7.11	B3	6.78	B3	6.49	B3	4.47	B3	4.40	B3	4.44	B3						
16	Population - non-households billed measured water	000	2	102.7	B3	102.28	B3	102.4	B3	98 08	B3	98.11	B3	98.17	B3						
17	Population - total	000	2	1,819.47	B2	1,827.79	B2	1,840.54	B2	1,850 27	B2	1,861.58	B2	1,869.17	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. Blocks are completed by the CSD Services - CS MI & Data (Blocks A & B) and Leakage DMU (Block C) teams.

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).

Definition of 'Billed' Properties

Domestic customers were originally due to be charged for water and sewerage charges from April 2007. However, this was deferred in April 2007 and has not been implemented since. There are no apparent plans for charges to be implemented during 2018/19. NI Water is subsidised for these domestic customers by Department for Regional Development (DRD) (note: DRD is the now Department for Infrastructure DFI)

In April 2008, NI Water extended the charging in the non-domestic sector to include unmeasured non-households in addition to the measured non-household customer base. These charges are based on the NAV of the non-household property, derived from annual information provided by Land and Property Services (LPS).

As per previous AIR submissions, for clarity, where reference is made in Table 7 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).

Classification of Farms

As per Utility Regulator guidelines, farms were reclassified as billed non-households for AIR09 – this has remained for AIR18. This classification remains for AIR 18 and farms are included in the billed non-households. Previously, in AIR08, farms had been classified and reported as 'billed' households on the principle of their status and allocation of 'domestic allowance'.

Data Sources, Data Validation and Data Quality Projects

The primary source of information for the new connections and property data in Table 7 is the customer-billing database, RapidXtra.

Customer/Property information is updated through;

- 'business as usual' customer contacts, such as new connection requests, move in/move outs, or

- through Data Quality initiatives/Projects, and/or
- Metering work streams e.g. UNHH, 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 is legislation which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NIW 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 property counts and classifications continue to be reported monthly from Rapid in the Rapid Property Summary (RPS). The RPS provides us with a snapshot at the end of each month in terms of gross movements; it does not support us in the explanation of net movements within the data.

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.

From the Rapid Property Summary there are deemed to be 652 (gross) 'unmeasured – not charged' properties which (based on sample taken) are mostly NI Water properties. NI Water are currently investigating any 'unmeasured – not charged' properties outside of NI Water ownership to ensure they are classified correctly.

Background

As Table 7 is based on averages, please find summary table below for 'End March 2017' and 'End March 18'. The '1st Dec 2017' are actual numbers used in the Principal Statement and Tariff Setting process.

Property Numbers	March 2017	1st Dec 2017	March 2018	Expected Movement
Unmeasured Water Household	723910	731271	734866	Increase
Unmeasured Water Non-Household	8642	8570	8604	Decrease
Measured Water Non-Household	70286	70546	70547	Increase
Voids	49561	49179	48971	

The variances in our property numbers from AIR17 to AIR18 can be explained by the following:

1. New Connections during the reporting year. The figures are based on the data supplied by our Customer Connections Team and represent completed connections during the reporting year
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 customers 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 of properties as a result of data quality initiatives.
    a. Duplicate properties
    b. Reclassifications of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

In addition to the above, further data quality requirements have been built into the new CBC Contract. They cover all aspects of the property life cycle (creating, amending and demolishing properties) and data degradation will be monitored/measured throughout. These system validations have been split into 4 delivery phases. The functionality for Phases 1-3 have been delivered, with the functionality for the Post Phase 3 data validations due to be delivered within the next database release/upgrade in August 2018. Off-system data cleanse is required before some of the system validation rules can be applied.

No Water/Well Water

No Water / Well Water and demolished properties are not included in the Table 7 property count, however, their exclusion does 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 17/18 the household no water/well water category increased by 11 and the non-household by 503. Throughout 18/19 we will continue to sample check the No Water/Well Water category to ensure properties are truly not connected for water.

The Metering & Billing Project are currently aligning our data with LPS and on some occasions are adding properties that are not connected for water - this project is due to run until 2019.

We are currently reviewing this category to ascertain if it would be worthwhile separating the No Water properties from the Well Water properties.

Site Metered Properties

As part of the ongoing data checks, NIW 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 NIW retain this information for customer record and charging purposes).

There are 1744 domestic properties (an increase of 914 during 17/18) classified as site meters and there will be further investigation and analysis to be completed during 2018/2019 to ensure these are classified correctly. As above, the Metering & Billing project through their alignment with LPS data are adding additional site meter properties to Rapid.

Overall, the number of non-domestic site meters has increased by circa 338 during 2017/18. This has resulted from categorisation movements in year such as measured water to site

meter and unmeasured water to site meter and also the resulting work of Metering & Billing project as detailed above.

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, with some nett minor 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 2017	1st Dec 2017	March 2018
Unmeasured Water Gross Household (L7 year-end sub calc)	762389	769881	773387
Unmeasured Water Occupied Household (L3 year-end sub calc)	723910	731271	734866
Unmeasured Water Voids Household	38479	38610	38521

Household Voids	Voids	Difference (in-year)
March 2017	38521	(+)42
March 2017	38479	(-) 549
March 2016	39028	

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 2017	1st Dec 2017	March 2018
Unmeasured Water Gross Non-Household	15047	14497	14313
Unmeasured Water Occupied Non-Household (L8 year-end sub calc)	8642	8570	8604
Unmeasured Water Voids Non-Household	6405	5927	5709

Measured Non-Household Property Movement

Property Numbers	March 2017	1st Dec 2017	March 2018
Measured Water Gross Non-Household	74963	75188	75288
Measured Water Occupied Non-Household (L9 year-end sub calc)	70286	70546	70547
Measured Water Voids Non-Household	4677	4642	4741

Non Household Voids

Non-Household Voids	Voids	Difference (in-year)
March 2018	10450	(-) 632
March 2017	11082	(-) 906
March 2016	11988	

Annex A details the Line Methodology followed for the figures calculated in Table 7 Lines 1-12.

Confidence Grades

We have kept the confidence grades consistent with those of AIR17. 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 AIR18.

Lines 13 – 17 Population

The population data used by NI Water has been derived from 2016 based Population Projections obtained from NISRA (Northern Ireland Statistics & Research Agency) website at https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/NPP16-coc.xls

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.

The population for unconnected properties has been calculated from two sources:

1. The gross number of unconnected household properties is provided by Customer Services. In AIR14 this figure was reported as the average of the year start and end values of “no water/well water”. In 2014/15 however the figure for “no water/well water” increased from 7,981 to 15,088. NI Water understood that new connections and some other in-year property movements were miscoded as “not supplied”. As a result, NI Water have investigated this issue in 2015/16, 2016/17 and 2017/18, however consider it appropriate for the AIR17 calculation of the total water connected population (Lines 13 - 17) to use the reported 2014/15 figure of 7,981 while the process of updating property miscoding continues.
2. The unconnected occupancy is sourced from the NIHE Housing Condition Survey 2011 (statistical annex – Table 5.6). The NIHE Housing Condition Survey 2016 - Preliminary Report was published in October 2017. However, the report does not have sufficiently updated tables/information to enable a revised unconnected occupancy rate to be derived, therefore the previous figure is used.

http://www.nihe.gov.uk/2011_house_condition_survey_annex_tables__published_october_2012_.pdf

The number of unconnected properties is 7,981 and an occupancy rate is calculated at 0.474 (rounded) to determine a total population for unconnected properties of 3,783. The total supplied population for all connected properties is calculated as 1861.58 (x1000). (Line 17) Non-household population has been calculated by adding the population in communal residence http://www.ninis2.nisra.gov.uk/InteractiveMaps/DataVis/Households2012.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
https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/HHP12_Table4.xls

It should be noted that there was a significant change in the communal population from AIR15 to AIR17 and the average household occupancy rate from 2.45 to 2.53. This is the first publication from NISRA since the 2011 census regarding these figures. The communal population for AIR18 is 24,886 compared to 32,612 as used in AIR15.

The farm population is 30,748 x 2.53 = 77,731. Therefore with the addition of the communal population, the non-household population is 102.62 (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 1766.56 (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 (77,731) has been classed as measured. The communal population (24,498) is split based on 8,623 unmeasured customers (17.85%) and 39,688 measured customers which excludes farms (82.15%). This therefore provides a population for measured NHH of 98.17 (x1000) (Line 16) and an unmeasured NHH population of 4.44 (x1000) (Line 15).

Line 17 is calculated by summing Line 13 + Line 14 + Line 15 + Line 16. This gives a figure of 1869.17 (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

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 18 NC_7616 Water.xlsx

Therefore, the number of new household connections for the year is 7267.

Household properties connected during the year	7267

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 349.

Non-Household properties connected during the year	349

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 AIR18 (dated 31st March 2018) as attached below.

RPS March YE 2018.xlsx

Households Billed Unmeasured Water	End March 2017	End March 2018
Household – Unmeasured	680612	690441
Household - Measured – Not Charged (test meters)	213	176
Household - Measured	42370	43150
Household - Site Meters	698	1082
Unmeasured - Not Charged	17	17
Total	723910	734866
Average (Apr17/Apr18)	**729388**	

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 2017	End March 2018
	0	0
Average Apr 17/Apr18	**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 2017	End March 2018
	0	0
Average (Apr17/Apr18)	**0**	

Line 6: Households Billed Water

Average number of households billed for water within the water supply area.

Calculated by adding AIR18 Table 7 lines 3, 4 and 5

Households Billed Water	Average 17/18
Households billed unmeasured water (Line 3)	729388
Households billed measured water (external meter) (Line 4)	0
Households billed measured water (not external meter) (Line 5)	0
Total	**729388**

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 AIR18 (dated 31st March 2018)

Household Properties (Water Supply Area)	End March 2017	End March 2018
Unmeasured	714297	723615
Measured – Not Charged (Test)	224	182
Measured	47019	47827
Site Meters	830	1744
Unmeasured - Not Charged	19	19
Total	762389	773387
Average (Apr17/Apr18)	**767888**	

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 2017 and End March 2018 non-domestic unmeasured properties.

Non-Households Billed Unmeasured Water	End March 2017	End March 2018
	8642	8604
Average (Apr17/Apr18)	**8623**	

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 2017 and End March 2018 non-domestic measured properties.

Non-Households Billed Measured Water	End March 2017	End March 2018
	70286	70547
Average (Apr17/Apr18)	**70417**	

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. Where many customers are served through one site meter, only the landlord or business park management are considered as the customer, the other business are tenants.

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 AIR18, excluding voids.

The sum of AIR18 Table 7 lines 8 & 9

Non-Households Billed Water	Average 17/18
Non-Households Billed Unmeasured Water (Line 8)	8623
Non-Households Billed Measured Water (Line 9)	70417
Total	**79040**

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 2017	End March 2018
Unmeasured	15047	14313
Measured	74963	75288
Total	90010	89601
Average (Apr17/Apr18)	**89806**	

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 2017	End March 2018
Non-Household – Unmeasured	6405	5709
Non-Household – Measured	4677	4741
Household – Unmeasured	33685	33174
Household - Measured	4649	4677
Household – Measured - Not Charged (Test)	11	6
Household – Site Meters	132	662
Household - Not Charged	2	2
Total	49561	48971
Average	**49266**	

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 8 NON FINANCIAL MEASURES
WATER METERING (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	HOUSEHOLD METER INSTALLATION																				
1	Selective meters - installed	nr	0	3,078	B3	3,030	B3	3,787	B3	5,218	B3	1,395	B3	0	B3						
2	Meter optants installed	nr	0	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	3,078	B3	3,031	B3	3,787	B3	5,218	B3	1,395	B3	0	B3						
4	Meters installed - external meter without boundary box	nr	0	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						
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						
B	NON HOUSEHOLD METER INSTALLATION																				
7	Selective meters - installed	nr	0	692	B2	458	B2	509	B2	473	B2	449	B2	601	B2						
7a	Number of non household meters renewed	nr	0	4,653	B2	6,772	B2	6,044	B2	9,830	B2	9,671	B2	3,156	B2						
8	Meter optants installed	nr	0	45	B2	23	B2	18	B2	20	B2	57	B2	61	B2						
9	Meters installed - external meter with existing or new boundary box	nr	0	638	B2	396	B2	472	B2	469	B2	452	B2	614	B2						
10	Meters installed - external meter without boundary box	nr	0	17	B2	22	B2	37	B2	22	B3	38	B3	37	B3						
11	Meters installed - internal meter	nr	0	82	B2	62	B2	18	B2	2	B2	16	B2	11	B2						
12	No. of meter installation requests outstanding for greater than three months	nr	0	10	B2	8	B2	1	B2	2	B2	6	B2	4	B2						
C	WATER DEMAND AT RECENTLY METERED NON-HOUSEDHOLD PROPERTIES																				
13	Average water billed - selective metered properties	l/prop/d	2	363.53	B3	520.74	B3	449 68	B3	384 09	B3	532.55	B3	580.74	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.

The company never installed meters at existing domestic premises or at the request of domestic customers (including those over 60 years of age) given the deferral of charging by the Northern Ireland Assembly (NIA) in March 2007. The company did not exercise its power to meter domestic properties upon change in occupancy or ownership for the same reasons as stated above. For these reasons the company has entered zero in lines 2, 4, 5 and 6 of section A table 8. Information is however provided in lines 1 and 3.

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 601. New connections accounted for 37 large and 279 small diameter installations, the other 285 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 logged on a local database and channelled through a maintenance process. The MMR's are forwarded to the maintenance contractor who has a maximum of 28 days to complete the replacement or remedial work and return the associated data. The returned data is processed by the MCT and meter exchanges are notified to the individual who requested the job, the CSC (for billing purposes) and the Corporate Asset Register (for asset management reasons). 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 1425 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 272 meters under the PME programme.

An additional 480 meters were replaced through an Engineering and Procurement contract for water mains rehabilitation.

Other teams within NI Water replaced a total of 979 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 3156 meters.

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 61.

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 614.

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 37 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 11.

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 4.

Line 13 – Average Water Billed - Selective Metered Properties

The meters uploaded to Rapid during the previous reporting year (2016/17) are the focus for this line, along with the consumption usage throughout the 2017/18 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 580.74 **l/prop/day,** an increase of 48.19 l/prop/day from AIR17. To demonstrate the range of consumption for AIR17 and AIR18, please see table below:

Consumption Band (m³)	AIR17	AIR18
1-1000	623	564
> 1000	68	70
Total (excl. zeros)	721	634

The embedded document below details the meter industry codes of the meters included in this calculation. This will help to explain/justify the increase in the l/prop/day volume.

AIR17_18
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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	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	23.100	A2	3 654	A2	3.559	A2	15.364	A2	15.322	A2	44 561	A2						
7	Conditioning water supplies to reduce plumbosolvency	Ml/d	3	563 648	A2	562 851	A2	560.429	A2	562.876	A2	571.703	A2	570 584	A2						
8	Reducing the risk from Cryptosporidium	Ml/d	3	0 000	A1	0 000	A1	0.000	A1	0.000	A1	0.000	A1	0 000	A1						
9	Other	Ml/d	3	22 952	A2	0.000	A1	106.441	A2	0.000	A1	0.000	A1	0 000	A1						

Table 9 – Water Quality

Background – Year on Year

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 risen slightly from 99.86% in 2016 to 99.88% in 2017 (figure assessed by NI Water - waiting for confirmation from DWI).
- The Drinking Water OPA (based on turbidity, iron, manganese, faecal coliforms, Total Trihalomethanes (THM) and aluminium at customer tap) decreased from 99.50% in 2015 to 99.13% in 2016, but has upturned to 99.49% in 2017 due largely to a number of THM exceedances in 2016
- The percentage compliance measured at Water Treatment Works (WTWs) increased slightly from 99.89% in 2015 to 99.95% in 2016, but has dropped slightly to 99.93% in 2017.
- The percentage compliance measured at Service Reservoir (SR) increased from 99.93% in 2015 to 99.95% in 2016 and has remained at 99.95% for 2017.

Please note a total re-zoning exercise was carried out for 2009 based on more accurate DMA data. The new 2009 and 2010 Water Supply Zones were not contiguous with the previous zones, and as such were given new codes and names, with the codes reflecting the leakage supply areas, and the names reflecting the supplying WTW / SR and the major conurbation in the zonal area. Following some small WTWs being taken out of service in 2010, some further zones were created for 2011 with new codes and names as before. For 2014 onwards some zonal boundaries were moved to more closely match leakage operational boundaries.

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.

During 2010 - 2015 exceedances of MCPA were detected at Belleek, Seagahan and Carran Hill WTWs. A programme of enhanced monitoring for MCPA has been setup for these sites. Other sites had a similar enhanced monitoring for MCPA in place which has since been lifted.

Site Name	Ml/d Raw Water Deterioration	Comment
Belleek	1.582	Enhanced sampling programme
Carran Hill	5.156	Enhanced sampling programme
Seagahan	9.857	Enhanced sampling programme
Total:	16.596	

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. Enforcement Orders (including "Consideration of Provisional Enforcement Orders", "Provisional Enforcement Orders" and "Regulation Notices") are now the methodology by which NIW is regulated by DWI.

A CPEO for Derg WTW was closed in 2016, being replaced by a PEO due to contravention of the Regulatory Standard for the pesticide MCPA.

A further CPEO for Ballinrees WTW was opened in 2017 for the pesticide MCPA.

Including these 2 sites, the volume for Raw Water deterioration is therefore 44.561 Ml/d.

Line 7 – Conditioning water supplies to reduce Plumbosolvency

NI Water, as required by DWI following discussion with the Health Authorities, has put in place orthophosphoric acid dosing to control plumbosolvency in the distribution system. The average initial dose rate was approximately 1 mg/l following propensity testing. The level of dosing is reviewed annually against compliance with existing and future 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, some of the dose rates for 2017 were reduced with most however remaining at the same levels.

Site Name	Average Dosed Water (ML/d)
Altnahinch	8.877
Ballinrees	29.071
Belleek	1.582
Carmoney	18.363
Carran Hill	5.156
Castor Bay	104.310
Caugh Hill	18.007
Clay Lake	3.308
Derg	15.489
Dorisland	15.856
Drumaroad	89.424
Dungonnell	7.703
Dunore Point	110.978
Fofanny	35.354
Forked Bridge	15.772
Glenhordial	3.859
Killyhevlin	23.961
Killylane	12.180
Lough Bradan	5.303
Lough Fea	10.860
Lough Macrory	10.437
Moyola	14.877
Seagahan	9.857
Total:	570.584

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. These risk assessments are now incorporated into annual revisions of the treatment works and supply systems Drinking Water Safety Plans (DWSP) which are submitted to DWI under regulation 26.

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. The return for this line is therefore 0 Ml/d.

Line 9 – Other

There were no other legal instruments in place during 2016, therefore the return for this line is 0 Ml/d (see appendix).

Confidence Grades

Confidence grades used in returns are based on OFWAT guidance documentation.

Appendix – Lines 6 & 9

Regulatory enforcement	Issue Date	Location	Parameter	Date Closed
PEO/16/01	Issued 30/06/2016	Derg WTW	Contravention of the Regulatory Standard for the pesticide MCPA	

Regulatory enforcement	Issue Date	Location	Parameter	Date Closed
CPEO/17/01	Issued 24/05/2017	Ballinrees WTW	Contravention of the Regulatory Standard for the pesticide MCPA	

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 10 NON FINANCIAL MEASURES
WATER DELIVERED (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**WATER DELIVERED - VOLUMES**																				
1	Billed measured household	Ml/d	2	0 00		0.00		0 00		0.00		0 00		0.00							
2	Billed measured non-household	Ml/d	2	121.44		125.79		120.17		118.03		120 58		122.02							
3	Billed measured	Ml/d	2	121.44		125.79		120.17		118.03		120 58		122.02							
4	Billed unmeasured household	Ml/d	2	297.41		285.52		292 36		294.86		302.76		304.82							
5	Billed unmeasured non-household	Ml/d	2	6 87		6.07		5 82		5.28		5.17		5.14							
6	Billed unmeasured	Ml/d	2	304 28		291.59		298.18		300.14		307 93		309.96							
B	**WATER DELIVERED - COMPONENTS**																				
7	Estimated water delivered per unmeasured non-household	l/prop/d	2	630 51	C4	591.01	B4	606 98	B4	595.87	B4	601 02	B4	596.08	B4						
7a	Estimated water delivered per unmeasured household	l/prop/d	2	436 66	B3	414.50	B3	420.70	B3	418.97	B3	422 25	B3	417.91	B3						
8	Per capita consumption (unmeas'd h'hold - excl s/pipe leakage)	l/h/d	2	149 98	B3	145.53	B3	148.42	B3	148.42	B3	151 89	B3	152.35	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							
10	Underground supply pipe leakage (unmeas'd households)	l/prop/d	2	60 20		51.22		50 87		50.38		49 62		48.92							
11	Underground supply pipe leakage (ext. metered households)	l/prop/d	2	30.10		25.61		25.44		25.19		24 81		24.46							
12	Underground supply pipe leakage (other metered h'holds)	l/prop/d	2	60 20		51.22		50 87		50.38		49 62		48.92							
13	Underground supply pipe leakage (void properties)	l/prop/d	2	60 20		51.22		50 87		50.38		49 62		48.92							
14	Meter under-registration (measured households)	Ml/d	2	0 00		0.00		0 00		0.00		0 00		0.00							
15	Meter under-registration (measured non-households)	Ml/d	2	9 29		9.70		9 21		8.52		8 22		7.81							
16	Distribution system operational use	Ml/d	2	2 36		2.39		2 51		3.05		2 93		3.51							
17	Water taken legally unbilled	Ml/d	2	14.79		15.16		17.10		16.80		16.40		17.57							
18	Water taken illegally unbilled	Ml/d	2	0 51		0.48		0.43		0.38		0 68		0.66							
19	Water taken unbilled	Ml/d	2	15 30		15.64		17 53		17.18		17 08		18.23							
20	Water delivered (potable)	Ml/d	2	441 02		433.02		435 88		435.35		445 59		450.21							
21	Water delivered (non-potable)	Ml/d	2	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							
23	Water delivered (non-standard rates: non-potable)	Ml/d	2	0 00		0.00		0 00		0.00		0 00		0.00							
24	Distribution losses	Ml/d	2	115.44		127.31		126 08		122.08		123 52		122.52							
25	Total leakage	Ml/d	2	161.75	B4	167.21	B3	165 99	B3	161.99	B3	163.43	B3	162.43	B3						
26	Distribution input	Ml/d	2	558 82	B2	562.72	B2	564.47	B2	560.48	B2	572 04	B2	576.24	B2						
27	Bulk supply imports	Ml/d	2	0 00		0.00		0 00		0.00		0 00		0.00							
28	Bulk supply exports	Ml/d	2	0 85		1.09		0 80		0.73		0 34		0.44							
29	Water treated at own works to own customers	Ml/d	2	557 97		561.63		563 67		559.75		571.70		575.80							
30	Overall water balance	CG			B2		A1		A1		A2		B2		B2						
C	**SECURITY OF SUPPLY**																				
31	Security of supply index - company's planned levels of service	nr	0	100		100		100		100		100		100							
32	Not used																				

Table 10 – Non Financial Measures - Water Delivered

Introduction

NI Water continues to follow the methodology as described in Chapter 10 of the Northern Ireland Authority for Utility Regulation (NIAUR) AIR18 Reporting Requirements and Definitions manual March 2018. 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.

As a result of the Sustainable Economic Level of Leakage (SELL) study in PC13 as the method of deriving company leakage targets, NI Water has challenged themselves with the setting of a 12 Ml/d target reduction over the six year period of PC15, namely, 165 Ml/d to 153 Ml/d.

For AIR15, the final reporting year of the PC13 period, NI Water reported a reconciled leakage figure of 165.99 Ml/d which was approximately 1 Ml/d above target and subsequently established a 15/16 target of 3 Ml/d reduction in reconciled leakage to bring the PC15 programme back to profile. For AIR17, NI Water reported a reconciled leakage figure of 163.43 Ml/d.

For AIR18, the pre-MLE bottom up leakage figure of 160.09 Ml/d equated to a decrease of 0.84 Ml/d from AIR17. For AIR18, a household night use update was implemented which resulted in a reduction of BU leakage of 3.48 Ml/d. It is proposed that this parameter is calculated at the end of each reporting year and applied retrospectively. It is considered that the update of this parameter on an annual basis reflects a more accurate reported leakage calculation.

In summary, the outputs of this water balance are that the Integrated Flow Method of leakage assessment has given a figure of 173.37 Ml/d for total leakage and the Minimum Night Flow Method has provided a figure of 160.09 Ml/d. When the resulting imbalance between the two methods of 13.28 Ml/d is compared to the Distribution Input figure of 577.62 Ml/d (pre-MLE), it provides a percentage discrepancy of 2.30%. 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 162.42 Ml/d. This figure is approximately 3.4 Ml/d behind the PC15 profiled leakage target of 159.00 Ml/d.

Demand Analysis

During the 2017/18 reporting year there has been an increase in the distribution input of 0.8% from a pre-MLE value of 573.23 Ml/d in AIR17 to 577.62 Ml/d in AIR18.

The graph in Fig 1 below illustrates the monthly distribution input in AIR16, AIR17 & AIR18 and highlights a marked month on month increase in demand profile compared to the benign AIR16 DI. On comparison, the year-to-date DI average for AIR18 was less than AIR17 until mid-December 2017 when an outbreak of leakage was experienced from which recovery was challenging and prolonged and further compounded by an early March 2018 event.

Fig. 2 shows AIR18 having a similar profile to AIR17 in regards to sunshine observations however, recorded rainfall was 30% greater than in AIR17. In the main, the rainfall was comparable for Q1 through to Q3 however, Q4 in AIR18 experienced a 73% increase in precipitation than the previous year’s Q4.

This, when observed with the prolonged negative weekly average ground temperature (fig. 3) from early November 2017 correlate to the initial DI increases in November followed by reported leakage increases in December.

Although greater detection resources were maintained in order to recover from the previous year's reconciled leakage increase, NRR analysis for 2017/18 indicates that NRR has been the highest since the 2010/11 winter freeze/thaw event for Q3 & Q4. This has challenged the leakage resource and management and has affected NI Water's ability to reduce leakage to pre-AIR17 levels.

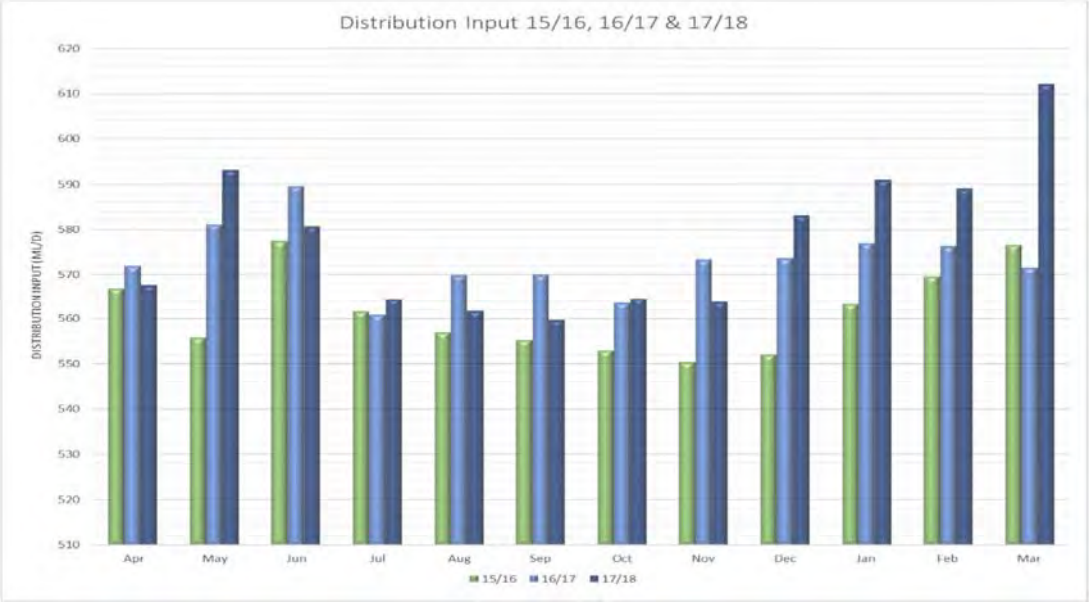


Fig 1

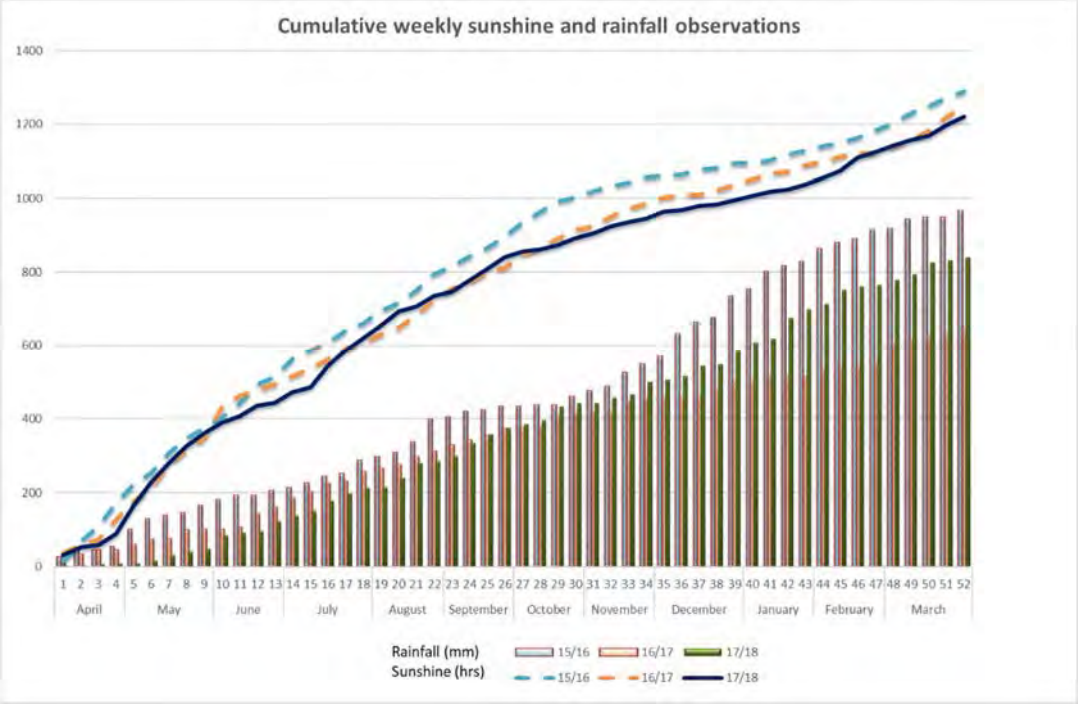


Fig 2

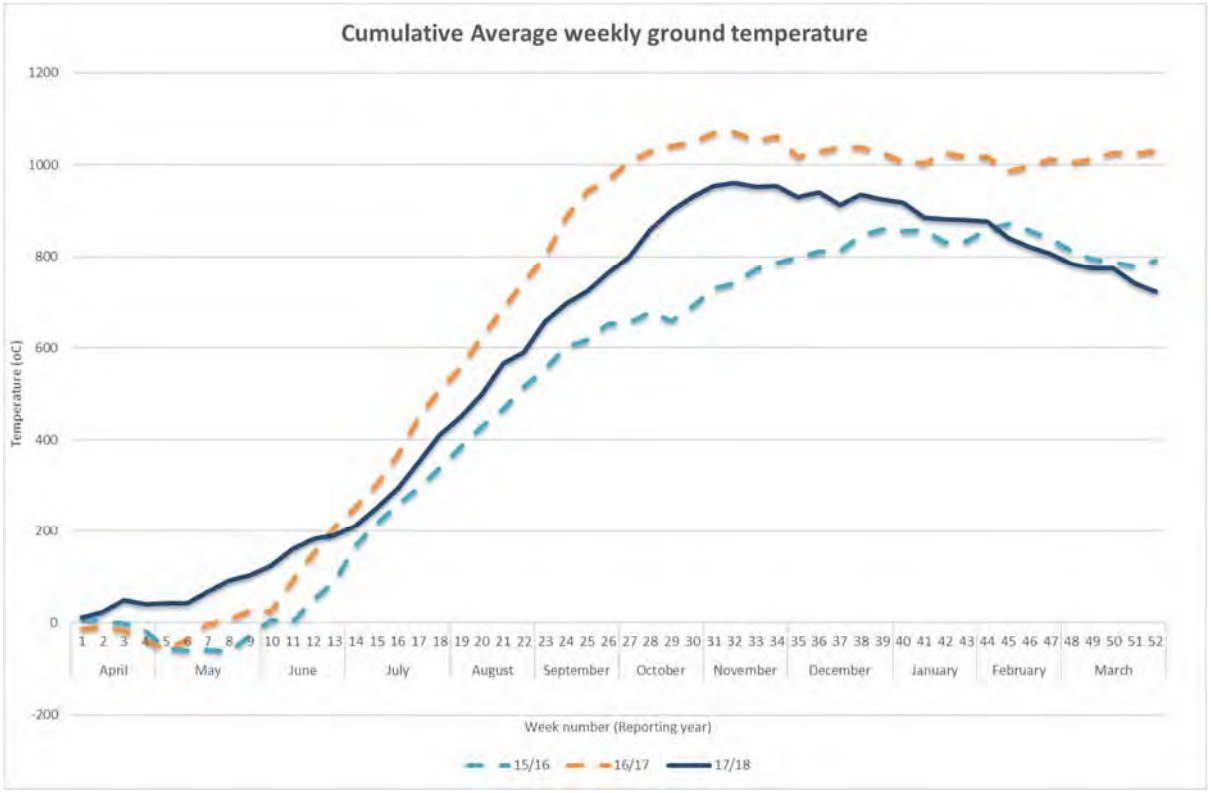


Fig 3

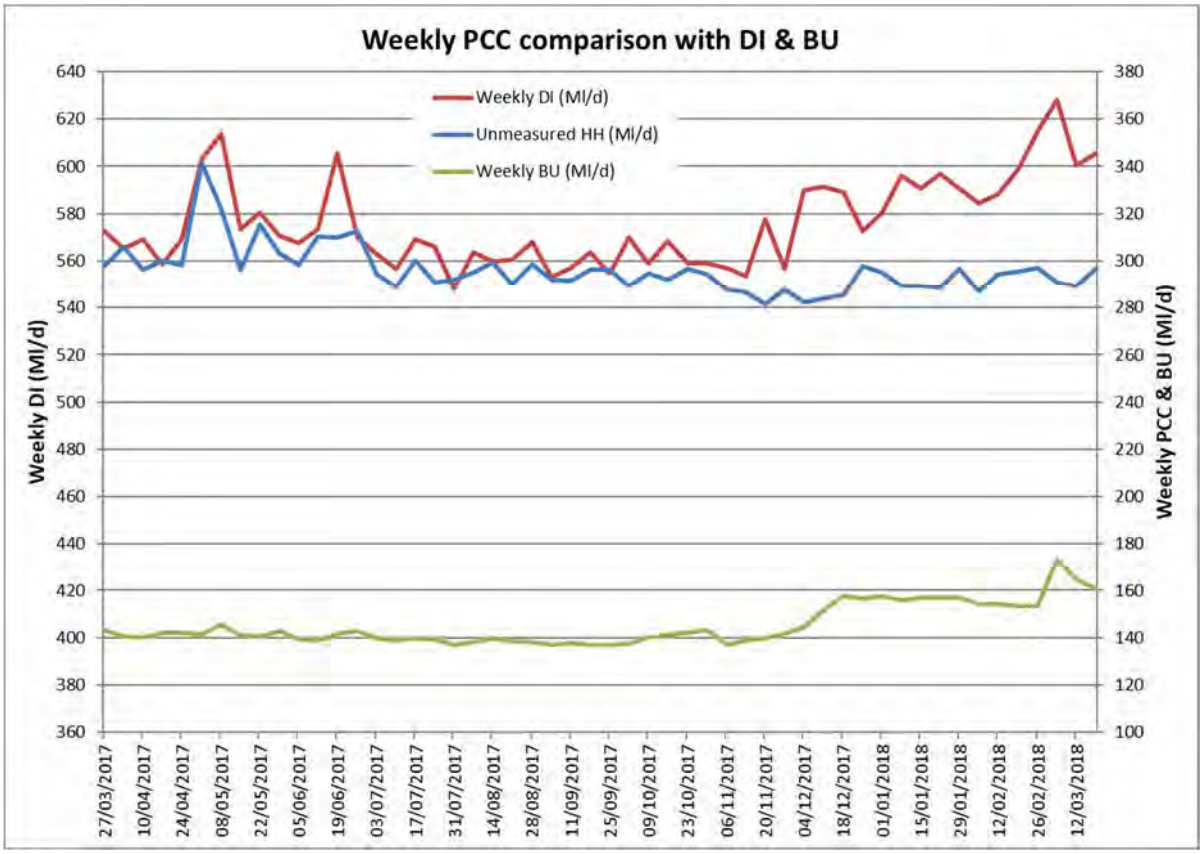


Fig 4

Data Quality

NI Water has remained committed to improve data quality throughout the PC10 and PC13 periods and will continue this commitment throughout PC15.

With Netbase embedded as NI Water's leakage reporting tool, the UKWIR 20th Percentile calculation of Bottom Up leakage remains as reported in AIR17 commentary and in keeping with the Reporter's recommendations the Bottom Up error estimation is 10%.

As reported in AIR17, DMA operability decreased from 78% in AIR15 to 73% in AIR16 which was impacted by a continuing telemetry outstation upgrade project and the Netbase update regarding continuously logged users.

NI Water was focussed on recovering operability to prior year levels and reports a DMA operability value of 75% for March 2018. NI Water is focussed on the continued improvement of operability however continues to be impacted by infrastructure upgrades, improvements and recent winter events.

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.

In AIR15, NI Water completed the assessment of trunk main and service reservoir leakage based on flow meter balances, finding that 50% of the trunk main flow balance calculated leakage occurred within 10% of the trunk main flow balance audits. Although NI Water accepts that there may be leakage within these audits, the company is undertaking a number of proactive steps to identify and resolve issues.

NI Water considers 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.

NI Water is partnered with other E&W water companies regarding a continued project facilitated by WRc for determining uncertainties on large diameter upstream meters.

Gross Measured Consumption

As part of the annual tariff submission to the Utility Regulator, NI Water is required to submit the Principle 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 Principle Statement and for these volumes to reconcile to within 1%.

Similar to previous years, reconciliation of both the Gross Measured Consumption Report and Principle Statement has closed to 0%.

HDF

In preparation for the PC15 submission, NI Water commissioned an SELL assessment to determine company leakage targets for submission years AIR16 to AIR21. As part of this review, HDF was assessed based on 2012/13 data and, as a result, it was deemed appropriate to update the HDF for AIR14 to 23.2.

As part of continuing data enhancements, NI Water have commenced work on the development of a pressure model utilising Netbase, the comprehensive pressure managed area study (2500+ PMAs) and permanent pressure monitoring points (1500+ pressure points). This model will allow NI Water to calculate HDF on a more regular basis and it is envisaged that the reported HDF will be introduced during the PC15 period.
An interim HDF value will be calculated as part of the current SELL.

Meter Under Registration

It should be noted that the NIAUR has determined that, during the PC15 period, the non-household meter under registration (NHH MUR) figure shall reduce from 8.33%, which was derived for AIR10 by WRc utilising the NI Water meter age profile and meter sample tests, to 5.5% which is understood to be the current NHH MUR average for E&W companies.

This reduction in NHH MUR is planned to be implemented linearly over the six years of the PC15 period, however it is proposed that a company specific MUR study will be commissioned during PC15.

NI Water has acknowledged a risk to the water balance calculation in applying an unsubstantiated MUR figure which is moving the company away from the excellent work undertaken over recent years in terms of developing company specific data.
For AIR17, NHH MUR has been updated to 6.92%.

NI Water initiated both a non-household consumption MUR study and PCC monitor MUR study during AIR17.

Leakage Capital Investment

The PC15 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 upgrade of DMA meters from GSM logger technology to telemetry status remains a priority project thus providing access to continuous data to assist leakage management, NI Water and the customer. At present 90% of all DMA sites are now monitored directly through telemetry with the remaining returning data via GSM loggers. This work is proposed to continue in the PC15 period. This has increased data availability and quality to enhance leakage monitoring, targeting and reporting as well as being available during major incidents.

During 2017/18 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 31 PRV replacements and 22 new PRV installations during the year.

DMA optimisation continues to play an important role within the success of the function. In 2017/18 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 regards to High Volume DMA studies, DMA optimisation and data quality improvements has resulted in excess of 190 infrastructure improvement schemes being identified and installed as part of the overall capital improvement programme.

For reference, the table below states the variables/parameters which may impact upon the variance in individual water balance component calculations.

	AIR17	AIR18
HDF (hrs)	23.2	23.2
UNHH consumption (m3/yr)	190.60	191.54
PCC MUR (%)	7.39	7.39
HH occupancy (nr)	2.53	2.53
NHH MUR (%)	7.39	6.92
SPL (Ml/d)	39.91	39.91
HH night use allowance (l/p/hr)	2.42	2.64
NHH night use allowance (l/p/hr)	Dynamic (19.81)	Dynamic (20.22)
Per Capita Consumption (l/hd/d)	136.70	136.62

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 120.59 Ml/d in AIR17 to 122.02 Ml/d in AIR18.

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 Principle Statement calculations closing within the recommended 1%.

For AIR18, the variance between GMCR and the Principle Statement has been calculated and closes to 0%. The GMCR is used to derive the billed measured non-household consumption as stated in Table 10 Line 2.

Similar to AIR17, 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.

A non-household meter under-registration (MUR) value of 6.92% has been added to billed measured non-household use. It should be noted that the NIAUR has determined that, during the PC15 period, the non-household meter under registration (NHH MUR) figure shall reduce from 8.33%, which was derived for AIR10 by WRc utilising the NI Water meter age profile and meter sample tests, to 5.5% which is understood to be the current NHH MUR average for E&W companies.

This reduction in NHH MUR is planned to be implemented linearly over the six years of the PC15 period, however it is proposed that a company specific MUR study will be commissioned during PC15. NI Water initiated non-household consumption MUR study during AIR17. It is expected that this project should conclude during AIR19.

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 AIR18 is 304.42 Ml/d. This figure represents an increase from the AIR17 value of 302.87 Ml/d.

The net effect of an increased population combined with a slight decrease in calculated PCC has resulted in a similar reported figure to AIR17.

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) 2016. Adjustments are made to this household population figure to account for:

- Non-Household Population – Sourced from the most recent NISRA 2016 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 2017/18 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 7.39% has been applied to this total volume. This percentage was assessed by WRc for AIR10 and is specific to NI Water's domestic consumption monitor meters and has remained constant. NI Water initiated PCC monitor MUR study during AIR17. It is expected that this project should conclude during AIR19.

During the reporting year work has continued to maintain the reliability of this value:

- A comprehensive door to door survey of approximately 30% of the Domestic Consumption Monitor Areas (21% of total PCC properties). The data from the 2017/18 surveys has been input into the AIR18 consumption monitor assessment. The overall occupancy rate is 2.39 for AIR18 and is unchanged from the AIR17 occupancy rate. The NISRA occupancy rate for Northern Ireland is 2.53 for 2017/18.
- A figure of 1.5% continues to be applied to allow for the 'Hawthorne Effect' and is consistent with previous AIR submissions.

- Use of company specific MUR value as determined by WRc.

The confidence limit of 10% on this component has not been changed and is considered to be appropriate.

A sensitivity analysis of the billed unmeasured household calculation in relation to the NISRA published household occupancy rates concluded that the impact of published occupancy rate was not significant.

Line 5 – Billed Unmeasured Non-Household

The reported value for Billed Unmeasured Non-Household for AIR18 is 5.14 Ml/d. The value reported in AIR17 was 5.01 Ml/d. NI Water has continued with a programme of meter installation of unmeasured non-household properties.

The assessed unmeasured non-household figure for AIR18 is 191.54 m^3/prop/yr, which is an increase compared to a figure of 190.60 m^3/prop/yr for AIR17.

As these unmeasured non-households have an allowance that has been estimated from metered non-households then underground supply pipe leakage has not been included in this figure. A non-household company specific MUR value of 6.92% was applied for AIR18.

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.

Lines 7 to 30 – Water Delivered Components

Line 7 – Estimated Water Delivered Per Unmeasured Non–Household

The post MLE figure for estimated water delivered per unmeasured non-household for AIR18 is 596.08 l/prop/d. The figure reported for AIR17 was 600.58 l/prop/d.

The allowance for unmeasured non-household properties for AIR18 is 191.54 m^3/prop/yr. The calculated figure for AIR17 was 190.60 m^3/prop/yr.

Line 7a – Estimated Water Delivered Per Unmeasured Household

The post MLE figure for estimated water delivered per unmeasured household for AIR18 is 417.91 l/prop/d. The figure reported for AIR17 was 412.28 l/prop/d.

Line 8 – Per Capita Consumption (Unmeasured Household – Excluding Supply Pipe Leakage)

The post MLE PCC figure for AIR18 is 152.35 l/hd/d. The figure reported for AIR17 was 151.92 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 136.64 l/hd/d. This assessment is based on 12 months consumption data from 1 April 2017 to 31 March 2018. This compares to a figure of 136.70 l/hd/d for AIR17.

A company specific MUR value of 7.39% has been used for unmeasured PCC. This figure has been provided by WRc as a result of a project commissioned by NI Water and is specific to NI Water's domestic consumption monitor meters.

A company specific domestic consumption monitor MUR study has been initiated and it is expected that this study should be completed by the end of the AIR19 reporting period.

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 PC13, 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. This accounts for approximately 24% 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 2012/13 company data.

As SPL has remained constant at 39.91 Ml/d throughout the PC15 period, it is required to adjust the 'per property' assessed underground supply pipe unit values on an annual basis due to increasing property numbers.

Therefore, the assessed SPL unit values of 52.49 & 26.25 l/prop/d, for unmeasured and measured properties respectively, require adjustment as they have been calculated using 2012/13 base year data resulting in a total SPL of 39.91 Ml/d.

The SPL assessment will remain unchanged for the duration of the PC15 period as agreed with NIAUR, therefore the adjusted AIR18 unit values are 48.92 l/prop/d for unmeasured, other households and void properties, with a value of 24.46 l/prop/d being calculated for externally measured non-households.

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.

The SPL calculation for NI Water is detailed in the NI Water Assessment of Leakage from Customer Supply Pipes (carried out by RPS) and has be reassessed in parallel with the AIR17 commissioned SELL study.

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 AIR18 leak notices increased by 20% from the previous year.

Lines 14 to 15 – Meter Under-Registration

It should be noted that the NIAUR has determined that, during the PC15 period, the non-household meter under registration (NHH MUR) figure shall reduce from 8.33%, which was derived for AIR10 by WRc utilising the NI Water meter age profile and meter sample tests, to 5.5% which is understood to be the current NHH MUR average for E&W companies.

This reduction in NHH MUR is proposed to be implemented linearly over the six years of the PC15 period. NI Water initiated both a non-household consumption MUR study and PCC monitor MUR study during AIR17. It is expected that this project should conclude during AIR19.

NI Water has acknowledged a risk to the water balance calculation in applying an unsubstantiated MUR figure which is moving the company away from the excellent work undertaken over recent years in terms of developing company specific data.

For AIR17, NHH MUR has reduced to 6.92%. Furthermore the MUR value applied to the unmeasured household consumption remains at 7.39%.

Line 16 – Distribution System Operational Use

The reported value of Distribution System Operational Use (DSOU) for AIR18 is 3.51 Ml/d. The value reported for AIR17 was 2.93 Ml/d. This calculation is consistent with the AIR16 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 18.23 Ml/d in AIR18 is an increase from the value of 17.09 Ml/d in AIR17.

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 AIR17 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 AIR17 with the addition of the ‘NHH property review project’ category which estimates the consumption currently not captured as billed measured non-household but the likely consumption billed after surveying is completed.

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 AIR18 are estimated to be 122.52 Ml/d. This is a decrease on the AIR17 figure of 123.53 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 AIR18 is 162.43 Ml/d. The reported figure for AIR17 was 163.43 Ml/d.

Total leakage is also calculated using an MNF methodology. For AIR18 the reported pre MLE MNF method leakage is 160.49 Ml/d. The figure reported for AIR17 was 161.33 Ml/d and equates to a decrease in BU leakage of 0.84 Ml/d.

NI Water has an extensive DMA network (approx. 1090 DMAs) covering 98% of all properties in Northern Ireland. Approximately 90% of these DMAs are now monitored with electromagnetic meters with a direct link to the company telemetry system. The remaining DMAs are monitored through mechanical meters using GSM flow loggers. Whilst GSM loggers have an automatic link to the company's telemetry system they do not have the facility to provide real-time data but provide a 24 hour daily download.

DMA minimum night flow (MNF) continues to be determined using a 20th percentile method. Minimum night flows are recorded on a daily basis. The company specific night use allowance for households has been updated from 2.42 l/prop/hr to 2.64 l/prop/hr. It is proposed to review the household night use figure on an annual basis and applied retrospectively to the reported leakage calculation. The methodology to derive the household night use figure has not changed.

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 AIR18 is approximately 20 l/prop/hr.
It is proposed to review the non-household night use assessment through the initiation of a representative consumption logging programme during AIR19. This will be consistent with current industry best practice.

According to the guidance provided the reporting requirements for this line calculates total leakage by adding Distribution Losses (line 24) to the various calculated SPL components for MHH, UHH, MNHH, UNHH & voids. The SPL figure was reassessed for the PC13 period as 39.91 Ml/d. It was proposed that SPL would be reassessed during the PC15 period and as part of an SELL study. The reported SPL using 2015/16 base data is 43.64 Ml/d.

As agreed with NIAUR for the inclusion of stable data during a PC reporting period, total customer SPL remains at 39.91 Ml/d, however 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 20% since the last SPL review utilising 2012/13 base data.

Similarly, 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 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.

Further work is required to refine NI Water's estimate and methodology particularly in relation to meter uncertainty. NI Water have engaged with other England & Wales water companies along with Scottish Water with a view of undertaking a joint research project into large diameter meter uncertainties in conjunction with WRc.

In addition, NI Water will review the recently published UKWIR report "Leakage Upstream of District Meters", and will assess trunk main and service reservoir leakage with a view to meet best practice.

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.

Line 26 – Distribution Input

The distribution input figure for AIR18 has been calculated as a post MLE figure of 576.24 Ml/d. The distribution figure for AIR17 was 572.02 ML/d.

The company specific confidence interval for distribution input for AIR17 remains at 2.1% and is unchanged from AIR17.

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	29.53	29.48
Castor Bay	117.95	117.74
Dunore Point	110.00	109.81
Moyola	14.94	14.91
Total	**272.42**	**271.94**

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 74 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 0.44 Ml/d and includes an MUR adjustment of 6.92%.

Line 29 – Water Treated At Own Works to Own Customers

With the exception of the 74 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 576.24 Ml/d and deducting the cross border exports the volume of water treated at NI Water's own works to its own customers is 575.80 Ml/d.

Overall Water Balance

AIR18 - 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	120.70	10%	145.67	10.0%	1.33	122.02
Billed Unmeasured HH	296.79	10%	880.81	60.5%	8.04	304.82
Billed Unmeasured NHH	5.13	15%	0.59	0.0%	0.01	5.14
SPL	39.91					39.91
DSOU	3.50	25%	0.77	0.1%	0.01	3.51
Water Taken Unbilled	18.04	25%	20.35	1.4%	0.19	18.23
Sum of components	564.34					576.25
Distr bution Input	577.62	2%	151.37	10.4%	1.38	576.24
Top Down Leakage	**173.37**					
BU Leakage	**160.09**	10%	256.28	17.6%	2.34	**162.43**
Imbalance (mld)	**13.28**			100.0%		
% Imbalance	**2.30%**					**453.73**

Table 1: Water Balance

The Water Balance produces an overall imbalance of 13.28 Ml/d, (2.30%). The imbalance reported for AIR17 was 11.62 Ml/d, (2.03%).

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 2018, the confidence grade applied to the NI Water's water balance for AIR18 is B2. The confidence level for the overall water balance for AIR17 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, NIAUR use 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 AIR18.
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 B3 confidence grade.

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. An error estimate of 10% has been applied to this component in the MLE calculations.

Line 25 - Total Leakage has a confidence grade of B3 for AIR18 and is consistent with AIR17.

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 NIAUR the Overall Water Balance had a confidence grade of B2 in AIR18.

It is considered appropriate that the confidence grade for AIR18 is B2, as the water balance components reconcile with measured distribution input to greater than 2% and less than 5%. Similar to AIR17, 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.
This is a similar confidence grade to AIR17 with the imbalance marginally above the 2% threshold, at 2.30%, which required this confidence grade to be reported as a B2.

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 - Security of Supply

Security of Supply is discussed in Table 10a.

Addendum to Table 10
Achieving Leakage Target by AIR21

The Company met with the Reporter on Wednesday 13th June 2018 to discuss the AIR18 Leakage return, during which it was asked to provide further commentary on what the Company was doing to achieve the PC15 leakage target of 153 Ml/d by 31st March 2021 (AIR21), on the basis that the AIR18 outcome was reported as 162.43 Ml/d.

The Company agreed to provide such in the form of this Addendum to the AIR18 paperwork as follows, which is a summary of the more detailed discussion with the Reporter.

Restated AIR18 out-turn

Given previous and in-year performance, and having initially reported the AIR18 draft leakage figure of 165.35 Ml/d, the Company has been reviewing the various components of the Water Balance to ensure that each provided an updated value.

As mentioned to the Reporter, one of these was the Household Night Use (HHNU) figure, a company specific figure calculated at 2.42 l/prop/hr in PC13, which has been reassessed at 2.64 l/prop/hr during the SELL 2016 study utilising the same methodology.

The impact of applying this parameter is very significant and when applied to the reconciled leakage it would reduce the AIR18 leakage figure to 162.43 Ml/d. We believe that this should be applied as it is a company specific figure and is consistent with best practice.

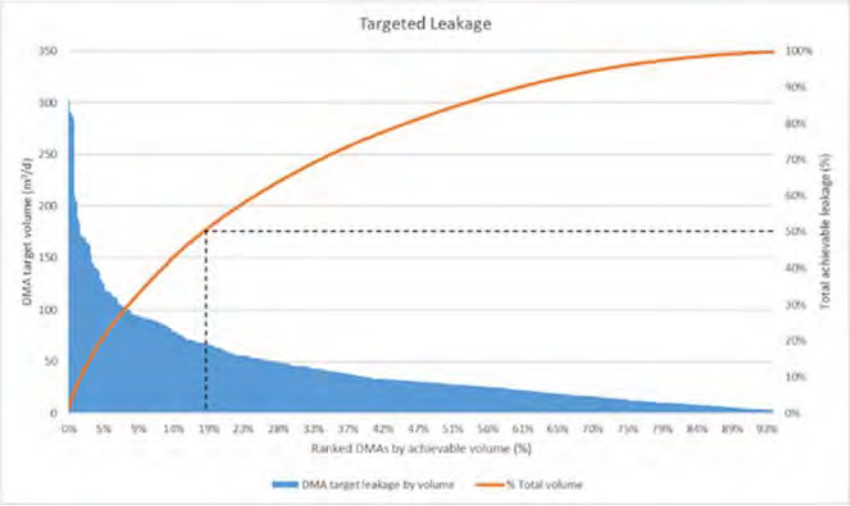
Leakage Workshops/Meetings

Quarterly workshops comprising key members of staff (including the Director of Customer Service Delivery) have been held since Summer 2016, the most recent of which (8th workshop) took place on 21st June 2018.

The purpose of this workshop is to consider current leakage performance, trends and initiatives, and to provide strategic direction and focus to the leakage teams with a view to achieving leakage targets.

Additional Targeted Reporting

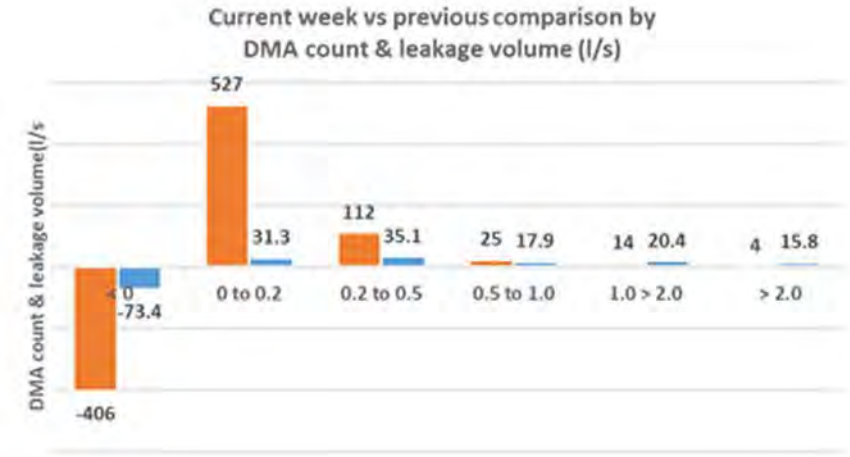
There has been significant and further progress in the development of targeted reports. One such report was presented to the Reporter which identifies the changes in leakage for the top 10 DMAs in the week, month and against Minimum Achieved Leakage (MAL). The reporting developments provide opportunity for focussed leakage detection and better toolset for leakage detection teams.



NRR

NRR in AIR17 and AIR18 has been calculated at values above the SELL planning NRR and correlates directly with the reactive nature of leakage detection experienced over the last two years.

Although NRR has increased, it should be noted that defect flow rates have reduced which in turn impacts the strategy of leakage targeting (greater number of smaller leaks).
Typically, weekly leakage increases are the summation of small increases experienced across a large number of DMAs.



Analysis of reactive DMAs in conjunction with the number and type of defects, calculated NRR, man-hrs spent, leakage levels, AZNP, topography, etc. has resulted in a pilot number of DMAs undergoing extensive investment in multiple pressure management installations. Post-analysis of these pilot schemes has resulted in the DMAs becoming more stable and minimising leakage intervention.

This analysis has been extended out to other DMAs and we will be reviewing and prioritising appropriate investment.

Pressure Management

Pressure management analysis and intervention is focused on reducing reactive leakage increases therefore concentrating NI Water's leakage resource to proactively reduce leakage.

Existing pressure reduced and pumping PMAs are being analysed and optimised for leakage and HDF.

Innovation & Technology

Drones are being trialled both internally and by contractor to determine the effectiveness of locating leakage within DMAs of varying characteristics.

The deployment of noise loggers has been trialled at a pilot level over the last year and as a tool to assist in the follow up of DMA step tests. Initial analysis has been positive and proved successful. The procurement and deployment strategy of noise loggers within the network are under consideration.

Analysis of leakage outbreaks vs temperature shows a direct correlation with the rate of change of ground temperature. NI Water's flow and pressure logger supplier have recently added a temperature logging functionality.

We will be looking, with others within UK Water Industry, to see how the further use of technology can support leakage detection techniques.

Customer Supply Pipe Leakage (CSPL)

The AIR18 commentary highlighted the increasing number of leaks on customer supply pipes and leak notices issued to advise customers. A recent SELL study has determined that CSPL has increased from the currently reported 39.91 Ml/d to 43.64 Ml/d.

The Company is currently commencing a review of the approach of other water utilities to customer supply pipe repair policy, such as the provision of a discretionary service for free or assisted pipe repair following an assessment of the property.

The feasibility of this approach is being considered to determine the implications of adopting a revised policy in terms of costs, resource requirements, responsibility, etc. for the Company and the potential benefits for leakage.

HDF

A programme of works has commenced to calculate a fully dynamic HDF value. Incorporated within this programme are parallel studies to review pressure reducing and pump regimes in order to refine HDF values and to determine bespoke N1 infrastructure values.

Smart Metering

NI Water are currently deploying a number of Smart meters on to their billed customers. Suppliers are being consulted as to the frequency and method of data return. Smart metered data will be utilised within the leakage calculation to refine the NHHNU model in near real-time, for seasonal analysis and customer side leakage awareness.

MUR

As noted in the main commentary, NIAUR has determined that, during the PC15 period, the non-household meter under registration (NHH MUR) figure shall reduce from 8.33% to 5.5% which is understood to be the current NHH MUR average for E&W companies.

NI Water have commissioned WRc to review NHH MUR and PCC MUR which is due to complete for AIR19.

It is considered appropriate to apply bespoke NI Water MUR values when available rather than a notional E&W average.

Mains Rehabilitation

Analysis of bursts and mains cohorts indicates that there is a prevalence of bursts on PVC mains (42%) and on mains greater than 50 years of age (25% of mains stock). With this analysis, it is proposed that network models and rehabilitation scheme generation are appropriately influenced.

Resources

NI Water has increased its leakage detection resource as well as putting in place a new detection contract from March 2018. In addition to maintaining the current levels of inhouse leakage detection teams, we have increased our investment in external leakage detection, which totalled nearly £2.0m. It is our intention to continue with this level of investment in 2018/19.

This is an increase in expenditure of approximately £0.8m from 2016/17.

Dynamic factors

NI Water has remained committed to improve data quality throughout the Price Control periods and will continue this commitment throughout PC15 and beyond. NI Water's aspiration is to develop a fully dynamic suite of water balance parameters which continue to align with best practice guidance and consistency reporting.

Distribution Input

Over the last 15 years, DI has decreased by 19% from 714 Ml/d to 576 Ml/d.

A meter study in 2010 determined that meter uncertainty was 2.13% however, a proprietary investigation regarding the review of meter uncertainty indicates that a number of DI meters are now inappropriately sized. Since the 2010 study, DI has decreased by 9% and DI meter sizes have not changed for over 15 years.

As DI is a fundamental component of the water balance calculation, it is deemed appropriate to investigate and install adequately sized metering.

In addition, NI Water will continue in its partnership with other E&W companies through commissioned WRc projects determining meter uncertainty of large diameter upstream meters.

It is considered that resizing DI meters will reduce the calculated Distribution Input figure and therefore leakage.

Property Numbers

Property numbers are a fundamental component of the leakage calculation and both Leakage DMU and CS Data teams have been working closely with external providers of property data (such as Land & Property Services – LPS) to reconcile datasets and compare property numbers, property type and occupancy status on a DMA by DMA basis.

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	55.08	50.00	0.00	75.28	74.61	29.80	4.73	25.07	31.33	257.123	0.00	0.000	
West	86.44	0.00	0.00	63.62	63.05	22.82	4.89	17.93	26.17	166.953	0.00	0.000	
Central	11.86	19.00	0.00	26.05	25.81	4.81	1.98	2.83	10.10	73.261	0.00	0.000	
East	146.51	207.00	0.00	259.82	257.51	93.69	19.47	74.22	26.57	943.826	0.00	0.000	
South	70.17	127.00	0.00	158.05	156.64	39.11	13.00	26.11	15.27	428.007	0.00	0.000	
Total	**370.05**	**403.00**	**0.00**	**582.82**	**577.62**					**1869.170**		**0.000**	**100.000**

Table 10a (i) – Non Financial Measures - Security of Supply Index – Planned level of service

NI Water published its Water Resource Management Plan (WRMP) in 2012 which covers the period 2010-2035. The Security of Supply Index (SoSI) calculated for AIR18 is based on Ofwat's letter RD 03/02, and is formulated from the information presented in the WRMP.

The WRMP has adopted the latest methodology for producing water resource management plans. There has been no change in the reported SOSI from AIR17. For 2017/18 the SoSI remains 100. This is mainly due to the following reasons:

The Water Available for Use has risen slightly due the additional capacity from the River Strule Abstraction (11.6Ml/d) in the West WRZ. The Distribution Input (DI) has increased slightly from last year. In 2016/17 the total average DI was 573.23 Ml/day, this has risen by 0.77% to 577.62 in 2017/18, and this is based on the Post Maximum Likelihood Estimation (MLE) figure.

There are also a number of other factors that influence the AIR18 SoSI calculation. These include:

- There is a significant interaction between South and East water resource zones (WRZs). The WRMP indicates it is likely that circa 20Ml/d from Castor Bay is actually used within the East WRZ. This reallocation of Water Available for Use (WAFU) between East and South is believed to be a more accurate reflection of the actual situation on the ground.
- The Water Available for Use (WAFU) across Northern Ireland has risen slightly from 358.68Ml/d in 2016/17 to in 370.05Ml/d in 2017/18. This is mainly due to the additional capacity from the River Strule Abstraction (11.6Ml/d) in the West WRZ brought online in 2017/18.
- Outage allowance for NI Water WTWs remains at 2% as indicated in the WRMP for the period 2010-2035.
- For this calculation, it has been assumed that the bulk imports from the PPP WTWs are available at the contracted volumes as set out in the WRMP.

The total population figure used within the SoSI calculation has been confirmed to correspond with the population figure used in AIR 18 Table 7.

As part of the Reporters Recommendations for AIR18 he stated that *'Recommend as part of the WMRP update the Company continues to investigate if data exists to further refine the normal year uplift.'*

NI Water has completed the Draft 2017 Water Resource and Supply Resilience Plan (WR&SRP), which is currently awaiting ministerial sign-off. Some of 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 2018, 2017/18 is deemed as a "Warm & Wet" year as can be seen in Figure 1 below. The monthly demand weather model was populated with the outputs for 2017/18 and this estimates the average DI would be 0.9% higher in a dry year (like 1995/96) than in 2017/18. This was calculated as the DI was 0.8% higher in 2017/18 than would be expected in NYAA. Therefore the Dry Year Uplift Factor then would be 1.7% (Difference in DYAA TO NYAA) – 0.8% (Difference in 2017/18 to NYAA) which equates to 0.9% (1.7-0.8=0.9). Thus, an uplift factor of 1.009 has been used in the SoSI 18 calculation.

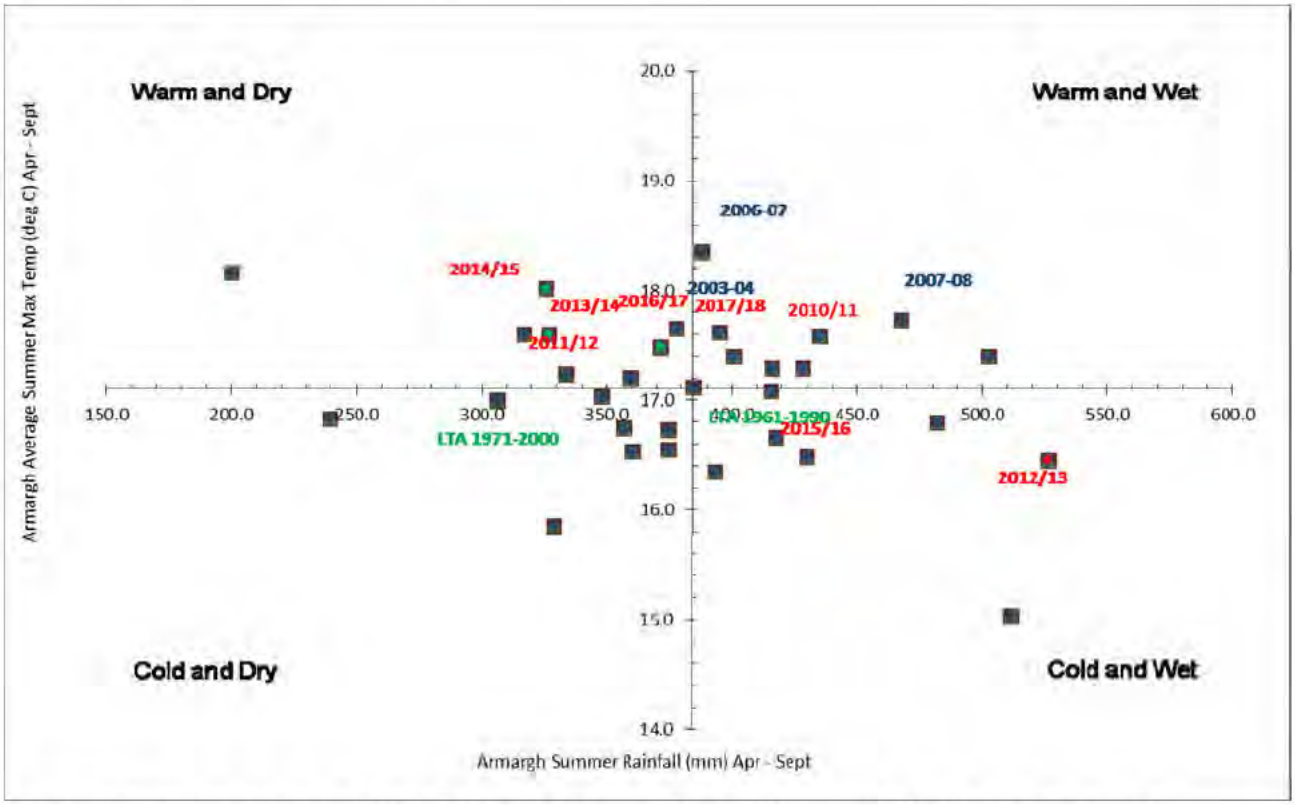


Figure 1 – Historical rainfall & Temperature Data Summer (April-September)

The calculation for AIR18 is believed to be an accurate reflection of the current NI Water SoSI based on the 2012 WRMP.

As previously described, NI Water has completed the 2017 Water Resource and Supply Resilience Plan (WR&SRP), which is currently awaiting ministerial sign-off. A SoSI figure based on the draft outputs on this latest plan has been calculated and the estimated figure

is 100. There have been changes to a number of the inputs in the calculation, based on the Draft 2017 WR&SR Plan, these are detailed below:

1. The 2017 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 increased from the 2012 plan by 12.08Ml/d to 773.77Ml/d and changes detailed below.
    a. Table 1 on page 4, shows the comparison of the 2017 WR&SR Plan Baseline DO estimates with the results from the WRMP 2012. Overall, the total DO for Northern Ireland appears to have had little change from the previous assessment. The WR&SR Plan Baseline DO estimate (using DYAA LoS) for Northern Ireland has been calculated as 814.5 Ml/d, which is around a 25 Ml/d increase from the 789.2 Ml/d overall DO from the previous plan assessment. In order to facilitate the comparison between the two assessments, the WRZs have been based on the WRMP 2012 WRZ boundaries. Therefore, the South, East and North East WRZs DO estimates have been combined to compare to the WRMP 2012 East and South WRZ DO estimates. The DO results from West WRZ and South West WRZ have also been combined in order to compare to the West WRZ estimates of the WRMP 2012.

Table 1: Comparison of 2017 WR&SR Plan and 2012 WRMP Baseline DO Estimates

WRZ (based on WRMP 2012 WRZs)	WRMP 2012 DO (Ml/d)	WR&SR Plan DO (DYAA) (Ml/d)	Comments
North	115.6	113	
South and East	553.4	590	Camlough WTW has been decommissioned. Differences in constraints including Drumaroad WTW capacity.

WRZ (based on WRMP 2012 WRZs)	WRMP 2012 DO (Ml/d)	WR&SR Plan DO (DYAA) (Ml/d)	Comments
			Lough Island Reavy modelled as a permanent source for Fofanny WTW. Hydrological differences due to length of record and revised inflow sequences.
Central	31.1	32.5	Slight increase in Lough Fea output.
West	89.1	79	The differences are likely mostly due to different assumptions made on the license restrictions at the Derg/Strule.
NI Total	**789.2**	**814.5**	

b. The outage allowance for NI Waters WTWs has increased from 2%, used in the previous plan, to 5%. This was based on the available data for analysis, expert opinion as part of the 2017 WR&SR Plan, and benchmarked against a review of UK water companies' data that showed that outage ranges from 2% to 8%.

3. The dry year uplift factor has decreased in the latest plan from 7% in 2012 to 1.7%. As described previously the 2017 WR&SR Plan figure was obtained from applying the monthly demand-weather model, developed as part of the 2017 WR&SR Plan process, to the dry weather year 1995/96.

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 Management Plan (WRMP) 2012.

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 in AIR16 and AIR17 as part of the 2017 WRMP, critical periods were included within the analysis and it was felt a critical period SOSI should be available for AIR18. However there has been further slippage in the delivery of the draft plan and as consequence it will be AIR19 before the outputs could be used for the development of a critical period SOSI.

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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**ASSET BALANCE AT APRIL 1**																				
1	Total length of mains	km	2	26,499 03	B3	26,700.79	B3	26,710.55	B3	26,712.44	B3	26,728.83	B3	26,778.15	B3						
B	**CHANGES DURING REPORT YEAR**																				
2	Mains renewed	km	2	285.42	A2	202.31	A2	164 91	A2	105 24	A2	161.29	A2	120 55	A2						
3	Mains relined	km	2	0 00	A1	0.00	A1	0 00	A1	0.00	A1	0.00	A1	0 00	A1						
4	Mains cleaned (total)	km	2	683.75	B3	1,096.52	B2	1,189.50	B2	1,191 68	B3	1,665.69	B3	2,008 61	B3						
6	New mains	km	2	89 05	B2	50.40	B2	118 24	B2	76.51	B2	75.22	B2	92.43	B2						
6a	Total length of new, renewed or relined mains	km	2	374.47		252.72	A2	283.15	A2	181.75	B2	236.51	A2	212 98	A2						
6b	Length of new, renewed or relined mains delivered under the watermain rehabilitation programme	km	2	326.41		226.13	A2	222 66	A2	116 92	A2	172.27	A2	126 00	A2						
7	Mains abandoned and other changes	km	2	357 29	A2	214.62	A2	208.09	A2	105 51	A2	167.55	A2	124 24	A2						
8a	Lead communication pipes replaced as a consequence of water quality sample failures	nr	0			20	B2	15	B2	37	B2	44	B2	43	B2						
8b	Lead communication pipes replaced as a consequence of customers notifying NI Water that they are replacing their lead supply pipe	nr	0			617	B2	566	B2	703	B2	599	B2	574	B2						
8c	Opportunistic lead communication pipes replacement undertaken under the watermain rehabilitation programme or during burst service pipe repairs	nr	0			1239	A2	2747	A2	660	B2	1801	A2	76	B3						
8d	Lead communication pipes replaced under the proactive lead replacement programme	nr	0			0	A1	401	B2	1,922	B2	1,867	A2	1,767	A2						
9	Total lead communication pipes replaced	nr	0	1,271	B3	1,876	B3	3,729	B2	3,322	B2	4,311	A2	2,460	A2						
10	Communication pipes replaced - other	nr	0	8,566	B3	8,790	B3	7,469	B3	3,915	B3	5,608	B2	3,769	B2						
11	Mains bursts per 1000km	nr	0	93	B3	86	B3	85	B3	74	B3	80	B3	91	B3						
C	**ASSET BALANCE AT MARCH 31**																				
12	Total length of mains	km	2	26,700.79	B3	26,710 55	B3	26,712.44	B3	26,728 83	B3	26,778.15	B3	26,837.45	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						
14	Distribution zone studies ongoing	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1						
15	Total distribution zones identified for study	nr	0	71	A1	71	A1	71	A1	71	A1	71	A1	71	A1						
16	Cumulative % distribution zone studies completed	%	1	100	A1	100	A1	100	A1	100.0	A1	100 0	A1	100 0	A1						
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						
E	**WATER QUALITY COMPLIANCE MEASURES**																				
18	% overall compliance with drinking water regulations	%	2	99.77		99.81		99 86		99.83	A2	99.86	A2	99 88	A2						
19	% compliance at consumers tap	%	2	99 63		99.74		99.78		99.74	A2	99.77	A2	99 81	A2						
20	% iron compliance at consumers tap	%	2	97 25		98.08		98 95		98.40	A2	98.66	A2	98 85	A2						
21	% Service Reservoirs with coliforms in >5% samples	%	2	0 00		0.00	A1	0 00	A1	0.00	A1	0.00	A1	0 00	A2						
F	**NOMINATED WATER SERVICE OUTPUTS**																				
22	Completion of nominated trunk main schemes	nr	0	2	A1	0	A1	1	A1	2	A1	1	A1	0	A1						
23	Completion of nominated water treatment works schemes	nr	0	0	A1	0	A1	3	A1	1	A1	0	A1	0	A1						
24	Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks	nr	0	1	A1	0	A1	1	A1	0	A1	0	A1	1	A1						
G	**ADDITIONAL WATER SERVICE OUTPUT MEASURES**																				
25	Number of Catchment Management Plans	nr	0			3	A1	5	A1	3	A1	7	A1	3	A1						
26	Number of school visits	nr	0	138		150		209		277	A1	257	A1	219	A1						
27	Number of other education events	nr	0	35		38		59		65	A1	64	A1	62	A1						
28	% Service Reservoirs where sample taps have been assessed and are to required standard	%	1							0.0	A1	0 0	A1	72.9	A2						

Table 11– Water Service Activities

Line 1 – Total length of mains at 1st April 2017

This value has been extracted from AIR17 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 17/18 on water mains and communication pipes.

Total Mains Activity Progress

Northern Ireland Water has delivered 212.98km of total mains activity in this period, no relining has been carried out in this period.

Watermains Rehabilitation Progress against PC 15 Target

The cumulative length of Watermains Rehabilitation pipelines completed to the end of year 3 from the Line 6b output in AIR 16, 17 and 18 is:
116.92km + 172.27km + 126.00km = **415.19km**

This is against a **cumulative** FD target at the half way point target of PC15 of
130km + 144km + 129km = **403km**.

The cumulative length of Watermains Rehabilitation pipelines completed to the end of year 3 has exceeded the PC 15 target for this stage by over 10km.

Proactive Lead Replacements Total against PC15 Target

The Lead Communications pipe replacement target for PC15 is on target.

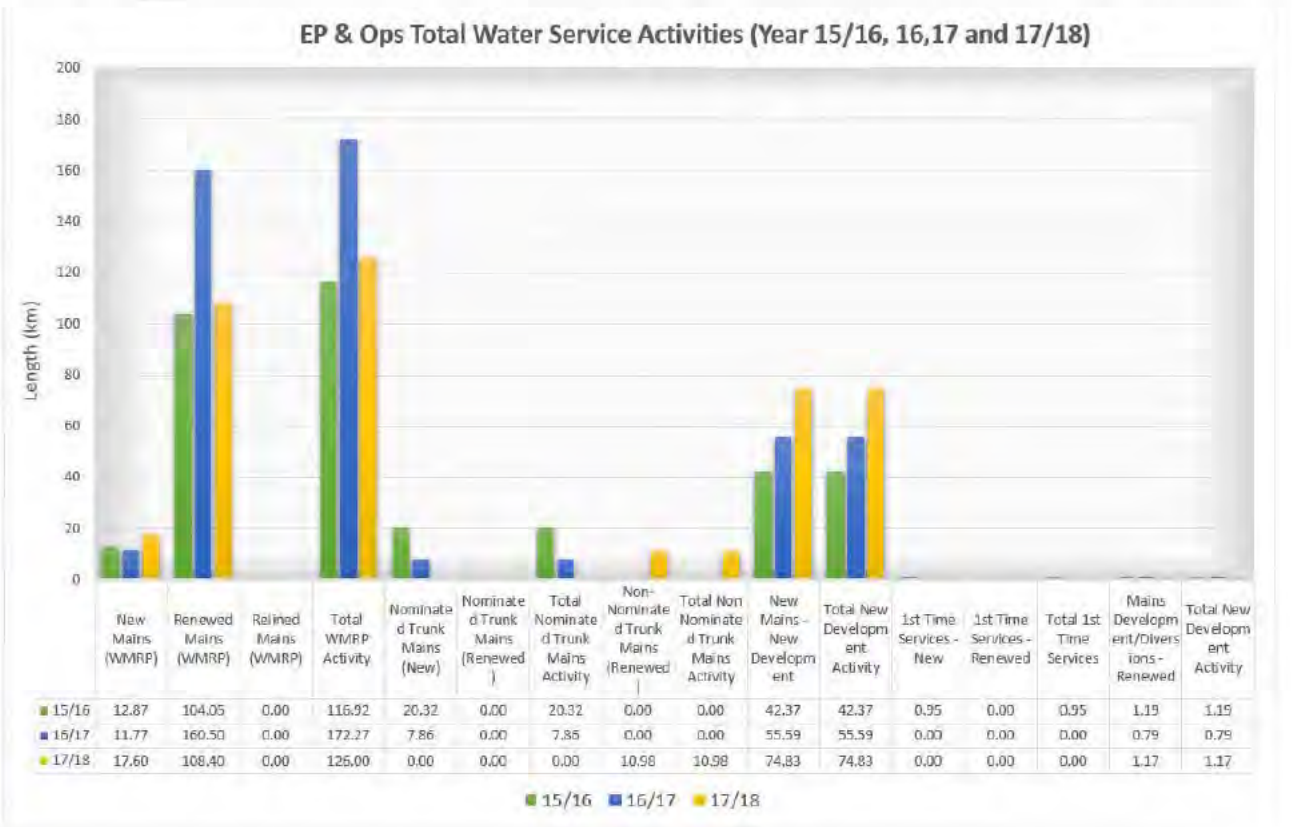
The number of lead communications pipe replacements respectively from AIR16, 17 and 18 is: 1,922 + 1,867 + 1,767 = 5,556nr.

Overall NI Water has exceeded the FD cumulative target of 5,532 (1,844 annual target x 3).

Summary of Mains Activity Figures for PC 15

Activity Description	Total Return AIR 16 (km)	Total Return AIR 17 (km)	Total Return AIR 18(km)	PC 15 TOTAL (km)
New Mains (WMRP)	12.87	11.77	17.60	42.24
Renewed Mains (WMRP)	104.05	160.50	108.40	372.95
Relined Mains (WMRP)	0.00	0.00	0.00	0.00
Total WMRP Activity	116.92	172.27	126.00	415.19
Nominated Trunk Mains (New)	20.32	7.86	0.00	28.18
Nominated Trunk Mains (Renewed)	0.00	0.00	0.00	0.00
Total Nominated Trunk Mains Activity	20.32	7.86	0.00	28.18
Sub Programme 23c and 23e	0.00	0.00	10.98	10.98

Activity Description	Total Return AIR 16 (km)	Total Return AIR 17 (km)	Total Return AIR 18(km)	PC 15 TOTAL (km)
Total Sub Programme 23c and 23e	0.00	0.00	10.98	10.98
New Mains - New Development	42.37	55.59	74.83	172.79
Total New Development Activity	**42.37**	**55.59**	**74.83**	172.79
1st Time Services - New	0.95	0.00	0.00	0.95
1st Time Services - Renewed	0.00	0.00	0.00	0.00
Total 1st Time Services	0.95	0.00	0.00	0.95
Mains Development/Diversions -Renewed	1.19	0.79	1.17	3.15
Total New Development Activity	1.19	0.79	1.17	3.15
Total Mains Activity in the Period	181.75	236.51	212.98	631.24



Strategic Trunk Mains Progress for PC 15

Year 3

Team	Project No	Project Name	Watermains New (km)	Watermains Renewed (km)	Watermains Relined (km)
WC P2	JB 693	Carland to Cookstown Strategic Trunk Main	0	0	0
WC P2	JB 342	Strategic Link Castor Bay to Belfast	0	0	0

Nominated Trunk Mains

JB693 Carland – Cookstown Strategic TM

The NIW Water Resources Management Plan 2012 identified that the Central Water Resource Zone (WRZ) will show a deficit of 2 Ml/d in 2015/2016 in the Cookstown area.

The provision of HPPE trunk water main from Carland SR to junction of Sandholes Rd and Strifehill Rd Cookstown with capacity to move 2Ml/day of water to maintain the Supply Demand Balance for the Central Water Resource Area will secure supply to this zone and fulfil the outputs from the Water Resource Strategy.

This pipeline is now complete.

JR342 Strategic Link Castor Bay – Belfast

The need identified in the Water Resource Strategy (2002 and 2007) and the Draft Water Resource Management Plan 2010 for a Strategic Trunk Main Link from Castor Bay to Lisburn and Belfast.
The resulting Strategic Link pipeline capacity requirement is 56 Ml/d. The scope of works for the preferred option includes new 800/900mm diameter strategic trunk main laid from Castor Bay to South Lisburn; additional storage through the recommissioning of Danescroft SR and St Andrews SR; new water pumping stations at Magherliskmisk SR, Danescroft SR and St Andrews; reinforcement of Gravity II / CTM in North Belfast.
This pipeline is now complete.

Sub Programme 23c: Trunk Mains Rehabilitation during AIR 18 Period

The following Non-Nominated Trunk Mains were addressed in 17/18 as risk based prioritised rehabilitation schemes.

- **JB 732 Killylane to Crosshill**
  The work completed in this reporting period comprises a renewed section of 3.8km of 500mm O.D. HPPE pipes and also 3.8km of 125mm O.D. new distribution pipes laid in the same trench.
- **JN 545 Alley Hill to Doochrock**
  The work completed in this reporting period comprises a renewed section of 1.45km of 400mm O.D. HPPE pipes, apart from the condition driver there was also a driver for upsizing this existing Strategic Main for hydraulic capacity reasons.
- **JN 514 Castletown to Koram**
  This pipeline replaced 1.5km of 100mm dia. Pumping pipeline with a 180mm dia. pipeline which supplies Koram SR from Castletown WPS, apart from the condition driver there was also a driver for upsizing this existing Strategic Main for hydraulic capacity reasons.

Sub Programme 23e: Appraisal of NI Water Infrastructure at Railways, DRD Road and Pipe Bridges (Water)

- **JI 048 Resilience of Pipelines Crossing Northern Ireland Railways Track**
  This Project involves the slip lining, (insertion of a smaller pipe inside the existing pipe), to rehabilitate the pipeline. This work is not funded out of Watermains Rehabilitation. In this period 430m (0.43km) of pipeline under railway tracks were slip lined.

The total reported in the summary table above for non-nominated trunk mains, (which are not funded under the Watermains Rehabilitation Budget but funded from Sub Programmes 23c and 23e), is 10.98km.

Line 2 - Mains renewed (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
2	Mains renewed	km	2	119.38	A2	1.17	**B3**	120.55	**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 108.4km of Watermains Rehabilitation and 10.98km (108.395km) of Trunk Main Rehabilitation= 119.38km
- This figure does not include first time services
- Asset Delivery is the primary contributor to this information
- The 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.
- The confidence grade is B3

Future Reporting for Networks Water will continue to develop the established process for monthly reporting using MWM as a source for base information. The CSD mains renewal work is usually very low volume as is the case here.

Overall Line Confidence Grade is A2 - The overall confidence grade is A2 due to the fact that the Asset Delivery return is 99 % of the total.

The EP/Asset Delivery total contributes to the total WM Rehab progress, see summary comment at the beginning of this commentary.

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 zero.

To ensure VFM and continuity is achieved, NIW have withheld the review of spray lining techniques until the award of the new framework. It is anticipated that a WP of spray lining will be considered in 18/19 as the new Framework is now awarded, to test the viability and value of this technique.

Overall Line Confidence Grade is A1 as the return is zero for Asset Delivery and CSD Networks Water.

There has been no change in the current mains relined figures in PC 15 as this methodology is not currently used within NIW. The Asset Delivery Team are continuing to review the value for money from the delivery of mains relining.

Line 4 - Mains cleaned (km)

Line	Description	Units	CSD	CSD CG	Total	Overall CG
4	Mains cleaned (total)	km	2,008.61	**B3**	2,008.61	**B3**

This work is carried out by CSD Networks Water, the Asset Delivery team has no involvement in this activity.

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 sent to the Field Operators. 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 0.297km per flushing.

Calculation - 2017 -2018 information return is made up as follows:
6763 no. flushings x 0.297 km per flush = 2 008.61kms.

This comprises a total count of 6685 no. flushing MST's in Ellipse, minus 398no. flushing MSTs identified as not having been carried out in the report year, plus 476 no. reactive flushing jobs completed.

For AIR18, 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.

Confidence Grade B3

Although the total no. of reactive flushing jobs (476no.) 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 slight increase in the completed no. of reactive flushing's which may be linked to the slight increase in the number of burst main repairs carried out and increasing customer awareness of water quality standards.
The number of flushing MST's not carried out has increased noticeably from AIR 17 but this is primarily down to staffing issues in certain Field Manager areas as well as other tasks being given a higher priority.

Line 6 - New mains (km)

Line	Description	Units	DP	AD	AD CG	CSD	CSD CG	Total	Overall CG
6	New mains	km	2	7.60	A2	74.83	B2	92.43	B2

Asset Delivery

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. The information is collated from each individual contract on a monthly basis and aggregated into an overall annual figure. The figure for 17/18 = 17.601km = 17.6km to two decimal places.

Asset Delivery Confidence Grade is A2. This figure is obtained from Monthly Reports in Captrax and aggregated into an annual return.

CSD Networks Water

Data for the period April 17 – March 18 was collated by Field Managers using system reports, which when checked and confirmed, 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 is the sole contributor for new mains laid in new housing developments. Asset Delivery is the primary contributor for new mains (replacement upsizing).

CSD Networks Confidence Grade is B2. The total new mains figure of 92.43 km is made up of 17.6 km of New Mains WMRP with 0 km of New Strategic Trunk Mains) and 74.83 km of first time services.

Overall Line Confidence Grade is B2 -This figure is arrived at by considering that there is a 20:80 split in the total favouring CSD. It is reasonable therefore to state that the CG assessment is B2

The EP/Asset Delivery total contributes to the total WM Rehab progress.

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	136.98	A2	76.00	B2	212.98	A2

This is the calculated sum of Lines 2, 3 and 6 the Asset Delivery Total (108.40km plus 17.6km plus 10.98km of Trunk Main Rehab) =126km. The CSD Total (1.17km plus 74.83km) = 76km.

Overall Line Confidence Grade is A2 as Asset Delivery contribution is 60% 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	126.00	A2	126.00	**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 126km is derived from the Asset Delivery totals of 108.4km renewed and 17.6km of new mains. Relining was not utilised as a watermains rehabilitation technique during this period.

Overall Line Confidence Grade is A2 as reporting is from Asset Delivery Team from CPMR and Asset Delivery are the only contributors to this line.

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	122.89	A2	1.35	B3	124.24	**A2**

Asset Delivery

The PC15 year 3 results for sub-programme 8 indicates 98% of mains renewed are subsequently abandoned which is a similar percentage of rehabilitated mains, based on historical data.

Total mains installed = 108.4 + 17.6 = 125.996 km

Abandoned Mains = 122.894 km

Asset Delivery Confidence Grade is A2.

CSD Networks Water

Data for April 17 – March 18 was collated by Field Managers, confirmed and input onto a spread sheet managed by the Water Business Unit who collate the data for the annual reporting period. Asset Delivery is the primary contributor to this information but Networks Water has taken some ownership of smaller schemes, in particular social housing redevelopments and minor mains diversions.

CSD Networks Water Confidence Grade is B3.

Overall Line Confidence Grade is A2 as 98% of this return is from Asset Delivery**.**

Comment - The PC15 year 3 results for sub-programme 8 indicates 98% of mains renewed are subsequently abandoned which is a similar percentage of rehabilitated mains, based on historical data.

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	43	43	B2

The CSD Networks Water Business Unit collates information from Customer Field Managers using system reports, which, when checked and confirmed, was input onto a spreadsheet, collated data for the reporting period April 17 – March 18. This is managed by the Water Business Unit, which collates the data for the annual reporting period.

Overall Line Confidence Grade is B2.

Comparison to PC 13 year 2 Output – The CSD total is the same as **last year's output** 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	574	574	B2

Data for the reporting period April 17 – March 18 was collated from Customer Field Managers using system reports which, when checked, confirmed, and input onto a spreadsheet.

The total submitted for AIR 18 is comparable to that submitted for AIR17 and AIR 16. There is no set target for this line.

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	***13***	A2	63	**B3**	76	B3

Asset Delivery

The PC15 year 3 for sub programme 8 results showed 13 nr lead communication pipes replaced as part of opportunistic lead replacement programme. The Asset Delivery figure for Opportunistic Lead communications pipes is significantly less than last year's figure of 1753 .This may be due to the rural nature of this year's Work packages.

This Asset Delivery figure for Opportunistic Lead Communications pipes is significantly less than last year's figure of 1753 .This may be due to the increased rural nature of this year's Work packages, (see urban-rural watermains rehabilitation outturn split table under Line 10 comment below).

CSD Networks Water

Data for the reporting period April 17 – March 18 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 Business Unit.

This figure reported for AIR 18 for CSD is comparable to the last two years. This can be a complex issue to analyse on some Work Orders to ascertain if a full communication pipe replacement has taken place and if lead was a factor.

CSD Networks Water Confidence Grade is B3.

Overall Line Confidence Grade is B3 using the CSD figure of B3 due to the 20:80 split in data dominance for this line between Asset Delivery and CSD.

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	1,767	1,767	**A2**

The PC15 year 1 sub programme 23 results showed 1,767nr lead pipes replaced as a result of the implementation of the proactive lead replacement programme. Overall NIW has exceeded the FD cumulative target of 5,532nr (i.e. 1,844 annual target x 3). The 3 year target is therefore exceeded as the number of lead communications pipe replacements respectively from AIR16, 17 and 18 is: 1,922 + 1,867 + 1,767 =AIR 18 Total of 5,556nr.

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.

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	1780	A2	680	B2	2460	**A2**

Asset Delivery

This is the calculated sum of Lines 8a, 8b, 8c and 8d
Calculation - The Asset Delivery Total is 1,767 + 13= 1,780
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 43+574=63 = 680 this is comparable to last year's figure.
CSD Networks Water Confidence Grade is B2.

Overall Line Confidence Grade is A2 as 70% of this return is from the Asset Delivery Team.

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	2336.00	A2	1,413	**B3**	3 769	B2

Asset Delivery

The AIR 17 return is significantly less than that carried out in year 2, as there would be more non-lead communications pipes in urban areas.
Asset Delivery Water Confidence Grade is A2.

Urban Rural Out-Turn from Watermains Rehabilitation Project

	2015-2016 Actual Outturn			2016-2017 Actual Outturn			2017-2018 Actual Outturn		
	Urban	Rural	City	Urban	Rural	City	Urban	Rural	City
Total - km	29,941	81,759	276	50,123	122,403	0	21,634	106,766	0
Total - %age	26.74%	73.01%	0.25%	29.05%	70.95%	0.00%	16.85%	83.15%	0.00%

CSD Networks Water

Data for the reporting period April 17 – March 18 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 Business Unit. This figure is broadly in line with figures submitted for AIR 16 and AIR 17. 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.

CSD Networks Water Confidence Grade is B3.

Overall Confidence Line Grade is B2 as it is between the B3 and A2 Confidence grades submitted.

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 17 – March 18 was collated using MWM system reports which when checked and confirmed were transferred onto a summary spreadsheet. A number of 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

2510 – 66 (rechargeables) / 26,837.45km = 0.0911 x 1,000 = 91.07

Total Bursts per 1,000km = 91.07

2014 information return was 2,382 (Inc. 83no. rechargeables)
2015 information return was 2,348 (inc. 82no. rechargeables)
2016 information return was 2,051 (inc. 79no. rechargeables)
2017 information return was 2,257 (inc. 61no. rechargeables)

Proportion of bursts within line 11 detected by proactive methods

The total number of Mains Repairs carried out by NIW was 2510 (including 66no. due to third party damage).

The number of mains repairs carried out by Networks Water function due to non-proactive leakage detection methods was 1394.

The number of mains repairs carried out due to proactive leakage detection methods was 1116.

Confidence Grade B3

The number of bursts for Networks Water has been captured for the complete year using base information on a monthly basis from MWM reporting systems. Individual Work Orders have been analysed and duplicates and non-mains repairs extracted. This year's figure has increased slightly from AIR 17 but the following comments continue to be a factor:

- 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.

There is a significant increase in the figures across the four months from December through to March compared to AIR 17. During this four month period there were several instances of negative temperatures followed by sharp rises resulting in a noticeable increase in the number of defects. This resulted in elevated burst numbers through both proactive leakage detection and those reported by customers. The winter period, on the whole, has been markedly more severe than the previous 3 – 4 years.

Line 12 - Total length of mains 31st March 2018

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 AIR17 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.

As per the reporters recommendation during the AIR14 audit this figure includes trunk mains that are marked as "Out of Service" on the Corporate Asset Register. This recommendation was made as although these mains are currently out of service they are not abandoned and could potentially come back into service in the future.

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 NIW 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 NIW 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 NIW Zones had been addressed by the Rehabilitation/Zonal Study Process (as shown in the table below).

The Confidence Grade therefore of this line is A1.

Line 13 – Cumulative number of distribution zone studies completed

The Zonal Studies table has been removed, as agreed with the Reporter, as this metric does not reflect the NIW PC 15 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. The total submitted however is 71 Zonal Studies completed (this has been the return for the past two years as it does not change).

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 NIW Managers and Field Staff.

The WIIM methodology involves taking all appropriate NIW 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 NIW. 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

The 71 Model areas have now been combined into 54 proposed model areas reflecting the current Water Resource areas.

During this period two phases of prioritised interventions were commenced under the WIIM methodology, with the following WPs being issued in 2016 -2017, see table below.

Water Networks Rehab Workpackages passed to Delivery Team in 2016-2017 by the AP Networks Water Team (All Costs stated are Pre –Construction estimates)

WPs WIIM 1.2	Month completed	Year completed	Cost £
Althaninch Bushmills 1	April	2016	1.7M
Althaninch Bushmills 2	April	2016	2.0M
Ballinrees Limavady 1	April	2016	2.2M
Ballinrees Limavady 2	April	2016	1.2M
Carran Hill Crossmaglen	April	2016	2.5M
Clay Lake Keady	April	2016	2.5M
Dunore BGO North	April	2016	1.3M
Dunore East	April	2016	2.4M
Dunore Point	April	2016	2.2M
Lough Braden	April	2016	2.4M
Lough Fea	April	2016	2.3M
Loughmacrory	April	2016	2.0M
Moyola	April	2016	2.2M
TOTAL			**£27M**

WPs WIIM 1.2	Month completed	Year completed	Cost £
Antrim North	November	2016	2.2M
Antrim South	November	2016	1.3M
Banbridge South Armagh	November	2016	1.8M
Craigavon	November	2016	2.6M
Fermanagh North	November	2016	2.8M
Fermanagh South	November	2016	2.1M
Lurgan Moira	November	2016	2.6M
Tyrone North	November	2016	2.4M
Tyrone South	November	2016	2.4M
Tyrone West	November	2016	2.1M
Antrim Ballyclare	March	2017	2.3M
Lisburn	March	2017	2.4M
Newtownards	March	2017	2.2M
TOTAL			**29.2M**

WIIM 2.2 Work Page 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 2017 to inform the next phases of WIIM 3 Schemes.

Hydraulic Model Rebuilds Arising Out of WIIM Analysis

Hydraulic Model rebuilds are now identified by looking forward into the following years WIIM priority areas and making a judgement as to whether the model in this area is adequate to allow accurate Verification of the WIIM Desktop priority schemes. If the model quality is considered to be inadequate for purpose, due to the passage of time and the fact that the area has been extensively rehabilitated since the model was originally built, then the model area is prioritised for re-build so that the WIIM Work package can be carried out in the following year.

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

Summary of current

Note: The NIW Trunk Main model is almost complete after 2 years of detailed work.

Model Number	Model Code	Model Name	Number of Properties Supplied	Model Calibration Date
1	BTPK	Belfast Oldpark	151,046	2009
2	FBDY	Forked Bridge Dunmurry	24,150	2010
3	DBNS	Dunore Ballygomartin South	104,030	2009
4	DDAP	Drumaroad Ards Peninsula	11,382	2017
5	DDAC	Drumaroad Ards Carryduff	10,081	2016
6	DDBH	Drumaroad Ballynahinch	17,183	2018
7	LSRL	Lisburn South Rural	6,053	2010
8	RNID	Rathlin Island	115	N/A
9	DPBE	Dunore Point Ballymena East	1,979	2005
10	BASH	Breda South	24,673	2014
11	AHBS	Altnahinch Bushmills	13,121	2015
12	DELL	Dungonnell	15,729	2013
13	KENH	Killylane CWB North	2,735	2005
14	KESH	Killylane CWB South	17,435	2010
15	DPAM	Dunore Point Antrim	25,803	2015
16	DEET	Dunore East	2,086	2010
17	CGUS	Carrickfergus	35,961	2017

Model Number	Model Code	Model Name	Number of Properties Supplied	Model Calibration Date
18	BWON	Ballywonard	13,681	2018
19	FBSD	Forked Bridge Stoneyford	10,561	2005
20	CBLN	Castor Bay Lurgan	11,538	2014
21	DDAN	Drumaroad Ards Newtownards Town	13,475	2016
22	DDBR	Drumaroad Bangor	34,241	2017
23	DDLU	Drumaroad Lisburn - Urban	13,482	2015
24	PBUR	Purdysburn	41,541	2016
25	DDDK	Drumaroad Downpatrick	17,342	2018
26	FOSH	Foffany South	26,236	2018
27	CBNH	Castor Bay North	50,676	2013
28	FONH	Foffany North	15,003	2013
29	DBNN	Dunore Ballygomartin North	18,947	2009
30	DBNH	Dunore Belfast North	19,962	2017
31	CYEN	Carmoney Eglinton	18,909	2018
32	CHNW	Camlough Newry West	10,932	2004
33	CHCN	Carran Hill Crossmaglen	5,994	2016
34	CLKY	Clay Lake Keady	3,997	2016
35	LMBH	Lough Macrory Beragh	4,652	2010
36	MAUM	Moyola Unagh Mormeal	2,644	2015
37	CYDY	Corrody Derry	27,236	2018
38	BSLY	Ballinrees Limavady	8,654	2006
40	LFEA	Lough Fea	15,917	2015
41	SNAH	Seagahan Armagh	15,211	2017
42	CBDG	Castor Bay Dungannon	27,136	2017
43	KNEN	Killyhevlin / Enniskillen	34,448	2008
44	BKGN	Belleek Garrison	2,122	2008
45	LBDN	Lough Bradan Drumquin	9,976	2015
46	LMKC	Lough Macrory Killyclogher Omagh	14,615	2010
47	DGSE	Derg Strabane	16,508	2002
48	MAMT	Moyola Magherafelt	18,083	2015
49	CHDN	Caugh Hill Dungiven	6,467	2006
50	BSCE	Ballinrees Coleraine	39,568	2002
51	CBTE	Castor Bay Tandragee	5,693	2004
52	DBSH	Dunore Breda North	18,163	2009
53	BMEN	Ballymena	13,939	2013
54	DDLC	Drumaroad Lisburn - Castlereagh	11,947	2004

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.

Reporting Year	2010	2011	2012	2013	2014	2015	2016	2017
% Overall Compliance	99.87	99.84	99.77	99.81	99.86	99.83	99.86	99.88

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.

Reporting Year	2010	2011	2012	2013	2014	2015	2016	2017
% Compliance at consumer tap (including supply points)	99.81	99.73	99.63	99.74	99.78	99.74	99.77	99.81

Line 20 - % Iron compliance at consumers tap

Reporting Year	2010	2011	2012	2013	2014	2015	2016	2017
% Iron compliance at consumer tap	97.98	98.27	97.25	98.08	98.95	98.40	98.66	98.85

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.

For 2017 all PC15 targets were met.

Line 22 - Completion of nominated trunk main schemes

No projects of this type were profiled to achieve Beneficial Use in Year 3 (2017/18).

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

No Water Treatment Works scheme identified in the PC15 Programme achieved Beneficial in Year 3 (2017/18).

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

One Clear Water Tank identified as an additional output for PC15 achieved Beneficial Use in Year 3 (2017/18) of the programme.

JC385	Monaclogh SR	Achieved beneficial use in 2017/18

The confidence was assessed as A1 following review of CPMR approvals and financial details contained within CPMR.

Water Treatment Work Name	Catchment Management Study	Target Delivery Date
Killylane	2013/14	31/03/2014
Dorisland	2013/14	31/03/2014
Clay Lake	2013/14	31/03/2014
Derg (Inc Strule)	2014/15	31/03/2015
Lough Braden	2014/15	31/03/2015
Caugh Hill	2014/15	31/03/2015
Carmoney	2014/15	31/03/2015
Seagahan	2014/15	31/03/2015
Altnahinch	2015/16	31/03/2016
Drumaroad (inc Silent Valley, Annalong & Lough Island Reavey)	2015/16	31/03/2016
Fofanny	2015/16	31/03/2016
Dunore Point	2016/17	31/03/2017
Castor Bay	2016/17	31/03/2017
Moyola	2016/17	31/03/2017
Ballinrees	2016/17	31/03/2017
Lough Macrory	2016/17	31/03/2017
Lough Fea	2016/17	31/03/2017
Glenhordial	2016/17	31/03/2017
Carron Hill	2017/18	31/03/2018
Rathlin	2017/18	31/03/2018
Dungonnell	2017/18	31/03/2018
Killyhevlin	2018/19	31/03/2019
Belleek	2018/19	31/03/2019

*PC15 outputs have all been met to date and are on target for the remainder of the PC15 period.

Line 26 - Number of school visits

There were 219 Schools visited during this reporting period.

Line 27 - Number of other education events

There were 62 other education events attended during this reporting period.

Line 28 - % Service Reservoirs where sample taps have been assessed and are to required standard

212 sample taps were installed during this reporting period. This is 72.9% of the total of 291 to be addressed.

The sample tap contract was awarded in 16/17 with delays due to the development and award of New Frameworks, in addition delays were partly caused by the approval process required on the design before the manufacture of the sample tap points could commence. The full delivery of 100% taps (291No.) is expected by June /July 2018.

Confidence Grade A2

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	0.767	0.000		B2
2	River abstractions			9	0.232	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				91.3	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	1
7	Proportion of distribution input - W1	0.000	0
8	Proportion of distribution input - W2	0.000	0
9	Proportion of distribution input - W3	0.514	8
10	Proportion of distribution input - W4	0.486	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	21,048.93	4,132.85	1,372.98	282.69

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	0.046	0.000		B2
2	River abstractions			4	0.954	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				154.3	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	0.000	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		
				nr / 0	Prop'n (0-1) / 3	Prop'n (0-1) / 3		
A	SOURCE TYPES AND PUMPING							
1	Impounding reservoirs			24	0.427	0.000		B2
2	River abstractions			13	0.573	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				121.0	B4

	DESCRIPTION	TOTAL PROP'N OF D.I. UNITS / DP	TOTAL NR OF WORKS UNITS / DP
		Prop'n (0-1) / 3	nr / 0
B	TREATMENT TYPE		
6	Proportion of distribution input - simple disinfection	0.000	1
7	Proportion of distribution input - W1	0.000	0
8	Proportion of distribution input - W2	0.000	0
9	Proportion of distribution input - W3	0.271	8
10	Proportion of distribution input - W4	0.729	14
11	Proportion of distribution input - total	1.000	
12	Total numbers of works		23

	DESCRIPTION	UNITS	DP	BAND 1 <= 165mm	BAND 2 166 - 320mm	BAND 3 321 - 625mm	BAND 4 > 625mm
C	POTABLE MAINS						
13	Potable mains (nominal bore)	km	2	21,048.93	4,132.85	1,389.40	282.69

Table 12 – Water Explanatory Factors

Water sources & treatment types – NI Water only

Changes to Sources since AIR17

NI Water (Only) had the following 32 sources in service for part or all of AIR18, 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 AIR17 to AIR18.

Changes to treatment types since AIR17

The treatment type totals in service for part or all of AIR18, have not changed since AIR17, and include - simple disinfection (SD) (1nr); 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) (8 nr); more than one stage of complex treatment, capturing processes with very high operating costs (W4) (10 nr).

Changes to proportional distribution input since AIR17

The distribution input increased slightly from AIR17 to AIR18. The reasoning for the latter is considered to be due to loss of water and increased leakages resulting from the flooding in the North West, which resulted in bridges, and hence watermains, being washed away and other weather related incidents. The distribution input from the PPP WTWs increased because of the latter, and also due to water quality issues experienced at Drumaroad WTW. There was also an increase in distribution input from NIW impounding reservoirs, and reduction from rivers and loughs, due to the breach on the intake pipe from Glenedra River as a result of the flooding event. This source feeds Caugh Hill WTW.

The following table shows changes which have occurred with reference to source types and treatment types since AIR17.

Location	AIR17 Source Type	Treatment Type	WTW In Service during AIR 18	Sources In Service at 31st Mar 2017	Sources In Service at 31st Mar 2018
An Rathlin	Borehole	SD	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.	W4	Yes	Yes - 2No sources	Yes - 2No sources

Location	AIR17 Source Type	Treatment Type	WTW In Service during AIR 18	Sources In Service at 31st Mar 2017	Sources In Service at 31st Mar 2018
	Reservoir, and Lough Lee				
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

Location	AIR17 Source Type	Treatment Type	WTW In Service during AIR 18	Sources In Service at 31st Mar 2017	Sources In Service at 31st Mar 2018
		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 17/18 indicates that 2.9% of the raw water into the WTWs came from Glenedra River during the AIR18 period. The Distribution Input for Caugh Hill has therefore been split in the ratio of 97:3 between the IR and the River, for the computation of the proportional distribution input for Lines 1 to 3. The AIR18 draw off from Glenedra River is lower than that for AIR17 as a breach on the feed pipe from Glenedra, following the storm in North West in August 2018, resulted in the intake being out of operation to allow repairs to take place. All of the raw water was sourced from Bannagher Dam from approx. August 2017, and was only brought back into operation within the last 2 months

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 Balinrees source. With water quality issues of two years ago Glenedra intake was reduced as the colour instrument on which the valve control was based proved unreliable and the percentage draw off would be down on normal. Based on the figures over the years the Glenedra flow could be as high as 10-30 % of the plant throughput.

2. Fofanny WTW

Fofanny WTWs is fed directly and independently by 3 sources Lough Island Reavy IR, Spelga IR and Fofanny IR. NIW is listing these three sources for Fofanny WTWs, for AIR18.

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 AIR18, according to the Plant Manager, 60% of the total WTWs' raw water comes from Lough Lee (and 40% 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 is not available for AIR18 as 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 AIR18 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 AIR17, NIW is listing Lough Macrory and Fingrean IR as two sources for Lough Macrory WTW for AIR18.

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 NIAUR 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. NIW 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 natural lake (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.

Following a number of years raw water deterioration due to the presence of MCPA, (a herbicide approved product used for rush control) NI Water installed GAC Filtration at this site to ensure the water quality parameters we achieve. This latest investment at this plant has been operational since April 2015.

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 43% of the raw water which is pumped to the Derg WTW Inlet, during AIR18. NIW is listing River Strule and River Derg as two sources for Derg WTW, for AIR18, as the works receives water directly from the two sources.

11. Dungonnell WTW

The OSEC plant has been taken out of service and temporary hypo dosing commenced on 27th March 2017 to complete water disinfection. A base maintenance project to remove the OSEC plant and install bulk hypo tanks was planned for 2017/18 delivery, but has not yet started. There is no change to the treatment type.

12. Altnahinch WTW

The OSEC plant has been taken out of service and temporary hypo dosing commenced on 14th November 2016 to complete water disinfection. A base maintenance project to remove the OSEC plant and install bulk hypo tanks has been completed during AIR18. There is no change to the treatment type.

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 AIR18 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
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
Dungonnell 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 NIW'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.

The table below summarises NIW's position, at 31st March 2018, regarding all borehole sites. This information was taken directly off NIW's Corporate Asset Register.

Status	Descriptor	AIR17 Count	AIR18 Count
In Service	All sites that are currently in operation. Includes those that are maintained by either Operations or M&E	1	1
OOS Abandoned	Any site that is no longer in use and not planned to be returned to service. This may include facilities that are still in physical existence	56	54
Disposed	Any site which no longer belongs to NIW as it has been sold off	1	2

The count of one for borehole site 'in service', as shown in the table above, refers to Rathlin Island, at which there are 2 boreholes in service. Lough Carn One and Lough Carn Three boreholes are also in service but are not listed in the table above as they feed into Lough Carn, (and on into Lough Fingrean IR and Lough Macrory WTW) which is not counted as a source.

With reference to the 'Disposed' borehole sites, as shown in the table above, the Alcrossagh Boreholes which were disposed of in AIR17, do not feature in the count for AIR18. Balmoral Park and Cabragh Road boreholes were disposed of in AIR18

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.

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%	0.892	0.420
B – with reference to Treatment Type W4	0%	0.935	0.739

Line 5 - Average pumping head – NIW only / PPP only / Total
The NIW 'Total' AIR18 Average Pumping Head is 121.03m.hd with a confidence grade of B4, an increase of 1.45m.hd from AIR17 (119.58m.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 from AIR12. For AIR18 the use of data from telemetry has continued to be used and has been expanded with 76% of pumpset returns based fully or in part on telemetry data.

For AIR18, NIW had 369 pumpsets in service. Of these 252 are based on flow and/or lift data from telemetry. 55 of the 369 have no / incomplete data, no return has been made for these pumpsets.

Reporter recommendations for previous returns stated pumpsets with a significant contribution to the overall calculation be targeted (say flow x lift >50m.h). There are 95 pumpsets with an individual contribution greater than or equal to 50m.h. Of these 92 are based on flow and / or lift data from telemetry.

The daily flow total for individual pumpsets is 1566.53Ml/d. Of this 1555.0/d is based on telemetry data. Thus 99.2% of flow is based on data relative to the reporting year. Similarly the total lift for individual pumpsets is 17507.03m, of which 5847.47m is based on telemetry data, equating to 33.4% of lift based on data relative to the reporting year.

The Average Pumping Head figure has increased by 1.45m.hd from AIR17. Distribution pumpsets have contributed an increase of 0.3m.hd to the overall figure, Water Supply a decrease of 0.2m.hd and PPP an increase of 1.47m.hd. One pumpset is no longer in service and with this removed from the calculation reduces the overall figure by 0.13m.hd. The increase can be attributed mainly to the change in supply zones, with Dunore supply zone being extended to serve an area supplied by Drumaroad/Silent Valley in AIR17. The table below lists pumpsets whose contribution to the overall AIR18 APH figure has changed by 0.5m.hd or greater from its corresponding contribution in AIR17. These 8 pumpsets represents 1.06m.hd increase. The changes are explained in more detail further in the commentary.

Pumpsets whose contribution to the overall AIR18 APH figure has changed by 0.5m.hd or greater from AIR17

Name	AIR17 Individual APH	Contribution to Overall AIR17 APH Figure	AIR18 Individual APH	Contribution to Overall AIR18 APH Figure	Contributing difference from AIR17/AIR18
Dunore WTW HL (Hydepark & Ballyrobin)	10537.25	18.382	12300.05	21.294	-2.91
Dunore RWPS	4512	7.871	5264	9.113	-1.24
River Bann RWPS	3199.03	5.581	2802.69	4.852	0.73
Castor Bay 2 WPS	3173.73	5.537	2707.74	4.688	0.85
Castor Bay WPS	2431.25	4.241	1951.25	3.378	0.86
Drumaroad-Dunmore WPS	5360.49	9.351	5042.33	8.729	0.62

Name	AIR17 Individual APH	Contribution to Overall AIR17 APH Figure	AIR18 Individual APH	Contribution to Overall AIR18 APH Figure	Contributing difference from AIR17/AIR18
Carnbane Tandragee Rd WPS (Camlough/Newry West)	153.18	0.267	483.64	0.837	0.57
Lough Island Reavy Fofanny RWPS	2130.39	3.716	1801.42	3.119	0.60

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 at 76% of pumpsets, the rollout programme should continue. The report created to provide data from Telemweb only produces information from the date pumpsets are added. Some telemetry data for pumpsets 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 pumpsets 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. Pumpsets based solely on DZS data makes up 23% of the return.

1no distribution pumpset was removed from service during the AIR18 reporting period.

- Mullaghans Bridge 1 WPS

No data was available for previous returns for the following pumpsets. Telemetry data is now available to allow a return to be made against them for AIR18.

- Brackagh Lane 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 0.3m.hd to the overall increase from AIR17.

The main contributors are listed in the table below:-

Name	AIR17Individual APH	Contribution to Overall AIR17 APH Figure	AIR18Individual APH	Contribution to Overall AIR18 APH Figure	Contributing difference from AIR17/AIR18
Carnbane Tandrage Rd WPS (Camlough/Newry West)	153.18	0.267	483.64	0.837	0.57

Camlough WTW was removed from service during AIR17. As a result the network Carnbane WPS serves has been extended to include Newry West SR. This has resulted in an increase in the pump lift.

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 pumpsets, the use of telemetry data has been sought for Supply pumpsets, with all but 2 of the 44 Supply pumpsets based on flow and / or lift data obtained from Telemweb.

Telemetry data has become available for Strule RWPS that provides raw water to Derg WTW, and is included in the calculation.

Changes to Supply pumpsets have contributed a decrease of 0.2m.hd to the overall change from AIR17.

The main contributors are listed in the table below:-

Name	AIR17 Individual APH	Contribution to Overall AIR17 APH Figure	AIR18 Individual APH	Contribution to Overall AIR18 APH Figure	Contributing difference from AIR17/AIR18
Drumaroad-Dunmore WPS	5360.49	9.351	5042.33	8.729	0.62
Lough Island Reavy Fofanny RWPS	2130.39	3.716	1801.42	3.119	0.60

Drumaroad-Dunmore WPS-The supply zone served by Drumaroad WTW has been reduced over AIR18 which was transferred over to Dunore WTW. This corresponded with increases in the individual APH for the HL pumps from Dunore (PPP).

Lough Island Reavy Fofanny RWPS – AIR17 saw an increase in flow from Lough Island Reavy due to Drought Management Planning. Over AIR18 with the drought risk reducing the demand from Lough Island Reavy has reduced accordingly.

Distribution Input (DI)

The Company DI by Supply Source (577.62Ml/d) has been provided by the Company's Leakage Data Management Unit, as has the PPP Only DI (272.42Ml/d) and the NIW Only DI (305.2Ml/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) – The marginally differing figures supplied for the current reporting period (2017/18) from the last submission (2016/17) is due to the fact that these 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. This has demonstrated an Increase in overall calculated Average Pumping Head.

Average to Supply (Ml/d)

Note that the average flows represent updated figures for the 2017/18 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.

Changes to PPP pumpsets have contributed 1.47m.hd increase to the overall figure from AIR17.

The main contributors to the change are:

Name	AIR17 Individual APH	Contribution to Overall AIR17 APH Figure	AIR18 Individual APH	Contribution to Overall AIR18 APH Figure	Contributing difference from AIR17/AIR18
Dunore RWPS	4512	7.871	5264	9.113	1.24
Dunore WTW HL (Hydepark & Ballyrobin)	10537.25	18.382	12300.05	21.294	2.91
River Bann RWPS	3199.03	5.581	2802.69	4.852	-0.73

Name	AIR17 Individual APH	Contribution to Overall AIR17 APH Figure	AIR18 Individual APH	Contribution to Overall AIR18 APH Figure	Contributing difference from AIR17/AIR18
Castor Bay 2 WPS	3173.73	5.537	2707.74	4.688	-0.85
Castor Bay WPS	2431.25	4.271	1951.25	3.378	-0.86

Dunore – the supply zone for Dunore has increased and extended into the Silent Valley/Drumaroad supply zone. This corresponds with a decrease in individual APH from the HL pumps from Drumaroad WTW.
Castor Bay (Forked Bridge) – this supply zone has been reduced with water from Dunore making up the shortfall;
Castor Bay 2 (Magheraliskmisk) – this supply zone has been reduced with water from Silent Valley/Drumaroad making up the shortfall

There is a slight discrepancy between the PPP APH figure (155.89m.hd) calculated by the PPP Concessionaire and the figure calculated by NIW (154.29m.hd). The discrepancy has occurred with the PPP DI figure used, 269.67Ml/D by PPP, 272.42Ml/D NIW. The NIW PPP DI figure is based on data provided by the Company's Leakage Data Management Unit as indicated above.

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 91.34m.hd and 154.29m.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 154.29m.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 complied 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 91.34m.hd and 154.29m.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 2017/18 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 pumpsets 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.

55 of the 369 as having an 'in service' operational status during AIR18 period have no or incomplete data, no return has been made for these pumpsets. As the majority of these

pumpsets 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 AIR17

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 33% 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.

Average Pumping Head result comparison from 2008 to 2018

	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	277.62	70,092.1	121.03

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 AIR17 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.

As per the reporters recommendation during the AIR14 audit this figure includes trunk mains that are marked as “Out of Service” on the Corporate Asset Register. This recommendation was made as although these mains are currently out of service they are not abandoned and could potentially come back into service in the future.

PPP

Lines 1- 4 Column 1 only – Number of sources (PPP)

The PPP Water sources have remained consistent over the reporting period for AIR18 as they were with AIR17. 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 2017-18 as it did in 2016-17.

Line 5 Column 4 only – Average pumping head (PPP)

The reported data is solely due to the average flows called by the Company from its PPP sites, it has varied from last year's average flows.

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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	PROPERTIES																				
1	Households properties connected during the year	000	3	3.455	B2	3.108	B2	2.627	B2	4.076	B2	0.177	B2	6.385	B2						
2	Non-households properties connected during the year	000	3	0.123	B2	0.106	B2	0.13	B2	0.198	B2	0 041	B2	0.178	B2						
B	BILLING																				
3	Households billed unmeasured sewage	000	3	586.127	A2	591.043	B2	594.525	A2	599.994	A2	609.753	A2	619.835	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						
5	Households billed sewage	000	3	586.127	A2	591.043	B2	594.525	A2	599.994	A2	609.753	A2	619.835	A2						
6	Non-households billed unmeasured sewage	000	3	9.250	A2	8.706	A2	8.132	A2	7.513	A2	7.314	A2	7.354	A2						
7	Non-households billed measured sewage	000	3	23.014	A2	23.347	A2	23.56	A2	23.809	A2	24.343	A2	24.820	A2						
8	Non-households billed sewage	000	3	32.250	A2	32.053	A2	31.692	A2	31.322	A2	31.657	A2	32.174	A2						
9	Void properties	000	3	44.637	A2	44.479	B2	44.164	A2	43.463	A2	42 551	A2	41.741	A2						
C	POPULATION																				
10	Total connected population	000	3	1,512.024	B3	1,514.925	B3	1,521.776	B3	1,529.734	B3	1536.699	B3	1544.413	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).

Definition of 'Billed' Properties

Domestic customers were originally due to be charged for water and sewerage charges from April 2007. However, this was deferred in April 2007 and has not been implemented since. There are no apparent plans for charges to be implemented during 2018/19. NI Water is subsidised for these domestic customers by Department for Regional Development (DRD) (note: DRD is the now Department of Infrastructure DFI).

In April 2008, NI Water extended the charging in the non-domestic sector to include unmeasured non-households in addition to the measured non-household customer base. These charges are based on the NAV of the non-household property, derived from annual information provided by Land and Property Services (LPS).

Northern Ireland Water introduced sewerage charging to include non-households, phased in at 50%. Volumes returned to sewer are assumed to be 95%, based on standard industry figures, unless the customer challenges this assumption, whereupon they can apply for a non-return to sewer allowance which will be investigated and determined by NIW.

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).

Classification of Farms

As with Table 7 (Water) - per Utility Regulator guidelines, farms were reclassified as billed non-households for AIR09 – this has remained for AIR18. Previously, in AIR08, farms had been classified and reported as 'billed' households on the principle of their status and allocation of 'domestic allowance'.

Data Sources, Data Validation and Data Quality Projects

As with Table 7 (Water), the key source of information for the new connections and property data is the customer billing database, RapidXtra.

Customer information is updated through;

- 'business as usual' customer contacts, such as new connection requests, move in/move outs, or
- through Data Quality initiatives/Projects and/or

- Metering work streams e.g. UNHH, Optants, and Proactive Meter Exchange etc.

Under the Water & Sewerage Services (2006) Order, NI Water is required to install meters on all new household connections since April 2007. This practice has stopped as directed by a change is legislation which took effect in July 2016. The legislation was amended by Regulations, which in effect relieved NIW 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 property counts and classifications continue to be reported monthly from Rapid. The Rapid Property Summary (RPS) provides us with a snapshot at the end of each month in terms of gross movements; it does not support us in the explanation of net movements within the data.

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.

From the Rapid Property Summary there are deemed to be 640 (gross) 'unmeasured – not charged' properties which (based on sample taken) are mostly NI Water properties. NI Water are currently investigating any 'unmeasured – not charged' properties outside of NI Water ownership to ensure they are classified correctly.

Background

As Table 13 is based on averages, please find summary table below for 'End March 2017' and 'End March 18'. The '1st Dec 2017' are actual numbers used in the Principal Statement and Tariff Setting process.

Property Numbers	March 2017	1st Dec 2017	March 2018
Unmeasured Sewerage Household	615246	621166	624423
Unmeasured Sewerage Non-Household	7357	7314	7350
Measured Sewerage Non-Household	24645	24896	24994
Voids	41930	41721	41551

The variances in our property numbers from AIR17 to AIR18 can be explained by the following:

1. New Connections during the reporting year. The figures are based on the data supplied by our New Connections team of the actual connections made in 2017/2018
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 customers 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 as a result of data quality initiatives.
    - Duplicate properties
    - Reclassifications of properties that were recorded in error
4. Change in occupancy status – movement from void/vacant to occupied and vice-versa.

In addition to the above, further data quality requirements have been built into the new CBC Contract. They cover all aspects of the property life cycle (creating, amending and demolishing properties) and data degradation will be monitored/measured throughout. These system validations have been split into 4 delivery phases. The functionality for Phases 1-3 have been delivered, with the functionality for the Post Phase 3 data validations due to be delivered within the next database release/upgrade in August 2018. Off-system data cleanse is required before some of the system validation rules can be applied.

Site Metered Properties

As part of the ongoing data checks, NIW 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 NIW still retain this information for customer record and charging purposes).

There are 1468 domestic properties (an increase of 770 during 17/18) classified as site metered - these will require further investigation and analysis to be completed during 2018/19 to ensure these are classified correctly. The Metering & Billing project are currently aligning our data with LPS and on some occasions are adding properties that are not connected for water , this project is due to run until 2019 and through their alignment with LPS data, are adding additional site meter properties to Rapid.

Overall, the number of non-domestic site meters has decreased by 306 during 2017/18. This has resulted from categorisation movements in year such as measured water to site meter and unmeasured water to site meter and also the resulting work of Metering & Billing project as detailed above.

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, with some nett minor 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 2017	Dec 2017	March 2018
Unmeasured Sewerage Gross Household	648573	654710	657882
Unmeasured Sewerage Occupied Household (L3 year-end sub calc)	615246	621166	624423
Unmeasured Sewerage Voids Household	33327	33544	33459

Household Voids	Voids	Difference (in-year)
March 2018	33459	(+) 132
March 2017	33327	(-) 522
March 2016	33849	

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 2017	1st Dec 2017	March 2018
Unmeasured Sewerage Gross Non-Household	13209	12720	12557
Unmeasured Sewerage Occupied Non-Household (L6 year end sub calc)	7357	7314	7350
Unmeasured Sewerage Voids Non-Household	5852	5406	5207

Measured Non-Household Property Movement

Property Numbers	March 2017	1st Dec 2017	March 2018	Expected Movement
Measured Sewerage Gross Non-Household	27396	27667	27879	Increase
Measured Sewerage Occupied Non-Household (L7 year end sub calc)	24645	24896	24994	Increase
Measured Sewerage Voids Non-Household	2751	2771	2885	

Non Household Voids

Non-Household Voids	Voids	Difference (in-year)
March 2018	8092	(-) 511
March 2017	8603	(-) 719
March 2016	9322	

Annex A details the methodology followed for the figures calculated in Table 13.

Confidence Grades

We have kept the confidence grades consistent with those of AIR17. 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 AIR18.

Annex A – Line Methodology for Table 13

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).

An issue with the system report has resulted in a change in methodology for this year. 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 18 NC_7616 Sewerage.xlsx

Households properties connected during the year	6385

The number of new domestic connections for the year is 6385.

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).

An issue with the system report has resulted in a change in methodology for this year. The figures are based on a reconciliation of New Connections extracted directly from Rapid (via CorVu), with 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 above. It is NIW policy to install meters on all New Connections.

Non-Households properties connected during the year	178

The number of new non-domestic connections for the year is 178.

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 AIR18 (dated 31st March 2018) as embedded below.

RPS March YE 2018.xlsx

Households Billed Unmeasured Sewerage	End March 2017	End March 2018
Household - Unmeasured	583801	592465
Household - Sewerage Only	6	6
Household - Measured – Not Charged (test meters)	152	124
Household - Measured	30700	30989
Household – Site Meters	573	825
Household - Unmeasured - Not Charged	14	14
Total	615246	624423
Average (Apr17/Apr18)	**619835**	

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 now included in line 3, as per AIR18 Table 7.

Households Billed Measured Sewerage	End March 2017	End March 2018
	0	0
Average (Apr17/Apr18)	**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 17/18
Households billed unmeasured sewerage	619835
Households billed measured sewerage	0
Total	**619835**

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 2017 and End March 2018 non-domestic unmeasured properties.

Non-Households Billed Unmeasured Sewerage	End March 2017	End March 2018
Non-Household - Unmeasured	7343	7336
Non-Household - Sewerage Only	14	14
Total	7357	7350
Average (Apr17/Apr18)	**7354**	

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 2017 and End March 2018 non-domestic measured properties.

Non-Households Billed Measured Sewerage	End March 2017	End March 2018
	24645	24994
Average (Apr17/Apr18)	**24820**	

Site metered properties are a subset of the overall non-domestic billed measured sewerage customer base, therefore not included in the figure above (as per AIR18 Table 7). Where

many customers are served through one site meter, only the landlord or business park management are considered as the customer and the other business are tenants.

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 17/18
Non-Households Billed Unmeasured Sewerage	7354
Non-Households Billed Measured Sewerage	24820
Total	**32143**

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 AIR18 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 2017	End March 2018
Household - Unmeasured	612707	620990
Household - Sewerage Only	6	6
Household – Measured - Not Charged (test meters)	161	129
Household - Measured	34985	35273
Household – Site Meters	698	1468
Household - Unmeasured - Not Charged	16	16
Non-Household – Unmeasured	13190	12538
Non-Household – Sewerage only	19	19
Non-Household - Measured	27396	27879
Total	689178	698318
Average (Apr17/Apr18)	**693748**	

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 AIR18 submission.

Voids	**End March 2018**
Total Gross Properties (as above)	693748
Less total occupied properties (line 5+line 8) =	652008
Total	**41741**

*rounding issues noted in table above - spreadsheet calculation results in a figure of 41741

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 2017 and End March 2018.

	End March 2017	End March 2018	Average 17/18		
Gross number of properties connected for sewerage	689178	698318	693748		
Gross number of properties connected for water (T7 L7 + T7 L11)	852399	862988	857694		
Calculation = Sewerage Properties / Water Properties	= (693748 / 857694) * 100		**80.89%**	**Therefore, Total Connected Population equals (Table 7 Line 17 [1,869,170] * 80.89%) + Table 17a Line 2 [32,441]**	**1,544,413**
				1511972+ 32441	

As detailed above, the number of sewerage properties has been calculated as 80.89% 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 80.89%) + Non-Resident Population (Source Lisa Woodman) = Table 13 line 10

(1,869,170 X 80.89%) = 1,511,972 + 32,441 = 1,544,413

T13 L10	**1544.413**

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 14 NON FINANCIAL MEASURES
SEWAGE COLLECTED (TOTAL)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	SEWAGE - VOLUMES																				
1	Volume unmeasured household sewage	Ml/d	2	243.14	B3	232.74	B3	237.61	A2	238 81	A2	244.60	B2	244.35	A2						
2	Volume unmeasured non-household sewage	Ml/d	2	5.53	B3	4 89	B3	4.69	A2	4 25	A2	4.18	B2	4.16	A2						
3	Volume unmeasured sewage	Ml/d	2	248.67	B3	237 63	B3	242 3	A2	243.06	A2	248.78	B2	248.51	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						
5	Volume measured non - household domestic sewage	Ml/d	2	35.9	B3	36 65	B3	39.11	B3	38.72	B3	41.50	A2	39.21	A2						
6	Volume trade effluent (excluding Roads Drainage)	Ml/d	2	34.12	B2	41.73	B2	48.49	B2	49 96	B2	49.00	B2	52.19	B2						
7	Volume waste water returned	Ml/d	2	318.69	B3	316.01	B3	329.90	B3	331.74	B3	339.28	B3	339.91	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						

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 6.92% 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 AIR18 volume reported for unmeasured household sewage is 244.35 Ml/d. The volume reported in AIR17 was 244.60 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 AIR18 is 5.14 Ml/d. The value reported in AIR17 was 5.01 Ml/d.

The AIR18 volume reported for unmeasured non-household sewage is 4.16 Ml/d. The volume reported in AIR17 was 4.18 Ml/d.

Line 5 - Volume Measured Non-Household Domestic Sewerage

The reported sewerage figure was based on actual billed sewerage discharge April 17 to March 18. The discharge volumetric information was derived directly from:

- The monthly 'Reconciling' Reports Apr17-Mar17 - detailing actual billed sewerage discharge m^3.
- The DfI Domestic Allowance Subsidy Assurance Report Apr17 – Mar18 – detailing actual domestic sewerage allowance applied per bills.
- Monthly FN12 Transaction Reports Apr17 – Mar18 – detailing Bad Debt Write-Off by Charge Type.

The calculated sewerage discharge volume was 14,313,073 m^3 converted to mega litres per day of 39.21 Ml/d.

Sewerage volume is 6% (834.091m^3 | 2.29 Ml/d) lower than last year.

The reduction in sewerage volume can be categorised as follows;

- 400,000 m^3 – reduction in retrospective billing linked to the ongoing 'Achieving Customer Excellence' (ACE) programme of work.

  The ACE programme is a customer focused programme incorporating a number of projects to improve the integrity and completeness of customer account configuration and subsequent billing.
  - Following agreement with DfI, CCNI and Utility Regulator, NIW retrospective billing policy was amended from 6 Years to 18 months.
  - The 'In-Year' impact of the Sewerage Account Configuration Review has decreased from 400,000 m^3 in 2016-17, which included a large retrospective element, to 100,000 m^3 in 2017-18.
- 300,000 m^3 – reduction due to the Laundrette Trade Effluent Consent Project. Laundrette sewerage discharge previously classified and billed as 'standard sewerage' volume is now classified and billed as 'trade effluent' volume. The reduction in billed sewerage volume will be offset by a corresponding increase in trade effluent volume.
- 100,000 m^3 – underlying reduction in billed sewerage volume.

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

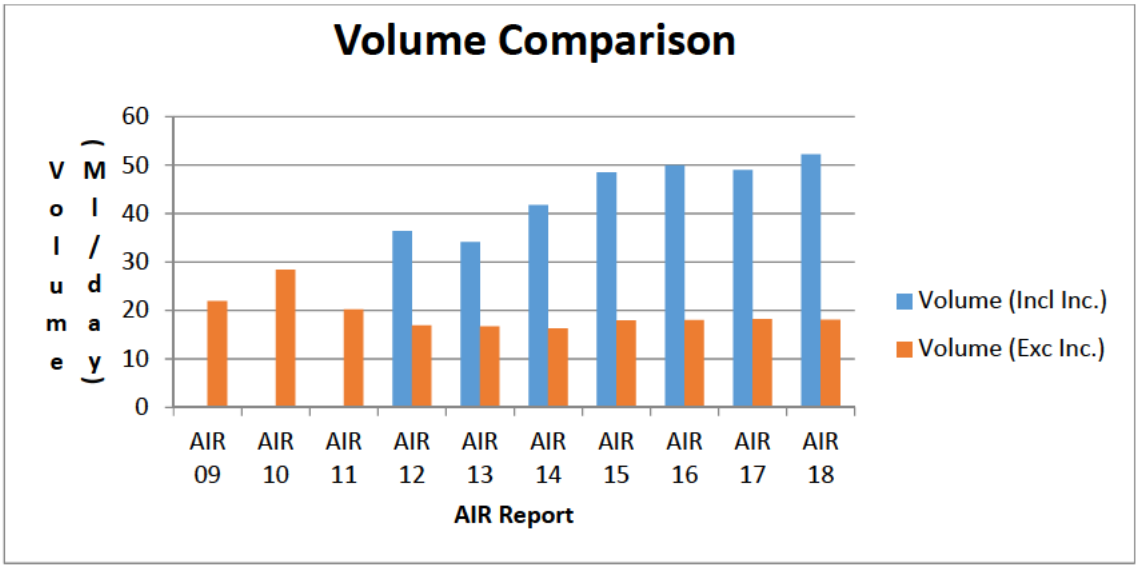
Sources

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 43 traders out of 579 assessed. The total number of traders has increased from 551 in AIR17 to 579 in AIR18.

The total volume for AIR 17 and 18 are detailed below:

AIR 17 Volume = 49.00 Ml/day
AIR 18 Volume = 52.19 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 3.35Ml/day increase of effluent discharged from [redacted] during this period (30.76 Ml/day to 34.11 Ml/day). Comparing the total AIR 18 volume to the AIR 17 volume there has been an overall increase of 3.19 Ml/day. With the volumes for [redacted] excluded there has been a decrease of 0.16 Ml/day.

Summary of Volumes changes between AIR17 and AIR18 excluding the [redacted] are detailed below:

Comparison of AIR17 and AIR18 Vo

Overall there are minor decreases in volumes in NE, South, NE PPP and South PPP Sampled and Charged Traders as well as with the NW, NW PPP and South Standard Charge traders. The total reduction for volumes in these areas and customer types equates to 0.95 Ml/day.
There are minor increases in volume in NW sampled and charged traders, and also the NE Standard Charge traders equating to an increase of 0.84 Ml/day.

On reviewing the background spreadsheet for the trade effluent AIR data an error was identified in the NE Standard charge volume data for [redacted] resulted in an annual volume of 311256 m^3/year being reported mistakenly instead of 31256m^3/yr. Substituting the correct volume reduces the associated ML/day from 0.85 to 0.09. The difference of 0.76 ML/day is 1.48% of the total AIR18 volume and has been deemed insignificant. Taking into account this error, the actual difference in total volume between AIR17 and AIR18 should have been reported as an increase of 2.42 Ml/day rather than 3.19 Ml/day.

Line 7 – Volume of Waste Water 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 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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**SEWAGE - LOADS**																				
1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1	3,778.6	B2	3,880.2	B2	5,322 6	B2	5,005 0	B2	4,378.9	B2	4,595.0	B2						
2	Total load receiving secondary treatment (BOD/year)	tonnes	1	39,183.9	C3	39,160.6	C3	38,946.1	C3	38,977 2	C3	38,552.9	C3	39,123.7	C3						
3	Total load receiving primary treatment only (BOD/year)	tonnes	1	286.6	C3	273.9	C3	210 8	C3	211 2	C3	211.0	C3	212.2	C3						
4	Total load receiving preliminary treatment only (BOD/year)	tonnes	1	691.5	C3	634.4	C3	634.4	C3	669 9	C3	670.0	C3	389.7	C3						
5	Total load entering sewerage system (BOD/year)	tonnes	1	40,312.8	C5	40,213.4	C5	39,929.7	C5	39,991 8	C3	39,561.2	C3	39,850.2	C3						
6	Equivalent population served (resident)	000	2	1,806.82	C5	1,802.63	C5	1,789.68	C5	1,792.79	C3	1,773.11	C3	1,785.8	C3						
7	Equivalent population served (resident) (numerical consents)	000	2	1,742.90	C5	1,740.19	C5	1,727.76	C5	1,731.65	C3	1,712 28	C3	1,724.8	C3						
B	**SEWERAGE - SERVICE FACILITIES**																				
8	Number of sewage treatment works	nr	0	1,018	A2	1,015	A2	1,016	A2	1,015	A2	1,015	A2	1,015.0	A2						
9	Treatment capacity available (BOD5/day)	tonnes	1	132.4	D3	133.4	D3	134 2	D3	134.1	D3	134.2	D3	135.0	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						
15	Total sewage sludge produced	ttds	1	32	B2	32.491	B2	33 5	B2	33.7	B2	37.2	B2	35.7	B2						
16	Total sewage sludge transferred to PPP	ttds	1	31.3	A2	31.7	A2	32 6	A2	32 9	A2	36.4	A2	34.9	A2						
17	Total sewage sludge disposal by NI Water	ttds	1	0.8	B2	0.8	B2	0.9	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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**SEWAGE - LOADS**																				
1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1	1,040.6	B2	1,082.3	B2	1,117.7	B2	1,094.1	B2	1,232.3	B2	1,418.4	B2						
2	Total load receiving secondary treatment (BOD/year)	tonnes	1	6,594.9	B3	7,209.1	B3	7,031 9	B3	7,153 2	B3	7,360.2	B3	6,909.8	B3						
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						
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						
5	Total load entering sewerage system (BOD/year)	tonnes	1	6,594.9	C5	7,209.1	C5	7,031 9	B2	7,153 2	B2	7,133.2	B2	6,909.8	B2						
6	Equivalent population served (resident)	000	2	301.14	B2	329.18	B3	321.09	B3	326.41	B3	325.72	B3	315.5	B3						
7	Equivalent population served (resident) (numerical consents)	000	2	301.14	B2	329.18	B3	321.09	B3	326.41	B3	325.72	B3	315.5	B3						
B	**SEWERAGE - SERVICE FACILITIES**																				
8	Number of sewage treatment works	nr	0	6	A1	6	A1	6	A1	6	A1	6	A1	6	A1						
9	Treatment capacity available (BOD5/day)	tonnes	1	30.4	B3	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	A2	0.00	A1	0.00	A1	0.00	A1	0 00	A1	0 00	A1						
15	Total sewage sludge produced	ttds	1	6.3	B2	6.4	A2	6.7	B3	5.7	B3	5.9	B3	6.0	B3						
16	Total sewage sludge received from NI Water	ttds	1	31.3	A2	31.7	A2	32 6	A2	32 9	A2	36.4	A2	34.9	A2						
17	Total sewage sludge disposal	ttds	1	37.6	B2	38.1	A2	39 3	B2	38 6	B2	42.3	B2	40.9	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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**SEWAGE - LOADS**																				
1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1	4,819.2	B2	4,962.6	B2	6,440 3	B2	6,099.1	B2	5,611.2	B2	6,013.4	B2						
2	Total load receiving secondary treatment (BOD/year)	tonnes	1	45,778.8	C3	46,369.7	C3	45,978 0	C3	46,130.4	C3	45,913.1	C3	46,033.5	C3						
3	Total load receiving primary treatment only (BOD/year)	tonnes	1	286.6	C3	273 9	C3	210 8	C3	211.2	C3	211.0	C3	212.2	C3						
4	Total load receiving preliminary treatment only (BOD/year)	tonnes	1	691.5	C3	634.4	C3	634.4	C3	669.9	C3	670.0	C3	389.7	C3						
5	Total load entering sewerage system (BOD/year)	tonnes	1	46,907.7	C5	47,422 5	C5	46,961 6	C5	47,145.0	C3	46,694.4	C3	46,759.9	C3						
6	Equivalent population served (resident)	000	2	2,107.96	C5	2,131.81	C5	2,110.77	C5	2,119 20	C3	2,098 83	C3	2,101.4	C3						
7	Equivalent population served (resident) (numerical consents)	000	2	2,044.04	C5	2,069.37	C5	2,048.85	C5	2,058 06	C3	2,038 00	C3	2,040.3	C3						
B	**SEWERAGE - SERVICE FACILITIES**																				
8	Number of sewage treatment works	nr	0	1,024	A2	1,021	A2	1,022	A2	1,021	A2	1,021	A2	1,021.0	A2						
9	Treatment capacity available (BOD5/day)	tonnes	1	162.8	D3	163.8	D3	164 6	D3	164.5	D3	164.6	D3	165.4	D3						
C	**SEWAGE - SLUDGE DISPOSAL**																				
14	Percentage unsatisfactory sludge disposal	%	2	0.00	A2	0.00	A1	0.00	A1	0 00	A1	0 00	A1	0.00	A1						
15	Total sewage sludge produced	ttds	1	38.4	B2	38.9	A2	40 2	B2	39.4	B2	43.1	B2	41.70	B2						
16	Not used	ttds	1																		
17	Total sewage sludge disposal	ttds	1	38.4	B3	38.9	A2	40 2	B2	39.4	B2	43.1	B2	41.70	B2						

Table 15 - Sewage Treatment

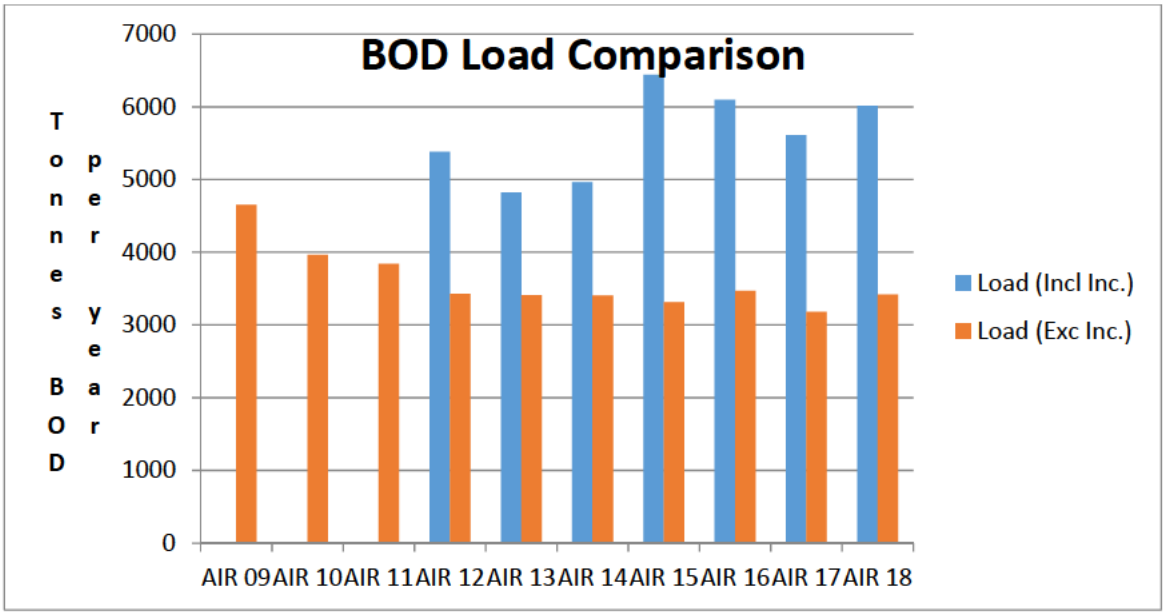
Line 1 - Trade effluent load receiving secondary treatment (BOD/year)

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 sewage strength or where a fixed industry strength or bespoke strength has been assigned to the discharge, a calculated BOD strength using the conversion factor detailed in the methodology document was used.

The loading for this year's and the previous year's reports were as follows:

AIR18 = 6013.4 tonnes BOD/year
AIR17 = 5611.3 tonnes BOD/year

In order to analyse these figures they have been separated to show loading including Duncrue Incinerator and loading excluding Duncrue Incinerator.



The loading from [redacted] has increased by 162.9 from 2432.2 tonnes BOD/year (AIR17) to 2595.1 tonnes BOD/year (AIR18). Overall the loading for AIR18 increased by 402.12 tonnes BOD/year. With the increase from the incinerator removed from this figure, the difference between the two reports is an increase of 239.23 tonnes BOD/year.

There was a decrease in the BOD strength used for the standard charge traders during this period. This strength was derived from the average results of the Mogden Samples during the period 1st March 2017 to 28th February 2018. The average BOD strength of the Mogden samples decreased from 195 mg/l to 181 mg/l.

As detailed in the methodology, the Fixed Strength COD's were then converted to a BOD strength. The strengths in the report are detailed below:

Industry Type	Settled COD (mg/l)	BOD (mg/l)
Vehicle Wash (Jet)	517	407
Vehicle Wash (Roller)	108	85
Industrial Laundry	722	246
Swimming Pool Filter Backwash	36	569
Small Brewery	2648	28
Cattlemarts	1404	2085
Wheelie Bin Cleaners	406	1106
Launderettes	478	320

Summary of BOD loading changes between AIR17 and AIR18 excluding the [redacted] are detailed below:

Comparison of AIR17 and AIR18 BO

There were increases in loading reported in the NE, NW and South PPP Sampled and Charged traders, as well as NE, NW and South Standard Charge traders. These increases equated to 349.7 tonnes BOD/year, the most significant of these increases were for traders in the NW Sampled and Charged (75.40 tonnes BOD/year) and South PPP Sampled and Charged traders (199.86 tonnes BOD/year).

There were reductions in loading reported in the South and NE PPP Sampled and Charged Traders, and in the NE PPP and South PPP Standard Charge traders. The total reduction was 110.5 tonnes BOD/year, the most significant of which were the South Sampled and Charged traders (reduction of 96.7 tonnes BOD/year).

The net of these changes equates to the 239.23 tonnes BOD/year increase in the AIR loadings with the [redacted] figures excluded.

On reviewing the background spreadsheet for the trade effluent AIR data an error was identified in the NE Standard charge volume data for [redacted] which resulted in an annual volume of 311256 m^3/year being reported in mistakenly. Substituting the correct volume reduces the associated tonnes BOD/year from 13.38 to 1.34. The difference of 12.04 tonnes BOD/year is 0.2% of the total AIR18 loading and has been deemed insignificant. .

In summary, there has been an increase in loading from [redacted], a general downwards trend in PPP loading (with exception to Southern Sampled and Charged traders) and a general increase to NIW WwTW's with exception to those Traders in the South Sampled and Charged category.

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 AIR17, PEs for 84 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 AIR17, 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 AIR18 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. The AIR11 Trade Information, for nursing homes and clinics, has been maintained for AIR18 in order to allow for this proportion of the influent entering the WWTWs. 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. This figure has been updated for AIR18 with the latest trade information giving a new figure of 365,139 PE. However it should be noted that there are a number of projects currently being carried out for NIW that are investigating the PEs discharging to Belfast and early indications would suggest the equivalent PE discharging to the WWTWs is much higher than currently stated. The main projects involved are:

- Belfast WwTW Appraisal Study (which includes a full 12 month flow and load study). The study is due to be completed in the Spring of 2018 ,
- Glenmachan Sewers Project, and
- Compliance with the Surface Water (Shellfish) Regs (NI) – Belfast Lough.

The outcomes of these projects are likely to influence the PE for Belfast for AIR19.

NIW has information pertaining to septic tank imports to its WWTWs. In summary of the 17 WWTWs that are septic tank imports centres four receive the sludge at the head of the inlet works and the remaining 13 receive it via sludge reception centres

For AIR18 conversion factors, received from our scientific staff, were used to convert the septic tank imports to PEs for the 4 WWTWs where imports are discharged directly to the inlet works.

Allowance at the other 13 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, Glenstall, Limavady and Lisburn (New Holland). 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	345	2460.5	6.74	0.07	67.41	1124
Glenstall	1109	6434.025	17.63	0.18	176.27	2938
Limavady	3162	255.356	0.70	0.01	7.0	117
Lisburn (New Holland)	329	12095.037	33.14	0.33	331.37	5523

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 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	1,246,298	27,293.92
Non-Residential	222,983	4,883.33
Hotels	4,123	90.3
Nursery School	1,257	27.52
Playschool	1,067	23.38
Primary School	30,860	675.83
Secondary School	30,477	667.44
Trade PE	101,852	2,230.57
Large (>7500m3) Consumers	122,530	2,683.4
Caravan Parks	29,677	649.92

Components used in build-up of Total Load	Total PE	000 tonnes of BOD per annum
Sludge Import / Export / Supernatant (Sludge Import to Inlet of Works – to 4 WWTWs 9702 PE)	28,520	624.59
Total (Line 5)	**1,819,644**	**39,850.19**

Confidence Grades

The confidence grades of the data in lines 2 - 4 remain as C3.

The Reporter recommended in AIR14 and in AIR15 (Recommendation No 28/Reporter's Report Reference Table 15 Lines 2-9 S7) that NI Water consider increasing the confidence grades for lines 5 – 7 from C5 to C3. Following discussions with the Reporter, the confidence grades for these lines in AIR16 have been amended to reflect this recommendation.

The confidence grades of the data in lines 8 and 9 remain as in AIR15, due to the confidence in the other information associated with the population of these lines.

The AIR 14 Reporter also recommended that NI Water should consider increasing the confidence grade for PPP Works (line 5) from C5 to B2. The latter was duly carried out for AIR15.

Line 2 - Total load receiving secondary treatment

The table below shows the changes in WWTWs receiving secondary treatment since AIR17 for Line 2. NB. Change in PE (-Ve AIR18 PE Higher).

Name of Works	CAR Site ID	PE Change	Comments
Aghanloo (1)	S02989	-6	PE updated with AIR18 Trade Information
Aghinlig (WWTW)	S02554	-79	A population study was carried out for this site and reviewed and adopted for AIR18.
Annsborough	S02687	-149	PE updated with AIR18 Trade Information
Antrim (WWTW)	S01422	345	PE updated with AIR18 Trade Information
Ardglass (WWTW)	S00268	136	PE updated with AIR18 Trade Information
Ballycastle (WWTW)	S01071	-12797	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change. PE updated with AIR18 Trade Information
Ballyclare	S01467	36	PE updated with AIR18 Trade Information
Ballykelly (L/Derry)	S03016	32	PE updated with AIR18 Trade Information
Ballymacawley	S02560	1	PE updated with AIR18 Trade Information
Ballymena (WWTW)	S01456	4573	PE updated with AIR18 Trade Information

Name of Works	CAR Site ID	PE Change	Comments
Ballyvoy	S01177	24	A population study was carried out for this site and reviewed and adopted for AIR18.
Banbridge (WWTW)	S02102	1044	PE updated with AIR18 Trade Information
Belfast (WWTW)	S00345	-4537	PE updated with AIR18 Trade and septic tank import information
Bonnanaboigh	S03031	-54	A population study was carried out for this site and reviewed and adopted for AIR18.
Bushmills (WWTW)	S01178	-2	PE updated with AIR18 Trade Information
Carnanbane	S03037	1	A population study was carried out for this site and reviewed and adopted for AIR18.
Carrickfergus (WWTW)	S00261	66	PE updated with AIR18 Trade Information
Coalisland	S02828	97	PE updated with AIR18 Trade Information
Cookstown (WWTW)	S01582	-1577	PE updated with AIR18 Trade Information
Corkill (Fermanagh)	S03059	-6	A population study was carried out for this site and reviewed and adopted for AIR18.
Creevangar	S03068	12	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change
Culmore (WWTW)	S03071	-4853	PE updated with AIR18 Trade Information
Derryhale	S02570	-148	PE updated with AIR18 Trade Information
Dervock (WWTW)	S01102	-1	PE updated with AIR18 Trade Information
Donaghmore (WWTW)	S02840	-44	PE updated with AIR18 Trade Information
Donemana	S03103	-382	A population study was carried out for this site and reviewed and adopted for AIR18.
Donnybrewer	S03080	141	PE updated with AIR18 Trade Information
Douglas Bridge	S03082	-14	A population study was carried out for this site and reviewed and adopted for AIR18.
Downpatrick (WWTW)	S00771	-52	PE updated with AIR18 Trade Information
Draperstown	S01615	-2	PE updated with AIR18 Trade Information
Dromara (WWTW)	S00316	-3	PE updated with AIR18 Trade Information

Name of Works	CAR Site ID	PE Change	Comments
Dromore (Down)	S02127	-242	PE updated with AIR18 Trade Information
Dromore (Tyrone)	S03083	-2	PE updated with AIR18 Trade Information
Drumenny	S03088	23	A population study was carried out for this site and reviewed and adopted for AIR18.
Dungannon	S02850	1688	PE updated with AIR18 Trade Information
Dungiven	S03101	28	PE updated with AIR18 Trade Information
Dunmurry	S00346	103	PE updated with AIR18 Trade Information
Edenreagh Road(39-41)	S04094	33	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change
Enniskillen	S03218	283	PE updated with AIR18 Trade Information
Ervey Road	S03107	16	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change
Fivemiletown (WWTW)	S03113	-709	A population study was carried out for this site and reviewed and adopted for AIR18.
Glenstall	S01109	-123	PE updated with AIR18 Trade Information
Grange (Taylorstown)	S01442	-7	PE updated with AIR18 Trade Information
Greenisland (WWTW)	S00263	915	PE updated with AIR18 Trade Information
Hilltown (WWTW)	S02701	-4	PE updated with AIR18 Trade Information
Irvinestown	S03137	-1	PE updated with AIR18 Trade Information
Keady (Armagh)	S02553	-3	PE updated with AIR18 Trade Information
Kesh (WWTW)	S03140	5	PE updated with AIR18 Trade Information
Kilkeel (WWTW)	S00313	-396	PE updated with AIR18 Trade Information
Killinchy (WWTW)	S00252	1665	PE updated with AIR18 Trade Information
Killybaskey	S01581	-12	A population study was carried out for this site and reviewed and adopted for AIR18.
Killygonlan (WWTW)	S02043	-4	PE updated with AIR18 Trade Information
Kilrea	S01156	-8	PE updated with AIR18 Trade Information

Name of Works	CAR Site ID	PE Change	Comments
Larne (WWTW)	S02044	-100	PE updated with AIR18 Trade Information
Limavady (WWTW)	S03162	54	PE updated with AIR18 Trade and septic tank import information
Lisburn (New Holland)	S00329	-2888	PE updated with AIR18 Trade and septic tank import information
Lisnaskea (WWTW)	S03171	-357	PE updated with AIR18 Trade Information
Longfield (Eglinton)	S03173	-162	A population study was carried out for this site and reviewed and adopted for AIR18.
Maghera (L/Derry)	S01629	68	PE updated with AIR18 Trade Information
Magherafelt (WWTW)	S01621	302	PE updated with AIR18 Trade Information
Magherahoney	S01117	14	A population study was carried out for this site and reviewed and adopted for AIR18.
Markethill	S02591	-74	A population study was carried out for this site and reviewed and adopted for AIR18.
Mayboy	S01163	-51	A population study was carried out for this site and reviewed and adopted for AIR18.
Moneymore (WWTW)	S01589	2	PE updated with AIR18 Trade Information
Moneyreagh (WWTW)	S00337	-1	PE updated with AIR18 Trade Information
Mountnorris	S02248	-3	PE updated with AIR18 Trade Information
Moy (WWTW)	S02859	-591	PE updated with AIR18 Trade Information
Newmills (WWTW)	S02852	-2	PE updated with AIR18 Trade Information
Newry (WWTW)	S02685	-2281	A population study was carried out for this site and reviewed and adopted for AIR18.
Newtownbreda (WWTW)	S00342	-10	PE updated with AIR18 Trade Information
Newtownbutler (WWTW)	S03200	-1	PE updated with AIR18 Trade Information
North Coast (WWTWs)	S04150	-518	PE updated with AIR18 Trade Information
Old Green	S01448	-90	A population study was carried out for this site and reviewed and adopted for AIR18.
Omagh (WWTW)	S03999	-346	PE updated with AIR18 Trade Information
Pomeroy (WWTW)	S01593	1	PE updated with AIR18 Trade Information

Name of Works	CAR Site ID	PE Change	Comments
Riverside(16-20)	S02029	12	Rationalisation of Riverside (16-20) to Portglenone WwTW
Rock Cottages	S02172	6	A population study was carried out for this site and reviewed and adopted for AIR18.
Strabane	S03223	-1752	A population study was carried out for this site and reviewed and adopted for AIR18.
Swatragh (WWTW)	S01637	1	PE updated with AIR18 Trade Information
Tamnamore (WWTW)	S02862	-3	PE updated with AIR18 Trade Information
Tandragee	S02174	342	PE updated with AIR18 Trade Information
Trillick (WWTW)	S03231	4	PE updated with AIR18 Trade Information
Tullyroan	S02600	-8	PE updated with AIR18 Trade Information
Warrenpoint (WWTW)	S02720	-2490	A population study was carried out for this site and reviewed and adopted for AIR18.
Whitehouse	S00265	-185	PE updated with AIR18 Trade Information
	TOTAL	**-26,053**	**Change in Line 2 since AIR17**

The change in PE equates to an increase in load of 570.57t BOD/yr (i.e. 26,053 x 60 for 60g/hd/day /1000/1000 x 365) from AIR17 to AIR18, allowing for rounding up and down and conversions.

Difference between AIR18 and AIR17 values (to 2 decimal places):

Line 2 for AIR17-	**38552.87**
Line 2 for AIR 18 -	**39123.74**
Total Difference -	**570.87**

Note – The difference in the above totals are due to rounding of values.

Line 3 - Total load receiving primary treatment only

The table below shows the changes in WWTWs receiving primary treatment only since AIR17 for Line 3. NB. Change in PE (-Ve AIR18 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Cornamuck	S03061	6	A population study was carried out for this site and reviewed and adopted for AIR18.
Creevangar	S03068	-12	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change
Edenreagh Road(39-41)	S04094	-33	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change

Name of Works	CAR ID	PE Change	Comments
Ervey Road	S03107	-16	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change
St Johns Terrace (Kilcoo)	S02717	1	A population study was carried out for this site and reviewed and adopted for AIR18.
	Total	-54	**Change in Line 3 PE since AIR17**

The change in PE equates to an increase in load of 1.17t BOD/yr (i.e. 54 x 60 for 60g/hd/day /1000/1000 x 365) from AIR17 to AIR18, allowing for rounding up and down and conversions.

Difference between AIR18 and AIR17:

Line 3 for AIR16 -	**211.00**
Line 3 for AIR 17 -	**212.19**
Total Difference -	**1.19**

Note – The difference in the above totals are due to rounding of values

Line 4 - Total load receiving preliminary treatment only

The table below shows the changes in WWTWs receiving preliminary only since AIR17 for Line 4. NB. Change in PE (-Ve AIR18 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Ballycastle (WWTW)	S01071	12797	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change
	Total	12797	**Change in Line 4 PE since AIR16**

The change in PE equates to an increase in load of 284.23t BOD/yr (i.e. x 60 for 60g/hd/day /1000/1000 x 365) from AIR17 to AIR18, allowing for rounding up and down and conversions.

Difference between AIR18 and AIR17:

Line 4 for AIR17 -	**669.95**
Line 4 for AIR 18 -	**389.69**
Total Difference -	**280.26**

Line 5 - Total load entering sewerage system

The table below shows the changes in WWTWs since AIR17 that affects load entering the system for Line 5. NB. Change in PE (-Ve AIR18 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Aghanloo (1)	S02989	-6	PE updated with AIR18 Trade Information
Aghinlig (WWTW)	S02554	-79	A population study was carried out for this site and reviewed and adopted for AIR18.

Name of Works	CAR ID	PE Change	Comments
Annalong (WWTW)	S00300	126	PE updated with AIR18 Trade Information
Annsborough	S02687	-149	PE updated with AIR16 Trade Information
Antrim (WWTW)	S01422	345	PE updated with AIR18 Trade Information
Ardglass (WWTW)	S00268	136	PE updated with AIR18 Trade Information
Ballyclare	S01467	36	PE updated with AIR18 Trade Information
Ballykelly (L/Derry)	S03016	32	PE updated with AIR18 Trade Information
Ballymacawley	S02560	1	PE updated with AIR18 Trade Information
Ballymena (WWTW)	S01456	4573	PE updated with AIR18 Trade Information
Ballyvoy	S01177	24	A population study was carried out for this site and reviewed and adopted for AIR18.
Banbridge (WWTW)	S02102	1044	PE updated with AIR18 Trade Information
Belfast (WWTW)	S00345	-4537	PE updated with AIR18 Trade and septic tank import information
Bonnanaboigh	S03031	-54	A population study was carried out for this site and reviewed and adopted for AIR18.
Bushmills (WWTW)	S01178	-2	PE updated with AIR18 Trade Information
Carnanbane	S03037	1	A population study was carried out for this site and reviewed and adopted for AIR18.
Carrickfergus (WWTW)	S00261	66	PE updated with AIR18 Trade Information
Coalisland	S02828	97	PE updated with AIR18 Trade Information
Cookstown (WWTW)	S01582	-1577	PE updated with AIR18 Trade Information
Corkill (Fermanagh)	S03059	-6	A population study was carried out for this site and reviewed and adopted for AIR18.
Cornamuck	S03061	6	A population study was carried out for this site and reviewed and adopted for AIR18.
Culmore (WWTW)	S03071	-4853	PE updated with AIR18 Trade Information
Derryhale	S02570	-148	PE updated with AIR18 Trade Information
Dervock (WWTW)	S01102	-1	PE updated with AIR18 Trade Information

Name of Works	CAR ID	PE Change	Comments
Donaghmore (WWTW)	S02840	-44	PE updated with AIR18 Trade Information
Donemana	S03103	-382	A population study was carried out for this site and reviewed and adopted for AIR18.
Donnybrewer	S03080	141	PE updated with AIR18 Trade Information
Douglas Bridge	S03082	-14	A population study was carried out for this site and reviewed and adopted for AIR18.
Downpatrick (WWTW)	S00771	-52	PE updated with AIR18 Trade Information
Draperstown	S01615	-2	PE updated with AIR18 Trade Information
Dromara (WWTW)	S00316	-3	PE updated with AIR18 Trade Information
Dromore (Down)	S02127	-242	PE updated with AIR18 Trade Information
Dromore (Tyrone)	S03083	-2	PE updated with AIR18 Trade Information
Drumenny	S03088	23	A population study was carried out for this site and reviewed and adopted for AIR18.
Dungannon	S02850	1688	PE updated with AIR18 Trade Information
Dungiven	S03101	28	PE updated with AIR18 Trade Information
Dunmurry	S00346	103	PE updated with AIR18 Trade Information
Enniskillen	S03218	283	PE updated with AIR18 Trade Information
Fivemiletown (WWTW)	S03113	-709	A population study was carried out for this site and reviewed and adopted for AIR18.
Glenstall	S01109	-123	PE updated with AIR18 Trade Information
Grange (Taylorstown)	S01442	-7	PE updated with AIR18 Trade Information
Greenisland (WWTW)	S00263	915	PE updated with AIR18 Trade Information
Hilltown (WWTW)	S02701	-4	PE updated with AIR18 Trade Information
Irvinestown	S03137	-1	PE updated with AIR18 Trade Information
Keady (Armagh)	S02553	-3	PE updated with AIR18 Trade Information
Kesh (WWTW)	S03140	5	PE updated with AIR18 Trade Information
Kilkeel (WWTW)	S00313	-396	PE updated with AIR18 Trade Information
Killinchy (WWTW)	S00252	1665	PE updated with AIR18 Trade Information

Name of Works	CAR ID	PE Change	Comments
Killybaskey	S01581	-12	A population study was carried out for this site and reviewed and adopted for AIR18.
Killygonlan (WWTW)	S02043	-4	PE updated with AIR18 Trade Information
Kilrea	S01156	-8	PE updated with AIR18 Trade Information
Larne (WWTW)	S02044	-100	PE updated with AIR18 Trade Information
Limavady (WWTW)	S03162	54	PE updated with AIR18 Trade and septic tank import information
Lisburn (New Holland)	S00329	-2888	PE updated with AIR18 Trade and septic tank import information
Lisnaskea (WWTW)	S03171	-357	PE updated with AIR18 Trade Information
Longfield (Eglinton)	S03173	-162	A population study was carried out for this site and reviewed and adopted for AIR18.
Maghera (L/Derry)	S01629	68	PE updated with AIR18 Trade Information
Magherafelt (WWTW)	S01621	302	PE updated with AIR18 Trade Information
Magherahoney	S01117	14	A population study was carried out for this site and reviewed and adopted for AIR18.
Markethill	S02591	-74	A population study was carried out for this site and reviewed and adopted for AIR18.
Mayboy	S01163	-51	A population study was carried out for this site and reviewed and adopted for AIR18.
Moneymore (WWTW)	S01589	2	PE updated with AIR18 Trade Information
Moneyreagh (WWTW)	S00337	-1	PE updated with AIR18 Trade Information
Mountnorris	S02248	-3	PE updated with AIR18 Trade Information
Moy (WWTW)	S02859	-591	PE updated with AIR18 Trade Information
Newmills (WWTW)	S02852	-2	PE updated with AIR18 Trade Information
Newry (WWTW)	S02685	-2281	A population study was carried out for this site and reviewed and adopted for AIR18.
Newtownbreda (WWTW)	S00342	-10	PE updated with AIR18 Trade Information
Newtownbutler (WWTW)	S03200	-1	PE updated with AIR18 Trade Information

Name of Works	CAR ID	PE Change	Comments
North Coast (WWTWs)	S04150	-518	PE updated with AIR18 Trade Information
Old Green	S01448	-90	A population study was carried out for this site and reviewed and adopted for AIR18.
Omagh (WWTW)	S03999	-346	PE updated with AIR18 Trade Information
Pomeroy (WWTW)	S01593	1	PE updated with AIR18 Trade Information
Rock Cottages	S02172	6	A population study was carried out for this site and reviewed and adopted for AIR18.
St Johns Terrace (Kilcoo)	S02717	1	A population study was carried out for this site and reviewed and adopted for AIR18.
Strabane	S03223	-1752	A population study was carried out for this site and reviewed and adopted for AIR18.
Swatragh (WWTW)	S01637	1	PE updated with AIR18 Trade Information
Tamnamore (WWTW)	S02862	-3	PE updated with AIR18 Trade Information
Tandragee	S02174	342	PE updated with AIR18 Trade Information
Trillick (WWTW)	S03231	4	PE updated with AIR18 Trade Information
Tullyroan	S02600	-8	PE updated with AIR18 Trade Information
Warrenpoint (WWTW)	S02720	-2490	A population study was carried out for this site and reviewed and adopted for AIR18.
Whitehouse	S00265	-185	PE updated with AIR18 Trade Information
	Total	-13,195	**Change in Line 5 PE since AIR17**

The change in PE equates to an increase in load of 288.97t BOD/yr (i.e. 13,195 x 60 for 60g/hd/day /1000/1000 x 365) from AIR17 to AIR18, allowing for rounding up and down and conversions.

Difference between AIR18 and AIR17:

Line 5 for AIR17 -	**39561.15**
Line 5 for AIR 18 -	**39850.19**
Total Difference -	**289.04**

Note – The difference in the above totals are due to rounding of values.

Line 6 - Equivalent population served (resident)

The table below shows the changes in WWTWs since AIR17 that affects equivalent population served (resident) for Line 6.

Name of Works	CAR ID	PE Change	Comments
Aghanloo (1)	S02989	-6	PE updated with AIR18 Trade Information
Aghinlig (WWTW)	S02554	-79	A population study was carried out for this site and reviewed and adopted for AIR18.
Annalong (WWTW)	S00300	125	PE updated with AIR18 Trade Information
Annsborough	S02687	-149	PE updated with AIR16 Trade Information
Antrim (WWTW)	S01422	345	PE updated with AIR18 Trade Information
Ardglass (WWTW)	S00268	136	PE updated with AIR18 Trade Information
Ballyclare	S01467	37	PE updated with AIR18 Trade Information
Ballykelly (L/Derry)	S03016	32	PE updated with AIR18 Trade Information
Ballymacawley	S02560	1	PE updated with AIR18 Trade Information
Ballymena (WWTW)	S01456	4573	PE updated with AIR18 Trade Information
Ballyvoy	S01177	24	A population study was carried out for this site and reviewed and adopted for AIR18.
Banbridge (WWTW)	S02102	1044	PE updated with AIR18 Trade Information
Belfast (WWTW)	S00345	-4537	PE updated with AIR18 Trade and septic tank import information
Bonnanaboigh	S03031	-54	A population study was carried out for this site and reviewed and adopted for AIR18.
Bushmills (WWTW)	S01178	-2	PE updated with AIR18 Trade Information
Carnanbane	S03037	1	A population study was carried out for this site and reviewed and adopted for AIR18.
Carrickfergus (WWTW)	S00261	67	PE updated with AIR18 Trade Information
Coalisland	S02828	96	PE updated with AIR18 Trade Information
Cookstown (WWTW)	S01582	-1577	PE updated with AIR18 Trade Information
Corkill (Fermanagh)	S03059	-6	A population study was carried out for this site and reviewed and adopted for AIR18.
Cornamuck	S03061	6	A population study was carried out for this site and reviewed and adopted for AIR18.

Name of Works	CAR ID	PE Change	Comments
Culmore (WWTW)	S03071	-4853	PE updated with AIR18 Trade Information
Derryhale	S02570	-148	PE updated with AIR18 Trade Information
Dervock (WWTW)	S01102	-1	PE updated with AIR18 Trade Information
Donaghmore (WWTW)	S02840	-45	PE updated with AIR18 Trade Information
Donemana	S03103	-382	A population study was carried out for this site and reviewed and adopted for AIR18.
Donnybrewer	S03080	140	PE updated with AIR18 Trade Information
Douglas Bridge	S03082	-14	A population study was carried out for this site and reviewed and adopted for AIR18.
Downpatrick (WWTW)	S00771	-52	PE updated with AIR18 Trade Information
Draperstown	S01615	-2	PE updated with AIR18 Trade Information
Dromara (WWTW)	S00316	-3	PE updated with AIR18 Trade Information
Dromore (Down)	S02127	-242	PE updated with AIR18 Trade Information
Dromore (Tyrone)	S03083	-2	PE updated with AIR18 Trade Information
Drumenny	S03088	23	A population study was carried out for this site and reviewed and adopted for AIR18.
Dungannon	S02850	1688	PE updated with AIR18 Trade Information
Dungiven	S03101	29	PE updated with AIR18 Trade Information
Dunmurry	S00346	103	PE updated with AIR18 Trade Information
Enniskillen	S03218	283	PE updated with AIR18 Trade Information
Fivemiletown (WWTW)	S03113	-632	A population study was carried out for this site and reviewed and adopted for AIR18.
Glenstall	S01109	-124	PE updated with AIR18 Trade Information
Grange (Taylorstown)	S01442	-7	PE updated with AIR18 Trade Information
Greenisland (WWTW)	S00263	915	PE updated with AIR18 Trade Information
Greysteel (WWTW)	S03123	1	PE updated with AIR18 Trade Information

Name of Works	CAR ID	PE Change	Comments
Hilltown (WWTW)	S02701	-5	PE updated with AIR18 Trade Information
Irvinestown	S03137	-1	PE updated with AIR18 Trade Information
Keady (Armagh)	S02553	-3	PE updated with AIR18 Trade Information
Kesh (WWTW)	S03140	4	PE updated with AIR18 Trade Information
Kilkeel (WWTW)	S00313	-396	PE updated with AIR18 Trade Information
Killinchy (WWTW)	S00252	1665	PE updated with AIR18 Trade Information
Killybaskey	S01581	-12	A population study was carried out for this site and reviewed and adopted for AIR18.
Killygonlan (WWTW)	S02043	-4	PE updated with AIR18 Trade Information
Kilrea	S01156	-8	PE updated with AIR18 Trade Information
Larne (WWTW)	S02044	-101	PE updated with AIR18 Trade Information
Limavady (WWTW)	S03162	54	PE updated with AIR18 Trade and septic tank import information
Lisburn (New Holland)	S00329	-2888	PE updated with AIR18 Trade and septic tank import information
Lisnaskea (WWTW)	S03171	-358	PE updated with AIR18 Trade Information
Longfield (Eglinton)	S03173	-162	A population study was carried out for this site and reviewed and adopted for AIR18.
Maghera (L/Derry)	S01629	69	PE updated with AIR18 Trade Information
Magherafelt (WWTW)	S01621	302	PE updated with AIR18 Trade Information
Magherahoney	S01117	14	A population study was carried out for this site and reviewed and adopted for AIR18.
Markethill	S02591	-75	A population study was carried out for this site and reviewed and adopted for AIR18.
Mayboy	S01163	-51	A population study was carried out for this site and reviewed and adopted for AIR18.
Moneymore (WWTW)	S01589	3	PE updated with AIR18 Trade Information
Moneyreagh (WWTW)	S00337	-1	PE updated with AIR18 Trade Information
Mountnorris	S02248	-3	PE updated with AIR18 Trade Information

Name of Works	CAR ID	PE Change	Comments
Moy (WWTW)	S02859	-591	PE updated with AIR18 Trade Information
Newmills (WWTW)	S02852	-2	PE updated with AIR18 Trade Information
Newry (WWTW)	S02685	-2244	A population study was carried out for this site and reviewed and adopted for AIR18.
Newtownbreda (WWTW)	S00342	-10	PE updated with AIR18 Trade Information
Newtownbutler (WWTW)	S03200	-1	PE updated with AIR18 Trade Information
North Coast (WWTWs)	S04150	-518	PE updated with AIR18 Trade Information
Old Green	S01448	-90	A population study was carried out for this site and reviewed and adopted for AIR18.
Omagh (WWTW)	S03999	-346	PE updated with AIR18 Trade Information
Pomeroy (WWTW)	S01593	1	PE updated with AIR18 Trade Information
Rock Cottages	S02172	6	A population study was carried out for this site and reviewed and adopted for AIR18.
St Johns Terrace (Kilcoo)	S02717	1	A population study was carried out for this site and reviewed and adopted for AIR18.
Strabane	S03223	-1674	A population study was carried out for this site and reviewed and adopted for AIR18.
Swatragh (WWTW)	S01637	2	PE updated with AIR18 Trade Information
Tamnamore (WWTW)	S02862	-3	PE updated with AIR18 Trade Information
Tandragee	S02174	342	PE updated with AIR18 Trade Information
Trillick (WWTW)	S03231	4	PE updated with AIR18 Trade Information
Tullyroan	S02600	-8	PE updated with AIR18 Trade Information
Warrenpoint (WWTW)	S02720	-2220	A population study was carried out for this site and reviewed and adopted for AIR18.
Whitehouse	S00265	-184	PE updated with AIR18 Trade Information
	Total	-12,739	**Change in Line 6 PE since AIR17**

NB. Change in PE (-Ve AIR18 PE Higher); Difference between totals is due to rounding.

Difference between AIR18 and AIR17:

Line 6 for AIR17 -	**1773107**
Line 6 for AIR 18 -	**1785843**
Total Difference -	**-12,736**

Note – The difference in the above totals are due to rounding of values.

Line 7 - Equivalent population served (resident) (Numerical consents)

The table below shows the changes in WWTWs PEs since AIR17 that affects equivalent population served (resident) with numerical consents for Line 7. NB. Change in PE (-Ve AIR18 PE Higher)

Name of Works	CAR ID	PE Change	Comments
Aghanloo (1)	S02989	-6	PE updated with AIR18 Trade Information
Annsborough	S02687	-149	PE updated with AIR16 Trade Information
Antrim (WWTW)	S01422	345	PE updated with AIR18 Trade Information
Ardglass (WWTW)	S00268	136	PE updated with AIR18 Trade Information
Ballyclare	S01467	37	PE updated with AIR18 Trade Information
Ballykelly (L/Derry)	S03016	32	PE updated with AIR18 Trade Information
Ballymena (WWTW)	S01456	4573	PE updated with AIR18 Trade Information
Ballyvoy	S01177	24	A population study was carried out for this site and reviewed and adopted for AIR18.
Banbridge (WWTW)	S02102	1044	PE updated with AIR18 Trade Information
Belfast (WWTW)	S00345	-4537	PE updated with AIR18 Trade and septic tank import information
Bonnanaboigh	S03031	-54	A population study was carried out for this site and reviewed and adopted for AIR18.
Bushmills (WWTW)	S01178	-2	PE updated with AIR18 Trade Information
Carrickfergus (WWTW)	S00261	67	PE updated with AIR18 Trade Information
Coalisland	S02828	96	PE updated with AIR18 Trade Information
Cookstown (WWTW)	S01582	-1577	PE updated with AIR18 Trade Information
Culmore (WWTW)	S03071	-4853	PE updated with AIR18 Trade Information
Derryhale	S02570	-148	PE updated with AIR18 Trade Information
Dervock (WWTW)	S01102	-1	PE updated with AIR18 Trade Information
Donaghmore (WWTW)	S02840	-45	PE updated with AIR18 Trade Information
Donemana	S03103	-382	A population study was carried out for this site and reviewed and adopted for AIR18.
Donnybrewer	S03080	140	PE updated with AIR18 Trade Information
Downpatrick (WWTW)	S00771	-52	PE updated with AIR18 Trade Information
Draperstown	S01615	-2	PE updated with AIR18 Trade Information
Dromara (WWTW)	S00316	-3	PE updated with AIR18 Trade Information
Dromore (Down)	S02127	-242	PE updated with AIR18 Trade Information
Dromore (Tyrone)	S03083	-2	PE updated with AIR18 Trade Information
Dungannon	S02850	1688	PE updated with AIR18 Trade Information
Dungiven	S03101	29	PE updated with AIR18 Trade Information
Dunmurry	S00346	103	PE updated with AIR18 Trade Information
Enniskillen	S03218	283	PE updated with AIR18 Trade Information
Fivemiletown (WWTW)	S03113	-632	A population study was carried out for this site and reviewed and adopted for AIR18.
Glenstall	S01109	-124	PE updated with AIR18 Trade Information

Name of Works	CAR ID	PE Change	Comments
Grange (Taylorstown)	S01442	-7	PE updated with AIR18 Trade Information
Greenisland (WWTW)	S00263	915	PE updated with AIR18 Trade Information
Hilltown (WWTW)	S02701	-5	PE updated with AIR18 Trade Information
Irvinestown	S03137	-1	PE updated with AIR18 Trade Information
Keady (Armagh)	S02553	-3	PE updated with AIR18 Trade Information
Kesh (WWTW)	S03140	4	PE updated with AIR18 Trade Information
Kilkeel (WWTW)	S00313	-396	PE updated with AIR18 Trade Information
Killinchy (WWTW)	S00252	1665	PE updated with AIR18 Trade Information
Killygonlan (WWTW)	S02043	-4	PE updated with AIR18 Trade Information
Kilrea	S01156	-8	PE updated with AIR18 Trade Information
Larne (WWTW)	S02044	-101	PE updated with AIR18 Trade Information
Limavady (WWTW)	S03162	54	PE updated with AIR18 Trade and septic tank import information
Lisburn (New Holland)	S00329	-2888	PE updated with AIR18 Trade and septic tank import information
Lisnaskea (WWTW)	S03171	-358	PE updated with AIR18 Trade Information
Maghera (L/Derry)	S01629	69	PE updated with AIR18 Trade Information
Magherafelt (WWTW)	S01621	302	PE updated with AIR18 Trade Information
Markethill	S02591	-75	A population study was carried out for this site and reviewed and adopted for AIR18.
Moneymore (WWTW)	S01589	3	PE updated with AIR18 Trade Information
Moneyreagh (WWTW)	S00337	-1	PE updated with AIR18 Trade Information
Mountnorris	S02248	-3	PE updated with AIR18 Trade Information
Moy (WWTW)	S02859	-591	PE updated with AIR18 Trade Information
Newmills (WWTW)	S02852	-2	PE updated with AIR18 Trade Information
Newry (WWTW)	S02685	-2244	A population study was carried out for this site and reviewed and adopted for AIR18.
Newtownbreda (WWTW)	S00342	-10	PE updated with AIR18 Trade Information
Newtownbutler (WWTW)	S03200	-1	PE updated with AIR18 Trade Information
North Coast (WWTWs)	S04150	-518	PE updated with AIR18 Trade Information
Omagh (WWTW)	S03999	-346	PE updated with AIR18 Trade Information
Pomeroy (WWTW)	S01593	1	PE updated with AIR18 Trade Information
Strabane	S03223	-1674	A population study was carried out for this site and reviewed and adopted for AIR18.
Swatragh (WWTW)	S01637	2	PE updated with AIR18 Trade Information
Tamnamore (WWTW)	S02862	-3	PE updated with AIR18 Trade Information
Tandragee	S02174	342	PE updated with AIR18 Trade Information
Trillick (WWTW)	S03231	4	PE updated with AIR18 Trade Information
Warrenpoint (WWTW)	S02720	-2220	A population study was carried out for this site and reviewed and adopted for AIR18.
Whitehouse	S00265	-185	PE updated with AIR18 Trade Information
	Total	-12,497	**Change in Line 7 PE since AIR17**

Difference between AIR18 and AIR17:

Line 7 for AIR17 -	**1,712,277**
Line 7 for AIR 18 -	**1,724,769**
Total Difference -	**-12,492**

Note – The difference in the above totals are due to rounding of values.

Line 8 - Number of sewage treatment works

The number of WWTWs of 1015, 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 (6 No.), as per the definition for this line.

The table below shows the changes in numbers of WWTWs since AIR17 for Line 8.

Name of Works	CAR ID	Change in Nr of STWs	Comments
		Net Reduction	**0**

Difference between AIR18 and AIR17:

Line 8 for AIR17 -	**1,015**
Line 8 for AIR 18 -	**1,015**
Total Difference -	**0**

Line 9 – Treatment capacity available

The table below shows the changes in Treatment Capacity Available at WWTWs since AIR17 for Line 9. NB. Change in PE (-Ve AIR18 PE Higher).

Name of Works	CAR ID	PE Change	Comments
Ardgarvan (WWTW)	S02987	-47	Upgraded during AIR18 under RWwIP.
Ballycastle (WWTW)	S01071	-13563	Capital upgrade with beneficial use achieved during AIR18
Bresagh	S00332	-10	Upgraded during AIR18 under RWwIP.
Carnanbane	S03037	30	Upgraded during AIR18 under RWwIP.
Clabby (WWTW)	S03051	-479	Capital upgrade with beneficial use achieved during AIR18
Cornamuck	S03061	7	Upgraded during AIR18, completed by CSDD.
Creevangar	S03068	-4	Upgraded during AIR17 under RWwIP.
Drumsurn	S03100	-277	Capital upgrade with beneficial use during AIR15 but design PE update missed
Edenreagh Road(39-41)	S04094	-32	Upgraded during AIR18, completed by CSDD.
Ervey Road	S03107	-25	Upgraded during AIR18, completed by CSDD.
Glenabbey (WWTW)	S03119	11	Upgraded during AIR18, completed by CSDD.

Name of Works	CAR ID	PE Change	Comments
Mullans (Antrim)	S01118	-250	Capital upgrade with beneficial use achieved during AIR18
Oliver Plunket Park	S02284	-50	Upgraded during AIR178 under RWwIP.
	Total	-14,689	**Change in Line 9 PE since AIR17**

The change in PE equates to an increase in load of 0.88t BOD/day (i.e. 14,689 x 60 for 60g/hd/day /1000/1000) from AIR17 to AIR18.

Difference between AIR18 and AIR17:

Line 9 for AIR17 -	**134.15**
Line 9 for AIR 18 -	**135.03**
Total Difference -	**0.88**

Note – The difference in the above totals are due to rounding of values

Confidence Grade

The confidence grade for line 8 remains as A2 (as for AIR15). 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.

Lines 2-7 – Sewage loads
PPP Only
Line 2 - Total load receiving secondary treatment

The total loads receiving secondary treatment have changed to reflect the load discharged from the NI Water sewer network to the PPP works.

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.

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 18 submission Table 15 (NIW Only) relates to sewage sludge produced for 2017/18 (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 which are routinely removed as part of the sewage treatment process and disposed of separately under Tender C821 (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 C821 has been collated for the period of 2017/18.

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 combined for the Total T15 submission. This data is also submitted through PPP reporting in T42

NI Water, in accordance with AIR17 Reporter's Recommendation 29 (also Refers to Recommendation 24) continues to ensure the reported T15 L14-17 liquid and cake sludge quantities are a single corporate record of data for sludge production at any WwTW, irrespective of whether the WwTW is operated by NIW or a PPP contractor.

NI Water, in accordance with AIR17 Reporter Recommendations (25 & 26), has continued to monitor and investigate monthly sludge volume variations due to operational reasons. NI

Water continues to monitor for variance (AIR18 1.69%) between NI Water cake figure and that of the NI Water contractor, comparisons are only considered for operational confidence and not replacement data for the corporate sludge production.

In relation to AIR17 Reporter's Recommendation 27 NI Water acknowledges that whilst there continues to be occasional issues with quantity and quality of centrate returns these have been well reduced in frequency allowing a more stable operation on site. No measurement facility has been deemed necessary but is still under consideration.

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 97.8 % of sewage sludge to PPP during 2017/18, The total estimated quantity of grit and screenings removed as part of the sewage treatment process and disposed of separately under Tender C821 (Collection, Transportation and Disposal of Waste by skip) has been collated and disposed to landfill in 2017/18.

NIW has assigned a confidence grade of (B2) to sludge disposal (NIW Only) as the company has systems in place to record the volumes and the measured percentage dry solids.

PPP only

Line 5 - Total load entering sewerage system

The information has been separated out of the 'NIW Only' figure for the PPP related catchments and recorded in this cell to readily consider PPP Catchments to PPP Treatment Works. This information was not provided by the PPP Contractors as they do not operate these catchments. The AIR 18 value computed by APT is 315,512PE or 6909.75 tonnes BOD/year.

Line 14 – Percentage unsatisfactory sludge disposal

No change – the PPP Contractor has confirmed that all sludges were disposed of through authorised routes.

Line 15 - Total sewage sludge produced

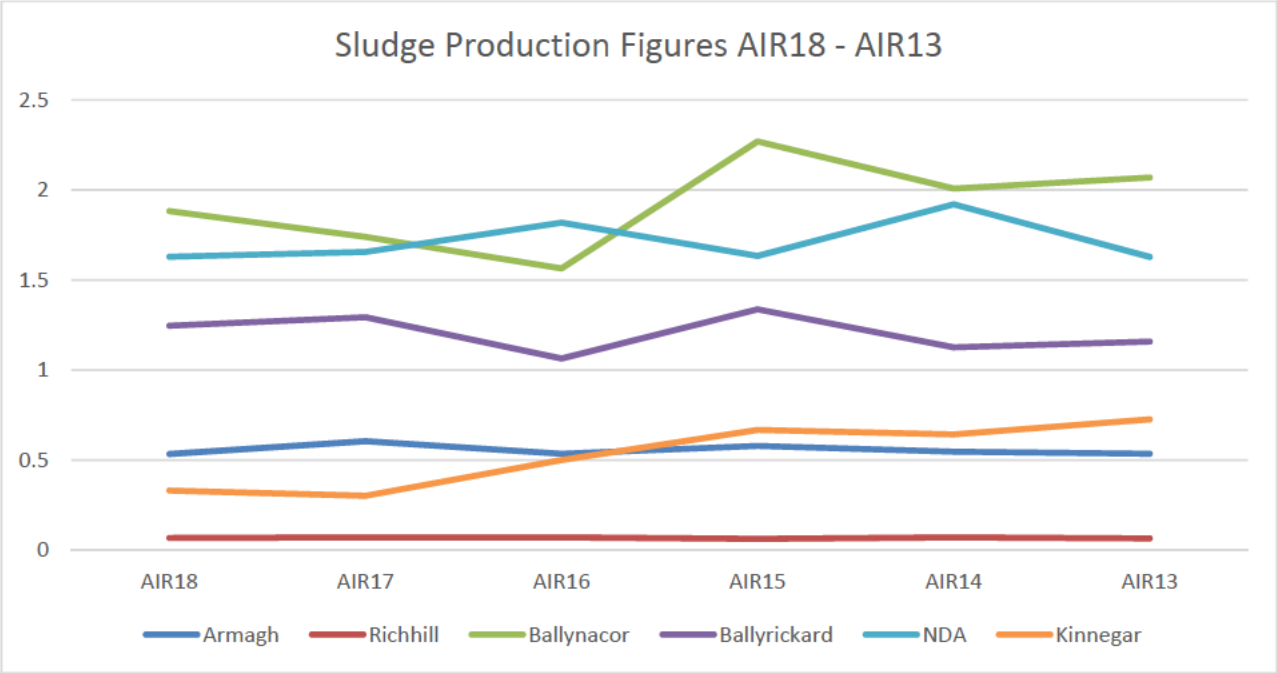
The changes in sludge produced data reflect the loads delivered to the PPP contractor from the NI Water sewer network, outside the PPP contractor's control. There are minor additions for Screenings and Grit which were initially reported in AIR13 and subsequently in AIR submissions since by the Contractors.

The variations are tabulated below;

PPP Production	AIR18	AIR17	AIR16	AIR15	AIR14	AIR13	AIR12	AIR11	AIR10
Armagh WWTW	0.534	0.605	0.535	0.579	0.547	0.535	0.570	0.759	0.840
Richhill WWTW	0.068	0.071	0.071	0.063	0.071	0.065	0.066	0.213	0.210
Ballynacor WWTW	1.882	1.739	1.564	2.269	2.007	2.069	3.330	2.468	2.290
Ballyrickard WWTW	1.246	1.293	1.064	1.337	1.126	1.158	1.225	1.627	1.717
NDA WWTW	1.629	1.656	1.818	1.633	1.920	1.628	1.559	1.753	1.654
Kinnegar WWTW	0.331	0.302	0.501	0.668	0.643	0.726	0.823	0.792	0.700
Omega Screenings/Grit	0.233	0.206	0.083	0.083	0.088	0.106			
Kinnegar Screenings/Grit	0.035	0.058	0.049	0.057	0.047	0.022			
Totals	5.958	5.930	5.685	6.689	6.449	6.309	7.573	7.612	7.411

The changes in sludge production, shown below in graphical form, records data for Omega reflect a probable combination of

- Cumulative tolerances in the representative nature of dry solids sampling and flowmeter accuracy (particularly on smaller sites)
- 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
- the loads delivered to the PPP contractor from the NI Water sewer network, outside the PPP contractor's control, and
- The timing of data capture, where prolonged dry periods can have a fluctuating effect from year to year on absolute values.



The reduced Kinnegar WwTW Sludge Production figures in AIR17 and AIR18 periods reflects the fact that significant quantities of Sludge have been retained on site during the trial of various dewatering solutions. In addition when the dewatering solution was determined, the commissioning of the new plant caused further back logs in Sludge Production to be caused. The Contractor was requested to provide a report to determine the extent of the Sludge Storage on site and this report is available if required. It is however obvious from recent data that the Sludge Production rates are now recovering.

Kinnegar aside, the Omega sites continue to present as a flat line / static trend over the last 5 year AIR periods. The notable exception to the trend is Ballynacor WwTW, which presents a clear downward trend from AIR15 to AIR16, albeit with some recent recovery in AIR17 and AIR18. Given the treatment processes have not changed in the same period and effluent compliance has been maintained, it can be deduced the overall loading on the WwTW tends towards decreased loading from within the catchment and/or from tankered imports, albeit the trend shown signs of recovery in AIR17/18. This is supported by the data behind Line 2 (Load Receiving Secondary Treatment).

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 AIR17 the Omega Contractor reported a disposal of 42.2 ttds [42.229 ttds] sludge disposed of. This year (AIR18) the reported figure is 40.9 ttds [40.856 ttds]. However, last year [AIR17] the Reporter made a recommendation that the Incinerator Returns be deducted from the Total Sludge Disposal collation. The Incinerator returns have been estimated to be 1.660 ttds [Confidence Grade for this estimation would be approx. C4 at best], which could make this actual disposal figure 39.196 ttds, but this figure can't be used to compare variances as the Incinerator Returns were not collated for the previous year [AIR17].

The variance of 1.373 ttds [3.638 ttds AIR17] 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 STWs.
(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.

Specific Commentary Requirements:

- Assumptions Made:
  - 60g/h/d as per NIAUR requirements
  - Skips weights (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 AIR18 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. 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 10-17.

Total Table

Line 14 - Percentage unsatisfactory sludge disposal

No change – the PPP Contractor has confirmed that all sludges were disposed of through authorised routes.

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 AIR17 the PPP Contractors reported a disposal of 43.0 ttds sludge disposed of. This year (AIR18) the reported figure is 41.7 ttds.

In AIR17 the Company disposed of 0.8 ttds relating to grit/screenings sludge. This year (AIR18) the reported figure is 0.8 ttds [0.802 ttds].

In total, AIR17 reported 43.0 ttds [43.073 ttds] of sludge disposed of by all parties. In this reporting year (AIR18) the figure is 41.7 ttds [41.658 ttds].

The variance of 1.415 ttds [3.679 ttds AIR17] 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.

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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**ASSET BALANCE AT APRIL 1**																				
1	Total length of sewers	km	2	15,090.35	B3	15,254.37	B3	15,410.44	B3	15,581.51	B3	15,625.13	B3	15,777.29	B3						
2	Total length of "critical" sewers	km	2	3,656.86	C3	3,716.68	C3	3,732.98	C3	3,760.85	C3	3,839.64	C3	3,860.69	C3						
B	**CHANGES DURING REPORT YEAR**																				
3	New "critical" sewers	km	2	33.50	C3	24.68	C3	19.54	C3	36.44	C3	1.49	C3	2.75	C3						
4	"Critical" sewers - inspection by CCTV/man entry	km	2	51.79	C4	48.98	C4	35.98	C4	71.62	C4	91.44	C4	151.69	C4						
5	"Critical" sewers - renovated	km	2	1.41	B2	0.99	B2	1.87	B2	1.26	B2	4.65	B2	2.49	B2						
6	"Critical" sewers - replaced	km	2	1.04	B2	3.32	B2	5.09	B2	5.32	B2	1.48	B2	2.76	B2						
7	Abandoned "critical" sewers and other changes	km	2	0.00	B2	1.48	B2	0.50	B2	0.00	B2	0.16	B2	0.00	B2						
8	New "non-critical" sewers	km	2	145.40	C3	172.22	C3	130.22	C3	110.60	C3	117.07	C3	117.78	C3						
9	"Non-critical" sewers - renovated	km	2	2.31	B2	2.93	B2	1.95	B2	2.71	B2	2.53	B2	3.88	B2						
10	"Non-critical" sewers - replaced	km	2	19.29	B2	18.08	B2	11.89	B2	7.80	B2	0.63	B2	5.98	B2						
11	Abandoned "non-critical" sewers and other changes	km	2	0	B2	0.36	B2	0.60	B2	0.11	B2	0.29	B2	0.18	B2						
11a	Total length of sewers replaced or renovated	km	2	24.05		25.32	B2	20.80	B2	17.09	B2	9.29	B2	15.11	B2						
12	Sewer collapses per 1,000km	nr	1	73.6	B3	72.7	B3	85.7	B3	78.5	B6	79.1	B3	75.8	B3						
13	Sewer blockages per 1,000km	nr	1	1,363.6	B3	1,172.1	B3	1,073.6	B3	1,023.4	B3	998.6	B3	905.8	B3						
13a	Number of sewer blockage clearance which exceeds 6 hours	nr	0	1,250	B3	1,104	A2	2,640	B4	4,199	A2	4,285	A2	3,362	A1						
13b	Number of sewer blockage clearance which exceeds 12 hours	nr	0	849	B3	645	A2	1,832	B4	3273	A2	3,625	A2	2,586	A1						
13c	Number of sewer blockage clearance which exceeds 24 hours	nr	0	444	B3	203	A2	276	B4	555	A2	708	A2	390	A1						
C	**ASSET BALANCE AT MARCH 31**																				
14	Total length of sewers	km	2	15,254.37	B3	15,410.44	B3	15,581.51	B3	15,625.13	B3	15,777.29	B3	15,890.63	B3						
15	Total length of "critical" sewers	km	2	3,716.68	C3	3,732.98	C3	3,760.85	C3	3,839.64	C3	3,860.69	C3	3,892.98	C3						
D	**INTERMITTENT DISCHARGES**																				
16a	Number of unsatisfactory intermittent discharges excluding CSOs (NIEA)	nr	0	197	C2	190	C2	159	C2	151	C2	147	C2	143	C2						
16b	Number of unsatisfactory intermittent discharges CSOs (NIEA)	nr	0	318	C2	312	C2	288	C2	270	C2	263	C2	255	C2						
17a	Number of intermittent discharges excluding CSOs	nr	0	1,675	B3	1,732	B3	1,751	B3	1,760	B3	1,762	C2	1,766	C2						
17b	Number of CSOs	nr	0	779	B3	802	B3	802	B3	800	B3	796	C2	788	C2						
E	**DRAINAGE AREA PLANS**																				
18	Cumulative number of drainage area plans completed	nr	0	71	A1	71	A1	58	A1	58	A1	58	A1	79	A1						
19	Number of drainage area plan studies in progress at the report end of the report year	nr	0	1	A1	8	A1	8	A1	8	A1	14	A1	23	A1						
20	Total sewerage drainage areas	nr	0	256	A2	254	A2	251	A2	250	A2	250	A2	250	A2						
21	Cumulative % drainage area plan studies completed	%	1	27.7	A2	28.0	A2	23.1	A2	23.2	A2	23.2	A2	31.6	A2						
22	% population/properties covered by completed studies	%	1	53.3	B3	53.2	B3	50.7	B3	50.4	B3	50.2	B3	87.2	B2						
F	**SEWAGE TREATMENT COMPLIANCE MEASURES**																				
23	% WwTW discharges compliant with numeric consents	%	1	93.1		91.8	A1	92.17	A1	92.6	A1	93.4	A1	93.4	A1						
24	% of total p.e. served by WwTWs compliant with numeric consents	%	1	97.9		94.5	C5	96.45	C5	97.5	A1	93.9	A1	98.1	A1						
24a	% of total p.e. served by WwTWs compliant with numeric consents excluding upper tier failures	%	1	98.5		97.6	C5	98.15	C5	98.3	A1	98.7	A1	98.4	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						
G	**NOMINATED SEWERAGE SERVICE OUTPUTS**																				
26	Delivery of improvements to nominated UIDs as part of a defined programme of work	nr	0	38	B3	11	A2	17	A2	26	A2	11	A1	11	A1						
27	Delivery of improvements to nominated WWTWs part of a defined programme of work	nr	0	12	B3	17	A2	16	A2	3	A2	2	A1	3	A1						
28	Small WwTWs delivered as part of the rural wastewater investment programme	nr	0	14		7	A2	18	A2	4	A2	8	A2	4	A2						
H	**ADDITIONAL SEWERAGE SERVICE OUTPUTS**																				
29	CSO and EO discharges at which event and duration monitoring equipment has been installed	nr	0							0	B2	0	B2	0	B2						
30	WwTWs upgraded to comply with PPC Regulations	nr	0							0	A1	0	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						
32	Number of sustainable WwTW solutions delivered (p.e. ≥ 250)	nr	0							1	A1	1	A2	1	A2						
33	Number of sustainable WwTW solutions delivered (p.e. < 250)	nr	0							0	A1	1	A2	0	A2						

Table 16 - Sewerage Service Activities (NI Water only WWTW)

Line 1 – Total length of sewers at 1 April

This value has been extracted from line 14 of the AIR17 Table 16.

Line 2 – Total length of 'critical' sewers at 1 April

This value has been extracted from line 15 of the AIR17 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	AD	DS	CSD	Total(km)
3	New "critical" sewers	0.65	2.10	0	2.75
5	"Critical" sewers - renovated	2.15	n/a	0.34	2.49
6	"Critical" sewers - replaced	2.76	n/a	0	2.76
7	Abandoned "critical" sewers and other changes	0	n/a	0	0
8	New "non-critical" sewers	11.50	106.28	0	117.78
9	"Non-critical" sewers - renovated	2.19	n/a	1.69	3.88
10	"Non-critical" sewers - replaced	5.98	n/a	0	5.98
11	Abandoned "non-critical" sewers and other changes	0.18	n/a	0	0.18
11a	Total length of sewers replaced or renovated				15.11

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 118.560 km in AIR17 to 120.530km.

The critical sewer lengths have been calculated using the same methodology as AIR17.The confidence grade is unchanged at C3.

Line 4 - 'Critical' sewers – inspection by CCTV/man entry

Line	Description	AD	In-house	AP	Total(km)
4	'Critical sewers'- inspection by CCTV/man entry	19.47	40.02	92.20	151.69

Asset Performance

Carried out 92.2 of CCTV work with 20.24km of SPG4s and SPG5s discovered to enable the rehab programme for 17/18 to be addressed.

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 (15.11km) is higher than the AIR 17 figure of 9.29 km.

Confidence grades remain unchanged at B2.

Lines 7 and 11 - sewers abandoned

These lines had a return of 0.18 km which is lower from the AIR17 figure of 0.45 km.

Lines 12-13c – Sewer collapses and blockages

General

NIW collate the number of sewer blockages and sewer collapses from the draft invoices provided by the contractor and approved by the relevant Field Managers. As result of further refinement at NIW's request the contractor now, (end of March 2015), accurately records on their invoices what section within the sewer the blockage occurred (e.g. main, lateral or private). NIW are now in a good position for AIR18 to report on whether collapses or blockages have occurred in a private lateral, public lateral or public main sewer. The data is collected for both main and lateral sewers but the return only requires the totals for collapses and blockages. NIW does not distinguish between collapses and essential repairs to sewers; they are all collated together for AIR figures. 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 there were as follows

12 Rising Main Failures Repaired
1115 Gravity Main Sewers Repaired
77 Gravity Lateral Sewers Repaired
1204 Total number of sewer repairs

13691 Main Sewer Blockages
702 Lateral Sewer Blockages
14393 Total Number of sewer blockages

Of the 14393 sewer blockages, for 17/18 reporting year there were 27 incidents of actual internal flooding.

All FOC's attributed to 20 Blockages 7 Collapses 0 Equipment Failure

NIW are now more proactive in their approach to repeat blockages, as part of their annual performance objectives all the Field Managers (FM) have been tasked to make a 3% reduction in the number of blocked sewers and the AIR return figure is evidence of this success rate. 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. Repeat blockages are recorded on the draft invoices, from the contractor, as they are not paid unless the original blockage was more than 14 days prior to the reoccurrence. These blockages are discounted from the blockage numbers. This has helped reduce the number of sewer blockage complaints by 5.83% on last year's total.

NIW now run a monthly report in the Ellipse system that confirms the length of time a sewer blockage job took to be completed. WWBU now collate a list of all the work order numbers on the blockage drafts which are not "full rate" blockage clearance jobs and these jobs are excluded from the above-mentioned Ellipse data. Due to the fact that the Ellipse system calculates the length of time a job takes from the time the work request is raised until the

work request is closed all jobs exceeding 24 hours are investigated as all follow-on jobs are included in the time the work request is open. These jobs are then reported in the correct category according to the length of time the blockage job actually took to be completed.

- 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 2018 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.

Reported blockages which could not be identified or required no action when investigated on site are recorded on the blockage draft invoices as attendance only and are only paid an attendance rate therefore they are not counted in the blockage numbers for the AIR return.

Line 13 - Sewer Blockages per 1,000 Km

- The number of sewer blockages is divided by the total length of sewers at 31 March 2018 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

NIW now run a monthly Ellipse report that confirms the length of time a sewer blockage job took to be completed. WWBU now collate a list of all the work order numbers on the blockage drafts, which have not been paid the “full rate” for blockage clearance and these jobs are excluded from the above-mentioned Ellipse data. Due to the fact that the Ellipse system calculates the length of time a job takes from the time the work request is raised until the work request is closed all jobs exceeding 24 hours are investigated as all follow-on jobs are included in the time the work request is open. These jobs are then reported in the correct category according to the length of time the blockage job actually took.

Confidence Grading – Lines 12, 13, 13a, 13b & 13c

Because NIW are using data from checked and paid invoices (B2) and total length of sewers (B3), the confidence grade for the AIR18 L12 & L13 is B3. NIW expects this to consolidate as we move forward into AIR19 as report building continues with the single Sewer Maintenance Contractor.

Because NIW are using an Ellipse report (minus work orders that are not full rate blockage clearance jobs), to gather the information for Lines 13, 13b & 13c and this is being manually confirmed, these lines have been given a confidence grade of A1 for AIR18.

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.

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 regards 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.

Lines 17a and 17b – Sewerage System Intermittent Discharges

Table A - Depicting differences between the sewerage system overflows between AIR17 and AIR18

Lines 3 to 11a – Changes during report year

The tables below show the make-up of the figures submitted for these lines.

Line	Description	AD	DS	CSD	Total(km)
3	New "critical" sewers	0.65	2.10	0	2.75
5	"Critical" sewers - renovated	2.15	n/a	0.34	2.49
6	"Critical" sewers - replaced	2.76	n/a	0	2.76
7	Abandoned "critical" sewers and other changes	0	n/a	0	0
8	New "non-critical" sewers	11.50	106.28	0	117.78
9	"Non-critical" sewers - renovated	2.19	n/a	1.69	3.88
10	"Non-critical" sewers - replaced	5.98	n/a	0	5.98
11	Abandoned "non-critical" sewers and other changes	0.18	n/a	0	0.18
11a	Total length of sewers replaced or renovated				15.11

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 118.560 km in AIR17 to 120.530km.

The critical sewer lengths have been calculated using the same methodology as AIR17.The confidence grade is unchanged at C3.

Line 4 - 'Critical' sewers – inspection by CCTV/man entry

Line	Description	AD	In-house	AP	Total(km)
4	'Critical sewers'- inspection by CCTV/man entry	19.47	40.02	92.20	151.69

Asset Performance
Carried out 92.2 of CCTV work with 20.24km of SPG4s and SPG5s discovered to enable the rehab programme for 17/18 to be addressed.

The confidence grade for this line remains unchanged at C4.

Lines 5, 6, 9, 10 and 11 a - sewers renovated and replaced
The total length renovated and replaced (15.11 km) is higher than the AIR 17 figure of 9.29 km.

Confidence grades remain unchanged at 82.

Lines 7 and 11 - sewers abandoned
These lines had a return of 0.18 km which is lower from the AIR17 figure of 0.45 km.

Lines 17a and 17b - Above Ground Overflows from within WTWWs

Table H - Total number of Overflows within WWTW

	AIR17 Number	AIR18 Number
Total number of Overflows from within WWTW	657	659

Hence for AIR18 the total number of overflows within WWTW is 659.

The overall number of WWTW overflows from AIR17 to AIR18 has had a net increase of 2 overflows. 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 AIR17 is mainly due to capital investment which has resulted in numerous small works now having an overflow facility.

The physical changes on the ground with respect to the number of overflows within WWTW since AIR17 are as follows:

- 1 Overflow within WWTW withdrawn since AIR17.
  (See Table I, J, K & L below)
- 3 Additional overflows within WWTW since AIR17.
  (See Table M, N & 0 below)

Hence a net increase of 2 overflows since AIR17.

Table I - Overflows within WWTW withdrawn since AIR17 due to works becoming a pump away in AIR18

NAME of Works	Site ID	Status in AIR17	Withdrawn 0/Fs Since AIR17
Not applicable for AIR18			0
Total Number of overflows withdrawn since AIR17 due to the WWTWs becoming a pump away			0

Table J - Overflows within WWTW withdrawn since AIR17 due to works being upgraded

NAME of Works	Site ID	Status in AIR18	Changes to Overflows for AIR18	Withdrawn O/Fs Since AIR17
Clabby	S03051	Works Upgraded	3 DWF	-1
Total Number of overflows withdrawn since AIR17 due to the works being upgraded				**-1**

Table K – Withdrawn Overflows within WWTWs due to incorrect designation in AIR17

NAME of Works	Site ID	Status in AIR18	Withdrawn O/Fs Since AIR17
Not Applicable for AIR18			0
Total of Withdrawn Overflows due to incorrect designation in AIR17			**0**

Table L– Summary of the total number of Overflows withdrawn since AIR17

Total of overflows withdrawn since AIR17 due to the works becoming a pump away	0
Total of overflows withdrawn since AIR17 due to the works being upgraded	-1
Total of Withdrawn Overflows due to incorrect designation in AIR16	0
Combined Total Number of overflows within WWTW withdrawn since AIR17	**-1**

Table M - Additional overflows within WWTW since AIR17 due to WWTW upgrades

NAME of Works	Site ID	Status in AIR18	Changes to Overflows for AIR18	Additional O/Fs Since AIR17
Bresagh	S00332	Works upgraded	1 additional FFT O/F	1
Oliver Plunkett Park	S02284	Works upgraded	1 additional FFT O/F	1
Clabby	S03051	Works Upgraded	1 additional FA O/F	1
Total Number of additional overflows since AIR17 due to WWTW being upgraded				**3**

Table N - Additional overflows within WWTW due to incorrect designation in AIR17

NAME of Works	CAR ID	Status in AIR18	Changes in Overflows for AIR18 from Process Info	Additional O/Fs Since AIR17
Not Applicable for AIR18			0	0
Totals Number of additional overflows within WWTW due to incorrect designation in AIR17				**0**

Table O – Summary of additional overflows within WWTW since AIR17

Total Number of additional overflows since AIR17 due to works being upgraded	3
Totals Number of additional overflows within WWTWs due to incorrect designation in AIR18	0
Combined Total: of Additional overflows within WWTWs since AIR17	**3**

For AIR18, 1 overflow has been withdrawn (see Table J) and 3 additional overflows (see Table M) due to works being upgraded have now been included.
This equates to a net increase of 2 additional overflows since AIR17.

Table P – Summary of Overflow type within WWTW

Overflow Type	AIR17 Overflows from WWTW	AIR17 Overflows - Totals	AIR18 Overflows from WWTW	AIR18 Overflows - Totals	Difference between AIR17 & AIR18
Formula "A" O/Fs only	171	199	171	200	1
Formula "A" O/Fs (which also act as PS E/O)	19		20 (addition of Clabby)		
Formula "A" O/Fs with Storm (which also act as PS E/O)	9		9		
FFT O/Fs only	103	332	105 (addition of Bresagh and Oliver Plunkett Park)	334	2
FFT O/Fs (which also act as PS E/O)	16		16		
FFT O/Fs with Storm Retention	203		203		
FFT O/Fs with Storm Retention (which also act as PS E/O	10		10		
3 DWF	15	15	14 (removal of Clabby)	14	-1
Additional Overflows-storm	6	111	6	111	0
Additional Overflows-other structures	6		6		
Additional Overflows-pumping station E/O	99		99		
Total No of WWTWs Overflows	**657**	**657**	**659**	**659**	**2**

Since AIR16 the 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 APT has not endeavored to use A/C data due to the on-going A/C process of subscribing WOC information across onto GIS.

Comparison between AIR16& AIR17 – CSOs in the Sewerage System

The number of CSOs in the sewerage system has decreased since AIR17 i.e. (796 in AIR17 – 788 in AIR18). The final reported number is 788, 830 minus 42 Dual, Duplicates and Bifurcation assets which are not reported upon.

This improved figure in CSOs is due to on-going improvements in our data capturing process. When the process has been rectified, there will be a significant improvement in data quality, GIS network data, and the addition of CSOs which had previously been unidentified or unconsented.

1. Background

NI Water had a programme of Drainage Area Studies which commenced in 1995. The programme related 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.

Each Drainage Area Study has used the full investigation procedure set out in the Sewerage Rehabilitation Manual, 4th Edition (WRc), including a CCTV survey targeted at surveying all critical sewers within the network.

More recently, networks with less than 5000 population have been subject to a scoping-study which seeks to identify the needs within the network, and allows a decision to be made as to whether a full DAS is justified.

It has been NI Water practice to review each Study on a 5-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

Following studies are being carried out for Model Build and Verification:

- Millisle
- Newry
- Bangor
- Seahill
- Dungannon
- Bushmills/Portballintrea
- Greenisland
- Kinnegar
- Moy
- Kilkeel
- Portrush
- Portstewart
- Downpatrick
- Killyleagh
- Belfast
- Omagh
- Cookstown

The studies below have achieved completion of the first stage - Model Build and Verification – of a study and second stage – Needs and Options are in process.

- Newtownbreda
- Whitehouse
- Carrickfergus
- Larne
- Ballyrickard
- Annesbouragh/Castlewellan

3. Specification

NI Water's DAS specification is the "NI Water Risk Based Drainage Area Plan Document".

4. PC 15

To date, the principal driver for DAPs in Northern Ireland has been the need to develop UID solutions. The PC15 capital plan includes very limited funding for additional UID projects. There is therefore a risk that DAPs produced at present will not achieve funding for implementation and will therefore inform the PC21 business plan.

5. Outputs.

The main outputs from a DAP are:

- UIDs
- DG5s
- New Developments.
- 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 April 2018

Table 1 - Drainage area studies completed in last 5 years

Drainage Area	DAP Completion Date	DAP Status Categories	AIR17 Actual PE
Ballyclare DA	January 2015	Completed in last 5 years	16352
Ballygowan DA	January 2017	Completed in last 5 years	3372
Ballykelly DA	July 2015	Completed in last 5 years	3651
Cushendall DA	January 2015	Completed in last 5 years	4006
Dungiven DA	July 2014	Completed in last 5 years	4773
Moneyreagh DA	January 2017	Completed in last 5 years	2386
		TOTAL	34,540

Table 2 - Drainage area studies completed outside the last 5 years since 2003

Drainage Area	DAP Completion Date	DAP Status Categories	AIR17 Actual PE
Annalong DA	June 2006	Over 5 years since completion	3222
Ardglass DA	October 2006	Over 5 years since completion	2866
Armagh DA	April 2008	Over 5 years since completion	14133

Drainage Area	DAP Completion Date	DAP Status Categories	AIR17 Actual PE
Ballycastle DA	June 2005	Over 5 years since completion	12797
Ballyhalbert DA	August 2006	Over 5 years since completion	5834
Ballywalter DA	August 2006	Over 5 years since completion	2223
Bessbrook DA	February 2004	Over 5 years since completion	6754
Castledawson DA	November 2006	Over 5 years since completion	792
Cloughey DA	August 2006	Over 5 years since completion	1381
Craigavon DA	November 2006	Over 5 years since completion	66108
Downpatrick DA	September2005	Over 5 years since completion	19657
Donaghadee DA	March 2006	Over 5 years since completion	6470
Draperstown DA	June2006	Over 5 years since completion	3252
Dromore DA (Down)	November 2006	Over 5 years since completion	7480
Dundrum DA	July 2006	Over 5 years since completion	2243
Dunmurry DA	November 2003	Over 5 years since completion	46042
Glenavy DA	Flow Survey 2006	Over 5 years since completion	2112
Glenstall DA	October 2004	Over 5 years since completion	21153
Greyabbey DA	February 2006	Over 5 years since completion	1147
Hillsborough DA	August 2003	Over 5 years since completion	3284
Keady DA	Flow Survey 2006	Over 5 years since completion	4568
Kircubbin DA	February 2006	Over 5 years since completion	1361
Lisburn DA	October 2009	Over 5 years since completion	69742
Lurgan DA	April 2003	Over 5 years since completion	28292
Maghaberry DA	November 2006	Over 5 years since completion	4597
Magherafelt DA	November 2006	Over 5 years since completion	17453
Magheralin DA	July 2005	Over 5 years since completion	2163

Drainage Area	DAP Completion Date	DAP Status Categories	AIR17 Actual PE
Millisle DA	March 2006	Over 5 years since completion	2331
Moira DA	April 2003	Over 5 years since completion	5144
Moneymore DA	June 2006	Over 5 years since completion	2828
Newcastle DA	December 2005	Over 5 years since completion	16227
Portadown DA	November 2006	Over 5 years since completion	30154
Portaferry DA	February 2006	Over 5 years since completion	3801
Portavogie DA	August 2006	Over 5 years since completion	2624
Portglenone DA	October 2006	Over 5 years since completion	3488
Rathfriland DA	November 2003	Over 5 years since completion	3977
Randalstown DA	March 2008	Over 5 years since completion	3947
Ritchill	February 2004	Over 5 years since completion	2455
Strabane DA	September 2003	Over 5 years since completion	22191
Tandragee DA	June 2005	Over 5 years since completion	11686
Waringstown DA	June 2005	Over 5 years since completion	7230
Warrenpoint DA	April 2009	Over 5 years since completion	14871
Whitehead DA	September 2004	Over 5 years since completion	5729
		TOTAL	495,809

Table 3 - Drainage area studies to be completed in PC15

Drainage Area	DAP Completion Date	DAP Status Categories	AIR17 Actual PE
Annsborough /Castlewellan DA	October 2006	For completion in PC15	5882
Antrim DA	March 2008	For completion in PC15	65282
Ballymena DA	August 2009	For completion in PC15	70948
Ballymoney DA	October 2004	For completion in PC15	21276
Ballynahinch DA	2004	For completion in PC15	7936
Bangor DA	October 2010	For completion in PC15	59813
Belfast DA	2003	For completion in PC15	360602
Carrickfergus DA	August 2003	For completion in PC15	32474

Drainage Area	DAP Completion Date	DAP Status Categories	AIR17 Actual PE
Coleraine DA	November 2006	For completion in PC15	22730
Cookstown DA	2009	For completion in PC15	20014
Cranfield DA (Kilkeel)	November 2017	For completion in PC15	4140
Culmore DA	November 2006	For completion in PC15	131123
Dungannon DA	Flow Survey 2006	For completion in PC15	79331
Enniskillen DA	No DAP	For completion in PC15	26231
Greencastle DA	No DAP	For completion in PC15	12529
Kilkeel DA	July 2006	For completion in PC15	14101
Killyleagh DA		For completion in PC15	7226
Kinnegar DA	February 2010	For completion in PC15	104540
Larne DA	No DAP	For completion in PC15	23175
Limavady DA	MBV 2014 & 2015	For completion in PC15	16321
Moy DA		For completion in PC15	3179
Newry DA		For completion in PC15	56605
Newtownbreda DA	MBV Nov 2014	For completion in PC15	34497
Omagh DA		For completion in PC15	33245
Portrush DA		For completion in PC15	9755
Portstewart DA		For completion in PC15	7801
Seahill DA	April 2006	For completion in PC15	6794
Whitehouse DA	MBV March 2015	For completion in PC15	87930
		TOTAL	1,352,631

The above domestic PEs have been updated where possible from the 'Master List of AIR17' spreadsheet. Giving TOTAL PE of 1,882,980.

Lines 23 – 25 and Line 30 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 Waste Water 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 2017 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 18

1. For AIR 18 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 Asset Management Section (Performance Team – Above Ground) for the AIR 16 Return. These same PE's were also used to calculate the number of audit samples required per site for the 2017 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 18 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 4 – 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 5 indicates the WWTW affected by sampling frequency threshold changes and is provided overleaf.

Table 5 – Sampling Frequency Threshold Changes

Works Name	PE used in AIR15	PE Supplied by Asset Management	Threshold Being Crossed
Ballymena	113,825	69,915	100,000
Dunmurry	53,605	46,243	50,000
Dromore (Tyrone)	2032	1917	2,000
Dundrum	2243	1674	2,000

The 2012 sample scheduling PE data, which was agreed with NIEA in November 2011, has been applied to the works in Table 5, in the absence of flow and load data.

5. Only NI Water operated WWTW are included in assessment.

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 Waste Water 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.

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, Board and CSDD/MT) 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 18 Calculation Spreadsheet

No. of NI Water Only WWTW's = 226
No. of failing NI Water Only works = 15
No. of passing NI Water Only works = 211

211/226 x 100 = 93.36%
Reported to one decimal place = **93.4%**

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 18 Calculation Spreadsheet

PE of failing NI Water Only works = 35254
Total PE of NI Water Only works = 1808627
PE of passing NI Water Only works = 1773373

1773373 / 1808627 x 100 = 98.05
Reported to one decimal place = **98.1%**

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 18 Calculation Spreadsheet

PE of failing NI Water Only works (Exc UT) = 28873
Total PE of NI Water Only works = 1808627
PE of passing NI Water Only works = 1779754

1779754 / 1808627 x 100 = 98.40
Reported to one decimal place = **98.4%**

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 has been introduced for PC15 for small works in the band 20 – 249 population equivalent (pe). 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 PC15 Final Determination indicated a target of 56 UID improvements for the 6-year period, with 5 of these profiled for delivery in 2017/18. None of these PC15 FD nominated outputs profiled for 2017/18 were delivered between 01 April 2017 and 31 March 2018. 7 PC15 FD UIDs which had been profiled for delivery in 2015/16 were delivered between 01 April 2017 and 31 March 2018.
It is important to note however that NI Water delivered 2 PC13 UIDs in 2017/18 which had originally been profiled for 2014/15.
A further 2 additional UIDs were identified and delivered during 2016/17: these were not included in the PC15 FD and were not PC13 carry-over.
11 UIDs in total were delivered during 2017/18.

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 2017/18, the confidence grades 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 third year of PC15 – AIR18 Period

Catchment	UID Address	FD Ref.	Project ID	Comments	Operational Date
Armagh WWTW	Newry Road SPS	UID010	KF330	CSO set to pass forward Formula A, 6mm screen fitted, Increase Storage	19/05/2017
Armagh WWTW	Milford SPS	UID008	KF396	6mm screen fitted, Increase Storage	04/08/2017
North Coast WWTW	Ballysally CSO	UID040	KC415	6mm screen fitted, Increase Storage	16/06/2017
Culmore WWTW	Bleachgreen WwPS	UID420	KL524	6mm screen fitted, Increase Storage	30/06/2017
North Down WWTW	Castle Park CSO 07	UID023	KS877		29/01/2018
North Down WWTW	13 Rugby Avenue CSO 8A	UID179	KS877	Abandoned	29/01/2018
North Down WWTW	11 Brunswick Road CSO 8B	UID180	KS877	Abandoned	29/01/2018
North Down WWTW	104 Abbey street CSO 8E	UID181	KS877	Abandoned	29/01/2018
North Down WWTW	114 Abbey street CSO 8E	UID182	KS877		29/01/2018

Catchment	UID Address	FD Ref.	Project ID	Comments	Operational Date
North Down WWTW	Abbey Park CSO 9	UID184	KS877		29/01/2018
Milltown WWTW	Muckamore WwPS	UID389	KA260	Increase Storage	04/04/2017

Line 27 – Delivery of improvements to WwTW through nominated schemes as part of a defined programme of work

3 WwTW nominated outputs were delivered between 01 April 2017 and 31 March 2018. Ballycastle, Clabby and Mullans are all PC15 outputs.

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 2017/18, the confidence grades 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.

WwTWs Delivered during the second year of PC15 – AIR17 Period

Project Name	Project Code	Beneficial Use Date	Comments
Ballycastle WwTW	KC296	31/12/2017	
Clabby WwTW	KP586	28/03/2018	
Mullans WwTW	KA239	29/03/2018	

Line 28 - Investment in improvements to small wastewater treatment works as part of the Rural Wastewater Investment Programme

Four small wastewater treatment works achieved Beneficial Use during 2017/18. Details of the actual works and year delivered are listed below.

CAR Site Reference	Project title	Year claimed	Outstanding outputs
S02284	Oliver Plunkett	2017/18	
S00332	Bresagh	2017/18	
S02987	Ardgarvan	2017/18	
S03037	Carnabane	2017/18	

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 adopted a cautious approach to the installation of new technology which has first to be proven to function adequately. To this end, during 2016/17 we identified and procured equipment necessary for trials at 10 CSOs and 20 wastewater pumping stations. It is anticipated that these trials will conclude in 2017/18. We plan to install all necessary monitoring equipment in the PC15 period.

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 28 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.

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 has set out their priorities for completion of odour modelling. This requires 23 odour modelling assessments to be undertaken, with 5 sites being assessed by NIEA as not requiring odour modelling.

An Odour Modelling plan has been prioritised and agreed with NIEA.

Upon completion of the odour modelling, NI Water and NIEA will be in a position to assess each site 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, all 23 sites are assessed as non-compliant at this stage.

For the 5 sites not requiring odour modelling NI Water will progress all site documentation, such as site specific management plans, accident management plans and odour management plans to obtain sign-off by NIEA.

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	Mar-17	Mar-17	2016/17	Complete
Culmore	2	Yes	Jun-17	31/05/2017	Oct-17	Dec-17	Jan-18	2017/18	Complete
Ballymena (Tullygarley)	2	Yes	Jun-18		Summer 18	TBC		2018/19	Potential Delay
Antrim	2	Yes	Jun-17	31/05/2017	Not required	Not required	Not required	2017/18	Complete
Dunmurry	2	Yes	Jun-17	31/05/2017	Not required	Not required	Not required	2017/18	Complete
Cookstown	2	Yes	Jun-17	31/07/2017	Oct-17	Dec-17	Jan-18	2017/18	Complete
Glenstall (Ballymoney)	2	Yes	Jun-17	31/07/2017	Not required	Not required	Not required	2017/18	Complete
Limavady	2	Yes	Oct-17	02/11/2017	Not required	Not required	Not required	2017/19	Complete
Downpatrick	2	Yes	Dec-17	31/07/2017	Not required	Not required	Not required	2017/18	Complete
North Coast	3	No	Nov-17	15/11/2017	Not required	Not required	Not required	2017/19	Complete
Enniskillen	3	No	Apr-18		Summer 18	TBC		2018/19	On Target
Omagh	3	No	Apr-18		Summer 18	TBC		2019/20	On Target
Banbridge	3	No	TBC		Summer 18	TBC		2019/20	On Target
Larne	3	No	Nov-17	17/11/2017	Not required	Not required	Not required	2017/19	Complete
Tandragee	3	No	TBC		Summer 18	TBC		2019/20	On Target
Magherafelt	3	No	Oct-17	02/11/2017	Summer 18	TBC		2020/21	On Target
Waringstown	3	No	TBC		Summer 18	TBC		2020/21	On Target
Greenisland	3	No	Apr-18		Summer 18	TBC		2020/21	On Target
Ballyclare WwTW	3	No	Apr-18		Summer 18	TBC		2020/21	On Target
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	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	Complete
Lisnaskea	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	Complete

Line 31 Impermeable Surface Area

NI Water removed 119,200m2 of impermeable surface water from the combined sewerage system. This was achieved from the completion of three schemes as listed below.

Project No.	Project Name	Impermable Surface removed
KL540	Foyle College, Limavady Road Londonderry	82000
KR612	Olympia Leisure Centre Windsor Park Storm Sewer Requisition	36000
KR658	Fitzroy Avenue Belfast Storm Sewer Extension	1200
	Total	**119,200**

Line 32 - Number of sustainable WwTW solutions delivered (p.e. ≥ 250)

1 WwTW sustainable solution with a P.E. greater than 250 was delivered in 2017/18: this was Clabby WwTW. Clabby is a works with newly added Phragmafiltre with a maximum PE of 750.

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 2017/18

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																	1,512.0	C3
2	Annual average non-resident population	000	1																	32.4	C3
3	Volume of sewage collected (daily average)	Ml/d	1																	399.9	B2
4	Total connected properties	nr	0																	698,318	A2
5	Area of Sewerage District	km^2	0																	13520	B2
B	**SEWERAGE DATA**																				
6	Total length of sewer	km	0																	15891	B3
C	**Costs**																				
7	Sewerage: Direct Costs	£000	0																	13,020	
8	Sewerage: Power Costs	£000	0																	4,015	
9	Sewerage: Service Charges	£000	0																	1	
10	Sewerage: General & Support Expenditure	£000	0																	7,962	
11	Sewerage: Functional Expenditure	£000	0																	20,982	

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 AIR18: Table 13: Line 10, the total connected population (comprising resident and non-resident population) is 1,544.413 x 10^3
- According to AIR18: Table 17a: Line 2, the annual average non-resident population is 32.441 x 10^3
- By calculation, the annual average resident connected population = 1,544.413 x 10^3 - 32.441 x 10^3 = **1,511.972 x 10^3**

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

AIR16	CG	AIR17	CG	AIR18	CG
1,500.4 x 10^3	C3	1,505.6 x 10^3	C3	**1,512.0 x 10^3**	**C3**

The estimated annual average resident sewerage connected population has increased from 1,505.6 x 10^3 in AIR17 to 1,512.0 x 10^3 in AIR18, an increase of 6.4 x 10^3 *(0.43%)*.

Confidence Grade

There are two figures associated with the calculation of AIR18: Table 17a: Line 1: Column 9. The first figure is derived from AIR18: Table 13: Line 10 and was allocated a confidence grade of B3. The second figure is derived from AIR18: 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)

AIR16	CG	AIR17	CG	AIR18	CG
29.4 x 10^3	C3	31.1 x 10^3	C3	**32.4 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

Each year, NI Water reviews all of the latest tourism publications and adopts a methodology which best utilises the information available at the time.

In order to calculate the **winter population**, the annual number of visitor nights is required for the year in question. NI Water normally bases the calculation of winter population on a calendar year because of known delays in the publication of tourism statistics and the non-availability of data for Q4 of the financial year around the time that AIR is completed.

The AIR18 calculation was due to have been based on the 2017 calendar year. However, according to NISRA's publication schedule, the 2017 NI Annual Tourism Statistics Report was not due to be published until 7th June 2018 *(at the latest)* and the only available information at the time of completing AIR was the number of visitor nights in Q1 to Q3.

When this issue has arisen in the past, an alternative methodology has been used involving the assumption that there is a direct relationship between the occupancy of hotels and guesthouses/B&Bs and visitor nights. As the number of bed spaces sold was available for all twelve months of 2017, then knowing the percentage of total bed spaces sold in Q4 of 2017, the number of visitor nights in Q1 to Q3 was factored up accordingly.

Statement detailing estimation method used including date of data on which estimate is made

The following statistics were derived from the table entitled *'Estimated Overnight Trips taken in Northern Ireland by Country of Residence, Q1 2011-Q3 2017 (provisional)'* in the NISRA publication *'Microdata for online Q1 2011 to Q3 2017'*, available as a download from the NISRA website.

	Visitor Nights (Q1 to Q3)
GB Visitors	4,343,852
RoI Visitors	771,425
Visitors from outside UK & RoI	4,081,803
All Visitors (excluding NI)	**9,197,080**

The number of visitor nights (Q1 to Q3) was 9,197,080.

From AIR18 Table 2 Line 20, the percentage of bed spaces sold (Q1 to Q3) was

$$6.06 + 6.40 + 6.97 + 8.38 + 8.89 + 9.53 + 10.51 + 11.50 + 9.44 = 77.67\%$$

Assumption: There is a direct relationship between bed-spaces sold and non-resident visitor nights.
The estimated number of non-resident visitor nights in 2017 =

$$(9{,}197{,}080 / 77.67) \times 100 = \mathbf{11{,}841{,}100}$$

The above estimate has been used in place of an accurate alternative.

The annual average non-resident population was estimated as follows:

$$11{,}841{,}100 / 365 \text{ nights} = \mathbf{32{,}441}$$

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

Last year, the Company reported a Table 17a Line 2 outturn of 31.1 x 10^3. The Company also recalculated the AIR16 outturn as 29.3 x 10^3 using updated data for the entire twelve-month period of 2016.

Based on the AIR17 outturn, the estimated annual average non-resident sewerage population has increased by 1.4 x 10^3 *(4.47%)*. This increase can be attributed to an increase in the number of non-resident visitor nights. The 2017 estimate was 11,841,100 compared to the 2016 estimate of 11,365,623.

Despite the absence of information relating to Q4 of 2017, a comparison of the Q1 to Q3 statistics for 2016 and 2017 reveals an increase in tourism and hence, an increase in winter population.

	Visitor Nights (2016 - Q1 to Q3)	**Visitor Nights (2017 - Q1 to Q3)**
GB Visitors	4,339,966	4,343,852
RoI Visitors	642,814	771,425
Visitors from outside UK & RoI	3,558,930	4,081,803
All Visitors (excluding NI)	**8,541,710**	**9,197,080**

The statistics show that external visitors are on average staying longer, leading to an increase in overall visitor nights in the first nine months of 2017. The increase has been driven largely by increases in visitors from Republic of Ireland and overseas.

Confidence Grade

The annual average non-resident population is an estimate based on several sources of information:

1. The NISRA publications '*Hotel-excel-dec*' and '*GH-BB-excel-dec*' 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 *'Microdata for online Q1 2011 to Q3 2017'* 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.

Line 3 – Volume of Sewerage Collected

This figure has been copied from AIR18 Table 14 Line 7 – Volume Waste Water Returned.

Line 4 – Total Connected Properties

Northern Ireland Water's (NIW) property data is provided via a data download of the property database tables held within the RapidXtra billing system. The data is then manipulated within Microsoft SQL to produce the Rapid Property Summary Report.

Our AIR18 methodology has remained consistent with previous years – using the automated tool to populate Table 17a figures (this was first introduced in AIR12 - Rapid Property Summary as the input).

The difference between the AIR17 and the AIR18 figures is 9140. This can be explained by the following;

1) New Connections during the 2017/18 reporting year
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 and the adding of duplicates as the customers address could not be found on Rapid. For example, 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
    (b) Another scenario - The street name may 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 of duplicates/properties as a result of data quality initiatives

In addition to the above, further data quality requirements have been built into the new CBC Contract. They cover all aspects of the property life cycle (creating, amending and demolishing properties) and data degradation will be monitored/measured throughout. These system validations have been split into 4 delivery phases. The functionality for Phases 1-3 have been delivered, with the functionality for the Post Phase 3 data validations due to be delivered within the next database release/upgrade in August 2018. Off-system data cleanse is required before some of the system validation rules can be applied.

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 2018. Work is on-going, through the Cost to Serve Project. Cost to Serve is not fully implemented and therefore could not be used for AIR18. The figures populated in Column 9 have been taken from Table 22 (NIW only).

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.

C Costs

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 £0.5M from AIR17.

The main reason for this was increased power costs (see below), Hired and Contracted Services and Materials and Consumables.

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 £0.1M from AIR17 mainly 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 AIR18.

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 increased by almost £0.7M from AIR 17.

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. £1.2m since AIR17. This is due to the combination of higher power costs and increased general and support as explained above.

Annex A

Line 4 - Total Connected Properties

Total properties connected for sewerage services (including voids) at year end.

This figure is taken from the AIR18 Rapid Property Summary, as attached.

RPS March YE 2018.xlsx

Total Gross Sewerage Properties	End March 2018
Household - Unmeasured	620990
Household - Sewerage Only	6
Household – Measured - Not Charged (test meters)	129
Household - Measured	35273
Household – Site Meters	1468
Household - Unmeasured - Not Charged	16
Non-Household - Unmeasured	12538
Non-Household – Sewerage only	19
Non-Household - Measured	27879
Total	**698318**

Confidence Grades

Line 3

There has been a change in confidence grade this year to B2. 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.

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
1	Works Name				Belfast		Culmore		Ballymena		Whitehouse		North Coast		Newry		Lisburn		Antrim		Dunmurry		Omagh		Dungannon		Newtownbreda		Carrickfergus		Enniskillen	
A	**WORKS SIZE**																															
2	Population equivalent of total load received	000	0	1,175	365	C5	136	C5	66	C5	88	C5	77	C5	54	C5	73	C5	65	C5	46	C5	34	C5	78	C5	35	C5	32	C5	26	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
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
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
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	
D	**COSTS**																															
9	Direct cost	£000	0	6,024	1,451		499		411		323		242		411		472		349		302		285		409		281		260		329	
10	Power costs	£000	0	3,389	1,098		272		198		206		161		247		226		174		121		93		234		120		130		112	
11	Service Charges	£000	0	214	26		23		13		12		5		13		20		12		16		15		19		14		13		14	
12	General and support expenditure	£000	0	3,794	453		413		237		206		90		227		348		217		276		269		329		245		234		250	
13	Functional expenditure	£000	0	9,819	1,905		912		649		529		332		638		820		566		577		554		738		526		494		579	
14	Estimated terminal pumping costs	£000	0	0																												
15	Estimated sludge costs	£000	0	0																												

Table 17b – Sewerage Explanatory Factors (NIW only)
Sewage Treatment Works – Large Works Information Database

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 AIR17 are:

LIMS Code	LIMS Name	Confirmed PE	AIR15 Band	BOD WOC	BOD UWWTR
S34AG	Carrickfergus WWTW	32408	Band 6	30	25
S34AK	Belfast WWTW	365139	Band 6	30	25
S37AB	Dunmurry WWTW	45939	Band 6	10	25
S37AA	Lisburn (New Holland) WWTW	72630	Band 6	10	25
S34AD	Newtownbreda WWTW	34507	Band 6	15	25
S34AE	Whitehouse WWTW	88115	Band 6	30	25
S15AO	Antrim (Milltown) WWTW	64937	Band 6	10	25
S13BE	Ballymena (Tullaghgarley) WWTW	66375	Band 6	15	25
S25AC	Dungannon (Moygashel) WWTW	77643	Band 6	25	25
S27AC	Newry WWTW	53968	Band 6	30	25
S45IB	Omagh WWTW	33591	Band 6	30	25
S43CI	Culmore WWTW	135976	Band 6	30	25
S17HF	North Coast WWTW	76554	Band 6	30	25
S47HK	Enniskillen WWTW	25948	Band 6	20	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	AIR 14 Band
S36AA	Downpatrick	19710	Band 5
S34AH	Greenisland	11614	Band 5
S36BB	Kilkeel	14497	Band 5
S36BO	Newcastle	16227	Band 5
S15BS	Larne	23275	Band 5
S17ED	Ballycastle	12797	Band 5

LIMS Code	LIMS Name	Confirmed PE	AIR 14 Band
S15AA	Ballyclare	16316	Band 5
S17BP	Ballymoney	21276	Band 5
S13CH	Cookstown	21591	Band 5
S13GK	Magherafelt	17151	Band 5
S27AA	Banbridge	20689	Band 5
S25AB	Coalisland	10010	Band 5
S27AN	Tandragee	11344	Band 5
S27AD	Warrenpoint	15635	Band 5
S43GI	Limavady	16267	Band 5
S45JA	Strabane	22745	Band 5

D Costs

This table was populated in the same way as AIR17. 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 2018. The Population Equivalent (PE) information used to complete this table was received from Asset Management on 5 June 2018. 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 AIR18 there are 14 works that fall into Band 6, this is the same as AIR17. Enniskillen was included in Band 6 for both years.

Direct costs have decreased by approx. £0.9M from AIR17. This is mainly due to decreased power costs (see below).

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 decreased in AIR18 by £0.6M mainly in Belfast WWTWs.

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 44:56 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 AIR17 was 46:54 for the Belfast and Incinerators. No costs for the Incinerator have been included in this table in AIR18.

Line 11 – Service Charges

There is an increase in Service Charges from AIR17 to AIR 18 by £0.1M.

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 £0.3m since AIR17. 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 decreased since AIR17 by £0.6M mainly due to the decreased power costs as explained above.

Line 14 – Terminal Pumping Costs

This information was populated in the same way as AIR17. 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	240	20	509			3	2			5	779
2	Number of STWs in size band 2	nr	0		6	32	3	1	10	6	1	1		60
3	Number of STWs in size band 3	nr	0	1	13	47	7	12	15	7	1		1	104
4	Number of STWs in size band 4	nr	0	1	15	7	1	15	2	5	3	1		50
5	Number of STWs in size band 5	nr	0		5	0	2	8		1				16
B	LARGE WORKS													
6	Number of STWs in size band 6	nr	0		3			11						14
7	Total numbers of STWs	nr	0	242	62	595	13	47	30	21	5	2	6	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	59										

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										
				PRIMARY	SECONDARY		TERTIARY				SEA OUTFALLS			TOTAL
					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											
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										
					SECONDARY		TERTIARY				SEA OUTFALLS			
				PRIMARY	ACTIVATED	BIOLOGICAL	A1	A2	B1	B2	PRELIMINARY TREATMENT	SCREENED	UNSCREENED	TOTAL
A	SMALL WORKS													
1	Number of STWs in size band 1	nr	0	240	20	509			3	2			5	779
2	Number of STWs in size band 2	nr	0		6	32	3	1	10	6	1	1		60
3	Number of STWs in size band 3	nr	0	1	13	47	7	12	15	7	1		1	104
4	Number of STWs in size band 4	nr	0	1	15	7	2	15	2	5	3	1		51
5	Number of STWs in size band 5	nr	0		5		2	9		1				17
B	LARGE WORKS													
6	Number of STWs in size band 6	nr	0		4			14						18
7	Total numbers of STWs	nr	0	242	63	595	14	51	30	21	5	2	6	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	61										

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 84 WWTWs (which were live during AIR18) have been updated.

Changes regarding WWTWs from the AIR17 period are as follows:

- 3 WWTWs have been upgrade and achieved beneficial use in the last financial year – i.e. Ballycastle WwTW, Clabby WwTW and Mullans (Antrim) WwTW.
- 4 WWTWS had 'turn of flow' under the RWwIP project (including upgrades to Bresagh and Oliver Plunket Pk WWTWs and refurbishment to Ardgarvan and Carnanbane WwTWs)
- 5 WWTW (Cornamuck, Creevangar, Edenreagh Rd (39-41), Ervey Rd and Glenabbey) have been replaced by CSDD in the last financial year
- Drumsurn WwTW was upgraded during AIR15 but the updating of the design PE was overlooked. This has been updated for AIR18.

There is no net change in the number of WWTWs from AIR17 reporting, with 1023 WWTW live on 31st March 2018.

The total number of WWTWs in Table 17c line 7 is the total of all works in this table i.e. 1,023 including the screened outfalls (2 No.) and the unscreened outfalls (6 No). The number of WWTWs in Table 15 line 8 is 1,015 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 AIR18 is 14 No WWTWs.

It should be noted that the AIR18 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 AIR18 comparison between the two figures.

Total Residential Population used to Calculate Table 17c for AIR18	1,246,298
Total Population connected to the sewerage system based on Table 13 Line 10	1,544,413
Difference	**298,115**

As can be seen there is a difference of 298,115. 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 AIR18 Trade PE. The non-residential aspect of these PEs

have been subtracted from the overall AIR18 PPP PE (based on the reported AIR18 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	63,700	9,474	54,226
Armagh WWTW	14,133	7,357	6,776
Richhill WWTW	1,933	196	1,737
Newtownards (Ballyrickard)	46,700	16,865	29,835
Ballynacor WWTW	118,067	64,255	53,812
Kinnegar	70,979	31,374	39,605
Total	**315,512**	**129,521**	**185,991**

As can be seen the residential population for the PPP sites is now approximated to be 185,991. If this is added to the 17c figure (1,246,297) then the total is 1,432,288 which is 112,125 less than the figure held in Table 13. However the Table 13 Line 10 residential figure includes nursing homes and tourist population. Nursing homes are included in the Trade PE so if this element (7821) and the AIR18 tourist population for both NIW sites (33,800 pe) and PPP sites (1,964) are included this gives a revised figure of 1,475,873 which is 68,540 pe less than the figure held in Table 13, approximately 4.4%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 AIR11 Reporter's Report stated '***The Asset Performance team collates all information into the central spreadsheet from which Band Size for each WwTW can be assessed and any changes highlighted. The size banding of each works is added manually. For AIR12, we consider this process should be automated, for the avoidance of any misrepresentation.'*** Hence NIW has incorporated a means within the central spreadsheet to automate this process.

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 698, and

- the number of WWTWs with a PE greater than 100 but less than or equal to 250 (excluding tourist PE) is 81.

The table below highlights the changes in band sizes from AIR17 to AIR18

Name of Works	CAR ID	AIR17 Band Sizes	AIR18 Band Sizes	Comment
Bonnanaboigh	S03031	Band 1	Band 2	A population study was carried out for this site and reviewed and adopted for AIR18.
Longfield (Eglinton)	S03173	Band 1	Band 2	A population study was carried out for this site and reviewed and adopted for AIR18.

It should be highlighted that for AIR14 NIW re-assessed the treatment categories for a number of sites. This followed a query from NIW with OFWAT as to the definition of what constitutes a tight consent. At this time it was confirmed that that a company is given a tight consent if it has a Suspended Solids consent of less than or equal to 30mg/l AND a BOD of less than or equal to 20mg/l. Also a company is given a tight consent if its ammonia consent is less than or equal to 5mg/l.

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 physic-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 physic-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 physic-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 AIR17. In line with the AIR15 Reporter's Recommendation No 33 (Table 17c S7) NI Water will monitor the possible impact of this interpretation of tertiary treatment in future reporting.

The table below highlights the changes in treatment category from AIR17 to AIR18.

Name of Works	CAR ID	AIR17 Treatment Category	AIR18 Treatment Category	Comment
Ballycastle (WWTW)	S01071	Sea Out Prel	Sec Act	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change.
Clabby (WWTW)	S03051	Ter B2	Ter B1	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change.

Name of Works	CAR ID	AIR17 Treatment Category	AIR18 Treatment Category	Comment
Creevangar	S03068	Sec Bio	Prim	Process replaced by CSDD which resulted in a treatment category change.
Edenreagh Road(39-41)	S04094	Sec Bio	Prim	Process replaced by CSDD which resulted in a treatment category change.
Ervey Road	S03107	Sec Bio	Prim	Process replaced by CSDD which resulted in a treatment category change.
Mullans (Antrim)	S01118	Ter A2	Ter B1	Works upgraded with beneficial use for AIR18 which resulted in a treatment category change.

Difference between AIR17 and AIR18 for total in Table 17c (column 11, row 7)

Total Number of Works for AIR 17 -	**1,023**
Total Number of Works for AIR 18 -	**1,023**
Total Difference -	**0**

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 AIR17 to present are summarised below:

Line	Nr AIR17	Nr AIR18	Difference	Comment
8	44	44		No consent changes during AIR18 with regards to line 8 Net change - zero
9	61	59	-2	Castle Archdale Country Park & Stoneyford Beeches One are an integrated constructed wetland treatment process. NIEA view the process as new technology and a pilot process. Compliance will not be assessed against these two sites during 2018. Net Change - two

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 AIR18 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 PC15 Business Plan submission and given the reduction in funding over the first 3 years of PC15 they are not currently prioritised for inclusion in the capital works programme.

WWTWs	Site ID	AIR18 Actual PE	Actual PE recognised by NIEA
Ballymena (WWTW)	S01456	66,375	113825
Dromore (Tyrone)	S03083	1919	2032
Dunmurry	S00346	45,939	53605

PPP

Lines 1-6

There are no changes to the PPP sewage works treatment categories.

Line 9

There are no changes to the PPP sewage works treatment categories

Specific required commentary;

- 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 AIR 18 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										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 BOD_5/day	0	141	85	1,399			62	25			32	1,744	C3
2	Load received by STWs in size band 2	kg BOD_5/day	0		137	691	61	18	216	138	248	69		1,580	C3
3	Load received by STWs in size band 3	kg BOD_5/day	0	91	1,019	2,694	432	817	994	455	42		55	6,599	C3
4	Load received by STWs in size band 4	kg BOD_5/day	0	350	3,490	1,414	130	4,208	323	1,212	778	186		12,092	C3
5	Load received by STWs in size band 5	kg BOD_5/day	0		4,813		1,783	8,819		1,029				16,444	C3
B	LARGE WORKS														
6	Load received by STWs in size band 6	kg BOD_5/day	0		16,285			54,434						70,719	C3
7	Total loads rec'd (daily average all size bands)	kg BOD_5/day	0	581	25,830	6,199	2,406	68,296	1,596	2,860	1,068	255	87	109,179	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	5,160											
9	Load rec'd by small STW w. NH_3 consents (< = 5mg/l)	kg BOD_5/day	0	14,064											

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											
					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												
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				116							116	B3
5	Load received by STWs in size band 5	kg BOD5/day	0					848						848	B3
B	LARGE WORKS														
6	Load received by STWs in size band 6	kg BOD5/day	0		4,259			13,708						17,967	B3
7	Total loads rec'd (daily average all size bands)	kg BOD5/day	0		4,259		116	14,556						18,931	B3
C	SMALL WORKS WITH AMMONIA CONSENTS														
8	Load rec'd by small STW w. NH3 consent (5 - 10mg/l)	kg BOD5/day	0												
9	Load rec'd by small STW w. NH3 consents (< = 5mg/l)	kg BOD5/day	0	964											

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										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	141	85	1,399			62	25			32	1,744	C3
2	Load received by STWs in size band 2	kg BOD5/day	0		137	691	61	18	216	138	248	69		1,580	C3
3	Load received by STWs in size band 3	kg BOD5/day	0	91	1,019	2,694	432	817	994	455	42		55	6,599	C3
4	Load received by STWs in size band 4	kg BOD5/day	0	350	3,490	1,414	246	4,208	323	1,212	778	186		12,208	C3
5	Load received by STWs in size band 5	kg BOD5/day	0		4,813	0	1,783	9,667		1,029				17,292	C3
B	LARGE WORKS														
6	Load received by STWs in size band 6	kg BOD5/day	0		20,544			68,142						88,686	C3
7	Total loads rec'd (daily average all size bands)	kg BOD5/day	0	581	30,089	6,199	2,522	82,852	1,596	2,860	1,068	255	87	128,110	C3
C	SMALL WORKS WITH AMMONIA CONSENTS														
8	Load rec'd by small STW w. NH3 consent (5 - 10mg/l)	kg BOD5/day	0	5,160											
9	Load rec'd by small STW w. NH3 consents (< = 5mg/l)	kg BOD5/day	0	15,028											

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 84 WWTWs (which were live during AIR18) 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 AIR17. There have been no additions or reductions in the number of WWTWs being reported from AIR17 to AIR18.

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 AIR18 these have been removed from the Trade Effluent Submission. For the majority of hospitals a certain % of hospital discharges has been included due to discharges from x-ray departments and bathing pools. The AIR11 Trade Information, for nursing homes and clinics, has been maintained for AIR18 in order to allow for this proportion of the influent entering the WWTWs. 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 365,000Pe was agreed. This figure has been updated for AIR18 with the latest trade information giving a new figure of 365,139PE. However it should be noted that there are a number of projects currently been carried out for NIW that are investigating the PEs discharging to Belfast and early indications would suggest the equivalent PE discharging to the WWTWs is much higher than currently stated. The main projects involved are:

- Belfast WwTW Appraisal Study (which includes a full 12 month flow and load study). The study is due to be completed shortly,
- Glenmachan Sewers Project, and
- Compliance with the Surface Water (Shellfish) Regs (NI) – Belfast Lough.

The outcomes of these projects are likely to influence the PE for Belfast for AIR19.

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 (6 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 confidence grades of the data in lines 1 - 7 remain as C3 as stated in AIR17.

The AIR11 Reporter's report stated '***We suggest that NI Water consider comparing the results from the ongoing programme of flow and load surveys against the previous assumptions for each site to determine if there is a statistically significant difference which should be extrapolated into the larger population of WwTW sites.'***

There was some analysis on this within the AIR13 commentary however it was concluded that there was not a large enough sample to justify extrapolating the differences. Since AIR13 only one additional Flow & Load PE has been adopted and this was for Kilkeel WWTWs and therefore the sample is still not large enough to extrapolate.

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 13 no. WWTWs included in the table.

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	Difference* *(-ve indicates AIR18 figure larger)	Comments
Aghinlig (WWTW)	S02554	146	225	-79	A population study was carried out for this site and reviewed and adopted for AIR18.
Bonnanaboigh	S03031	219	273	-54	A population study was carried out for this site and reviewed and adopted for AIR18.
Cornamuck	S03061	27	21	6	A population study was carried out for this site and reviewed and adopted for AIR18.
Donemana	S03103	813	1195	-382	A population study was carried out for this site and reviewed and adopted for AIR18.

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	Difference* *(-ve indicates AIR18 figure larger)	Comments
Drumenny	S03088	98	75	23	A population study was carried out for this site and reviewed and adopted for AIR18.
Fivemiletown (WWTW)	S03113	2145	2854	-709	A population study was carried out for this site and reviewed and adopted for AIR18.
Longfield (Eglinton)	S03173	108	270	-162	A population study was carried out for this site and reviewed and adopted for AIR18.
Magherahoney	S01117	100	86	14	A population study was carried out for this site and reviewed and adopted for AIR18.
Mayboy	S01163	184	235	-51	A population study was carried out for this site and reviewed and adopted for AIR18.
Moy (WWTW)	S02859	3179	3770	-591	PE updated with AIR18 Trade Information
Old Green	S01448	17	107	-90	A population study was carried out for this site and reviewed and adopted for AIR18.
Tullyroan	S02600	37	45	-8	PE updated with AIR18 Trade Information
Warrenpoint (WWTW)	S02720	14871	17361	-2490	A population study was carried out for this site and reviewed and adopted for AIR18.

***(-ve indicates AIR17 figure larger)**

It should be highlighted that for AIR14 NIW re-assessed the treatment categories for a number of sites. This followed a query from NIW with OFWAT as to the definition of what constitutes a tight consent. At this time it was confirmed that a company is given a tight consent if it has a Suspended Solids consent of less than or equal to 30mg/l AND a BOD of less than or equal to 20mg/l. Also a company is given a tight consent if its ammonia consent is less than or equal to 5mg/l.

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 AIR17.

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 109,178.6kg BOD/day from all NIW (only) WWTWs reconciles with the Total load entering sewerage system (BOD/year) of 39,850.19*t BOD/year*, from Table 15 line 5.

The Total load receiving primary treatment in table 17d (line 7, column 1) of 581.3kg BOD/day is consistent (allowing for rounding up/down and conversions) with total load receiving primary treatment in table 15 (line 3) of *212.19t BOD/yr.*

The Total load receiving secondary and tertiary treatment in table 17d (line 7, sum of columns 2–7) i.e. 107,188.3kg BOD/day is consistent (allowing for rounding up/down and conversions) with total load receiving secondary treatment in table 15 (line 2) i.e. 39,123.74 *t BOD/yr*.

The Total load receiving preliminary treatment in table 17d (line 7, column 8) of 1067.7kg 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 389.71*t BOD/yr.*

The table below depicts changes in PEs at WWTWs from AIR17 to AIR18.
The following table depicts how PE changes have occurred at WWTWs during the last financial year.

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	Difference*	AIR17 Band	AIR18 Band	Band Size Change
Aghanloo (1)	S02989	697	703	-6	Band 3	Band 3	
Aghinlig (WWTW)	S02554	146	225	-79	Band 1	Band 1	
Annalong (WWTW)	S00300	3222	3096	126	Band 4	Band 4	
Annsborough	S02687	5882	6031	-149	Band 4	Band 4	
Antrim (WWTW)	S01422	65282	64937	345	Band 6	Band 6	
Ardglass (WWTW)	S00268	2866	2730	136	Band 4	Band 4	
Ballyclare	S01467	16352	16316	36	Band 5	Band 5	
Ballykelly (L/Derry)	S03016	3651	3619	32	Band 4	Band 4	
Ballymacawley	S02560	22	21	1	Band 1	Band 1	
Ballymena (WWTW)	S01456	70948	66375	4573	Band 6	Band 6	
Ballyvoy	S01177	288	264	24	Band 2	Band 2	
Banbridge (WWTW)	S02102	21733	20689	1044	Band 5	Band 5	
Belfast (WWTW)	S00345	360602	365139	-4537	Band 6	Band 6	
Bonnanaboigh	S03031	219	273	-54	Band 1	Band 2	Y
Bushmills (WWTW)	S01178	5542	5544	-2	Band 4	Band 4	

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	Difference*	AIR17 Band	AIR18 Band	Band Size Change
Carnanbane	S03037	42	41	1	Band 1	Band 1	
Carrickfergus (WWTW)	S00261	32474	32408	66	Band 6	Band 6	
Coalisland	S02828	10107	10010	97	Band 5	Band 5	
Cookstown (WWTW)	S01582	20014	21591	-1577	Band 5	Band 5	
Corkill (Fermanagh)	S03059	18	24	-6	Band 1	Band 1	
Cornamuck	S03061	27	21	6	Band 1	Band 1	
Culmore (WWTW)	S03071	131123	135976	-4853	Band 6	Band 6	
Derryhale	S02570	1136	1284	-148	Band 3	Band 3	
Dervock	S01102	969	970	-1	Band 3	Band 3	
Donaghmore (WWTW)	S02840	1938	1982	-44	Band 3	Band 3	
Donemana	S03103	813	1195	-382	Band 3	Band 3	
Donnybrewer	S03080	5370	5229	141	Band 4	Band 4	
Douglas Bridge	S03082	196	210	-14	Band 1	Band 1	
Downpatrick (WWTW)	S00771	19657	19710	-52	Band 5	Band 5	
Draperstown	S01615	3252	3254	-2	Band 4	Band 4	
Dromara	S00316	1382	1385	-3	Band 3	Band 3	
Dromore (Down)	S02127	7480	7722	-242	Band 4	Band 4	
Dromore (Tyrone)	S03083	1917	1919	-2	Band 3	Band 3	
Drumenny	S03088	98	75	23	Band 1	Band 1	
Dungannon	S02850	79331	77643	1688	Band 6	Band 6	
Dungiven	S03101	4773	4745	28	Band 4	Band 4	
Dunmurry	S00346	46042	45939	103	Band 6	Band 6	
Enniskillen	S03218	26231	25948	283	Band 6	Band 6	
Fivemiletown (WWTW)	S03113	2145	2854	-709	Band 4	Band 4	
Glenstall	S01109	21153	21276	-123	Band 5	Band 5	
Grange (Taylorstown)	S01442	565	572	-7	Band 3	Band 3	
Greenisland (WWTW)	S00263	12529	11614	915	Band 5	Band 5	
Hilltown (WWTW)	S02701	2054	2058	-4	Band 4	Band 4	
Irvinestown	S03137	2679	2680	-1	Band 4	Band 4	
Keady (Armagh)	S02553	4568	4571	-3	Band 4	Band 4	
Kesh (WWTW)	S03140	2684	2679	5	Band 3	Band 3	
Kilkeel (WWTW)	S00313	14101	14497	-396	Band 5	Band 5	
Killinchy (WWTW)	S00252	4640	2975	1665	Band 4	Band 4	
Killybaskey	S01581	103	115	-12	Band 1	Band 1	
Killygonlan (WWTW)	S02043	1303	1307	-4	Band 3	Band 3	
Kilrea	S01156	2555	2563	-8	Band 4	Band 4	

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	Difference*	AIR17 Band	AIR18 Band	Band Size Change
Larne (WWTW)	S02044	23175	23275	-100	Band 5	Band 5	
Limavady (WWTW)	S03162	16321	16267	54	Band 5	Band 5	
Lisburn (New Holland)	S00329	69742	72630	-2888	Band 6	Band 6	
Lisnaskea (WWTW)	S03171	6483	6840	-357	Band 4	Band 4	
Longfield (Eglinton)	S03173	108	270	-162	Band 1	Band 2	Y
Maghera (L/Derry)	S01629	6750	6682	68	Band 4	Band 4	
Magherafelt (WWTW)	S01621	17453	17151	302	Band 5	Band 5	
Magherahoney	S01117	100	86	14	Band 1	Band 1	
Markethill	S02591	2510	2585	-74	Band 4	Band 4	
Mayboy	S01163	184	235	-51	Band 1	Band 1	
Moneymore (WWTW)	S01589	2828	2826	2	Band 4	Band 4	
Moneyreagh	S00337	2386	2387	-1	Band 4	Band 4	
Mountnorris	S02248	889	892	-3	Band 3	Band 3	
Moy (WWTW)	S02859	3179	3770	-591	Band 4	Band 4	
NewMills (WWTW)	S02852	725	727	-2	Band 3	Band 3	
Newry (WWTW)	S02685	56605	58886	-2281	Band 6	Band 6	
Newtownbreda (WWTW)	S00342	34497	34507	-10	Band 6	Band 6	
Newtownbutler (WWTW)	S03200	1289	1290	-1	Band 3	Band 3	
North Coast (WWTWs)	S04150	76036	76554	-518	Band 6	Band 6	
Old Green	S01448	17	107	-90	Band 1	Band 1	
Omagh (WWTW)	S03999	33245	33591	-346	Band 6	Band 6	
Pomeroy (WWTW)	S01593	980	979	1	Band 3	Band 3	
Rock Cottages	S02172	21	15	6	Band 1	Band 1	
St Johns Terrace (Kilcoo)	S02717	30	29	1	Band 1	Band 1	
Strabane	S03223	22191	23943	-1752	Band 5	Band 5	
Swatragh (WWTW)	S01637	719	718	1	Band 3	Band 3	
Tamnamore (WWTW)	S02862	614	617	-3	Band 3	Band 3	
Tandragee	S02174	11686	11344	342	Band 5	Band 5	
Trillick (WWTW)	S03231	611	607	4	Band 3	Band 3	
Tullyroan	S02600	37	45	-8	Band 1	Band 1	
Warrenpoint (WWTW)	S02720	14871	17361	-2490	Band 5	Band 5	
Whitehouse	S00265	87930	88115	-185	Band 6	Band 6	
			Total	-13,196			

***(-ve indicates AIR18 figure larger)**

The change in PE equates to an increase in load of 791.8kg BOD/day (i.e. 13,196 x 0.06 for 60g/hd/day) from AIR17 to AIR18

Difference between AIR18 and AIR17 for the total load entering WWTWs as shown in Table 17d - column 11, row 7

Total Load Received at WWTWs for AIR17 -	**108387**
Total Load Received at WWTWs for AIR 18 -	**109179**
Total Difference -	**792**

The differences between the above totals is due to rounding.

The interpretation of the treatment categories is as below:-

AIR16 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 where used as a tertiary treatment stage;	Ter A2

AIR16 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 where 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 AIR17 to AIR18.

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	PE Change *	Comments
Derryhale	S02570	1136	1284	-148	PE updated with AIR18 Trade Information
Donaghmore (WWTW)	S02840	1938	1982	-44	PE updated with AIR18 Trade Information
Draperstown	S01615	3252	3254	-2	PE updated with AIR18 Trade Information
Dromore (Tyrone)	S03083	1917	1919	-2	PE updated with AIR18 Trade Information
Hilltown (WWTW)	S02701	2054	2058	-4	PE updated with AIR18 Trade Information
Kesh (WWTW)	S03140	2684	2679	5	PE updated with AIR18 Trade Information
Lisnaskea (WWTW)	S03171	6483	6840	-357	PE updated with AIR18 Trade Information
Maghera (L/Derry)	S01629	6750	6682	68	PE updated with AIR18 Trade Information
Markethill	S02591	2510	2585	-74	A population study was carried out for this site and reviewed and adopted for AIR18. PE updated with AIR18 Trade Information
Mountnorris	S02248	889	892	-3	PE updated with AIR18 Trade Information

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	PE Change *	Comments
Strabane	S03223	22191	23943	-1752	A population study was carried out for this site and reviewed and adopted for AIR18. PE updated with AIR18 Trade Information
Swatragh (WWTW)	S01637	719	718	1	PE updated with AIR18 Trade Information
			Total	-2,314	

***(-ve Indicates AIR18 PE Higher)**

The change in PE equates to an increase in load of 138.84 kg/d (i.e. 2314 x 0.06 for 60g/hd/day) from AIR17 to AIR18, for line 8.

Total Load rec'd by small WWTWs with NH3 consents (5-10mg/l) for AIR17-	**5021**
Total Load rec'd by small WWTWs with NH3 consents (5-10mg/l) for AIR18-	**5160**
Total Difference –	**139**

Changes in Line 9 - Small works with ammonia consent (between 0 and 5) from AIR17 to AIR18.

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	PE Change*	Comments
Annsborough	S02687	5882	6031	-149	PE updated with AIR18 Trade Information
Ballyclare	S01467	16352	16316	36	PE updated with AIR18 Trade Information
Ballyvoy	S01177	288	264	24	A population study was carried out for this site and reviewed and adopted for AIR18.
Banbridge (WWTW)	S02102	21733	20689	1044	PE updated with AIR18 Trade Information
Coalisland	S02828	10107	10010	97	PE updated with AIR18 Trade Information

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	PE Change*	Comments
Cookstown (WWTW)	S01582	20014	21591	-1577	PE updated with AIR18 Trade Information
Downpatrick (WWTW)	S00771	19657	19710	-52	PE updated with AIR18 Trade Information
Dromara (WWTW)	S00316	1382	1385	-3	PE updated with AIR18 Trade Information
Dromore (Down)	S02127	7480	7722	-242	PE updated with AIR18 Trade Information
Dungiven	S03101	4773	4745	28	PE updated with AIR18 Trade Information
Grange (Taylorstown)	S01442	565	572	-7	PE updated with AIR18 Trade Information
Irvinestown	S03137	2679	2680	-1	PE updated with AIR18 Trade Information
Keady (Armagh)	S02553	4568	4571	-3	PE updated with AIR18 Trade Information
Killinchy (WWTW)	S00252	4640	2975	1665	PE updated with AIR18 Trade Information
Limavady (WWTW)	S03162	16321	16267	54	PE updated with AIR18 Trade Information
Magherafelt (WWTW)	S01621	17453	17151	302	PE updated with AIR18 Trade Information
Moneymore (WWTW)	S01589	2828	2826	2	PE updated with AIR18 Trade Information
Moneyreagh (WWTW)	S00337	2386	2387	-1	PE updated with AIR18 Trade Information

Name of Works	CAR ID	AIR17 Actual PE	AIR18 Actual PE	PE Change*	Comments
Newtownbutler (WWTW)	S03200	1289	1290	-1	PE updated with AIR18 Trade Information
Pomeroy (WWTW)	S01593	980	979	1	PE updated with AIR18 Trade Information
Stoneyford Beeches One WwTW	S05705	695	695 (but for L9, 0 for AIR18)	695	NIEA view the treatment process (**ICW) as new technology and a pilot process. Compliance will not be assess during 2018
Tandragee	S02174	11686	11344	342	PE updated with AIR18 Trade Information
Castle Archdale Country Park (WWTW)	S05877	849	849 (but for L9, 0 for AIR18)	849	NIEA view the treatment process (**ICW) as new technology and a pilot process. Compliance will not be assess during 2018
			Total	3103	

***(-ve Indicates AIR18 PE Higher)**
****(Integrated Constructed Wetland)**

The change in PE equates to an increase in load of 186.2kg/d (i.e. 3103 x 0.06 for 60g/hd/day) from AIR17 to AIR18 for line 9.

Total Load rec'd by small WWTWs with NH3 consents (0-5mg/l) for AIR17-	**14250.6**
Total Load rec'd by small WWTWs with NH3 consents (0-5mg/l) for AIR18-	**14064.2**
Total Difference -	**186.4**

PPP

Lines 1 – 7

The variation in load data from AIR 17 is solely due to the variation in influent loads received by the same PPP works from the NI Water catchments over the AIR 18 Period. While in some cases there has been little difference, the North Down WwTW has experienced an 18% reduction in averaged Daily BOD over the entire year. This issue has been rechecked and the calculations verified. The prevailing rainfall will not enable an explanation as the AIR18 period experienced 1241.5mm of rainfall while the AIR17 period experienced 958.3mm and the 100 year average [AREAL series] for Northern Ireland is 1100mm. The Contractor has reported there were no apparent operational reasons for the reduction.

Line 9

The variation in load data is due to the variation in influent loads received by the Richhill STW and Armagh STW over the AIR18 Period.

Specific company commentary;

- There have been no changes to the number of PPP operated STW's in each Treatment Category
- There are currently the following Capital Works Project plans which could close, or divert flows arriving to, PPP operated works.
- There are currently a number of Capital Works Projects proposed in PPP catchments;

KI607	NI Long Term Sludge Strategy
KI601	Strategic Sewerage Network Modelling, Bathing Waters Excluding Belfast Lough
KR576	Belfast WWTW PLC Upgrade
KR599	Belfast WwTW – Appraisal study
KS872	Bangor DAP Work Package 1: Carnalea Stream UID
KS873	Bangor DAP Work Package 2: Rathmore Stream UIDs
KS874	Bangor DAP Works Package 3 - Belfast Lough UIDs
KS879	Bangor DAP Work Package 4: Bangor Marina UIDs
KS958	Bangor DAP Wks Pkge 5 Clandeboye Stream UIDs Phase II
KS875	Bangor DAP Works Package 6: Lukes Point WWPS UID
KS878	Bangor DAP Works Package 7: Orlock, Sandeel, Seacliff Road & Orlock Caravan Park WWPSs – UID
KR480	Holywood Sewer Network Improvements
KR640	Holywood Sewer Network Improvements- Phase 2
KR443	Sydenham WWPS Remedial Works
KR444	Sydenham WWPS Strategic Investigations
KF330	Armagh DAP Stage 1
KF396	Milford WWPS, Armagh, Upgrade
KS914	Scrabo Road, Newtownards, WWPS Upgrade
KS901	Movilla Street, Newtownards, Replacement Sewer
KS850	Quarry Heights, Newtownards, Foul and Storm Sewer Extension
KR568	Loughries PS Newtownards *(Diversion into Ballyrickard).*
KG189	Cornakinnegar Road, Lurgan Foul & Storm Sewer Extension
KG184	Portadown Drainage Area Network Improvements - Obins Street and Park Road
KG203	Portadown DAP (Storage at Seagoe WWPS).
KI515	DG5 Minor Works – Bullays Hill PS Lurgan
KG184	Portadown Drainage Area Network Improvements
KI561	Donaghadee Base Maintenance – Flooding
KS930	Millisle DAP

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	56.453	67.855	548.207			17.835	19.849			6 957	717.155
2	Direct costs of STWs in size band 2	£000	3		70.346	320.888	38.026	12.481	88.643	54.911	88.538	39.347		713.181
3	Direct costs of STWs in size band 3	£000	3	12.862	498.881	952.799	179.956	398.430	301.298	197.076	12.432		8 039	2,561.773
4	Direct costs of STWs in size band 4	£000	3	21.495	768.995	303.782	32.922	1,268.927	41.451	203.251	74.558	3.451		2,718.832
5	Direct costs of STWs in size band 5	£000	3		610.364		294.438	1,617.670		229.076				2,751.548
B	LARGE WORKS													
6	Direct costs of STWs in size band 6	£000	3		1,152.258			4,872.150						6,024.408
C	ALL WORKS													
7	Total direct costs of STWs - all sizes	£000	3	90.810	3,168.699	2,125.675	545.342	8,169.658	449.227	704.163	175.528	42.798	14 996	15,486.896
8	Sludge Treatment and Disposal Adjustments	£000	3											
9	Sewage Treatment: Direct costs	£000	3	90.810	3,168.699	2,125.675	545.342	8,169.658	449.227	704.163	175.528	42.798	14 996	15,486.896
10	Sewage Treatment: Power costs	£000	3	6.167	1,696.802	506.603	263.671	4,601.408	99.697	219.028	59.866	-0.688	0 535	7,453.089
11	Sewage Treatment: service charges	£000	3	7.517	139.004	144.282	25.937	297.390	33.414	37.677	10.611	3.484	1 287	700.604
12	Sewage Treatment: General and Support	£000	3	133.565	2,469.890	2,563.662	460.862	5,284.151	593.711	669.462	188.549	61.898	22 874	12,448.625
13	Sewage Treatment: Functional Expenditure	£000	3	224.375	5,638.589	4,689.337	1,006.204	13,453.809	1,042.938	1,373.625	364.077	104.695	37.871	27,935.521

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
				PRIMARY	SECONDARY		TERTIARY				SEA OUTFALLS			
					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											
2	Direct costs of STWs in size band 2	£000	3											
3	Direct costs of STWs in size band 3	£000	3											
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					1,921.460						1,921.460
C	ALL WORKS													
7	Total direct costs of STWs - all sizes	£000	3				[redacted]	[redacted]						[redacted]
8	Sludge Treatment and Disposal Adjustments	£000	3											0.000
9	Sewage Treatment: Direct costs	£000	3				38 307	2,039.864						2,078.171
10	Sewage Treatment: Power costs	£000	3				38 307	2,039.864						2,078.171
11	Sewage Treatment: service charges	£000	3											0.000
12	Sewage Treatment: General and Support (NIW)	£000	3		[redacted]		24 044							[redacted]
13	Sewage Treatment: Functional Expenditure	£000	3		[redacted]		[redacted]	[redacted]						[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	56.453	67 855	548.207			17.835	19.849			6.957	717.155
2	Direct costs of STWs in size band 2	£000	3		70 346	320.888	38.026	12.481	88.643	54.911	88.538	39.347		713.181
3	Direct costs of STWs in size band 3	£000	3	12.862	498.881	952.799	179.956	398.430	301.298	197.076	12.432		8.039	2,561.773
4	Direct costs of STWs in size band 4	£000	3	21.495	768.995	303.782	[redacted]	1,268.927	41.451	203.251	74.558	3.451		[redacted]
5	Direct costs of STWs in size band 5	£000	3		610.364		294.438	[redacted]	0.000	229.076				
B	LARGE WORKS													
6	Direct costs of STWs in size band 6	£000	3		1,152.258			6,793.610						7,945.868
C	ALL WORKS													
7	Total direct costs of STWs - all sizes	£000	3	90.810	3,168.699	2,125.675	[redacted]		449.227	704.163	175.528	42.798	14.996	[redacted]
8	Sludge Treatment and Disposal Adjustments	£000	3											
9	Sewage Treatment: Direct costs	£000	3	90.810	3,168.699	2,125.675	583.649	10,209.522	449.227	704.163	175.528	42.798	14.996	17,565.067
10	Sewage Treatment: Power costs	£000	3	6.167	1,696.802	506.603	301.978	6,641.272	99.697	219.028	59.866	-0.688	0.535	9,531.260
11	Sewage Treatment: service charges	£000	3	7.517	139.004	144.282	25.937	297.390	33.414	37.677	10.611	3.484	1.287	700.604
12	Sewage Treatment: General and Support	£000	3	133.565	[redacted]	2,563.662	484.906	5,380.327	593.711	669.462	188.549	61.898	22.874	[redacted]
13	Sewage Treatment: Functional Expenditure	£000	3	224.375	[redacted]	4,689.337	[redacted]		1,042.938	1,373.625	364.077	104.695	37.871	

Table 17f - Sewage Treatment Works (NIW only)

An updated Population Equivalent (PE) database with treatment type by WWTW's was sent from Asset Management on the 5 June 2018 which was used to populate Line 1-13. No PPP sites are included in this table. Ballycastle WWTW's falls into Band 5 – Line 5. Ballycastle does not have a separate W finance location however with the further implementation of Cost to Serve the costs can be separately identified. Enniskillen is included in Band 6 for AIR18, it was also included in Band 6 in AIR17.

Table 17f has been completed based on the figures available at for the year ended 31 March 2018 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 AIR17 by circa £0.3M.

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 against this line have increased by circa £0.1M from AIR17.

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 decreased from AIR17 by circa £0.9M. 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 decreased since AIR17 by circa £0.6M. This is primarily due to a decrease in costs at the Band 6 sites.

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. 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 an increase of £0.2M from AIR17.

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 £0.2M from AIR17. Overall General and Support costs have increased in AIR18 and the apportionment of costs to Sewage Treatment has increased. 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 decreased from AIR17 by circa £0.03M 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 Ballinacor (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 reduced from AIR16 as a result of reduced tariffs in 2016/17 and lower wastewater volumes.

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	CG	2 FARMLAND CONVENTIONAL	CG	3 FARMLAND ADVANCED	CG	4 INCINERATION	CG	5 TO PPP	CG	6 LANDFILL	CG	7 COMPOSTED	CG	8 LAND RECLAMATION	CG	9 OTHER	CG	10 TOTAL	CG
1	Resident population served	000	1									1,478.1	C3	33.9	C3							1,512.0	C3
2	Amount of sewage sludge	ttds	1									34 9	A2	0.8	B2							35.7	B2
3	Sludge treatment: direct costs	£000	3																	3,258.716		3,258.716	
4	Sludge disposal: direct costs	£000	3									2,186.161		193.437								2,379.598	
5	Sludge treatment & disposal: direct costs	£000	3									2,186.161		193.437						3,258.716		5,638.313	
6	Sludge treatment & disposal: power costs	£000	3																	2,440 656		2,440.656	
7	Sludge treatment & disposal: service charges	£000	3																	264 246		264 246	
8	Sludge treatment & disposal: general & support exp.	£000	3									2,478.323								170 829		2,649.152	
9	Sludge treatment & disposal: functional expenditure	£000	3									4,664.484		193.437						3,429 544		8,287.465	

Table 17g - Sewerage explanatory factors - sludge treatment and disposal information

The methodology has not changed from AIR17. 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 2018.

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 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 2017/18 (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 removed as part of the treatment process and disposed of under Tender C821.

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 C821.

Line 3 – Sludge Treatment: Direct Costs

Expenditure has been input in Column 9. These costs have increased by £1.4M from AIR17.

Sludge treatment costs for WWTW's are coded using activity 621 and can be separately identified to populate Column 9.

Power costs in AIR18 do not include the Incinerator or any PPP sites.

Line 4 - Sludge Disposal: Direct Costs

Columns 5 and 6 have been populated on this line. The direct costs have increased by £0.3M from AIR17.

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 only) column 3 line 9. Costs have increased by circa £1.7M from AIR17, (see below).

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 AIR17 was 46:54 and in AIR18 is 44:56 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 AIR18.

Line 7 - Sludge treatment & disposal: Service Charges

The Service Charges figure is approx. £0.3m in AIR18 and this is similar to what the costs were in AIR17. 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 AIR17. Overall General and Support costs have increased from AIR17. 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 £2.6M 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
	DESCRIPTION	**UNITS**	**DP**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**
1	Turnover	£m	3	366.398	361.313	364.407	367.287	372.851	381.099			
2	Operating costs (excluding HCD)	£m	3	-202.316	-209.933	-205.450	-207.727	-210.758	-219 231			
3	Historical cost depreciation	£m	3	-44.871	-48.580	-47.523	-54.364	-55.773	-56.418			
4	Operating income	£m	3	0.334	0.276	0.525	0.799	0.656	1.035			
5	Operating profit	£m	3	119.545	103.076	111.959	105.995	106.976	106.485			
6	Other income	£m	3	0.000	0.000	0.000	0.000	0 000	0.000			
7	Net interest receivable less payable	£m	3	-55.067	-48.580	-51.957	-53.609	-53.804	-56 253			
8	Profit on ordinary activities before taxation	£m	3	64.478	54.496	60.002	52.386	53.172	50.232			
9	Current tax	£m	3	0.000	0.000	-0.017	-0.017	-0 012	-0.009			
10	Deferred tax	£m	3	-24.872	13.798	-24.037	2.536	-6.430	-18 286			
11	Profit on ordinary activities after taxation	£m	3	39.606	68.294	35.948	54.905	46.730	31.937			
12	Extraordinary items	£m	3	0.000	0.000	0.000	0.000	0 000	0.000			
13	Profit for the year	£m	3	39.606	68.294	35.948	54.905	46.730	31.937			
14	Dividends	£m	3	-26.587	-21.391	-21.562	-22.888	-21.510	-21.153			
15	Retained profit for the year	£m	3	13.019	46.903	14.386	32.017	25 220	10.784			

Table 18 – HC Profit and Loss account for the year ending 31 March 2018

- 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 2017/18 can be analysed as follows:

	Gross Charge	Residual interest credit	Lease repayment	Capital maintenance	HC Depreciation	Net P&L Charge
	£m	£m	£m	£m	£m	£m
[redacted]*	19.621	-	(2.376)	(1.516)	3.442	19.171
[redacted]	26.917	(3.454)	-	-	-	23.463
[redacted]	2.512	(0.282)	-	-	-	2.230
Total	**49.050**	**(3.736)**	**(2.376)**	**(1.516)**	**3.442**	**44.864**

* includes lease interest of £6.406m – shown in line 7 of Table 18.

- PPP elements of line 2 'Operating Costs' are £35.016m.
  Additionally within Line 3 'HCD' there are depreciation costs for the [redacted] Project of £3.442m.

The Current and Deferred tax charge

Factors affecting the tax charge for the current period

The company adopted International Financial Reporting Standards (IFRS) for the first time in its statutory accounts for the year end 31st March 2011. The regulatory accounts will continue to be produced under 'Old'* UK generally accepted accounting policies (UK GAAP). However as the corporation tax computation for the company will be based on the IFRS statutory accounts it has been agreed with the Regulator that the tax charge and provision in the regulatory accounts should be the same as those shown in the statutory accounts.

*'Old' UKGAAP - this is UK GAAP in existence prior to the introduction of FRS100, FRS101 and FRS102

The income tax expense in the statutory accounts for the period is £18.108m which is lower 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	**£m**
Profit for the year	85.329
Income tax expense	18.108
Profit before income tax	103.437
Income tax using the Company's domestic tax rate (19%)	19.653
Reduction in tax rate	(2.026)
Non-deductible expenses	0.210
Other timing differences	-
Adjustment to prior years	0.192
Group relief not chargeable	0.079
	18.108

The statutory accounts income tax expense of £18.108m can be shown as follows:

Tax recognised in profit and loss	**£m**
Current tax expense	
Current year	(0.183)
Adjustment for prior years	0. 005
	(0.178)
Deferred Tax	
(Origination)/ reversal of timing differences	20.123
Adjustment to prior years	0.189
Reduction in tax rate	(2.026)
	18.286
Tax charge on profit on ordinary activities	(18.108)

This statutory income tax expense of £18.108m under IFRS is shown in the Regulatory Accounts as follow:

	Appointed activities	**Unappointed activities**	**Total**
	£m	**£m**	**£m**
Current tax	-	(0.178)	(0.178)
Deferred tax	18.286	-	18.286
Total	**18.286**	**(0.178)**	**18.108**

The statutory accounts deferred tax expense of £18.286m 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 current tax credit of £0.178m relates to a carry back of losses to 2017 against three specific income streams - interest receivable (wholly appointed - see Commentary to Table 18d), aerial site income (unappointed activity) and rental income (unappointed activity). The current tax charge has been allocated as follows:

Income stream	**Income £m**	**Current tax credit £m**	**Unappointed £m**
Interest Receivable	0.070	(0.014)	(0.014)
Aerial sites	0.346	(0.065)	(0.065)
Rental Income	0.494	(0.099)	(0.099)
Total	**0.910**	**(0.178)**	**(0.178)**

The statutory deferred tax liability at 31st March 2018 is £217.766m. Table 19 shows a deferred tax liability on the appointed balance sheet of £221.641m (with zero balance at 31st March 2018 for unappointed activities). This liability under UKGAAP reconciles to the IFRS based statutory accounts balance at 31st March 2018 of £217.766m as the IFRS Accounts are required to show the deferred tax asset of £3.875m associated with the pension liability within the deferred tax balance rather than the UKGAAP approach of showing this amount

separately within the pension account. The statutory balance of £217.766m can be summarised as follows:

	2018 £m Excluding Pension	2018 £m Pension	**2018 £m Total**
Opening liability	202.263	(11.217)	**191.046**
Current year deferred tax charge/(credit) to profit and loss account	19.378	(1.092)	**18.286**
Current year deferred year tax charge to the Statement of Total Recognised Gains and Losses	0.000	8.434	**8.434**
Closing liability	221.641	(3.875)	**217.766**

The UKGAAP approach (FRS 17) aspect of 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:

	2018 £m
Benefit obligation at end of year	(256.192)
Fair value of plan assets at end of year	233.403
Net liability	(22.789)
Less deferred tax	3.875
Pension liability after deferred tax	**(18.914)**

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-18	**31-Mar-17**
Discount rate	2.65%	2.60%
Rate of compensation increase	2.00% for the next 4 years, 3.00% thereafter	2.10% for the next 4 years, 3.10% thereafter
Rate of increase in pensions in payment	3.05%	3.10%
Rate of increase in pensions in deferment	3.05%	3.10%
Inflation RPI	3.00%	3.10%
Inflation CPI	2.00%	2.10%

Weighted average assumptions used to determine net pension cost for year ended:

	31-Mar-18	31-Mar-17
Discount rate	2.60%	3.70%
Rate of compensation increase	2.10% for 3 yrs 3.10% thereafter	1.95% for 4 yrs 2.95% thereafter
Rate of increase in pensions in payment	3.10%	2.95%
Inflation	3.10%	2.95%

Any changes to the assumptions from 2017 to 2018 have been advised by the independent actuaries.

There is a pension liability at 31 March 2018 of £18.914m (after deferred tax). In agreement with the Pension Trustees the cash contribution rate to the Fund is 24.6% of pensionab,le pay (2016/17: 24.6%).

A dividend of £24.524m was proposed, approved and paid in 2017/18 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 31 st March 2018 £21.153 m of the statutory dividend of £24.524m was allocated to appointed activities and £3.371 m allocated to unappointed activities.

Operating Costs

Cost components in Operating Costs

The following cost components of Line 2 (£219.231m) exceed £2.7m in 2017-18:

Employment Costs	21.634m*/\
Power	29.211 m*
Rates	26.217m*
Contractors	18.649m*
Customer services	9.629m
Materials and consumables	6.144m
General and support expenditure	44.280m
PPP Operating Charges - [redacted]	9.323m
PPP Operating Charges - [redacted]	25.693m /\/\
IRC	25.757m
Total	**216.537m (98.8% of total operating costs)**

* 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).

/\/\ stated net of residual interest

Interest

Interest received and payable can be summarised as follows:

	£m	£m
Interest received		
Bank Interest	0.052	
Cash Pooling	0.115	
Total Interest received		**0.167**
Interest Payable:		
On bonds held as security	(0.048)	
On all other loans	(48.365)	
On PPP finance lease	(6.406)	
On Pension Fund	(1.600)	
Total Interest Payable		**(56.419)**
Net Interest		**(56.252)**

Capitalisation of costs

During 2017/18 £13.970m of costs were capitalised from the profit and loss account. This can be broken down as follows:

Cost	**£m**
Staff Costs	11.669
Labour charge	0.223
Temporary staff	0.056
Consultants	-
Overheads capitalised	2.022
Total	**13.970**

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 and PC15

A comparison to 2016/17 and to PC15 can be shown as follows:

	Actual	**Actual**	**PC15**
	2017 - 2018	**2016 - 2017**	**2017 - 2018**
	£m	**£m**	**£m**
Sales	381.099	372.851	385.765
Expenditure	(274.614)	(265.875)	(278.423)
Net Operating Profit	106.485	106.976	107.342
Operating Margin	*27.9%*	*28.7%*	*27.8%*
Interest payable	(56.253)	(53.804)	(61.301)
Tax charge	(18.295)	(6.442)	(8.319)
Profit for the year	31.937	46.730	37.722
Net Profit Margin	*8.38%*	*12.5%*	*9.8%*

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.

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 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
A	CAPITAL EXPENDITURE CATEGORIES											
1	Profit for the year	£m	3	13.019	46.903	14.386	32.017	25.220	10.784			
2	Actuarial gains/losses on post employment plans	£m	3	-11.535	8 012	-11.081	4.294	-46.621	41.180			
3	Other gains and losses	£m	3	0.000	0 000	0.000	0.000	0.000	0 000			
4	Total recognised gains and losses for the year	£m	3	1.484	54.915	3.305	36.311	-21.401	51 964			

Table 18c – STRGL (HCA)

Line 2 shows £41.180m of actuarial losses on post-employment plans.

Line 3 is nil as there are no other recognised gains or losses for the year.

Although the Regulatory Accounts are based on 'old' UKGAAP (see commentary to Table 18) the actuarial loss noted above of £41.180m is taken from the IFRS statutory accounts. Similar to last year the application of the amended version of IAS 19 (Employee Benefits) has led to the UKGAAP and IFRS approaches on accounting for pension costs being different. The IFRS approach was used in the Regulatory Accounts for the following reasons:

- The primary difference in IFRS and 'old' UKGAAP in this area arises in the allocation of pension costs as an expense to the profit and loss account or directly to reserves. If the actuarial loss had been calculated in line with 'old' UKGAAP rather than IFRS the actuarial gain charged directly to reserves (through the STRGL) there would have been no overall balance sheet impact on either the profit and loss account reserves or on the pension asset of following IFRS as opposed to 'old' UKGAAP.
- Adopting this approach avoided the additional costs of requesting the company actuary to provide year end pension disclosures for both statutory accounts and regulatory accounts purposes.

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 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
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			
2	Other ordinary dividends	£m	3	-26.587	-21 391	-21.562	-22 888	-21.510	-21.153			
3	Total dividends	£m	3	-26.587	-21 391	-21.562	-22 888	-21.510	-21.153			
B	**INTEREST ANALYSIS**											
4	Interest receivable/payable on intercompany balances	£m	3	0.000	0 000	0.000	0 000	0.000	0.115			
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			
6	Indexation element of index-linked bonds	£m	3	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			
8	Other interest receivable	£m	3	0.134	0.112	0.079	0 096	0.070	0.052			
9	Other interest payable	£m	3	-44.137	-41.459	-45.367	-46 604	-47.111	-48.414			
10	Other finance charges - post employment costs	£m	3	0.849	-0 300	0.155	-0.400	-0.200	-1.600			
11	Other finance charges	£m	3	-11.913	-6 933	-6.824	-6.701	-6.562	-6.406			
12	Total net interest	£m	3	-55.067	-48 580	-51.957	-53 609	-53.803	-56.253			

Table 18d – Analysis of dividends and interest charges

There has been no financial reorganisation during the year.

A dividend was proposed and approved in 2017/18 and this is shown on line 2. The full dividend for 2017/18 was £24.524m with £21.153m apportioned to appointed activities and £3.371m 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 (£0.167m) relates to monies held on deposit (£0.052m) & intercompany cash pooling interest (£0.115m).

Interest payable of £48.414m is comprised of £48.365m relating to the loan notes held with DfI and £0.048m relating to interest payable on cash bonds. The interest on loan notes has increased from last year by £1.279m (2.7%). The increase, as in the prior year, is due to the additional interest on the drawdown of £69m additional loan notes in 2017/18 (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 £1.600m for the finance interest cost relating to post employment plans calculated by the actuaries of the pension fund at year end.

During 2017/18 an amount of £6.406m (2015/16: £6.562m) has been included as other finance charges. [redacted]

The following table compares the actual net interest payable and balance of loan notes with the 2017/18 budget and PC15:

	Actual	Budget	PC15
	£m	£m	£m
Net Interest payable	56.253	54.296	61.301
Loan notes	1,082.560	1,048.560	1,156.498

The drawdown of loans is £73.94m less than the PC15 projected for 2017/18. This is primarily driven by reduced funding in the capital programme and a lower working capital requirement than was anticipated particularly for capital creditors.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 19 REGULATORY ACCOUNTS (HISTORICAL COST ACCOUNTING)
BALANCE SHEET AS AT 31 MARCH (TOTAL)

	DESCRIPTION	UNITS	DP	1 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
A	**FIXED ASSETS**											
1	Tangible fixed assets	£m	3	1907 525	1994.848	2073.392	2139.613	2201.787	2262.482			
2	Investment - loan to group company	£m	3	0.000	0.000	0.000	0.000	0 000	0 000			
3	Investment - other	£m	3	0.106	0.091	0.091	0.091	0 091	0 091			
4	Total fixed assets	£m	3	1907 631	1994.939	2073.483	2139.704	2201 878	2262 573			
B	**CURRENT ASSETS**											
5	Stocks	£m	3	2.379	2.021	2.269	2.368	2 347	2.469			
6	Debtors	£m	3	28 824	27.167	30.759	29.832	30 386	62.428			
7	Cash	£m	3	9.102	1.637	0.792	2.015	0.412	0.723			
8	Short term deposits	£m	3	5.300	0.600	0.020	1.000	2 501	2 508			
9	Infrastructure renewals prepayment	£m	3	3.341	0.050	0.000	0.000	0 000	3 573			
10	Total current assets	£m	3	48 946	31.475	33.840	35.215	35 646	71.701			
C	**CREDITORS AMOUNTS FALLING DUE WITHIN ONE YEAR**											
11	Overdrafts	£m	3	0.000	0.000	0.000	0.000	0 000	0 000			
12	Infrastructure renewals accrual	£m	3	0.000	0.000	-0.702	-5.844	-0 921	0 000			
13	Creditors	£m	3	-118 022	-124.404	-132.752	-131.139	-136 204	-129.195			
14	Borrowings	£m	3	0.000	0.000	0.000	0.000	0 000	0 000			
15	Corporation tax payable	£m	3	0.000	0.000	0.000	-0.189	-0.189	0 228			
16	Ordinary share dividends payable	£m	3	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			
18	Total creditors	£m	3	-118 022	-124.404	-133.454	-137.172	-137 314	-128 967			
19	Net current assets	£m	3	-69.076	-92.929	-99.614	-101.957	-101 668	-57 266			
D	**CREDITORS AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR**											
20	Borrowings	£m	3	-882 560	-911.560	-947.560	-983.560	-1013 560	-1082 560			
21	Other creditors	£m	3	-96.187	-95.302	-93.773	-91.751	-89 305	-87 360			
22	Total creditors	£m	3	-978.747	-1,006.862	-1,041.333	-1,075.311	-1,102 865	-1,169 920			
E	**PROVISION FOR LIABILITIES AND CHARGES**											
23	Deferred tax provision	£m	3	-187.416	-173.693	-197.982	-195.465	-202 263	-221 641			
24	Deferred income - grants and contributions	£m	3	-19.456	-19.785	-21.969	-22.301	-23 070	-25.769			
25	Post employment asset / (liabilities)	£m	3	-4.123	2.784	-9.304	-5.880	-54.767	-18 915			
26	Other provisions	£m	3	-9.589	-10.315	-5.837	-5.035	-4 886	-4.739			
F	**PREFERENCE SHARE CAPITAL**											
27	Preference share capital	£m	3	0.000	0.000	0.000	0.000	0 000	0 000			
28	Net assets employed	£m	3	639 224	694.139	697.444	733.755	712 359	764 323			
G	**CAPITAL AND RESERVES**											
29	Called up share capital	£m	3	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			
31	Profit and loss account	£m	3	-32.466	22.449	25.754	62.065	40 669	92 633			
32	Other reserves	£m	3	171 690	171.690	171.690	171.690	171 690	171 690			
33	Capital and reserves	£m	3	639 224	694.139	697.444	733.755	712 359	764 323			

Table 19 – HC Balance Sheet as at 31 March 2018

The balance sheet in the published regulatory accounts includes a separate analysis of unappointed activities.

The retained profit for the year is £10.784m (post dividend).

The P&L reserves in the Balance Sheet increased by £51.964m and this movement can be shown as follows:

Retained profit for the year	£10.784m
Pension scheme actuarial gain net of deferred tax	£41.180m
Movement in P&L Account	**£51.964m**

The company has adopted International Financial Reporting Standards (IFRS) in its statutory accounts for the year end 31st March 2018. The regulatory accounts will continue to be produced under 'Old'* UK generally accepted accounting policies (UK GAAP). As the corporation tax computation for the company will be based on the IFRS statutory accounts it has been agreed with the Regulator that the tax charge and provision in the regulatory accounts should be the same as those shown in the statutory accounts.

*'Old' UKGAAP - this is UK GAAP in existence prior to the introduction of FRS100, FRS101 and FRS102

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	120.109 *	28.914	4.060	**153.083**
Acc. Deprec	(31.010)	-	-	**(31.010)**
NBV	**89.099**	**28.914**	**4.060**	**122.073**

* Includes the original capital value of [redacted] the NIW assets transferred to and utilised by the concessionaire and subsequent additions of capital maintenance.

Line - 13 Creditors falling due within one year

	[redacted]	[redacted]	[redacted]	**Other PPP expense**	**Total**
	£m	£m	£m	£m	£m
Lease obligation due < 1 yr	2.650	-	-	-	**2.650**
Accruals	1.644	15.130	0.232	-	**17.006**
Total	**4.294**	**15.130**	**0.232**	**-**	**19.656**

Line 21 - Other creditors falling due after more than one year

	[redacted]
	£m
Lease obligation due > 1 yr	85.350

Line 26 - Other provisions

	[redacted]
	£m
Provisions	1.000

Significant features and movements

Fixed Assets

Increase of £61m in line with in year additions of £189m, capital contributions of £41m, HC depreciation of £82m, disposals of £1.035m and a movement from an infrastructure accrual of £0.921m to an infrastructure prepayment of £3.573m.

Debtors

Increased by £32.042m from £30.386m to £62.428m (105.45%). This is primarily due to:

- Measured, unmeasured and TE debtors decreased by £0.7m
- Measured, unmeasured and TE bad debt provision decreased by £0.7m
- Accrued income from measured and TE customers increased by £1.5m.
- VAT receivable debtors increased by £0.2m.
- DfI Subsidy debtor increased by £0.2m
- Other Prepayments increased by £0.1m
- PPP Capital maintenance decreased by £0.2m
- Intercompany debtor cash pooling from the [redacted] companies during the year of £29.312m

Cash and Short term deposits

Cash has increased by £0.311m from £0.412m to £0.723m (75.49%) and Short term deposits have increased by £0.007m from £2.501m to £2.508m (0.28%).

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	£174.082m
Net Interest paid	£ 53.840m
Dividend paid	£ 21.153m
PPP Lease payments	£ 2.376m
Increase in cash	£ 0.311m
Increase in deposit monies	£ 0.007m
Total	**£251.769m**

Funded by:

Generated from operations	£182.769m
Loans	£ 69.000m
Total	**£251.769m**

Deferred tax

The deferred tax balance has increased from £202.263m to £221.641m. An explanation for this has been included in the commentary to Table 18.

Borrowings > 1 year

Borrowings have increased by £69m from £1,013.560m to £1,082.560m. The additions to capital expenditure during the year were £189m. 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 £54.767m decreased to a Pension liability of £18.914m (a change in value of (65.5%)).

This can be shown as follows:

	£m
Opening balance at 1.4.17	**(54.767)**
Current Service Costs	(13.500)
Administration Costs	(1.000)
Past Service Costs	(1.500)
Contributions	11.181
Finance Cost	(1.600)
Actuarial Gain	49.614
Increase in Deferred tax asset on liability	(7.342)
Closing balance 31.3.18	**(18.914)**

Other provisions

Decreased from £4.886m to £4.739m (3.01%).

This decrease of £0.147m can be summarised as follows:

	£m
Decrease in holiday pay provision	(0.159)
Increase in PL/EL	0.012
Total	**(0.147)**

PPP – Infrastructure renewals charge (IRC) and expenditure (IRE)
– Capital Maintenance

The table below summarises the IRC, IRE and capital maintenance during 2017/18 in relation to the PPP projects:

	[redacted]	[redacted]	[redacted]	**Total**
	£m	£m	£m	**£m**
IRE	-	-	-	**-**
IRC	-	-	-	**-**
Capital maintenance	1.756	-	-	**1.756**

[redacted]
Alpha is treated as ‘on balance sheet’ and an amount of the unitary charge for Alpha is deemed to be related to the carrying out of capital maintenance by the operator. For 2017-18 this is confirmed by the operator to be £1.756m. This amount is credited to the Profit and Loss account and debited to Alpha fixed assets.

This capital maintenance is assumed to be 100% non-infrastructure and there are no infrastructure additions to Alpha in 2017-18 (2016-17: nil). There has therefore been no apportionment of IRC in 2017-18 (2016-17: nil).

[redacted] are treated as ‘off balance sheet’ and the additions in year relate to the residual interest asset with no related IRE, IRC or capital maintenance aspects.

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 INTEREST COST £m 3dp	FULL YEAR EQUIVALENT REAL CASH INTEREST PAYMENT £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	9	627.560	5648.040	1.95%	5.25%	32.947	32.947	627.560
302	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	20.000	180.000	1.73%	5.03%	1.006	1.006	20.000
303	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	20.000	180.000	1.59%	4.89%	0.978	0.978	20.000
304	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	20.000	180.000	1.18%	4.48%	0.896	0.896	20.000
305	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	10.000	90.000	1.83%	5.13%	0.513	0.513	10.000
306	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	10.000	90.000	1.86%	5.16%	0.516	0.516	10.000
307	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	10.000	90.000	1.97%	5.27%	0.527	0.527	10.000
308	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	20.000	180.000	1.75%	5.05%	1.010	1.010	20.000
309	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	1.50%	4.80%	0.240	0.240	5.000
310	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	15.000	135.000	1.09%	4.39%	0.659	0.659	15.000
311	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	7.000	63.000	0.20%	3.50%	0.245	0.245	7.000
312	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	10.000	90.000	0.07%	3.37%	0.337	0.337	10.000
313	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	15.000	135.000	0.32%	3.62%	0.543	0.543	15.000
314	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	18.000	162.000	0.38%	3.68%	0.662	0.662	18.000
315	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	8.000	72.000	0.34%	3.64%	0.291	0.291	8.000
316	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	8.000	72.000	0.06%	3.36%	0.269	0.269	8.000
317	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	-0.08%	3.22%	0.161	0.161	5.000
318	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	20.000	180.000	-0.24%	3.06%	0.612	0.612	20.000
319	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	10.000	90.000	-0.17%	3.13%	0.313	0.313	10.000
320	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	24.000	216.000	-0.08%	3.22%	0.773	0.773	24.000
321	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	0.69%	3.99%	0.200	0.200	5.000
322	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	8.000	72.000	0.80%	4.10%	0.328	0.328	8.000
323	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	0.65%	3.95%	0.198	0.198	5.000
324	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	11.000	99.000	0.61%	3.91%	0.430	0.430	11.000
325	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	0.56%	3.86%	0.193	0.193	5.000
326	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	0.42%	3.72%	0.186	0.186	5.000
327	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	0.61%	3.91%	0.196	0.196	5.000
328	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	-0.15%	3.15%	0.158	0.158	5.000
329	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	-0.10%	3.20%	0.160	0.160	5.000
330	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	8.000	72.000	-0.50%	2.80%	0.224	0.224	8.000
331	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	3.000	27.000	-0.69%	2.61%	0.078	0.078	3.000
332	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	13.000	117.000	-0.64%	2.66%	0.346	0.346	13.000
333	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	-0.24%	3.06%	0.153	0.153	5.000
334	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	8.000	72.000	-0.38%	2.92%	0.234	0.234	8.000
335	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	-0.63%	2.67%	0.134	0.134	5.000
336	Capital loan note issued under GBP £1.2802bn Fixed Coupon Unsecured Loan note instrument 2027	9	5.000	45.000	-0.82%	2.48%	0.124	0.124	5.000
337	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.35%	2.95%	0.148	0.148	5.000
338	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.90%	2.40%	0.120	0.120	5.000
339	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.59%	2.71%	0.136	0.136	5.000
340	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.69%	2.61%	0.131	0.131	5.000
341	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	10.000	160.000	-0.87%	2.43%	0.243	0.243	10.000
342	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	28.000	448.000	-0.88%	2.42%	0.678	0.678	28.000
343	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	12.000	192.000	-0.69%	2.61%	0.313	0.313	12.000
344	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.75%	2.55%	0.128	0.128	5.000
345	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.72%	2.58%	0.129	0.129	5.000
346	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	5.000	80.000	-0.89%	2.41%	0.121	0.121	5.000
347	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	6.000	96.000	-0.73%	2.57%	0.154	0.154	6.000
348	Capital loan note issued under GBP £600m Fixed Coupon Unsecured Loan note instrument 2034	16	8.000	128.000	-0.81%	2.49%	0.199	0.199	8.000
C2	Floating rate instruments								
351									
"									
400									
C3	Index linked instruments								
401									
"									
450									
	TOTAL FOR OTHER BORROWINGS		1082.560				49.335	49.335	1082.560
D	TOTALS		1082.560	10436.040			49.335	49.335	1082.560

E	RPI assumption	3.3%

F	ANALYSIS	
F	INDICATIVE INTEREST RATES	
F1	Nominal interest	4.6%
F2	Cash interest	4.6%
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	10

Table 19a – Analysis of Borrowings due after more than One Year

At 31 March 2018 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 2018 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 only.

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 2017/18 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 2021. That facility was not utilised during 2017/18.

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	4.066	8 535	12.600
2	Power	£m	3	4.368	3 387	7.755
3	Agencies	£m	3	0.000	0.000	0.000
4	Hired and contracted services	£m	3	2.577	7.268	9.846
5	Associated companies	£m	3	0.000	0.000	0.000
6	Materials and consumables	£m	3	4.142	0.576	4.719
7	Service charges	£m	3	0.648	0.000	0.648
8	Bulk supply imports	£m	3	0.000	0.000	0.000
9	Other direct costs	£m	3	0.019	0 040	0.059
10	Total direct costs	£m	3	15.820	19.806	35.626
11	General and support expenditure	£m	3	9.851	10.724	20.575
12	Functional expenditure	£m	3	25.671	30.530	56.201
B	**OPERATING EXPENDITURE**					
13	Customer services	£m	3			4.568
14	Scientific services	£m	3			1.513
15	Other business activities	£m	3			0.492
16	Total business activities	£m	3			6.573
17	Rates	£m	3			8.606
18	Doubtful debts	£m	3			0.071
19	Exceptional items	£m	3			0.000
20	Total opex less third party services	£m	3			71.451
21	Third party services - opex	£m	3			0.008
21a	PPP Unitary Charges (Opex element)	£m	3			
22	Total operating expenditure	£m	3			71.459
22a	Payment by concessionaire to operator	£m	3			
C	**OPEX)**					
23	Reactive and planned maintenance infrastructure	£m	3	0.000	8.751	8.751
24	Reactive and planned maintenance non-infrastructure	£m	3	1.367	4.909	6.277
D	**CAPITAL MAINTENANCE**					
25	Infrastructure renewals charge (excluding third party services)	£m	3	14.679	0 000	14.679
26	Historical cost depreciation (allocated)	£m	3	8.983	7.817	16.800
27	Amortisation of deferred credits	£m	3			-0.354
28	Amortisation of intangible assets	£m	3			0.000
29	Business activities historical cost depreciation (non-allocated)	£m	3			0.040
30	Capital maintenance excluding third party services	£m	3			31.165
31	Third party services - historical cost depreciation	£m	3			0.000
32	Third party services - infrastructure renewals charge	£m	3			0.000
33	Total capital maintenance	£m	3			31.165
34	Total operating costs	£m	3			102.624

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	5.469	0 000	5.469
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	0.084	0.000	0.084
8	Bulk supply imports	£m	3			
9	Other direct costs	£m	3	0.000	0 000	0.000
10	Total direct costs	£m	3	5.553	0 000	5.553
11	General and support expenditure (NIW Only)	£m	3	0.079	0.000	0.079
12	Functional expenditure	£m	3	5.632	0.000	5.632
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			7.674
18	Doubtful debts	£m	3			
19	Exceptional items	£m	3			
20	Total opex less third party services	£m	3			13.306
21	Third party services - opex	£m	3			
21a	PPP Unitary Charges (Opex element)	£m	3			[redacted]
22	Total operating expenditure	£m	3			[redacted]
22a	Payment by concessionaire to operator	£m	3	[redacted]	[redacted]	[redacted]
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	0.000	0 000	0.000
26	Historical cost depreciation (allocated)	£m	3	3.442	0.000	3.442
27	Amortisation of deferred credits	£m	3			0.000
28	Amortisation of intangible assets	£m	3			0.000
29	Business activities historical cost depreciation (non-allocated)	£m	3			0.000
30	Capital maintenance excluding third party services	£m	3			3.442
31	Third party services - historical cost depreciation	£m	3			0.000
32	Third party services - infrastructure renewals charge	£m	3			0.000
33	Total capital maintenance	£m	3			3.442
34	Total operating costs	£m	3			[redacted]

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	4.066	8 535	12.600
2	Power	£m	3	9.837	3 387	13.224
3	Agencies	£m	3	0.000	0.000	0.000
4	Hired and contracted services	£m	3	2.577	7.268	9.846
5	Associated companies	£m	3	0.000	0.000	0.000
6	Materials and consumables	£m	3	4.142	0.576	4.719
7	Service charges	£m	3	0.732	0.000	0.732
8	Bulk supply imports	£m	3	0.000	0.000	0.000
9	Other direct costs	£m	3	0.019	0 040	0.059
10	Total direct costs	£m	3	21.373	19.806	41.179
11	General and support expenditure	£m	3	9.930	10.724	20.654
12	Functional expenditure	£m	3	31.303	30.530	61.833
B	OPERATING EXPENDITURE					
13	Customer services	£m	3			4.568
14	Scientific services	£m	3			1.513
15	Other business activities	£m	3			0.492
16	Total business activities	£m	3			6.573
17	Rates	£m	3			16.280
18	Doubtful debts	£m	3			0.071
19	Exceptional items	£m	3			0.000
20	Total opex less third party services	£m	3			84.757
21	Third party services - opex	£m	3			0.008
21a	PPP Unitary Charges (Opex element)	£m	3			[redacted]
22	Total operating expenditure	£m	3			[redacted]
22a	Payment by concessionaire to operator	£m	3	[redacted]	[redacted]	[redacted]
C	OPEX)					
23	Reactive and planned maintenance infrastructure	£m	3	0.000	8.751	8.751
24	Reactive and planned maintenance non-infrastructure	£m	3	1.367	4.909	6.277
D	CAPITAL MAINTENANCE					
25	Infrastructure renewals charge (excluding third party services)	£m	3	14.679	0 000	14.679
26	Historical cost depreciation (allocated)	£m	3	12.425	7.817	20.242
27	Amortisation of deferred credits	£m	3			-0.354
28	Amortisation of intangible assets	£m	3			0.000
29	Business activities historical cost depreciation (non-allocated)	£m	3			0.040
30	Capital maintenance excluding third party services	£m	3			34.607
31	Third party services - historical cost depreciation	£m	3			0.000
32	Third party services - infrastructure renewals charge	£m	3			0.000
33	Total capital maintenance	£m	3			34.607
34	Total operating costs	£m	3			[redacted]

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	3 928	4.786	0 319	9.032
2	Power	£m	3	4 015	7.453	0 920	12.389
3	Agencies	£m	3	0 000	0.000	0 000	0.000
4	Hired and contracted services	£m	3	4 815	1.901	2 088	8.804
5	Associated companies	£m	3	0 000	0.000	0 000	0.000
6	Materials and consumables	£m	3	0 260	0.640	0 526	1.426
7	Service charges	£m	3	0 001	0.701	0 264	0.965
8	Other direct costs	£m	3	0 001	0.006	0 000	0.008
9	Total direct costs	£m	3	13 020	15.487	4.117	32.624
10	General and support expenditure	£m	3	7 962	12.449	2.488	22.898
11	Functional expenditure	£m	3	20 982	27.936	6 605	55.523
B	**OPERATING EXPENDITURE**						
12	Customer services	£m	3				3.983
13	Scientific services	£m	3				1.231
14	Other business activities	£m	3				0.429
15	Total business activities	£m	3				5.642
16	Rates	£m	3				8.837
17	Doubtful debts	£m	3				-0.236
18	Exceptional items	£m	3				0.000
19	Total opex less third party services	£m	3				69.766
20	Third party services - opex	£m	3				0.000
20a	PPP Unitary Charges (Opex element)	£m	3				
21	Total operating expenditure	£m	3				69.766
21a	Payment by concessionaire to operator	£m	3				
C	**OPEX)**						
22	Reactive and planned maintenance infrastructure	£m	3	2 601	0.000	0 000	2.601
23	Reactive and planned maintenance non-infrastructure	£m	3	8.431	2.251	0 000	10.682
D	**CAPITAL MAINTENANCE**						
24	Infrastructure renewals charge (excluding third party services)	£m	3	11 078		0 000	11.078
25	Historical cost depreciation (allocated)	£m	3	0 955	34.447	0.739	36.141
26	Amortisation of deferred credits	£m	3				-0.713
27	Amortisation of intangible assets	£m	3				0.000
28	Business activities historical cost depreciation (non-allocated)	£m	3				0.000
29	Capital maintenance excluding third party services	£m	3				46.506
30	Third party services - historical cost depreciation	£m	3				0.000
31	Third party services - infrastructure renewals charge	£m	3				0.000
32	Total capital maintenance	£m	3				46.506
33	Total operating costs	£m	3				116.272

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	2.078	1 521	3.599
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	2.078	1 521	3.599
10	General and support expenditure (NIW Only)	£m	3	0 000	0.157	0 048	0.205
11	Functional expenditure	£m	3	0 000	2.235	1 569	3.804
B	OPERATING EXPENDITURE						
12	Customer services	£m	3				
13	Scientific services	£m	3				0.088
14	Other business activities	£m	3				
15	Total business activities	£m	3				0.088
16	Rates	£m	3				1.100
17	Doubtful debts	£m	3				
18	Exceptional items	£m	3				
19	Total opex less third party services	£m	3				4.992
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	0 000		0 000	0.000
25	Historical cost depreciation (allocated)	£m	3	0 000	0.000	0 000	0.000
26	Amortisation of deferred credits	£m	3				0.000
27	Amortisation of intangible assets	£m	3				0.000
28	Business activities historical cost depreciation (non-allocated)	£m	3				0.000
29	Capital maintenance excluding third party services	£m	3				0.000
30	Third party services - historical cost depreciation	£m	3				0.000
31	Third party services - infrastructure renewals charge	£m	3				0.000
32	Total capital maintenance	£m	3				0.000
33	Total operating costs	£m	3				[redacted]

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	3 928	4.786	0 319	9.032
2	Power	£m	3	4 015	9.531	2.441	15.988
3	Agencies	£m	3	0 000	0.000	0 000	0.000
4	Hired and contracted services	£m	3	4 815	1.901	2 088	8.804
5	Associated companies	£m	3	0 000	0.000	0 000	0.000
6	Materials and consumables	£m	3	0 260	0.640	0 526	1.426
7	Service charges	£m	3	0 001	0.701	0 264	0.965
8	Other direct costs	£m	3	0 001	0.006	0 000	0.008
9	Total direct costs	£m	3	13 020	17.565	5 638	36.223
10	General and support expenditure	£m	3	7 962	12.606	2 536	23.103
11	Functional expenditure	£m	3	20 982	30.171	8.174	59.327
B	OPERATING EXPENDITURE						
12	Customer services	£m	3				3.983
13	Scientific services	£m	3				1.319
14	Other business activities	£m	3				0.429
15	Total business activities	£m	3				5.730
16	Rates	£m	3				9.937
17	Doubtful debts	£m	3				-0.236
18	Exceptional items	£m	3				0.000
19	Total opex less third party services	£m	3				74.758
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	2 601	0.000	0 000	2.601
23	Reactive and planned maintenance non-infrastructure	£m	3	8.431	2.251	0 000	10.682
D	CAPITAL MAINTENANCE						
24	Infrastructure renewals charge (excluding third party services)	£m	3	11 078		0 000	11.078
25	Historical cost depreciation (allocated)	£m	3	0 955	34.447	0.739	36.141
26	Amortisation of deferred credits	£m	3				-0.713
27	Amortisation of intangible assets	£m	3				0.000
28	Business activities historical cost depreciation (non-allocated)	£m	3				0.000
29	Capital maintenance excluding third party services	£m	3				46.506
30	Third party services - historical cost depreciation	£m	3				0.000
31	Third party services - infrastructure renewals charge	£m	3				0.000
32	Total capital maintenance	£m	3				46.506
33	Total operating costs	£m	3				[redacted]

Tables 21 & 22 Activity Costing Analysis – Water & Sewerage Service

The costs in Tables 21 & 22 are populated with the updated information available at 29th May 2017 for the year ended 31st March 2018.

Allocation of costs between expenditure types

Expenditure is classified as capital expenditure if it satisfies the following criteria: (as per *FR15 Capitalisation Guidelines).*

- 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 AIR18. 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 AIR17 to AIR18 (by circa £3.1M). 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 AIR18.

Description	R&T	Distribution	Sewerage	Sewage Treatment	Sludge Treatment & Disp	Comments
BASIS - Total Direct Costs	27.3%	26.2%	17.2%	22.3%	7.1%	
G&S Overhead Pot 1	27.3%	26.2%	17.2%	22.3%	7.1%	Non ops general spend. Excludes CS, SS & Regulation
G&S Overhead Pot 2a - Water	51.0%	49.0%	0.0%	0.0%	0.0%	Water related activities only
G&S Overhead Pot 2b - Sewerage	0.0%	0.0%	36.9%	47.8%	15.2%	Sewerage activities only
G&S Overhead Pot 3 - SA 390	27.3%	26.2%	17.2%	22.3%	7.1%	Water and sewerage networks spend only
G&S Overhead Pot 3 - M&E	6.3%	15.8%	23.0%	54.9%	0.0%	M&E Split as supplied by M&E Function

The percentage splits in AIR18 used to allocate General & Support expenditure are consistent with AIR17. The allocation to Water from General & Support Overhead Pot 1, which contains approx. 78% of the costs, remains consistent with AIR17.

The costs of the CRC Energy Efficiency Scheme are 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 2017/18 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 increased slightly from to 52.5% in AIR17 to 53.4% in AIR18 while allocation to Sewerage has decreased slightly in AIR17 to 46.6% in AIR18.

The table below shows the basis of apportionment for AIR18.

Apportionment of business activities	Water		Sewerage		
Description	R&T	Distribution	Sewerage	Sewage Treatment	Sludge Treatment & Disp
BASIS - Total spend (Includes general & Support)	27.0%	26.4%	17.1%	22.2%	7.2%
Apportionment					
Water / Sewerage split	53.4%		46.6%		

Rates were allocated between Table 21 and Table 22 using the rates bills. The rates charge can be specifically identified from the rates bill. In AIR18, overall rates are split 62.1% Water and 37.9% Sewerage which is consistent with AIR17.

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:

2017/18 atypical costs and credits

Description	Amount	Comment
Extreme weather	£1.1M	Costs arising from extreme weather events on 22 Aug 2017 and 28 Feb 2018.
Retrospective Pension payment	£1.7M	Cost accrued to NIW pension scheme to reflect the outcome of the triennial evaluation carried out in 2017.
IHR related costs	£1.2M	Costs incurred releasing staff via the Ill Health Retirement scheme.
VER/VS costs	£0.3M	Costs incurred releasing employees via the VER/VS schemes.
BI consultancy	£1.0M	Only BI related consultancy costs are deemed to be atypical. In addition to consultancy costs, NIW also incurred £2.1M in staff related costs and £0.1M in other costs in order to deliver the BI (ACE) programme in 2017-18.
PPP atypicals	[redacted]	Primarily relating to performance deductions. See PPP section of this commentary for further information.
Project Clear	£0.5M	Technical and legal advisors costs in relation to Project Clear which is a one off project relating to the acquisition of Project Alpha.
RPDM credit	(£0.2M)	Balance of 2016-17 accrual released in 2017-18.
UR credit	(£0.2M)	Balance of 2016-17 accrual released in 2017-18.
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 AIR18 was £3.2M, which is £0.7M higher than AIR 17 (£2.5M). This is due to an increase in Employment Costs (£0.4M) and Consultant Fees (£0.2M).

Voluntary Early Retirement / Voluntary Severance / Ill Health retirement

During 2017/18 NI Water further reduced the workforce resulting in the release of Voluntary Early Retirement (VER), Voluntary Severance (VS) and Ill Health Retirement schemes. Further details on the staff reduction programme is contained within the Annual Report.
The payments made during the year totalled £1.5M in relation to the 2017/18 scheme, which is an increase of £0.9M from AIR17. This is due to an increase in the number of Ill Health retirements in 2017/18.

Negative Opex

NIW generate income from the sale of electricity and Renewable Obligation Certificates (ROCs) by way of water turbine and solar installations. In 2017/18, this income amounted to £0.4m, which is consistent with AIR17.

Employment Costs

Staff costs for total NI Water come to circa £53.9M as detailed below has increased from AIR17 (£49.75M). These costs include the £1.5M VER\VS and ill-health costs outlined above. Only circa £21.6M is included in Employment Costs (Line 1) in Tables 21 & 22 (AIR17 circa £21.4M).

The table below provides the reconciliation between these amounts:

Description	Amount	Table 21/22 location
Industrial Wages	£16.7M	
Salaries	£33.1M	
Temporary Staff	£1.3M	
Other Costs of Employment	£1.78M	
Staff Expenses	£1.1M	
Total NI Water staff costs	**£53.9M**	
Less:		
Customer Services	(£4.0M)	Customer Services
Scientific Services	(£1.5M)	Scientific Services
Regulation	(£0.5M)	Other Business Activities
Unallocated	(£26.2M)	General & Support
Total Employment Costs	**£21.6M**	**£12.6M Table 21 and £9.0M Table 22**

The unallocated amount of circa £26.2M 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 £4.4M from AIR17 due to an increase in Wages of £0.1M, Salaries of £3.3M and Temporary Staff of £0.1M and Other Costs of Employment of £0.9M.

Wages and Salaries have increased due to the annual inflationary pay rise, a NIC increase and £1.7M accrued to the NIW Pension Scheme to reflect the outcome of the triennial evaluation carried out in 2017/18, (this has been included in Atypical Costs – see below.) The increase in Other Employment Costs is due to the increase in Ill Health retirements in 2017/18.

Hired & Contracted

Hired and Contracted Services of circa £17.5M in Table 21 and Table 22 are split out in the table below. The corresponding charge in the AIR17 was circa £17.5M

Hired & Contracted Services:	Table 21	Table 22	TOTAL
Operational Contractors	£9.4M	£8.7M	£18.1M
Other Contractors	£0.4M	£0.1M	£0.5M
Consultants	£0.0M	£0.0M	£0.0M
TOTAL	**£9.8M**	**£8.8M**	**£18.6M**

Within the Operational Contractors costs of £9.4M in Table 21, circa £2.5M relates to the cost of contractors for Water Treatment with the balance being the cost for the hire of plant and contractors to facilitate the maintenance of the networks. This is an increase of £1.3M from AIR17 which will be explained in Table 21 Line 4 below. Within the Operational Contractors cost of £8.7M in Table 22, circa £2.0M is for the cost of the various Sludge Disposal Routes, circa £4.8M 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 Sewage Treatment has decreased by £0.6M from AIR17. The Cost of the maintenance of the Sewerage Network has increased by £0.5M from AIR17. This will be explained in Table 21 Line 4 below.

There is no spend on Consultants Fees within Hired and Contracted in AIR18.

General & Support Costs

General & Support costs have increased by circa £3.1M from AIR17 (£40.7M) to AIR18 (£43.8M).

Description	Amount	Table 21/22 location
Unallocated Employment Costs	£26.2M	Included in General & Support (Removed from Employment Costs)
Unallocated Power	£0.6M	Included in General & Support (Removed from Power Costs)
Unallocated Hired & Contracted Costs	£6.9M	Included in General & Support (Removed from Hired & Contracted)
Unallocated Materials & Consumables	£1.3M	Included in General & Support (Removed from Materials & Consumables)
Unallocated Other Direct Costs	£4.3M	Included in General & Support (Removed from Other Direct Costs)
V&P Repairs	£0.5M	General & Support
Mobile V&P Charges	£1.9M	General & Support
Other	£2.1M	General & Support
Total	**£43.8M**	**£20.7M Table 21 and £23.1M 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 AIR18 and AIR17. See the **Allocation of costs between service areas** section at the start of the commentary.

The main differences from AIR17 are in Unallocated Employment Costs (£4.6M increase) Unallocated Hired & Contracted Costs (£0.9M decrease) and Unallocated Materials & Consumables (£0.5M decrease).

The increase in Unallocated Employment Costs have been explained under Employment Costs. Unallocated Hired & Contracted Costs have decreased mainly in Operational Contractors (£2.0M) due to improved allocation at source. The decrease in Unallocated Other Direct Costs is mainly due to Legal and Professional Fess (£1.4M) due to the decrease in legal costs relating to Project Clear and a specific legal case in 2016-17.

Table 21 – NI Water Total

Table 21 Total Expenditure in AIR18 has increased by circa £3.1M from AIR17 to AIR18. This is mainly driven by a number of substantial increases in Power £1.1M, Hired and Contracted Services of £1.3M and Materials and Consumables £0.7M various other variances which are explained on a line by line basis below:

- Line 1: Employment costs have increased by circa £0.1M from AIR17. This is due to the annual inflationary pay rise.
- Line 2: Power costs include electricity costs, fuel costs for power generation and costs for the CRC Energy Efficiency Scheme. Overall the costs have increased by £1.1M from AIR17. The main reason for this is due to increased energy tariffs.
  Power costs include [redacted] related to PPP.
- Line 3: Agencies – there are no costs in this line.
- Line 4: Hired and Contracted Services have increased by circa £1.3M from AIR17. The increase has been driven by a decrease in Water Resources & Treatment (WRT) of £0.2M and an increase of £1.4M in Water Distribution (WD). The main reason for the increase in WD was expenditure on additional leakage detection resources.
- Line 5: Associated companies – there are no costs in this line.
- Line 6: Materials & Consumables have increased from AIR17 by £0.7M. This is mainly within WRT in Chemicals £0.3M due to increase in consumption and prices rises and Materials and Equipment £0.2M due to additional civils work at numerous plants and site maintenance.
- Line 7: Service Charges – the costs are £0.8M with the majority of the costs in WRT for abstraction licences. These are consistent with AIR17. Service Charges include circa [redacted] 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 AIR17.
- Line 10: Total Direct Costs – this is a calculated line and is the total of Line 1-9. AIR18 direct costs are £3.1M higher than AIR17. This is driven by the increase in Power costs, Hired and Contracted and Materials and Consumables as detailed above.
- Line 11: General & Support expenditure has increased by circa £1.4M from AIR17 to AIR18. The reason for the increase in the costs in Table 21 is the increase in the overall General & Support expenditure (as already discussed) combined with the changes in allocation.
  i) The percentages used are calculated on the total of Direct Costs for General & Support Pot 1 & 2 which have remained in line with AIR17. However General & Support Pot 3 M&E has changed marginally from AIR17. WRT has remained in line while WD has decreased from 18.1% to 15.8% resulting in a total decrease for Table 21 of circa 2.3%. 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**.
  ii) The NI Water total costs are immaterial for PPP.
- Line 12: This is the calculated total line for functional expenditure which has increased by £4.6M from AIR18 as a result of the increase in Total Direct Costs as already discussed above and in General & Support Costs as explained in Line 11 above. Line 12 includes [redacted] of costs associated with PPP (AIR17 [redacted]).

B - Operating Expenditure

- Line 13: Customer Services costs are in line with AIR17 in Table 21. Customer Services costs are apportioned based on the percentage of direct costs from Table 21 & 22 and are broadly in line with the split in previous years. In AIR18 the percentage split was calculated at 53.4% Table 21 and 46.6% Table 22. In AIR17 the percentage split was 52.5% and 47.5% between Table 21 & 22 respectively.

- Line 14: Scientific Services costs have increased marginally by £0.1M from AIR17. 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 remained in line with AIR17. 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. The increase from AIR17 of circa £0.5M is driven by the increases as detailed above.
- Line 17: Local authority rates have remained in line with AIR17. Rates include circa [redacted] relating to PPP sites.
- Line 18: Doubtful debts have decreased by £0.2M from AIR17 due to the improvement of Debtors Days. The doubtful debts have split between Table 21 and Table 22 on a specific line by line basis, consistent with what was done in AIR17.
- 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 £5.3M from AIR17 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 [redacted] from the AIR17 charge at [redacted] in AIR18. 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 £4.7M from AIR18 due to the increase in the costs as discussed. This agrees to Table 35 line 24.
  Total operating expenditure includes circa [redacted] relating to PPP (AIR17 [redacted]).
- Line 22a: This figure is in line with AIR17 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 £1.0M from AIR17. This is as a result of an increase on spend on all the activities that feed into this line in WD. The increase is a combination of increased activity and rates.
- Line 24: Non-infrastructure, this figure has increased by circa £0.9M from AIR17. This is as a result of an increase on spend on all the activities that feed into this line in WRT and WD. The increase is a combination of increased activity and rates.

Leakage costs

Operating costs relating to leakage have increased from £5.6M in AIR17 to £6.1M in AIR18. This is due to additional resources deployed to reduce Leakage. Capital expenditure has remained consistent from AIR17 to AIR18.

.

Table 22 – NI Water Total

A - Direct Costs

Total Expenditure in Table 22 has increased by circa £3.2M from AIR17 to AIR18. This is mainly driven by an increase in General & Support Costs of £1.7M and Power costs of £1.3M and various other variances which are explained on a line by line basis below:

- Line 1: Employment costs are in line with AIR17.
- Line 2: Power costs include electricity costs and fuel costs for power generation and costs for the CRC Energy Efficiency Scheme. Overall the costs have increased by £1.3M in AIR18 from AIR17. The main reason for this is due to increased energy tariffs.

  In AIR18 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 AIR17.

  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 44:56 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 AIR17 the estimated split was 46:54.

Power costs include [redacted] for PPP (AIR17 [redacted]).

- Line 3: Agencies – there are no costs in this line.
- Line 4: Hired and Contracted services are in line with AIR17.
- Line 5: Associated companies– there are no costs in this line.
- Line 6: Materials & Consumables have increased marginally by £0.2M from AIR17.
- Line 7: Service Charges – increased by £0.2M from AIR17. The vast majority of these fees relate to NIEA Discharge Consents.
- 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. AIR18 direct costs are £1.6M higher than AIR17. This is driven by the increase in Power costs, Materials and Consumables and Service Charges as detailed above.
- Line 10: General & Support expenditure has increased by circa £1.7M from AIR17 to AIR18. The reason for the increase in the costs in Table 22 is the increase in the overall General & Support expenditure (as already discussed).
  i) The percentages used are calculated on the total of Direct Costs for General & Support Pot 1 & 2 which have remained in line with AIR17. 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 [redacted] for PPP. This is consistent with AIR17.
- Line 11: This is the calculated total line for Functional Expenditure which has increased by £3.3M. This increase is driven by the increase in Power costs and General & Support Costs as discussed above. Line 11 includes costs of [redacted] associated with PPP (AIR17 [redacted]).

B - Operating Expenditure

- Line 12: Customer Services costs have decreased by circa £0.2M compared to AIR17 in Table 22. Customer Services costs are apportioned based on the percentage of direct costs from Table 21 & 22. In AIR18 the percentage split was calculated at

53.4% Table 21 and 46.6% Table 22. In AIR17 the percentage split was 52.5% and 47.5% between Table 21 & 22 respectively.

- Line 13: Scientific Services costs have remained constant with from AIR17. 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 have are in line with AIR17. 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. There has increased by circa £0.2M from AIR17.
- Line 16: Local authority rates have increased by circa £0.2M from AIR17. This is due to increases in poundages from AIR 17. Line 16 includes circa [redacted] for PPP rates.
- Line 17: Doubtful debts have decreased from AIR17 by circa £0.5M. The doubtful debts have split between Table 21 and Table 22 on a specific line by line basis, consistent with what was done in AIR17.
- 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 £3.5M from AIR17. This is primarily driven by the increase in Power and General & Support Costs as detailed above.
- Line 20: Third party services are immaterial.
- Line 20a: Total PPP Unitary Charge has increased by circa [redacted] from AIR17. 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 £3.8M from AIR17.
  Total operating expenditure includes [redacted] of costs associated with PPP (AIR17 [redacted]).
- 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 £0.8M to £10.9M in AIR18.

C - Reactive & Planned Maintenance

- Line 22: Infrastructure, this figure has remained constant from AIR17 at £2.6M.
- Line 23: Non-infrastructure, this figure has increased by circa £0.3M from AIR17 to £10.7M. There has been a £0.6M increase in Sewerage and £0.3M decrease in Sewage Treatment and is due to a decrease in M&E expenditure in both areas in the financial year.

Reactive and planned maintenance

The overall approach and allocation process for Tables 21 and 22 has remained consistent with AIR17. 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 2018 were £17.6M (AIR17 £12.5M) which amounts to £16.0M before interest **costs** of £1.6M (AIR17 £12.3M before interest **costs** of £0.2M) and these were charged to the profit and loss account. This is made up of current service costs of £13.5M (AIR17 £9.7M) and past service costs of £1.5M (AIR17

(£1.2M)). 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 £11.2M (AIR17 £9.9M) including £0.3M relating to payment of 2016/17 past service costs and £1.7m of cost accrued to NIW pension scheme to reflect the outcome of the triennial evaluation carried out in 2017.

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 2018 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 2018.

Third party costs
Third party costs remain negligible in AIR18 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.

Table 21 PPP only

Line 2 - Power costs

Power costs for the PPP Alpha sites of [redacted] has increased by 16.7% from the AIR17 figure. This increase is largely related to an increase in volumes of water taken from PPP Alpha sites (circa 5%) plus an increase in rate (circa 10% at total NI Water level).

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 AIR17.

Line 11 - General & support expenditure

General and support expenditure has been calculated on the same basis as in AIR17. These costs have increased from that reported in AIR17 due to there being a full year of full headcount within the cost centre.

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 have risen by 6.2% from AIR17. This is largely due to an increased proportion of DI being taken from PPP sites. 47.3% of water was taken from PPP sites in 2017/18 compared to 45.3% in 2016/17.

Line 21a - PPP unitary charges (Opex)

This line data is drawn directly from the Company's accounts. No additional reconciliation is required.

During 2017/18 the Alpha Concessionaire recognised performance deductions of [redacted] and this is reflected in the [redacted] opex charge. The charge also includes atypical income of [redacted] as follows:

	[redacted]
Quality Monitoring Change credit	
EIB Step-down	
Refund in respect of reorganisation costs	
Total	

Further details on each of these are given in the commentary to table 42 line 10.

The increase of [redacted] in the unitary charge cost from AIR17 is made up as follows:

	[redacted]
Inflationary increase in capacity charge	
Increase in volumetric charge (inflation and flow related)	
Increase in performance deductions	
Increase in atypical credits	
Increase in amounts capitalised	)
Decrease in interest element of charge	

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 AIR17 by 19.6%, largely as a result of increased tariffs in 2017/18 and higher wastewater volumes. There has also been a reduction in self-generation at the incinerator which has increased grid requirements and hence cost.

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 2016-17 actuals being used as a proxy for 2017-18 as outturn reports are not available until July. The allocation to sludge has increased from 10.5% in AIR17 to 12.5% in AIR18. All other allocations are consistent with AIR17.

Kinnegar: Power costs are not recorded as

ii) they are not paid directly by the Company and
iii) 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 AIR17 reflecting all costs associated with P101 cost centre. These costs have increased from that reported in AIR17 due to there being a full year of full headcount within the cost centre.

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 decreased from AIR17 mainly as a result of reduced chemicals and consumables in R113 cost centre.

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 AIR18 is 1.7% and is largely inflationary related.

Line 20a - PPP unitary charges (Opex)

The charge for Kinnegar included in this line of [redacted] reflects the invoiced/accrued amounts for the year. This cost includes a reduction for residual interest of [redacted].

The Omega charge of £23.463m reflects unitary charge invoiced and accrued of [redacted], performance deductions of £nil, the credit for residual interest of [redacted] and atypical costs of [redacted] as follows:

Performance Deductions Re-Accrued	[redacted]
Performance Deductions Released	
North Down and Ards Disinfection Change	

Supplemental 4 Agreement
Change in Calibration Frequency
2017/18 out of spec sludges
Total

[redacted]

Further details on all of these atypical amounts are given in the commentary to line 10 of table 42.

The charge on this line has increased by [redacted] from AIR17. This movement can be summarised as follows:

Increase in volumetric charge (inflationary and flow related)
Increase in atypical costs
Increase in amounts capitalised

[redacted]

Line 21a - Payment by concessionaire to operator

Inputs for this line are obtained directly from the PPP contractor.

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	C/S	21	22	23	24	25	26	27	28	29
				2012-13			2013-14			2014-15			2015-16			2016-17			2017-18						2018-19			2019-20			2020-21		
				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		WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS	WATER SERVICES	SEWERAGE SERVICES	APPOINTED BUSINESS
A	**TURNOVER**																																
1	Unmeasured - household	£m	3	121.195	143.905	265.100	122.139	138.161	260.300	126.574	135.825	262.399	125.277	138.923	264.200	123.828	141.172	265.000	124.853	145.747	270.600	124.853	145.747	A2									
2	Unmeasured - non- household	£m	3	2.211	2.766	4.977	2.049	2.545	4.594	1.762	2.102	3.864	1.829	2.125	3.954	2.041	2.401	4.442	1.891	2.203	4.094	0.925	1.075	A2									
3	Unmeasured	£m	3	123.406	146.671	270.077	124.188	140.706	264.894	128.336	137.927	266.263	127.106	141.048	268.154	125.869	143.573	269.442	126.744	147.950	274.694	125.778	146.822	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	A2									
5	Measured - non- household	£m	3	38.751	22.144	60.895	38.465	24.148	62.613	39.872	26.168	66.040	39.955	24.739	64.694	41.096	27.518	68.614	42.541	26.865	69.406	9.258	5.906	A2									
6	Measured	£m	3	38.751	22.144	60.895	38.465	24.148	62.613	39.872	26.168	66.040	39.955	24.739	64.694	41.096	27.518	68.614	42.541	26.865	69.406	9.258	5.906	A2									
7	Trade effluent	£m	3		4.326	4.326		3.889	3.889		3.561	3.561		4.557	4.557		4.278	4.278		4.777	4.777	0.000	0.000	A2									
7a	Roads Drainage Revenue	£m	3	0.000	20.911	20.911		20.049	20.049		19.154	19.154		20.030	20.030		20.596	20.596		21.047	21.047	0.000	0.000	A2									
8	Large user and special agreement	£m	3	5.354	4.290	9.644	5.243	4.041	9.284	5.136	3.711	8.847	4.980	4.286	9.266	4.980	4.105	9.085	5.517	4.811	10.328	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	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	A2									
11	Rechargeable works	£m	3	0.093	0.093	0.186	0.092	0.092	0.184	0.056	0.056	0.112	0.065	0.065	0.130	0.064	0.064	0.128	0.055	0.055	0.110	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	A2									
13	Other appointed business (third party)	£m	3	0.172	0.187	0.359	0.162	0.238	0.400	0.191	0.239	0.430	0.196	0.260	0.456	0.368	0.343	0.711	0.403	0.334	0.737	0.000	0.000	A2									
14	Third party services (excluding non-potable water)	£m	3	0.265	0.280	0.545	0.254	0.330	0.584	0.247	0.295	0.542	0.261	0.325	0.586	0.432	0.407	0.839	0.458	0.389	0.847	0.000	0.000	A2									
15	Other sources (excluding large users, third parties 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	0.000	0.000	0.000	0.000	0.000	A2									
16	Total turnover	£m	3	167.776	198.622	366.398	168.150	193.163	361.313	173.591	190.816	364.407	172.302	194.985	367.287	172.377	200.477	372.854	175.260	205.839	381.099	135.036	152.728	A2									
B	**OPERATING INCOME**																																
17	Not used																																
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			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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			A2									
20	Total operating income	£m	3	-0.133	-0.170	-0.303	0.208	0.000	0.208	0.255	0.233	0.488	-0.083	0.174	0.091	0.523	-0.034	0.489	0.000	0.000	0.000			A2									
C	**WORKING CAPITAL ADJUSTMENT**																																
21	Not used																																
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	A2									

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 (F&R) 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 4, NI Water performs 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 210 days old).

A draft income summary is prepared 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 the latest forecast. An initial meeting between F&R and B&R is held on the afternoon of
Day 4 to ascertain high-level reasons for any budget/forecast variances in the month.

A written report is then prepared by the F&R Business Partner on the income and debt performance (including commentary on the level of provisions held), in advance of the Monthly Accounts meeting held with the Director of F&R (which normally occurs on the morning of working day 5 in the month).

On Day 5, Echo finalises the Day 5 data, and is saved on to an NI Water Public drive. This contains a number of detailed spreadsheets, such as VAT reports and suspense account (see Appendix B).

On Day 8, the final income meeting is held between F&R and B&R, at which the variance analysis is discussed in greater depth. The final income summary is then sent out to all relevant staff, including the Director of F&R and the Director of Customer Services Delivery (CSD).

A short commentary on the total NI Water income for the month is prepared for the Board to be included in the monthly Finance Report (though this may be completed in advance of the Day 8 meeting, depending on the date of the Board Meeting in the month).

NI Water also analyses billed income each month by volume and consumption, in what is termed the "Actuals Report". A monthly meeting between F&R and B&R is held to review this, though always some time after the Day 8 meeting.

Movements in Income against PC15

Following on from the monitoring process detailed above, the 2017/18 year-end position of income against PC15 submission was as follows:

Income	Actual Income 2017/18 £m	PC15 Income 2017/18 £m	Variance £m
Subsidy:			
Domestic phasing subsidy - water	124.9	127.5	(2.6)
Domestic phasing subsidy - sewerage	145.7	150.0	(4.3)
Non-domestic phasing subsidy - water	0.9	1.1	(0.2)
Non-domestic phasing subsidy - sewerage	1.1	1.2	(0.1)
Domestic allowance - water	9.3	8.6	0.7
Domestic allowance - sewerage	5.9	4.6	1.3
Septic tank subsidy	2.7		2.7
Total subsidy	290.5	293.0	(2.5)
Non-domestic income:			
Measured water	38.8	37.3	1.5
Measured sewerage	22.6	23.4	(0.8)
Unmeasured water	1.0	1.1	(0.1)
Unmeasured sewerage	1.1	1.2	(0.1)
Trade effluent	7.9	6.7	1.2
Total non domestic income	71.4	69.7	1.7
Road drainage income	21.0	22.4	(1.4)
Other regulated income	1.0	0.7	0.3
Other non-regulated income	3.9	0.0	3.9
TOTAL INCOME	**387.8**	**385.8**	**2.0**

The above table includes both appointed and un-appointed income.

Specific reasons for the £2.0m increase over PC15 are:

- The domestic phasing subsidy represents a volumetric measured water tariff of £1.0916 per m^3 used at the time of PC15 for 2017/18, as opposed to the actual tariff of £1.04; with measured sewerage, the PC15 tariff was £1.7972 per m^3, against the actual of £1.698.
- Septic tank subsidy is not included within the PC15 submission.
- The domestic allowance subsidy reflects the rateable allowances being claimed by customers, which are refunded to NI Water. The PC15 figures represented the assumptions at the time; the actual figures reflect the fact that a new report was developed (after the PC15 submission) to capture domestic allowances which were not being picked from the previous report. In addition, there were domestic allowances arising from the Metering & Billing project.
- With measured water:
    - There was a 5.0% reduction in the actual tariff, from what was used in the PC15 submission, equivalent to around £1.5m.
    - There was a £0.2m release from old provisions.
    - The PC15 submission assumed a water volume of 28.7 million m^3; actual consumption was more like 31.3 million m^3. This £2.6m difference is due to the following:
        - Back-billing from the Metering and Billing project has been around 0.1 million m^3.
        - New customers e.g. [redacted]
        - Increased consumption e.g. [redacted]
        - Income from properties, previously designated as voids (and hence not being billed);
        - General overall increase in consumption arising the low rainfall experienced in late 2016/17 and the first half of 2017/18.
- Measured sewerage:
    - There was a 5.4% reduction in the actual tariff, from what was used in the PC15 submission, equivalent to around £1.0m.
    - In addition for 2017/18, there was a £0.5m reduction for the forthcoming laundrette project, where a number of customers, who currently run laundry facilities, are to be switched from the more expensive metered sewerage tariff to the less expensive trade effluent tariff.
    - There was a £0.2m release from old provisions.
    - The PC15 submission assumed a sewerage volume of 10.8 million m^3; actual consumption was more like 11.0 million m^3. This £0.4m difference is due to the following:
        - Back-billing from the Metering and Billing project has been around 0.1 million m^3.
        - New customers e.g. [redacted]
        - Increased consumption e.g. [redacted], and other borewell users, [redacted].
- For unmeasured income, income was roughly in line with PC15 estimates.
- For trade effluent income, there has been:
    - There was a reduction in the actual tariff, from what was used in the PC15 submission, equivalent to around £0.5m.

- There was £0.2m accrued to income arising from customers with a laundrette function about to be billed trade effluent, rather than measured sewerage.
- A £0.5m release of the provision for [redacted]; this was fully provided at AIR17, but cash of £0.4m was received during AIR18.
- Around £1.0m for a mixture of new customers (e.g [redacted], [redacted] increased strengths (e.g. [redacted] and increased consumption [redacted]

- For Road Drainage, higher TE tariffs were used in the PC15 calculation.
- Other income in the PC15 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). The £0.3m increase is largely due to increased income from development income, arising from an uplift in the building sector.

Movements in Income against budget

Following on from the monitoring process detailed above, the 2017/18 year-end position of income against budget was as follows:

Income	Actual Income 2017/18 £m	Budget Income 2017/18 £m	Variance £m
Subsidy:			
Domestic phasing subsidy - water	124.9	124.9	0.0
Domestic phasing subsidy - sewerage	145.7	145.7	0.0
Non-domestic phasing subsidy - water	0.9	1.0	(0.1)
Non-domestic phasing subsidy - sewerage	1.1	1.1	0.0
Domestic allowance - water	9.3	9.7	(0.4)
Domestic allowance - sewerage	5.9	5.9	0.0
Septic tank subsidy	2.7	2.8	(0.1)
Total subsidy	290.5	291.1	(0.6)
Non-domestic income:			
Measured water	38.8	37.2	1.6
Measured sewerage	22.6	22.6	0.0
Unmeasured water	1.0	0.9	0.1
Unmeasured sewerage	1.1	1.1	0.0
Trade effluent	7.9	7.3	0.6
Total non domestic income	71.4	69.1	2.3
Road drainage income	21.0	21.0	0.0
Other	4.9	4.1	0.8
TOTAL **INCOME**	**387.8**	**385.3**	**2.5**

The above table includes both appointed and un-appointed income.

Specific reasons for the £2.5m increase over budget are:

- During 2017/18, the level of allowances arising from the Metering and Billing project was not as great as had been expected; hence the £0.4m negative variance against budget for the water domestic allowance subsidy.
- With measured water non-domestic income:
  - Back-billing from the Metering and Billing project has been around £0.3m less than the £0.5m budgeted.
  - In 2017/18, £0.1m from new customers, such as [redacted]
  - There have been consumption increases for some of the larger customers e.g. [redacted].
  - General overall increase in consumption arising the low rainfall experienced in late 2016/17 and the first half of 2017/18.
- Measured sewerage:
  - There was a £0.5m provision set up during the year for the laundrette project.
  - In 2017/18, £0.2m from new customers, such as [redacted]
  - Increased consumption of around £0.2m e.g. [redacted] and other borewell users, [redacted].
- For unmeasured income, income was very close to budget. Back-billing from the Metering and Billing project has been around £0.3m less than the £0.5m budgeted.
- For trade effluent income, there has been:
  - There was £0.2m accrued to income arising from customers with a laundrette function about to be billed trade effluent, rather than measured sewerage.
  - A £0.5m release of the provision for [redacted]; this was fully provided at AIR17, but cash of £0.4m was received during AIR18.

Movements in Income between 2017/18 and 2016/17

The table below details the income for the year ended 31 March, for both 2018 and 2017:

Income	Actual Income 2017/18 £m	Actual Income 2016/17 £m	Variance £m
Subsidy:			
Domestic phasing subsidy - water	124.9	123.8	1.1
Domestic phasing subsidy - sewerage	145.7	141.2	4.5
Non-domestic phasing subsidy - water	0.9	0.9	0.0
Non-domestic phasing subsidy - sewerage	1.1	1.1	0.0
Domestic allowance - water	9.3	9.2	0.1
Domestic allowance - sewerage	5.9	5.6	0.3
Septic tank subsidy	2.7	2.6	0.1
Total subsidy	290.5	284.4	6.1
Non-domestic income:			
Measured water	38.8	36.9	1.9
Measured sewerage	22.6	23.2	(0.6)
Unmeasured water	1.0	1.1	(0.1)
Unmeasured sewerage	1.1	1.4	(0.3)
Trade effluent	7.9	7.1	0.8
Total non domestic income	71.4	69.7	1.7
Road drainage income	21.0	20.6	0.4
Other	4.9	4.1	0.8
TOTAL INCOME	**387.8**	**378.8**	**9.0**

The above table includes both appointed and un-appointed income.

The income has increased by £9.0m, due to:

- An increase in the subsidy for domestic properties of £5.6m, which reflects the second year of the PC15 Final Determination.
- A £0.4m rise in the level of the rateable allowances being claimed by customers, arising mainly from the Metering and Billing project.
- For measured water, there was only a 1% tariff increase (equivalent to around £0.4m). Furthermore:
    - There have been consumption increases for some of the larger customers e.g. [redacted].
    - General overall increase in consumption arising the low rainfall experienced in late 2016/17 and the first half of 2017/18.
- For measured sewerage, there was a 2% increase against 2016/17 (2%), equivalent to approximately £0.4m. Again, as in the analysis against budget, the big movements against the previous year were:
    - In 2016/17, £0.6m of income from the Retro Sewerage EPIC project.

  - In 2016/17, £0.2m of income from void properties was created.
  - There was a £0.5m provision set up during the year for the laundrette project.
  - In 2017/18, £0.2m from new customers, such as [redacted]
  - Increased consumption of around £0.2m e.g. [redacted], and other borewell users, [redacted]x.
- For unmeasured income, there was a large increase in 2016/17 arising from the Metering and Billing project and the Void project. There was not such a big boost in 2017/18.
- For trade effluent income, there has been:
  - Tariff increase of roughly £0.1m.
  - There was £0.2m accrued to income arising from customers with a laundrette function about to be billed trade effluent, rather than measured sewerage.
  - A £0.5m release of the provision for [redacted]
  - A £0.1m rise in consumption/strengths for other customers e.g. [redacted]
  - In 2017/18, a £0.1m increase in income from new customers e.g. [redacted]
  - In 2016/17, a £0.1m hit, from the re-calculation of the NRTS allowance for [redacted] (as mentioned in measured sewerage above).

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 2018:

Measured and unmeasured income	
	£m
Billed income	64.7
Movement in accrued income	0.8
2017/18 unmeasured billing deferred	(2.3)
Movement in referred bills	0.3
[redacted], other provision releases	0.5
Laundrette provision	(0.5)
Total income per accounts	63.5

Accrued income at 31 March 2018 represented 21% (2017: 19%) of annual billed income.

Trade effluent	
	£m
Billed income	7.2
Movement in accrued income	0.0
[redacted] provision	0.5
Laundrette provision	0.2
Total income per accounts	7.9

Accrued income at 31 March 2018 represented 9% (2017: 11%) 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 are "one-off' adjustments in 2017/18, and are not expected to recur:

- [redacted] other provision releases - these were released in 2017/18.
- [redacted] provision - this was released in 2017/18.

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.
- 2018/19 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.
- Laundrette provision - with the project due to get under way in 2018/19, there will be movement in the provision during the 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 F&R.
- 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. The results from this are discussed at the Day 8 meeting.
- An income sheet, listing various checks on the Day 3 report, is adhered to (see Appendix J).

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". The bill will then be investigated.

Review by Internal Audit

There were no internal audit reviews carried out in 2017/18 on income reporting.

Balance Sheet Nominal Ledger Accounts

The table below gives details of the relevant balance sheet accounts as at 31 March 2018, together with a comparison to the balances as at 31 March 2017.

	Balance 2017/18 £m	Balance 2016/17 £m	Variance £m
Debtors	9.7	10.4	(0.7)
Bad debt provision	(2.2)	(3.0)	0.8

Within the £0.7m fall in debtors there was:

- A fall of £1.5m in debit balances, largely due to increased cash received during the year from the likes of [redacted] and the [redacted].
- A fall of £0.3m in credit balances;
- A fall of £0.3m in referred bills, again due to the release of the [redacted] bills
- A fall of £0.1m in the mixed supply debt written off.
-

There was a decrease in the bad debts provision, largely due to:

- The reduction in debtors, as mentioned above, especially within debt > 6 months old.
- The accounts for 2017/18 including a “year-end adjustment” of £0.1m, which increased the provision.

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 which are used for the calculation of the accrual.

Accruals for trade effluent income are based on an excel spreadsheet model built by Xansa. 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 % to either increase or decrease the accrual, depending on the % uplift/reduction in prices from the previous year. The other parameter which has been built into the model is that the report will not create an accrual, if either:

- A monthly customer has not been billed for 3 months; or
- A six monthly customer has not been billed for 500 days;

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 are issued.

A high level reconciliation is performed by Echo 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 2018 adjustments in Appendix H).

The accrued income in the last two years has been:

	Accrued Income 2017/18 £m	Accrued Income 2016/17 £m	Variance £m
Accrued income:			
Measured water and sewerage	10.0	9.1	0.9
Trade effluent	1.1	0.4	0.7
TOTAL ACCRUED INCOME	**11.1**	**9.5**	**1.6**

The rise of £1.6m against the previous year can be explained as follows:

- There was a £0.8m increase in MW and MS, reflecting the uplift in consumption which took place during the first part of 2017/18. In addition, the number of days seems to have increased, due to the simple timing of the billing.
- For trade effluent in AIR17, there was £0.5m provided for against [redacted] this was released during AIR18.
- In addition, there is £0.2m accrued within trade effluent for the Laundrette project.

Subsidy Income

In 2017/18, NI Water had total subsidy income of £290.5m. This was broken down as follows:

- £270.6m for domestic phasing subsidy for water and sewerage, in lieu of domestic charges.
- £2.0m for non-domestic phasing subsidy, representing 50% of unmeasured non-domestic income.
- £15.2m 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.).
- £2.7m for septic tank subsidy. NI Water receives subsidy income for all septic tanks which 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 2017/18 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 £21.0m was invoiced in 2017/18 to DfI, compared to £20.6m in 2016/17. 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	£0.4449 / m^3	£0.2091 / m^3	
Cost of Run off	£14,381,480	£6,665,021	£21,046,501

Non-tariff Basket Income

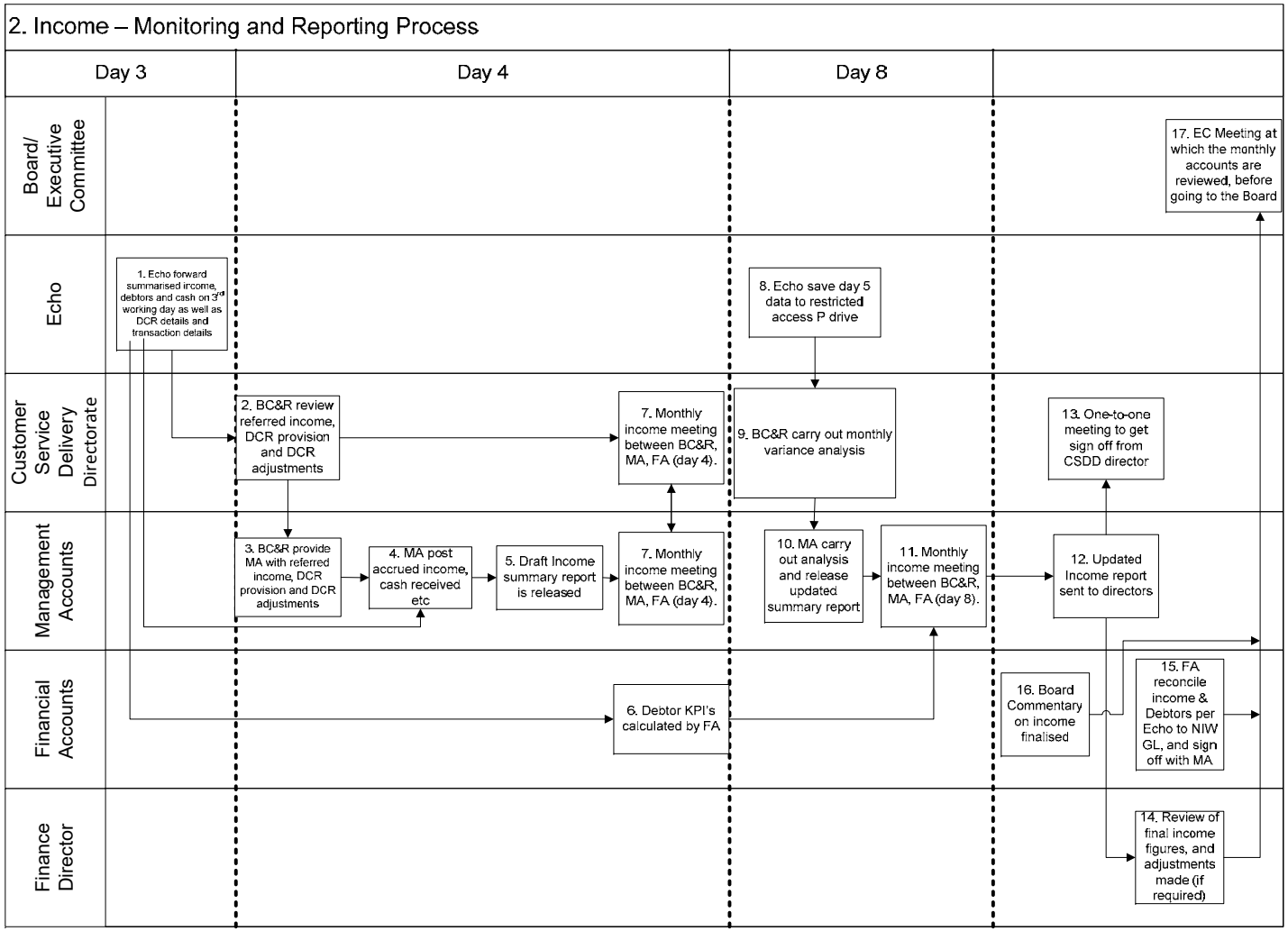
There is no net income movement out of the tariff basket for either water or sewerage.

Other Income

Other income was £4.9m for the 2017/18 year, against a budget of £4.1m, largely as a result of a rise (£0.8m) in miscellaneous income, being the settlement of claims arising from major incidents.

The increase in sundry income from the 2016/17 figure is also largely due to this factor.

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 2017

		Y D ncome 1st Apr to end of Previous Month	from Echo Disc	Accrued Income Reverse Previous	Accrued Income For this month	Referred Income Reverse Previous	Referred Income For this month	Deferred Income Reverse Previous	Deferred Income For this month	Monthly Movement	Closing Balance	GL01 report	D ff
			Dr/(Cr)	Dr/(Cr)	Dr (Cr)	Dr (Cr)	Dr (Cr)						
211	Measured Water	35 271,358	[illegible]	(8,071,183)	8,01 ,531	206,119	(36,105)			3,295,119	38 566,477	38 796 888	230 411
311	Measured Sewerage	20 414,398	[illegible]	(5,297,169)	5, 16,813	212, 28	(15,197)			2,215,127	22 629,525	22 668 054	38 529
251	Unmeasured Water	888 678	[illegible]					80,791	(1,063,587)	77,1 6	965,824	965 825	1
351	Unmeasured Sewerage	1,032,7 9	[illegible]					93,838	(1,240,950)	95,152	1 127,901	1 127 901	0
11	Trade Effluent	6,782 576	687,832	(832,192)	83 ,908	0				670,3 9	7 452,925	7 876 832	423 907
		64,389,759	8,048,830	15,735,146	14,266,252	418,547	(51,306)	174,629	(2,304,537)	6,352,892	70,742,651	71,435,500	692,849

		DCR provision movement reversal	DCR movement provision	Adj n accrued income reversal	Adj in accrued income	Industry average adj reversal	Industry average adj	Income prov reversal	Income prov adj	Prov against MS customers reversal	Prov against MS customers	Back billing provision reversal	Back b lling provision
		536,828	-536,828										
211	Measured Water	(142,804)	141,759	67,191	(63,734)	63,000	(63,000)	55,000	(55,000)			225,000	(225,000)
311	Measured Sewerage	(99,453)	98,725	71,415	(94,158)			25,000	(25,000)	50 000	(50,000)	200,000	(200,000)
251	Unmeasured Water												
351	Unmeasured Sewerage												
11	Trade Effluent	(12,750)	12,657									25,000	(25,000)
		281,820	(283,687)	138,606	(157,892)	63,000	(63,000)	80,000	(80,000)	50,000	(50,000)	450,000	(450,000)

		[redacted] provision reversal	[redacted] provision	Backbilling (formerly bad debt) reversal	Increase to Mar 15 level reversal	ncrease to Mar 15 level	[redacted] reversal	ul 16 provision reversed	ul 16 provision	[redacted] provision reversed	[redacted] provision	Additional back billing provision reversed	Additional back billing provision	Void provision reversed	Void provision	[redacted] provision reversed	[redacted] provision reversed	[redacted] provision	Launderette provision reversed	Launderette provision	Diff
211	Measured Water	135,000	(135 000)	150,000	60 000	(60,000)		100,000	(100,000)			50,000	(50 000)	70 000	(70,000)	78,000	5,000	(5,000)			(0)
311	Measured Sewerage	155,000	(155 000)	100,000						50,000	(50 000)	50,000	(50 000)	55 000	(55,000)		10,000	(10,000)	421,000	(459 000)	(0)
251	Unmeasured Water	30,000	(30 000)																		1
351	Unmeasured Sewerage	20,000	(20 000)																		0
11	Trade Effluent						406,000												(201,000)	219,000	1
		340,000	(340,000)	250,000	60,000	(60,000)	406,000	100,000	(100,000)	50,000	(50,000)	100,000	(100,000)	125,000	(125,000)	78,000	15,000	(15,000)	220,000	(240,000)	1

Appendix D – Reconciliation of Debtors account on Oracle

NORTHERN IRELAND WATER LIMITED AS AT 31 MARCH 2018	
Summary of Debtors	
Water & Sewerage Debtors GL code 1210	**Mar-18**
Opening Balance	**£8,962,942.74**
Take on Bills/New Bills- TOTAL	**£6,587,096.53**
Take on Bills/New Bills- Sewerage	1,558,865.74
Take on Bills/New Bills- Water	2,495,137.93
Take on Bills/New Bills- VAT	153,083.22
Annual Billing	2,304,536.66
Annual Billing - VAT	75,472.98
Discounts	0.00
System Adjustments- Total	**£1,133,235.29**
System Adjustments- Sewerage	374,667.33
System Adjustments- Water	699,376.18
System Adjustments- VAT	59,191.78
Manual Adjustments- Total	**-£50,556.28**
Manual Adjustments- Sewerage	(31,998.56)
Manual Adjustments- Water	(18,478.34)
Manual Adjustments- VAT	(79.38)
Write Off Adjustments Total	**£95.03**
Write Off Adjustments- Sewerage	**(1.87)**
Write Off Adjustments- Water	**97.10**
Write Off Adjustments- VAT	**(0.20)**
NIWS Bad Debt Authorised Write Off- Total	**-£83,771.10**
NIWS Authorised Write Off- Sewerage	(16,153.30)
NIWS Authorised Write Off- Water	(64,575.22)
NIWS Authorised Write Off- VAT	(3,042.58)
Net Cash	**(6,064,254.22)**
Refunds	130,076.91
Water & Sewerage GL code 1210 Closing Balance	**£10,614,864.90**
Check	
Metered & Unmetered Water & Sewerage Debtors	**£10,614,864.90**
(As per Echo)	
Per Tb GL code 1210	**8,490,756.38**
Variance	**£2,124,108.52**
Due to	
Variance (Oct = w/off Income 0708 in Oct08)	
Referred Bills **NOT** Recognised NET	(93,010.33)
Write-off of mixed supply debt > 3 years	(340,800.00)
System Adjustment Reduction	(1,550,000.00)
Various MS Adjustments	(140,000.00)
Unknown	-£298.19
Trade Effluent Debtors GL code 1213	
Opening Balance	**£1,590,654.98**
Take on Bills/New Bills	629,762.94
Referred Bills	
Annual Billing	
System Adjustments	**£39,533.39**
Manual Adjustments	**-£1,664.26**
Write Off Adjustments	
NIWS Authorised Bad Debt Write Off	**-£74,708.17**
Net Cash	**-£1,013,981.46**
Refunds	**£0.00**
Trade Effluent GL code 1213 Closing Balance	**£1,169,597.42**
Variance	**-£14.05**
Per Trial Balance general ledger code 1213	**1,169,611**
Due to	
Trade Effluent	
Referred Bills	
Total Opening Balance GL code 1213 & 1210	**£10,553,597.72**
Take on Bills/New Bills	**£4,912,322.81**
Annual Billing	**£2,304,536.66**
Discounts	**£0.00**
System Adjustments	**£1,172,768.68**
Manual Adjustments	**-£52,220.54**
Write Off Adjustments	**£95.03**
NIWS Authorised Bad Debt Write Off	**-£158,479.27**
Net Cash	**-£7,078,235.68**
Refunds	**£130,076.91**
Total Closing Balance GL code 1213 & 1210	**£11,784,462.32**
Balance as per FN012 Summary	**£11,783,992.73**
Difference	**£469.59**
Echo Debtor Ledger	**£11,757,742.98**
Balance as per FN012 Summary	**£11,783,992.73**
Suspense Ac FN012 Summary	**£46,672.79**
Difference	**-£72,922.54**
Prepared By	
Date	
Reviewed By	
Date	

Appendix E – Reconciliation of Accrued Income Account

NIW Accrued Income	
	Mar-18
Per Echo	
Measured Water	8,015
MW Accrued Income Adj	
Measured Sewerage	5,417
Trade Effluent	805
Accrued income	**14,236**
Accrued income adjustments	
Voids not billed in unmeasured	0
Additional TE Accrual re [redacted]	30
DCR Provision	-284
DCR Further	-500
Accrued Income provision	-158
Increase in provision	-110
Industry average adj	-63
Income prov adj	-80
Future System Adjustments	-620
BackBilled Income Provision	-700
Retro Sewerage EPIC Provision	-50
M&B Provision	-170
July '16 Provision	-100
[redacted]	0
Void back-billing	-125
[redacted] provision	0
[redacted]	-15
[redacted]	0
[redacted] Provision	0
Accrued Income Phasing Adjustment	0
[redacted]	0
Laundrette project	-240
Accrued income posted	11,051
Per TB (1420/1423)	11,051
Difference	0
Miscellanous accrued Income	417
Interest Received Accrual	1
Total Accrued Income	**11,469**
Signed:	

Appendix F – Reconciliation of Meters

2017/18 - Meter Reconciliation Analysis

Meters to be read	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Estimated	166	228	100	119	96	179	162	221	139	147	111	154
No Read	1,102	737	503	513	589	626	717	733	499	973	574	627
Read	12,371	13,188	10,519	10,797	11,609	13,029	12,292	13,220	10,494	10,815	12,347	12,441
Total Meters	13,639	14,153	11,122	11,429	12,294	13,834	13,171	14,174	11,132	11,935	13,032	13,222
No Reads to be investigated - Code Red	13	17	12	40	15	17	21	11	11	9	5	31

Meters to be billed	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Billable Meters	12,916	13,406	10,624	10,929	11,704	13,201	12,461	13,418	10,638	11,440	12,446	12,608
Non-Billable Meters	723	747	498	500	590	633	710	756	494	495	586	614
Total Meters	13,639	14,153	11,122	11,429	12,294	13,834	13,171	14,174	11,132	11,935	13,032	13,222
Total Meters Billed	12,415	13,268	10,511	10,774	11,568	13,087	12,337	13,283	10,524	10,815	12,303	12,482
Meters to be investigated	501	138	113	155	136	114	124	135	114	625	143	126
Billable Meters	12,916	13,406	10,624	10,929	11,704	13,201	12,461	13,418	10,638	11,440	12,446	12,608
Meters to be investigated - Code Red	22	18	19	48	20	21	25	9	14	13	15	22

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Estimated reads as % of Total Meters to be read	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%
No Reads as a % of Total Meters to be read	8%	5%	5%	4%	5%	5%	5%	5%	4%	8%	4%	5%
Read Meters as % of Total Meters to be read	91%	93%	95%	94%	94%	94%	93%	93%	94%	91%	95%	94%
Total Meters	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Code Red as % of Meters to be investigated	1%	2%	2%	8%	3%	3%	3%	2%	2%	1%	1%	5%
Estimated % (Excl 'No Reads')	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Billable Meters as % of Total Meter Records	95%	95%	96%	96%	95%	95%	95%	95%	96%	96%	96%	95%
Non - Billable Meters as % of Total Meter Records	5%	5%	4%	4%	5%	5%	5%	5%	4%	4%	4%	5%
Total Meters	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Meters Billed as a % of Billable Meters	96%	99%	99%	99%	99%	99%	99%	99%	99%	95%	99%	99%
Meters to be investigated as a % of Billable Meters	4%	1%	1%	1%	1%	1%	1%	1%	1%	5%	1%	1%
Billable Meters	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Code Red as % of Meters to be investigated	4%	13%	17%	31%	15%	18%	20%	7%	12%	2%	10%	17%

Appendix G – Reconciliation of invoices and system adjustments as at 31 March 2017

	Trans Rpt	GL Posting	Variance
Measured Water	3,181,741	3,181,741	0
Measured Sewerage	1,898,252	1,898,252	0
Unmeasured Water	1,059,942	1,059,942	0
Unmeasured Sewerage	1,242,263	1,242,263	(0)
TE	667,632	667,632	0
Sub-total	8,049,830	8,049,830	(0)
Discount	4	4	(0)
VAT	287,668	287,668	0
TOTAL	**8,337,502**	**8,337,502**	**0**

Appendix H – Accrued Income Adjustments at 31 March 2017

	Custome	Meter F	C sto e / Co a Na e	Industry	Pipe Si	Read F	Accrual	Read H	Water w	Water w	Sewera	Sewera	Water S	Water Vo	Total Water	Sewera	Sewerag	Total Sew	Total ac	Total accru	Total Accru
Per DCR	93509 8	808332	[redacted]	Activ ty Re	20mm/.75	Six Month	171	READING	5,09	30	0	30	£31	£5,200	£5,231	£0	£0	£0	£31	£5,200	£5,231
Correction	93509 8	808332		Activ ty Re	20mm/.75	Six Month	171	READING	855	5	0	5	£31	£873	£904	£0	£0	£0	£31	£873	£904
														Var ance	(£4 327)		Var ance	£0		Var ance	(£4,327)
	Customer R	Meter Ref	C sto e / Co any Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	6502512	2170	[redacted]	Food Man	25mm/1.0	Six Month	86	IND AVE	2,705	31	0	31	£26	£2,76	£2,790	£0	£0	£0	£26	£2,76	£2,790
Correction	6502512	2170		Food Man	25mm/1.0	Six Month	86	IND AVE	7,740	90	0	90	£26	£7,910	£7 936	£0	£0	£0	£26	£7,910	£7,936
														Var ance	£5 145		Var ance	£0		Var ance	£5,145
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	86867 3	1389705	[redacted]	Food Man	25mm/1.0	Six Month	61	IND AVE	1,919	31	1,823	31	£19	£1,996	£2,01	£22	£3 099	£3,121	£ 0	£5,095	£5,135
Correction	86867 3	1389705		Food Man	25mm/1.0	Six Month	61	IND AVE	61	1	58	1	£19	£63	£82	£22	£99	£120	£ 0	£162	£202
														Var ance	(£1 932)		Var ance	(£3 001)		Var ance	(£4,933)
	Customer R	Meter Ref	C sto e / Co a Na e	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	26070	1392095	[redacted]	Hospitals	75mm/3.0	Six Month	121	IND AVE	3,6	30	3, 62	30	£213	£3,788	£ ,001	£2 7	£5 883	£6,131	£ 60	£9,671	£10,131
Correction	26070	1392095		Hospitals	75mm/3.0	Six Month	121	IND AVE	1,210	10	1,150	10	£213	£1,258	£1,470	£2 7	£1 953	£2 201	£ 60	£3,211	£3,671
														Var ance	(£2 530)		Var ance	(£3 930)		Var ance	(£6,460)
	Customer R	Meter Ref	C sto e / Co a Na e	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9206805	53825	[redacted]	Army Base	75mm/3.0	Six Month	182	IND AVE	5,765	32	5, 77	32	£317	£5,996	£6,313	£369	£9 311	£9,680	£686	£15,307	£15,993
Correction	9206805	53825		Army Base	75mm/3.0	Six Month	182	IND AVE	182	1	173	1	£317	£189	£506	£369	£294	£663	£686	£483	£1,169
														Var ance	(£5 806)		Var ance	(£9 017)		Var ance	(£14,823)
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9 19906	286673	[redacted]	Pubs/Wine	20mm/.75	Six Month	165	READING	2 ,956	151	23,708	151	£30	£25,861	£25,890	£35	£ 0,157	£ 0,193	£65	£66,018	£66,083
Correction	9 19906	286673	d	Pubs/Wine	20mm/.75	Six Month	165	READING	990	6	941	6	£30	£1,026	£1,056	£35	£1,593	£1,628	£65	£2,619	£2,684
														Var ance	(£24 835)		Var ance	(£38 564)		Var ance	(£63,399)
	Customer R	Meter Ref	C sto e / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	3207179	665 10	[redacted]	Food Man	20mm/.75	Six Month	23	IND AVE	723	31	687	31	£	£660	£665	£5	£1 025	£1,030	£9	£1,686	£1,695
Correction	3207179	665 10		Food Man	20mm/.75	Six Month	23	IND AVE	46	2	44	2	£	£42	£46	£5	£55	£60	£9	£102	£118
														Var ance	(£618)		Var ance	(£960)		Var ance	(£1,578)
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9 1682	7 7 7	[redacted]	Food Man	25mm/1.0	Six Month	31	IND AVE	975	31	926	31	£9	£996	£1,006	£11	£1 5 7	£1,558	£20	£2,5 3	£2,56
Correction	9 1682	7 7 7		Food Man	25mm/1.0	Six Month	31	IND AVE	31	1	29	1	£9	£32	£41	£11	£45	£56	£20	£81	£101
														Var ance	(£965)		Var ance	(£1 498)		Var ance	(£2,462)
	Customer R	Meter Ref	C sto e / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	7801393	38932	[redacted]	Farms Do	15mm/.50	Six Month	52	READING	2,235	3	0	3	£9	£2,295	£2,305	£0	£0	£0	£9	£2,295	£2,305
Correction	7801393	38932		Farms Do	15mm/.50	Six Month	52	READING	780	15	0	15	£9	£801	£810	£0	£0	£0	£9	£801	£810
														Var ance	(£1 494)		Var ance	£0		Var ance	(£1,494)
	Customer R	Meter Ref	C sto e / Co a Na e	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9079877	367338	[redacted]	Other Lod	50mm/2.0	Six Month	137	READING	11,255	82	10,692	82	£120	£11,705	£11,826	£1 1	£18,176	£18,317	£261	£29,882	£30,1 3
Correction	9079877	367338		Other Lod	50mm/2.0	Six Month	137	READING	685	5	651	5	£120	£712	£833	£1 1	£1 106	£1 247	£261	£1,819	£2,080
														Var ance	(£10 993)		Var ance	(£17 070)		Var ance	(£28,063)
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	880 260	30871	[redacted]	Food Man	50mm/2.0	Monthly	15	IND AVE	72	31	8	31	£13	£ 83	£ 96	£15	£7 8	£763	£29	£1,231	£1,259
Correction	880 260	30871		Food Man	50mm/2.0	Monthly	15	IND AVE	15	1	14	1	£13	£15	£29	£15	£24	£39	£29	£39	£68
														Var ance	(£467)		Var ance	(£724)		Var ance	(£1,191)
	Customer R	Meter Ref	C sto e / Co a Na e	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	83 591	18770	[redacted]	Food Man	50mm/2.0	Monthly	15	IND AVE	72	31	72	31	£13	£ 83	£ 96	£15	£0	£15	£29	£ 83	£511
Correction	83 591	18770		Food Man	50mm/2.0	Monthly	15	IND AVE	1,050	70	998	70	£13	£1,073	£1,087	£15	£0	£15	£29	£1,073	£1,102
														Var ance	£591		Var ance	£0		Var ance	£591
	Customer R	Meter Ref	C sto e / Co a y Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9396 9	761001	[redacted]	Food Man	20mm/.75	Six Month	121	IND AVE	3,806	31	3,616	31	£22	£3,890	£3,911	£26	£6 0 0	£6,066	£ 8	£9,930	£9,977
Correction	9396 9	761001		Food Man	20mm/.75	Six Month	121	IND AVE	121	1	115	1	£22	£124	£146	£26	£192	£238	£ 8	£316	£363
														Var ance	(£3 766)		Var ance	(£5 848)		Var ance	(£9,614)
	Customer R	Meter Ref	C sto e / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9 23007	1391 69	[redacted]	Food Man	15mm/.50	Six Month	103	IND AVE	3,2 0	31	0	31	£19	£3,311	£3,330	£0	£0	£0	£19	£3,311	£3,330
Correction	9 23007	1391 69		Food Man	15mm/.50	Six Month	103	IND AVE	1,030	10	0	10	£19	£1,053	£1,071	£0	£0	£0	£19	£1,053	£1,071
														Var ance	(£2 259)		Var ance	£0		Var ance	(£2,259)
	Customer R	Meter Ref	C sto e / Co a y Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	8 66 90	303305	[redacted]	Energy pr	100mm/ .	Monthly	11	IND AVE	298	27	0	27	£35	£310	£3 5	£0	£0	£0	£35	£310	£3 5
Correction	8 66 90	303305		Energy pr	100mm/ .	Monthly	11	IND AVE	650	60	0	60	£35	£686	£721	£0	£0	£0	£35	£686	£721
														Var ance	£376		Var ance	£0		Var ance	£376
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9 037 6	629997	[redacted]	Hotels	20mm/.75	Six Month	117	READING	5,1 8		,891		£21	£5,287	£5,309	£25	£8 211	£8,236	£ 6	£13, 98	£13,5 5
Correction	9 037 6	629997		Hotels	20mm/.75	Six Month	117	READING	585	5	556	5	£21	£607	£633	£25	£931	£956	£ 6	£1,534	£1,589
														Var ance	(£4 687)		Var ance	(£7 278)		Var ance	(£11,965)
	Customer R	Meter Ref	C sto e / Co a Na e	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	53003	301270	[redacted]	Business s	15mm/.50	Six Month	13	READING	00	31	380	31	£0	£ 16	£ 16	£0	£6 6	£6 6	£0	£1,062	£1,062
Correction	53003	301270		Business s	15mm/.50	Six Month	13	READING	26	2	25	2	£0	£27	£27	£0	£42	£42	£0	£69	£69
														Var ance	(£389)		Var ance	(£604)		Var ance	(£993)
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9 06 0	793 25	[redacted]	Supermark	25mm/1.0	Six Month	83	READING	2,515	30	2,389	30	£25	£2,569	£2,59	£30	£3 988	£ ,018	£55	£6,557	£6,612
Correction	9 06 0	793 25		Supermark	25mm/1.0	Six Month	83	READING	249	3	237	3	£25	£254	£269	£30	£395	£424	£55	£649	£704
														Var ance	(£2 314)		Var ance	(£3 593)		Var ance	(£5,908)
	Customer R	Meter Ref	C sto e / Co a Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	9 36379	131997	[redacted]	Building Su	20mm/.75	Six Month	0	READING	1,206	30	0	30	£7	£1,25	£1,261	£0	£0	£0	£7	£1,25	£1,261
Correction	9 36379	131997		Building Su	20mm/.75	Six Month	0	READING	120	3	0	3	£7	£125	£132	£0	£0	£0	£7	£125	£132
														Var ance	(£1 129)		Var ance	£0		Var ance	(£1,129)
	Customer R	Meter Ref	C sto e / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
Per DCR	12011	13 6 32	[redacted]	Water and	100mm/ .	Monthly	26	READING	2,072	80	1,968	80	£82	£2,1 0	£2,222	£95	£3 322	£3, 17	£177	£5, 62	£5,639
Correction	12011	13 6 32		Water and	100mm/ .	Monthly	26	READING	780	30	741	30	£82	£806	£888	£95	£1 251	£1 345	£177	£2,056	£2,234
														Var ance	(£1 335)		Var ance	(£2 071)		Var ance	(£3,406)
	Customer R	Meter Ref	Customer / Company Name	Industry C	Pipe Size	Read Frec	Accrual Da	Read Hist	Water volu	Water volu	Sewerage	Sewerage	Water Sta	Water Volun	Total Water C	Sewerage	Sewerage V	Total Sewer	Total accru	Total accrual	Total Accrual
													otal Accrual Adj		(£63 734)			(£94 158)			(£157 892)

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:

$$56.3\text{million } m^2 \times 1.14m = 64.2\text{million } m^3$$

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 stormwater 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	Cost (£) Per cubic metre	Application
R (Reception)	0.2091	Run off into Storm water sewers
V (Volumetric)	0.2359	Run off into Combined sewers
R+V	0.4449	

Appendix J – Monthly Income Check Sheet

NI WATER

Income check for March 2018

		ACTION BY	COMPLETE BY
1.	Transaction report for income, bad debt and discount ties up to the GL posting.	[redacted]	06/04/18
2.	DCR listing and TE accrual totals agree to the Table in the Day 3 report.	[redacted]	06/04/18
3.	The number of days in the DCR detailed listing has been increased by the correct number of days in the month.	[redacted]	06/04/18
4.	There are no obvious large incorrect items of accrued income in the DCR listing.	[redacted]	09/04/18
5.	Review the DCR, for where there is volume in m^3, but no £.	[redacted]	06/04/18
6.	Review the DCR, both MW and MS, for any negative items.	[redacted]	06/04/18
7.	Review top 300 customers on DCR for any material over-statement arising from leakage/incorrect meter exchange/faulty meter, etc.	[redacted]	06/04/18
8.	Review DCR for any records where accrued volume is zero, but there is a £ amount.	[redacted]	06/04/18
9.	Total for "Ordinary Customers N-stops" agrees total per "Referred Bills Summary" agrees to total per "N-stop Detail".	[redacted]	06/04/18
10.	N-stop detail does not contain any duplicate or triplicate lines.	[redacted]	06/04/18
11.	Debit balance and credit balances in the Day 3 report agree to the debt report.	[redacted]	06/04/18
12.	Cash in the FN012 summary agrees to the cash report.	[redacted]	06/04/18
13.	The FN012 Summary Total has the correct balance c/f and b/f.	[redacted]	09/04/18
14.	Have all the correct adjustments been made for additional provisions/provision release?	[redacted]	10/04/18
15.	Does the summary Excel income report agree to Oracle?	[redacted]	09/04/18

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)

				1	2	3	4	5	6	7	8	9
	DESCRIPTION	UNITS	DP	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	658.937	423.916	37.946	1,120.799	932.097	886.159	50.441	1,868.697	2,989.496
2	AMP adjustment	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	Not used											
4	Disposals	£m	3	0.000	-0.157	-0.755	-0.912	0.000	-0.010	-0.984	-0.994	-1.906
5	Additions	£m	3	9.229	36.127	2.278	47.634	46.855	63.127	1.406	111.388	159.022
6	Gross replacement cost at 31 March	£m	3	668.166	459.886	39.469	1,167.521	978.952	949.276	50.863	1,979.091	3,146.612
B	**DEPRECIATION**											
7	Depreciation at 1 April	£m	3	1.293	106.271	24.924	132.488	0.000	199.880	33.508	233.388	365.876
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	Not used											
12	Disposals	£m	3	0.000	-0.096	-0.570	-0.666	0.000	0.000	-0.738	-0.738	-1.404
13	Charge for year	£m	3	0.000	17.289	2.993	20.282	0.000	33.465	2.676	36.141	56.423
14	Depreciation at 31 March	£m	3	1.293	123.464	27.347	152.104	0.000	233.345	35.446	268.791	420.895
15	Net book amount at 31 March	£m	3	666.873	336.422	12.122	1,015.417	978.952	715.931	15.417	1,710.300	2,725.717
16	Net book amount at 1 April	£m	3	657.644	317.645	13.022	988.311	932.097	686.279	16.933	1,635.309	2,623.620

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 2017 have been brought forward from the total closing balances for gross book value and depreciation at 31 March 2017. The analysis across asset categories is based on analysis within the fixed asset register.

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 mainly consisted of surplus land, buildings, civils, mobile plants (lorries and vans) and fixed plant assets. All disposals have depreciation in the month of disposal.

Decommissioned Assets

A number of assets (NBV £185,598.39) were decommissioned during the year. Decommissioned assets are assets which are no longer in use but still have a net book value (NBV) value at the time. In order to account for this, the assets are fully depreciated in year to bring the NBV down to nil.

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.

In accordance with the regulatory accounting guidelines, fixed asset additions are stated gross of capital contributions but net of IRE. This gives rise to the reconciliation with the capital works programme and statutory accounts below:

	£'000
Total expenditure in CWP (incl.) Operations)	**150,277**
Add: Water and sewer connections	4,101
Add: Capital maintenance Omega and Kinnegar	1,539
Add: adopted assets – infrastructure	30,025
Add: adopted assets – non-infrastructure	1,120
Less: de-capitalised assets	15
Add: capitalised interest	5,361
Less: expenditure classified as opex under IFRS	(1,188)
Total additions per statutory accounts	**191,249**
Less Capital maintenance Omega and Kinnegar	**(1,539)**
Add back: IRE treated as opex repairs under IFRS	1,188
Less: interest capitalised	(5,361)
Less: IRE	(30,250)
Add: PPP residual interest	3,736
Total additions per regulatory accounts	159,023

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 [redacted] capital maintenance fund.

There is also additional residual interest for PFI Kinnegar asset and Omega asset with an historical cost of [redacted] which is included in Table 25 under operational civil. The total residual interest at 31 March 2018 is [redacted] (31 March 2017: [redacted]).

Depreciation Charge for Year

Historical cost depreciation charge during the year was calculated based on the opening GBV at 1 April 2017. 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 £32,476,170.88 (16/17: £31,241,682.66) as at 31 March 2018, 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 unappointed business relating to vehicle maintenance carried out for third parties. This has been adjusted through 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

				1	2	3	4	5	6	7	8	9
	DESCRIPTION	UNITS	DP	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
1	Net cashflow from operating activities	£m	3	181.015	190 580	195.707	170 228	182.677	182.769			
A	RETURN ON INVESTMENTS & SERVICING OF FINANCE											
2	Interest received	£m	3	0.134	0.114	0.080	0 092	0.074	0.103			
3	Interest paid	£m	3	-42.208	-43.723	-45.339	-46 568	-46.945	-47.537			
4	Interest in finance lease rentals	£m	3	-11.913	-6 933	-6.824	-6.701	-6.562	-6.406			
5	Non-equity dividends paid	£m	3	0.000	0 000	0.000	0 000	0.000	0.000			
6	Net cashflow from returns on investments & servicing of finance	£m	3	-53.987	-50 542	-52.083	-53.177	-53.433	-53.840			
B	TAXATION											
7	Taxation (paid)/received	£m	3	0.000	0 000	-0.017	0 000	0.000	0.000			
C	CAPITAL EXPENDITURE AND FINANCIAL INVESTMENT											
8	Gross cost of purchase of fixed assets	£m	3	-130.590	-135 971	-134.620	-115 602	-128.215	-158.278			
9	Receipts of grants and contributions	£m	3	5.757	6 586	7.333	7 980	11.550	12.910			
10	Infrastructure renewals expenditure	£m	3	-31.368	-30.118	-31.557	-20.144	-20.145	-30.250			
11	Disposal of fixed assets	£m	3	1.177	1.164	1.046	1 693	1.096	1.536			
12	Movements on long term loans to group companies	£m	3	0.000	0 000	0.000	0 000	0.000	0.000			
13	Net cashflow from investing activities	£m	3	-155.024	-158 339	-157.798	-126 073	-135.714	-174.082			
D	ACQUISITIONS AND DISPOSALS											
14	Acquisitions and disposals	£m	3	0.000	0 000	0.000	0 000	0.000	0.000			
E	EQUITY DIVIDENDS											
15	Equity dividends paid	£m	3	-26.587	-21 391	-21.562	-22 887	-21.510	-21.153			
F	MANAGEMENT OF LIQUID RESOURCES											
16	Net cashflow from management of liquid resources	£m	3	-5.300	4.700	0.580	-0 980	-1.501	-0.007			
17	Net cashflow before financing	£m	3	-59.883	-34 992	-35.173	-32 889	-29.481	-66.313			
G	FINANCING											
18	Capital in finance lease rentals	£m	3	-3.675	-1.473	-1.672	-1 888	-2.122	-2.376			
19	New bank loans taken out	£m	3	75.000	29 000	36.000	36 000	30.000	69.000			
20	Repayment of bank loans	£m	3	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			
22	Net cash inflow from financing	£m	3	71.325	27 527	34.328	34.112	27.878	66.624			
23	Increase/(decrease) in cash in the year	£m	3	11.442	-7.465	-0.845	1 223	-1.603	0.311			

Table 28 – Cashflow statement

Significant movements from last period

Line 1 - Net cashflow from operating activities

This has increased by £0.092m (0.05%). 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	106.485
2	Working capital adjustment	£m	-
3	Movement in working capital	£m	(5.910)
4	Depreciation	£m	56.418
5	Current cost profit on sale of fixed assets	£m	(1.035)
6	Infrastructure renewals charge	£m	25.757
7	Other non-cash profit and loss items	£m	1.054
8	Net cash flow from operating activities	£m	182.769

Line 3 – Interest paid

Interest paid has increased by 1.26% from £46.945m to £47.537m. This is consistent with an additional loan drawdown of £69m in 2017-2018. 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)

Line 4 - Interest in finance lease rentals

The Alpha project during 2017-2018 gave rise to [redacted] (2017: [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).

Line 8 - Gross cost of purchase of fixed assets

These have increased by £0.937m (0.73%). This is consistent with capital expenditure plans for 2017-18 and the movement in capital creditors across the period. Purchase of subsidiaries of 29.126m has been included within purchase of fixed assets.

Line 10 - Infrastructure Renewals Expenditure

IRE for 2017-2018 compared to 2016-2017 can be shown as follows:

IRE	2017-2018	2016-2017	Increase/(Decrease) in period	Increase/(Decrease) in period
	£m	£m	£m	%
Water	17.015	19.497	(2.482)	(12.7%)
Sewerage	13.235	10.434	2.801	26.8%
Total	30.250	29.931	0.319	1.1%

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 £0.007m from the end of 2016-2017 to the end of 2017-2018 with a consequent decrease in cashflow. The balance on deposit at the end of 31st March 2018 is £2.508m.

Line 18 - Capital in finance lease rentals.

An amount of [redacted] was made in payment against the Alpha PPP finance lease.

Line 19 - New bank loans taken out

In 2017-2018 £69m 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 PPP paid for via the unitary payments. All other capital expenditure for Alpha 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 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
1	Historical cost operating profit	£m	3	19.872	19.799	59.111	53.738	56 925	106.485			
2	Not used											
3	Movement in working capital	£m	3	0.595	8.388	12.045	-9.675	-1 670	-5 910			
4	Receipts from other income	£m	3	0.000	0.000	0.000	0 000	0 000	0 000			
5	Depreciation	£m	3	150.895	135.458	104.185	110.522	110 854	56.418			
6	Historical cost profit on sale of fixed assets	£m	3	-0.303	-0.208	-0.488	-0 091	0.489	-1 035			
7	Infrastructure renewals charge	£m	3	30.761	33.409	32.309	25.286	25 008	25.757			
8	Other non-cash profit and loss items	£m	3	-18.164	-4.265	-10.615	-8 036	-5 897	1 054			
9	Net cash flow from operating activities	£m	3	181.015	190.580	195.707	170 228	182 677	182.769			

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 2017/18 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 PC10/PC13 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 the PC15 query responses on CIDA allocation NI Water have revised the CIDA allocation manual during 2017/18 to reflect the revisions. These are being integrated into the capital projects. A CIDA training programme should be delivered during the next financial year 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 2017/18 all CIM (Table 40) information has been reported directly from CPMR without the detailed manual assessment required in previous years. 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 17 has been adopted for AIR 18.

Assets Adopted at Nil Cost

Sewer adoptions paid by third parties of £45.960m are included in column 4, line 7 of Table 32 within Sewerage infrastructure enhancements. Sewerage Pumping Stations paid by third parties of £6.730m 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

- Total asset additions – Water Service – Check to Table 25 line 5 col 4.
  For AIR 18 the reported numbers in these two tables are as follows:
  Table 25 – £47.634m
  Table 36 – £46.197m

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) £9k included in Table 25 relates to Decapitalised projects in 2017/18
   - Total asset additions – Sewerage Service – Check to Table 25 line 5 Col 8.
     For AIR 18 the reported numbers in these two tables are as follows:
     Table 25 – £111.634m
     Table 36 – £110.405m

The main variances in the above two figures are explained as follows:

c) PPP Omega [redacted] and PPP Kinnegar [redacted] residual asset additions were not included in Table 36.
d) £7k included in Table 25 relates to Decapitalised projects in 2017/18

Expenditure to reduce leakage

The table below provides a breakdown of the leakage expenditure in 2017/18. This includes the purpose allocations which have followed the principle as set out in PC10 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.

Activity	2017/18 actual spend per category £m	**Purpose allocation**
Leakage detection costs - opex	4.700	OPEX
Leakage repair costs - opex	1.500	OPEX
Leakage detection costs - capex	0.307	Base
Leakage infra replacement repair costs - capex	0.665	Base
Leakage detection equip	0.042	Base
Leakage software upgrades and developments	0.000	Base
New leakage technology	0.000	Base
DMA studies	0.428	Base
Trunk Main studies	0.026	SDB Growth
DMA optimisation	0.103	SDB Growth
Water balance asset data assessments	0.071	Base
ELL reviews	0.001	Base
Pressure Management	0.421	SDB Growth
PRV replacements	0.229	Base
GSM Loggers/Meter studies/Meter replacement	0.807	Base
Other	0.000	Base
Total (OPEX)	**6.200**	
Total (Capex)	**3.098**	
Total Leakage investment	**9.298**	

Capital programme variance

The Capital programme for 2017/18 when compared to the PC15 final determination has under delivered in the 'Water Service' but delivered in the 'Sewerage Service'. It is important to note however that NI Water was not funded to deliver the PC15 Final Determination and produced an adjusted budget which reflected the reduced funding allocation. This adjusted budget reduced PE funding by £9.3m (once other funding considerations are taken into consideration), from £164.5m to £155.2m

The main reasons for variance in 2017/18 are as follows:

a) The largest variances are found in Sub programme 12 (Sewerage Maintenance, Flooding and DG5) and Sub programme 16 (Wastewater treatment (new starts). One of the largest overspends has occurred in Sub-programme 16 where spending on Dungannon WwTW was accelerated in the programme resulting in approximately £3.5m of an overspend. The overspend in sub programme 12 has been the result of additional sewer rehabilitation work identified during DAP investigations and has resulted in an overspend of around £5m. This overspend is being assessed and expenditure in subsequent years shall be moderated in line with PC15 budgets.
b) Sub programme 8 was adjusted to accommodate in year capital works programme changes (e.g. Dunore Solar) which resulted in an underspend of around £8m. Sub programme 4 had a large underspend due to ongoing investigations into the solution required at Caugh Hill WTW, this resulted in an underspend of around £5m.

Year 3 saw the PC15 overspend in base maintenance reducing with an in year baseline of £90.5m against an actual figure of £77.6m and will continue to be addressed as PC15 proceeds.

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.

2017/18 Q4 Capital Investment Monitoring Return (Table 40)

Company Baseline

A PC15 baseline is included in this CIM submission. The PC15 capital baseline is a detailed listing of projects and programmes of work, the costs and outputs from which have been presented to the Utility Regulator through the Price Control process. The baseline is expressed in 2012/13 prices, post efficiency.

Capital Expenditure Commentary

This submission is completed primarily using CPMR with full reconciliation completed to ORACLE.

The following is a summary of CAPEX expenditure in 2017/18 (excluding contributions) at the end of Q4 as per ORACLE and reconciled to the CIM submission shown in money of the day.

	£m
Total Gross capital expenditure as per ORACLE	152.622
Capital works programme expenditure	109.557
Operations Capital from CPMR	22.419
M & G capital from CPMR	6.691
Capitalised Salaries and overheads	13.957
Rounding from ORACLE to CAPTRAX/CPMR	-0.002
Reconciled Total	152.622

During the period (April 2017 – March 2018) there has been Capital income in the form of Grants and Contributions totalling to £12.557m. 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 2 shows actual RPI in 2015-16 and OBR forecast figures for the years 2017-18 to 2020-21 (based on Mar 18 economic and fiscal outlook). This shows a reduction in inflation levels from that assumed in the PC15 FD. NI Water continue to monitor the OBR view of RPI.

Inflation (RPI) projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
PC15 FD assumed Indices	266.800	275.871	285.250	294.949	304.977	315.346
	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Current actual and projected indices (OBR Mar 2017)	259.433	264.992	275.326	284.687	293.513	302.612
	1.08%	2.14%	3.90%	3.40%	3.10%	3.10%

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)	23.543	22.285	-1.258	-5.65
2	Infrastructure renewals expenditure (gross)	19.497	20.710	1.213	5.86
3	Capex: Total quality enhancement programme	14.177	14.238	0.060	0.42
4	Capital expenditure - customer service	3.175	2.949	-0.226	-7.66
5	Capital expenditure - supply demand balance	7.393	7.304	-0.089	-1.22
6	Gross Capital expenditure - Water Service	67.786	67.485	-0.301	-0.45

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)	46.247	45.999	-0.248	-0.54
8	Infrastructure renewals expenditure (gross)	10.434	10.628	0.194	1.82
9	Capex: Total quality enhancement programme	13.559	13.872	0.313	2.26
10	Capital expenditure: customer service	5.359	5.322	-0.038	-0.71
11	Capital expenditure supply demand balance	10.951	11.027	0.076	0.69
12	Gross Capital expenditure - Sewerage Service	86.551	86.848	0.297	0.34

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 17 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.

Sixteen Box Summary

2017/18 Current Actual Projected 16 box summary showing expenditure £m (nominal)

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	5.34	16.76	0.80	6.18	29.07
Water Non-Infrastructure	2.39	20.07	10.43	2.29	35.18
Sewerage Infrastructure	5.79	10.42	5.11	5.88	27.21
Sewerage Non-Infrastructure	10.47	43.23	2.92	4.55	61.16
Totals	23.99	90.48	19.26	18.89	152.62

2017/18 Current Actual Projected 16 box summary in percentages

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	3.5%	11.0%	0.5%	4.0%	19.0%
Water Non-Infrastructure	1.6%	13.2%	6.8%	1.5%	23.1%
Sewerage Infrastructure	3.8%	6.8%	3.4%	3.9%	17.8%
Sewerage Non-Infrastructure	6.9%	28.3%	1.9%	3.0%	40.1%
Totals	15.7%	59.3%	12.6%	12.4%	100.0%

2017/18 Baseline 16 box summary showing expenditure £m (2012/13 prices)

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	12.00	12.81	1.14	10.56	36.51
Water Non-Infrastructure	6.81	22.17	2.80	4.02	35.80
Sewerage Infrastructure	5.73	9.83	3.84	4.70	24.10
Sewerage Non-Infrastructure	7.65	32.83	5.22	4.19	49.88
Totals	32.19	77.63	13.00	23.47	146.29

2017/18 Baseline Projected 16 box summary in percentages

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	8.2%	8.8%	0.8%	7.2%	25.0%
Water Non-Infrastructure	4.7%	15.2%	1.9%	2.7%	24.5%
Sewerage Infrastructure	3.9%	6.7%	2.6%	3.2%	16.5%
Sewerage Non-Infrastructure	5.2%	22.4%	3.6%	2.9%	34.1%
Totals	22.0%	53.1%	8.9%	16.0%	100.0%

PC15 16 box FD baseline (2012/13 prices): Expenditure across the PC15 programme £m

	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	72.24	78.15	6.98	54.95	212.32
Water Non-Infrastructure	27.20	125.28	16.71	34.13	203.32
Sewerage Infrastructure	36.92	59.48	21.08	27.60	145.08
Sewerage Non-Infrastructure	61.03	201.49	20.54	33.58	316.64
Totals	197.39	464.40	65.32	150.26	877.36

PC15 16 box summary: Baseline expenditure by percentage across the PC15 programme

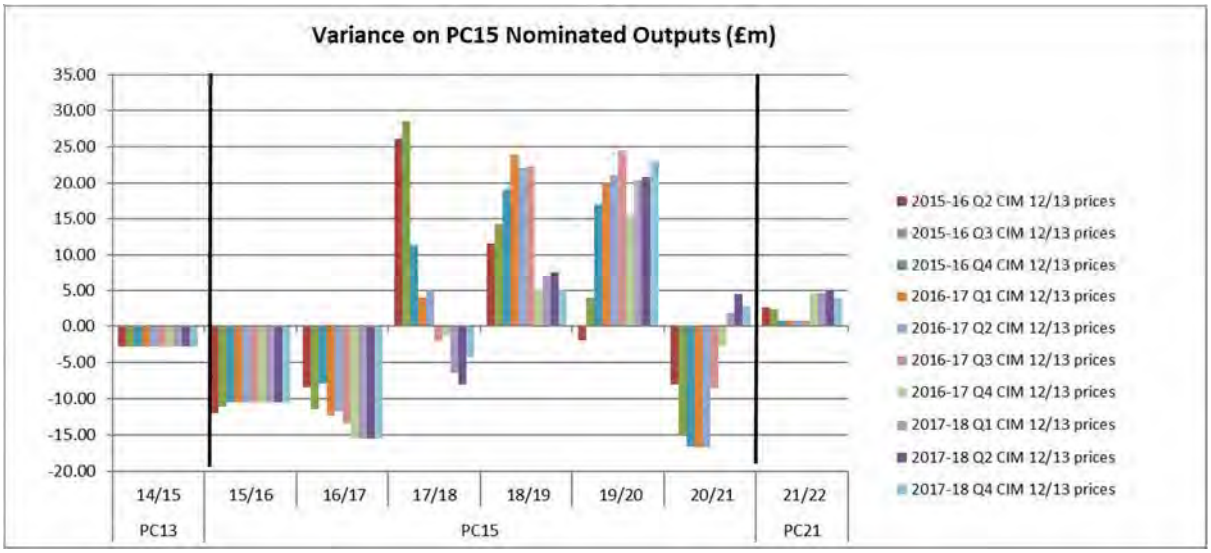
	Quality Enhancement	Base Service provision	Enhanced service levels	Supply Demand Balance	Totals
Water Infrastructure	8.23%	8.91%	0.80%	6.26%	24.20%
Water Non-Infrastructure	3.10%	14.28%	1.90%	3.89%	23.17%
Sewerage Infrastructure	4.21%	6.78%	2.40%	3.15%	16.54%
Sewerage Non-Infrastructure	6.96%	22.97%	2.34%	3.83%	36.09%
Totals	22.50%	52.93%	7.44%	17.13%	

Variance on Nominated Outputs (2012/13 prices)

Figure 1 illustrates the movement in the PC15 nominated output projects: this is based on the PC15 FD baseline and assumes a fully funded Final Determination budget with catch-up. In 2014/15 a number of nominated projects were delayed and carried into PC15. In addition, PE reductions have had an impact in PC15 year 1 and 2. The variance showing in 2021/22 is due to spend on KF350 Dungannon WWTW and KR489 Glenmachan Strategic Project Phase 1a Sicily & Marguerite Park Flood Alleviation.

In summary, a negative variance of £37m incurred from 2014/15 to 2017/18 must be addressed from 2018/19 to 2020/21: To date this has reduced to £30m however NI Water must continue to ensure sustained focus on delivery as the catch-up from 2018/19 to 2020/21 will require significant effort.

Figure 1: Variance on Nominated Outputs



CIM summary Table

Code	Title	Baseline £m (2012/13 prices)	Current actual or projected 2015/16 £m (nominal)	Current actual or projected 2015/16 £m (2012/13 prices using latest OBR RPI forecast)
0	Staff Salaries and on-costs	11.20	13.96	12.40
1	Base maintenance (Water)	6.06	8.33	7.40
2	Base maintenance (sewerage)	20.85	24.87	22.10
3	Water resources	0.72	2.03	1.80
4	Water treatment works	7.41	2.67	2.37
5	Water trunk mains	4.36	-0.08	-0.07
6	Service reservoirs and clear water tanks	0.76	1.17	1.04
7	Service reservoir rehabilitation	3.19	3.61	3.21
8	Water mains rehabilitation	17.72	11.11	9.88
9	Leakage	2.55	2.42	2.15
10	Ops capital Water	6.13	8.05	7.15
12	Sewerage Maintenance, UIDs, Flooding	14.48	21.88	19.44
15	Wastewater treatment (carryover)	0.00	-0.08	-0.07
16	Wastewater treatment (new starts)	7.99	12.88	11.45
17	Small wastewater treatment works	1.87	1.36	1.21
18	Ops capital Sewerage	7.24	10.90	9.69
19	Meter installation and maintenance	3.65	1.05	0.93
20	Management and general	10.25	17.63	15.67
23	Minor watermain repairs, requisitions, road schemes and public realm	3.97	5.49	4.87
24	Minor sewer repairs, requisitions, road schemes and public realm	3.40	3.40	3.02
98	Additional Outputs Programme (Enhancement)	11.84	0.00	0.00
99	PC15 balancing line (Base)	0.67	0.00	0.00
Total	Excluding additional outputs	11.20	152.64	135.65
Total	Including additional outputs	146.29	152.64	135.65

Nominated Outputs

Refer to Table 40a and associated commentary for full detail on nominated outputs over Year 3 of the PC15 period.

Water

Beneficial Use was claimed on the following CWTs during 2017/18:

Ref	Scheme	Name	Quarter claimed
1	JC385	Monaclogh SR	17/18 Q1

Sewerage

Beneficial Use was claimed on the following UIDs during 2017/18:

Ref	UID	Scheme	UID Name	Quarter claimed
1	UID389	KA260	Muckamore WwPS	17/18 Q1
2	UID010	KF330	Newry Road SPS	17/18 Q1
3	UID040	KC415	Ballysally CSO Upgrade	17/18 Q2
4	UID008	KF396	Milford WwPS	17/18 Q2
5	UID420	KL524	Bleachgreen WwPS	17/18 Q2
6	UID023	KS887	Castle Park CSO 07	17/18 Q4
7	UID179	KS887	13 Rugby Avenue CSO 8A	17/18 Q4
8	UID180	KS887	11 Brunswick Road CSO 8B	17/18 Q4
9	UID181	KS887	104 Abbey Street CSO 8F	17/18 Q4
10	UID182	KS887	114 Abbey Street CSO 8E	17/18 Q4
11	UID184	KS887	UID184 Abbey Park CSO 9	17/18 Q4

Beneficial Use was achieved at the following Waste Water Treatment Works:

Ref	Scheme	Site	Quarter claimed
1	KP586	Clabby Wwtw	17/18 Q4
2	KC296	Ballycastle WwTW	17/18 Q4
3	KA239	Mullans WwTW (Antrim)	17/18 Q4

Beneficial Use was achieved at the following Waste Water Treatment Works from the Rural WwTW Programme:

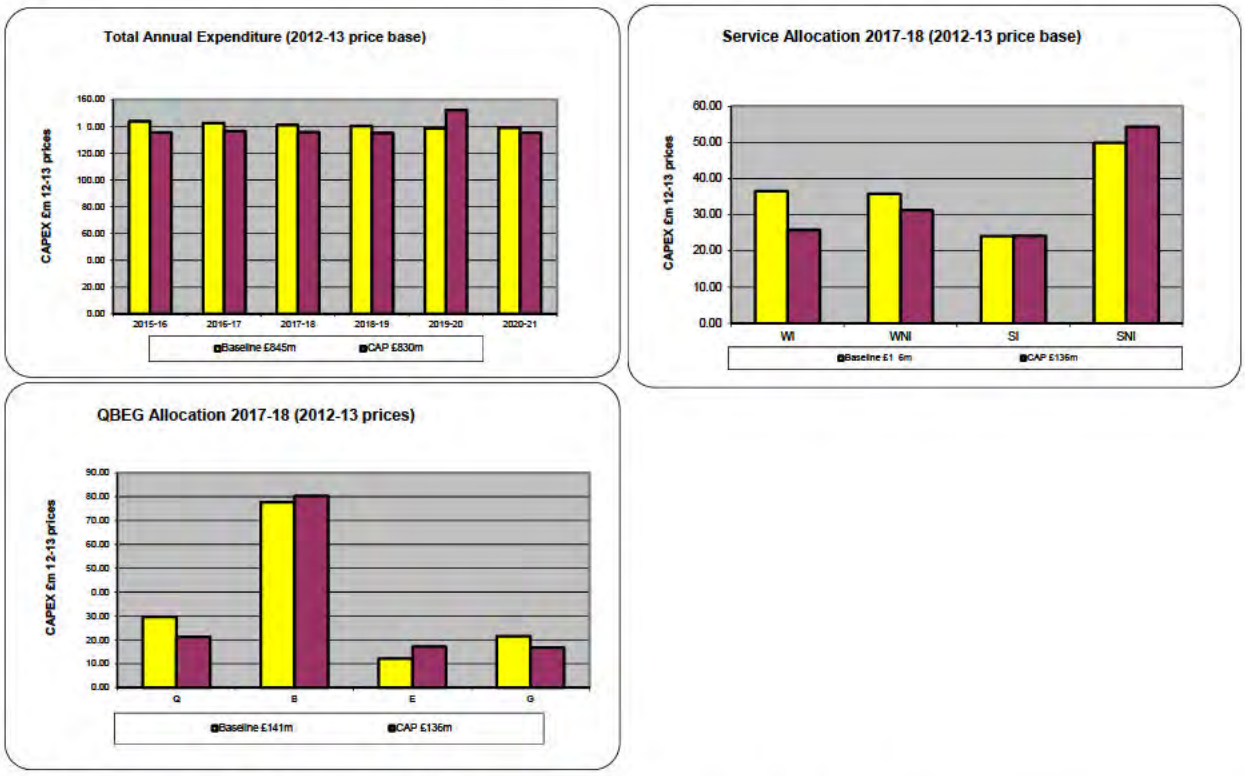
Scheme	Site	CAR ID	Quarter claimed
KI542	Oliver Plunkett	S02284	17/18 Q2
KI542	Bresagh WwTW	S00332	17/18 Q3
KI542	Carnanbane WwTW	S03037	17/18 Q3
KI542	Ardgarvan WwTW	S02987	17/18 Q4

Regulatory Dashboard

Figure 2 is an extract of the Regulatory Dashboard for period to end of March 2017/18. Only graphs that are currently meaningful have been included. 2012/13 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 £10.64m reduction in 2017/18 in funding available, when the baseline funding and Current Actual Projected are stated in 2012/13 terms.
- Graph 2: Service allocation. Service allocation for 2017/18 shows an element of imbalance between water and wastewater: Water Infrastructure and Water Non-infrastructure are below the baseline profile while Sewerage Infrastructure is slightly above and Wastewater non-infrastructure is slightly below profile.
- Graph 3: QBEG. 2017/18 currently indicates £80.41m actual expenditure on base against a £77.63m baseline. This £2.78m variance has improved on the £4.6m overspend previously profiled in Q2.

Figure 2: 2017-18 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

1. Purpose and background

This Annex A is a report on capital projects associated with the NI Water Energy Efficiency programme for inclusion in the NI Water Annual Information Return (AIR 17) Chapter 30. This report was first requested in 2016, at which time the Utility Regulator specifically outlined reporting elements for inclusion as follows:

"Energy efficiency and renewable energy schemes"

3.13 The commentary should identify the total invested in energy efficiency and renewable energy schemes and the allocation of this investment by purpose.

3.14 The PC15 final determination included funding for a range of energy efficiency and renewable energy schemes proposed by the company intended to contribute cumulative energy reductions of around 12GWhr by the end of the PC15 period. This expenditure is spread across a range of investment categories within the capital expenditure tables. The company should summarise progress on delivery of energy efficiency and renewable energy savings through these schemes in a specific section within the consolidated report on capital investment. This should include an estimation of the cumulative energy reductions delivered against PC15 estimates and an explanation of how they have been derived. Explanations for any variance to original delivery plans should be provided.

3.15 In the PC15 final determination we noted that confirmation of the scope, costs and benefits for the sub-meter schemes were subject to the completion of a feasibility study and that NI Water needed to demonstrate that the investment was beneficial and confirm this to the Utility Regulator before embarking on wide spread sub-metering. Progress on this issue should also be addressed in this section of the consolidated report."

2. Context

The PC15 Final Determination includes capital funding of £9.0m for a range of energy efficiency and renewable energy schemes that were proposed by NI Water to contribute cumulative energy reductions of 12GWh by the end of the PC15 period.

Since the PC15 energy efficiency and renewable energy action plan was first drafted, the energy landscape and NI Water's roll in it has changed. Decarbonisation, decentralisation and digitalisation are rapidly transforming electricity grids, alongside continuing technological advances in energy storage and the electrification of transportation and heat.

In addition, Government policy changes in 2015, particularly the closure of the Renewables Obligation, negatively impacted the investment profile of renewable energy generation projects.

These dramatic and unforeseen changes to policy instruments, together with rapid changes to the electricity grid, necessitated that NI Water strategically review the PC15 Final Determination to ensure that best value for money is achieved.

3. Reporting requirements 3.13 and 3.14

3.13 The commentary should identify the total invested in energy efficiency and renewable energy schemes and the allocation of this investment by purpose.

3.14 The PC15 final determination included funding for a range of energy efficiency and renewable energy schemes proposed by the company intended to contribute cumulative energy reductions of around 12GWhr/ by the end of the PC15 period. This expenditure is spread across a range of investment categories within the capital expenditure tables. The company should summarise progress on delivery of energy efficiency and renewable energy savings through these schemes in a specific section within the consolidated report on capital investment. This should include an estimation of the cumulative energy reductions delivered against PC15 estimates and an explanation of how they have been derived. Explanations for any variance to original delivery plans should be provided.

3.1. NI Water Response

Northern Ireland Water has a dedicated PC15 Energy Efficiency programme, some of which is a continuation of investments undertaken during PC13. Details of PC15 investment by purpose are further detailed in Appendix 1 and Appendix 2 of this report.

Table 3.1 below provides a high-level summary of expenditure profiles:

Capital funding as stated in PC15 DD Response Annex 6 (£k)	2015/16 investment (£k)	2016/17 investment (£k)	2017/18 Investment (£k)	Forecast Investment (£k)	Total (£)
9,204	0.982	1.54	0.332	2.039	4.893 *

Table 3. *Excludes JA312 - Dunore Point WTW Renewable Energy*

For the first two years, the Energy Efficiency Programme has been managed under five work streams:

- Renewables
- Clean Water
- Wastewater
- PPP
- Negative Opex

Benefits from the energy efficiency and renewable energy schemes are expressed as:

- Reduced Consumption kWh;
- Reduced Rate of electricity (ppu);
- Self-Generation;
- Increased income, either via ROCs or exporting electricity to the grid.

3.1.1. Renewables

Renewable initiatives are split into two categories:

- Self-Generation from NI Water Assets
- Renewable Generation via Power Purchase Agreements (PPAs)

3.1.1.1. Self-Generation from NI Water Assets

EP017 Renewable Energy

Capital Requested in DD Business Plan: £2.176m
Current Assessment of Funding Required during PC15: £1.247m

Funding available for EP017 was allocated for the purpose of investing in renewable energy during PC15. Within the PC15 Business Plan, NI Water proposed to develop a single wind turbine at the North Coast WwTW. The business case for this project was deemed viable as the kWh generation could be consumed within the WwTW (at the North Coast WwTW) and would receive an income from the Governments Renewable Obligation Certificates (ROCS) incentive scheme. After two unsuccessful planning applications, the balanced of this proposed expenditure was reallocated to the installation of Solar Photo Voltaic Systems.

Multiple Sites - Solar Photo Voltaic (<150kW each)

Capital Requested in DD Business Plan: £0
Current Assessment of Funding Required: £1.54m
NI Water installed approximately 8MW of Solar PV systems during PC15 to date. 57 installations have occurred across NI Waters Asset base (throughout Northern Ireland) during PC15. Funding for these installations was provided from EP017 and BE017.

Dunore WTW - Solar Photo Voltaic (5MW)

Capital Requested in DD Business Plan: £0
Current Assessment of Funding Required: £7.53
NI Water were previously seeking to take advantage of land adjacent to Dunore Water Treatment Works to procure renewable energy through a private wire Power Purchase Agreement ("PPA"). The land had planning permission for a 46MW solar farm, which would enable NI Water to utilise existing connection offers from NIE Networks. This opportunity concluded unsuccessfully when the tenderer withdrew their BAFO.

An alternative 5MW project was subsequently identified whereby NI Water would lease the land from the landowner, buy the development rights for the site and award the design and build contract through an existing framework.

Legal opinion confirmed that this project could be viewed as a lands transaction and was therefore compliant with the Utility Contract Regulations (UCRs). In addition, albeit under a challenging timeframe, the project could reasonably expect to qualify for ROCs if completed before 31 march 2018.

Following ECI approval, NI Water constructed the 5MW Solar PV array at Dunore Point WTW during the 2017/18 FY. The project was completed in advance of the closure of the ROC grace period deadline. Benefits from this windfarm will start accruing during the 2018/19 FY and are estimated at £560k and 2,000 tCO_2 per annum.

Delivery of this project has received favourable public recognition and helped achieve a number of strategic objectives for NI Water, including:

- Reduce the cost per kWh of electricity supply at major energy consuming sites
- Reduce the net cost paid for electricity used at major consuming sites
- Reduce the longer term cost of electricity and volatility in electricity pricing at major consuming sites
- Increase NI Water's use of renewable energy to mitigate the effects of climate change

Funding for this installation was provided from JA312.

JI041 Hydro power from raw water

Capital Requested in DD Business Plan: £0.439m
Current Assessment of Funding required £0.051m

Within the PC15 business plan (after a feasibility exercise), ten potential hydro schemes were identified for delivery at eight sites.

This envisaged programme of work was impacted by the withdrawal of the incentive scheme from central Government and NIE Networks connection process.

A further feasibility assessment is underway to re-examine these projects to determine their viability at five sites, taking into account the following issues:

1. Silent Valley: A NIE grid connection was applied for in 2017 but cannot be progressed further as NIE Networks has confirmed that there is currently no export capacity available and reinforcement costs are prohibitive.
2. Dorisland WTW: A connection application was submitted to NIE Networks in 2015, but cannot be progressed further as NIE Networks has confirmed that there is currently no capacity available and reinforcement costs are prohibitive.
3. Altnaheglish (Caugh Hill): A connection application was submitted to NIE Networks in 2015, but cannot be progressed further as NIE Networks has confirmed that there is currently no export capacity available and reinforcement costs are prohibitive.
4. and 5. Two existing Hydro electricity generators are being evaluated for refurbishment and the design solutions are underway. Repurposing for potential application within a pumped storage scheme is also under consideration.

JI040 Recovering Energy from the water distribution System

Capital Requested in DD Business Plan: £1.350m
Current Assessment of Funding Required during PC15: £1.484m

Due to technical and connection uncertainties around this initiative, NI Water focused on sites with potentially attractive payback periods. Within the PC15 programme, NI Water planned to conduct a trial to assess the viability of generating electricity from Pressure Relief Valves in the water network. Due to technical difficulties, withdrawal of the government incentive schemes and NIE connection issues this project has been withdrawn for implementation during the PC15 period.

3.1.1.2. Renewable Generation via Power Purchase Agreements (PPAs)

Within the PC15 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.

Following submission and approval of an Outline Business Case, the Energy Team are progressing with market engagement to determine the business benefits of entering into Corporate PPA arrangements that include both ‘private wire’ and virtual/synthetic PPAs to inform the development of a Final Business Case. This Final Business Case is expected to be reviewed in Q4 18/19. Both DfI and SIB were consulted during development of the Outline Business Case and are expected to be involved in the development of the Final Business Case.

3.1.2. Clean Water Initiatives

Clean Water initiatives identified within NI Waters Energy Efficiency Programme for PC15 include:

JI069 WPS Pump Efficiency

Capital Requested in DD Business Plan: £1.286m (JI069 and JI075 combined)
Current Assessment of Funding Required during PC15: £0.879m
Five WPS had control optimisation or pumps replaced as part of this project during the 2016/17 and 2017/18 FY's. The benefits associated with these upgrades amounts to £47k.

JI075 - WPS Pump Efficiency

Phase 2 of this Water Pumping programme is being developed taking into account the learnings of Phase 1 (under JI069). Energy audits are being completed at two WPS sites to assist in identifying further WPS efficiencies – these audits were funded under JI075.

JI071 – Electrical Sub-meters (water)

Capital Requested in DD Business Plan: £0.488m
Current Assessment of Funding Required: £0.007m
Sub-metering is viewed as an important enabler for energy efficiency. Trials have been conducted at one Water site and one Wastewater site (KI545). NI Water are currently receiving the data from this trial however there needs to be a reasonable period to collect this data to enable trend analysis to be undertaken and evaluated.

Advances in sensor and communication technology have also caused NI Water to strategically review how optimal sub-metering may be cost effectively achieved in compliance with the NIS Directive. This is covered in more detail in section 3.3 of this report.

JI032 – Buildings, water treatment sites - water regulation compliance & energy efficiency

Capital Requested in DD Business Plan: £0.741m
Current Assessment of Funding Required: £0.216m
The Energy element of the PC15 Business Plan included funding for NI Water to place energy efficiency measures into buildings at its operational sites to improve energy efficiency. This work (mainly heating and lighting) has been undertaken during 17/18 with further sites being identified in the 18/19 FY. Anticipated benefits in 18/19 (awaiting final reports) is estimated at circa £60k based on work completed in 17/18 FY. The level of investment and subsequent benefits are anticipated to be lower than the initial business case.

WD083 Seasonal Time of Day (STOD)

Capital Requested in DD Business Plan: £0m
Current Assessment of Funding Required: £0.272m
This programme of work moved electricity use from peak consumption periods to off peak consumption periods at 17 WPS during 2015/16 and 2016/17. Although the main driver for Time of Day pumping was to reduce the appu (average price per unit per kW) rate (i.e. a £Cash benefit) the analysis from this investment has concluded there has also been some savings due to reduced consumption (kWh). This is evidenced by more efficient pumping regimes (for these sites), that have provided reduced consumption and cost savings. Expenditure during 2015/16 (£59k) and 2016/17 (£30K) on this project produced a cost saving of c. £40k during this same period. STOD savings in 18/19 amounted to £4k.

Water Energy Audits

NI Water are undertaking Energy Audit surveys at a number of Clean Water sites (WTW and Water Pumping Stations) to assist in identifying further energy efficiency opportunities. These audits will be completed in Q2 18/19 with an outline programme developed for funding and delivery in Q3.

3.1.3. Wastewater Initiatives

KI514 – Buildings, wastewater treatment sites - water reg. compliance & energy efficiency

Capital Requested in DD Business Plan: £0.79m
Current Assessment of Funding Required: £0.193m

The Energy element of the PC15 Business Plan included funding for NI Water to place energy efficiency measures into buildings at its operational sites to improve energy efficiency. This work (mainly heating and lighting type work) was undertaken at 5 Wastewater sites and will complete in Q1 18/19, with benefits realisation during 2017/18 and 2018/19. The level of investment and subsequent benefits are anticipated to be lower than the initial business case with circa £30k of benefits forecast in 18/19 FY.

KI517 Energy efficiency at wastewater pumping stations

Capital Requested in DD Business Plan: £0.021m
Current Assessment of Funding Required: £0.003m

Appraisals were performed at wastewater pumping stations to identify where potentially highly cost effective energy efficiency measures could be delivered. NI Water has assessed the appraisals and concluded that energy efficiency opportunities at these WwPS are not economically viable purely on energy efficiency. NI Water are however looking at other alternatives in regards to energy efficiency measures for pumping in Wastewater.

KI553 - Energy efficiency at wastewater pumping stations

Capital Requested in DD Business Plan: £0m
Current Assessment of Funding Required: £0m

Appraisals were performed at wastewater pumping stations to identify where potential more marginal energy efficiency measures could be delivered. NI Water has assessed the appraisals and concluded that energy efficiency opportunities at these WwPS are not economically viable purely on energy efficiency. NI Water are however looking at other alternatives in regards to energy efficiency measures for pumping in Wastewater.

KI545 – Electrical Sub-meters (wastewater)

Capital Requested in DD Business Plan: £0.651m
Current Assessment of Funding Required: £0.01m

Sub-metering is viewed as an important enabler for energy efficiency. Trials have been conducted at one Water site and one Wastewater site (KI545). NI Water are currently receiving the data from this trial however there needs to be a reasonable period to collect this data to enable trend analysis to be undertaken and evaluated.

Advances in sensor and communication technology have also caused NI Water to strategically review how optimal sub-metering may be cost effectively achieved in compliance with the NIS Directive. This is covered in more detail in section 3.3 of this report.

PL005 Process Optimisation of WwTW

Capital Requested in DD Business Plan: £0
Current Assessment of Funding Required: £0.235m

BN048 Process Optimisation of WwTW

Capital Requested in DD Business Plan: £0
Current Assessment of Funding Required: £0.1m

Within the PC15 Energy Efficiency Delivery Programme, under PL005, £240K of Capital has been allocated and within BN048 (a further £100K) to fund a process optimisation project at a number of Waste Water Treatment Works (WwTW) across NI Water. The work optimises energy usage within the wastewater treatment processes and utilises a Programmable Logic

Controller (PLC) at each WwTW where the technology is applicable. In general, optimisation modifications have been focused within a number of areas namely the site's capacity, flow/loading, historic energy consumption, process variables (flow management, Dissolved Oxygen (DO), Mixed Liquors (MLSS), RAS, SAS) and regulatory requirements.

This programme of work across circa 40 large WwTW (a combined total) has produced in year consumption reductions of 957,683 kWh in 2015/16 and a further 1,176,603 kWh reduction in 2016/17.

During 2017/18 FY 7 WwTW were optimised with £41k of energy benefits being delivered in year. There are a further 6 Wastewater sites to optimise in 18/19 FY and the introduction of improved process control technology is being explored through a pilot at WwTW sites to establish the improved site performance and energy benefits that this technology may deliver.

Wastewater Energy Audits

NI Water are undertaking Energy Audit surveys at a number of Wastewater sites (WwTW and Wastewater Pumping Stations) to assist in identifying further energy efficiency opportunities. These audits will be completed in Q2 18/19 with an outline programme of developed for funding and delivery in Q3.

3.1.4. PPP

There were two PPP projects being considered under energy efficiency.
The first was investment in a Variable Speed Drive and a pump refurbishment programme with the Alpha contractor. This initiative was considered under NI Water governance and due to the nature of the contract, it was determined that this project was not a viable at this stage.
The second project was with the Omega contractor where control improvements were being considered at Donaghadee Pumping Station and a number of other locations. This project has been completed with £4k of savings being realised from this project in 2017/18.

3.1.5. Negative Opex

NI Water currently generates revenue from existing electricity generation assets:

- Raw Water Turbines at Silent Valley and Oaklands
- Sale of ROCs
- Participation in an Aggregated Generation Unit with fixed standby generation
- Exporting electricity to the grid

This revenue is considered "unregulated" and has not been treated as "negative opex" in the UR's Corrected Ordinary Least Squares (COLS) econometric and unit cost models used for PC10, PC13 and PC15 determinations.

The UR is currently developing a new methodology for the assessment of NI Water's efficiency gap to inform the upcoming PC21. NI water are hopeful that the new methodology will allow revenue from energy generation to be treated as negative expenditure in line with the approach adopted by Ofwat in England and Wales.

3.1.6. Not Defined as Energy Efficiency Capital

KR627 and KS974 Energy Efficiency to Inlet and Primary Effluent Pumps, Return Activated Sludge Pumps. (Screw Pumps)

Capital Requested in DD Business Plan: £0
Current Assessment of Funding Required: £1.54m

Energy efficiency improvements to screw pumps is a further project identified as a key driver to assist NI Water reduce electricity consumption. NI Water have commenced a programme of work at Screw Pumps to reduce consumption (kWh) at a number of sites. This includes the six Inlet Screw Pumps, the three Pre-Treatment Effluent Screw pumps (PEPs) and the three Return Activated Sludge Pumps (RAS) at Belfast WwTW. The benefits realisation from this work is currently being undertaken, however energy usage through the half hour meter data has shown no clear energy reduction on site at present.

3.1.7. Additional PC15 Energy Efficiency Activity and Projects

Mindful of the need to stay cognisant of and respond accordingly to changes in the energy landscape, on February 24th 2018 the NI Water Executive Committee approved the NI Water Energy Sustainability and Resilience Strategy (ESRS) and Energy Action Plan (EAP) to collectively embed energy 'best practice' within the business.
The ESRS is an overarching strategy document.

The EAP is a live document that is used to capture energy related ideas and innovation from within the business. These saving opportunities are assessed and prioritised to inform the Energy Efficiency delivery programme on an ongoing basis.

Specific ESRS activities scheduled for delivery through the PC15 period, include:

- Achieve ISO 50001 accreditation. ISO 50001 is an internationally recognised energy management Standard (EnMs) that is aligned with ISO 14001 (a suite of environmental standards that NI Water has already attained). Encompassing existing and planned energy management activity within an internationally recognised energy management standard will embed energy management into NI Water's business processes and drive continual improvement.
- Conduct general sustainability and energy awareness training through a suite of eLearning modules and tools that have been specifically mapped to the competence, training and awareness requirements of ISO 50001.
- Deploy a Metering, Monitoring & Targeting system that will; detect avoidable energy waste, target energy efficiency activity; provide feedback for staff, improve budget setting, enable benchmarking, and quantify savings. NI Water has considerable energy and process data but not all of the data sets are yet centralised or capable of being indexed to one another. Work is underway to address this.
- Undertake a series site surveys using a risk assessed technical evaluation process, underpinned by measurement, analysis and business case metrics to inform further PC15 optimisation activity and the PC21capital programme.
- Optimise NI Water energy income potential by; fully understanding Capacity & DS3 payment income structures; working with NIEN and the Utility Regulator to harness more NI water generating capacity; enhancing existing commercial arrangements for the third party management of these income related services; and by exploring the potential to stack revenue streams through the use of technological innovation.
- Contract for the supply of a significant proportion of NI Water's energy requirements via Corporate Power Purchase Agreements (CPPA), in particular those that are behind the meter (sometimes referred to as 'private wire'). CPPAs are relatively new to Northern Ireland but well established in GB, where large electricity users increasingly buy renewable energy via supply contracts negotiated for periods lasting 10 to 15 years. These contracts are attractive because they cut CO_2 emissions, provide price certainty and security of supply and are commercially competitive.

As in the case of the Dunore Solar Farm project, NI Water are working closely with the Strategic Investment Board (SIB) in their review of NI Public Sector arrangements for

managing and procuring electricity, including CPPAs. The company anticipates being fully aligned with this strategy and playing an important role in the implementation of it.

Within the Energy Efficiency programme, there are three energy efficiency projects (JI041 Hydro and Sub-metering in Water JI071 and Wastewater KI545) with capital investment estimates against them that are based on the original Business Cases. As indicated, there are delivery risks associated with these projects and this may release capital for other energy efficiency projects. NI Water are currently seeking to identify energy efficiency projects that are viable and are undergoing trials and pilots in several areas. Business Cases will be brought forward seeking capital when the outcome of the trials and pilots are concluded.

Reporting requirement 3.5

3.15 In the PC15 Final Determination we noted that confirmation of the scope, costs and benefits for the sub-meter schemes were subject to the completion of a feasibility study and that NI Water needed to demonstrate that the investment was beneficial and confirm this to the Utility Regulator before embarking on wide spread sub-metering. Progress on this issue should also be addressed in this section of the consolidated report."

3.2. NI Water Response

Sub-metering pilots have been conducted at two sites - Antrim WwTW (KI545) and Brick Row WPS (JI071). These projects do not seek to deliver any direct energy reductions, rather their purpose is to quantify the full range of benefits and costs with which to inform the business case for further implementation.

Due to technical data retrieval difficulties, the data verification exercise for these pilot sites is still in progress. In an attempt to minimise costs, NI Water's in-house IT section have been developing bespoke IT architecture systems with which to retrieve the data.

Since identifying these projects in PC13 and conducting pilots in PC15, sensor, communications and cybersecurity innovation and compliance requirements have developed that will need to be considered in any future sub-metering business case.

3.3. NIS Directive

The UK is in the process of implementing the EU directive on the security of Networks and Information Systems (known as the NIS Directive). Under the NIS Directive, NI Water are categorised as an Operator of Essential Services (OES) within the drinking water supply and distribution subsector, the definition for which is; supply of potable water to 200,000 or more people.

During the NIS Directive implementation period, OES, such as NI Water, have to take appropriate and proportionate security measures to manage risks to their network and information systems and are required to notify serious incidents to the relevant national authority.

With implementation of the NIS Directive underway, NI Water are strategically reviewing sub metering provision with a view towards compliance and cross cutting work streams under way; including the Digital Strategy and Business Analytics.

3.3.1. Industry 4.0

Industry 4.0 is a name for the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. Industry 4.0 is commonly referred to as the fourth industrial revolution.

Industry 4.0 creates what has been called a "smart factory". Within the modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralised decisions. This is consistent with NI Water's digital and data analytics aspirations and obligations under the NIS Directive.

NI Water Energy Team are investigating a trial of IoT technology, including an Industry 4.0 gateway, to collect energy data remotely through wireless sensors. This relatively new

technology makes it easier, more cost effective and secure to collect energy data with which to make informed decisions. This technology will be trialled in Q2 18/19.

4. Conclusion

The PC15 Draft Determination Energy Efficiency programme outlined a requirement for approximately £9.0m of capital investment (nominal terms).

NI Water's 2016 response identified that the water regulations compliance elements of the clean and wastewater ("Buildings, water treatment sites - water regulation compliance & energy efficiency") projects were excluded. As a result, the baseline requirements for the Energy Efficiency programme were reduced to £7.43m.

NI Water has invested £0.98m in 2015/16, £1.54m in 2016/17 and £7.48m in 2017/18.

NI Water is seeing encouraging results from these investments. Overall electricity consumption within NI Water has out turned at 290GW in 17/18.

Up to 31 March 2018, the benefits summary from the energy efficiency projects invested in during PC15 are as follows:

Energy reduction (GWh/a)	**15-16**	**16-17**	**17-18**	**Totals**
From Renewables	0.01	0.3	0.46	0.77
From Energy efficiency	0.96	1.4	1.0	3.36
Total	0.97	1.7	1.46	4.13

5. Next steps & actions

The PC15 Energy Efficiency programme has been impacted by changes to the NIE Networks connection process and incentive mechanisms for renewable energy generation (e.g. ROCs). Whilst these issues impacted the programme as originally conceived, NI Water is pro-actively seeking alternative saving opportunities through a wide range of initiatives, including those outlined in section 3.1.7

6. Appendices

Appendix 1 - Detailed list of investment in energy efficiency and renewable energy schemes and the allocation of this investment by purpose

Type of project	Project code	Project title	Capital funding as requested in DD PC15 BP (£m)	Current assessment of funding required (£m)	Included in Annex 6 baseline?	Note	Q	B	E	G
Renewable	JI040	Recovering energy within the water distribution system	1.350	1.484	Y	The viability of this initiative was dependent on obtaining ROCs, with only 4 sites viable for ROCs. Updated profile reflects current expenditure incurred.	0	0	100	0
Renewable	JI041	Hydro power from raw water	0.439	0.051	Y	The viability of delivering all 10 Hydro Turbines was dependent on obtaining ROCs. 5 Hydro sites are still being considered for viability but grid connections will be difficult to obtain.	0	0	100	0
Renewable	EP017	Electricity generation from wind power or alternative green energy solution	2.176	1.247	Y	46 sites were completed before the 3 ROCs deadline of 30 Sept 16. Further extensions at Westland and New Holland WwTW also occurred in March 17 before the 2 ROCs deadline. 3 more sites were added prior to March 2018 end of ROCs deadline.	0	0	100	0

Type of project	Project code	Project title	Capital funding as requested in DD PC15 BP (£m)	Current assessment of funding required (£m)	Included in Annex 6 baseline?	Note	Q	B	E	G
Renewable	BE017	Energy M&G	0.000	0.207	N	6 installations completed under this investment (before ROCs deadline). Where does the 3 sites that were completed before end March come in?	0	55	45	0
Cleanwater	JI032	Buildings, water treatment sites - water regulation compliance & energy efficiency	1.822	0.216	Y	Combined total of Water Regulation element and energy efficiency	59	40	0	0
Cleanwater	JI032	Water regulation compliance	1.081	N/A	Y	The Water Regulation element of this project can be considered distinct from the Energy element. The baseline has been split based on an assessment of the business case.	100	0	0	0
Cleanwater	JI032	Energy efficiency	0.741	N/A	Y	NIW has commenced with this project: Initial business case appears to have over-estimated the level of investment and benefits. NI Water has proceeded with caution, a reduced scope and therefore a reduced investment is envisaged.	0	100	0	0

Type of project	Project code	Project title	Capital funding as requested in DD PC15 BP (£m)	Current assessment of funding required (£m)	Included in Annex 6 baseline?	Note	Q	B	E	G
Cleanwater	JI069	WPS Pump Efficiency Capital Investment Phase 1	1.286	0.502	Y	This project has completed with benefits realisation in 16/17 and 17/18.	0	100	0	0
Cleanwater	JI075	WPS Pump Efficiency Capital Investment Phase 2	0.000	0.377	Y	NI Water are taking time to take stock of the output of JI069 and WPS analysis before proceeding with phase 2.	0	100	0	0
Cleanwater	JI071	Electrical Sub-meters (water)	0.488	0.007	Y	Spend profile broadly tracking PC15 baseline, but final form of delivery will depend on outcome of trends from data and success of data verification.	0	0	100	0
Cleanwater	WD083	Time of day pumping	0.000	0.243	N	Time of Day pumping was not included in the PC15 baseline. While not delivering any reductions in kWh, it does deliver more efficient pumping practices and reduce overall costs.				
Wastewater	KI514	Buildings, wastewater treatment sites - water reg. compliance &	0.790	N/A	Y		65	35	0	0

Type of project	Project code	Project title	Capital funding as requested in DD PC15 BP (£m)	Current assessment of funding required (£m)	Included in Annex 6 baseline?	Note	Q	B	E	G
		energy efficiency								
Wastewater	KI514	Water regulation compliance	0.514	N/A	Y	The Water Regulation element of this project can be considered distinct from the Energy element. The baseline has been split based on an assessment of the business case.	100	0	0	0
Wastewater	KI514	Energy efficiency	0.277	0.193	Y	NIW has commenced with this project and is due to be completed in 2017/18. Initial business case appears to have over-estimated the level of investment and benefits. NI Water have proceeded with caution, reduced scope and therefore reduced investment required. 5 Wastewater sites complted under KI514 with energy benefits estimated at £40k with investment of £32k?.	0	100	0	0
Wastewater	KI517	Appraisal of Energy Efficiency at Waste Water	0.021	0.003	Y		0	100	0	0

Type of project	Project code	Project title	Capital funding as requested in DD PC15 BP (£m)	Current assessment of funding required (£m)	Included in Annex 6 baseline?	Note	Q	B	E	G
		Pumping Stations								
Wastewater	KI553	Energy efficiency at wastewater pumping stations	0.000	0.000	Y		0	100	0	0
Wastewater	KI545	Electrical Sub-meters (wastewater)	0.651	0.01	Y	Spend profile broadly tracking PC15 baseline, but final form of delivery will depend on outcome of outcome of trends from data and success of data verification.	0	0	100	0
Wastewater	PL005	Energy Efficiency - Process Optimisation	0.000	0.253	N	Although not included in the scope of energy projects identified in Annex 6, this is a valuable project which has been successfully delivered during PC15.	0	55	45	0
Wastewater	BN048	Energy Efficiency - Process Optimisation	0.000	0.1	N	Although not included in the scope of energy projects identified in Annex 6, this is a valuable project which has been successfully delivered during PC15.	0	100	0	0

Type of project	Project code	Project title	Capital funding as requested in DD PC15 BP (£m)	Current assessment of funding required (£m)	Included in Annex 6 baseline?	Note	Q	B	E	G
Renewable	JA312	Dunore Point WTW Renewable Energy	0	7.53	N	Completion of MW solar farm at Dunore Point WTW in 17/18 FY.	0	0	100	0
Total			**9.025**	**12.423**						

Appendix 2 – Energy related capital expenditure YTD

Type of project	Project code	Project title	15/16 expenditure, nominal (£m)	16/17 expenditure, nominal (£m)	17/18 expenditure, nominal (£m)
Renewable	JI040	Recovering energy within the water distribution system	0.003	0.000	0
Renewable	JI041	Hydro power from raw water	0.009	0.00	0.03
Renewable	EP017	Electricity generation from wind power or alternative green energy solution	0.003	1.173	0.018
Renewable	BE017	Energy M&G	0.012	-0.002	-0.002
Cleanwater	JI032	Buildings, water treatment sites - water regulation compliance & EE	0.022	0.028	0.133
Cleanwater	JI032	Water regulation compliance	0.000	0.000	0.000
Cleanwater	JI032	Energy efficiency	0.000	0.000	0.000
Cleanwater	JI069	WPS Pump Efficiency Capital Investment Phase 1	0.432	0.064	0.006
Cleanwater	JI075	WPS Pump Efficiency Capital Investment Phase 2	0.037	0.000	0.006
Cleanwater	JI071	Electrical Sub-meters (water)	0.007	0.000	0.000
Cleanwater	WD083	Time of day pumping	0.059	0.030	0.137
Wastewater	KI514	Buildings, wastewater treatment sites - water reg. compliance & energy efficiency	0.000	0.000	0.000
Wastewater	KI514	Water regulation compliance	0.000	0.000	0.000
Wastewater	KI514	Energy efficiency	0.023	0.061	0.001
Wastewater	KI517	Appraisal of Energy Efficiency at Waste Water Pumping Stations	0.003	0.000	0.000
Wastewater	KI553	Energy efficiency at wastewater pumping stations	0.000	0.000	0.000
Wastewater	KI545	Electrical Sub-meters (wastewater)	0.011	0.000	-0.001
Wastewater	PL005	Energy Efficiency - Process Optimisation	0.176	0.072	0.004
Wastewater	BN048	Energy Efficiency - Process Optimisation	0.000	0.100	0.000
Renewable	JA312	Dunore Point WTW Renewable Energy	0.000	0.000	7.530
Total			**0.982**	**1.54**	**7.862**

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	0.125	0.145	0.270				0.270
2	Water treatment works	£m	3		0.737	0.737				0.737
3	Water distribution mains	£m	3	9.200	-0.019	9.181				9.181
4	Service reservoirs and water towers	£m	3		2.720	2.720				2.720
5	Pumping stations	£m	3		0.687	0.687				0.687
6	Water management and general	£m	3	0.231	10.379	10.610				10.610
7	Sewerage	£m	3				45.960	0.476	46.436	46.436
8	Sea outfalls and headworks	£m	3				0.103	-0.014	0.090	0.090
9	Sewage treatment works	£m	3					8.705	8.705	8.705
10	Sludge treatment works	£m	3					1.408	1.408	1.408
11	Sludge disposal	£m	3				0.000	0.000	0.000	0.000
12	In-line pumping stations	£m	3					6.730	6.730	6.730
13	Terminal pumping stations	£m	3					0.171	0.171	0.171
14	Sewerage management and general	£m	3				3.230	0.781	4.011	4.011
15	Total infrastructure additions (Enhancement)	£m	3	9.557		9.557	49.294		49.294	58 851
16	Total non-infrastructure additions (Enhancement)	£m	3		14.648	14.648		18.258	18.258	32 906
17	Total additions (Enhancement)	£m	3	9.557	14.648	24.205	49.294	18.258	67.552	91.757
B	NIW BASE SERVICE PROVISION									
18	Water resource facilities	£m	3	1.582	0.258	1.840				1.840
19	Water treatment works	£m	3		6.990	6.990				6.990
20	Water distribution mains	£m	3	13.504	1.814	15.318				15 318
21	Service reservoirs and water towers	£m	3		4.188	4.188				4.188
22	Pumping stations	£m	3		2.668	2.668				2.668
23	Water management and general	£m	3	1.524	6.074	7.598				7.598
24	Sewerage	£m	3				9.708	0.139	9.848	9.848
25	Sea outfalls and headworks	£m	3				0.002	0.000	0.002	0.002
26	Sewage treatment works	£m	3					29.293	29.293	29 293
27	Sludge treatment works	£m	3					0.337	0.337	0.337
28	Sludge disposal	£m	3				0.000	0.000	0.000	0.000
29	In-line pumping stations	£m	3					9.053	9.053	9.053
30	Terminal pumping stations	£m	3					1.281	1.281	1.281
31	Sewerage management and general	£m	3				0.750	2.751	3.502	3.502
32	Total infrastructure renewals (Base)	£m	3	16.609		16.609	10.461		10.461	27 070
33	Total non-infrastructure expenditure (Base)	£m	3		21.992	21.992		42.854	42.854	64 846
34	Total expenditure (Base service provision)	£m	3	16.609	21.992	38.602	10.461	42.854	53.314	91 916

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)

				1	2	3	4	5	6		7	8	9	10	11	12	13	15	15		16	17	18	19	20	21	22	23	24		25	26	27
				Water Service										Sewerage Service										Total								
	DESCRIPTION	UNITS	DP	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21
A	DEPRECIATION CHARGE FOR THE YEAR																															
1	HCD as at 31 March of the year	£m	3	80.086	47.905	33.476	38.517	16.635		B3				66.802	83.520	66.627	67.861	35.670		B3				146.888	131.425	100.103	106.378	52.305		B3			
2	HCD on additions (enhancement assets) post 1 April 2014	£m	3						0.113	B3									0.272	B3									0.385	B3			
3	HCD on additions (MNI assets) post 1 April 2014	£m	3						0.712	B3									1.376	B3									2.088	B3			
4	Total depreciation charge for the year	£m	3						0.825	B3									1.648	B3									2.473	B3			
5	Total depreciation charged	£m	3	80.086	47.905	33.476	38.517	16.635	16.839	B3				66.802	83.520	66.627	67.861	35.670	36.141	B3				146.888	131.425	100.103	106.378	52.305	52.980	B3			

				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
				Water Service										Sewerage Service										Total								
	DESCRIPTION	UNITS	DP	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21
B	EXPENDITURE AND PROVISION																															
6	Infrastructure renewals expenditure	£m	3	22.593	22.391	23.055	11.134	11.134	17.015	B2				8.775	7.727	8.502	9.010	9.010	13.235	B2				31.368	30.118	31.557	20.144	20.144	30.250	B2			
7	Infrastructure renewals charges	£m	3	19.902	23.935	22.488	14.410	14.410	14.679	C5				10.859	9.474	9.821	10.876	10.876	11.078	C5				30.761	33.409	32.309	25.286	25.286	25.757	C5			
8	Infrastructure renewals prepayment/ (accrual)	£m	3	12.134	10.590	11.157	7.881	7.881	19.462	C5				-10.312	-12.059	-13.378	-15.244	-15.244	-17.408	C5				1.822	-1.469	-2.221	-7.363	-7.363	2.054	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	13	14	15		16	17	18	19	20	21	22	23	24		25	26	27
				Water Service										Sewerage Service										Total									
				2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21
A	DEPRECIATION CHARGE FOR THE YEAR																																
1	HCD as at 31 March of the year	£m	3	4.007	4.033	4.082	4.146	3.407		B3				0.000	0.000	0.000	0.000	0.000		B3				4.007	4.033	4.082	4.146	3.407		B3			
2	HCD on additions (enhancement assets) post 1 April 2014	£m	3						0.000	B3									0.000	B3									0.000	B3			
3	HCD on additions (MNI assets) post 1 April 2014	£m	3						0.036	B3									0.000	B3									0.036	B3			
4	Total depreciation charge for the year	£m	3						0.036	B3									0.000	B3									0.036	B3			
5	Total depreciation charged	£m	3	4.007	4.033	4.082	4.146	3.407	3.442	B3				0.000	0.000	0.000	0.000	0.000	0.000	B3				4.007	4.033	4.082	4.146	3.407	3.442	B3			

	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	24		25	26	27
				Water Service										Sewerage Service										Total									
				2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	Actual 2018-19	Actual 2019-20	Actual 2020-21
B	EXPENDITURE AND PROVISION																																
6	Infrastructure renewals expenditure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	B2				0.000	0.000	0.000	0.000	0.000	0.000	B2				0.000	0.000	0.000	0.000	0.000	0.00	B2			
7	Infrastructure renewals charges	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	C5				0.000	0.000	0.000	0.000	0.000	0.000	C5				0.000	0.000	0.000	0.000	0.000	0.00	C5			
8	Infrastructure renewals prepayment/ (accrual)	£m	3	1.519	1.519	1.519	1.519	1.519	1.519	C5				0.000	0.000	0.000	0.000	0.000	0.000	C5				1.519	1.519	1.519	1.519	1.519	1.519	C5			

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	13	14	15		16	17	18	19	20	21	22	23	24		25	26	27
				Water Service										Sewerage Service										Total								
	DESCRIPTION	UNITS	DP	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21
A	DEPRECIATION CHARGE FOR THE YEAR																															
1	HCD as at 31 March of the year	£m	3	84.093	51.938	37.558	42.663	20.042		B3				66.802	83.520	66.627	35.670	35.670		B3				150.895	135.458	104.185	110.524	55.712		B3			
2	HCD on additions (enhancement assets) post 1 April 2014	£m	3						0.113	B3									0.272	B3									0.385	B3			
3	HCD on additions (MNI assets) post 1 April 2014	£m	3						0.748	B3									1.376	B3									2.124	B3			
4	Total depreciation charge for the year	£m	3						0.861	B3									1.648	B3									2.509	B3			
5	Total depreciation charged	£m	3	84.093	81.938	37.558	42.663	20.042	20.281	B3				66.802	83.520	66.627	35.670	35.670	36.141	B3				150.895	135.458	104.185	110.524	55.712	56.422	B3			

				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
				Water Service										Sewerage Service										Total								
	DESCRIPTION	UNITS	DP	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	2018-19	2019-20	2020-21	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	CG	Actual 2018-19	Actual 2019-20	Actual 2020-21
B	EXPENDITURE AND PROVISION																															
6	Infrastructure renewals expenditure	£m	3	22.593	22.391	23.055	11.134	11.134	17.015	B2				8.775	7.727	8.502	9.010	9.010	13.235	B2				31.368	30.118	31.557	20.144	20.144	30.250	B2			
7	Infrastructure renewals charges	£m	3	19.902	23.935	22.488	14.410	14.410	14.679	C5				10.859	9.474	9.821	10.876	10.876	11.078	C5				30.761	33.409	32.309	25.286	25.286	25.757	C5			
8	Infrastructure renewals prepayment/ (accrual)	£m	3	13.653	12.109	12.676	9.400	9.400	20.981	C5				-10.321	-12.059	-13.378	-15.244	-15.244	-17.408	C5				3.341	0.050	-0.702	-5.844	-5.844	3.573	C5			

Table 33 – Depreciation Charge by Asset Type & Infrastructure Renewals Charge

Historical Cost Depreciation (HCD) Charge

The depreciation charge for the year has been populated using the same methodology used to populate Table 25. Historical cost depreciation was calculated using the Fixed Asset Register (Real Asset Management). The Fixed Asset Register holds two sets of books (HCA and CCA books) which calculate depreciation using different gross book value (GBV) and gross current replacement cost (GCRC) figures. The HCA books have been used for both Table 25 and Table 33.

The final depreciation report from the HCA book was then analysed to 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.

Assets to be decommissioned or written off resulted in accelerated depreciation in the year. Assets with a NBV of £185,598.39 were decommissioned in 2017/2018 – the corresponding accelerated depreciation is included in Table 33.

There are three main PPP Projects – Alpha, Omega and Kinnegar. When these projects were established each was examined to determine whether the risks and rewards were transferred to the provider or remained with NIW. Findings are as follows:

> *Alpha Project* - for Alpha it was determined that the risks and rewards remained with NIW and therefore the assets were owned by the company and should be capitalised and depreciated. An associated finance lease should also be established with an initial liability equivalent to the value of the assets capitalised.
>
> *Omega and Kinnegar Projects* – it was determined that in both cases the risks and rewards were transferred to the operator and thus the assets would not be capitalised and all charges would be debited to the P&L as incurred. However an element of these charges would be credited from P&L to Balance Sheet to establish a residual interest asset since ultimately the assets would come back into NIW ownership and would have a residual value at this time. These residual assets would not be depreciated during the life of the contracts.

Depreciation for the year in relation to the PPP Alpha Project (which is on balance sheet) was [redacted]7/18 (2016/17: [redacted]s shown separately in the second table for PPP only.

The asset lives used in calculating depreciation are consistent with those that have been used to populate Table 34. The asset lives used to calculate depreciation in the Fixed Asset Register are the same in both the HCA and CCA books.

Table 33 has also been adjusted to include only the appointed business and exclude the unappointed business relating to vehicle maintenance carried out for third parties

During the year, decommissioned assets with a net book value (NBV) of £185,598.39 were included within the current year depreciation charge.

	Water (17/18)	Sewerage (17/18)	Total (17/18)
HC Depreciation in year	£20,120,139.15	£36,116,561.59	£56,236,700.74
Accelerated Depreciation	£161,294.70	£24,303.69	£185,598.39
Total (2017/2018)	£20,281,433.85	£36,140,865.28	£56,422,299.13

	Water (16/17)	Sewerage (16/17)	Total (16/17)
HC Depreciation in year	£19,063,445.57	£35,159,861.53	£54,223,307.10
Accelerated Depreciation	£978,708.52	£509,881.91	£1,488,590.43
Total (2016/2017)	£20,042,154.09	£35,669,743.44	£55,711,897.53

The total depreciation charge for 17/18 (£56,422k) is £710k higher than 16/17 (£55,712k). Normal decommissioning in the course of the business amounted to £186k for the year, compared to £1.5m in 2016/17. Also, 17/18 included a full year's depreciation [redacted] of the Alpha PPP asset; which was [redacted] higher than the previous year.

Infrastructure Renewals accounting

The IRC calculation for 17/18 is based on the final determination arising from PC15. The Regulator determined that the IRC and IRE will be the same for the six year period of PC15. The projected IRE forms part of the PC15 capital expenditure plans.

The difference between the actual out-turn IRE and the IRC is treated as an accrual or prepayment.

2017-2018 IRC

The IRC for 2017-18 based on PC15 can be summarised as follows:

Water - £14.679m
Sewerage - £11.078m
Total - £25.757m

The out-turn IRE for 2017-2018 can be shown as follows:

Water - £17.015m
Sewerage - £13.235m
Total - £30.250m

The accrual at 31 March 2018 can be shown as follows:

	W TOTAL £m	S TOTAL £m	Total TOTAL £m
IRE	17.015	13.235	30.250
IRC	(14.679)	(11.078)	(25.757)
In year (accrual)	2.337	2.157	4.493
c/f prepayment / (accrual)	18.644	(19.565)	(0.921)
Cumulative prepayment / (accrual)	20.981	(17.408)	3.573

At the end of the year to 31 March 2018 a prepayment balance of £3.573m was evident. This balance arose as the in-year prepayment of £4.493m for 2017-18 was added to the cumulative brought forward accrual balance of £0.921m, which existed at 31st March 2017.

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 2018 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 PPP has 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 differs from the IRC in the regulatory accounts.

NORTHERN IRELAND WATER LIMITED ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN TABLE 34 FINANCIAL MEASURES (CURRENT COST ACCOUNTING)
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	13	14	15		16	17	18
				Water Service										Sewerage Service									
				2012 13	2013 14	2014 15	2015 16	2016 17	2017 18	CG	2018 19	2019 20	2020 21	2012 13	2013 14	2014 15	2015 16	2016 17	2017 18	CG	2018 19	2019 20	2020 21
A	ACCOUNTING FIXED ASSET ADDITIONS NON INFRASTRUCTURE ASSET ADDITIONS (ENHANCEMENT) BY ASSET LIFE																						
1	Very Short	£m	3	0.108	0.702	0.135	0.077	0.199	0.032	B3				-0.005	0.473	0.088	0.071	0.156	-0.001	B2			
2	Short	£m	3	2.457	3.136	2.779	1.154	2.954	2.858	B2				3.923	3.506	4.763	4.272	1.908	2.049	B2			
3	Medium	£m	3	2.610	2.425	7.433	2.279	1.536	7.662	B2				10.142	9.775	9.873	4.251	6.604	6.082	B2			
4	Medium long	£m	3	0.000	0.383	0.014	0.000	0.000	-0.003	B2				0.000	0.000	0.010	0.002	0.001	0.012	B2			
5	Long	£m	3	2.640	1.566	4.926	2.715	2.094	3.405	B2				14.217	13.256	10.907	6.455	9.202	9.578	B2			
6	Land	£m	3	0.000	0.000	0.007	0.000	0.009	0.695	B2				0.102	0.050	0.021	0.261	0.340	0.538	B2			
7	Land Disposals	£m	3	-0.111	-0.351	-0.066	-0.164	-0.166	-0.128	B2				-0.160	-0.190	-0.079	-0.251	-0.120	-0.114	B2			
8	Total	£m	3	7.704	7.861	15.229	6.061	6.626	14.520	B2				28.219	26.870	25.583	15.060	18.091	18.144	B2			
B	NON INFRASTRUCTURE ASSET ADDITIONS (BASE SERVICE) BY ASSET LIFE																						
9	Very Short	£m	3	2.119	1.948	0.950	1.705	2.044	1.504	B2				1.916	1.886	2.390	0.811	1.780	1.143	B2			
10	Short	£m	3	3.285	5.839	3.416	4.524	4.585	4.186	B2				4.859	6.151	5.762	4.545	4.560	4.781	B2			
11	Medium	£m	3	6.817	3.874	7.652	10.926	12.066	11.994	B2				24.145	30.514	14.642	22.828	25.713	23.372	B2			
12	Medium long	£m	3	0.000	0.134	0.506	0.380	0.481	0.149	B2				0.000	0.250	0.137	0.092	0.164	0.084	B2			
13	Long	£m	3	3.688	5.029	5.366	5.701	4.368	4.159	B2				10.338	12.185	7.153	14.523	14.031	13.473	B2			
14	Total	£m	3	15.909	16.825	17.891	23.235	23.543	21.992	B2				41.258	50.986	30.084	42.799	46.247	42.854	B2			
C	NON INFRASTRUCTURE ADDITIONS AVERAGE LIFE (YEARS)																						
	Lines 15-19 not used	years	0																				

NORTHERN IRELAND WATER LIMITED ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN TABLE 34 FINANCIAL MEASURES (CURRENT COST ACCOUNTING)
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	13	14	15		16	17	18
				Water Service										Sewerage Service									
				2012 13	2013 14	2014 15	2015 16	2016 17	2017 18	CG	2018 19	2019 20	2020 21	2012 13	2013 14	2014 15	2015 16	2016 17	2017 18	CG	2018 19	2019 20	2020 21
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	n/a				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	n/a				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	n/a				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	n/a				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	n/a				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	n/a				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	n/a				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	n/a				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																				

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 Engineering Procurement, Operations, Asset Management, PPP and Finance and Regulation directorates. This training has been delivered to external consultants where requested each year since 2010/11. Further training will be provided in future to provide refresher training for existing staff.

Methodology NIW Table

Capital expenditure is analysed in 3 separate streams as follows:

a) Capital Works Programme delivered by Engineering Procurement 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 2017/18 against each project, excluding land acquisition, with a full CIDA output.
    - CIDA lands – This reports the accrual in 2017/18 against land acquisition and the associated CIDA output.
b) CWP AIR reporting Model – The model developed in Excel for AIR09 and subsequent years has been adopted for AIR18 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 2017/18.

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

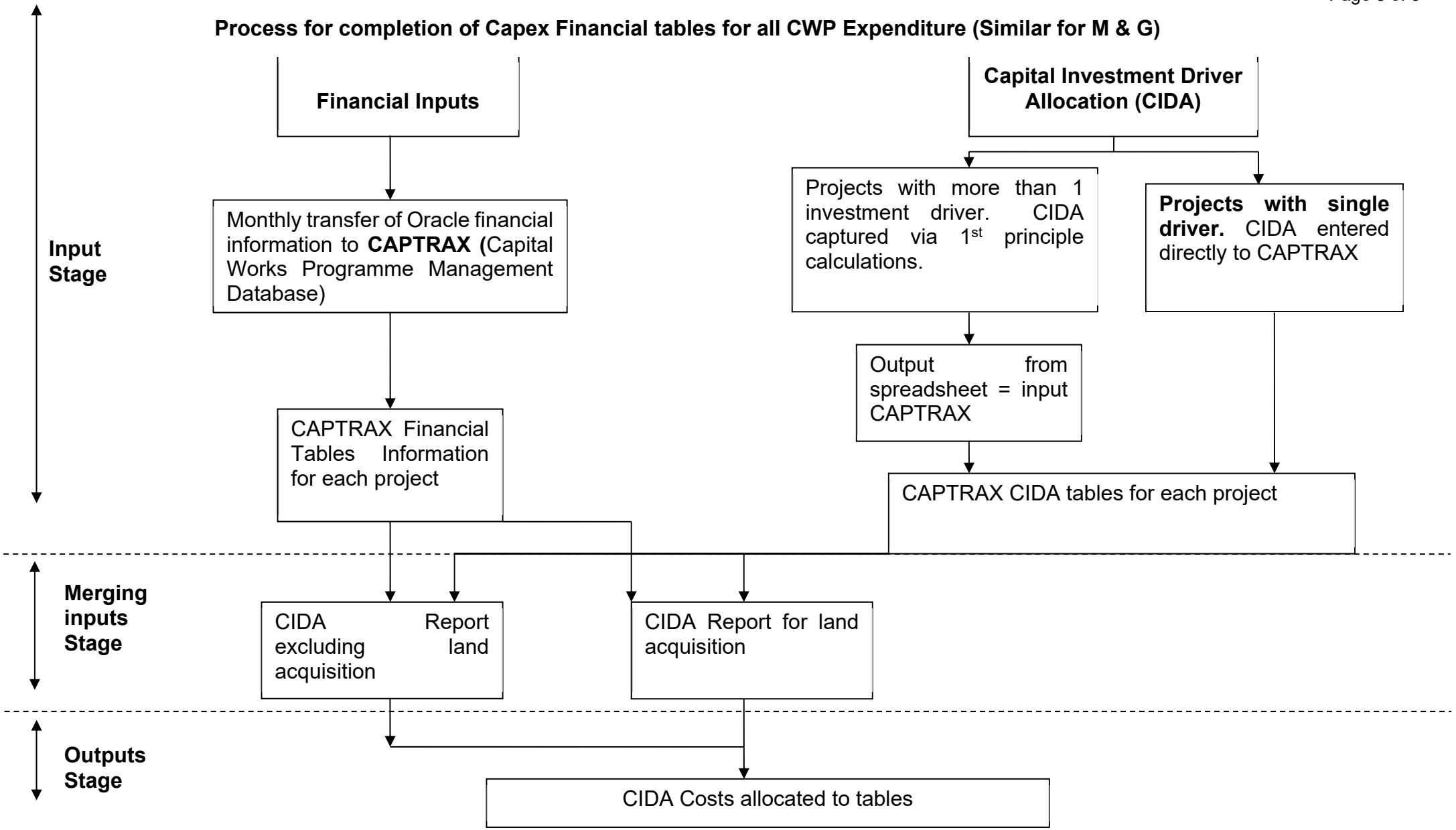
expenditure) the CIDA information has been captured at project level within CPMR Coptrax. This has been used in AIR18 for completion of Table 40. Unfortunately the system needs further refinement to enable reporting information for Tables 32, 34, 36 and 36a accurately as there are a significant number of contracts within each project with combinations of a number of service areas, asset types and financial categories. For reporting in AIR18, 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

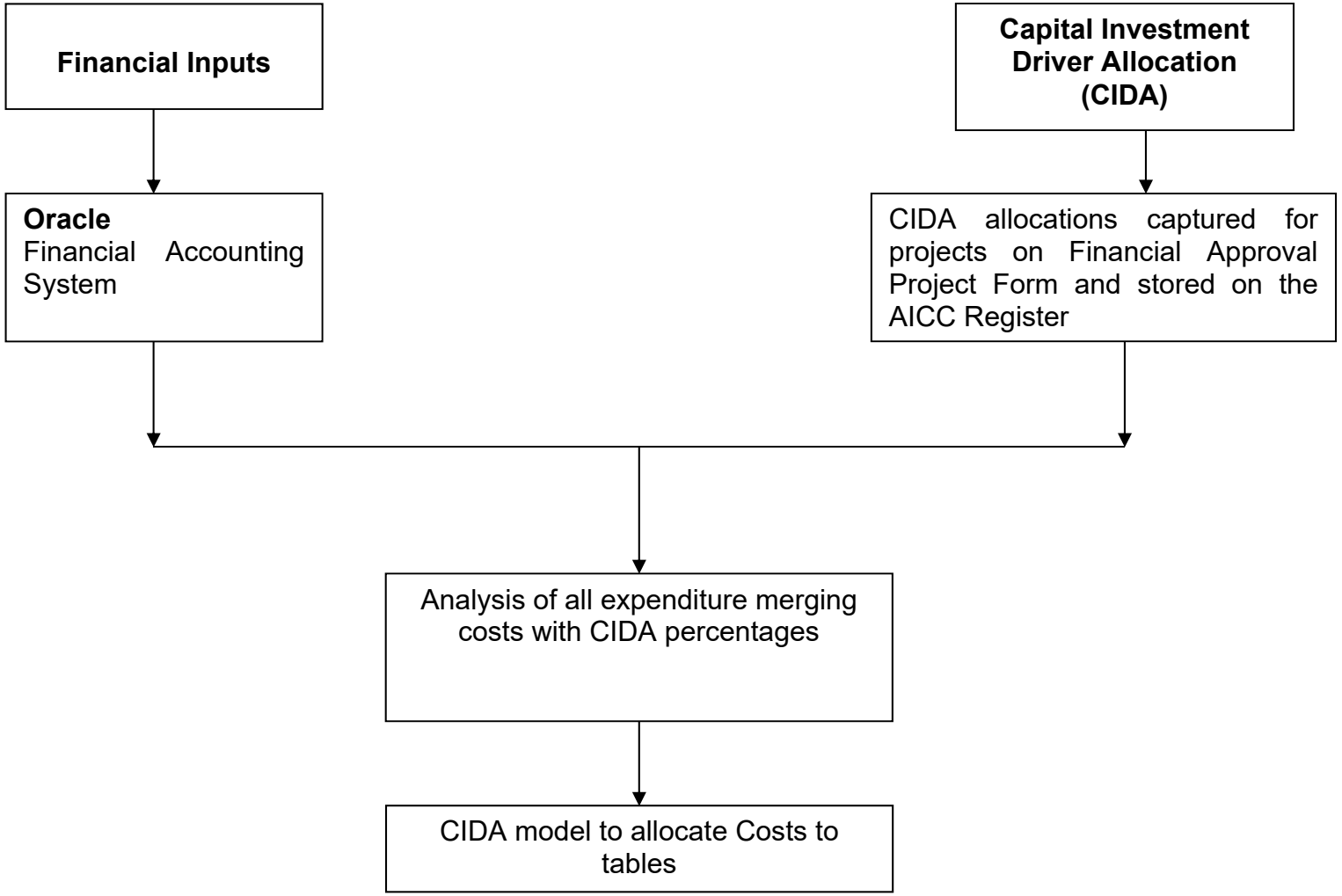
Data used in the population of the table is based on data extracted from the company's core systems and no assumptions are made in the allocation of project expenditure to the lines in the tables for all the expenditure with CIDA directly attributed. The small rounding figure of £24k of CWP expenditure (due to CATPRAX rounding finance to the nearest £k), is 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 AIR18. This change applies to the life for Meters which have been changed to 17 years to align with PC15 Business plan assumptions. Expenditure for meters has been moved from Short life to Medium life for AIR 16 report. No changes have been made to previous years' data in respect of Meter expenditure reporting.

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 AIR18 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. In order 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 NIW have no information on either the QBEG or the Asset Life categories for this project.

NIW 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 2017/18. 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

NI Water has updated the figures in the former years for this line. The reason for the correction was due to incorrect understanding of the definition. In prior years the figures reported were the actual disposal receipts rather than the HCA book value. The HCA book value is determined from the Fixed Asset Register based upon the Asset Mgt 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 18 with zero Net Book Value (NBV) is £80,389,953.08.

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 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
A	**Available PE capital budget in nominal prices**											
1	Public Expenditure capital budget available	£m	3									
B	**Capital budget statement in nominal prices**											
2	Public Expenditure capital budget used	£m	3	0.000	165.540	154 946	140.291	147.099	174.969			
3	Alpha PPP maintenance	£m	3									
4	Residual interest in off-balance sheet PPP	£m	3	0.000	-3.385	-3.469	-3.556	-3.645	-3.736			
5	IFRS infrastructure renewal charge adjustment	£m	3									
6	*Further adjustments.....*	£m	3	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			
6b	Rounding	£m	3	0.000	0.013	-0.006	-0.001	0.000	-0 003			
6c	Decapitalised assets	£m	3	0.000	0.000	0.238	0.005	0.000	0.000			
6d	Project Clear: Aquistion of Alpha PPP	£m	3									
7	Capital grants and contributions	£m	3	0.000	6.586	7.331	7.985	11.550	14.009			
8	Capital grants and contributions transferred to deferred credits	£m	3	0.000	-0.693	-1.025	-0.999	-1.284	-1.452			
9	NI Water gross capital budget	£m	3	0.000	167.566	158 898	143.691	154.337	152.620			

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 PC15 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 2017/18, the PE capital DEL budget available at the start of the financial year was £10.3m short of that assumed within the PC15 Final Determination (PC15 FD). This is set out in the table below and shows that the £10.3m capital DEL is equivalent to a £9.3m drop in gross capital expenditure, once other capital allocations are taken into account.

	Final Determination	Budget	Variance
	2017-18	2017-18	2017-18
	£M	£M	£M
PE Capital DEL Acquisitions	163.0	152.7	(10.3)
Alpha PPP maintenance / capex	[redacted]	[redacted]	[redacted]
Residual interest in off balance sheet PPP	[redacted]	[redacted]	[redacted]
IFRS infrastructure renewal charge adjustment	1.1	1.1	-
Capital grants and contributions	6.7	8.1	+1.4
Capital grants and contributions transferred to deferred credits	(0.8)	(1.1)	(0.3)
NI Water gross capital budget	[redacted]	[redacted]	[redacted]

In terms of movements in funding within the current year, 'Capital DEL Acquisitions' was increased by [redacted] for Project Clear. NI Water's gross capital budget was also increased by [redacted] due to increased capital disposals, largely in connection with the sale of Antrim depot.

The PE capital DEL funding at the end of the 2017/18 year is therefore as follows:

	2017/18
	£m
PE Capital DEL budget at start of year	152.720
Allocation for Project Clear	[redacted]
Additional spending power due to increased capital disposals	0.380
PE Capital DEL budget at end of year	[redacted]

Taking into account these movements, gross capital expenditure available to NI Water was £152.6m, £11.9m lower than assumed in the PC15 FD.

	Final Determination	Final Outturn	Variance
	2017-18	2017-18	2017-18
	£M	£M	£M
PE Capital DEL Acquisitions	[redacted]	[redacted]	[redacted]
Alpha PPP maintenance / capex	[redacted]	[redacted]	[redacted]
Residual interest in off balance sheet PPP	[redacted]	[redacted]	[redacted]
IFRS infrastructure renewal charge adjustment	1.1	1.2	0.1
Project Clear	-	[redacted]	(29.2)
Capital grants and contributions	6.7	14.0	7.3
Capital grants and contributions transferred to deferred credits	(0.8)	(1.5)	(0.7)
NI Water gross capital budget	[redacted]	[redacted]	[redacted]

Other changes during the year

Due to funding uncertainty at the start of 2017/18 and the upcoming PC15 Mid Term Review, adjusted outputs were not formally agreed with Utility Regulator and other key stakeholders.

NI Water shared draft adjusted outputs with the Utility Regulator on 14 September 2017 based on DfI indicative allocations – these outputs formed the basis of 2017/18 annual targets reflected in Q1 update to ORG. Outputs were adjusted further at December Monitoring Round (Oct/Nov 2017) when our 2017/18 budget allocation was confirmed and account was taken of Project Alpha acquisition and Dunore Solar Farm. This formed the basis of further quarterly updates to ORG.

In the PC15 Mid-Term Review (Feb 2018), the Utility Regulator stated:

- Based on reasonable forward planning scenarios for capital investment, NI Water should have sufficient capital budget to deliver all of its defined PC15 outputs within the PC15 6 year period. But it is unlikely to allow investment in additional necessary quality improvements, which may need to be deferred to the PC21 period. The reduction in expenditure in line with inflation is being passed on to consumers through RPI+K price cap regulation and the PC15 outputs are being delivered.
- Our overall conclusion is that the PC15 Final Determination targets remain valid and should be used for planning and performance reporting for the rest of the PC15

period….We expect NI Water to continue to focus on the delivery of these priority requirements, notwithstanding the variations to annual budgets which may occur.

As a result, adjusted outputs were not formally agreed with the Utility Regulator for 2017/18 and we will endeavour to deliver PC15 FD targets within the price control period.

NI Water continues to make the case for certainty of funding and a medium term financial settlement to enable price limits and service targets/outputs set in the PC15 Final Determination to prevail. If funding levels drop below the minimum required to deliver all of the defined PC15 outputs within the PC15 6 year period, a further process will be undertaken to agree changes to PC15 Final Determination targets.

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 ([redacted] & £0.380m), there was an underspend on available 'Capital DEL Acquisitions' of £0.011m (circa 0.01%).

Note the PE capital used has been agreed to our 2017/18 'provisional outturn' return submitted to DfI on the 27th April 2018. The 2017/18 '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, the treatment of Alpha expenditure for Public Expenditure purposes has changed.

Up to the date of purchase (20st November 2017), we have adopted the previous method of accounting which was based on forecast expenditure levels from the original financial model. Post-acquisition, the actual expenditure incurred by Alpha scores for PE purposes.

The amount included in line 3 has been calculated as follows:

	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Total
Alpha Capital 2017-18 (NIW Group)													
Old Method	[redacted]												
Adjustment (20/11/17)								[redacted]					
Actual Capital Expenditure	[redacted]												
Adjustment (20/11/17)	[redacted]												
Transitional Capital									[redacted]				
Total	[redacted]												

- **Pre-acquisition (£0.923m)**
  £1,756k full year forecast per FC financial model less £833k for post-acquisition period.

  Following an accounting treatment change implemented in 2013/14, the capital maintenance element of the unitary charge is now allocated straight line across the life of the contract. This correctly reflects that the unitary charge does not fluctuate with changes in the capital maintenance spend in any year. This change now means that AIR17 Table 42 line 14 now represents an accrued amount of capital maintenance and no longer represents actual capital maintenance. The difference between the two figures is held in NL account 1521 – PPP deferred capital maintenance.

- **Post-acquisition (£2,252.8m)**
  £3,088.9m full year actual expenditure by Alpha less £1,257.4m for pre-acquisition period
  £421k spend by NI Water on transitional capital expenditure for Alpha – largely ICT, networks, telecoms etc.

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.

For Regulatory accounting purposes, Omega & Kinnegar assets are held 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.

	2017/18
Kinnegar Residual Interest	[redacted]
Omega Residual Interest	[redacted]
Total	[redacted]

Entries to this line reconcile directly to AIR17 Table 42 line 15.

Line 5 – IFRS infrastructure renewals charge adjustment

This line represents a transfer of expenditure which is treated differently under IFRS and our current Regulatory Accounting Guidelines, RAG's.

DfI have adopted IFRS and require certain types of repair, which we currently classify as capital expenditure under the RAG's, to be reported as operational expenditure under IFRS and therefore under PE reporting.

The table summarises expenditure currently decapitalised under IFRS.

	Actual 2017-18 £
IFRS Adjustment on De-capitalised Repairs	-
LN098102 - Leakage Detection SE	183,202
LN099102 - Leakage Detection NW	122,135
LN101102 - Repair of Defects identified as a result of leakage detection activities	393,314
LN110109 - High Volume DMA's SE (Consultants' fees)	111,620
LN110110 - High Volume DMA's NW (Consultants' fees)	109,498
LN136102 - Active Leakage Control SE	160,957
LN137102 - Active Leakage Control NW	107,305
TOTAL	**1,188,031**

Line 6 – Further adjustments

Represents additional funding required for Project Clear. DoF/DfI provided £21.880m additional funding with NI Water funding the remainder from the initial capital allocation.

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 AIR17 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.

We have also received and deferred a number of capital grants in 2017/18. These are being released over a period of 60 years. As noted above, a different approach has been adopted in PE for these grants.

Entries to this line are consistent with AIR17 Table 37 line 18.

Line 9 – NI Water gross capital expenditure

Represents gross capital expenditure as per AIR17 Table 36.

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 2012-13	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**Water service**																			
1	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	15.909	16.825	B3	17 891	B3	23.235	B2	23 543	B3	21.992	B3						
2	Infrastructure renewals expenditure (gross)	£m	3	22.593	22.391	B3	23 055	B3	11.133	B2	19.497	B3	16.687	B3						
3	Capital expenditure - quality enhancement programme	£m	3	9.972	14.396	B3	21 913	B3	14.646	B2	14.177	B3	7.347	B3						
4	Capital expenditure - customer service	£m	3	3.126	3.262	B3	2 616	B3	1.194	B2	3.175	B3	11.304	B3						
5	Capital expenditure - supply demand balance	£m	3	17.782	15.049	B3	21.478	B3	13.791	B2	7 393	B3	5.554	B3						
5a	Capex - new development	£m	3	8.323	4.777	B3	4 628	B3	5.258	B2	4.721	B3	3.045	B3						
5b	Capex - growth	£m	3	0.244	0.309	B3	0 634	B3	0.051	B3	0 016	B3	-0.012	B3						
5c	Capex - security of supply	£m	3	9.214	9.842	B3	16 099	B3	8.436	B2	2 625	B3	2.486	B3						
5d	Capex - free meters	£m	3	0.000	0.121	B3	0.117	B3	0.046	B3	0 031	B3	0.034	B3						
6	Gross capital expenditure - water service	£m	3	69.382	71.923	B3	86 953	B3	63.999	B2	67.786	B3	62.885	B3						
B	**Sewerage Service**																			
7	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	41.258	50.986	B3	30 084	B3	42.799	B2	46 247	B3	42.854	B3						
8	Infrastructure renewals expenditure (gross)	£m	3	8.775	7.727	B3	8 502	B3	9.010	B2	10.434	B3	10.475	B3						
9	Capital expenditure - quality enhancement programme	£m	3	21.626	21.238	B3	15.179	B3	13.851	B2	13 559	B3	16.305	B3						
10	Capital expenditure - customer service	£m	3	2.899	3.955	B3	4.137	B3	4.406	B2	5 359	B3	7.518	B3						
11	Capital expenditure - supply demand balance	£m	3	18.318	11.736	B3	14 043	B3	9.626	B2	10 951	B3	12.584	B3						
11a	Capex - new development	£m	3	17.871	11.579	B3	14 013	B3	9.626	B2	10 951	B3	12.578	B3						
11b	Capex - sewage treatment	£m	3	0.447	0.158	B3	0 030	B3	0.000	B3	0 000	B3	0.007	B3						
12	Gross capital expenditure - sewerage service	£m	3	92.876	95.643	B3	71 945	B3	79.692	B2	86 551	B3	89.735	B3						
C	**Gross capital expenditure total**																			
13	Gross capital expenditure total	£m	3	162.258	167.566	B3	158 898	B3	143.691	B2	154 337	B3	152.620	B3						
D	**Adopted assets, nil cost assets**	£m	3																	
14	Water service assets adopted at nil cost	£m	3	0.000	0.000	B3	0 000	B3	0.000	B3	0 000	B3	0.000	B3						
15	Water service assets adopted in return for an payment	£m	3	0.000	0.000	B3	0 000	B3	0.000	B3	0 000	B3	0.000	B3						
16	Sewerage service asset adopted at nil cost	£m	3	48.233	59.566	B3	48.406	B3	32.724	B2	32 071	B3	31.145	B3						
17	Sewerage service assets adopted in return for a payment.	£m	3	0.000	0.000	B3	0 000	B3	0.000	B3	0 000	B3	0.000	B3						
18	Total adopted assets and nil cost assets	£m	3	48.233	59.566	B3	48.406	B3	32.724	B3	32 071	B3	31.145	B3						
E	**Infrastructure renewals expenditure (net)**																			
19	Water service infrastructure renewals expenditure (net) (NIW only)	£m	3	22.514	22.277	B3	23 022	A2	10.930	B2	19.430	A2	16.609	A2						
20	Sewerage service infrastructure renewals expenditure (net) (NIW only)	£m	3	8.609	7.632	B3	8.438	A2	9.010	B2	10.434	A2	10.461	A2						
21	Total infrastructure renewals expenditure (net) (NIW only)	£m	3	31.123	29.909	B3	31.460	A2	19.941	B2	29 864	A2	27.070	A2						
F	**Total asset additions**																			
22	Water service total asset additions	£m	3	46.788	49.532	B3	63 898	B3	52.866	B2	48 289	B3	46.197	B3						
23	Sewerage service total asset additions	£m	3	132.334	147.482	B3	111 849	B3	103.406	B2	108.188	B3	110.405	B3						
24	Total asset additions	£m	3	179.122	197.014	B3	175.747	B3	156.272	B2	156.477	B3	156.603	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

	DESCRIPTION	UNITS	DP	1	2	3	4	5	6	7	8	9	10	11	12	13	14
				PC15 OUTTURN (£M)							PC15 FINAL DETERMINATION (£M)						
				REPORTING YEAR 2015-16	REPORTING YEAR 2016-17	REPORTING YEAR 2017-18	REPORTING YEAR 2018-19	REPORTING YEAR 2019-20	REPORTING YEAR 2020-21	TOTAL TO DATE PC15	REPORTING YEAR 2015-16	REPORTING YEAR 2016-17	REPORTING YEAR 2017-18	REPORTING YEAR 2018-19	REPORTING YEAR 2019-20	REPORTING YEAR 2020-21	TOTAL TO DATE PC15
A	**Water service**																
1	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	23.235	23.543	21.992				68.771	22.576	23.060	23.673				69.309
2	Infrastructure renewals expenditure (gross)	£m	3	11.133	19.497	16.687				47.318	14.012	14.313	14.693				43.018
3	Capital expenditure - quality enhancement programme	£m	3	14.646	14.177	7.347				36.170	13.810	14.106	19.365				47.282
4	Capital expenditure - customer service	£m	3	1.194	3.175	11.304				15.673	4.036	4.123	3.707				11.866
5	Capital expenditure - supply demand balance	£m	3	13.791	7.393	5.554				26.738	14.109	14.411	15.309				43.830
6	Gross capital expenditure - water service	£m	3	63.999	67.786	62.885				194.670	68.544	70.013	76.748				215.305
B	**Sewerage Service**																
7	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	42.799	46.247	42.854				131.900	36.143	36.918	37.899				110.960
8	Infrastructure renewals expenditure (gross)	£m	3	9.010	10.434	10.475				29.919	10.575	10.802	11.089				32.466
9	Capital expenditure - quality enhancement programme	£m	3	13.851	13.559	16.305				43.715	20.380	20.817	14.489				55.686
10	Capital expenditure - customer service	£m	3	4.406	5.359	7.518				17.283	8.802	8.991	10.080				27.873
11	Capital expenditure - supply demand balance	£m	3	9.626	10.951	12.584				33.161	8.016	8.188	8.474				24.678
12	Gross capital expenditure - sewerage service	£m	3	79.692	86.551	89.735				255.978	83.917	85.715	82.031				251.663
C	**Gross capital expenditure total**																
13	Gross capital expenditure total	£m	3	143.691	154.337	152.620				450.648	152.461	155.728	158.779				466.968
D	**CAPITAL CONTRIBUTIONS NET OF DEFERRED CREDITS**																
14	Capital contributions for new connections	£m	3	7.782	11.483	13.917				33.182	4.174	4.263	4.431				12.868
15	Other capital contributions	£m	3	0.203	0.067	0.092				0.362	1.226	1.253	1.300				3.779
16	Total capital contributions net of deferred credits	£m	3	7.985	11.550	14.009				33.544	5.400	5.516	5.731				16.647
E	**TOTAL CAPITAL EXPENDITURE (NET)**																
17	Total capital expenditure (net)	£m	3	135.706	142.787	138.611				417.104	147.061	150.212	153.048				450.321

	DESCRIPTION	UNITS	DP	15	16	17	18	19	20	21	22	23	24	25	26	27	28
				PC15 VARIANCE FROM FD (£M)							PC15 VARIANCE FROM FD (%)						
				REPORTING YEAR 2015-16	REPORTING YEAR 2016-17	REPORTING YEAR 2017-18	REPORTING YEAR 2018-19	REPORTING YEAR 2019-20	REPORTING YEAR 2020-21	TOTAL TO DATE PC15	REPORTING YEAR 2015-16	REPORTING YEAR 2016-17	REPORTING YEAR 2017-18	REPORTING YEAR 2018-19	REPORTING YEAR 2019-20	REPORTING YEAR 2020-21	TOTAL TO DATE PC15
A	**Water service**																
1	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	-0.659	-0.483	1.680				0.539	-2.9	-2.1	7.1				0.8
2	Infrastructure renewals expenditure (gross)	£m	3	2.879	-5.184	-1.994				-4.300	20.5	-36.2	-13.6				-10.0
3	Capital expenditure - quality enhancement programme	£m	3	-0.835	-0.071	12.018				11.112	-6.0	-0.5	62.1				23.5
4	Capital expenditure - customer service	£m	3	2.842	0.947	-7.597				-3.808	70.4	23.0	-204.9				-32.1
5	Capital expenditure - supply demand balance	£m	3	0.318	7.018	9.755				17.092	2.3	48.7	63.7				39.0
6	Gross capital expenditure - water service	£m	3	4.545	2.227	13.863				20.635	6.6	3.2	18.1				9.6
B	**Sewerage Service**																
7	Non-infrastructure maintenance (gross of grants and contributions)	£m	3	-6.656	-9.329	-4.955				-20.940	-18.4	-25.3	-13.1				-18.9
8	Infrastructure renewals expenditure (gross)	£m	3	1.565	0.368	0.614				2.547	14.8	3.4	5.5				7.8
9	Capital expenditure - quality enhancement programme	£m	3	6.529	7.258	-1.815				11.971	32.0	34.9	-12.5				21.5
10	Capital expenditure - customer service	£m	3	4.396	3.632	2.561				10.590	49.9	40.4	25.4				38.0
11	Capital expenditure - supply demand balance	£m	3	-1.610	-2.764	-4.110				-8.483	-20.1	-33.8	-48.5				-34.4
12	Gross capital expenditure - sewerage service	£m	3	4.225	-0.836	-7.704				-4.315	5.0	-1.0	-9.4				-1.7
C	**Gross capital expenditure total**																
13	Gross capital expenditure total	£m	3	8.770	1.391	6.159				16.320	5.8	0.9	3.9				3.5
D	**CAPITAL CONTRIBUTIONS NET OF DEFERRED CREDITS**																
14	Capital contributions for new connections	£m	3	-3.608	-7.220	-9.486				-20.314	-86.4	-169.3	-214.1				-157.9
15	Other capital contributions	£m	3	1.023	1.186	1.208				3.417	83.4	94.7	92.9				90.4
16	Total capital contributions net of deferred credits	£m	3	-2.585	-6.034	-8.278				-16.897	-47.9	-109.4	-144.4				-101.5
E	**TOTAL CAPITAL EXPENDITURE (NET)**																
17	Total capital expenditure (net)	£m	3	11.355	7.425	14.437				33.217	7.7	4.9	9.4				7.4

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 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
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			
2	Infrastructure renewals grants and contributions.	£m	3	0.079	0.114	0 033	0.203	0.067	0.078			
3	Total maintenance grants and contributions	£m	3	0.079	0.114	0 033	0 203	0.067	0.078			
B	**Water Service - Enhancement grants and contributions**											
4	Infrastructure charge receipts - new connections	£m	3	1.127	1.272	1.426	1 800	2.284	2.561			
5	Enhancement requisitions, grants and contributions	£m	3	2.031	2.054	2 387	2 553	4.038	3.339			
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			
7	Total enhancement capital grants and contributions	£m	3	3.158	3.326	3 813	4 353	6.322	5.900			
C	**Water Service - Deferred credits**											
8	Capital grants and contributions transferred to deferred credits	£m	3	0 500	0.382	0 666	0 545	0.685	0.768			
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			
10	Infrastructure renewals grants and contributions.	£m	3	0.166	0.095	0 064	0.000	0.000	0.014			
11	Total maintenance grants and contributions	£m	3	0.166	0.095	0 064	0.000	0.000	0.014			
E	**Sewerage Service - Enhancement grants and contributions**											
12	Infrastructure charge receipts - new connections	£m	3	0.911	1.036	1.195	1.515	1.997	2.280			
13	Enhancement requisitions, grants and contributions	£m	3	1.443	2.015	2 226	1.914	3.164	5.737			
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			
15	Total enhancement capital grants and contributions	£m	3	2.354	3.051	3.421	3.429	5.161	8.017			
F	**Sewerage Service - Deferred credits**											
16	Capital grants and contributions transferred to deferred credits	£m	3	0.404	0.311	0 359	0.454	0.599	0.684			
G	**Totals for the Water and Sewerage Services**											
17	Total enhancement capital grants and contributions	£m	3	5.757	6.586	7 331	7 985	11.550	14.009			
18	Total capital grants and contributions transferred to deferred credits	£m	3	0 904	0.693	1 025	0.999	1.284	1.452			

Table 37 – Capital Investment - Capital Grants and Contributions

Line 1 – Water service MNI – grants and contributions

Nil for 2017-18.

Line 2 – Water service maintenance grants and contributions

This line shows £0.078m and represents contributions from developers towards the cost of watermains diversions.

Line 4 – Water service infrastructure charge receipts - new connections

This line shows £2.561m 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	£ 2.927m
Water requisitions	£ 0.209m
Grants	£ 0.203m
Total Line 5	**£ 3.339m**

Line 6 – Water service other categories of capital grants and contributions

Nil for 2017-18.

Line 8 – Water service deferred credits

This line shows £0.768m and represents:

(i) 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 £2.561m x 30% = £0.768m

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 2017-18.

Line 10 – Sewerage service - maintenance grants and contributions

This line shows £0.014m and represents contributions from developers towards the cost of realignment of sewers.

Line 12 – Sewerage service - Infrastructure charge receipts - new connections

This line shows £2.280m 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	£1.830m
Sewerage requisitions	£2.000m
Sewers for adoption –application fees	£0.938m
Grants	£0.969m
Total Line 13	**£5.737m**

Line 14 – Sewerage service - other categories of capital grants and contributions

Nil for 2017-18.

Line 16 – Sewerage service deferred credits

This line shows £0.684m 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 £2.280m x 30% = £0.684m

The 30% used in this calculation is based on an estimate of the future capital expenditure that relates to non-infrastructure growth.

Comparison of 2017-18 to PC15*

The following table shows a comparison of the actual contributions for 2017-18 compared to PC15.

	2017-18	**2017-18**	**2017-18**	**2017-18**
	Actual	**PC15**	**Variance**	**Variance**
	£m	**£m**	**£m**	**%**
Water				
Infrastructure – base	0.1	0.0	0.1	100.0%
Infrastructure charges - gross	2.6	1.5	1.1	73.3%
Connections	2.9	2.3	0.6	26.1%
Requisitions	0.2	0.1	0.1	100.0%
Grants	0.2	0.0	0.2	200.0%
Total	**6.0**	**3.9**	**2.1**	**53.85%**
Included in the gross Infrastructure charges above the non infrastructure element - 30%	0.8	0.5	0.3	60.0%
Sewerage				
Infrastructure – base	0.0	0.0	0.0	N/A
Infrastructure charges – gross	2.3	1.2	1.1	91.7%
Connections	1.8	1.0	0.8	80.0%
Requisitions	2.0	0.1	1.9	1900.0%
Sewers for adoption	0.9	0.5	0.4	80.0%
Grants	1.0	0.0	1.0	1000.0%
Total	**8.0**	**2.8**	**5.2**	**185.7%**
Included in the gross Infrastructure charges above the non infrastructure element - 30%	0.7	0.3	0.4	133.3%
Total contributions	**14.0**	**6.7**	**7.3**	**109.0%**
Which includes: *non-infrastructure contributions*	**1.5**	**0.8**	**0.7**	**87.5%**

**This table is rounded to one decimal place to reflect the presentation of these figures in the PC15 submission.*

Note: no base infrastructure contributions or new grants were assumed in PC15.

The level of activity around developer contributions is very difficult to project.

The Developers Services Team has made the following observations in regards to the current status of the new development market.

The development market has been relatively depressed over the past eight years with few developments brought to completion since 2009. However the development sector is now showing signs of strengthening with NIW noting an increase of approximately 30% in the activity in the sector over the last two years which is consistent with a recent NHBC UK Report. However the trend shows a smaller average number of units being constructed per development which will impact on all the associated developer contributions.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 38 FINANCIAL MEASURES

CAPITAL INVESTMENT - ADDITIONAL OPEX FROM CAPEX

	DESCRIPTION	UNITS	DP	1 2012-13	2 2013-14	3 2014-15	4 2015-16	5 2016-17	6 2017-18	7 2018-19	8 2019-20	9 2020-21
A	OPEX from CAPEX											
1	Additional OPEX arising from Water Service projects	£m	3		0 215	0.004	0.027	0.026	0.022			
2	Additional OPEX arising from Sewerage Service projects	£m	3		1.483	0.403	0.003	-0.021	0.025			
3	Total additional OPEX	£m	3		1 698	0.407	0.030	0.005	0.047			

Table 38 - Capital investment - additional opex from capex

A list of sites with CAR ID's is obtained and the Opex costs for 2017/18 are calculated for these sites through various reports.

The Opex from Capex costs have been calculated by taking the difference between the total 2017/18 costs and the 2016/17 costs.

Line 1 Additional OPEX arising from water service projects

The total of water pumping stations and water treatment plants has been used to populate Line 1 in Table 38 which is £0.022M.

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 which is a reduction of £0.025M.

Line 3 - Total additional OPEX

The total figure is £0.046M.

T A WAT MT -A A MAT T

A A MAT T -TA 4 A TA V TM
A TA V TM TM T - M
A A MAT T 2 7-

SOR	CIM_Sub	I_ oject_ D	I_ oject_Name	I_C_ e od	I_ AREN _ oject_ D	I_SUBS I U E_ o ect_ D	I_ _Asset_Cat	I_ C 0_ og	I_Reg_S gno
A			T a a ex e e e						
1	2017_18 Q	KS887	Ba lycranbeg WWTW	02	KS111		09	16	NIEA
2	2017_18 Q	KR388	Ba lywal er WwTW Interim Solution	01	KS113		09	15	NIEA
3	2017_18 Q	KS927	Whitechurch Road Ballywa ter Sewage Scheme	00	KS113		07	2	DRD
	2017_18 Q	KS939	Central Promenade, Newcast e CSO Upgrade (Pattons Bridge	03	KS8 8		07	12	NIEA
5	2017_18 Q	JA26	Crosskennan SR, Antrim, Water Pumping Station.	00			05	06	DWI
6	2017_18 Q	JA271	Ki lylane WTW	02			06	01	DWI
7	2017_18 Q	JA289	Lylehi l WPS Templepatr ck Si e Security Improvements	00			05	01	DRD
8	2017_18 Q	JA290	Ki lylane Duno e East Phase 1	00			03	08	DRD
9	2017_18 Q	JA300	A31 Magherafe t By-Pass, Wa ermain Diversions	00			03	23	DRD
10	2017_18 Q	JA306	Carr ckfergus Road, Larne, Water Quality Schemes.	00			03	08	
11	2017_18 Q	JA308	A6 Cas ledawson to Randalstown	00			03	23	
12	2017_18 Q	JA310	WI M Phase 2 Dunore East WP	06			03	08	
13	2017_18 Q	JA311	WI M Phase 2 Dunore Point WP	06			03	08	
1	2017_18 Q	JA312	Dunore Point WTW Renewable Energy	06			06	20	
15	2017_18 Q	JA313	Antrim North WI M 2.1 Work Package	06			03	08	
16	2017_18 Q	JA31	Antrim South WIIM 2.1 Work Package	06			03	08	
17	2017_18 Q	JA315	Belraugh WPS	06			05	01	
18	2017_18 Q	JA319	Dor s and Wtw treatabil ty recommended improvements.	06			02	0	
19	2017_18 Q	JA321	Donegore SR Rehab itation	06			0	07	
20	2017_18 Q	JB671	Glenlough Pumping Sta ion & Pumping Main	01			03	01	DWI
21	2017_18 Q	JB692	Rathlin Island SR rat onal sation	00			03	06	DRD
22	2017_18 Q	JB693	Car and to Cookstown Stra eg c Trunk Main	0			03	05	DRD
23	2017_18 Q	JB69	Tully Rehab Work Packages.	03			03	08	DRD
2	2017_18 Q	JB695	Buckna WPS Upgrade - Ballymena F ow Optimisat on	03			05	01	DRD
25	2017_18 Q	JB70	Desertcreat Road/ Lindsayv lle Road, Cooks own, Rep acemer	00			03	08	DWI
26	2017_18 Q	JB706	A26 Dualling: Gla ryford o A (Drones Road) Junc ion - Wate	00			03	23	DRD
27	2017_18 Q	JB709	Lough Fea CWB Capac ty Increase	06			0	06	DWI
28	2017_18 Q	JB713	Replacement Watermains 201 /15 - Reactive, Bund e 1	03			03	08	DWI
29	2017_18 Q	JB717	Cra gyhi l Bungalows, Larne, Lead Supply Pipe Replacement F	00			03	23	
30	2017_18 Q	JB723	Moyola WTW to Mullaghaboy SR Trunk Main Rep acement	06			03	23	
31	2017_18 Q	JB72	Ki lylane WTW o Crosshi l SR Trunk Main Replacement (part)	06			03	23	
32	2017_18 Q	JB725	WI M Phase 2 Lough Fea WP	06			03	08	
33	2017_18 Q	JB726	WI M Phase 2 Moyola Magherafe t WP	06			03	08	
3	2017_18 Q	JB727	WI M Phase 2 Altnahinch Bushmi ls WP	06			03	08	
35	2017_18 Q	JB729	Bonneytober SR Rehab l tat on	06			0	07	
36	2017_18 Q	JB732	Ki lylane o Crosshi l SR TM Rep acement Stage , including 1	06			03	23	
37	2017_18 Q	JB733	INTERREG VA co-operating across borders for Biodiversity(C/	06			01	03	
38	2017_18 Q	JB735	Central Zone Res lience	06			01	23	
39	2017_18 Q	JC385	Monac ogh SR Capacity Extens on	06			0	06	DWI
0	2017_18 Q	JC386	Cra gpark SR Capac ty Ex ension	06			0	06	DWI
1	2017_18 Q	JC387	Lagavara SR Capacity Extens on	06			0	06	DWI
2	2017_18 Q	JC391	Marine Apartments, Ba lycast e, W/main ext.	00			03	23	DRD
3	2017_18 Q	JC397	Kilraugh s Road Ballymoney Water Main Replacement	03			03	23	DRD
	2017_18 Q	JC399	WI M Phase 2 Ba linrees Limavady WP	06			03	08	
5	2017_18 Q	JC 00	WI M Phase 2 Altnahinch Bushmi ls 2 WP	06			03	08	
6	2017_18 Q	JC 01	Royal Portrush - Open 2019 Watermains	06			03	23	
7	2017_18 Q	JD3 3	Ba lybo len Road Ahogh ll - Wa ermain Extens on					08	
8	2017_18 Q	JF007	Seagahan Zone Watermain Improvements	00			03	08	
9	2017_18 Q	JF606	WI M Phase 2 Clay Lake Keady WP	06			03	08	
50	2017_18 Q	JF607	Dor s and Impounding Reservior	06			02	03	
51	2017_18 Q	JF608	Cra gavon W IM 2.1 Work Package	06			03	08	
52	2017_18 Q	JF610	Southern Zone Resi ience	06			01	23	
53	2017_18 Q	JG035	Ba lydougan to Newry Main Link Reinforcement	02			03	05	DWI
5	2017_18 Q	JG036	Castor Bay to Dungannon Strategic Trunk Mains	01			03	05	DWI
55	2017_18 Q	JG079	Legahory Cra gavon, Replacement Watermains	00			03	08	DWI
56	2017_18 Q	JG080	Cranny Lane, Por adown Wate main Ext	00			03	23	DRD
57	2017_18 Q	JG082	Derryo a Br dge Road, Craigavon, Replacement Watermain	00			03	23	DRD
58	2017_18 Q	JG08	Seagoe Refurbishment	06			15	20	
59	2017_18 Q	JG085	M l ennium Way, Lurgan (New Road Construction)	00			03	23	
60	2017_18 Q	JG087	Castor Bay WTW to Ballydougan SR Upgrade	00			03	05	DWI
61	2017_18 Q	J 003	Water Mains Rehab l tat on, New and Rep acement incl FTS	00			03	08	DWI
62	2017_18 Q	JF592	Granvi le Dungannon Invest NI Watermain Extens on	00	JI003		03	23	DRD
63	2017_18 Q	JR	Newtownabbey Zone Watermain Improvements Phase 3	00	JI003		03	08	UR
6	2017_18 Q	J 005	Base Maintenance (Water)	00			02	01	UR
65	2017_18 Q	JF581	Clay Lake - Remed al Work	00	JI005		02	01	UR
66	2017_18 Q	J 020	Assessment of requirements at WTWs to opera e effectively in	00	JI005		02	01	DRD
67	2017_18 Q	JN 82	Ki lymore Road, Gortin Pumping Station	00	JI005		03	01	
68	2017_18 Q	JR367	Service Reservoir Enhanced Security	01	JI005		0	07	UR
69	2017_18 Q	JR 60	Gravity II, McVe ghs well to Old Park SR.	02	JI005		03	05	DRD
70	2017_18 Q	JS297	Bloody Br dge Water Pumping Stat on & New Link Main or Ma	00	JI005		03	23	DRD
71	2017_18 Q	J 006	Panel Engineers Recommendat on	00			01	03	DWI
72	2017_18 Q	JB662	Panel Engineer Recommenda ions - North Phase 1	00	JI006		01	03	DWI
73	2017_18 Q	JR 20	Panel Engineer Recommenda ions - East Phase 1	00	JI006		01	03	DWI
7	2017_18 Q	J 007	WTW Effluent Qual ty	00			02	0	DWI
75	2017_18 Q	J 010	SEMD Surveys PC10 Water	01			02	0	UR
76	2017_18 Q	J 015	Enhanced S te Security	01			06	0	UR
77	2017_18 Q	J 017	Capital Investment - WPS Pump Eff c ency	01			05	01	UR
78	2017_18 Q	J 069	WPS Pump Ef iciency Capital Investment Phase 1	00	JI017		05	01	DRD
79	2017_18 Q	J 02	M MP West (Major Inc dent Mi igation Project West Region) Fr	00			03	08	DRD
80	2017_18 Q	J 025	M MP South (Major Inc dent Mi igation Project South Region) F	00			03	08	DRD
81	2017_18 Q	J 026	MIMP North (Major Incident Mit ga ion Project No th Region) F	00			03	08	DRD
82	2017_18 Q	J 027	M MP Cent al Major Incident M tigat on Project Central Reg or	00			03	08	DRD
83	2017_18 Q	J 028	M MP East (Major Inc dent Mit ga ion Project East Reg on) Fre	00			03	08	DRD
8	2017_18 Q	J 029	Service Reservoir Assessmen s - Site Access	00			0	01	UR
85	2017_18 Q	J 031	Offices & Depots Water Regu ation Compliance & Energy Eff (	01			06	20	DRD
86	2017_18 Q	J 032	Water Treatment Sites - Water Regu ation Compliance & Ener(	01			02	01	DRD
87	2017_18 Q	J 035	Impounding Reservoir Future Use Assessment	00			01	03	DRD
88	2017_18 Q	J 037	Flood Resil ence at NIW Water Supply S tes - Appra sal Study	02			02	01	DRD
89	2017_18 Q	J 038	Service Reservoir Security Phase 1	02			0	07	DRD
90	2017_18 Q	J 039	Water Supply West - Turbidity Mon tor Upgrade	00			02	01	DRD
91	2017_18 Q	J 0 0	Recovering Energy Within the Water D stribution Sys em	00			02	01	DRD
92	2017_18 Q	J 0 1	Hydro Power from Raw Water - Feasibil ty Study	00			02	01	DRD
93	2017_18 Q	J 0 3	Lough Bradan WTW & A taveedan SR Sludge Lagoons	00			02	01	DRD
9	2017_18 Q	J 0 6	WP13 High Priority Water Mains Ph1	00			03	08	DRD
95	2017_18 Q	J 0 7	High Pr ority Watermains Phase 2 Work Package.	00			03	08	DRD
96	2017_18 Q	J 0 8	Appra sal of NIW infrastructure at Railways, DRD Road & Pipe	00			03	23	DRD
97	2017_18 Q	J 050	Service Reservoir Rehab (Paren)	00			0	07	DWI
98	2017_18 Q	JA309	Tully Hi l South SR Rehabil tat on	00	JI050		0	07	
99	2017_18 Q	JB722	Gortac ady SR Rehabi itation	00	JI050		0	07	
100	2017_18 Q	JB728	Mormeal North SR Rehabil ta ion	06	JI050		0	07	
101	2017_18 Q	JC398	North Garvagh SR Refurbishment	06	JI050		0	07	
102	2017_18 Q	JF603	Benraw SR Rehabi itation	00	JI050		0	07	
103	2017_18 Q	JF60	Castlehi l SR Refurbishment	06	JI050		0	07	
10	2017_18 Q	JF605	Seagahan CWB Refurbishment	06	JI050		0	07	
105	2017_18 Q	JG078	Ba lydougan Command 2B 3A 3B SR Rehabi itation	00	JI050		0	07	DRD
106	2017_18 Q	JG083	Ba lyvally Old SR Rehabil tat on	06	JI050		0	07	
107	2017_18 Q	JG086	Cleomack SR Rehabi itation	06	JI050		0	07	
108	2017_18 Q	J 009	Service Reservoir Rehab	00	JI050		0	07	DWI
109	2017_18 Q	JB710	Ki lylane CWB Refurb shment	03	JI009		0	07	
110	2017_18 Q	JF597	Doochrock West SR Rehabil ta ion	00	JI009		0	07	DRD
111	2017_18 Q	JL758	Reservoir Rehab li at on Programme Phase 3	00	JI009		0	07	DWI
112	2017_18 Q	JR 81	Ba lyrid ey New SR Rehabi itation	03	JI009		0	07	
113	2017_18 Q	JR 82	Muldersle gh Hill SR Rehabil ta ion	03	JI009		0	07	
11	2017_18 Q	JV866	Deehommed High Level SR Rehabi itation	03	JI009		0	07	
115	2017_18 Q	JL777	Carmoney WTW - Old CWT Outlet Pipewo k	00	JI050		0	07	DRD
116	2017_18 Q	JL779	Carmoney CWB 1 and 2 Refurb shment	03	JI050		0	07	
117	2017_18 Q	JL780	Carmoney CWB 3 and Refurb shment	03	JI050		0	07	
118	2017_18 Q	JL782	Tamneymo e SR Rehabi itation	06	JI050		0	07	
119	2017_18 Q	JN522	Omagh Phase 2 Serv ce Reservoir Inner Works	0	JI050		03	07	
120	2017_18 Q	JN523	Ki lybrack 1 SR Rehabi itation	00	JI050		0	07	
121	2017_18 Q	JN52	Brookeborough Sr Rehab li ation	00	JI050		0	07	
122	2017_18 Q	JN525	Bo era SR Rehab li at on	00	JI050		0	07	
123	2017_18 Q	JN531	Barravey SR Rehab li at on	00	JI050		0	07	
12	2017_18 Q	JN533	Glenchu l SR Refurbishment	06	JI050		0	07	
125	2017_18 Q	JN536	Ki lyc ogher No.2 Sr Refurb shment	06	JI050		0	07	
126	2017_18 Q	JN5 0	Lough Bradan CWB Rehabi itation	06	JI050		02	07	
127	2017_18 Q	JP686	Rathmore SR Rehab litation	00	JI050		0	07	
128	2017_18 Q	JP689	Derrylin SR Rehabi itation	00	JI050		0	07	
129	2017_18 Q	JR 76	L snabreeny Road SR1 and SR2 Rehabi ita ion	03	JI050		0	07	DRD
130	2017_18 Q	JR 86	Breda SR Rehabi itation	00	JI050		0	07	
131	2017_18 Q	JR 91	Ba lygrainey SR Rehabi itation	00	JI050		0	07	
132	2017_18 Q	JR 92	Ba lyhowne SR Rehabi itation	00	JI050		0	07	
133	2017_18 Q	JR500	Ba lywonard No.1 SR Rehab li ation	06	JI050		0	07	
13	2017_18 Q	JV857	Newry West SR Rehab li at on	03	JI050		0	07	DRD
135	2017_18 Q	JV869	Senrty Hill SR Rehabil ta ion	00	JI050		0	07	
136	2017_18 Q	JV872	Ba linl ss Upper SR Rehabi itation	00	JI050		0	07	
137	2017_18 Q	JV873	Newtown SR Rehabi itation	00	JI050		0	07	
138	2017_18 Q	JV875	Sturgan SR Rehabil ta ion	00	JI050		0	07	
139	2017_18 Q	JV876	Baby on Hill SR Rehabil tat on	00	JI050		0	07	
1 0	2017_18 Q	JV877	Camlough Derry Beg CWB Rehab litation	00	JI050		0	07	
1 1	2017_18 Q	JV878	Camly New SR Rehabi itation	00	JI050		0	07	
1 2	2017_18 Q	JV879	Drumnahare SR Rehabi ita ion	00	JI050		0	07	
1 3	2017_18 Q	JV882	Tullymurry Newry SR Rehab li at on	06	JI050		0	07	
1	2017_18 Q	JV883	M ll Road SR Rehabi ita ion	06	JI050		0	07	
1 5	2017_18 Q	J 051	Watermains Rehab li ation, New and Rep acement incl FTS - P	00			03	08	DRD
1 6	2017_18 Q	J 052	WTWs Five Treatab lity Appraisal Studies	03			02	0	DWI
1 7	2017_18 Q	J 053	Water Mains Rehab l tat on (Planned)	03			03	08	UR
1 8	2017_18 Q	JA210	Tardree Zone WM Imps	02	JI053		03	08	DRD
1 9	2017_18 Q	JA283	A8 Bel ast to Larne Dual Carr ageway – Water main & sewer r(	00	JI053		03	23	DRD
150	2017_18 Q	JB 58	Dunore West Zone Watermain Improvements	00	JI053		03	08	
151	2017_18 Q	JB 60	Moyola Zone Watermain Improvements	00	JI053		03	08	
152	2017_18 Q	JB679	The Glens Zone Watermain Improvements	00	JI053		03	08	UR
153	2017_18 Q	JB680	Dungonnell Zone Watermain Improvemen s	00	JI053		03	08	UR
15	2017_18 Q	JB687	Cookstown Phase 2 Watermain Improvements	00	JI053		03	08	UR
155	2017_18 Q	JB688	Cookstown Phase 3 Watermain Improvements	00	JI053		03	08	UR
156	2017_18 Q	JC3 9	Portba lintrae Zone Wm Improvements	00	JI053		03	08	
157	2017_18 Q	JC350	Ba lycast e Zone Wm Improvements	00	JI053		03	08	
158	2017_18 Q	JC351	Ba lynahone Zone Wm Improvements	00	JI053		03	08	
159	2017_18 Q	JC388	Rasharkin Zone Wa ermain Improvements Phase 2	00	JI053		03	08	UR
160	2017_18 Q	JF593	Altmore Phase 2 Wa ermain Rehabilitation	00	JI053		03	08	DRD
161	2017_18 Q	JL693	Citys de Zone Watermain Improvements	00	JI053		03	08	
162	2017_18 Q	JL699	Limavady Zone Watermain Improvements	00	JI053		03	08	
163	2017_18 Q	JN355	North Tyrone Zone Watermain Improvements	00	JI053		03	08	
16	2017_18 Q	JN 30	Al eyhi l Zone Wm Improvements	00	JI053		03	08	
165	2017_18 Q	JN505	Omagh Wa ermain Improvements	00	JI053		03	08	UR
166	2017_18 Q	JR321	Breda North Zone Wate main Improvemen s	00	JI053		03	08	
167	2017_18 Q	JR 37	South Bel ast Urban	00	JI053		03	08	
168	2017_18 Q	JR 38	Newtownabbey Zone Watermain Improvemen s Phase 1	00	JI053		03	08	UR
169	2017_18 Q	JR 39	Carr ckfergus Zone Watermain Improvements Phase 1	00	JI053		03	08	UR
170	2017_18 Q	JR 0	Newtownabbey Zone Watermain Improvemen s Phase 2	00	JI053		03	08	UR
171	2017_18 Q	JR 1	Ba lys llan Zone Watermain Improvements	00	JI053		03	08	UR
172	2017_18 Q	JR 2	Ba lywonard Zone Watermain Improvemen s	00	JI053		03	08	UR
173	2017_18 Q	JR 50	Queensfort Road Watermain Upgrade	00	JI053		03	08	DRD
17	2017_18 Q	JR 53	Ba lygomar in North Phase 1 Watermain Improvements	00	JI053		03	08	UR
175	2017_18 Q	JR 5	Ba lygomar in South Phase 1 Water Mains Improvements	00	JI053		03	08	UR
176	2017_18 Q	JR 55	Whiterock Phase 1 Watermains Improvements	00	JI053		03	08	UR
177	2017_18 Q	JS226	Downpatrick Zone WM Imps	00	JI053		03	08	
178	2017_18 Q	JS227	South Down Zone WM Imps	00	JI053		03	08	
179	2017_18 Q	JS229	Mourne Coast Zone Wa ermain Improvements	00	JI053		03	08	
180	2017_18 Q	JS293	North Down Bangor Phase 2 Watermain Improvements	00	JI053		03	08	UR
181	2017_18 Q	JT252	L sburn North Rural Phase 2 Wa ermain Improvements	00	JI053		03	08	UR
182	2017_18 Q	JV02	Ba lintemp e Zone Watermain Improvemen s	00	JI053		03	08	
183	2017_18 Q	JV025	Lough Ross Zone Watermain Improvements	00	JI053		03	08	

SOR	B_M_A	B_M_ o ect_App oval	B_M_SoS	B_M_BU	B_M_RSO	B_M_CoC	B_M_EoM	BSA_WI%	BSA_WNI%	BSA_SI%	BSA_SNI%
1			01 0 2013	31/12/2013		30/03/201	30/03/2015	0	0	5	95
2			1 03 2008	0 /09/2012		0 /09/2012	0 /09/2013	0	0	0	0
3											
								0	0	100	0
5	26 02 2010	12/0 /2010	31 05 2010	28/0 /2011		28/0 /2011	27/0 /2012	0	0	0	0
6			01 0 2013	31/12/2013		31/03/201	31/03/2015	0	100	0	0
7											
8											
9											
10											
11											
12											
13											
1											
15											
16											
17											
18											
19											
20								60	0	0	0
21											
22				31/03/2021				100	0	0	0
23											
2											
25											
26											
27				30/09/2019				33	67	0	0
28–38											
39	25 10 2010							0	0	0	0
0								0	0	0	0
1								0	0	0	0
2–7											
8	26 0 2006		1 01 2008	29/09/2008		29/09/2008	29/09/2009	0	0	0	0
9–52											
53	01 10 2009	26/10/2009	07 12 2009	28/08/2015		28/02/2015	28/02/2016	82	18	0	0
5	11 12 2008	23/12/2008	1 09 2009	2 /05/2011		2 /05/2011	23/05/2012	0	0	0	0
55–60											
61								0	0	0	0
62								0	0	0	0
63											
6								1	86	0	0
65	19 02 2010	2 /02/2010	06 0 2011	28/09/2012		28/09/2012	28/09/2013	0	0	0	0
66								0	100	0	0
67	16 08 2007	17/08/2007	10 12 2007	23/05/2008		23/05/2008	23/05/2009	0	0	0	0
68			28 01 2008	13/10/2010		13/10/2010	13/10/2011	0	0	0	0
69			08 07 2011	30/11/201		30/12/201	30/12/201	100	0	0	0
70	22 02 2012	1 /03/2012	26 09 2011	28/09/2012		28/09/2012	28/09/2013	0	0	0	0
71								100	0	0	0
72	15 02 2011	25/02/2011	1 12 2011	28/05/2012		28/05/2012	28/05/2013	0	0	0	0
73	15 02 2011	28/02/2011	2 10 2011	22/06/2012		22/06/2012	22/06/2013	0	0	0	0
7								0	100	0	0
75								0	0	0	0
76			30 08 2012	01/0 /2013		01/0 /2013	01/0 /201	0	0	0	0
77			31 03 2011	28/03/201		28/03/201	28/03/2015	0	0	0	0
78								0	100	0	0
79				30/03/201				93	7	0	0
80	05 12 2011	08/12/2011	07 09 2011	18/06/2013		18/06/2013	18/06/201	9	6	0	0
81				30/03/2015				99	1	0	0
82				30/03/201				100	0	0	0
83				30/03/2015				99	1	0	0
8								0	100	0	0
85								0	0	0	0
86								0	100	0	0
87								0	0	0	0
88								0	0	0	0
89			09 05 2013	20/12/2016		20/12/2016	20/12/2017	0	100	0	0
90											
91								0	100	0	0
92								0	100	0	0
93								0	0	0	0
9–96											
97								0	100	0	0
98–107											
108								0	0	0	0
109–110											
111	02 02 2009	09/02/2009	06 0 2009	18/05/2009		18/05/2009	18/05/2010	0	0	0	0
112–1 5											
1 6				31/12/2020				0	100	0	0
1 7				31/03/201				9	6	0	0
1 8	15 06 2009	23/06/2009	12 08 2009	27/0 /2011		27/0 /2011	26/0 /2012	0	0	0	0
1 9											
150	02 0 2010	22/0 /2010	11 06 2010	07/08/2012		07/08/2012	07/08/2013	0	0	0	0
151	02 0 2010	26/0 /2010	20 09 2010	13/03/2012		13/03/2012	13/03/2013	0	0	0	0
152	16 09 2011	20/09/2011	26 09 2011	21/12/2012		21/12/2012	21/12/2013	0	0	0	0
153	05 07 2011	06/07/2011	25 03 2013	30/11/2012		30/11/2012	30/11/2013	0	0	0	0
15	16 09 2011	20/09/2011	03 05 2011	21/12/2012		21/12/2012	21/12/2013	0	0	0	0
155	17 10 2011	19/10/2011	27 05 2011	15/0 /2013		15/0 /2013	15/0 /201	0	0	0	0
156	26 09 2007	08/10/2007	05 11 2007	15/09/2008		15/09/2008	15/09/2009	0	0	0	0
157	26 02 2009	20/03/2009	06 0 2009	28/0 /2011		28/0 /2011	27/0 /2012	0	0	0	0
158	26 09 2007	08/10/2007	21 0 2007	29/09/2008		29/09/2008	29/09/2009	0	0	0	0
159	19 05 2011	01/06/2011	19 01 2011	01/06/2012		01/06/2012	01/06/2013	0	0	0	0
160											
161			18 07 2005	19/06/2006		19/06/2006	19/06/2007	0	0	0	0
162	0 11 2008	21/11/2008	29 12 2008	12/01/2011		12/01/2011	12/01/2012	0	0	0	0
163	12 03 2008	21/03/2008	11 08 2008	12/01/2011		12/01/2011	12/01/2012	0	0	0	0
16	01 0 2010	26/0 /2010	2 06 2010	13/01/2012		13/01/2012	12/01/2013	0	0	0	0
165	17 10 2011	19/10/2011	02 08 2011	30/05/2013		30/05/2013	30/05/201	0	0	0	0
166	02 0 2010	26/0 /2010	15 06 2010	1 /08/2012		1 /08/2012	1 /08/2013	0	0	0	0
167	07 09 2010	27/09/2010	10 11 2011	05/12/2011		05/12/2011	05/12/2012	0	0	0	0
168	03 06 2011	07/06/2011	01 02 2011	27/02/201		27/02/201	27/02/2015	0	0	0	0
169	19 05 2011	01/06/2011	19 01 2011	16/11/2012		16/11/2012	16/11/2013	0	0	0	0
170	05 07 2011	06/07/2011	02 02 2011	11/07/2012		11/07/2012	11/07/2013	0	0	0	0
171	05 07 2011	06/07/2011	19 01 2011	31/01/2013		31/01/2013	31/01/201	0	0	0	0
172	22 0 2011	06/05/2011	17 01 2011	25/07/2012		25/07/2012	25/07/2013	0	0	0	0
173	20 02 2012	27/02/2012	0 0 2012	25/0 /2012		25/0 /2012	25/0 /2013	0	0	0	0
17								0	0	0	0
175								0	0	0	0
176								0	0	0	0
177	21 07 2009	03/08/2009	07 06 2010	26/01/2012		26/01/2012	26/01/2013	0	0	0	0
178	21 07 2009	03/08/2009	27 09 2011	13/03/2012		13/03/2012	13/03/2013	0	0	0	0
179	21 07 2009	03/08/2009	07 06 2010	26/01/2012		26/01/2012	26/01/2013	0	0	0	0
180	17 10 2011	19/10/2011	02 08 2011	26/03/2013		26/03/2013	26/03/201	0	0	0	0
181	03 11 2011	08/11/2011	02 08 2011	2 /06/2013		2 /06/2013	2 /06/201	0	0	0	0
182	17 11 2011	18/11/2011	23 05 2011	06/05/2013		06/05/2013	06/05/201	0	0	0	0
183	02 0 2010	26/0 /2010	06 09 2010	30/07/2012		30/07/2012	30/07/2013	0	0	0	0

SOR	B_Capex_20 0- _£m	B_Capex_20 - 2_£m	B_Capex_20 2- 3_£m	B_Capex_20 3- 4_£m	B_Capex_20 4- 5_£m	B_Capex_20 5- 6_£m	B_Capex_20 6- 7_£m	B_Capex_20 7- 8_£m	B_A_Q%	B_A_B%	B_A_E%	B_A_G%
A (totals)	7 99	2 9	24 949	4	9	47 7	4	4 2				
1	0.0 7	0.00	0.126	0.66	0.0 6	0.172	0.000	0.000		26	0	30
2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
	0.000	0.000	0.000	0.000	0.000	0.017	0.000	0.000	100	0	0	0
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
6	0.061	0.003	0.000	0.922	0.13	0.000	0.000	0.000	0	100	0	0
20	0.000	0.000	0.000	0.2 8	0.000	0.000	0.000	0.000	0	20	0	80
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	100
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	2	0	58
39	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
53	5.022	5.651	3.382	1.105	3.559	3.238	0.000	0.000	0		0	96
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
61	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
62	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
6	0.000	0.000	0.000	2.628	3.7 5	0.000	0.000	0.000	13	87	0	0
65	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
66	0.000	0.000	0.000	0.000	0.000	0.000	1.016	0.970	0	100	0	0
67	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
68	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
69	0.000	0.000	0.000	1. 92	1.288	0.000	0.000	0.000	0	0	0	100
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
71	0.000	0.000	0.000	1.522	0.208	0.000	0.000	0.000	0	100	0	0
72	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
73	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
7	0.000	0.000	0.000	0.000	0.000	0.0 3	0.000	0.000	100	0	0	0
75	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
76	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
77	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
78	0.000	0.000	0.000	0.000	0.000	0.393	0. 00	0.388	0	100	0	0
79	0.000	0. 3	2.080	1.567	0.000	0.000	0.000	0.000	0	81	0	19
80	0.000	0.202	0.993	0.751	0.000	0.000	0.000	0.000	0	91	0	9
81	0.000	0.1 1	0.00	1.091	0. 9	0.000	0.000	0.000	15	80	1	
82	0.000	0.167	1.062	1.119	0.000	0.000	0.000	0.000	0	91	9	0
83	0.000	0.187	0.008	1.87	0.958	0.000	0.000	0.000	0	98	0	2
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.679	0	100	0	0
85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
86	0.000	0.000	0.000	0.000	0.000	0.851	0.8 6	0.000	62	38	0	0
87	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
88	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
89	0.000	0.000	0.0 8	1.8	1.238	0.652	0.6 8	0.6	100	0	0	0
91	0.000	0.000	0.000	0.000	0.000	0. 16	0. 13	0. 11	0	0	100	0
92	0.000	0.000	0.000	0.000	0.000	0.000	0. 0	0.000	0	0	100	0
93	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
97	0.000	0.000	0.553	2.	1.987	2.575	2.560	2.5	0	100	0	0
108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
111	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
1 6	0.000	0.000	0.000	0.000	0.000	0.2 7	0.000	0.000	100	0	0	0
1 7	0.000	0.000	0.000	17.01	21.785	0.000	0.000	0.000	37	7	3	13
1 8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
150–159 (each row)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0
161–183 (each row)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0

SOR	CAM_A	CAM_ ojec App oval	CAM_SoS	CAM_BU	CAM_RSO	CAM_CoC	CAM_EoM	CASA_WI%	CASA_WNI%	CASA_SI%	CASA_SNI%
1	0 /0 /201	1 /0 /201	03/11/201	31/03/2015		28/08/2015		0	0	5	95
2	09/01/2008	1 /01/2008	1 /03/2008	03/09/2012		2 /0 /2009		0	0		96
3								0	0	70	30
	29/01/2016	29/02/2016	07/03/2016	2 /03/2016				0	0	100	0
5	26/02/2010	12/0 /2010	31/05/2010	28/0 /2011		10/10/2011		0	100	0	0
6	08/07/2013	13/08/2013	29/01/201	05/12/201		25/03/2015	1 /09/2015	0	100	0	0
7	13/11/2013	19/11/2013	06/01/201	10/06/2015		29/05/2015		0	100	0	0
8	05/08/2013	06/08/2013	18/02/2013	23/03/2017		08/12/201		89	11	0	0
9	27/05/2015	29/05/2015						100	0	0	0
10	02/03/2015	0 /03/2015	16/03/2015	23/02/2016				100	0	0	0
11	06/01/2017	09/01/2017						58	0	2	0
12								100	0	0	0
13	30/06/2016	0 /07/2016	21/07/2016					100	0	0	0
1	16/10/2017	31/10/2017	09/08/2017	20/03/2018				0	100	0	0
15								100	0	0	0
16								100	0	0	0
17	05/03/2018	13/03/2018						50	50	0	0
18								0	100	0	0
19								0	100	0	0
20	16/02/2015	18/02/2015	01/08/2016	27/02/2018		15/12/2017		0	100	0	0
21	05/08/2013	12/08/2013	01/09/201	23/06/2015		30/03/2015	08/12/2015	0	100	0	0
22	16/03/2015	18/03/2015	15/09/2015	21/09/2016				100	0	0	0
23	13/05/201	21/05/201	09/09/2013	29/06/2015		30/03/2015		100	0	0	0
2	30/11/2016	05/12/2016	01/11/2017					0	100	0	0
25								100	0	0	0
26	30/03/2015	01/0 /2015						100	0	0	0
27	28/01/2016	02/02/2016						0	100	0	0
28	2 /09/201	03/10/201	27/10/201	29/06/2015				100	0	0	0
29	30/09/201	03/10/201	01/12/201	30/03/2015		17/0 /2015		100	0	0	0
30								100	0	0	0
31	28/10/2016	01/11/2016	05/12/2016	01/09/2017			23/01/2018	100	0	0	0
32	17/10/2016	2 /10/2016	31/10/2016					100	0	0	0
33	20/09/2017	03/10/2017	22/02/2018			31/01/2020		100	0	0	0
3	1 /10/2016	17/10/2016	01/07/2016					100	0	0	0
35								0	100	0	0
36								100	0	0	0
37	02/01/2018	05/01/2018						0	100	0	0
38								100	0	0	0
39	25/10/2010	19/11/2010	01/08/2016	26/06/2017		31/10/2017		0	100	0	0
0								0	100	0	0
1								50	50	0	0
2	22/10/2012	25/10/2012	07/05/2013	30/07/2013		28/05/2013		100	0	0	0
3	30/06/201	09/07/201	03/11/201	29/06/2015				100	0	0	0
	20/09/2017	03/10/2017						100	0	0	0
5	0 /07/2016	0 /07/2016	21/07/2016					100	0	0	0
6								100	0	0	0
7								100	0	0	0
8	26/0 /2006							100	0	0	0
9	0 /07/2016	0 /07/2016	21/07/2016					100	0	0	0
50								100	0	0	0
51								100	0	0	0
52								100	0	0	0
53	01/10/2009	26/10/2009		28/08/2015				82	18	0	0
5	11/12/2008	23/12/2008	03/06/2013	2 /05/2011		23/07/2012		90	10	0	0
55								100	0	0	0
56	12/06/201	2 /06/201						100	0	0	0
57								100	0	0	0
58	01/10/2015	05/10/2015	02/11/2015	07/03/2016		31/03/2016	0 /0 /2016	0	50	0	50
59	03/02/2016	29/02/2016						75	0	25	0
60								80	20	0	0
61	07/01/2013	1 /01/2013						89	11	0	0
62	03/02/201	10/02/201	01/06/2015			18/12/2015		86	1	0	0
63	17/12/2013	19/12/2013	06/01/201			26/01/2015		100	0	0	0
6								0	100	0	0
65	19/02/2010	2 /02/2010	21/03/2011	01/10/2013		26/08/2013		0	100	0	0
66	23/11/2015	23/11/2015						0	100	0	0
67	16/08/2007	17/08/2007	10/12/2007	20/06/2011		23/02/2009		71	29	0	0
68	20/11/2007	17/12/2007	07/12/2009	12/10/2010		02/12/2013		0	100	0	0
69	13/12/2013	13/12/2013	01/01/201	28/11/201		02/12/201	23/06/2015	100	0	0	0
70	22/02/2012	1 /03/2012	26/09/2011	30/0 /2012		2 /09/2012		75	25	0	0
71								100	0	0	0
72	15/02/2011	25/02/2011	22/07/2013	23/10/2015		22/09/2015		100	0	0	0
73	15/02/2011	28/02/2011	10/06/2013	19/05/2015		22/0 /2015		100	0	0	0
7	28/10/2015	17/11/2015	0 /01/2016	01/03/2017			03/10/2017	0	100	0	0
75	30/05/201	20/06/201	01/03/2018			12/0 /2019		0	100	0	0
76	23/02/2012	28/02/2012	30/08/2012	11/09/2013		12/09/2013		0	100	0	0
77	29/11/2010	12/01/2011						0	100	0	0
78	22/07/201	31/07/201	10/02/2015	28/02/2017				0	100	0	0
79	16/10/2012	2 /10/2012	05/09/2011	1 /02/201		21/07/201		9	6	0	0
80	05/12/2011	08/12/2011	07/09/2011	2 /01/201		25/09/2013		100	0	0	0
81	12/12/2012	20/12/2012	02/06/2011	18/08/201		18/09/201		100	0	0	0
82	15/10/2012	25/10/2012	05/05/2011	28/03/201		26/06/201		100	0	0	0
83	12/12/2012	20/12/2012	0 /08/2011	09/02/2015		28/08/201		100	0	0	0
8	17/02/201	21/02/201						0	100	0	0
85	01/10/2015	09/10/2015						0	100	0	0
86	2 /06/201	17/07/201						0	100	0	0
87	22/01/2018	22/01/2018						100	0	0	0
88	15/05/201	21/05/201		0 /0 /2017		31/03/2016	25/05/2017	0	100	0	0
89	0 /03/201	13/03/201	03/05/2016			31/01/2018		0	100	0	0
90	15/05/201	30/05/201	02/03/2015	19/06/2015			26/08/2016	0	100	0	0
91								0	100	0	0
92	0 /03/2015	06/03/2015						0	100	0	0
93	03/09/2015	07/09/2015	23/12/2015	31/01/2017		28/07/2017	20/06/2017	0	100	0	0
9	27/08/2013	29/08/2013	01/02/2013	31/08/2015		26/12/201		100	0	0	0
95	19/08/2013	29/08/2013	1 /02/2013	31/12/201		26/06/201		100	0	0	0
96	22/05/2017	2 /05/2017						80	0	20	0
97								0	100	0	0
98	05/02/2016	05/02/2016	22/08/2016	15/12/2016		15/12/2016		0	100	0	0
99	02/02/2016	02/02/2016	31/01/2017	28/03/2017		20/03/2017	23/05/2017	0	100	0	0
100	1 /11/2016	1 /11/2016	05/07/2017	08/09/2017		31/10/2017		0	100	0	0
101	1 /11/2016	1 /11/2016	12/09/2017	21/03/2018		30/03/2018		0	100	0	0
102	18/01/2016	18/01/2016	20/06/2016	2 /08/2016		09/02/2017		0	100	0	0
103	1 /11/2016	1 /11/2016	27/09/2017	19/03/2018		05/02/2018		0	100	0	0
10	1 /11/2016	1 /11/2016	1 /06/2017			30/0 /2018		0	100	0	0
105	25/0 /201	02/05/201	02/06/201	02/12/2015		30/07/2015	16 12/2015	0	100	0	0
106	10/03/2015	10/03/2015	10/12/2015	15/0 /2016		18/03/2016	09 09/2016	0	100	0	0
107	11/11/2016	11/11/2016	11/05/2017	27/10/2017		30/03/2018		0	100	0	0
108	2 /01/2013	30/01/2013						0	100	0	0
109	0 /08/201	22/09/201	08/12/201	15/05/2015		30/06/2015		0	100	0	0
110	0 /07/201	17/07/201	08/12/201	21/0 /2015		21/0 /2015	20 11 2015	0	100	0	0
111	02/02/2009	09/02/2009						0	100	0	0
112	0 /08/201	22/09/201	01/12/201	30/03/2015		31/03/2015		0	100	0	0
113	0 /08/201	22/09/201	18/11/201	30/03/2015		31/03/2015	20 11 2015	0	100	0	0
11	0 /08/201	22/09/201	09/03/2015	27/05/2015		08/05/2015		0	100	0	0
115	02/09/2015	02/09/2015	01/0 /2015	09/05/2016		06/05/2016	21 07 2016	0	100	0	0
116	26/11/201	15/01/2015	18/0 /2016	21/10/2016		21/10/2016	05 09 2017	0	100	0	0
117	26/11/201	15/01/2015	07/11/2016	19/10/2017		29/09/2017		0	100	0	0
118	1 /11/2016	1 /11/2016	0 /0 /2017	31/10/2017		29/09/2017		0	100	0	0
119	03/02/2015	03/02/2015	01/06/2015	31/07/2015		02/10/2015		0	100	0	0
120	10/03/2015	30/0 /2015	18/01/2016	29/0 /2016		06/05/2016	25/11/2016	0	100	0	0
121	10/03/2015	10/03/2015	22/07/2015	18/11/2015		30/10/2015	21/11/2016	0	100	0	0
122	10/03/2015	10/03/2015						0	100	0	0
123	02/02/2016	02/02/2016	2 /10/2016	16/02/2017		23/02/2017	23/05/2017	0	100	0	0
12	11/11/2016	11/11/2016	07/06/2017	30/10/2017		15/09/2017		0	100	0	0
125	11/11/2016	11/11/2016	23/11/2017	02/03/2018		12/02/2018		0	100	0	0
126	11/11/2016	11/11/2016	06/08/2018			30/11/2018		0	100	0	0
127	09/0 /2015	09/0 /2015	20/07/2015	20/10/2015		30/10/2015	01/11/2016	0	100	0	0
128	18/01/2016	18/01/2016	06/02/2017	26/0 /2017		29/03/2017		0	100	0	0
129	25/11/2015	10/12/2015	0 /01/2016	28/10/2016		18/11/2016		0	100	0	0
130	27/0 /2015	30/0 /2015	12/10/2015	02/06/2016		31/05/2016	01/08/2016	0	100	0	0
131	18/01/2016	26/01/2016	13/06/2016	1 /12/2016		27/01/2017	01/06/2017	0	100	0	0
132	18/01/2016	18/01/2016	06/06/2016	26/0 /2017		0 /05/2017	15/06/2017	0	100	0	0
133	1 /11/2016	1 /11/2016	0 /0 /2017	20/10/2017		28/08/2017		0	100	0	0
13	11/11/2013	13/11/2013						0	100	0	0
135	09/0 /2015	09/0 /2015	02/11/2015	15/12/2015		18/0 /2016	11/08/2016	0	100	0	0
136	12/11/2015	12/11/2015						0	100	0	0
137	18/01/2016	18/01/2016	10/08/2016	09/12/2016		12/01/2017		0	100	0	0
138	02/02/2016	02/02/2016	12/09/2016	13/02/2017		20/02/2017	23/05/2017	0	100	0	0
139	05/02/2016	05/02/2016	06/06/2016	08/07/2016		01/07/2016	08/08/2016	0	100	0	0
1 0	05/02/2016	05/02/2016	19/12/2016	09/05/2017		12/0 /2017	25/05/2017	0	100	0	0
1 1	08/02/2016	08/02/2016	16/08/2016	23/09/2016		23/09/2016	18/01/2017	0	100	0	0
1 2	16/02/2016	29/02/2016						0	100	0	0
1 3	1 /11/2016	1 /11/2016	27/11/2017	15/12/2017		30/03/2018		0	100	0	0
1	11/11/2016	11/11/2016	22/01/2018			12/0 /2018		0	100	0	0
1 5	01/03/2013	11/03/2013						89	11	0	0
1 6								0	100	0	0
1 7								9	6	0	0
1 8	15/06/2009	23/06/2009						97	3	0	0
1 9	31/01/2013	05/02/2013						90	0	10	0
150	02/0 /2010	22/0 /2010	11/06/2010	07/08/2012		19/07/2013		100	0	0	0
151	02/0 /2010	26/0 /2010	20/09/2010	13/03/2012		30/06/201		95	5	0	0
152	16/09/2011	20/09/2011	26/09/2011	28/03/2013		25/03/2013	0 /11/201	76	2	0	0
153	05/07/2011	06/07/2011	02/0 /2012	06/03/2013		06/06/201		98	2	0	0
15	16/09/2011	20/09/2011	03/05/2011	01/08/201		18/12/2012	0 /11/201	93	7	0	0
155	17/10/2011	19/10/2011	27/05/2011	08/10/2013		12/0 /2013	0 /11/201	93	7	0	0
156	26/09/2007	08/10/2007	05/01/2009	03/03/2010		26/07/2010		100	0	0	0
157	26/02/2009	20/03/2009						100	0	0	0
158	26/09/2007	08/10/2007						100	0	0	0
159	19/05/2011	01/06/2011	02/0 /2012	26/03/2013		27/02/2013	0 /11/201	95	5	0	0
160	11/06/2013	2 /06/2013	10/12/2012	30/09/201		25/08/201		100	0	0	0
161								100	0	0	0
162	0 /11/2008	21/11/2008	29/12/2008	03/03/2010		15/11/2010		100	0	0	0
163	12/03/2008	21/03/2008	11/08/2008	11/01/2011		29/06/2009		100	0	0	0
16	01/0 /2010	26/0 /2010	2 /06/2010	12/01/2012		20/09/2012	01/07/2015	100	0	0	0
165	17/10/2011	19/10/2011	02/08/2011	26/03/2013		26/03/2013		100	0	0	0
166	02/0 /2010	26/0 /2010	01/03/2010	27/11/2012		06/11/2012	27/11/2012	98	2	0	0
167	07/09/2010	27/09/2010	10/11/2011	19/09/2011		19/01/2012	05/12/2011	100	0	0	0
168	03/06/2011	07/06/2011	01/02/2011	27/08/201		2 /06/201		97	3	0	0
169	19/05/2011	01/06/2011	01/0 /2013	26/07/2013		30/10/2013		93	7	0	0
170	05/07/2011	06/07/2011	02/02/2011	27/08/201		02/02/2011		98	2	0	0
171	05/07/2011	06/07/2011	19/01/2011	1 /01/201		26/03/201		98	2	0	0
172	22/0 /2011	06/05/2011	02/0 /2012	08/01/201		28/10/2013		87	13	0	0
173	20/02/2012	27/02/2012	0 /0 /2012	03/07/2012		25/0 /2012		100	0	0	0
17	07/10/2013	16/10/2013	01/0 /2012	29/06/2015		30/03/2015		100	0	0	0
175	07/10/2013	21/10/2013	01/0 /2012			31/03/2015		100	0	0	0
176	08/10/2013	16/10/2013	01/06/2011	30/03/2015		25/03/2015	01/07/2015	100	0	0	0
177	21/07/2009	03/08/2009	08/06/2010	13/05/2011		26/03/2013	26/01/2012	98	2	0	0
178	21/07/2009	03/08/2009	27/09/2010	12/03/2012		19/09/2011	01/07/2015	97	3	0	0
179	21/07/2009	03/08/2009	08/06/2010	02/08/2011		26/03/2013	26/01/2012	99	1	0	0
180	17/10/2011	19/10/2011	02/08/2011	27/08/201		23/0 /2013		100	0	0	0
181	03/11/2011	08/11/2011	02/08/2011	1 /03/201		2 /06/201		93	7	0	0
182	17/11/2011	18/11/2011	23/05/2011	08/10/2013		06/05/2013		90	10	0	0
183	02/0 /2010	26/0 /2010	06/09/2010	27/11/2012		13/02/2012		100	0	0	0

SOR	CA_Capex_ D_£m	CA_Capex_20 0- _£m	CA_Capex_20 - 2_£m	CA_Capex_20 2- 3_£m	CA_Capex_20 3- 4_£m	CA_Capex_20 4- 5_£m	CA_Capex_20 5- 6_£m	CA_Capex_20 6- 7_£m	CA_Capex_20 7- 8_£m	CA_A_Q%	CA_A_B%	CA_A_E%	CA_A_G%	CA_IRE_W%	CA_IRE_S%	NOM_Output
A (totals)	2 2	7 7	47	92 9	4 79	7	4 7	4 27	2 2							
1	0.036	0 000	0.000	0 000	0.000	0 873	0.201	0 091	0.036	0	68	0	32	0	5	08
2	0.01	0 013	-0.00	0 013	0.012	0 012	0.030	0 026	0.01	36	39	0	25	0	1	09
3	0.000	0 000	0.000	0 000	0.035	-0 010	0.001	0 000	0.000	100	0	0	0	0	0	01
	-0.002	0 000	0.000	0 000	0.000	0 015	0.2 7	0 000	-0.002	100	0	0	0	0	0	03
5	0.000	0 8 7	0.127	0 000	-0.001	0 000	0.002	0 000	0.000	0	53	0	7	0	0	
6	0.000	0 061	0.003	0 000	0.228	1 005	0.001	0 000	0.000	0	100	0	0	0	0	08
7	0.000	0 000	0.000	0 000	0.011	0 062	0.058	0 000	0.000	0	100	0	0	0	0	01
8	-0.128	0 000	0.000	0 267	1.953	0 715	0.003	0.156	-0.128	10	6	0		5	0	01
9	-0.002	0 000	0.000	0 000	0.000	0 015	0.061	0 005	-0.002	0	9	0	6	9	0	01
10	0.000	0 000	0.000	0 000	0.000	0 368	0. 65	0 003	0.000	69	25	6	0	25	0	01
11	0.199	0 000	0.000	0 000	0.000	0 000	0.0 9	0 089	0.199	0	69	0	31	1	28	01
12	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 200	0.000	0	60	0	0	60	0	01
13	1.105	0 000	0.000	0 000	0.000	0 000	0.000	1. 22	1.105	62	38	0	0	38	0	01
1	7.058	0 000	0.000	0 000	0.000	0 000	0.000	0.169	7.058	0	0	100	0	0	0	01
15	0. 50	0 000	0.000	0 000	0.000	0 000	0.000	0 0 5	0. 50	59	1	0	0	1	0	01
16	0.005	0 000	0.000	0 000	0.000	0 000	0.000	0 0 5	0.005	5	5	0	10	5	0	01
17	0.030	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.030	0	100	0	0	50	0	
18	0.035	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.035	100	0	0	0	0	0	
19	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
20	0.505	0 000	0.000	0 000	0.021	0 000	0.006	0 218	0.505	0	0	0	100	0	0	01
21	0.000	0 000	0.000	0 005	0.015	0 205	0.016	0 002	0.000	0	0	100	0	0	0	
22	0.000	0 000	0.000	0 000	0.015	0 0 7	1. 91	0 222	0.000	0	0	0	100	0	0	02
23	-0.001	0 000	0.000	0 000	0.080	1 237	0.081	0 030	-0.001		66	0	30	66	0	01
2	0.26	0 000	0.000	0 000	0.006	-0 002	0.015	0 020	0.26	0	100	0	0	0	0	01
25	0.000	0 000	0.000	0 000	0.003	0 022	0.00	0 000	0.000	100	0	0	0	0	0	01
26	0.010	0 000	0.000	0 000	0.016	-0 002	0.115	0 018	0.010	0	9	0	6	9	0	01
27	0.113	0 000	0.000	0 000	0.000	0 038	0.000	0 076	0.113	0	0	0	100	0	0	02
28	-0.060	0 000	0.000	0 000	0.000	0 385	0.021	0 0 0	-0.060	100	0	0	0	0	0	01
29	0.000	0 000	0.000	0 000	0.000	0 0 8	0.000	-0 008	0.000	100	0	0	0	0	0	01
30	0.103	0 000	0.000	0 000	0.000	0 000	0.000	0 02	0.103	0	100	0	0	100	0	01
31	0.677	0 000	0.000	0 000	0.000	0 000	0.000	1.111	0.677	0	100	0	0	100	0	01
32	1.217	0 000	0.000	0 000	0.000	0 000	0.000	0 963	1.217	37	62	1	0	62	0	01
33	0.199	0 000	0.000	0 000	0.000	0 000	0.000	0.180	0.199	32	68	0	0	68	0	01
3	1.090	0 000	0.000	0 000	0.000	0 000	0.000	0 575	1.090	0	60	0	0	60	0	01
35	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
36	0.091	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.091	0	60	0	0	60	0	01
37	0.028	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.028	100	0	0	0	0	0	07
38	0.012	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.012	10	0	20	70	0	0	
39	0.509	0 007	0.00	0 018	-0.017	0 000	0.000	0 803	0.509	0	0	0	100	0	0	0
0	0.000	0 000	0.000	0 000	0.003	0 000	0.000	-0 003	0.000	0	0	0	100	0	0	
1	0.000	0 000	0.000	0 000	0.003	0 000	0.000	-0 003	0.000	0	10	0	90	10	0	
2	0.000	0 000	0.000	0 000	0.008	0 000	0.000	0 002	0.000	0	0	0	100	0	0	01
3	0.000	0 000	0.000	0 000	0.000	0 275	0.000	-0 050	0.000	100	0	0	0	0	0	
	0.061	0 000	0.000	0 000	0.000	0 000	0.000	0 207	0.061	70	30	0	0	30	0	01
5	0.820	0 000	0.000	0 000	0.000	0 000	0.000	1 515	0.820	57	37	6	0	37	0	01
6	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	10	50	10	30	50	0	
7	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
8	0.000	0 000	0.138	0 027	0.000	0 000	0.027	0 000	0.000	11	89	0	0	89	0	01
9	0. 70	0 000	0.000	0 000	0.000	0 000	0.000	1 55	0. 70	17	83	0	0	83	0	01
50	0.079	0 000	0.000	0 000	0.000	0 000	0.000	0 006	0.079	20	80	0	0	80	0	
51	0.0 0	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.0 0	27	69	0		69	0	01
52	0.011	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.011	10	0	20	70	0	0	
53	0.0 0	5 022	5.787	3 2	0.2 5	2 059	2.916	0.106	0.0 0	0		1	95	0	0	02
5	-0.063	6 3 9	3.025	-0 352	0.017	0.1 6	0.183	0 000	-0.063	0	33	0	67	27	0	11
55	0.000	0 000	0.000	0 000	0.005	0 015	0.000	-0 007	0.000	100	0	0	0	0	0	01
56	0.000	0 000	0.000	0 000	0.009	0 009	0.002	0 000	0.000	0	0	0	100	0	0	01
57	0.000	0 000	0.000	0 000	0.001	0 002	0.003	0 000	0.000	0	100	0	0	100	0	01
58	-0.003	0 000	0.000	0 000	0.000	0 000	0.626	0 000	-0.003	0	100	0	0	0	0	01
59	0.000	0 000	0.000	0 000	0.000	0 000	0.010	0 030	0.000	0	100	0	0	75	25	01
60	0.030	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.030	0	7	1	92	0	0	10
61	0.000	0 000	0.000	0. 2	-0.08	0 000	0.000	0 000	0.000	26		3	27	38	0	
62	0.000	0 000	0.000	0 000	0.000	0 000	0.88	0.1 3	0.000	0	79	0	21	65	0	01
63	-0.220	0 000	0.000	0 000	0.250	0 895	0.011	0 000	-0.220	93	0	0	7	0	0	01
6	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
65	0.000	0 002	2.289	1 033	-0.1 2	0.113	0.132	-0 001	0.000	0	100	0	0	0	0	01
66	1.983	0 000	0.000	0 006	0.027	0 01	0.036	0 368	1.983	0	100	0	0	0	0	02
67	-0.015	0 000	-0.009	0 000	0.000	0 000	0.000	0 000	-0.015	0	0	0	100	0	0	
68	0.000	0 21	0.177	0 000	0.002	0 059	0.0	0 000	0.000	100	0	0	0	0	0	01
69	-0.011	0 000	0.000	0 000	1.628	3 398	0.033	-0 001	-0.011	0	0	0	100	0	0	08
70	-0.001	0 000	0.110	0 013	0.000	0 001	0.000	0 000	-0.001	0	0	0	100	0	0	
71	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	100	0	
72	-0.00	0 025	0.7 8	0 256	0.589	0 901	0.3	0 007	-0.00	0	100	0	0	100	0	09
73	-0.001	0.12	1.03	0.1 2	0.769	0 856	0.067	0 021	-0.001	0	100	0	0	100	0	09
7	0.006	0 000	0.000	0 003	0.007	0 003	0.0 7	0.122	0.006	100	0	0	0	0	0	01
75	0.0 1	0 000	0.000	0 000	0.067	0 071	0.535	0 007	0.0 1	100	0	0	0	0	0	01
76	-0.030	0 000	0.037	1 681	1.517	0.152	0.001	-0 032	-0.030	100	0	0	0	0	0	
77	0.000	0 020	0.022	0 018	0.01	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
78	0.007	0 000	0.000	0 000	0.030	0 053	0. 32	0 06	0.007	0	100	0	0	0	0	01
79	-0.00	0 000	0. 3	1 386	1.770	0 0 9	0.001	-0 0 6	-0.00	0	66	1	33	66	0	08
80	0.098	0 000	0.202	1 056	0.661	0 235	0.000	0 002	0.098	0	91	0	9	91	0	08
81	-0.00	0 000	0.1 1	0. 28	1.037	0.135	0.0 0	0 000	-0.00	30	65	0	5	65	0	08
82	-0.066	0 000	0.167	0 890	0.356	0. 91	0.001	0 000	-0.066	0	99	0	1	99	0	08
83	0.000	0 000	0.187	0 331	1.967	0 3 3	0.066	0 000	0.000	0	95	0	5	95	0	08
8	-0.00	0 000	0.000	0 000	0.050	0 082	0.688	0 09	-0.00	0	50	0	50	0	0	01
85	0.000	0 000	0.000	0 000	0.010	0 015	0.026	0 026	0.000	0	100	0	0	0	0	01
86	0.1 3	0 000	0.000	0 00	0.028	0 000	0.022	0 028	0.1 3	89	11	0	0	0	0	01
87	0.000	0 000	0.000	0 000	0.016	0 05	0.002	0 000	0.000	0	100	0	0	100	0	
88	-0.013	0 000	0.000	0 006	0.025	0 000	0.006	0.118	-0.013	0	100	0	0	0	0	01
89	0.98	0 000	0.000	0 003	0.082	0. 6	0. 92	1 356	0.98	100	0	0	0	0	0	01
90	0.000	0 000	0.000	0 00	0.013	0 350	0.093	-0 003	0.000	0	100	0	0	0	0	01
91	0.000	0 000	0.000	0 000	0.025	0 015	0.003	-0 002	0.000	0	0	100	0	0	0	01
92	0.030	0 000	0.000	0 000	0.023	0 026	0.009	0 001	0.030	0	0	100	0	0	0	01
93	0.002	0 000	0.000	0 000	0.008	0 000	0.003	0 000	0.002	0	100	0	0	0	0	01
9	-0.007	0 000	0.000	0 019	0.63	0 635	0.23	0 001	-0.007	59	25	11	5	25	0	01
95	-0.191	0 000	0.000	0 020	0.702	0 252	0.001	0 000	-0.191	52	8	0	0	8	0	
96	1. 03	0 000	0.000	0 000	0.018	0 012	0. 93	1 697	1. 03	0	100	0	0	80	20	01
97	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
98	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 0 0	0.000	0	100	0	0	0	0	01
99	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 017	0.000	0	100	0	0	0	0	01
100	0.061	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.061	0	100	0	0	0	0	01
101	0.081	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.081	0	100	0	0	0	0	01
102	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 0 2	-0.001	0	100	0	0	0	0	01
103	0.169	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.169	0	100	0	0	0	0	01
10	0.1 2	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.1 2	0	100	0	0	0	0	01
105	0.000	0 000	0.000	0 000	0.000	0 639	0.330	0 000	0.000	0	100	0	0	0	0	01
106	0.001	0 000	0.000	0 000	0.000	0 000	0.072	-0 016	0.001	0	100	0	0	0	0	01
107	0.092	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.092	0	100	0	0	0	0	01
108	0.069	0 000	0.000	0 003	0.105	0.100	0.091	0.100	0.069	0	100	0	0	0	0	01
109	0.000	0 000	0.000	0 000	0.000	0.127	0.152	-0 027	0.000	0	100	0	0	0	0	01
110	0.000	0 000	0.000	0 000	0.000	0 067	0.108	-0 02	0.000	0	100	0	0	0	0	01
111	0.000	0 011	-0.050	0 000	0.000	0 000	0.010	0 000	0.000	0	100	0	0	0	0	01
112	0.000	0 000	0.000	0 000	0.000	0 255	0.0 0	0 000	0.000	0	100	0	0	0	0	01
113	0.000	0 000	0.000	0 000	0.000	0.130	0.022	-0 021	0.000	0	100	0	0	0	0	01
11	0.000	0 000	0.000	0 000	0.000	0 0	0.0 3	0 000	0.000	0	100	0	0	0	0	01
115	-0.001	0 000	0.000	0 000	0.000	0 009	0.137	-0 001	-0.001	0	100	0	0	0	0	01
116	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 259	0.000	0	100	0	0	0	0	01
117	0.113	0 000	0.000	0 000	0.000	0 000	0.000	0 210	0.113	0	100	0	0	0	0	01
118	0.215	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.215	0	100	0	0	0	0	01
119	0.001	0 000	0.000	0 000	0.000	0 000	0.065	0 000	0.001	0	100	0	0	0	0	01
120	0.000	0 000	0.000	0 000	0.000	0 000	0.135	0 003	0.000	0	100	0	0	0	0	01
121	0.000	0 000	0.000	0 000	0.000	0 000	0.083	0 000	0.000	0	100	0	0	0	0	01
122	0.000	0 000	0.000	0 000	0.000	0 000	0.0 5	0 000	0.000	0	100	0	0	0	0	01
123	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 028	0.000	0	100	0	0	0	0	01
12	0.083	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.083	0	100	0	0	0	0	01
125	0.10	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.10	0	100	0	0	0	0	01
126	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
127	0.000	0 000	0.000	0 000	0.000	0 000	0.051	0 000	0.000	0	100	0	0	0	0	01
128	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 051	-0.001	0	100	0	0	0	0	01
129	0.000	0 000	0.000	0 000	0.000	0 000	0.191	0 312	0.000	0	100	0	0	0	0	01
130	0.000	0 000	0.000	0 000	0.000	0 000	0.518	0 081	0.000	0	100	0	0	0	0	01
131	0.003	0 000	0.000	0 000	0.000	0 000	0.000	0.181	0.003	0	100	0	0	0	0	01
132	0.0 6	0 000	0.000	0 000	0.000	0 000	0.000	0 068	0.0 6	0	100	0	0	0	0	01
133	0.278	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.278	0	100	0	0	0	0	01
13	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0.1 0	0.000	0	100	0	0	0	0	01
135	0.000	0 000	0.000	0 000	0.000	0 000	0.028	0 000	0.000	0	100	0	0	0	0	01
136	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
137	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 031	0.000	0	100	0	0	0	0	01
138	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 033	-0.001	0	100	0	0	0	0	01
139	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 021	-0.001	0	100	0	0	0	0	01
1 0	0.00	0 000	0.000	0 000	0.000	0 000	0.000	0 075	0.00	0	100	0	0	0	0	01
1 1	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 038	-0.001	0	100	0	0	0	0	01
1 2	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
1 3	0.0 1	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.0 1	0	100	0	0	0	0	01
1	0.039	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.039	0	100	0	0	0	0	01
1 5	-0.088	0 000	0.000	0 000	1.7 2	1 872	1.811	0 038	-0.088	26		3	27	38	0	01
1 6	0.126	0 000	0.000	0 000	0.112	0 075	0.376	0 068	0.126	100	0	0	0	0	0	02
1 7	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	30	51	3	16	7	0	
1 8	-0.020	2 081	1.117	0 550	0.351	0 009	0.019	0 005	-0.020	1	21	3	35	20	0	01
1 9	-0.013	0 000	0.000	0 006	0.121	0.137	0.01	0 06	-0.013	0	100	0	0	90	10	01
150	-0.077	2 598	0.511	-0 023	0.122	0 020	0.000	0 003	-0.077	9	6	7	20	6	0	
151	-0.06	1 568	2.55	0 726	0.180	0.135	0.018	-0 001	-0.06	18	19	60	3	17	0	01
152	-0.001	0 000	0.1 8	0 719	-0.050	0 000	0.009	-0 052	-0.001	12	6		20	58	0	01
153	-0.001	0 000	2. 79	0 973	0.060	0 003	0.017	0 000	-0.001	12	66	16	6	66	0	01
15	0.051	0 000	1.653	1 9 5	0.131	0 072	0.00	0 00	0.051	3	62	21	1	58	0	01
155	0.002	0 000	2.217	1 517	0.038	0 02	0.001	0 000	0.002	0	69	25	6	66	0	01
156	0.000	0 036	-0.031	-0 006	0.037	0 000	0.000	-0 001	0.000	67	27	6	0	27	0	01
157	0.000	1 303	0.062	-0 020	0.001	-0 053	0.007	0 000	0.000	27	32	32	9	32	0	01
158	0.000	0 019	0.0 1	0 000	-0.027	0 000	0.010	0 000	0.000	17	6	77	0	6	0	01
159	-0.051	0 277	1.800	0 300	-0.055	-0 002	0.030	0 000	-0.051	52	31	8	9	31	0	01
160	-0.032	0 000	0.000	0 276	1.867	0 7 0	0.065	-0 058	-0.032	32	22	37	9	22	0	01
161	-0.0 0	0 000	0.010	0 000	0.000	0 000	0.000	0 000	-0.0 0	0	100	0	0	100	0	
162	0.000	0 2 0	0.000	0 000	0.000	0 000	0.002	0 000	0.000	75	25	0	0	25	0	01
163	0.000	0 025	-0.027	-0 001	0.000	0 000	0.000	0 001	0.000	1	99	0	0	99	0	01
16	-0.013	2 336	0. 3	0 768	0.0 0	0 002	0.000	0 000	-0.013	13	60	5	22	60	0	01
165	-0.001	0 000	0.8	0. 09	0.169	0 000	0.029	0 000	-0.001	25	75	0	0	75	0	01
166	0.000	2 87	0.996	0 76	0.200	0 000	0.000	-0.150	0.000	25	6	7		6	0	
167	0.000	0. 32	0.278	0 092	-0.052	0 000	0.00	0 000	0.000	0	100	0	0	100	0	01
168	-0.03	0 087	0.996	1 067	0.761	0 02	0.001	0 000	-0.03	95	0	1		0	0	01
169	-0.083	0 265	1.863	0 770	0.065	0 2 0	0.0 5	0 051	-0.083	38	35	6	21	35	0	01
170	-0.085	0.162	1. 20	1. 08	1. 98	0 211	0.132	0 000	-0.085	92	5	1	2	5	0	01
171	-0.0 6	0 2 7	2.160	2 062	1.207	-0 003	0.010	0 000	-0.0 6		55	0	1	5	0	
172	-0.260	0 077	1.090	0 630	0.833	0 06	0.236	0 000	-0.260	9	76	6	9	67	0	01
173	0.005	0 000	0.000	0 01	0.003	-0 003	0.000	0 000	0.005	0	0	0	100	0	0	
17	-0.027	0 000	0.109	0 018	0.705	1 586	0.0	0 000	-0.027	72	22	1	5	22	0	01
175	-0.289	0 000	0.116	0 025	0.731	1 965	0.225	0 000	-0.289	7	51	0	2	51	0	01
176	0.001	0 000	0.156	-0 01	0.807	0 992	0.001	0 017	0.001	52		0			0	01
177	0.000	1. 20	-0.026	0 061	0.000	0 000	0.002	0 000	0.000	16	55		25	55	0	01
178	0.000	2 903	0.138	0.110	0.001	0 000	0.021	0 000	0.000	36	58	2		57	0	01
179	-0.00	1 95	0.118	0.160	-0.001	-0 089	0.002	0 000	-0.00	35	3	28	3	3	0	01
180	-0.031	0 000	0.318	1 81	0.367	0 000	0.050	0 000	-0.031	8	86	0	6	86	0	01
181	0.000	0 000	0.823	1 013	0.165	0.176	0.072	0 000	0.000	0	61	0	39	61	0	01
182	-0.030	0 015	3.296	3 75	0.9 6	0 213	0.017	0 000	-0.030	23	7	9	21	3	0	01
183	-0.027	1 299	.67	0.129	0.081	0 005	0.000	0 000	-0.027	2	51	5	2	51	0	

Project details / Baseline milestone dates

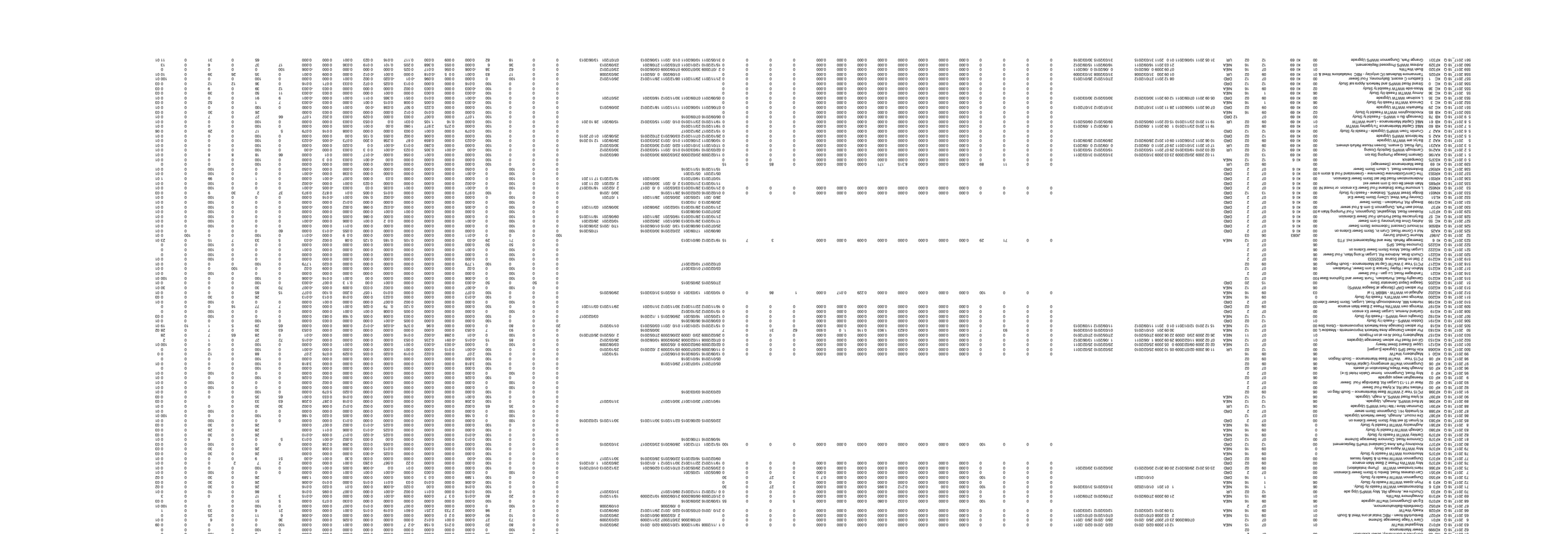
SOR	CIM_Sub	I_ oject_ D	I_ oject_Name	I_ C_ e iod	I_ AREN _ oject_ D	I_SUBS I U E_ oect_ID	I_ I_Asset_Cat	I_ C 0_ og	I_Reg_Signo	B M_A	B M_ oect_App oval	B M_SoS	B M_BU	B M_RSO	B M_CoC	B M_EoM
				5	6	7	8	9	0		2	3	4	5	6	7
A			T a a aex e ee e													
18	2017_18 Q	JV707	Drumnahare Dist Imps	00	JI053		03	08				01 06 2000	01/10/2001		01/10/2001	01/10/2002
185	2017_18 Q	JV8 1	Fofanny Bambridge Zone Watermain Improvements Phase 2	00	JI053		03	08	UR	2 05 2011	01/06/2011	12 01 2011	16/05/2012		16/05/2012	16/05/2013
186	2017_18 Q	JV8	WP101 Newry Phase2	00	JI053		03	08	DWI	03 11 2011	08/11/2011	02 08 2011	21/06/2013		21/06/2013	21/06/201
187	2017_18 Q	J 05	Water Mains New and Renewed including FTS. (Unp anned)	06			03	23	UR							
188	2017_18 Q	JA291	Ba lyc are Road Glengorm ey Wa ermains Upgrade	00	JI05		03	08	DRD							
189	2017_18 Q	JC293	Ba linrees Central Zone Watermain Imp ovements	00	JI05		03	23			22/0 /2005	27 07 2009	28/01/2010		28/01/2010	28/01/2011
190	2017_18 Q	JC31	Fairv ew Lane, Ar iclave - Wa ermain Ext	01	JI05		03	23				02 08 2010	05/08/2011		05/08/2011	0 /08/2012
191	2017_18 Q	JC396	Chatham Road, Armoy, Watermain Replacement.	00	JI05		03	08	DWI							
192	2017_18 Q	JF600	Carrive Rd Qu lly Rd Mul aghbawn Watermain Replacement	03	JI05		03	08	DWI							
193	2017_18 Q	J 023	A5 Western Transpo t Corr dor	00	JI05		03	23	DRD							
19	2017_18 Q	JN 95	Creggan Road Carrickmore Watermain Extens on	00	JI05		03	23		0 08 2008	03/07/2009	07 12 2009	22/01/2010		22/01/2010	22/01/2011
195	2017_18 Q	JR 7	M llmount Vi lage Dundonald Water Main Upgrades	00	JI05		03	23	DRD							
196	2017_18 Q	JS307	Drumarden Road Po taferry	03	JI05		03	08	DRD							
197	2017_18 Q	J 058	Recreational Si es Appraisa s or Pub ic Access	0			06	03								
198	2017_18 Q	J 059	Water Tower Reports demolit on of seven	03			0	07	DRD							
199	2017_18 Q	J 061	Impounding Reservoirs On-s te Act on Plans. (Reservoi s B ll)	03			01	03	DRD							
200	2017_18 Q	J 062	Lead Pipe Replacement Programme	03			03	23	DWI							
201	2017_18 Q	J 063	Inspec ion of Air Valves	03			03	08								
202	2017_18 Q	J 065	PC13 Base Main enance Water Treatment Wo ks - North/ Eas	03			02	01	DRD							
203	2017_18 Q	J 066	PC13 Base Maintenance Water Treatment Wo ks - South/ We	03			02	01	DRD							
20	2017_18 Q	J 067	Supply, insta lation and commissioning of Telemetry Scanning	00			03	08	DRD							
205	2017_18 Q	J 068	PC13 Base Maintenance Water Pumping Stat ons	03			05	01	DRD							
206	2017_18 Q	J 071	Sub Metering at Se ected Clean Water Si es	06			06	01	DRD							
207	2017_18 Q	J 072	PC15 Water Mains Rehab l tat on Framework	06			03	08	UR							
208	2017_18 Q	J 073	PC15 Water Mains Minor Works Framework.	06			03	23	UR							
209	2017_18 Q	J 07	Watermains Rehab li ation, New & Replacement Incorpora ing	06			03	08	UR							
210	2017_18 Q	J 075	WPS Pump Ef iciency Capital Investment Phase 2	00			05	01								
211	2017_18 Q	J 076	Replacement Watermains 201 /15 - Reactive, Bund e 2	03			03	08								
212	2017_18 Q	J 077	Source To Tap	03			01	03								
213	2017_18 Q	J 078	PC15 Service Reservoir Rehabi itation (Parent Code)	00			0	07								
21	2017_18 Q	J 079	PC15 Abstract on Moni oring	00			01	03								
215	2017_18 Q	J 080	PC15 Service Reservoir Sample Taps	00			0	07								
216	2017_18 Q	J 081	PC15 - PSCEMD (Water)	00			02	0								
217	2017_18 Q	J 082	PC15 Lead Communica ion Pipe Replacement Programme	00			03	23	DWI							
218	2017_18 Q	J 083	PC15 Trunk Main Rehab litation P ogramme (Parent)	00			03	23								
219	2017_18 Q	JV880	Camly Command SR Refurb shment	06	JI078		0	07								
220	2017_18 Q	JF601	Ardglena Grove Area Dungannon Watermain Rea ignment	06	JI083		03	23								
221	2017_18 Q	JR 8	Gravity 1 / Antrim Rd Trunk Main valve rep acements	06	JI083		03	23								
222	2017_18 Q	JR 87	Grea er Belfast Trunkmain Valve Replacement	06	JI083		03	23								
223	2017_18 Q	J 08	Water Treatment Works Treatabil ty Study	06			02	01								
22	2017_18 Q	J 086	PC15 Public Realm & Roads (Water)	00			03	23								
225	2017_18 Q	J 087	PC15 Watermains Rehab li ation WP1 - Fo fany/North Lisburn	00			03	08								
226	2017_18 Q	J 088	PC15 Watermains Rehab li ation WP 2: Fo ked Br dge Dunmur	00			03	08								
227	2017_18 Q	J 089	PC15 Watermains Rehab li ation WP 3: Ki lylane	00			03	08								
228	2017_18 Q	J 090	PC15 Watermains Rehab li ation WP : Ba lymena Ph1	00			03	08								
229	2017_18 Q	J 092	PC15 Watermains Rehab li ation WP 6: Dungonnell	00			03	08								
230	2017_18 Q	J 093	PC15 Watermains Rehab li ation WP 7: Carr ckfergus	00			03	08								
231	2017_18 Q	J 09	PC15 Watermains Rehab li ation WP 8: Be fast South Ph1	00			03	08								
232	2017_18 Q	J 096	PC15 Watermains Rehab li ation WP 10: Belfast North	00			03	08								
233	2017_18 Q	J 098	PC15 Watermains Rehab li ation WP 12: Wate mains Re- ining	00			03	08								
23	2017_18 Q	J 099	WI M Networks Workpackages Deve opment and Veri ication	0			06	20								
235	2017_18 Q	JI100	PC15 Capital Maintenance Planning	0			06	20								
236	2017_18 Q	JI101	PC15 Service Reservoir Cond tion Assessmen s.	0			0	20								
237	2017_18 Q	JI102	PC15 PPRA Review of EP Water Mains Rehab Work Package	0			03	20								
238	2017_18 Q	JI10	PC15 Year 1 Base Maintenance - Ch orine Dosing Si es	00			0	01								
239	2017_18 Q	JI105	WTW Condi ion Assessments	00			02	01								
2 0	2017_18 Q	JI106	SR ByPass Schemes Phase 2	00			03	06								
2 1	2017_18 Q	JI108	PC15 Year 1- Asset Peformance Miscel aneous Solu ions Dev	06			06	20								
2 2	2017_18 Q	JI109	Castor Bay Outage Feasibi ity Studies	06			03	0								
2 3	2017_18 Q	JI110	Impounding Reservoir Audits.	06			01	03								
2	2017_18 Q	JI111	PC15 Base Maintenance (Water) Parent	06			01	01								
2 5	2017_18 Q	JI112	PC15 Watermains Rehab liation Parent	06			03	08								
2 6	2017_18 Q	JI113	PC15 Addit onal enhancement output Parent				0	98								
2 7	2017_18 Q	JI11	PC15 FTS (Wa er) Parent EP	06			03	23								
2 8	2017_18 Q	JI115	PC15 Appra sal of NIW infrastructure at Railways, DRD Road (	06			03	23								
2 9	2017_18 Q	JI117	WTW Resil ence Improvement	00			02	0								
250	2017_18 Q	JI118	Service Reservoir Cond tion Assessment(PC15 Year 2)	00			0	07								
251	2017_18 Q	JI119	Capital Maintenance Planning: Trunk Main Condit on Grading (	00			03	05								
252	2017_18 Q	JI120	WI M Networks Work Packages & Ver ficat on(PC15 Year 2)	00			06	20								
253	2017_18 Q	JI121	Hydraulic Model Rebuilds & Project Management(PC15 Year 2	00			06	20								
25	2017_18 Q	JI122	PPRA's for Rehab Wo k Packages 2016 17	06			03	20								
255	2017_18 Q	JI123	NIW H s oric Esta e Cond tion Assessments	06			06	03								
256	2017_18 Q	JI126	PC15 Year 3 WPS Base Maintenance	06			05	01								
257	2017_18 Q	JI127	WI M Networks Workpackages and Verif ca ion 2017-2018	06			06	20								
258	2017_18 Q	JI128	Clean Water Network Hydrau ic Model Rebu lds and Ad -Hoc	06			06	20								
259	2017_18 Q	JI129	M sce laneous Risk and Consequence Upda e and C ean Wate	06			06	20								
260	2017_18 Q	JI130	Service Reservoir Cond tion Assessments 2017-2018 and bey(	06			0	20								
261	2017_18 Q	JI131	PPRA's for Rehab Wo k Packages	06			03	20								
262	2017_18 Q	JI132	Trunk / Strategic Main Invest ga ion 2017-2018	06			03	20								
263	2017_18 Q	JI133	DG3 Management Improvements	06			06	08								
26	2017_18 Q	JI13	Update to Standa dised Engineering Drawings	06			06	20								
265	2017_18 Q	JI135	Leakage Invest ga ions to inform WIIM Work Package deve op	06			06	01								
266	2017_18 Q	JI136	Deve opment and Implementa ion of Risk-Based Cond tion Ass	06			10	01								
267	2017_18 Q	JI137	CMP - Deteriorat on and Risk & Re iabil ty Modelling for PC21	06			1	20								
268	2017_18 Q	JI1 3	Clean Water Network Hydrau ic Model Rebu lds and Ad -Hoc A	06			06	20								
269	2017_18 Q	JL713	Ki lyhevlin to Lough Bradan Link Watermain	02			03	05	DWI							
270	2017_18 Q	JL715	Caugh Hill, Carmoney to Strabane St ategic Link Watermain	02			03	05	DWI				31/01/2019			
271	2017_18 Q	JL750	Ba linrees o Limavady/Londonderry Supply Augmenta ion	01			03	05	DWI	08 12 2009	05/01/2010	22 02 2010	30/09/2011		30/09/2011	29/09/2012
272	2017_18 Q	JL768	Caugh Hill WTW FAS S orage	00			02	0	DRD							
273	2017_18 Q	JL769	Glenedra Water In ake Refurb shment & Access Road Repair	00			01	03	DRD							
27	2017_18 Q	JL770	Caugh Hill WTW - Upgrade of Wash Water Treatment Facil ties	02			02	0	DRD							
275	2017_18 Q	JL772	WTW - Trea ab lity Appraisal of Caugh Hi l WTW	00			02	0	DRD				31/01/2019			
276	2017_18 Q	JL773	Carmoney WTW DAF process Optimisat on	00			02	0	DWI							
277	2017_18 Q	JL77	Faughan PS - Bandscreen upgrade	00			05	01								
278	2017_18 Q	JL781	A29 Ki lytoney Realignment, Watermain Divers ons	00			03	23								
279	2017_18 Q	JL785	A6 Dungiven Drumahoe	06			03	23	DRD							
280	2017_18 Q	JL786	Carmoney Wtw Trea ab l ty Recommended Improvements	06			02	0								
281	2017_18 Q	JL787	Faughan RWPS Res lience Scheme	06			05	01								
282	2017_18 Q	JL788	Creggan SR Overf ow	00			0	01								
283	2017_18 Q	JL789	Carmoney WTW Abstract on Point Review	06			01	03								
28	2017_18 Q	JL790	Northern WRZ Res lience	06			01	03								
285	2017_18 Q	JL791	Caugh Hill CWB Rehabi ita ion	06			0	07								
286	2017_18 Q	JN390	Lough Bradan WTWs Upgrade	01			02	0	DWI	31 03 2009	27/0 /2009	31 08 2009	03/03/2011		03/03/2011	02/03/2012
287	2017_18 Q	JN 83	Glenhordial WTW expansion of ex sting sludge plant	06			02	0								
288	2017_18 Q	JN508	Lough Bradan WTW Upgrade Part 2	02			02	0	DWI							
289	2017_18 Q	JN509	Derg WTW - Upgrade of F lters and Chemical Dosing	06			02	0	DRD							
290	2017_18 Q	JN510	Strule River Omagh Trunk Wa er Main Repair	00			03	23								
291	2017_18 Q	JN511	South / South East Zonal Study South East Phase 1 Work Pac	03			03	08	DRD							
292	2017_18 Q	JN512	Omagh Phase 2 Watermain Rehab	03			03	08	UR							
293	2017_18 Q	JN51	Castletown/Koram WPS Upgrade	06			03	23	DRD							
29	2017_18 Q	JN528	Crawfords Hi l Mains Rep acement	00			03	08								
295	2017_18 Q	JN529	Co ebrook Park Road Mains Replacement	00			03	08								
296	2017_18 Q	JN530	Toura Road Mains Replacement	00			03	08								
297	2017_18 Q	JN532	Be leek Meenac oybane Strateg c Main Replacement.	06			03	23								
298	2017_18 Q	JN53	WI M Phase 2 Loughmacrory WP	06			03	08								
299	2017_18 Q	JN535	WI M Phase 2 Lough Braden Drumquin WP	06			03	08								
300	2017_18 Q	JN538	Derg WTW MCPA PEO Undertakings	06			02	0								
301	2017_18 Q	JN5 1	PC15 Year 3 WTW Cap tal Maintenance - West Region	06			02	01								
302	2017_18 Q	JN5	Doochrock o Drumkeeran Watermain Upg ades	06			03	23								
303	2017_18 Q	JN5 5	Al eyhi l o Doochrock Watermain	06			03	23								
30	2017_18 Q	JN5 6	Tyrone South WIIM 2.1 Work Package	06			03	08								
305	2017_18 Q	JN5 7	Tyrone North WIIM 2.1 Work Package	06			03	08								
306	2017_18 Q	JN5 8	Fe managh South W M 2.1 Work Package	06			03	08								
307	2017_18 Q	JN5 9	Tyrone West WIIM 2.1 Work Package	06			03	08								
308	2017_18 Q	JN550	Lough Fea o Kinsgm l s TM Replacement (Part)	06			03	23								
309	2017_18 Q	JN551	Cornamuck Road Rea ignment	00			03	23	DRD							
310	2017_18 Q	JN553	Western WRZ Resi ience	06			01	03								
311	2017_18 Q	JN555	Gortin Road, Omagh - Road W dening	06			03	23								
312	2017_18 Q	JP631	Ki lyhevlin C ear Water Tank	02			0	06	DWI				30/09/2017			
313	2017_18 Q	JP650	Ki lyhevlin WTW Imp ovements to sludge settlement sys em	0			02	0								
31	2017_18 Q	JP653	Ennisk llen New Hospi al Watermain Ext	00			03	23								
315	2017_18 Q	JP669	Ki lyhevlin WTW - GAC	00			02	0	DWI			01 06 2013	30/09/201		01/02/2015	01 02 2016
316	2017_18 Q	JP680	South / South East Zonal Study South Phase 1 Work Package	03			03	08	DRD							
317	2017_18 Q	JP683	Ha lc aig road, Enn ski len WM Ext	00			03	23	DRD							
318	2017_18 Q	JP685	Ki lyhevlin WTW Hypo Storage Tank Rep acement	03			02	01								
319	2017_18 Q	JP688	PC15 Year 2 WTW Base Maintenance – West Region	00			02	01								
320	2017_18 Q	JP690	Syon in WPS to Dungoran SR 150mm DI Watermain Replacen	06			03	23								
321	2017_18 Q	JP691	Fermanagh North WIIM 2.1 Work Package	06			03	08								
322	2017_18 Q	JP693	Ki lyhevlin Wtw treatabi ity recommended improvements.	06			02	0								
323	2017_18 Q	JP69	Rathmore SR Bel eek reroute out et	06			03	23								
32	2017_18 Q	JP695	Upgrade of Ki lyhevlin WTW's	06			02	0								
325	2017_18 Q	JP696	PC15 Year WTW Base Maintenance – West Region	06			02	01								
326	2017_18 Q	JR3 2	Strategic Link - Castor Bay to Bel ast	01			03	05	DWI			01 06 2013	30/12/201		28/02/2015	28/02/2016
327	2017_18 Q	JR3 8	Dunore to Hydepa k Pumping Main Replacement	01			03	05				17 10 2005	13/01/2012		13/01/2012	12/01/2013
328	2017_18 Q	JR3 9	Installation of DCVs at Vulnerable Si es Accross NI					0								
329	2017_18 Q	JR 9	Oldpark Watermain Imp ovements	00			03	08	UR							
330	2017_18 Q	JR 61	Ba lystockard Quarry main repair	00			03	05	DRD	31 01 2012	07/02/2012	25 07 2011	08/02/2012		08/02/2012	29/02/2012
331	2017_18 Q	JR 63	Dor s and WTW - GAC Feasib l ty Study	01			02	0	DRD				31/03/2015			
332	2017_18 Q	JR 6	Carr ckfergus Phase 3 Watermains Improvemen s	00			03	08	DRD							
333	2017_18 Q	JR 65	Frenchpark Raw Water Conduit Appraisal Study	00			01	03	DWI							
33	2017_18 Q	JR 66	McVeigh's Well Rationalisat on of Pipework	00			03	08	UR							
335	2017_18 Q	JR 69	Whiteabbey Upper Serv ce Reservoir Outlet Pipe Rep acemen	00			0	07	DWI							
336	2017_18 Q	JR 80	Warwicks Row Carrickfergus Watermain Extension	00			03	23	DRD							
337	2017_18 Q	JR 85	Former Visteon Factory - watermain extension	00			03	23								
338	2017_18 Q	JR 88	Dunanney SR Building Improvements	00			0	07								
339	2017_18 Q	JR 90	West and House, Reception and AD Bu lding Upgrade	06			15	20								
3 0	2017_18 Q	JR 9	WI M Phase 2 Be fast Ballygomartin No th WP	06			03	08								
3 1	2017_18 Q	JR 99	Dor s and Aquaduct Survey	06			01	03								
3 2	2017_18 Q	JR50	Lough Island Reavy Scour uti isation, Drought Management	06			01	03								
3 3	2017_18 Q	JR505	Stockmans Way TM Replacement Appraisal	06			03	23								
3	2017_18 Q	JR508	PC15 Year WTW Base Maintenance – East Region	06			02	01								
3 5	2017_18 Q	JS179	Ba lykine Grav ty Distribution	01			0	06	DWI	05 05 1993	23/06/1993	05 0 2010	20/0 /2011		20/0 /2011	19/0 /2012
3 6	2017_18 Q	JS220	Bangor Outer Zone Watermain Improvements	00			03	08				1 01 2008	22/09/2008		22/09/2008	22/09/2009
3 7	2017_18 Q	JS27	Drumaroad WTW Clear Water Tank	01			02	06	DWI				31/03/2021			
3 8	2017_18 Q	JS299	Seas de Road, K llyleagh, Watermain Extension.	00			03	23	DRD							
3 9	2017_18 Q	JS306	Mourne Wall Towers	03			01	03								
350	2017_18 Q	JS309	Ardview Road K llinchy Wa ermain Replacement	00			03	23								
351	2017_18 Q	JS310	Manse Road Ba lygowan water main rep acement	0			03	23								
352	2017_18 Q	JS311	Sampsons Stone, SR, Scour Pipe Diversion.	06			0	07								
353	2017_18 Q	JS312	PC15 Year 2 WTW Base Maintenance – East Region	00			02	01								
35	2017_18 Q	JS315	Russell Quarter SR Scour/Overflow arrangement.	06			0	01								
355	2017_18 Q	JT255	L sburn Public Realm	00			03	23	DRD							
356	2017_18 Q	JT256	L sburn South Rural Phase 1 & Dunmurry wa ermain improvem	00			03	08	DRD							
357	2017_18 Q	JT260	Boomers Dam Flood Attenuation	06			01	03								
358	2017_18 Q	JT261	PC15 Year 3 WTW Cap tal Maintenance - East Region	06			02	01								
359	2017_18 Q	JT262	Lurgan Moi a W IM 2.1 Wo k Package	06			03	08								
360	2017_18 Q	JT26	Leathemstown R Scour Valve, Reservoir Scour valve Fault	06			0	07								
361	2017_18 Q	JV830	Crieve Service Reservoir	01			0	06	DWI	16 01 2012	13/02/2012	30 06 2013	01/01/2015		30/03/2015	30/03/2016
362	2017_18 Q	JV853	Camlough Impounding Reservoir Dam Survey. (Condit on Ass	00			01	03	DRD							
363	2017_18 Q	JV85	Si ent Va ley recreat onal acil ties appraisal	06			01	03								
36	2017_18 Q	JV856	Newry Publ c Realm Phase 2	00			03	23	DRD							
365	2017_18 Q	JV859	Watermain Improvements, Newry, Phase 3	03			03	08	DRD							
366	2017_18 Q	JV870	Si ent Va ley Project PH3	00			01	03								
367	2017_18 Q	JV871	Newry Depot premises upgrade	06			15	20								
368	2017_18 Q	JV881	WI M 1 Phase 2 Carran Hi l Crossmag en WP	06			03	08								
369	2017_18 Q	JV885	Lough Ross Raw Water Pumping Stat on	06			02	01								
370	2017_18 Q	JV886	Banbr dge South Armagh WIIM 2.1 Work Package	06			03	08								
371	2017_18 Q	JV887	Newry West WPS, ire damage	06			06	01								
372	2017_18 Q	JZ005	Water Resource and Supply Resi ience Plan	06			01	03	DRD				31/03/2017			

Baseline service allocation / Baseline capex / Baseline purpose allocation / Current actual or projected milestone dates

SOR	BSA_WI%	BSA_WNI%	BSA_SI%	BSA_SNI%	B _Capex_20 0- _£m	B _Capex_20 - 2_£m	B _Capex_20 2- 3_£m	B _Capex_20 3- 4_£m	B _Capex_20 4- 5_£m	B _Capex_20 5- 6_£m	B _Capex_20 6- 7_£m	B _Capex_20 7- 8_£m	B A_Q%	B A_B%	B A_E%	B A_G%	CAM_A	CAM_ oec App oval	CAM_SoS	CAM_BU	CAM_RSO	CAM_CoC	CAM_EoM	CASA_WI%
	8	9	20	2	22	23	24	25	26	27	28	29	36	37	38	39	40	4	42	43	44	45	46	47
A					7 99	2 9	24 949	4	9	47 7	4	4 2												
18	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0			2 /09/2010	19/0 /2011		27/05/2011		100
185	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	2 /05/2011	01/06/2011	12/01/2011	06/03/2013		16/10/2013		92
186	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	03/11/2011	08/11/2011	02/08/2011	29/06/2015		2 /06/201		100
187	99	0	1	0	0.000	0.000	0.000	3. 7	2.733	0.000	0.000	0.000	15	62	0	23								100
188																	01/07/2013	16/07/2013	01/08/2013	29/08/201		19/12/2013	0 /11/201	100
189	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0		22/0 /2005	27/07/2009	27/01/2010		15/11/2010		100
190	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0				01/10/2010	16/08/2011		01/10/2010		100
191																	05/08/201	12/08/201	30/09/201	01/07/2015			01/07/2015	100
192																	16/07/201	17/07/201	0 /08/201	30/03/2015			01/07/2015	100
193	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0								90
19	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0 /08/2008	03/07/2009	07/12/2009	21/01/2010		0 /01/2010		100
195																	0 /06/2015	0 /06/2015						100
196																	2 /09/201	03/10/201	30/10/201	03/0 /2017				100
197																	0 /02/2016	05/02/2016						0
198																								0
199	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.078	0.1 7	0.081	0	100	0	0	22/01/2018	22/01/2018						0
200	100	0	0	0	0.000	0.000	0.000	0.000	0.000	0.92	0.919	0.913	100	0	0	0	13/03/201	25/03/201						100
201																	0 /03/201	13/03/201						100
202																	27/06/201	22/07/201	02/11/2015					0
203																	27/06/201	22/07/201						0
20																	19/11/2013	29/11/2013						0
205																	02/11/2016	0 /11/2016						0
206	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0. 60	0.000	0.000	0	0	100	0								0
207																								96
208																								9
209																	23/02/2016	29/02/2016						9
210																								10
211																	2 /11/201	27/11/201	05/01/2015	03/08/2015		31/03/2016		100
212	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.605	0.601	0.598	11	8	38		13/03/2015	18/03/2015						0
213																								0
21	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.0 7	0.0 6	0.0 6	27	11	27	36								0
215	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0. 80	0. 77	0.000	0	100	0	0	29/0 /2016	03/05/2016						0
216	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.919	0.913	100	0	0	0	22/02/2018	22/02/2018						0
217																	21/08/2015	2 /08/2015						100
218	90	10	0	0	0.000	0.000	0.000	0.000	0.000	1.05	1. 29	1. 20	0	60	6	3								90
219																	18/08/2016	18/08/2016	0 /10/2016	17/01/2017		02/02/2017	15/02/2017	0
220																	15/01/2016	15/01/2016	01/03/2016	30/03/2016		01/0 /2016		100
221																	11/08/2015	1 /09/2015	05/10/2015	2 /11/2017		31/03/2017		100
222																	07/06/2016	09/06/2016	05/09/2016	10/03/2017		31/03/2017		100
223	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.151	0.150	0.186	69	31	0	0								0
22	100	0	0	0	0.000	0.000	0.000	0.000	0.000	1.036	1.030	1.02	0	100	0	0								100
225																	0 /06/2015	16/06/2015	02/02/2015					100
226																	03/11/2015	05/11/2015	01/09/2015			31/03/2016		100
227																	07/05/2015	12/05/2015	02/02/2015			30/0 /2018		92
228																	19/06/2015	22/06/2015	0 /02/2015	23/03/2017				100
229																	07/05/2015	12/05/2015	02/02/2015					100
230																	03/11/2015	05/11/2015	01/09/2015			31/03/2016		100
231																	03/11/2015	05/11/2015	01/09/2015			31/03/2016		86
232																	03/11/2015	05/11/2015	01/09/2015			30/11/2017		100
233																								100
23																	30/0 /2015	0 /06/2015						100
235																	01/05/2015	22/06/2015						100
236																	25/06/2015	26/06/2015						0
237																	01/05/2015	03/07/2015						100
238																	11/0 /2016	18/0 /2016	02/01/2017					0
239																								0
2 0																								0
2 1																	10/08/2015	1 /09/2015						100
2 2																								100
2 3																								100
2	0	100	0	0	0.000	0.000	0.000	0.000	0.000	3.558	3. 1	3. 21	0	100	0	0								100
2 5	96		0	0	0.000	0.000	0.000	0.000	0.000	17.937	17.829	17.722	9	35	2	1								96
2 6	32. 890689	18 8972862	20.7293722	27.88 2727	0.000	0.000	0.000	0.000	0.000	.811	10.776	11.837	8	0	16	36								32. 890689
2 7	100	0	0	0	0.000	0.000	0.000	0.000	0.000	0.6 7	0. 13	0.320	0	0	0	100								100
2 8	100	0	0	0	0.000	0.000	0.000	0.000	0.000	0.589	0.293	0.291	0	100	0	0								100
2 9																	08/09/2016	08/09/2016						0
250																	09/06/2016	10/06/2016						0
251																	09/06/2016	21/07/2016	03/10/2016	31/03/2017				100
252																	09/06/2016	21/07/2016						100
253																	0 /05/2016	10/06/2016						100
25																	08/06/2016	21/07/2016						100
255																								0
256																	19/07/2017	01/08/2017						0
257																	27/03/2017	13/0 /2017						100
258																	27/03/2017	16/05/2017						100
259																	18/12/2017	16/01/2018						100
260																	21/03/2018	27/03/2018						0
261																								100
262																	13/10/2017	2 /10/2017						100
263																								0
26																	15/08/2017	03/10/2017						0
265																								100
266																	30/10/2017	16/01/2018						0
267																	1 /06/2017	16/06/2017						50
268																								100
269	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0								99
270	89	11	0	0	0.000	0.000	0.000	0.000	0.000	0.000	1.089	.363	0	0	0	100								89
271	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	08/12/2009	05/01/2010						100
272																	29/10/2013	31/10/2013	28/11/201	01/02/2016		26/12/201	0 /0 /2016	0
273																	11/0 /201	28/0 /201	28/11/201	31/03/2016		25/05/2015	16/01/2017	0
27	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.000	1.252	2.887	0	100	0	0	12/02/2016	19/02/2016	03/0 /2017					0
275	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.607	88	12	0	0								0
276	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	100	0	0								0
277																	1 /0 /201	28/0 /201	03/11/201	06/01/2016		29/01/2016		0
278																	05/12/201	11/12/201						100
279																								89
280																								0
281																								0
282																								0
283																								0
28																								100
285																								0
286	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	31/03/2009	27/0 /2009	01/0 /201	02/03/2011		30/07/2012		0
287	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.338	0.000	0.000	0	100	0	0								0
288																								0
289	0	100	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	100	0	0	02/11/2016	0 /11/2016						0
290																								100
291																	1 /02/201	21/02/201	03/03/201	20/02/2015		23/03/2015		88
292																	0 /03/201	10/03/201	02/09/2013	30/10/2015		30/03/2015		100
293																	10/08/2016	12/08/2016	05/12/2016	26/01/2018		01/12/2017		65
29																								100
295																	16/03/2016	18/03/2016	15/02/2016	29/07/2016				100
296																	16/03/2016	18/03/2016		03/0 /2017				100
297																	28/10/2016	01/11/2016	07/11/2016	18/08/2017				78
298																	17/10/2016	17/10/2016	01/08/2016					100
299																	0 /07/2016	0 /07/2016	21/07/2016					100
300																								0
301																	0 /08/2017	09/08/2017						0
302																								100
303																	02/11/2017	08/11/2017	0 /09/2017					100
30																								100
305																								100
306																								100
307																								100
308																								100
309																								100
310																								100
311																								100
312	0	100	0	0	0.000	0.000	0.009	0.018	0.000	0.851	2.815	0.756	0	35	0	65	08/06/2016	16/06/2016						0
313																	18/10/2013	28/10/2013						0
31																	16/01/2008	25/02/2008	1 /0 /2008	11/06/201		02/08/2010		100
315	0	100	0	0	0.000	0.000	0.037	1.890	1.792	0. 39	0.000	0.000	100	0	0	0	08/07/2013	19/07/2013	11/03/201	31/03/2015		27/07/2015	16/02/2017	0
316																	13/05/201	21/05/201	16/06/201	31/08/2015		30/09/2015		100
317																	15/09/201	25/09/201	09/11/201	30/03/2015				100
318																	0 /08/2015	05/08/2015	18/01/2016	27/03/2017		29/07/2016		0
319																	05/03/2016	09/03/2016						0
320																	28/10/2016	01/11/2016	07/11/2016	05/0 /2017			07/11/2017	65
321																								100
322																								0
323																								100
32																								0
325																								0
326	85	15	0	0	0.1 7	0.277	0. 3	7.982	9. 32	0.978	0.000	0.000	0	1	0	59	08/10/2012	15/10/2012	01/0 /2013	30/09/2015		30/09/2015		85
327	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0			17/10/2005	12/01/2012		29/10/2007		100
328																								0
329	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	07/10/2013	16/10/2013	08/08/2011	01/07/2015		30/03/2015	01/07/2015	100
330	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	31/01/2012	07/02/2012	25/07/2011	07/02/2012		01/08/2011	28/02/2012	100
331	0	100	0	0	0.000	0.000	0.000	0.292	3. 29	0.525	0.000	0.000	100	0	0	0	20/06/2013	27/06/2013	31/01/201	27/03/2015		31/07/2015		0
332																	1 /05/2013	22/05/2013	31/05/2013	1 /01/2015		29/08/201		99
333	100	0	0	0	0.000	0.000	0.000	0.000	0.000	0.069	0.000	0.000	0	100	0	0	28/05/2015	29/05/2015						100
33																	1 /02/2013	19/02/2013	27/06/2012	09/10/201		25/08/201		100
335																	11/01/2018	11/01/2018	11/06/2015	19/06/2015		19/06/2015		0
336																	1 /11/201	20/11/201		12/12/201			17/02/2015	100
337																								100
338																	08/02/2016	08/02/2016	0 /01/2017	26/0 /2017		31/08/2017	05/03/2018	0
339																	23/01/2018	23/01/2018	13/11/2017	05/01/2018		15/12/2017	09/01/2018	0
3 0																								100
3 1																								0
3 2																								100
3 3																								100
3																								0
3 5	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	05/05/1993	23/06/1993	05/0 /2010	20/0 /2011		30/05/2011		0
3 6	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0			1 /01/2008	21/03/2012		23/02/2009		99
3 7	0	100	0	0	0.000	0.000	0.019	0.055	0.108	0.000	0.000	0.000	0	0	0	100	13/06/2017	30/06/2017						13
3 8																	08/0 /2013	16/0 /2013	03/06/2013	0 /11/2013		16/09/2013		100
3 9																	20/03/201	25/03/201	07/0 /201	31/07/201		26/05/201		0
350																	16/12/201	18/12/201	26/01/2015	29/06/2015				100
351																	18/05/2015	27/05/2015		01/07/2015		27/03/2015	01/07/2015	100
352																	27/06/2016	28/06/2016						0
353																	05/03/2016	09/03/2016						0
35																								0
355	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	20/09/2012	15/10/2012	03/0 /2013	27/08/201		09/0 /201	02 09/201	60
356																	17/10/201	21/10/201	12/09/2013	26/02/2016		20/08/2015	29/02/2016	100
357																								100
358																	0 /08/2017	09/08/2017						0
359																								100
360																								0
361	0	100	0	0	0.001	0.02	0.089	0. 65	0.603	0.613	0.000	0.000	0	35	0	65	16/01/2012	13/02/2012	02/06/201	27/03/2015		05/10/2015	20/09/2016	0
362	100	0	0	0	0.000	0.000	0.000	0.000	0.000	0.61	0.610	0.000	0	100	0	0	29/01/2015	30/01/2015	02/05/2016	16/06/2017		16/06/2017		100
363																	31/10/2016	02/11/2016						100
36																	06/01/201	1 /01/201	20/01/201	29/08/201		26/05/201		100
365																	17/01/201	10/02/201	2 /02/201	30/01/2015		26/05/201	01/07/2015	100
366																								0
367																	29/01/2016	29/01/2016	15/03/2018					0
368																	1 /10/2016	17/10/2016	0 /07/2016					100
369																								0
370																								100
371																	21/08/2017	25/08/2017	02/10/2017					0
372	50	50	0	0	0.000	0.000	0.000	0.000	0.000	0.32	0.322	0.000	0	0	0	100	20/10/201	22/10/201						100

Current actual or projected service allocation / capex / purpose allocation / IRE / Nominated output

SOR	CASA_WNI%	CASA_SI%	CASA_SNI%	CA _Capex_ D_£m	CA _Capex_20 0- _£m	CA _Capex_20 - 2_£m	CA _Capex_20 2- 3_£m	CA _Capex_20 3- 4_£m	CA _Capex_20 4- 5_£m	CA _Capex_20 5- 6_£m	CA _Capex_20 6- 7_£m	CA _Capex_20 7- 8_£m	CA A_Q%	CA A_B%	CA A_E%	CA A_G%	CA _IRE_W%	CA _IRE_S%	NOM_Ou put
	48	49	50	5	52	53	54	55	56	57	58	59	66	67	68	69	70	7	72
A				2 2	7 7	47	92 9	4 79	7	4 7	4 27	2 2							
18	0	0	0	0.000	0 015	-0.015	0 000	0.000	0 000	0.020	0 000	0.000	0	100	0	0	0	0	01
185	8	0	0	0.050	0.1 2	2.105	-0 213	0.520	0 098	0.016	0 000	0.050	5	71	1	10	71	0	01
186	0	0	0	-0.007	0 000	1.3 6	2 560	0.886	0 107	0.23	0 018	-0.007	32	9	0	19	9	0	01
187	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	15	62	0	23	62	0	
188	0	0	0	-0.017	0 000	0.000	0 000	0.29	0 010	0.003	0 030	-0.017	0	0	0	100	0	0	01
189	0	0	0	0.000	0.182	-0.001	0 003	0.000	0 000	0.000	-0 002	0.000	8	17	1	7	17	0	01
190	0	0	0	-0.001	0 03	-0.005	0 000	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
191	0	0	0	-0.038	0 000	0.000	0 000	0.000	0 080	0.001	0 000	-0.038	100	0	0	0	0	0	
192	0	0	0	0.000	0 000	0.000	0 000	0.000	0 356	0.007	0 000	0.000	88	0	0	12	0	0	01
193	0	10	0	0.025	0 000	0.010	0 000	0.000	-0 010	0.000	0 000	0.025	0	100	0	0	90	10	01
19	0	0	0	-0.001	-0 003	0.000	0 000	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
195	0	0	0	-0.020	0 000	0.000	0 000	0.003	0 008	0.019	0 000	-0.020	0	0	0	100	0	0	01
196	0	0	0	-0.005	0 000	0.000	0 000	0.000	0 200	0.020	0 020	-0.005	7	93	0	0	93	0	01
197	100	0	0	0.097	0 000	0.000	0 000	0.039	0 038	0.000	0 275	0.097	0	100	0	0	0	0	01
198	100	0	0	0.000	0 000	0.000	0 000	0.015	0 002	0.002	0 000	0.000	0	100	0	0	0	0	01
199	100	0	0	0.000	0 000	0.000	0 000	0.010	0 071	0.000	0 000	0.000	0	100	0	0	0	0	01
200	0	0	0	-0.1 6	0 000	0.000	0 000	0.000	0. 93	0.10	0 000	-0.1 6	100	0	0	0	0	0	01
201	0	0	0	0.000	0 000	0.000	0 000	0.000	0 010	0.001	0 000	0.000	0	100	0	0	100	0	01
202	100	0	0	0.029	0 000	0.000	0 000	0.005	0 021	1.960	1.18	0.029	0	100	0	0	0	0	01
203	100	0	0	0.088	0 000	0.000	0 000	0.005	0 020	1.527	1.1 0	0.088	0	100	0	0	0	0	01
20	100	0	0	-0.029	0 000	0.000	0 000	0.080	-0 026	0.001	0 029	-0.029	0	100	0	0	0	0	01
205	100	0	0	-0.003	0 000	0.000	0 000	0.017	0 0 2	0.003	0 000	-0.003	0	100	0	0	0	0	01
206	100	0	0	0.000	0 000	0.000	0 000	0.006	0 0 6	0.007	0 000	0.000	0	0	100	0	0	0	01
207		0	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.067	0 000	-0.001	50	3	2	1	32	0	01
208	6	0	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.031	0 000	-0.001	30	51	3	16	7	0	01
209	6	0	0	2.379	0 000	0.000	0 000	0.000	0 000	0.000	1 983	2.379	30	51	3	16	7	0	01
210	90	0	0	0.006	0 000	0.000	0 000	0.000	0 019	0.037	0 000	0.006	0	100	0	0	10	0	01
211	0	0	0	0.000	0 000	0.000	0 000	0.000	0 216	0.108	0 011	0.000		56	0	0	56	0	01
212	100	0	0	0.0 2	0 000	0.000	0 000	0.000	0 011	0.050	0 000	0.0 2	0	0	50	50	0	0	01
213	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
21	100	0	0	0.082	0 000	0.000	0 000	0.000	0 000	0.0 6	0 037	0.082	27	10	27	36	0	0	01
215	100	0	0	0.815	0 000	0.000	0 000	0.000	0 000	0.0 0	0 081	0.815	32	68	0	0	0	0	01
216	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 033	0.000	100	0	0	0	0	0	01
217	0	0	0	1.03	0 000	0.000	0 000	0.000	0 000	1. 22	1 629	1.03	100	0	0	0	0	0	01
218	10	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	63	2	35	53	0	01
219	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0.160	0.000	0	100	0	0	0	0	01
220	0	0	0	-0.018	0 000	0.000	0 000	0.000	0 000	0.1 8	0 015	-0.018	0	100	0	0	100	0	01
221	0	0	0	0.076	0 000	0.000	0 000	0.000	0 000	0.175	0 032	0.076	0	100	0	0	100	0	01
222	0	0	0	-0.013	0 000	0.000	0 000	0.000	0 000	0.103	0 608	-0.013	0	100	0	0	100	0	01
223	100	0	0	0.178	0 000	0.000	0 000	0.000	0 000	0.000	0.101	0.178	70	30	0	0	0	0	01
22	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	100	0	01
225	0	0	0	-0.020	0 000	0.000	0 000	0.000	0 087	1.775	0. 55	-0.020	5	6	0	0	6	0	01
226	0	0	0	0.137	0 000	0.000	0 000	0.000	0 000	0.696	1 000	0.137	97	3	0	0	3	0	01
227	8	0	0	-0.102	0 000	0.000	0 000	0.000	0 0 5	1.929	0 520	-0.102	78		5	13	3	0	01
228	0	0	0	-0.197	0 000	0.000	0 000	0.000	0 0 0	1. 23	0 335	-0.197	96		0	0		0	01
229	0	0	0	0.005	0 000	0.000	0 000	0.000	0 080	1.685	0.176	0.005	86	1	0	0	1	0	01
230	0	0	0	0.556	0 000	0.000	0 000	0.000	0 000	0.588	1 607	0.556	66	3	0	0	3	0	01
231	1	0	0	-0.105	0 000	0.000	0 000	0.000	0 000	0.623	1 651	-0.105	73	22	5	0	13	0	01
232	0	0	0	0.563	0 000	0.000	0 000	0.000	0 000	0.702	1 202	0.563	90	10	0	0	10	0	01
233	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	50	3	2	1	3	0	01
23	0	0	0	-0.006	0 000	0.000	0 000	0.000	0 000	0.133	0 023	-0.006	0	100	0	0	100	0	01
235	0	0	0	0.069	0 000	0.000	0 000	0.000	0 000	0.259	0 06	0.069	0	95	5	0	95	0	01
236	100	0	0	-0.002	0 000	0.000	0 000	0.000	0 000	0.028	0 02	-0.002	0	100	0	0	0	0	01
237	0	0	0	0.011	0 000	0.000	0 000	0.000	0 000	0.065	-0 001	0.011	30	60	7	3	60	0	01
238	100	0	0	0.602	0 000	0.000	0 000	0.000	0 002	0.0	0 290	0.602	10	90	0	0	0	0	01
239	100	0	0	-0.025	0 000	0.000	0 000	0.000	0.150	0.015	0 035	-0.025	0	100	0	0	0	0	01
2 0	100	0	0	0.183	0 000	0.000	0 000	0.000	0 000	0.035	0 009	0.183	0	0	100	0	0	0	01
2 1	0	0	0	-0.006	0 000	0.000	0 000	0.000	0 000	0.071	0 008	-0.006	0	100	0	0	100	0	01
2 2	0	0	0	0.0 5	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.0 5	0	0	0	100	0	0	
2 3	0	0	0	0.103	0 000	0.000	0 000	0.000	0 000	0.000	0 010	0.103	0	100	0	0	100	0	01
2	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
2 5		0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	9	35	2	1	0	0	01
2 6	18.8972862	20 7293722	27 88 2727	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	8	0	16	36	0	0	
2 7	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
2 8	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
2 9	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.055	0 015	0.000	15	85	0	0	0	0	01
250	100	0	0	0.172	0 000	0.000	0 000	0.000	0 000	0.000	0 053	0.172	0	100	0	0	0	0	01
251	0	0	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 3 2	-0.001	0	95	5	0	95	0	01
252	0	0	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 090	-0.001	0	100	0	0	100	0	01
253	0	0	0	0.013	0 000	0.000	0 000	0.000	0 000	0.000	0 512	0.013	0	60	7	33	60	0	01
25	0	0	0	0.023	0 000	0.000	0 000	0.000	0 000	0.000	0 019	0.023	30	60	7	3	60	0	01
255	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 081	0.000	100	0	0	0	0	0	01
256	100	0	0	0.759	0 000	0.000	0 000	0.000	0 000	0.000	0 005	0.759	0	100	0	0	0	0	01
257	0	0	0	0.072	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.072	0	100	0	0	100	0	01
258	0	0	0	0. 68	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0. 68	0	100	0	0	100	0	01
259	0	0	0	0.030	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.030	0	100	0	0	100	0	01
260	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
261	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	100	0	01
262	0	0	0	0.2 0	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.2 0	0	95	5	0	95	0	01
263	100	0	0	0.06	0 000	0.000	0 000	0.000	0 000	0.000	0 005	0.06	0	0	100	0	0	0	01
26	100	0	0	0.092	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.092	0	100	0	0	0	0	
265	0	0	0	0. 57	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0. 57	0	100	0	0	100	0	
266	51	0	9	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
267	0	50	0	0.120	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.120	0	0	100	0	0	0	01
268	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	100	0	01
269	1	0	0	-0.001	0 006	0.06	0 032	0.01	-0 003	0.0 5	-0 027	-0.001	0	0	0	100	0	0	03
270	11	0	0	0.238	0 021	-0.008	0 016	0.076	0 036	0.100	0 0 5	0.238	0	0	0	100	0	0	02
271	0	0	0	0.000	0 3 5	0.150	0 016	0.008	0 002	0.000	0 001	0.000	0	25	0	75	25	0	
272	100	0	0	0.000	0 000	0.000	0 003	0.012	0.152	0.368	0 001	0.000	0	0	0	100	0	0	01
273	100	0	0	-0.001	0 000	0.000	0 00	0.027	0 021	0.322	0 015	-0.001	0	100	0	0	0	0	01
27	100	0	0	2.198	0 000	0.000	0 005	0.022	0 010	0.006	0.132	2.198	0	72	28	0	0	0	01
275	100	0	0	0.1 6	0 000	0.000	0 005	0.059	0 007	0.00	0 009	0.1 6	89	11	0	0	0	0	02
276	100	0	0	-0.005	0 000	0.000	0 003	0.02	0 0 9	0.067	0 005	-0.005	0	100	0	0	0	0	01
277	100	0	0	0.000	0 000	0.000	0 000	0.009	0 3 6	0.09	-0 001	0.000	0	100	0	0	0	0	01
278	0	0	0	-0.007	0 000	0.000	0 000	0.000	0 03	0.013	0 000	-0.007	0	100	0	0	100	0	01
279	6	5	0	0.0 5	0 000	0.000	0 000	0.000	0 000	0.000	0 030	0.0 5	0	100	0	0	89	5	01
280	100	0	0	0.010	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.010	100	0	0	0	0	0	
281	100	0	0	0.215	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.215	0	100	0	0	0	0	
282	100	0	0	0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.001	0	100	0	0	0	0	
283	100	0	0	0.019	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.019	0	0	0	60	0	0	
28	0	0	0	0.0 0	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.0 0	10	0	20	70	0	0	
285	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
286	100	0	0	-0.3 3	1 536	0.210	0 020	0.1 7	0 000	0.010	-0 655	-0.3 3	51	9	0	0	0	0	
287	100	0	0	-0.00	0 000	0.000	0 002	0.013	0 005	0.009	0 01	-0.00	7	93	0	0	0	0	01
288	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	35	0	0	25	0	0	01
289	100	0	0	0. 96	0 000	0.000	0 010	0.003	0 013	0. 71	0 0 5	0. 96	38	51	0	11	0	0	01
290	0	0	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.007	0 000	-0.001	0	100	0	0	100	0	01
291	12	0	0	-0.080	0 000	0.000	0 000	0.510	2 025	0.023	0 010	-0.080	32	56	0	12	56	0	01
292	0	0	0	0.121	0 000	0.000	0 000	0. 20	1 895	0.618	-0 05	0.121	19	7	0	7	7	0	01
293	35	0	0	0.339	0 000	0.000	0 000	0.000	0 015	0.005	0 306	0.339	0	7		9	12	0	01
29	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.015	-0 015	0.000	0	100	0	0	100	0	01
295	0	0	0	-0.033	0 000	0.000	0 000	0.000	0 000	0.030	0.197	-0.033	0	100	0	0	100	0	01
296	0	0	0	-0.039	0 000	0.000	0 000	0.000	0 000	0.030	0 09	-0.039	0	100	0	0	100	0	01
297	22	0	0	0.588	0 000	0.000	0 000	0.000	0 000	0.000	0 903	0.588	0	8	0	16	68	0	01
298	0	0	0	1.311	0 000	0.000	0 000	0.000	0 000	0.000	0 692	1.311	11	89	0	0	89	0	01
299	0	0	0	1.382	0 000	0.000	0 000	0.000	0 000	0.000	1 399	1.382	1	86	0	0	86	0	01
300	100	0	0	0.020	0 000	0.000	0 000	0.000	0 000	0.000	0 283	0.020	95	5	0	0	0	0	03
301	100	0	0	0.781	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.781	0	100	0	0	0	0	01
302	0	0	0	0.082	0 000	0.000	0 000	0.000	0 000	0.000	0 002	0.082	0	70	0	30	70	0	01
303	0	0	0	0.605	0 000	0.000	0 000	0.000	0 000	0.000	0 002	0.605	0	39	0	61	39	0	01
30	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	1	8	0	51	8	0	01
305	0	0	0	0.150	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.150	9	88	0	3	88	0	01
306	0	0	0	0.225	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.225	1	66	0	33	66	0	01
307	0	0	0	0.070	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.070	5	9	0	1	9	0	01
308	0	0	0	0.078	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.078	0	100	0	0	100	0	01
309	0	0	0	0.010	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.010	0	100	0	0	100	0	
310	0	0	0	0.018	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.018	10	0	20	70	0	0	
311	0	0	0	0.023	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.023	0	9	0	6	9	0	
312	100	0	0	0.218	0 000	0.000	0 000	0.000	0 000	0.000	0.19	0.218	0	3	0	66	0	0	02
313	100	0	0	0.000	0 000	0.000	0 006	0.029	0 060	0.01	0 010	0.000	95	0	5	0	0	0	03
31	0	0	0	0.000	0 000	0.000	0 003	0.000	0 000	0.003	0 000	0.000	0	0	0	100	0	0	01
315	100	0	0	-0.105	0 000	0.000	0 008	0.717	3 777	0.331	0 070	0.105	100	0	0	0	0	0	08
316	0	0	0	0.000	0 000	0.000	0 000	0.273	1 782	0.132	-0 001	0.000	8	6	0	6	6	0	01
317	0	0	0	0.000	0 000	0.000	0 000	0.000	0 011	0.000	-0 011	0.000	0	0	0	100	0	0	01
318	100	0	0	-0.015	0 000	0.000	0 000	0.000	0 012	0.3 3	0.176	-0.015	0	100	0	0	0	0	01
319	100	0	0	1.1 1	0 000	0.000	0 000	0.000	0 000	0.005	1 755	1.1 1	0	100	0	0	0	0	01
320	35	0	0	0.18	0 000	0.000	0 000	0.000	0 000	0.000	0 61	0.18	0	90	0	10	65	0	01
321	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	35	65	0	0	65	0	01
322	100	0	0	0.035	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.035	100	0	0	0	0	0	
323	0	0	0	0.015	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.015	0	100	0	0	100	0	
32	100	0	0	0.020	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.020	20	0	0	0	0	0	
325	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
326	15	0	0	0.085	0.1 7	0.28	0 259	5.10	12 295	2.929	-0. 65	0.085	0	0	0	60	3	0	02
327	0	0	0	-0.397	0 000	0.2 1	0 011	-1.27	0 0 2	0.010	0 000	-0.397	0	100	0	0	0	0	
328	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	100	0	0	0	0	0	
329	0	0	0	-0.050	0 000	0.136	-0 013	0. 01	1. 12	0.001	0 000	-0.050	66	3	0	0	3	0	
330	0	0	0	0.000	0 000	0.155	-0 001	0.000	0 000	0.000	0 000	0.000	0	100	0	0	100	0	
331	100	0	0	-0.026	0 000	0.000	0 008	0. 89	. 69	0.2	-0 0 9	-0.026	100	0	0	0	0	0	08
332	1	0	0	-0.110	0 000	0.000	0 000	1.789	0. 55	0.076	0 000	-0.110	77	10	10	3	10	0	01
333	0	0	0	-0.009	0 000	0.000	0 005	0.011	0 000	0.096	0 011	-0.009	0	100	0	0	100	0	01
33	0	0	0	-0.016	0 000	0.000	0 070	0.256	0. 99	0.000	0 000	-0.016	0	13	0	87	13	0	
335	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.001	0 000	0.000	0	100	0	0	0	0	01
336	0	0	0	-0.007	0 000	0.000	0 000	0.000	0 01	0.001	0 000	-0.007	0	0	0	100	0	0	01
337	0	0	0	-0.007	0 000	0.000	0 000	0.000	0 000	0.007	0 000	-0.007	0	0	0	100	0	0	01
338	100	0	0	0.082	0 000	0.000	0 000	0.000	0 000	0.020	0 055	0.082	0	100	0	0	0	0	01
339	100	0	0	0.0 3	0 000	0.000	0 000	0.000	0 000	0.017	-0 007	0.0 3	0	100	0	0	0	0	01
3 0	0	0	0	0.050	0 000	0.000	0 000	0.000	0 000	0.000	0 070	0.050	0	60	0	0	60	0	01
3 1	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0.178	0.000	0	100	0	0	0	0	01
3 2	0	0	0	0.028	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.028	100	0	0	0	0	0	01
3 3	0	0	0	0.015	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.015	0	100	0	0	100	0	01
3	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	
3 5	100	0	0	-0.013	1 09	0.133	0 005	0.000	0 000	0.000	0 000	-0.013	0	0	0	100	0	0	
3 6	1	0	0	0.000	0 000	-0.010	0 000	0.000	0 000	0.005	0 000	0.000	37	21	36	6	21	0	01
3 7	87	0	0	0.15	0 000	0.000	0 000	0.028	0 000	0.012	0 005	0.15	0	18	9	73		0	02
3 8	0	0	0	0.001	0 000	0.000	0 000	0.001	0 000	0.000	0 000	0.001	0	0	0	100	0	0	
3 9	100	0	0	0.000	0 000	0.000	0 000	0.008	0 058	0.002	0 000	0.000	0	100	0	0	0	0	
350	0	0	0	-0.010	0 000	0.000	0 000	0.000	0.110	0.010	0 000	-0.010	100	0	0	0	0	0	01
351	0	0	0	-0.010	0 000	0.000	0 000	0.000	0 010	0.0 2	0 000	-0.010	0	100	0	0	100	0	01
352	100	0	0	0.00	0 000	0.000	0 000	0.000	0 000	0.017	0 075	0.00	0	100	0	0	0	0	01
353	100	0	0	0.615	0 000	0.000	0 000	0.000	0 000	0.005	1 950	0.615	0	100	0	0	0	0	01
35	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	0	01
355	0	0	0	0.000	0 000	0.000	0 029	1.077	-0.123	0.001	0 000	0.000	0	97	0	3	60	37	
356	0	0	0	-0.09	0 000	0.000	0 000	0.298	1 322	0. 36	0 073	-0.09	1	8	0	2	8	0	01
357	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.003	0 000	0.000	0	100	0	0	100	0	01
358	100	0	0	0.507	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.507	0	100	0	0	0	0	01
359	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	77	23	0	0	23	0	01
360	100	0	0	0.021	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.021	0	100	0	0	0	0	01
361	100	0	0	0.003	0 001	0.025	0 09	0.0 9	0 73	0.687	0 000	0.003	0	3	0	66	0	0	08
362	0	0	0	0.307	0 000	0.000	0 000	0.0	0 352	0. 50	1 865	0.307	0	100	0	0	100	0	01
363	0	0	0	0.927	0 000	0.000	0 000	0.006	0 012	0.00	0 016	0.927	0	95	5	0	95	0	01
36	0	0	0	-0.001	0 000	0.000	0 000	0.211	0 068	0.002	0 000	-0.001	0	100	0	0	100	0	01
365	0	0	0	-0.038	0 000	0.000	0 000	0.100	0 288	0.001	0 000	-0.038	13	77	0	10	77	0	01
366	100	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.001	0 000	0.000	100	0	0	0	0	0	01
367	50	0	50	0.052	0 000	0.000	0 000	0.000	0 000	0.030	0 025	0.052	0	100	0	0	0	0	01
368	0	0	0	1. 05	0 000	0.000	0 000	0.000	0 000	0.000	0 62	1. 05	26	69	5	0	69	0	01
369	100	0	0	0.015	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.015	0	100	0	0	0	0	01
370	0	0	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	17	5	0	29	5	0	01
371	100	0	0	0.0 9	0 000	0.000	0 000	0.000	0 000	0.000	0 003	0.0 9	0	100	0	0	0	0	01
372	0	0	0	0.105	0 000	0.000	0 000	0.000	0 002	0.182	0 305	0.105	10	60	10	20	60	0	02



| | | |

e e a										ase e M es e a es							ase e e v e s A a				ase e x e e e m 2 2- es)								ase e se A a				e A a e e M es e a es							e A a e e e v e s A a				e A a e e a a x e e e mm e a)									e A a e e se A a %)				e A a e e %)		m a e s e)
So t Re	C M Submiss on Re e ence	o ect D Re e ence	o ect Name	C oject e od	a ent oject ID	Substi ute o ect ID	ma y Asset Ca ego y	C 0 og amme	Regula o y S gn O Requi ed	Base ine A Date	Base ine o ect App oval Date	Base ne Sta t on S te Da e	Base ine Bene cial Use Date	Basel ne Regulato y sign-o Da e	Base ine Comp e ion o Const uct on Date	Base ine End o Main enance e od Date	Base ine Se vice A locat on Wate n ast uc u e	Base ine Se vice Al oca ion Wate Non- n ast uc u e	Base ine Se v ce A locat on Sewe age In ast uctu e	Basel ne Se v ce Al oca ion Sewe age Non- In ast uctu e	Basel ne CA EX 20 0- £m	Base ine CA EX 20 - 2 £m	Basel ne CA EX 20 2- 3 £m	Base ne CA EX 20 3- 4 £m	Base ine CA EX 20 4- 5 £m	Basel ne CA EX 20 5- 6 £m	Base ine CA EX 20 6- 7 £m	Basel ne CA EX 20 7- 8 £m	Base ine u pose A locat on Qual ty	Base ine u pose Al oca ion Base	Base ine u pose A locat on ES	Basel ne u pose Al oca ion G ow h	Cu ent Actual o o ected A Da e	Cu ent Ac ua o ojected oject App oval Date	Cu ent Actual o o ected Sta t on Si e Date	Cu ent Ac ua o ojected Bene cial Use Da e	Cu ent Actual o o ected Regu ato y sign-o Da e	Cu ent Actual o ojec ed Comple ion o Const uc ion Date	Cu ent Actual o o ected End o Maintenance e iod Date	Cu ent Actual o ojec ed Se v ce A locat on Wa e In ast uctu e	Cu ent Actual o o ec ed Se v ce A locat on Wa e Non- n ast uc u e	Cu ent Actual o o ec ed Se v ce A locat on Sewe age n ast uc u e	Cu ent Actual o o ec ed Se v ce A locat on Sewe age Non- n ast uc u e	Cu ent Actual o o ected CA EX ea to date £m	Cu ent Actual o ojec ed CA EX 20 0- £m	Cu ent Actual o o ected CA EX 20 - 2 £m	Cu ent Actual o ojec ed CA EX 20 2- 3 £m	Cu ent Ac ual o o ected CA EX 20 3- 4 £m	Cu ent Actual o o ec ed CA EX 20 4- 5 £m	Cu ent Ac ual o ojected CA EX 20 5- 6 £m	Cu ent Actual o o ected CA EX 20 6- 7 £m	Cu ent Ac ual o ojected CA EX 20 7- 8 £m	Cu ent Actual o o ec ed u pose Al oca ion Qua i y	Cu ent Actual o o ec ed u pose A location Base	Cu ent Actual o o ected u pose Al oca ion ES	Cu ent Actual o ojected u pose A locat on G owth	Cu ent Ac ual o ojected RE Al oca ion Wate	Cu ent Ac ual o ojected RE Al oca ion Sewe age	Nom na ed Output
	2	3	4	5	6	7	8	9	0		2	3	4	5	6	7	8	9	20	2	22	23	24	25	26	27	28	29	36	37	38	39	40	4	42	43	44	45	46	47	48	49	50	5	52	53	54	55	56	57	58	59	66	67	68	69	70	7	72
A			T a a aex e ee e																		7 99	2 9	24 949	4	9	47 7	4	4 2																2 2	7 7	47	92 9	4 79	7	4 7	4 27	2 2							
SOR	CIM_Sub	I_ oject_ D	I_ oject_Name	I_ C_ e iod	I_ AREN _ oject_ D	I_SUBS I U E_ oect_ID	I_ I_Asset_Cat	I_ C 0_ og	I_Reg_Signo	B M_A	B M_ oect_App oval	B M_SoS	B M_BU	B M_RSO	B M_CoC	B M_EoM	BSA_WI%	BSA_WNI%	BSA_SI%	BSA_SNI%	B _Capex_20 0- _£m	B _Capex_20 - 2_£m	B _Capex_20 2- 3_£m	B _Capex_20 3- 4_£m	B _Capex_20 4- 5_£m	B _Capex_20 5- 6_£m	B _Capex_20 6- 7_£m	B _Capex_20 7- 8_£m	B A_Q%	B A_B%	B A_E%	B A_G%	CAM_A	CAM_ oec App oval	CAM_SoS	CAM_BU	CAM_RSO	CAM_CoC	CAM_EoM	CASA_WI%	CASA_WNI%	CASA_SI%	CASA_SNI%	CA _Capex_ D_£m	CA _Capex_20 0- _£m	CA _Capex_20 - 2_£m	CA _Capex_20 2- 3_£m	CA _Capex_20 3- 4_£m	CA _Capex_20 4- 5_£m	CA _Capex_20 5- 6_£m	CA _Capex_20 6- 7_£m	CA _Capex_20 7- 8_£m	CA A_Q%	CA A_B%	CA A_E%	CA A_G%	CA _IRE_W%	CA _IRE_S%	NOM_Ou put
751	2017_18 Q	KF385	Coalisland Road Dungannon S orm Sewer Ex ension	00	KI538		07	2																									21/11/201	21/11/201	0 /01/2016	22/0 /2016		13/10/201	07/07/2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.021	0 005	0.000	0	0	0	100	0	0	01
752	2017_18 Q	KF386	Old Omagh Road Phase 1, Ballygawley Storm Sewer	00	KI538		07	2	DRD																								28/10/201	05/11/201						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 020	0.001	-0 001	0.000	0	0	0	100	0	0	01
753	2017_18 Q	KF392	8-20 S oans Street Dungannon Storm Sewer Extens on	00	KI538		07	2																									2 /05/2016	2 /05/2016	09/01/2017	22/02/2017		31/03/2017	05/05/2017	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0.131	0.000	0	0	0	100	0	0	01
75	2017_18 Q	KG118	Crumlin Road Storm Sewer Extens on	00	KI538		07	2	NIEA	10 09 2008	15/09/2008	01 12 2008	16/11/2010		16/11/2010	16/11/2011	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	10/09/2008	15/09/2008	01/12/2008	15/11/2010		16/02/2009		0	0	100	0	0.000	0 005	-0.001	0 005	0.000	0 000	0.005	0 000	0.000	0	0	0	100	0	0	01
755	2017_18 Q	KG168	Lyndale Manor Portadown Foul Sewer Extens on	00	KI538		07	2	NIEA	20 08 2009	03/09/2009	03 11 2009	20/01/2010		20/01/2010	16/03/2010	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	20/08/2009	03/09/2009	03/11/2009	19/01/2010		19/01/2010	16/03/2010	0	0	100	0	-0.003	0 003	0.002	-0 00	0.000	0 000	0.000	0 000	-0.003	0	0	0	100	0	0	
756	2017_18 Q	KG17	Lake Street Lurgan, Foul & S orm Sewer Ex ensions	00	KI538		07	2	NIEA																								27/11/201	27/11/201	09/02/2015	30/03/2015		06/03/2015	21/0 /2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 066	0.000	-0 015	0.000	0	0	0	100	0	0	01
757	2017_18 Q	KG189	Cornakinnegar Road, Lurgan Foul & Sto m Sewer Extension	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	09/01/2013	16/01/2013	23/09/2015	30/03/2016		20/05/2016	13/10/2016	0	0	100	0	-0.003	0 000	0.002	0 010	-0.015	0 001	0.2 3	0 000	-0.003	0	0	0	100	0	0	01
758	2017_18 Q	KG201	Derrytrasna Road, Lurgan, Foul Pumping Main Extension	00	KI538		07	2	DRD																								08/09/201	17/09/201		29/0 /2016			30/06/2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 037	0.000	0	0	0	100	0	0	01
759	2017_18 Q	KG20	Princess Way, Portadown, S orm Sewer Extension	00	KI538		07	2	DRD																								17/08/2015	17/08/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.010	0 000	0.037	0 000	0.000	63	37	0	0	0	37	01
760	2017_18 Q	KG206	Drumnagroon, Kernan Hill Rd, Craigavon Foul & Storm Sewer	00	KI538		07	2																									11/06/2015	16/06/2015						0	0	100	0	-0.01	0 000	0.000	0 000	0.000	0 000	0.089	0 000	-0.01	0	0	0	100	0	0	01
761	2017_18 Q	KG207	Obins Street Portadown Storm Sewer Extens on	00	KI538		07	2	DRD																								0 /0 /2017	0 /0 /2017						0	0	100	0	0.020	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.020	0	0	0	100	0	0	01
762	2017_18 Q	KG209	L snisky Lane, Por adown Foul Sewer Extension	00	KI538		07	2																									07/03/2017	13/0 /2017	19/06/2017	19/10/2017		31/03/2016	08 01 2018	0	0	100	0	0.18	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.18	0	0	0	100	0	0	01
763	2017_18 Q	KL376	Glengall agh Pumping Station and Pumping Main	00	KI538		07	2	NIEA			16 0 2007	15/0 /2006		15/0 /2006	15/0 /2007	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0								0	0	78	22	-0.00	0 0 3	0.015	0 00	0.006	0 000	0.000	0 016	-0.00	0	0	0	100	0	0	01
76	2017_18 Q	KL 72	Chapel Road, Dungiven, Foul Sewer Extension	00	KI538		07	2	NIEA	26 09 2011	03/10/2011	23 01 2012	22/02/2012		22/02/2012	21/02/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	26/09/2011	03/10/2011	23/01/2012	03/02/2012		06/02/2012		0	0	100	0	-0.001	0 001	0.009	0 000	0.002	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	01
765	2017_18 Q	KL 7	Gracef eld Road Maghe afelt S orm Sewer Ex ension	00	KI538		07	2	DRD	28 06 2011	0 /07/2011	0 0 2011	09/09/2011		09/09/2011	08/09/2012	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	28/06/2011	0 /07/2011						0	0	100	0	0.000	0 001	0.001	0 000	0.001	0 001	0.01	0 000	0.000	0	0	0	100	0	0	01
766	2017_18 Q	KL 77	Steelstown Road, Londonderry, Foul and Storm Sewer Extens	00	KI538		07	2	NIEA	19 0 2012	01/05/2012	11 06 2012	05/09/2012		05/09/2012	05/09/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	19/0 /2012	01/05/2012	11/06/2012	31/08/2012		27/08/2012		0	0	100	0	0.008	0 001	0.002	0 0 8	0.000	0 000	0.001	0 000	0.008	0	0	0	100	0	0	01
767	2017_18 Q	KL 79	Circu ar Road, Derry Storm sewer extens on	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	21/11/2012	11/12/2012	0 /03/2013	31/01/201		28/10/2013	03/11/201	0	0	100	0	-0.007	0 000	0.015	0 050	0. 85	-0 016	0.000	0 001	-0.007	0	22	0	78	0	22	
768	2017_18 Q	KL519	Cu da f Gardens, Derry Storm Sewer Extens on	00	KI538		07	2	DRD																								05/06/201	20/06/201	18/03/201	12/12/201		28/11/201	05/01/2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 033	0.018	0 000	0.000	0	0	0	100	0	0	01
769	2017_18 Q	KL520	37 Limavady Road, Derry Storm Sewer Ext	00	KI538		07	2	DRD																								18/02/2016	18/02/2016	0 /0 /2016	17/06/2016		31/03/2016	26/08/2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 087	0.000	0	0	0	100	0	0	01
770	2017_18 Q	KL529	St Peter' s H gh School Re-Development F&S Sewer	00	KI538		07	2																									0 /08/2015	0 /08/2015						0	0	100	0	-0.00	0 000	0.000	0 000	0.000	0 000	0.070	0 000	-0.00	0	0	0	100	0	0	01
771	2017_18 Q	KN610	Drumlegagh S orm Sewer Extens on	00	KI538		07	2	NIEA	13 11 2008	25/11/2008	20 07 2009	25/09/2009		25/09/2009	25/09/2010	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	13/11/2008	25/11/2008	20/07/2009	16/11/2010		28/09/2009		0	0	100	0	-0.003	0 012	-0.006	0 000	0.000	0 000	0.000	0 000	-0.003	0	0	0	100	0	0	
772	2017_18 Q	KN627	Meadowvale, Dublin Rd, N'townstewart, Foul Sewer Extension	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	03/07/2015	03/07/2015						0	0	100	0	0.000	0 000	0.003	0 000	0.001	0 003	0.036	0 005	0.000	0	0	0	100	0	0	01
773	2017_18 Q	KN6 5	Derry Road, Strabane.	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	22/02/2013	01/03/2013	02/0 /2012	18/11/2013		21/10/2013	06 01 201	0	0	100	0	0.001	0 000	0.000	0 007	0.006	-0 002	0.000	0 000	0.001	0	0	0	100	0	0	
77	2017_18 Q	KN660	L snaragh Road Donemana Foul sewer Extens on	00	KI538		07	2	DRD																								15/0 /201	12/05/201	09/06/201	20/02/2015		21/07/201	18 11 2015	0	0	100	0	0.000	0 000	0.000	0 000	0.002	0 068	0.006	0 000	0.000	0	0	0	100	0	0	01
775	2017_18 Q	KP60	Empire Mea s Ltd, Dernawi t Road Rosslea Sewage Pumping I	00	KI538		07	2	NIEA	18 0 2011	0 /05/2011	06 06 2011	2 /08/2011		2 /08/2011	2 /08/2011	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	18/0 /2011	0 /05/2011	06/06/2011	2 /08/2011		18/07/2011	2 /08/2011	0	0	100	0	-0.001	0 00	0.028	0 001	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
776	2017_18 Q	KP667	Aghadrumsee New Primary School Foul & Storm Sewer Ex en	00	KI538		07	2	DRD	21 11 2011	25/11/2011	09 01 2012	23/09/2011		23/09/2011	22/09/2012	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	21/11/2011	25/11/2011						0	0	100	0	-0.001	0 000	0.02	0 003	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
777	2017_18 Q	KP678	Coa Road, Enn skil en Storm Sewer Ext.	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	03/09/201	17/09/201						0	0	100	0	0.001	0 000	0.00	0 00	0.000	0 005	0.000	-0 001	0.001	0	0	0	100	0	0	01
778	2017_18 Q	KR361	Carrowreagh Road Dundonald Storm Sewer	00	KI538		07	2	NIEA	12 03 2009	2 /03/2009	21 05 2012	2 /09/2012		2 /09/2012	2 /09/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	12/03/2009	2 /03/2009	0 /01/2011	2 /09/2012		26/11/2013		0	0	100	0	-0.005	0 003	0.01	0 610	0.071	0 007	0.002	0 000	-0.005	0	0	0	100	0	0	01
779	2017_18 Q	KR397	Brooke Ha l, Cairnsh ll Be fast Foul Sewer Ex ension	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	16/12/2013	19/12/2013	02/06/201	12/12/201		28/11/201	0 /02/2015	0	0	100	0	0.000	0 001	-0.001	0 000	0.000	0 080	0.002	0 000	0.000	0	0	0	100	0	0	01
780	2017_18 Q	KR 22	Mersey Street, Belfast Storm Sewer	00	KI538		07	2	NIEA	05 08 2011	25/08/2011	05 05 2008	05/0 /2012		05/0 /2012	05/0 /2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	23/05/201	03/06/201	28/07/201	11/12/2015		30/01/2015	0 05/2016	0	0	100	0	0.000	0 001	0.000	0 000	0.003	0 272	0.937	0 059	0.000	0	28	38	3	0	28	01
781	2017_18 Q	KR 29	York Street, Be fast Inte change	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0								0	0	100	0	0.007	0 000	0.009	0 000	0.012	0 068	0.00	0 009	0.007	0	100	0	0	0	100	01
782	2017_18 Q	KR 58	287 Ballygomartin Road, Bel ast Foul Sewer Extension.	00	KI538		07	2	NIEA	0 05 2010	07/05/2010	1 06 2010	12/11/2010		12/11/2010	19/05/2011	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0 /05/2010	07/05/2010	1 /06/2010			17/01/2011	19/05/2011	0	0	100	0	-0.001	0.123	0.000	0 001	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
783	2017_18 Q	KR 63	Circu ar Road Bel ast, Storm Sewer Extension	00	KI538		07	2	NIEA			19 07 2010	06/08/2010		06/08/2010	06/08/2011	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0 /05/2010	13/05/2010				23/0 /2012		0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
78	2017_18 Q	KR 90	Donegal Avenue Wh tehead Foul Sewer Ex ension	00	KI538		07	2	NIEA	07 07 2011	11/07/2011	0 0 2011	01/09/2011		01/09/2011	31/08/2012	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	07/07/2011	11/07/2011						0	0	100	0	0.015	0 000	0.001	0 000	0.000	0 000	0.000	0 002	0.015	0	0	0	100	0	0	01
785	2017_18 Q	KR 93	Ba lyrobert Road Ballyclare S orm Sewer Extension	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	08/09/201	17/09/201	01/06/2015	11/12/2015		27/11/2015	25 01 2016	0	0	100	0	-0.008	0 000	0.002	0 000	0.000	0 000	0.06	0 000	-0.008	0	0	0	100	0	0	01
786	2017_18 Q	KR509	Carr ckfergus Publ c Realm Sewers	00	KI538		07	2	DRD	02 0 2012	06/0 /2012	09 09 2011	31/05/2012		31/05/2012	31/05/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	02/0 /2012	06/0 /2012						0	0	100	0	0.000	0 000	0.099	0.109	0.001	0 002	0.015	0 000	0.000	0	100	0	0	0	100	01
787	2017_18 Q	KR533	Springfield Crescent, Belfast, Storm Sewer Extension	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	08/05/2013	22/05/2013	10/02/201	29/0 /201		18/0 /201	20 08 2015	0	0	100	0	-0.003	0 000	0.000	0 003	0.010	0 017	0.003	0 000	-0.003	0	0	0	100	0	0	01
788	2017_18 Q	KR571	Drumbeg Road Storm Sewer Extens on	03	KI538		07	2	DRD																								19/06/2015	19/06/2015	05/10/2015	18/11/2015		30/10/2015	15 12 2015	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.021	0 000	0.000	0	0	0	100	0	0	01
789	2017_18 Q	KR573	M ll Road. Newtownabbey, Storm Sewer Extension	00	KI538		07	2	DRD																								21/11/201	21/11/201	13/0 /2015	12/06/2015			18 11 2015	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.078	0 000	0.000	0	0	0	100	0	0	01
790	2017_18 Q	KR57	Antrim Road, Glengormley, S orm & Foul Sewer Ex ension	00	KI538		07	2	DRD																								06/03/201	13/03/201	28/0 /201	27/08/201		19/06/201	20 11 201	0	0	100	0	-0.00	0 000	0.000	0 000	0.005	0 060	0.000	0 000	-0.00	0	0	0	100	0	0	
791	2017_18 Q	KR577	165 Groomsport Rd, Bangor - Storm Sewer Upg ade	00	KI538		07	2	DRD																								0 /0 /2017	0 /0 /2017						0	0	100	0	0.01	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.01	0	0	0	100	0	0	01
792	2017_18 Q	KR578	Ferry Quarter, Shore Road, Strangford foul and storm sewer	00	KI538		07	2	DRD																								01/09/201	17/09/201	01/12/201	12/06/2015		31/03/2015	22/12/2015	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 020	0.00	0 000	0.000	0	0	0	100	0	0	01
793	2017_18 Q	KR582	Torrens Park Belfast Storm Sewer	00	KI538		07	2	DRD																								11/08/201	05/09/201						0	0	100	0	0.000	0 000	0.000	0 000	-0.005	0 099	0.005	0 000	0.000	0	0	0	100	0	0	01
79	2017_18 Q	KR583	Victo ia Road, Be fast - Foul Sewer Extens on and Storm Sepa	00	KI538		07	2	DRD																								06/10/201	08/10/201	21/11/2016	16/05/2017		20/01/2017	31/08/2017	0	0	100	0	-0.005	0 000	0.000	0 000	-0.007	0 0 6	0.110	0.105	-0.005	0	0	0	100	0	0	01
795	2017_18 Q	KR58	Glenv lle Rd, Newtownabbey - Storm Sewer	00	KI538		07	2	DRD																								09/09/201	17/09/201						0	0	100	0	-0.00	0 000	0.000	0 000	0.000	0 033	0.002	0 000	-0.00	0	0	0	100	0	0	01
796	2017_18 Q	KR587	Glenwell Rd, Newtownabbey S orm Sewer	00	KI538		07	2	DRD																								12/01/2017	12/01/2017						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 022	0.000	0	0	0	100	0	0	01
797	2017_18 Q	KR590	Ba lygowan Road Be fast Storm Sewer Extension	00	KI538		07	2	DRD																								19/0 /2016	19/0 /2016	0 /07/2016	19/09/2016		26/08/2016	06/02/2017	0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.000	0.125	0.001	0	0	0	100	0	0	01
798	2017_18 Q	KR591	137-1 1 Ormeau Road Bel ast Storm Sewer Extension	00	KI538		07	2	DRD																								0 /08/2015	0 /08/2015	0 /07/2016	31/08/2016		26/08/2016	15/12/2017	0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 0 3	-0.001	0	0	0	100	0	0	01
799	2017_18 Q	KR592	QUB Med cal Centre University Terrace Storm Sewer Extens o	00	KI538		07	2	DRD																								05/02/2015	16/02/2015	06/06/2016	23/06/2016		0 /07/2016	12/12/2016	0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 0 7	-0.001	0	0	0	100	0	0	01
800	2017_18 Q	KR593	Glenmachan Street Belfast Storm Sewer for McDona ds	00	KI538		07	2	DRD																								10/09/201	17/09/201	01/12/201	12/12/201		01/09/201	20/0 /2015	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 030	0.00	0 000	0.000	0	0	0	100	0	0	01
801	2017_18 Q	KR597	Ba lynure Road, Ballyclare S orm Sewer Extension	00	KI538		07	2	DRD																								0 /08/2015	0 /08/2015	20/06/2016			11/11/2016		0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0.157	-0.001	0	0	0	100	0	0	01
802	2017_18 Q	KR607	Galway Park & Galway Drive, Dundonald Storm Sewer	00	KI538		07	2																									23/09/2015	23/09/2015	07/03/2016	19/0 /2016		22/0 /2016	26/10/2017	0	0	100	0	-0.002	0 000	0.000	0 000	0.000	0 000	0.0 3	0 01	-0.002	0	0	0	100	0	0	01
803	2017_18 Q	KR609	Former Visteon S te Bel ast Foul & Storm Sewer Extension	00	KI538		07	2	DRD																								09/02/2017	01/03/2017						0	0	100	0	0.00	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.00	0	0	0	100	0	0	01
80	2017_18 Q	KR613	Si e at 9-11 Ballycraigy Rd, Foul and S orm Sewer	00	KI538		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
805	2017_18 Q	KR615	530 Shore Road, Belfast	00	KI538		07	2																									2 /07/2015	2 /07/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
806	2017_18 Q	KR616	172 North Road, Carr ckfergus Storm Sewer Ext.	00	KI538		07	2																									0 /08/2015	0 /08/2015	18/07/2016	13/10/2016		26/08/2016		60	0	0	0	-0.013	0 000	0.000	0 000	0.000	0 000	0.000	0.117	-0.013	0	20	0	0	20	0	01
807	2017_18 Q	KS3 7	Crossgar Road, Ba lynahinch Sto m Sewer	00	KI538		07	2	NIEA	23 07 2009	02/09/2009	05 09 2011	11/06/2012		11/06/2012	11/06/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	23/07/2009	02/09/2009	11/07/2011	11/06/2012		03/06/2013		0	0	100	0	-0.010	0 009	0.2 9	0 055	-0.009	0 000	0.000	0 000	-0.010	0	0	0	100	0	0	
808	2017_18 Q	KS387	Manse Road, Seaforde Storm Sewer Extens on	00	KI538		07	2	NIEA	09 0 2009	27/0 /2009	01 02 2011	25/02/2011		25/02/2011	25/02/2012	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	09/0 /2009	27/0 /2009	01/02/2011			22/02/2011		0	0	100	0	0.003	0 00	0.000	0 000	0.000	0 000	0.000	0 000	0.003	0	0	0	100	0	0	
809	2017_18 Q	KS82	Sprinf e d Road, Portavogie Storm Sewer Extension	00	KI538		07	2	NIEA	20 07 2009	03/08/2009	21 07 2009	09/10/2009		09/10/2009	09/10/2010	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	20/07/2009	03/08/2009						0	0	100	0	0.001	0 000	0.002	0 000	0.003	0 000	0.000	0 000	0.001	0	0	0	100	0	0	01
810	2017_18 Q	KS838	Downpatrick Street Crossgar, Storm sewer.	00	KI538		07	2	NIEA	02 03 2011	15/03/2011	08 0 2011	09/02/2012		09/02/2012	08/02/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	02/03/2011	15/03/2011	08/0 /2011	08/02/2012		27/01/2012		0	0	100	0	-0.001	0 003	0.213	-0 013	0.008	-0 001	0.000	0 000	-0.001	0	8	76	16	0	8	
811	2017_18 Q	KS850	Quar y Heights, Newtowna ds, Foul and Storm Sewer Extensic	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	31/10/2013	0 /11/2013	22/01/201	18/03/201		09/0 /201		0	0	100	0	-0.01	0 003	0.000	0 000	0.16	-0 029	0.000	0 000	-0.01	0	0	0	100	0	0	
812	2017_18 Q	KS851	Main Street, C oughey, Pumping main, Foul and Storm Sewer	01	KI538		07	2	NIEA	11 09 2012	21/09/2012	06 09 2010	28/12/2012		28/12/2012	28/12/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	11/09/2012	21/09/2012	06/05/2013	30/07/2013		27/05/2013		0	0	100	0	0.000	0 003	0.002	0 001	0.078	0 017	0.003	0 001	0.000	0	0	0	100	0	0	01
813	2017_18 Q	KS85	Green Road, Con ig. Storm Sewer Extension.	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	06/07/2015	07/07/2015	17/10/2015	09/03/2017		31/03/2016		0	0	99	1	-0.283	0 006	0.000	0 000	0.01	0 000	0.720	0 53	-0.283	0	0	0	100	0	0	01
81	2017_18 Q	KS876	Old Bel ast Road, Bangor - Storm Sewer Extens on	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	18/12/2012	21/12/2012	13/0 /2015	28/07/2015		29/06/2015	28/07/2015	0	0	100	0	0.000	0 001	0.001	0 002	-0.003	0 002	0.099	0 000	0.000	0	10	0	90	0	10	01
815	2017_18 Q	KS893	Magheraknock Road Ballynahinch S orm Sewer Extension	00	KI538		07	2	DRD	0 01 2012	12/01/2012	07 05 2012	27/07/2012		27/07/2012	27/07/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0 /01/2012	12/01/2012	07/05/2012			23/07/2012		0	0	100	0	0.000	0 000	0.003	-0 002	0.000	0 000	0.001	0 000	0.000	0	0	0	100	0	0	01
816	2017_18 Q	KS895	Ardnava ley Comber Sewer Pumping Main Ex ension	00	KI538		07	2	DRD	20 07 2012	17/08/2012	15 10 2012	22/03/2013		22/03/2013	22/03/201	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	20/07/2012	17/08/2012	01/0 /2013	27/08/201		27/08/201	20/07/2015	0	0	9	6	-0.00	0 000	0.005	0 008	0.239	0 077	0.005	0 006	-0.00	76	2	0	0	0	18	01
817	2017_18 Q	KS92	Anns ie d C ose, K llyleagh Storm Sewer Ex ension.	00	KI538		07	2	DRD																								29/07/2013	06/08/2013						0	0	100	0	0.000	0 000	0.000	0 002	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
818	2017_18 Q	KS93	Moss Road, Ba lygowan, Pumping S ation Rationalisat on	00	KI538		07	2	DRD																								18/08/201	2 /09/201	01/12/201	27/02/2015			09/08/2016	0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 058	0.000	0 000	-0.001	0	0	0	100	0	0	
819	2017_18 Q	KS935	Co lege Ave/ Shandon Drive, Bangor - S orm Sewer Requisit o	00	KI538		07	2	DRD																								27/08/201	17/09/201	0 /06/2018			27/05/2016		0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	60	0	0	01
820	2017_18 Q	KS9 7	L ttle En er, Comber - Foul Sewer Extension	00	KI538		07	2																									0 /08/2015	0 /08/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
821	2017_18 Q	KS951	Chester Avenue Bangor S orm Sewer Extension	00	KI538		07	2																									27/10/2015	27/10/2015		29/01/2016			17/03/2016	0	0	100	0	-0.005	0 000	0.000	0 000	0.000	0 000	0.019	0 000	-0.005	0	0	0	100	0	0	01
822	2017_18 Q	KS952	Quo le Crescent, Downpatr ck, Foul and Storm Sewer Rep ace	00	KI538		07	12																									06/06/2017	16/06/2017	0 /09/2017			23/02/2018		0	0	100	0	0.523	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.523	0	100	0	0	0	100	01
823	2017_18 Q	KS956	M llbrook, Ba lynahinch, Storm Sewer Extension	00	KI538		07	2																									22/12/2015	22/12/2015						0	0	100	0	0.002	0 000	0.000	0 000	0.000	0 000	0.000	0 020	0.002	0	0	0	100	0	0	01
82	2017_18 Q	KS960	Adj 189 Donaghadee Rd, Bangor - Foul Sewer	00	KI538		07	2																									29/0 /2016	29/0 /2016						0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 028	-0.001	0	0	0	100	0	0	01
825	2017_18 Q	KT382	McKeown Street L sburn Environmen al Improvemen s	00	KI538		07	12	NIEA																															0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	100	0	0	0	100	01
826	2017_18 Q	KT389	Magheralave Road L sburn, Foul Sewer Extension	00	KI538		07	2	NIEA	16 07 2009	03/08/2009	2 08 2009	09/10/2009		09/10/2009	09/10/2010	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	16/07/2009	03/08/2009	07/03/2016	09/03/2017		31/03/2016		0	0	100	0	-0.002	0 000	-0.001	0 000	0.000	0 000	0.077	0 050	-0.002	0	0	0	100	0	0	01
827	2017_18 Q	KT39	Mount Eagles, Stewarts own Road, L sburn.	00	KI538		07	2	NIEA	15 11 2010	12/01/2011	01 0 2011	06/06/2011		06/06/2011	05/06/2012	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	15/11/2010	12/01/2011	01/0 /2011	19/05/2011		03/06/2011		0	0	100	0	-0.005	0 011	0.056	-0 001	0.000	0 000	0.000	0 000	-0.005	0	0	0	100	0	0	
828	2017_18 Q	KT396	Blaris Road Lisburn Storm Sewer Extension	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0								0	0	100	0	0.000	0 00	0.00	-0 00	0.002	0 000	0.001	0 000	0.000	0	0	0	100	0	0	01
829	2017_18 Q	KT 00	W llow Gardens Dunmurry Sewer Extension	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	01/07/2016	01/07/2016						0	0	100	0	0.0 1	0 002	0.000	0 005	-0.002	0 000	0.000	0 012	0.0 1	0	0	0	100	0	0	01
830	2017_18 Q	KT 07	Creevy Road, Lisburn S orm Sewer Ex ension	00	KI538		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	28/0 /201	02/05/201						0	0	100	0	0.000	0 000	0.00	0 000	0.000	0 012	0.00	-0 001	0.000	0	0	0	100	0	0	01
831	2017_18 Q	KT 17	Mount Eagles, Lisburn, Foul Sewer	00	KI538		07	2	DRD																								25/07/2013	05/08/2013	09/12/2013	29/01/201		09/12/2013	23/10/201	0	0	100	0	-0.002	0 000	0.000	0 000	0.0 7	0 003	0.000	0 000	-0.002	0	0	0	100	0	0	
832	2017_18 Q	KT 18	Dromore Road, H llsborough Pumping Stat on	00	KI538		12	2	DRD																								01/07/2015	10/07/2015						0	0	0	100	0.108	0 000	0.000	0 000	0.000	0 000	0.001	0 000	0.108	0	0	0	100	0	0	01
833	2017_18 Q	KT 20	Knockbracken Road New ownards Foul Sewer Ext	00	KI538		07	2																									2 /07/2015	2 /07/2015		23/03/2017		16/01/2017		0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 062	-0.001	0	0	0	100	0	0	01
83	2017_18 Q	KV129	Old Newry Road, Banbr dge Foul Sewer Ext	00	KI538		07	2	NIEA								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	08/01/2016	08/01/2016	30/08/2016	16/09/2016		26/09/2016	05 12 2016	0	0	100	0	-0.001	0 001	0.000	0 000	0.000	0 000	0.000	0 027	-0.001	0	0	0	100	0	0	01
835	2017_18 Q	KV1 2	Chancel ors Road, Newry Foul Sewage Pumping Main Ex ens	00	KI538		07	2	NIEA	16 09 2010	19/11/2010	1 03 2011	02/11/2011		02/11/2011	02/11/2011	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	16/09/2010	19/11/2010	1 /03/2011	30/03/2011		28/03/2011	02/11/2011	0	0	100	0	-0.001	0 015	0.002	-0 001	0.000	0 000	0.000	0 000	-0.001	0	0	0	100	0	0	
836	2017_18 Q	KV151	Carr ckdesland, Burren Foul Sewer Extens on	00	KI538		07	2	NIEA	02 07 2009	07/07/2009	31 08 2009	22/02/2010		22/02/2010	12/11/2010	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	02/07/2009	07/07/2009	31/08/2009			0 /07/2011	11/11/2010	0	0	100	0	0.000	0 006	0.002	0 001	0.000	0 000	0.001	0 000	0.000	0	0	0	100	0	0	01
837	2017_18 Q	KV152	Abbey Grammar School S orm Sewer Extension	00	KI538		07	2	NIEA	21 0 2009	05/05/2009	06 07 2009	15/11/2010		15/11/2010	15/11/2011	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	21/0 /2009	05/05/2009	06/07/2009	15/11/2010		31/08/2009		0	0	100	0	0.000	0 002	-0.002	0 007	0.000	0 000	0.007	0 000	0.000	0	0	0	100	0	0	01
838	2017_18 Q	KV156	Crieve Road, Newry Foul & Storm Sewer Ex ensions	00	KI538		07	2	NIEA	16 08 2010	08/09/2010	31 10 2011	17/02/2012		17/02/2012	16/02/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	16/08/2010	08/09/2010	31/10/2011	03/08/2012		06/08/2012	21/12/2012	0	0	100	0	0.000	0 001	0.092	0 027	-0.001	0 000	0.00	0 000	0.000	0	0	0	100	0	0	01
839	2017_18 Q	KV166	Upper Dromore Road, War enpoint - Upgrade of Storm Sewer.	00	KI538		07	2	NIEA	13 06 2011	30/06/2011	22 08 2011	26/01/2012		26/01/2012	25/01/2013	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	13/06/2011	30/06/2011	22/08/2011	1 /10/2011		28/11/2011		0	0	100	0	0.000	0 006	0.1 7	-0 001	0.000	0 000	0.002	0 000	0.000	0	0	0	100	0	0	01
8 0	2017_18 Q	KV170	Glassdrumman Road, Anna ong, Foul Sewer Extension	00	KI538		07	2	NIEA	02 12 2011	08/12/2011	01 0 2013	10/06/2013		10/06/2013	10/06/201	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	02/12/2011	08/12/2011						0	0	100	0	0.001	0 003	0.001	0 000	0.037	0 002	0.000	0 000	0.001	0	0	0	100	0	0	
8 1	2017_18 Q	KV203	Scarva Street Loughbrickland Pumping Main	00	KI538		07	2	DRD																								2 /07/2015	2 /07/2015				16/01/2015		0	0	100	0	0.016	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.016	0	0	0	100	0	0	01
8 2	2017_18 Q	KV205	Courtney H ll, Newry, Storm Sewer Extension	00	KI538		07	2	DRD																								27/11/201	27/11/201	30/06/2015	16/10/2015			21 12/2015	0	0	100	0	0.000	0 000	0.000	0 000	0.011	0 000	0.09	0 000	0.000	72	28	0	0	0	28	01
8 3	2017_18 Q	KV208	Laurel Grove Newry Foul Sewer Extens on	00	KI538		07	2	DRD																								17/09/201	25/09/201						0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.031	0 001	0.001	0	0	0	100	0	0	01
8	2017_18 Q	KV212	Percy Lodge, Dromo e Storm Sewer	00	KI538		07	2	DRD																								27/07/2015	27/07/2015						0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.009	-0 002	0.001	0	0	0	100	0	0	01
8 5	2017_18 Q	KV213	Calmor View, L s ea - Storm Sewer Extension.	00	KI538		07	2																									29/11/201	29/11/201						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 038	0.005	0 000	0.000	0	0	0	100	0	0	01
8 6	2017_18 Q	KV21	Tollymore Rd, Newcastle Foul & Storm Sewer	00	KI538		07	2																									07/07/2015	07/07/2015	30/05/2016	2 /06/2016		01/07/2016	08 12 2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 057	0.000	0	0	0	100	0	0	01
8 7	2017_18 Q	KV215	26 Crossgar Road, Saint ie d foul and storm sewer	00	KI538		07	2																									16/06/2015	16/06/2015	2 /08/2015	12/01/2016		25/09/2015	25 01 2016	0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.039	0 000	0.000	0	0	0	100	0	0	01
8 8	2017_18 Q	KV216	St Josephs Primary, Newry, Storm Sewer.	00	KI538		07	2																									10/11/2015	10/11/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
8 9	2017_18 Q	KV218	Old Road Mayobr dge Foul & Storm Sewer	00	KI538		07	2	DRD																								06/07/2015	06/07/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.030	0 000	0.000	0	0	0	100	0	0	01
850	2017_18 Q	KI539	PC15 Projects - Cluster of Septic Tanks causing Pollut on	0			09	16	NIEA																															0	0	100	0	0.000	0 000	0.000	0 000	0.008	0 000	0.00	0 000	0.000	100	0	0	0	0	0	01
851	2017_18 Q	KI5 0	Wastewater treatment works be onging o bankrupt developers	0			07	17	NIEA																															0	0	0	100	0.000	0 000	0.000	0 000	0.016	0 006	0.015	0 002	0.000	0	0	0	100	0	0	01
852	2017_18 Q	KI5 1	Sewerage Infrastructure Appraisal(s) for adoption from bankru	0			07	2	NIEA																															0	0	0	100	0.000	0 000	0.000	0 000	0.006	0 021	0.011	0 002	0.000	0	0	0	100	0	0	01
853	2017_18 Q	KI5 2	Small Rural WWTW Programme PC13	00			09	17	NIEA								0	0	0	100	0.000	0.000	0.000	.9 2	1.837	0.000	0.000	0.000	10	0	0	50	08/07/2013	19/07/2013	03/01/201	31/03/2015		27/03/2015	07/09/2015	0	0	0	100	-0.079	0 000	0.000	0 000	0.673	3 752	0.97	0. 35	-0.079	10	0	0	50	0	0	08
85	2017_18 Q	KI5 3	Pump Away Scheme Removal Appra sal	00			05	02	DRD																								15/01/2018	15/01/2018						0	0	0	100	0.000	0 000	0.000	0 000	0.030	0 018	0.000	-0 022	0.000	0	100	0	0	0	0	01
855	2017_18 Q	KI5	Non UWWTW MCert Compliance	0			09	16	NIEA								0	0	0	100	0.000	0.000	0.000	0.000	0.000	0.277	0.368	0.365	100	0	0	0								0	0	0	100	-0.022	0 000	0.000	0 000	0.000	0 060	0.065	0 000	-0.022	100	0	0	0	0	0	01
856	2017_18 Q	KI5 5	Sub Metering at selected WwTW	00			07	02	DRD								0	0	0	100	0.000	0.000	0.000	0.000	0.000	0.229	0.1	0.225	0	0	100	0								0	0	0	100	-0.001	0 000	0.000	0 000	0.009	0 066	0.012	0 000	-0.001	0	0	100	0	0	0	01
857	2017_18 Q	KI5 7	CSO Mon toring PC15	0			07	12	UR								0	0	0	100	0.000	0.000	0.000	0.000	0.000	0.873	0.867	0.862	100	0	0	0	03/08/2016	0 /08/2016						0	0	39	61	0.115	0 000	0.000	0 000	0.003	0 03	0.015	0.19	0.115	0	0	100	0	0	0	01
858	2017_18 Q	KI5 9	Non-Infrastructure Major Works	0			09	16																																0	30	0	70	0.036	0 000	0.000	0 000	0.000	0 019	0.015	0 0 2	0.036	3	26	0	31	0	0	01
859	2017_18 Q	KI551	FTS and Minor Sewerage - Professional Services (PC15)	00			07	2																									10/07/201	17/07/201						0	0	87	13	0.961	0 000	0.000	0 000	0.000	0 000	0. 32	0 661	0.961	0	17	0	83	0	15	01
860	2017_18 Q	KV222	Ca seal Court, Ba lyho land, Newry, Storm Sewer Extension.	00	KI538		07	2																									0 /08/2015	0 /08/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.026	0 000	0.000	0	0	0	100	0	0	01
861	2017_18 Q	KA271	Lylehi l Road, Temp epatr ck, Foul Sewer Ex ension.	00	KI551		07	2																									13/10/2017	13/10/2017						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
862	2017_18 Q	KA272	Hi lhead Road, Ballyclare Foul & Sto m Sewer	00	KI551		07	2																									26/02/2016	26/02/2016						0	0	100	0	0.026	0 000	0.000	0 000	0.000	0 000	0.000	0 082	0.026	0	0	0	100	0	0	01
863	2017_18 Q	KA27	Clare Park, Clare Road, Ballycastle Foul Sewer Ext	00	KI551		07	2																									23/08/2017	23/08/2017	0 /09/2017	2 /11/2017				0	0	100	0	0.138	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.138	0	0	0	100	0	0	01
86	2017_18 Q	KA277	The Old Station Dunadry S orm sewer	00	KI551		07	2																									0 /10/2017	0 /10/2017	21/11/2017	19/01/2018		19/01/2018		0	0	100	0	0.020	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.020	0	0	0	100	0	0	01
865	2017_18 Q	KA278	The Square, Ballyclare	06	KI551		07	2																									09/01/2018	09/01/2018						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
866	2017_18 Q	KA282	Ki limorr e Bel aghy Rd Dunloy, Foul sewer extens on.	06	KI551		07	2																									18/09/2017	18/09/2017		05/12/2017			23/01/2018	0	0	100	0	0.035	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.035	0	0	0	100	0	0	
867	2017_18 Q	KA283	Birch H ll Road, Antrim, Foul & Storm Sewer Ex ension.	06	KI551		07	2																									21/02/2018	21/02/2018						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
868	2017_18 Q	KA285	B031 28 Lands Opp 1 2 Upper Road G eenisland, Foul sewe	06	KI551		07	2																																0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.001	0	0	0	100	0	0	
869	2017_18 Q	KA286	Ferrard Meadow Antrim Foul Sewer	00	KI551		07	2																																0	0	100	0	0.002	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.002	0	0	0	100	0	0	
870	2017_18 Q	KB527	Tobermore Rd, Maghera elt Storm Sewer	00	KI551		07	2																									20/01/2016	20/01/2016						0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 015	-0.001	0	0	0	100	0	0	01
871	2017_18 Q	KB528	Trostan Avenue, Ba lymena, Foul Sewer Extension.	00	KI551		07	2																									12/01/2017	12/01/2017	03/0 /2017	07/0 /2017			26/09/2017	0	0	100	0	0.005	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.005	0	0	0	100	0	0	01
872	2017_18 Q	KB529	Castle Tower Special School, Trostan Avenue, Ballymena	00	KI551		07	2																									01/10/2016	01/10/2016	06/03/2017	07/0 /2017		1 /0 /2017	05/09/2017	0	0	100	0	-0.007	0 000	0.000	0 000	0.000	0 000	0.000	0 065	-0.007	0	0	0	100	0	0	01
873	2017_18 Q	KB530	Ba lymena Showgrounds S C. F&S sewer extens on	00	KI551		07	2																									17/11/2016	17/11/2016						0	0	100	0	0.027	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.027	0	0	0	100	0	0	01
87	2017_18 Q	KB531	Glenravel Rd Cargan Ballymena F&S sewer ext.	00	KI551		07	2																									28/11/2016	28/11/2016						0	0	100	0	0.020	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.020	0	0	0	100	0	0	01
875	2017_18 Q	KB533	Old own Road, Bellaghy Foul Sewer	00	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
876	2017_18 Q	KB536	Sourh ll Road Ba lymena Storm Sewer	00	KI551		07	2																									19/12/2017	19/12/2017						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
877	2017_18 Q	KB538	297-303 Ballymoney Rd Ballymena, S orm sewer ex ension	06	KI551		07	2																									28/09/2017	28/09/2017						0	0	100	0	0.01	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.01	0	0	0	100	0	0	
878	2017_18 Q	KB5 3	Ba lee Drive Ballymena, Foul & S orm Sewer Extens on Requis	06	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
879	2017_18 Q	KC 71	Laurel Hi l, Coleraine, Storm Sewer Extens on	00	KI551		07	2																									01/07/2016	01/07/2016						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 0 1	0.000	0	0	0	100	0	0	01
880	2017_18 Q	KC 78	The Cloisters, Bushm lls	06	KI551		07	2																									16/08/2017	16/08/2017	26/02/2018			30/03/2018		0	0	100	0	0.05	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.05	0	0	0	100	0	0	01
881	2017_18 Q	KC 80	B02260 Coleraine Ente prise zone project, Sewer pumping m	06	KI551		07	2																									19/12/2017	19/12/2017	05/02/2018	28/03/2018				0	0	100	0	0.07	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.07	0	0	0	100	0	0	
882	2017_18 Q	KF393	The Ho lows, Lurgan - Storm Sewer Requistion	00	KI551		07	2																									10/12/2015	10/12/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 018	0.000	0	0	0	100	0	0	01
883	2017_18 Q	KF39	Co ebrooke Rd Fivemi etown S orm Sewer	00	KI551		07	2																									01/07/2016	01/07/2016						0	0	100	0	0.020	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.020	0	0	0	100	0	0	01
88	2017_18 Q	KF395	Favour Royal Road, Augher Foul Sewer	00	KI551		07	2																									09/12/2015	09/12/2015						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.022	0 003	0.000	0	0	0	100	0	0	01
885	2017_18 Q	KF399	3A The Square, Moy Foul Sewer Ext.	00	KI551		07	2																									20/07/2016	03/08/2016						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 02	0.000	0	0	0	100	0	0	01
886	2017_18 Q	KF 01	Southern Regional College, Banbr dge Storm Sewer	00	KI551		07	2																									30/08/2017	30/08/2017				0 /06/2018		0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
887	2017_18 Q	KF 07	Sa ter Grange Rd, Armagh - S orm Sewer Ex ension	06	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
888	2017_18 Q	KG211	Edward St, Po tadown Foul & S orm Sewer.	00	KI551		07	2																									1 /10/2016	1 /10/2016						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
889	2017_18 Q	KG212	Armagh Rd, Portadown, Foul Sewer Requisi ion	00	KI551		07	2																									2 /06/2017	2 /06/2017	27/10/2017	09/02/2018		26/01/2018		0	0	100	0	0.170	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.170	0	0	0	100	0	0	01
890	2017_18 Q	KG216	Mounthall Grange, C onmaka e Rd, Storm Sewer	00	KI551		07	2																									19/02/2018	19/02/2018						0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 001	0.001	0	0	0	100	0	0	01
891	2017_18 Q	KG218	8-10 Lurgan Road, Crumlin	06	KI551		07	2																									27/10/2017	27/10/2017						0	0	100	0	0.030	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.030	0	0	0	100	0	0	01
892	2017_18 Q	KG22	So itude Demense, Lurgan, Storm & Foul Sewer	06	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
893	2017_18 Q	KL53	Sion Mi ls Stable Block Foul Sewer	00	KI551		07	2																									26/11/2015	26/11/2015						0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.021	-0 003	-0.001	0	0	0	100	0	0	01
89	2017_18 Q	KL535	Northland Road, Londonderry, S orm and Foul Sewer Extensio	00	KI551		07	2																									01/07/2016	03/08/2016						0	0	100	0	0.036	0 000	0.000	0 000	0.000	0 000	0.000	0 065	0.036	0	0	0	100	0	0	01
895	2017_18 Q	KL5 0	Foyle Co lege, Limavady Road, Derry S orm Sewer	00	KI551		07	2																									15/11/2016	15/11/2016	23/01/2017	07/0 /2017			05/05/2017	0	0	100	0	0.019	0 000	0.000	0 000	0.000	0 000	0.000	0.120	0.019	0	0	0	100	0	0	01
896	2017_18 Q	KL5	Carmoney Court, Eglinton Storm Sewer	00	KI551		07	2																									06/11/2017	06/11/2017	20/11/2017	11/01/2018				0	0	100	0	0.05	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.05	0	0	0	100	0	0	01
897	2017_18 Q	KL5 6	Dalys Brae, Drumahoe	06	KI551		07	2																									06/09/2017	06/09/2017	13/12/2017	16/02/2018		16/02/2018		0	0	100	0	0.065	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.065	0	0	0	100	0	0	01
898	2017_18 Q	KL5 7	Be t Road, Altnagelvin, Foul Sewer rep acement	06	KI551		07	2																									2 /01/2018	2 /01/2018	12/02/2018	28/03/2018				0	0	100	0	0.105	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.105	0	0	0	100	0	0	01
899	2017_18 Q	KL5 8	B010 99 Nixons Corner Braehead Londonderry, Foul sewer	06	KI551		07	2																									13/0 /2018	13/0 /2018						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
900	2017_18 Q	KL550	Coneyvi le Coney Rd Culmore L'Derry, Foul & Storm Sewer Ex	06	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
901	2017_18 Q	KN669	Omagh IPS Foul & Storm	00	KI551		07	2																									23/08/2017	23/08/2017		27/01/2018				0	0	100	0	0.0 3	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.0 3	0	0	0	100	0	0	01
902	2017_18 Q	KN670	B02 99 Gaelscoil na gCrann school) Omagh	06	KI551		07	2																																0	0	100	0	0.002	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.002	0	0	0	100	0	0	
903	2017_18 Q	KN672	Greenan Road Tril ick, Foul pumping main.	06	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
90	2017_18 Q	KN675	Academy 61 Derry Rd, Storm Sewer Extension	06	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	
905	2017_18 Q	KR511	Ravenhi l Road Bel ast - Storm Sewer Ex ension	00	KI551		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0								0	0	100	0	0.002	0 000	0.005	0 012	-0.001	0 000	0.001	0 000	0.002	0	0	0	100	0	0	01
906	2017_18 Q	KR555	Lapwing, Newtownards - Article 11 Enforcement Site	00	KI551		07	2	DRD																								05/08/201	17/09/201	21/11/2016	27/01/2017		10/02/2017		0	0	100	0	-0.008	0 000	0.000	0 000	0.005	0 000	0.000	0.10	-0.008	0	0	0	100	0	0	01
907	2017_18 Q	KR612	Olympia Le sure Centre Windsor Park Storm Sewer Requ s tio	00	KI551		07	2																									23/06/2016	27/06/2016	19/09/2016	12/05/2017			19/05/2017	0	0	100	0	0.226	0 000	0.000	0 000	0.000	0 000	0.000	0 5	0.226	0	39	0	61	0	39	01
908	2017_18 Q	KR617	Glen Road, Bel ast - Storm Sewer Ex ension	00	KI551		07	2																									26/02/2016	02/03/2016						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
909	2017_18 Q	KR621	Co lege Avenue, Be fast, Storm Sewer Extens on.	00	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
910	2017_18 Q	KR626	Ba lydu f Road, Newtownabbey Storm Sewer Ext	00	KI551		07	2																									16/08/2016	16/08/2016						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 015	0.000	0	0	0	100	0	0	01
911	2017_18 Q	KR638	Ravara Gardens, Bangor Foul Sewer	00	KI551		07	2																									22/11/2016	22/11/2016						0	0	100	0	0.01	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.01	0	0	0	100	0	0	01
912	2017_18 Q	KR639	Prince Andrew Way, Carr ckfe gus Foul Sewer	00	KI551		07	2																									23/11/2016	23/11/2016						0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 022	-0.001	0	0	0	100	0	0	01
913	2017_18 Q	KR6 1	336-3 O dpark Road, Belfast F&S sewer req.	00	KI551		07	2																									29/06/2017	29/06/2017	21/08/2017	08/09/2017			02/03/2018	0	0	100	0	0.030	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.030	0	0	0	100	0	0	01
91	2017_18 Q	KR6 3	Fashoda St, Bel ast Storm Sewer Requisition.	00	KI551		07	2																									1 /02/2017	1 /02/2017						0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.001	0	0	0	100	0	0	01
915	2017_18 Q	KR6	2-2 Shore Road Green sland Sto m Sewer	00	KI551		07	2																									10/10/2017	10/10/2017						0	0	100	0	0.027	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.027	0	0	0	100	0	0	01
916	2017_18 Q	KR6 9	Durham Street, Bel ast Storm Sewer Extension.	00	KI551		07	2																									0 /07/2017	0 /07/2017				02/07/2018		0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
917	2017_18 Q	KR650	Brookha l Foul Sewer Ex ension	00	KI551		07	2																									28/06/2017	28/06/2017	31/07/2017	1 /09/2017			01/11/2017	0	0	100	0	0.102	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.102	0	0	0	100	0	0	01
918	2017_18 Q	KR651	Castle St, Comber - foul and s orm sewer requ s tion	00	KI551		07	2																									03/05/2017	03/05/2017						0	0	100	0	0.026	0 000	0.000	0 000	0.000	0 000	0.000	0 001	0.026	0	0	0	100	0	0	01
919	2017_18 Q	KR652	Templepatr ck Road, Ballyclare Foul Sewer	00	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
920	2017_18 Q	KR65	Brookmount Street, Belfast - Storm Sewer Extension	00	KI551		07	2																									18/09/2017	18/09/2017		31/01/2018			30/03/2018	0	0	100	0	0.02	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.02	0	0	0	100	0	0	01
921	2017_18 Q	KR655	2- Cheston Street, Car ickfergus storm sewer	00	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
922	2017_18 Q	KR657	Glenbryn Park, Be fast - Storm Sewer	00	KI551		07	2																									10/10/2017	10/10/2017	27/11/2017	17/01/2018				0	0	100	0	0.061	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.061	0	0	0	100	0	0	01
923	2017_18 Q	KR658	Fi zroy Ave, Be fast S orm Sewer Ex ension	00	KI551		07	2																									05/09/2017	05/09/2017						0	0	100	0	0.052	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.052	0	0	0	100	0	0	01
92	2017_18 Q	KR660	113 Bangor Rd, Newtowna ds Storm Sewer Requ s tion	00	KI551		07	2																									15/11/2017	15/11/2017	26/02/2018	29/03/2018				0	0	100	0	0.0 7	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.0 7	0	0	0	100	0	0	01
925	2017_18 Q	KR661	Woodburn Primary School Carrick ergus	06	KI551		07	2																									31/08/2017	31/08/2017				0 /06/2018		0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
926	2017_18 Q	KR666	St Bernade te P/School Belfast Storm Sewer	00	KI551		07	2																									27/10/2017	27/10/2017						0	0	100	0	0.05	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.05	0	0	0	100	0	0	01
927	2017_18 Q	KS916	Flying Horse Rd, Downpatr ck Sewer Extens on	00	KI551		07	2	DRD								0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	27/01/201	10/02/201	20/02/2017	2 /02/2017		03/03/2017	02 05 2017	0	0	100	0	0.000	0 000	0.000	0 002	0.002	-0 001	0.000	0 013	0.000	0	0	0	100	0	0	01
928	2017_18 Q	KS959	Saul Rd, Downpatrick S orm Sewer Extens on	00	KI551		07	2																																0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
929	2017_18 Q	KS961	Cronstown Road, Newtownards, Sto m Sewer Upgrade	00	KI551		07	2																									07/0 /2016	07/0 /2016						0	0	100	0	-0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 012	-0.001	0	0	0	100	0	0	01
930	2017_18 Q	KS963	Skipperstone Road, Bangor, Foul & Storm Sewer Requ s tion	00	KI551		07	2																									08/03/2017	08/03/2017				07/07/2017		0	0	100	0	0.065	0 000	0.000	0 000	0.000	0 000	0.000	0 009	0.065	0	0	0	100	0	0	01
931	2017_18 Q	KS967	1 High Bangor Rd, Donaghadee - Foul Sewer Requ s tion.	00	KI551		07	2																									20/12/2016	23/12/2016	13/02/2017					0	0	100	0	0.037	0 000	0.000	0 000	0.000	0 000	0.000	0 028	0.037	0	0	0	100	0	0	01
932	2017_18 Q	KS969	Glenford Grove, Newtownards - Foul & Storm Sewer Extens or	00	KI551		07	2																									07/12/2016	07/12/2016						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
933	2017_18 Q	KS970	SEC-1833 Hunters Mill, Downpatrick Art11	00	KI551		07	2																																0	0	100	0	0.001	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.001	0	0	0	100	0	0	01
93	2017_18 Q	KS973	North Rd, Newtownards Storm Sewer Extens on	06	KI551		07	2																									16/0 /2018	16/0 /2018						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
935	2017_18 Q	KT 2	Hi lsborough Rd, Dromara Sto m Sewer	00	KI551		07	2																									07/07/2017	07/07/2017						0	0	100	0	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.000	0	0	0	100	0	0	01
936	2017_18 Q	KT 26	Derr aghy Rd, Lisburn - S orm Sewer Extension	00	KI551		07	2																									2 /0 /2017	2 /0 /2017	12/03/2018			16/0 /2018		0	0	100	0	0.038	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.038	0	0	0	100	0	0	01
937	2017_18 Q	KT 27	Lurgan Road, Moira - Storm Sewer Extension	00	KI551		07	2																									18/05/2017	18/05/2017						0	0	100	0	0.025	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.025	0	0	0	100	0	0	01
938	2017_18 Q	KT 29	Windmi l Lane, Ballynahinch Storm Sewer Requisit on	00	KI551		07	2																									11/08/2017	11/08/2017						0	0	100	0	0.016	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.016	0	0	0	100	0	0	01
939	2017_18 Q	KT 30	Hu ls Lane Lisburn storm sewer extens on	00	KI551		07	2																									10/08/2017	10/08/2017	12/03/2018			16/0 /2018		0	0	100	0	0.037	0 000	0.000	0 000	0.000	0 000	0.000	0 000	0.037	0	0	0	100	0	0	01

SOR	CIM_Sub	I_ oject_D	I_ oject_Name	I_C_ e iod	I_AREN_ oject_D	I_SUBS I U E_ o ect_ID	I_ i_Asset_Cat	I_C 0_ og	I_Reg_Signo
9 0	2017_18 Q	KT 31	Strawberry Hi l Ballynahinch Road Lisburn	00	KI551		07	2	
9 1	2017_18 Q	KT 32	52-58 Main Street Glenavy, storm sewer ex ension.	06	KI551		07	2	DRD
9 2	2017_18 Q	KT 33	125 Old Dundona d Road Dundonald , Foul & Storm sewer ext	06	KI551		07	2	
9 3	2017_18 Q	KT 3	Drumnakelly Wwps, Storm sewer extens on	06	KI551		07	2	
9	2017_18 Q	KV197	Monteith Road Annac one Foul & Sto m Sewer Extensions	00	KI551		07	2	DRD
9 5	2017_18 Q	KV226	Dromore Street, Banbridge Foul Sewer Extens on	00	KI551		07	2	
9 6	2017_18 Q	KV229	Ben Crom P ace, K lkeel - S orm Sewer Ex ension	00	KI551		07	2	
9 7	2017_18 Q	KI55	Energy Eff c ency at WwTW s Screw Pumps	00			09	02	
9 8	2017_18 Q	KI555	Stormwater Seperat on Programme for PC15	0			07	12	DRD
9 9	2017_18 Q	KI556	Small Rural WWTW Programme - PC15(2015-2021)	0			09	17	NIEA
950	2017_18 Q	KI557	PC15 Year 1 WWTW Base Maintenance – West Reg on	06			09	02	
951	2017_18 Q	KI558	Engineering Spec ficat ons Standards.	0			15	20	
952	2017_18 Q	KI559	PC15 Year 1 WWTW Base Maintenance - East Region	06			09	02	
953	2017_18 Q	KI560	PC15 Year 1 WWTW Base Maintenance – South Reg on	06			09	02	
95	2017_18 Q	KI561	PC15 Year 1 WWTW Base Maintenance – North Region	06			09	02	
955	2017_18 Q	KI562	PC15 Year 1 WwPS Base Maintenance	06			12	02	
956	2017_18 Q	KI563	Base Main enance Assoc ated o DG5 Investigations	00			07	12	
957	2017_18 Q	KI56	Appra sal of DG5 At-R sk Register Locat ons (Mi igation Phase	0			07	12	DRD
958	2017_18 Q	KI565	PC15 PSCEMD (Sewerage)	00			09	16	
959	2017_18 Q	KI568	Po lu ed Stormwa er Ou fall Solut ons - Phase 2	00			07	12	
960	2017_18 Q	KI571	Asset Resil ence Phase 3-Coastal Wastewater Treatment Wor	06			09	02	
961	2017_18 Q	KI573	DG5 Programme - Parent Code	06			07	12	UR
962	2017_18 Q	KI57	PC15 Base Maintenance (Sewerage) Parent	06			09	02	
963	2017_18 Q	KI575	PC15 (Sub Programme 12) Bathing Wa er and She lf sh Water	06			07	12	
96	2017_18 Q	KI576	PC15 (Sub Programme 16) Bathing Wa er and She lf sh Water	06			09	16	
965	2017_18 Q	KI577	PC15 UID Programme Parent	06			07	12	
966	2017_18 Q	KI578	PC15 Appra sal of NIW infrastructure at Railways, DRD Road (	06			07	2	
967	2017_18 Q	KI580	PC15 Base maintenance balancing line	06			0	99	
968	2017_18 Q	KI581	PC15 FTS (Sewe age) Parent EP	06			07	2	
969	2017_18 Q	KI582	PC15 Public Realm (Sewerage) Parent EP	06			07	2	
970	2017_18 Q	KI583	PC15 Implementation of PC13 Odour & IPPC Strategy	06			10	16	UR
971	2017_18 Q	KI58	PC15 Review of Sludge, IPPC and Odour Strategies	06			10	02	UR
972	2017_18 Q	KI585	Wastewater Marine Investment Scoping Study	06			09	16	
973	2017_18 Q	KI586	PC15 Year 2 WwPS Base Maintenance	06			12	02	
97	2017_18 Q	KI589	CMP Project : Improving Capab lity in Capi al Main enance P a	06			15	20	UR
975	2017_18 Q	KI591	Pi ch Fibre Sewer Replacement	06			07	12	
976	2017_18 Q	KI592	Samp ing and Analysis for WwTW PC15	00			1	20	
977	2017_18 Q	KI593	Independent Review of Annsborough WwTW Pollut on Inciden	06			1	20	
978	2017_18 Q	KI59	PC15 Year 3 WwPS Base Maintenance	06			12	02	
979	2017_18 Q	KI595	Fi e Safety Regu at on Compl ance	06			15	20	
980	2017_18 Q	KI596	CSO Mon toring Within Shell ish and Bathing Water Areas	06			07	12	
981	2017_18 Q	KI597	Marine Model ing, Bathing Wa ers (WwTW and Sewerage Syst	06			09	16	
982	2017_18 Q	KI598	Marine Model ing, She lf sh Wa ers Excluding Belfast Lough (W	06			09	16	
983	2017_18 Q	KI599	Marine Model ing, She lf sh Wa ers Including Belfast Lough (W	06			09	16	
98	2017_18 Q	KI601	Strategic Sewerage Network Mode ling, Bathing Waters Excluc	06			07	12	
985	2017_18 Q	KI603	Strategic Sewerage Network Mode ling, Shellf sh Waters Exclu	06			07	12	
986	2017_18 Q	KI60	Strategic Sewerage Network Mode ling, Shellf sh and Bathing \	06			07	12	
987	2017_18 Q	KI607	NI Long Term Sludge Stra egy	06			11	02	
988	2017_18 Q	KI608	Programme and Cost Management	06			15	20	
989	2017_18 Q	KI609	Integrated Delivery Serv ces.	06			15	20	
990	2017_18 Q	KI610	Asset Per ormance Service	06			1	20	
991	2017_18 Q	KI613	PC21 Preparedness and Assistance in Cost Setting	06			07	20	
992	2017_18 Q	KI61	PC15 Year WWPS Base Maintenance	06			12	02	
993	2017_18 Q	KI616	GRP Feasib lity study	06			15	02	
99	2017_18 Q	KL3 5	Donnybrewer WwTW	01			09	15	NIEA
995	2017_18 Q	KL350	Benone Area Sewerage	01			09	16	NIEA
996	2017_18 Q	KL386	Gortnahey WwTW	05			09	16	
997	2017_18 Q	KL39	Drumsurn WwTW	06			09	16	
998	2017_18 Q	KL 28	Londonderry Sewer Imps Stage 2 - Duke St PS G oup Scheme	01			07	11	NIEA
999	2017_18 Q	KL 9	Londonderry DAP: Strathfoyle & Drumahoe Work package: Dru	01			07	11	NIEA
1000	2017_18 Q	KL 50	Londonderry DAP: Strathfoyle & Drumahoe Work package: Ca	01			07	11	NIEA
1001	2017_18 Q	KL 55	Londonderry DAP: Sewers Rehab Phase1	01			07	12	NIEA
1002	2017_18 Q	KL 56	Londonderry DAP: Sewers Rehab Phase2	01			07	11	NIEA
1003	2017_18 Q	KL 73	M&E Capital Maintenance - Culmore WWTW	01			09	02	UR
100	2017_18 Q	KL 80	Faughan Crescent WWPS, Londonderry. Pumping station and	01			12	12	NIEA
1005	2017_18 Q	KL 81	Dungiven WWTW Inlet Sewer Hydraulic Assessment Upgrade.	00			07	16	
1006	2017_18 Q	KL 82	Tamnaherin WWTW Feasib lity Study	0			09	16	NIEA
1007	2017_18 Q	KL 96	Feeny WwTW Replacement of Secondary Treatment	05			09	16	DRD
1008	2017_18 Q	KL503	Benone Upgrade of Vacuum Sewerage Network & Foul Vacuu	00			07	12	DRD
1009	2017_18 Q	KL50	Londonderry DAP : Buncrana Road Work Package, S age 2	02			07	12	NIEA
1010	2017_18 Q	KL505	Ard Na Smo l, Dungiven, Storm Sewer Extens on	00			07	2	DRD
1011	2017_18 Q	KL506	Donnybrewer WWTW's Phase 2 Base Maintenance	00			09	02	DRD
1012	2017_18 Q	KL511	Foyle Street, Londonderry Feasib ity Study	00			07	12	DRD
1013	2017_18 Q	KL512	Benone WWTW Mode ling of Out all Discharge	02			08	16	
101	2017_18 Q	KL515	Dernaf aw WWTWs Feasib lity Study	0			09	16	NIEA
1015	2017_18 Q	KL516	Queens Quay CSO Extens on	00			07	12	DRD
1016	2017_18 Q	KL518	Ba lynagard, Derry, Culmore Trunk Sewer Stabil zation	00			07	12	DRD
1017	2017_18 Q	KL521	Clooney WwPS Upgrade Magil igan	06			12	12	DRD
1018	2017_18 Q	KL52	Bleachg een WWPS, Londonderry, Upgrade/Replacement	0			12	12	NIEA
1019	2017_18 Q	KL525	Dunfield Terrace, Londonderry, Drop Shaft Rehab liation.	00			07	02	
1020	2017_18 Q	KL527	Manorwood WWPS Replacement	06			07	12	
1021	2017_18 Q	KL530	Lough Foy e Sustainab e Water Qua ity Improvement Project (l	03			09	16	
1022	2017_18 Q	KL533	Cot age Row , Eg in on, WWPS, Upgrade/Replace.	06			12	12	
1023	2017_18 Q	KL537	Glencaw Park, Derry, Flood Al ev at on Feasibi ity Study	06			07	12	UR
102	2017_18 Q	KL538	Shee in Park Flood Al ev at on	06			07	12	UR
1025	2017_18 Q	KL539	Cra gavon Bridge PM Enhancement	06			07	02	
1026	2017_18 Q	KL5 1	L snafin wwps	06			12	02	
1027	2017_18 Q	KL5 2	Ba lymagor y Wwps	06			12	02	
1028	2017_18 Q	KL5 3	Limavady Catchment Upgrade To Address New Deve opment	06			07	12	
1029	2017_18 Q	KL5 5	9 Bayview Terrace, Londonderry	06			07	2	DRD
1030	2017_18 Q	KN155	Bready	01			09	2	
1031	2017_18 Q	KN57	Ba lybrack Road Foul Sewer Ex ension	00			07	2	
1032	2017_18 Q	KN596	BALLYMAGORRY WwTWs	06			1	16	
1033	2017_18 Q	KN599	Donaghmore WwTW Upgrade	06			1	16	NIEA
103	2017_18 Q	KN622	Omagh WWTW - Nutrient Reduct on	01			09	16	NIEA
1035	2017_18 Q	KN628	Carr ckmore WWPS Upgrade Including Replacement of Pumpi	00			12	02	
1036	2017_18 Q	KN630	Drumquin WWTW Feasib lity Study	02			09	16	NIEA
1037	2017_18 Q	KN6 7	Lough Macrory WWTW- Feasibil ty Study	06			1	16	NIEA
1038	2017_18 Q	KN655	Mountfield WWTW's Appra sal Study	0			09	16	NIEA
1039	2017_18 Q	KN656	Castle Archdale WWTW	0			09	16	NIEA
10 0	2017_18 Q	KN657	Victo a Bridge WWTWs Feasibil ty Study	0			09	16	NIEA
10 1	2017_18 Q	KN658	Ardstraw WWTW Feasib lity Study	0			09	16	NIEA
10 2	2017_18 Q	KN661	Beragh Sto m Pumping Station Des gn	03			12	12	DRD
10 3	2017_18 Q	KN666	Berryh ll Rd, A igarvan, Sewer Remed at on	06			07	12	
10	2017_18 Q	KN667	Strathroy Link Road, Omagh	00			03	23	
10 5	2017_18 Q	KN668	Ki lynure Wood, Ennisk llen S orm sewer	00			07	2	
10 6	2017_18 Q	KN671	Drumnak lly Road Omagh Foul & Storm Sewer	00			07	2	
10 7	2017_18 Q	KN673	B016820 Moun ainv ew Drive Lisnaskea	00			07	2	
10 8	2017_18 Q	KN67	Crevanagh Rd Omagh, Storm sewer ex ension requis tion.	06			07	2	
10 9	2017_18 Q	KO170	Lough Road, Lurgan	01			07	2	
1050	2017_18 Q	KP299	Ennisk llen WwTW	01			09	15	NIEA
1051	2017_18 Q	KP350	Ba lina eck - RBC Insta lations West & South	01			07	2	UR
1052	2017_18 Q	KP586	Clabby WwTWs	06			1	16	
1053	2017_18 Q	KP668	L snarrick WWTW Feasib lity Study	06			09	16	NIEA
105	2017_18 Q	KP677	Tamlaght Road WWPS, Omagh, Feasibi ity Study	00			12	12	DRD
1055	2017_18 Q	KP680	Rossory WWPS Upgrade Feasibi ity Study	00			07	12	DRD
1056	2017_18 Q	KP68	Dannys Mi l Road Enn ski len Sewer Rehab l tat on	00			07	12	DRD
1057	2017_18 Q	KP687	Monea WWTWs Appra sal	0			09	16	NIEA
1058	2017_18 Q	KP689	Ba lygaw ey WWTWs Feasibi ity Study	0			09	16	NIEA
1059	2017_18 Q	KP693	Tu lynagarn WWPS Feasib lity Study	00			12	12	DRD
1060	2017_18 Q	KP695	Rossory WWPS, Pumping Main Extension and Replacement.	06			07	12	
1061	2017_18 Q	KP696	Ennisk llen DAP Stage	06			07	12	UR
1062	2017_18 Q	KP697	PC15 Year 2 WWTW Base Maintenance – West Reg on	06			09	02	
1063	2017_18 Q	KP698	PC15 Year 3 WwTW Cap tal Main enance - West Region	06			09	02	
106	2017_18 Q	KP699	South West Co lege(O d Erne Hospital S te), Foul & Storm sew	06			07	2	
1065	2017_18 Q	KP700	PC15 Year WwTW Base Maintenance – West Region	06			09	02	
1066	2017_18 Q	KR310	Newtownbreda WwTW	01			09	15	NIEA
1067	2017_18 Q	KR313	L sbarnet WwTW	01			09	15	NIEA
1068	2017_18 Q	KR323	L goniel Sewerage Scheme	00			07	12	
1069	2017_18 Q	KR 09	Moneyreagh WwTW	05			07	16	NIEA
1070	2017_18 Q	KR 1	Montgomery Rd, Flood Al evia ion	01			07	12	NIEA
1071	2017_18 Q	KR 2	Glenmachan Street WWPS St ategic Invest ga ions	00			1	02	UR
1072	2017_18 Q	KR 8	Sa ety improvements on out of service pumping sta ions in Bel	00			12	02	UR
1073	2017_18 Q	KR 9	East Belfast CSOs Screenings	01			07	12	NIEA
107	2017_18 Q	KR500	Glenmachan Stra eg c Project Phase 1b Greystown Avenue &	00			07	12	DRD
1075	2017_18 Q	KR507	Commerc al Way, Newtownabbey DG5 At-R sk-Register	00			07	12	UR
1076	2017_18 Q	KR512	Bank Square, Bel ast, Environmental Improvements Scheme	00			07	12	DRD
1077	2017_18 Q	KR519	M llbay WWPS F ow Survey	00			07	12	NIEA
1078	2017_18 Q	KR523	2 -30 Red ort Drive, Ca ickfergus, DG5 Study.	00			07	12	UR
1079	2017_18 Q	KR527	Greenisland WWTW Effluent D scha ge Pipe - Feasibil ty Study	00			09	02	DRD
1080	2017_18 Q	KR529	Park Parade, Ormeau Embankment, Bel ast, Storm Sewer Ext	00			07	2	DRD
1081	2017_18 Q	KR530	Be fast WWTW Base Maintenance - Phase 2	00			09	02	DRD
1082	2017_18 Q	KR531	Park Road, Be fast Sewer Replacement	00			07	12	DRD
1083	2017_18 Q	KR53	Carrowdore WWTW - Phase 2 Base Maintenance	00			09	02	DRD
108	2017_18 Q	KR535	New Holland WWTW's Phase 2 Base Maintenance	00			09	02	DRD
1085	2017_18 Q	KR536	Newtownbreda WWTW's Phase 2 Base Maintenance	00			09	02	DRD
1086	2017_18 Q	KR538	Dunmurry WWTW's Phase 2 Base Maintenance	00			09	02	DRD
1087	2017_18 Q	KR539	Moneyreagh WWTWs Phase 2 Base Maintenance	00			09	02	DRD
1088	2017_18 Q	KR5 0	M ll Rd, Newtownabbey Foul and Storm Sewer	00			07	2	DRD
1089	2017_18 Q	KR5 2	Cyprus Avenue, Bel ast Sewer Rehabil tat on	00			07	12	DRD
1090	2017_18 Q	KR5 3	Ebor Street, Storm Sewer	00			07	2	DRD
1091	2017_18 Q	KR5 9	Net lehill Road, Lisburn - Storm Sewer	00			07	2	DRD
1092	2017_18 Q	KR556	Comp iance with The Surface Waters (She lf sh)(Classifica ion)	02			09	16	NIEA
1093	2017_18 Q	KR557	Brians Well Road, Poleglass Foul Sewer Extension	00			07	2	DRD
109	2017_18 Q	KR560	Orchardvi le and Finaghy Road North, Be afst Sewer Rehabil ta	00			07	12	DRD
1095	2017_18 Q	KR561	Orchardvi le WWPS Appraisal of Pumped Overflow and Inlet S	00			07	12	DRD
1096	2017_18 Q	KR562	Sicily Park Bel ast Sewer Diversions from S orm Culvert	00			07	12	DRD
1097	2017_18 Q	KR568	Loughries WWTWs Appraisal	0			09	16	NIEA
1098	2017_18 Q	KR570	Sydenham WWPS Appraisal	03			13	02	DRD
1099	2017_18 Q	KR576	Be fast WWTW PLC Upgrade	03			09	02	DRD
1100	2017_18 Q	KR579	22 Upper Lisburn Rd, Be fast Storm Sewer	00			07	2	
1101	2017_18 Q	KR581	163-165 G en Road Be fast S orm Sewer Extension	00			07	2	DRD
1102	2017_18 Q	KR586	Maryvi le Avenue, Belfast, DG5 Appraisal	06			07	12	UR
1103	2017_18 Q	KR588	Ravenhi l Avenue, Be fast, Sewer Upgrades	06			07	12	UR
110	2017_18 Q	KR59	Springwell Park, Groomsport	00			07	12	
1105	2017_18 Q	KR599	Be fast WwTW Appraisal Study	06			09	16	NIEA
1106	2017_18 Q	KR600	North Queen Street, S orm Sewer Ex ension	00			07	2	DRD
1107	2017_18 Q	KR605	Upper New ownards Road, Bel ast, Sewer Upgrade to Address	0			07	12	UR
1108	2017_18 Q	KR606	Eastleigh Dale Pasadena Gardens, Belfast, Sewer Upgrade fo	06			07	12	UR
1109	2017_18 Q	KR608	Ravenhi l Road, Be fast, Trunk Sewer Inves igations and Emer	05			07	12	
1110	2017_18 Q	KR610	32 Crum in Rd, Belfast - Storm Sewer Ext	00			07	2	
1111	2017_18 Q	KR61	Greencas le WwPS - Pumping Main Breach	03			07	2	
1112	2017_18 Q	KR618	152 - 15 Larne Rd, Carrick ergus	00			07	2	
1113	2017_18 Q	KR619	Sydenham WWPS Screen appraisal	06			13	02	
111	2017_18 Q	KR622	McClintock Street, Be fast, S orm Sewer Extension	00			07	2	
1115	2017_18 Q	KR623	Queens Bridge, Belfast, Siphons Upgrade.	06			07	12	
1116	2017_18 Q	KR62	East Befast, Back Drainage Study.	06			07	12	
1117	2017_18 Q	KR625	Wastewater Her tage and Educa ion Centre	06			1	20	
1118	2017_18 Q	KR627	PC15 Year 2 WWTW Base Maintenance – East Region	06			09	02	
1119	2017_18 Q	KR628	6 2 Saintfield Rd, Carryduff Storm Sewer Extens on	00			07	2	
1120	2017_18 Q	KR629	M lebush Park, Carr ckfergus F ood A leviation	06			07	12	UR
1121	2017_18 Q	KR631	Crawfordsburn Way, Newtownards - Storm Sewer Extension	00			07	2	
1122	2017_18 Q	KR632	Sydenham Park Avenue WWPS Replacement	06			13	12	NIEA
1123	2017_18 Q	KR633	East Belfast In egrated Catchment Model ing	06			1	20	
112	2017_18 Q	KR63	Harberton Park / Kings Ha l Storm Sewer Ex ension	00			07	2	
1125	2017_18 Q	KR635	Upper H gh own Road Newtownabbey S orm Sewer	00			07	2	
1126	2017_18 Q	KR6 0	Holywood Sewer Network Improvements- Phase 2	06			07	12	
1127	2017_18 Q	KR6 2	Laganbank Sewer Invest ga ion, Belfast	00			07	12	
1128	2017_18 Q	KR6 5	Sludge Disposal Strategy: Market Appraisal	06			11	12	

	e e a								
So t Re	C M Submiss on Re e ence	o ect D Re e ence	o ect Name	C oject e od	a ent oject ID	Substi ute o ect ID	ma y Asset Ca ego y	C 0 og amme	Regula o y S gn O Requi ed
	2	3	4	5	6	7	8	9	0
A			T a a aex e e e						
SOR	CIM_Sub	I_ oject_D	I_ oject_Name	I_ C_ e iod	I_ AREN _ oject_D	I_SUBS I U E_ oect_ID	I_ I_Asset_Cat	I_ C 0_ og	I_Reg_Signo
1129	2017_18 Q	KR6 6	761 Upper N'ards Road, Belfast Storm Sewer	00			07	2	
1130	2017_18 Q	KR6 7	Ba lyrobert Bangor Wwps Upgrade	06			12	02	
1131	2017_18 Q	KR6 8	Greencas le Wwps s orm screens	06			07	02	
1132	2017_18 Q	KR653	Upper Lisburn Rd, Be fast Storm Sewer Extension	00			07	2	
1133	2017_18 Q	KR656	Holywood A and B wwps	06			12	02	
113	2017_18 Q	KR659	Glenv ew Rd, Holywood - Foul Sewer Extension	06			07	2	
1135	2017_18 Q	KR662	3 and 1 Belfast Road, Antrim Storm sewer	00			07	2	
1136	2017_18 Q	KR663	Holywood Road, Newtownards, F ood Al evia ion	06			07	20	
1137	2017_18 Q	KR665	Gilnahirk Road F ood A leviation	06			07	12	
1138	2017_18 Q	KR667	Cooks Cove Wwps	06			12	12	
1139	2017_18 Q	KR668	Structural survey of Belfast Stormwa er Tunnel	06			07	20	
11 0	2017_18 Q	KR671	Henderson Avenue Flood Allev at on	06			1	12	
11 1	2017_18 Q	KR672	Fortwil iam Oakmount storm pumping station, Inves igation	06			1	20	
11 2	2017_18 Q	KR673	Be fast Stree s Ahead (Royal Avenue)	06			07	2	
11 3	2017_18 Q	KR675	263-285 Beersbr dge Rd, Foul and Storm Sewer new	06			07	2	
11	2017_18 Q	KR676	The Ards House, Bel ast Rd, Newtownards Sewage Scheme. F	06			07	2	
11 5	2017_18 Q	KR677	Moyard Park, Be fast - Storm Sewer Extens on	06			07	2	
11 6	2017_18 Q	KR679	Abbey View Gr, New ownards Rd, Bangor Storm Sewer	00			07	2	
11 7	2017_18 Q	KR680	Castle Park, Bangor - Storm Sewer.	00			07	2	
11 8	2017_18 Q	KR682	PC15 Year WwTW Base Maintenance – East Region	06			09	02	
11 9	2017_18 Q	KR683	Sydenham WwPM Repair at Airport Road, Holywood Exchang	06			07	12	
1150	2017_18 Q	KR68	Shore Road Newtownabbey F&S Ex ension	00			07	2	
1151	2017_18 Q	KR685	288 Beersbr dge Road Belfast, Storm Sewer Extension	06			07	2	
1152	2017_18 Q	KS111	Ards South, Portavogie, Ba lyhalbert, Cloughey,Ki kistown	05			07	16	NIEA
1153	2017_18 Q	KV235	Pound Hill, Dromore - S orm Sewer Extens on	06	KI551		07	2	
115	2017_18 Q	KI605	Storm water separation pilot study phase 2	06	KI555		07	12	
1155	2017_18 Q	JN 88	Aghyaran Road Booster S at on		JR3 9			08	
1156	2017_18 Q	KS113	Ards No th, Carrowdore, Ba lywal er, Ballyhaskin	06			09	16	NIEA
1157	2017_18 Q	KR389	Ba lyhalbert WwTW Interim Solution	01	KS111		09	15	NIEA
1158	2017_18 Q	KR391	Por avog e WwTW Interim Solution	01	KS111		07	15	NIEA
1159	2017_18 Q	KS216	Dunmore Sewerage - EC Comp iance	03			07	16	NIEA
1160	2017_18 Q	KS22	Downpatrick WwTW	01			09	15	NIEA
1161	2017_18 Q	KS225	Ardglass WwTW	01			09	15	NIEA
1162	2017_18 Q	KS235	Ba lygowan WwTW	03			09	16	NIEA
1163	2017_18 Q	KS326	Commons Road, Ballykinlar Storm Sewer	00			07	2	
116	2017_18 Q	KS328	De invi la Lane Dund um Storm Sewer	00			07	2	NIEA
1165	2017_18 Q	KS389	Ba lymartin & B ackrock WwTWs	05			09	16	NIEA
1166	2017_18 Q	KS8	Ba lyhornan Outfall Screen .	05			09	16	NIEA
1167	2017_18 Q	KS8 8	Newcastle Waste Water Treatment Works	01			09	16	NIEA
1168	2017_18 Q	KS873	Bangor DAP Work Package 2: Rathmore Stream UIDs	01			07	12	NIEA
1169	2017_18 Q	KS87	Bangor DAP Works Package 3 - Be fast Lough U Ds	01			07	12	NIEA
1170	2017_18 Q	KS875	Bangor DAP Works Package 6: Lukes Point WWPS UID	01			07	12	NIEA
1171	2017_18 Q	KS877	Bangor DAP Works Package 5 - Clandeboye Stream UIDs	01			07	12	NIEA
1172	2017_18 Q	KS879	Bangor DAP Work Package : Bangor Marina UIDs	01			07	12	NIEA
1173	2017_18 Q	KS880	Kirkistown North WwPS Refurbishment	01			12	12	DRD
117	2017_18 Q	KS881	Cloughey South WwPS Refurbishment	01			12	02	DRD
1175	2017_18 Q	KS900	WwPS Upgrades at Groomsport, K llinchy & Cra gavad	00			12	12	DRD
1176	2017_18 Q	KS902	Dundrum DAP, UIDs Upgrades.	02			07	12	NIEA
1177	2017_18 Q	KS903	Anna ong DAP UIDs, Upgrades.	02			07	12	NIEA
1178	2017_18 Q	KS905	Kilmore & Annac oy WwTW	06			1	16	NIEA
1179	2017_18 Q	KS908	Ki linchy WWTW - Feasib lity Study	06			1	16	NIEA
1180	2017_18 Q	KS909	DG5 157a & 155 Groomsport Road Bangor Addit onal Stud es	00			07	12	NIEA
1181	2017_18 Q	KS912	Greyabbey WWPS Catchment F ow and Loading Survey.	01			07	12	DRD
1182	2017_18 Q	KS913	Upper Crescent WWPS Upgrade	00			13	12	DRD
1183	2017_18 Q	KS91	Scrabo Road, Newtownards, WWPS Upgrade	02			12	12	NIEA
118	2017_18 Q	KS918	Greyabbey WWTW	00			09	16	DRD
1185	2017_18 Q	KS921	Kircubbin WWTW Phase 2 Base Main enance	00			09	02	DRD
1186	2017_18 Q	KS926	Primacy Road, Bangor, Foul and S orm Sewer Ex ensions	00			07	2	DRD
1187	2017_18 Q	KS930	M l is e DAP Stage 2, Phase 2	02			07	12	NIEA
1188	2017_18 Q	KS933	Kircubbin DAP CSO Upgrade	0			07	12	NIEA
1189	2017_18 Q	KS937	Annsborough WWPS Upgrade	06			07	12	NIEA
1190	2017_18 Q	KS938	Grange Road Kilkeel Out of Sewer Flooding Feasib lity Study	03			07	12	DRD
1191	2017_18 Q	KS9	Glenard Road New ownards Foul Sewer Extension	00			07	2	DRD
1192	2017_18 Q	KS9 6	Mourneview, Newcastle, Flood Al evia ion	0			07	12	UR
1193	2017_18 Q	KS955	Green Road, Ardglass, Foul and Storm Sewer.	00			07	2	
119	2017_18 Q	KS958	Bangor DAP Works Package 5 Clandeboye Stream U Ds Phas	03			07	12	NIEA
1195	2017_18 Q	KS962	Dundrum WwTW	06			09	16	UR
1196	2017_18 Q	KS96	106 Greencastle Road, Kilkeel, S orm Sewer Extension	00			07	2	
1197	2017_18 Q	KS965	Ki lyleagh Rd, Crossgar Foul Sewer Extension	00			07	2	
1198	2017_18 Q	KS968	Saint ie d Road, Ba loo Storm Sewer	00			07	2	
1199	2017_18 Q	KS971	Cot on Wwps	06			12	02	
1200	2017_18 Q	KS972	Ba lystockart, Comber - Network Investigat on	06			07	20	
1201	2017_18 Q	KS97	PC15 Year 3 WwTW Cap tal Maintenance - East Region	06			09	02	
1202	2017_18 Q	KS978	Foul Sewer Extension - Adjacent Rockfield Pk, Portaferry	06			07	2	
1203	2017_18 Q	KS979	8 Talbot Street New ownards, Storm Sewer Ex ension	06			07	2	
120	2017_18 Q	KT11	Hi lsborough WwTW	01			12	16	NIEA
1205	2017_18 Q	KT126	Stoneyford WwTW	06			09	16	NIEA
1206	2017_18 Q	KT391	L sburn DAP Stage 1	00			07	12	NIEA
1207	2017_18 Q	KT398	M ll Street/Br dge Street ,Hi den ,Lisburn, Storm Sewer Extensi	00			07	2	NIEA
1208	2017_18 Q	KT 02	Dunmurry WWTW Sludge Fac lity	05			10	16	DRD
1209	2017_18 Q	KT 12	Ba lynahinch Public Realm Sewer & Watermain Rehabi itation	00			07	2	DRD
1210	2017_18 Q	KT 13	Orchard Annah lt WWPS - Feasib lity Study	00			12	02	DRD
1211	2017_18 Q	KT 16	Annahilt WWTW Phase 2 Base Maintenance	00			09	02	DRD
1212	2017_18 Q	KT 21	Station Road, Lambeg, Sewer Upgrade (DG5)	03			07	12	UR
1213	2017_18 Q	KT 22	Longstone St, Lisburn Storm Sewer Extension	00			07	2	
121	2017_18 Q	KT 23	Mossvale Rd, Dromore Foul Sewer Requ s tion	00			07	2	
1215	2017_18 Q	KT 25	St Jame s Park, Hi lsborough Storm Sewer	00			07	2	
1216	2017_18 Q	KT 28	Ba lymacash Road, Lisburn, F ood A leviation	06			07	12	UR
1217	2017_18 Q	KT 35	Graham Garden s Lisburn - S orm Sewer Ex ension	06			07	2	
1218	2017_18 Q	KT 37	The Brae, Ballygown Storm Sewer Extens on.	06			07	2	
1219	2017_18 Q	KV013	Rostrevor Sewerage Scheme	00			12	12	NIEA
1220	2017_18 Q	KV06	Lurganare WwTW	01			07	15	NIEA
1221	2017_18 Q	KV079	McShanes Road, Bessbrook Foul Sewer Extens on	00			07	2	
1222	2017_18 Q	KV09	Whyte Acres, Banbr dge SPS Upgrade	00			12	02	UR
1223	2017_18 Q	KV122	High Street, Gil ord Sewer Rep acement	00			07	12	
122	2017_18 Q	KV125	Forkhill WWTW	01			09	16	NIEA
1225	2017_18 Q	KV178	Cranfield WwTW Feasibi ity Study	03			1	16	NIEA
1226	2017_18 Q	KV182	Carran H ll WTW & Creamery Road Sewer Ex ension	00			07	2	DRD
1227	2017_18 Q	KV186	Kilkeel WWTW Feasib lity Study	06			1	16	NIEA
1228	2017_18 Q	KV189	M l turn WWPS - Feasib lity Study	00			12	02	DRD
1229	2017_18 Q	KV19	Banbr dge WWTW's Phase 2 Base Maintenance	00			09	02	DRD
1230	2017_18 Q	KV196	Hi ltown WWTW Phase 2 Base Main enance	00			09	02	DRD
1231	2017_18 Q	KV200	Drumsesk Was ewater Header Tank - Feasib lity Study	00			07	12	DRD
1232	2017_18 Q	KV201	Moneyslane WWTWs Appraisal	0			09	16	NIEA
1233	2017_18 Q	KV202	Meigh WWTW Feasibi ity Study	0			09	16	NIEA
123	2017_18 Q	KV207	Whyte Acres - Banbr dge	00			07	12	DRD
1235	2017_18 Q	KV217	Car ingford Lough Sustainab e Water Qua ity Improvement Pro	06			09	16	
1236	2017_18 Q	KV219	Newpoint WWPS Screen upgrade	0			13	12	
1237	2017_18 Q	KV220	Warrenpoint Flooding Investigat ons	00			07	12	
1238	2017_18 Q	KV223	Carnagat Road Newry Foul & Storm Sewer Requisi ion	00			07	2	
1239	2017_18 Q	KV22	The S opes Rathfriland Wwps appraisal	06			12	12	
12 0	2017_18 Q	KV225	Newpoint TPS Fi e - Odour Cont ol	00			13	02	
12 1	2017_18 Q	KV228	Chapel View, Car an Rd SS Crossmag en	00			07	2	
12 2	2017_18 Q	KV230	Cranfield Catchment , K lkeel Storm Seperat on	00			07	12	
12 3	2017_18 Q	KV231	75 Kilkeel Rd, Annalong S orm Sewer Extension	00			07	2	
12	2017_18 Q	KV232	115-117 Main st, Newcas le Storm Sewer Extens on	00			07	2	
12 5	2017_18 Q	KV233	Canal St, New y - Storm Sewer Extens on	06			07	2	
12 6	2017_18 Q	KV23	School Road, Ba lymartin-Storm sewer Extension	06			07	2	
12 7	2017_18 Q	KZ002	Capital Works Programme Procurement	01			1	02	UR
12 8	2017_18 Q	KZ007	Storm Water Separation	06			07	12	
12 9	2017_18 Q	KZ008	Wastewater Networks Model ing/Surveys	06			1	20	
1250	2017_18 Q	AM086	CAR FME Server	00			15	20	
1251	2017_18 Q	AM089	Posit onal Improvement (OSNI)	0			15	20	
1252	2017_18 Q	AM090	Cost Base and Capex Comparative Eff c ency	03			15	20	UR
1253	2017_18 Q	AM093	PC15 M&G Parent	06			15	20	
125	2017_18 Q	AM09	Corpora e GIS Project	06			15	20	
1255	2017_18 Q	AM096	West and - Main Building K tchen / Coffee Lounge Extension				15	20	
1256	2017_18 Q	AP036	CCTV Surveys Asset Pe formance 2011 - 2012	00			07	02	DRD
1257	2017_18 Q	AP055	Condi ion Assessment	05			06	20	
1258	2017_18 Q	AP059	Netownbreda MBV	02			1	20	DRD
1259	2017_18 Q	AP066	Carr ck MBV	03			1	20	DRD
1260	2017_18 Q	AP08	Provision of Interim Bridging Serv ces (Prev ously KI522)	00			06	20	DRD
1261	2017_18 Q	AP089	Network Model Updates	03			06	20	DRD
1262	2017_18 Q	AP093	Sewer network models- Cushendall,Ba lykelly, Dungiven	03			1	20	
1263	2017_18 Q	AP09	Service Reservoir Cond tion Assessments Pilot Study	05			06	20	
126	2017_18 Q	AP096	Base Maintenance Pr or tisat on	03			15	20	
1265	2017_18 Q	AP100	PC13 Network Mode ling Support Services	03			06	20	
1266	2017_18 Q	AP101	Storm Analysis Reports	03			1	20	
1267	2017_18 Q	AP102	Provision of PPRA Reports	03			03	20	
1268	2017_18 Q	AP103	Invest ga ion of Po lu ed Stormwater Out al s	03			07	20	
1269	2017_18 Q	AP105	Larne MBV	03			1	20	
1270	2017_18 Q	AP106	Drainage A ea Study Specif cation rev s on	03			1	20	
1271	2017_18 Q	AP107	Sewer Network Mode ling Support	03			1	20	
1272	2017_18 Q	AP111	Larne Network Inves igation	03			1	20	
1273	2017_18 Q	AP11	Deve opment of PC15 Lead Pipe Replacement P ogramme	0			06	23	DWI
127	2017_18 Q	AP120	Asset Per ormance CCTV surveys - 1 /15	03			1	20	
1275	2017_18 Q	AP122	Invest ga ion of polluted s ormwater outfa ls - phase 1	05			07	12	
1276	2017_18 Q	AP128	Trunk Main Condit on Assessment 1 /15	03			03	20	
1277	2017_18 Q	AP130	Hydraulic Review Verif cation of Water Netwo k Schemes	03			03	20	DRD
1278	2017_18 Q	AP1 2	Provision of Pressure Logging Equipment	06			06	20	
1279	2017_18 Q	AP1 3	SR and CWB Risk and Consequence Model Update	06			06	20	
1280	2017_18 Q	AP150	Provision of F ow Monitoring Equipment	00			1	20	
1281	2017_18 Q	BC006	Meter reconci iation phase 2	01			06	20	DRD
1282	2017_18 Q	BC007	Debt and Collec ions phase 2	01			06	20	DRD
1283	2017_18 Q	BC009	CS Da a Qual ty Programme	05			15	20	
128	2017_18 Q	BC010	Digital Customer Phase 1	03			15	20	
1285	2017_18 Q	BC013	CBC Imp emen at on	0			15	20	
1286	2017_18 Q	BC01	Meter to Bill Improvement	06			06	20	DRD
1287	2017_18 Q	BE006	Vehicle GPS	01			15	20	DRD
1288	2017_18 Q	BE012	Monthly Pay and Orac e Enhancemen s	06			15	20	
1289	2017_18 Q	BE016	Plant Purchasing Project (Sho t Term Strategy)	06			06	20	
1290	2017_18 Q	BE017	Energy M&G	06			09	02	
1291	2017_18 Q	BE020	Addit onal Solar Installations				0	20	
1292	2017_18 Q	BI121	Contractor Ellipse Interface	02			1	20	
1293	2017_18 Q	BI139	SCaMP (Sustainab e Catchment Management Plan) Mournes	00			01	20	
129	2017_18 Q	BI151	DG2 Stage 2					20	
1295	2017_18 Q	BI152	Nisrans automated inter ace	01			15	20	
1296	2017_18 Q	BI156	Optimal Control & management System site surveys	00			1	20	
1297	2017_18 Q	BI226	Sustainable Local Power	01			06	20	
1298	2017_18 Q	BI231	AGGREGATED GENERATION	01			15	20	
1299	2017_18 Q	BI232	Installation of Sub E ectricity Meters - Pilot Study @ K llyhev in	01			06	20	
1300	2017_18 Q	BI2 0	Deve opment of ICAT Standards	03			15	20	
1301	2017_18 Q	BI2 9	Test and Deve opment Telemetry System	01			06	20	
1302	2017_18 Q	BI250	ANSWER Agr cu tural Need for Sustainable Wi low Effluent Re	03			09	20	NIEA
1303	2017_18 Q	BI25	Network D stribution Systems Control (NDCS) Phase 1	03			0	20	
130	2017_18 Q	BI259	Network D stribution control system p lot s tes.	01			0	20	
1305	2017_18 Q	BI272	Project Manager for the Property Address Cleansing Project Pl	01			06	20	
1306	2017_18 Q	BI280	ICAT Programme Manager - Level 3	03			1	20	
1307	2017_18 Q	BI282	ILMS Schne der Hardware & Software Support	03			03	20	
1308	2017_18 Q	BI287	PC15 Innovat on Programme Projects	06			15	20	
1309	2017_18 Q	BI291	MCC rep acement at Killyclogher SR	03			0	20	
1310	2017_18 Q	BI295	Sludge Dens ty Moni oring Using Coreo l s Flowmeters	03			02	20	
1311	2017_18 Q	BI301	i WATCH (Inte ligent Water Automation, Telemetry and Contro	06			03	20	
1312	2017_18 Q	BI303	Use of thermal and near infrared camera's in conjunct on with a	06			15	20	
1313	2017_18 Q	BI305	Revision of Sewers or Adoption (N.I)	06			1	20	
131	2017_18 Q	BI308	Remote Intake control p lot	06			06	20	
1315	2017_18 Q	BT00	Telemet y Radio Digital Upgrade	00			15	20	
1316	2017_18 Q	BT005	Scada Services Prov sion	00			15	20	
1317	2017_18 Q	BT012	Document Management	01			15	20	

	ase eM es e aes							ase e e v e s A a			
So t Re	Base ine A Date	Base ine o ect App oval Date	Base ne Sta t on S te Da e	Base ine Bene cial Use Date	Basel ne Regulato y sign-o Da e	Base ine Comp e ion o Const uct on Date	Base ine End o Main enance e od Date	Base ine Se vice A locat on Wate n ast uc u e	Base ine Se vice Al oca ion Wate Non- n ast uc u e	Base ine Se v ce A locat on Sewe age In ast uctu e	Basel ne Se v ce Al oca ion Sewe age Non- In ast uctu e
		2	3	4	5	6	7	8	9	20	2
SOR	B M_A	B M_ oect_App oval	B M_SoS	B M_BU	B M_RSO	B M_CoC	B M_EoM	BSA_WI%	BSA_WNI%	BSA_SI%	BSA_SNI%
1152				2825				0	0	85	15
1156			0273	3830		39 79	398	0	0	56	
1157			01 7	0900		0900	1265	0	0	0	0
1158			01 7	1177		1177	15 2	0	0	0	0
1159			0189	0872		0872	1237	0	0	0	0
1160			39636	0162		0162	0527	0	0	0	0
1161	3873	1207	1365	2007		2097	2372	0	0	0	100
1162			0612	279		0329	069	0	0	57	3
1163			0035	02 0		02 0	0605	0	0	0	0
116			0070	06 8		06 8	1013	0	0	0	0
1165			209	2 60		2551	2916	0	0	0	100
1166			1275	15 7		1608	1973	0	0	6	9
1167			0889	1505		1505	1870	0	0	0	100
1168			1730	2005		2005	2370	0	0	100	0
1169								0	0	30	70
1170			1365	1912		2007	2372	0	0	0	100
1171			16	2023		2023	2388	0	0	100	0
1172			16	2023		2023	2388	0	0	75	25
1176			1729	2023		2093	2093	0	0	100	0
1177								0	0	0	0
1178			133	2369		1671	1671	0	0	0	100
1179								0	0	0	100
1180								0	0	0	0
1181								0	0	0	0
1182								0	0	0	0
1183								0	0	0	0
118				286				0	0	38	62
1186								0	0	0	0
1187								0	0	17	83
1189								0	0	0	0
119								0	0	0	0
1195				3100				0	0	1	59
120			0995	2091		2091	2 57	0	0	17	83
1205			1672	2091				0	0	0	100
1206			1 55	2005		2005	2370	0	0	100	0
1207	062	0633	0 95	0786		0786	1151	0	0	0	0
1208			0988	2023		2082	2 8	0	0	0	100
1209								0	0	0	0
1210								0	0	0	0
1211								0	0	0	0
1219			39230	0802		0802	1167	0	0	0	0
1220			01 7	0 52		0 52	0817	0	0	0	0
1221			39539	0933		0933	1298	0	0	0	0
1222	0123	0133	0182	0295		0295	0660	0	0	0	0
1223			39706	0933		0933	1298	0	0	0	0
122			0581	1 2		1 70	1712	0	0	0	100
1225								0	0	30	70
1226								0	0	0	0
1227								0	0	0	100
1228								0	0	0	0
1229								0	0	0	0
1230								0	0	0	0
12 7		1177						0	0	0	0
1253								0	6	8	6
1275								0	0	100	0

	ase e x e e e m2 2- es)								ase e seA a			
So t Re	Basel ne CA EX 20 0- £m	Base ine CA EX 20 - 2 £m	Basel ne CA EX 20 2- 3 £m	Base ne CA EX 20 3- 4 £m	Base ine CA EX 20 4- 5 £m	Basel ne CA EX 20 5- 6 £m	Base ine CA EX 20 6- 7 £m	Basel ne CA EX 20 7- 8 £m	Base ine u pose A locat on Qual ty	Base ine u pose Al oca ion Base	Base ine u pose A locat on ES	Basel ne u pose Al oca ion G ow h
	22	23	24	25	26	27	28	29	36	37	38	39
A	7 99	2 9	24 949	4	9	47 7	4	4 2				
SOR	B _Capex_20 0- _£m	B _Capex_20 - 2_£m	B _Capex_20 2- 3_£m	B _Capex_20 3- 4_£m	B _Capex_20 4- 5_£m	B _Capex_20 5- 6_£m	B _Capex_20 6- 7_£m	B _Capex_20 7- 8_£m	B A_Q%	B A_B%	B A_E%	B A_G%
1152	0	0	0	0	0	0 092 2	1 92 1211	0	80	0	0	20
1156	0 0	0.0195316	0 011 331	0.3688395	0 0089601	0	0	2.2268771	63 289088	18.910856	0	17.800056
1157	0	0	0	0	0	0	0	0	0	0	0	0
1158	0	0	0	0	0	0	0	0	0	0	0	0
1159	0	0	0	0	0	0	0	0	0	0	0	0
1160	0	0	0	0	0	0	0	0	0	0	0	0
1161	0.229	-0.0 7852	0.119095	1.3693166	1. 291381	0	0	0	1	15	0	
1162	0	0	0	0	0	0	0. 3608	1.076 6 8	72.7729328	5.295 98 1	0	21 9315688
1163	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0
1165	0.009	0.0078126	0 0152 2	0.0 610 9	0	0. 320877	0	0	7 .627 3 2	8. 5701 08	0	16 9155517
1166	0 03	-0.028321	0 07 3153	0.5 95708	0	0	0	0	97	3	0	0
1167	0.35	1.599638	988651	1.2900161	0	0	0	0	95	5	0	0
1168	0	0	0 0190552	0	0 358 0 5	0	0	0	90	10	0	0
1169	0	0	0	0	0	0	1 0550218	0.5922282	100	0	0	0
1170	0	0	0 0562128	1.5085535	0. 61 58	0	0	0	90	10	0	0
1171	0	0	0 0838 29	0.2213037	2.167 51	1.6157295	0 723039	0	100	0	0	0
1172	0	0	0 061929	0.027663	1 3368 89	0	0	0	70	30	0	0
1176	0	0.0039063	0 01 291	0.07 69	0. 032051	0. 810822	0 89 0585	0	79.0138393	20.9861607	0	0
1177	0	0	0	0	0	0	0	0	0	0	0	0
1178	0	0.0126955	0 03 299	0.9036567	0	0.912559	0	0	0	53.5086551	0	6. 913 9
1179	0	0.00 8829	0 0323938	0.0331956	0	0	0	0	0	100	0	0
1180	0	0	0	0	0	0	0	0	0	0	0	0
1181	0	0	0	0	0	0	0	0	0	0	0	0
1182	0	0	0	0	0	0	0	0	0	0	0	0
1183	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	100	0	0
1186	0	0	0	0	0	0	0	0	0	0	0	0
1187	0	0	0	0	0	1.192 85	0	0	9.5768 81	7.5068668	2.91628518	0
1189	0	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0	0	0	0	0
1195	0	0	0	0	0	0	0 9762151	0.9373657	0	100	0	0
120	0	0.023 379	0.8098 6	0.5025 38	0	0	0	0	0	35	0	65
1205	0.012	0.0556651	0 06383 9	0.0922099	0 7678817	0	0	0	31	38	0	31
1206	0	0.00 8829	0 0219135	0.9682036	0 8960113	1.1551867	0	0	69.137109	20.9861607	0	9.87672991
1207	0	0	0	0	0	0	0	0	0	0	0	0
1208	0	0	0.1238588	1.675 53	1 7920227	0	0	0	23	71	0	6
1209	0	0	0	0	0	0	0	0	0	0	0	0
1210	0	0	0	0	0	0	0	0	0	0	0	0
1211	0	0	0	0	0	0	0	0	0	0	0	0
1219	0	0	0	0	0	0	0	0	0	0	0	0
1220	0	0	0	0	0	0	0	0	0	0	0	0
1221	0	0	0	0	0	0	0	0	0	0	0	0
1222	0	0	0	0	0	0	0	0	0	0	0	0
1223	0	0	0	0	0	0	0	0	0	0	0	0
122	0.231	0. 5118	0 9880121	0. 075676	0	0	0	0	6	39	0	15
1225	0	0.0166019	0.023819	0.018 2	0	0	0	0	0	100	0	0
1226	0	0	0	0	0	0	0	0	0	0	0	0
1227	0	0.0029297	0 0 66852	0.0230525	0	0	0	0	0	100	0	0
1228	0	0	0	0	0	0	0	0	0	0	0	0
1229	0	0	0	0	0	0	0	0	0	0	0	0
1230	0	0	0	0	0	0	0	0	0	0	0	0
12 7	0	0	0	0	0	0	0	0	0	0	0	0
1253	0	0	0	0	0	10.55917	10.3087 8	10 2 6895	0	63. 15 795	36.58 5205	0
1275	0	0	0	0	0	0. 70 296	0. 5 9163	0. 83053	0	100	0	0

	e A a e e M es e aes						
So t Re	Cu ent Actual o o ected A Da e	Cu ent Ac ua o ojected oject App oval Date	Cu ent Actual o o ected Sta t on Si e Date	Cu ent Ac ua o ojected Bene cial Use Da e	Cu ent Actual o o ected Regu ato y sign-o Da e	Cu ent Actual o ojec ed Comple ion o Const uc ion Date	Cu ent Actual o o ected End o Maintenance e iod Date
	40	4	42	43	44	45	46
SOR	CAM_A	CAM_ oec App oval	CAM_SoS	CAM_BU	CAM_RSO	CAM_CoC	CAM_EoM
11 8	3105	3116					
1152	0695	0763		3 65			
1153	3186	3186					
1155	39821	39869					
1157	39517	39518	0917	1729		1 21	
1158	3951	39518	01 7	1176		13	188 . 22
1159	35382	35 61	0189	072		1512	
1160			39636	0161		029	
1161			1730	2083		1995	
1162	2699	2709					
1163	39933	39951	0035	0239		0203	
116	39885	39899	0070	1207		06	
1165	1229	123		209			
1166	006	0072	1 28	1639		1729	
1167	0506	0555	0917	1617		1722	2 96.36
1168				29 7			
1170	1 29	1 2	1597	1878		1912	
1171	2 0	2 0	2583	29 7		3028	
1172	1 29	1 2	1603	1878		1908	
1173	1226	1227	12 3	1729		1726	19 6.609
117	1806	1837	1670	2093			235 . 51
1175	1229	123	12 3	195		1789	195 .676
1176				273			
1178	1708	1716	1918	2073		2366	
1180	21 2	2151	2289	2383		2398	
1182	20 8	2051					
1183	2052	2053					
1185	177	1778					
1187	1900	1906					
1189	20 8	2051	2310			2559	
1190	2 12	2 19					
1191	21 6	2157	2 6	2527		2356	
119	2033	2038	2058	3035		3126	
1195	303	30 7	3059				
1196	2781	2795					
1197	2773	2795					
1198	2781	2795					
1201	2699	2709					
120	39972	0058	0973	1716		1820	2178. 72
1205	0836	08 0	1701	1971		2359	
1206	1782	1793		2 22			
1207	062	0633	2800	2825		2825	2978. 16
1208	091	0918	1730	1716		3033	
1209	1197	1218	1323	15 8		1568	
1210	1226	1227	12 3	1653		12 3	19 6.613
1211	1226	1227	12 3	1729		1607	195 .669
1212	2038	2039					
121	2781	2795	2919	300		2958	3152.515
1216	2717	2723		2797			
1219	35572	35676	39230	0801		39629	
1220	0093	0100	01 7	0 51		0 8	
1221	39 63	39 70	39539			39875	
1222	0123	0133	0182	029		0266	19 6.5 9
1223	395 2	39590	39706	39822		39818	
122	0563	057	0917	1361		1785	
1228	1226	1227	12 3	1729			19 6.61
1229	1813	1837	2205	2 89		2580	2850. 61
1230	1226	1227	1730	1773		1726	19 9. 5
123	26 7	2657	2968			3062	
1236	2 93	2500	2695			3035	
1239	2667	2668					
12 0	230	2352		2 53			3011.533
12 7		1177					
12 8	2090	211					
12 9	2172	2187					
1250	2 51	2 51					
1251	172	1726					
1252	1 3	1					
125	2583	2583					
1255	282	282					
1256	0786	0793					
1257	1206	1213					
1258	1306	1311					
1259	1319	1327					
1260	1320	1327					
1261	1297	130					
1262	1 59	1 71					
1263	1355	1359					
126	1386	1387					
1265	1 2	1 25					
1266	1 52	1 53					
1267	1 95	1 98					
1268	1500	1502					
1269	1528	1538					
1270	1 95	1 98					
1271	1500	1502					
1272	1 77	1 85					
1273	18 1	18 5					
127	1739	17 3					
1275	1869	1869					
1276	1856	1862					
1277	18	18 5					
1278	238	238					
1279	20 7	20 7					
1280	2 30	2 30					
1281	1078	1080					
1282	1079	1087					
1283	1519	1529					
128	15 0	15 1					
1285	1792	1792					
1286	1892	1899					
1287	1170	1180					
1288	2 2	2 81					
1289	2236	2236					
1290	2306	2306					
1292	0882	0886					
1293	0569	0569					
1295	0828	0837					
1297	0830	0837					
1298	0862	0863					
1299	08 7	0856					
1300	1653	1655					
1301	126	1281					
1302	1276	1277					
1303	1683	1688					
130	126	127					
1305	1278	1278					
1306	1870	1877					
1307	1530	1538					
1309	1619	1623					
1310	167	1677					
1311	2201	2205					
1312	2332	2332					
1313	2397	2397					
1315	0605	0626					
1316	0 16	0 1					
1317	0626	0627					

	e A a e e e v e s A a				e A a e e a a x e e e mm e e a)									e A a e e seA a %)				e A a e e %)		m ae s e)
So t Re	Cu ent Actual o ojec ed Se v ce A locat on Wa e In ast uctu e	Cu ent Actual o o ec ed Se v ce A locat on Wa e Non- n ast uc u e	Cu ent Actual o o ec ed Se v ce A locat on Sewe age n ast uc u e	Cu ent Actual o o ec ed Se v ce A locat on Sewe age Non- n ast uc u e	Cu ent Actual o o ected CA EX ea to date £m	Cu ent Actual o ojec ed CA EX 20 0- £m	Cu ent Actual o o ected CA EX 20 - 2 £m	Cu ent Actual o ojec ed CA EX 20 2- 3 £m	Cu ent Actual o o ected CA EX 20 3- 4 £m	Cu ent Actual o o ec ed CA EX 20 4- 5 £m	Cu ent Ac ual o ojected CA EX 20 5- 6 £m	Cu ent Actual o o ected CA EX 20 6- 7 £m	Cu ent Ac ual o ojected CA EX 20 7- 8 £m	Cu ent Actual o o ec ed u pose Al oca ion Qua l y	Cu ent Actual o o ec ed u pose A location Base	Cu ent Actual o o ected u pose Al oca ion ES	Cu ent Actual o ojected u pose A locat on G owth	Cu ent Ac ual o ojected RE Al oca ion Wate	Cu ent Ac ual o ojected RE Al oca ion Sewe age	Nom na ed Output
	47	48	49	50	5	52	53	54	55	56	57	58	59	66	67	68	69	70	7	72
A					2 2	7 7	47	92 9	4 79	7	4 7	4 27	2 2							
SOR	CASA_WI%	CASA_WNI%	CASA_SI%	CASA_SNI%	CA _Capex_ D_£m	CA _Capex_20 0- _£m	CA _Capex_20 - 2_£m	CA _Capex_20 2- 3_£m	CA _Capex_20 3- 4_£m	CA _Capex_20 4- 5_£m	CA _Capex_20 5- 6_£m	CA _Capex_20 6- 7_£m	CA _Capex_20 7- 8_£m	CA A_Q%	CA A_B%	CA A_E%	CA A_G%	CA _IRE_W%	CA _IRE_S%	NOM_Ou put
1129	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
1130	0	0	0	100	0.068	0	0	0	0	0	0	0.03	0.068	0	100	0	0	0	0	01
1131	0	0	0	100	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	
1132	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
1133	0	0	0	100	0.017	0	0	0	0	0	0	0 008	0.017	0	100	0	0	0	0	01
113	0	0	100	0	0.001	0	0	0	0	0	0	0	0.001	0	0	0	100	0	0	01
1135	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
1136	0	0	100	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	
1137	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	
1138	0	0	0	100	0.0	0	0	0	0	0	0	0	0 0	1	3	0	16	0	0	03
1139	0	0	100	0	0.1	0	0	0	0	0	0	0	0.1	0	100	0	0	0	100	01
11 0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	50	50	0	0	50	
11 1	0	0	100	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	
11 2	0	0	100	0	0.121	0	0	0	0	0	0	0	0.121	0	100	0	0	0	100	
11 3	0	0	100	0	0.001	0	0	0	0	0	0	0	0.001	0	0	0	100	0	0	
11	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
11 5	0	0	100	0	0.001	0	0	0	0	0	0	0	0.001	0	0	0	100	0	0	
11 6	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
11 7	0	0	100	0	0.001	0	0	0	0	0	0	0	0.001	0	0	0	100	0	0	
11 8	0	0	0	100	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	
11 9	0	0	100	0	0.1	0	0	0	0	0	0	0	0.1	0	100	0	0	0	100	
1150	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
1151	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
1152	0	0	85	15	0.26	0 0 7	0.00	0 026	-0.001	0 058	0 01	0.06	0.26	80	0	0	20	0	0	02
1153	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
115	0	0	100	0	0.078	0	0	0	0	0	0	0	0.078	0	100	0	0	0	100	01
1155	0	100	0	0	-0.001	0	0	0	0	0	0	0	-0.001	0	0	100	0	0	0	
1156	0	0	56		0.063	0.0	0.02	0 023	0 03	0 061	0.011	0 012	0.063	6	18	0	18	0	10	02
1157	0	0	53	7	0	2. 09	0.687	3 679	-0.0 9	-0 057	0.005	0	0	53	0	0	7	0	0	09
1158	0	0	5	6	0	1 083	0. 69	0 609	-0.065	0 001	0.008	0	0	0	0	0	60	0	0	09
1159	0	0	51	9	-0.007	0.111	0.039	0 016	0.00	0	0	0	-0.007	0	9	0	91	0	0	
1160	0	0	0	100	0	0.125	-0.07	0 023	0.001	0	0.001	0	0	2	2	0	16	0	0	09
1161	0	0	0	100	0.009	0 229	-0.0 9	0 555	2 78	0 579	0.23	0 268	0.009	1	15	0		0	0	08
1162	0	0	71	29	0.059	0 022	0.03	0 026	0.036	0 056	0.012	0 0 6	0.059	0	78	0	22	0	56	02
1163	0	0	51	9	0	0	-0.002	0 00	0	0	0.002	0	0	0	9	0	91	0	0	01
116	0	0	100	0	0	0 009	-0.007	0 015	-0.001	0	0.013	0	0	0	26	0	7	0	26	01
1165	0	0	60	0	-0.013	0 009	0.008	0 02	0.3 3	0 761	0 71	0 0 3	-0.013	72	1	0	1	0	10	02
1166	0	0	6	9	0.005	0.03	-0.029	0 062	0.597	0 031	0	0	0.005	97	3	0	0	0	0	
1167	0	0	0	100	0	0 35	1.638	5. 6	2.679	0	0.001	0	0	77	23	0	0	0	0	08
1168	0	0	100	0	0.003	0	0	0.02	-0.002	0 007	0.007	0	0.003	100	0	0	0	0	0	02
1169	0	0	30	70	0.039	0	0	0 072	-0.02	0 027	0.002	0 00	0.039	100	0	0	0	0	0	02
1170	0	0	0	100	-0.002	0	0	0 059	1.107	0 571	0.037	0 007	-0.002	88	12	0	0	0	0	08
1171	0	0	13	87	1. 63	0	0	0 088	-0.003	0.131	0.103	1 585	1. 63	8	16	0	0	0	3	02
1172	0	0	0	100	0	0	0	0 065	1.0 3	0 256	0.016	0	0	100	0	0	0	0	0	08
1173	0	0	0	100	0	0	0	0 032	0.198	0	0.001	0	0	26	70		0	0	0	
117	0	0	0	100	0	0	0	0	0.006	0 3 6	0.00	0 001	0	0	100	0	0	0	0	01
1175	0	0	0	100	0	0	0	0 096	0.593	0 071	0.001	0	0	12	7	1	0	0	0	08
1176	0	0	100	0	0.018	0	0.00	0 027	0.0 3	0 025	0.061	0 00	0.018	70	30	0	0	0	30	02
1177	0	0	22	78	0	0	0.005	0 0 1	-0.003	0	0.011	0 01	0	85	15	0	0	0	2	06
1178	0	0	6	9	0.0 8	0	0.013	0 033	0.036	1. 51	0.729	0 092	0.0 8	0	53	0	7	0	3	02
1179	0	0	0	100	-0.006	0	0.005	0 01	0.0	0 008	0.001	0 008	-0.006	3	26	0	0	0	0	03
1180	0	0	100	0	0	0	0	0.01	0 01	0	0.257	0 015	0	0	0	100	0	0	0	01
1181	0	0	0	100	0	0	0	0 029	-0.005	0	0.001	0	0	0	36	12	12	0	0	01
1182	0	0	0	100	0.00	0	0	0.02	0.00	0 002	0.06	0 016	0.00	81	19	0	0	0	0	03
1183	0	0	0	100	0	0	0	0 018	0.005	0 002	0.068	0 001	0	78	22	0	0	0	0	03
118	0	0	0	100	0	0	0	0 006	0	-0 001	0	0	0	0	100	0	0	0	0	02
1185	0	0	0	100	0	0	0	0 002	0.012	0.01	0.001	0	0	0	100	0	0	0	0	
1186	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
1187	0	0	17	83	0.065	0	0	0	0	0 061	0 66	0 072	0.065	5	6	0	0	0	13	02
1188	0	0	100	0	0.01	0	0	0	0	0	0	0.02	0 01	90	10	0	0	0	10	10
1189	0	0	85	15	0	0	0	0	0	0 006	0.133	0.02	0	90	10	0	0	0	10	02
1190	0	0	59	1	0.02	0	0	0	0.00	0 012	0.016	0.10	0.02	0	100	0	0	0	59	01
1191	0	0	100	0	0	0	0	0	0	0	0	0 0 7	0	0	0	0	100	0	0	01
1192	0	0	100	0	0.259	0	0	0	0	0.01	0.033	0.02	0.259	0	50	50	0	0	50	01
1193	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
119	0	0	35	65	0.112	0	0	0	0	0 26	1.301	0.132	0.112	100	0	0	0	0	0	02
1195	0	0	0	100	1.1 6	0	0	0	0	0	0.035	0	1.1 6	0	100	0	0	0	0	02
1196	0	0	100	0	0	0	0	0	0	0	0	0 001	0	0	0	0	100	0	0	01
1197	0	0	100	0	0.0 8	0	0	0	0	0	0	0	0.0 8	0	0	0	100	0	0	01
1198	0	0	100	0	0.018	0	0	0	0	0	0	0 001	0.018	0	0	0	100	0	0	01
1199	0	0	0	100	0.006	0	0	0	0	0	0	0 00	0.006	0	100	0	0	0	0	01
1200	0	0	100	0	0.02	0	0	0	0	0	0	0 022	0.02	0	0	100	0	0	0	01
1201	0	0	0	100	1.801	0	0	0	0	0	0	0 777	1.801	0	100	0	0	0	0	01
1202	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
1203	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
120	0	0	17	83	-0.003	0	0.02	0 287	1.202	0 031	0.012	0 003	-0.003	0	35	0	65	0	7	08
1205	0	0	12	88	0.0	0 012	0.057	0 01	0.216	1. 2	0.0 2	0 055	0 0	26	37	0	37	0		08
1206	0	0	100	0	0.181	0	0.005	0 005	0.073	0 273	0. 39	0.138	0.181	70	20	0	10	0	20	02
1207	0	0	100	0	-0.00	0 002	0.001	0	0	0	0.002	0 0 1	-0.00	0	0	0	100	0	0	01
1208	0	0	0	100	0.159	0	0	0. 3	3.7 2	0.2	0.008	0 021	0.159	23	71	0	6	0	0	08
1209	68	0	32	0	-0.001	0	0	0 068	0.723	-0 0 8	0	0	-0.001	0	100	0	0	68	32	
1210	0	0	0	100	0	0	0	0 013	0.056	0	0	-0 001	0	2	86	12	0	0	0	01
1211	0	0	0	100	0	0	0	0 032	0.117	0 039	0.005	0	0	2	98	0	0	0	0	01
1212	0	0	100	0	-0.001	0	0	0	0	0.03	0	0	-0.001	0	0	100	0	0	0	09
1213	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
121	0	0	100	0	0.0 1	0	0	0	0	0	0	0	0.0 1	0	0	0	100	0	0	01
1215	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
1216	0	0	100	0	-0.006	0	0	0	0	0	0	0 0	-0.006	0	0	100	0	0	0	01
1217	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
1218	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
1219	0	0	30	70	0	0.01	0	0 006	0	0	0.006	0	0	62	35	0	3	0	3	01
1220	0	0	65	35	0	0 01	0.006	-0 061	0	0	0	-0 005	0	53	0	0	7	0	0	09
1221	0	0	100	0	0	0	-0.003	0 002	0	0	0.002	0	0	0	0	0	100	0	0	01
1222	0	0	0	100	-0.002	0 002	-0.003	-0 005	-0.001	0	0	0	-0.002	0	100	0	0	0	0	
1223	0	0	100	0	0	0	-0.002	0	0	0	0.003	0	0	0	100	0	0	0	100	01
122	0	0	0	100	-0.001	0 231	0. 62	1 388	0.161	0 08	0	0	-0.001	6	39	0	15	0	0	
1225	0	0	0	100	-0.012	0	0.017	-0 008	0 02	0.05	0	0 012	-0.012		26	0	30	0	0	03
1226	0	0	100	0	0	0	0.002	0 002	0	0	0	0	0	0	100	0	0	0	100	01
1227	0	0	0	100	-0.01	0	0.003	0 017	0 06	-0 001	0	0.01	-0 01	3	26	0	0	0	0	03
1228	0	0	0	100	-0.001	0	0	0.05	0.117	0 011	0	0	-0.001	0	100	0	0	0	0	
1229	0	0	0	100	-0.013	0	0	0 005	0.001	0 0 3	0 67	0	-0.013	0	100	0	0	0	0	01
1230	0	0	0	100	0.005	0	0	0 052	0 27	0 003	0.005	0	0.005	1	5	1	0	0	0	01
1231	0	0	100	0	0.012	0	0	0	0.00	0 012	0.001	0 001	0.012	0	100	0	0	0	100	01
1232	0	0	0	100	-0.018	0	0	0	0.025	0	0	0 029	-0.018	37	60	0	3	0	0	03
1233	0	0	0	100	-0.003	0	0	0	0.025	0	0	0 003	-0.003	8	2	0	28	0	0	03
123	0	0	100	0	0.125	0	0	0	0	0 005	0.001	0.01	0.125	0	100	0	0	0	100	01
1235	0	0	50	50	0.235	0	0	0	0	0	0 09	0 025	0.235	69	21	0	10	0	10	01
1236	0	0	0	100	0.88	0	0	0	0	0 00	0 01	1.101	0 88	0	60	0	0	0	0	01
1237	0	0	100	0	0.082	0	0	0	0	0 003	0.1 2	0 016	0.082	0	100	0	0	0	100	01
1238	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
1239	0	0	0	100	0	0	0	0	0	0	0.008	0 007	0	20	25	0	55	0	0	03
12 0	0	0	0	100	0	0	0	0	0	0	0.117	0 012	0	0	100	0	0	0	0	01
12 1	0	0	10	90	0	0	0	0	0	0	0	0	0	0	52	0	8	0	6	01
12 2	0	0	100	0	0.0 1	0	0	0	0	0	0	0 058	0.0 1	0	80	0	20	0	80	01
12 3	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
12	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	01
12 5	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
12 6	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
12 7	25	25	25	25	0.019	0 001	0	0	0.087	-0 001	0.0 6	0 057	0.019	0	100	0	0	25	25	01
12 8	0	0	100	0	-0.015	0	0	0	0	0 006	0 05	0 019	-0.015	0	100	0	0	0	100	01
12 9	0	0	100	0	1.239	0	0	0	0	0	0.375	1 056	1.239	35	30	21	1	0	30	01
1250	0	50	0	50	0	0	0	0	0	0	0.021	0	0	0	0	100	0	0	0	0
1251	0	50	0	50	0	0	0	0	0	0 083	0.138	0	0	0	100	0	0	0	0	0
1252	25	25	25	25	0	0	0	0	0.158	0.09	0.00	0	0	0	100	0	0	25	25	0
1253	0	6	8	6	0	0	0	0	0	0	0	0	0	0	63	37	0	0	0	0
125	0	50	0	50	0.179	0	0	0	0	0	0	0.27	0.179	0	100	0	0	0	0	0
1255	0	100	0	0	0.137	0	0	0	0	0	0	0 005	0.137	0	100	0	0	0	0	0
1256	0	0	100	0	0	0	0.13	0.152	0	0	0.008	0	0	0	100	0	0	0	100	0
1257	100	0	0	0	0	0	0	0	0. 98	0 061	0.017	-0 00	0	0	100	0	0	100	0	0
1258	0	0	100	0	0	0	0	0 015	0.065	0 015	0.002	0	0	0	100	0	0	0	100	0
1259	0	0	100	0	0.02	0	0	0	0.093	0.02	0.027	0 029	0 02	0	100	0	0	0	100	0
1260	100	0	0	0	0	0	0	0 298	-0.0 2	0	0.005	0	0	0	100	0	0	100	0	0
1261	100	0	0	0	0	0	0	0	0. 69	0.18	0.038	0	0	0	100	0	0	100	0	0
1262	0	0	100	0	0	0	0	0	0.0 7	0 091	0.001	0	0	0	100	0	0	0	100	0
1263	0	100	0	0	0	0	0	0.02	0. 22	0.127	0.001	0	0	0	100	0	0	0	0	0
126	0	0	20	0	0	0	0	0	0.058	0	0.001	0	0	0	100	0	0	0	20	0
1265	100	0	0	0	-0.001	0	0	0	0.012	0.117	0.01	0	-0.001	0	100	0	0	100	0	0
1266	0	0	100	0	0	0	0	0	0.006	0 003	0.001	0	0	0	100	0	0	0	100	0
1267	100	0	0	0	0	0	0	0	0.226	0 029	-0 01	0	0	0	100	0	0	100	0	0
1268	0	0	100	0	0	0	0	0	0.157	0 03	0.001	0	0	0	100	0	0	0	100	0
1269	0	0	100	0	0	0	0	0	0.035	0 092	0.001	0	0	0	100	0	0	0	100	0
1270	0	0	100	0	0	0	0	0	0.015	0 011	0.00	0	0	0	100	0	0	0	100	0
1271	0	0	100	0	0	0	0	0	0.033	0 063	0.022	0	0	0	100	0	0	0	100	0
1272	0	0	100	0	0	0	0	0	0.012	0.02	0.002	0	0	0	100	0	0	0	100	0
1273	100	0	0	0	-0.001	0	0	0	0	0.17	0.056	0 006	-0.001	100	0	0	0	0	0	0
127	0	0	100	0	0	0	0	0	0	0 2 9	0.00	0	0	0	100	0	0	0	100	0
1275	0	0	100	0	0	0	0	0	0	0 097	0	0	0	0	100	0	0	0	100	0
1276	100	0	0	0	-0.002	0	0	0	0	0 2 2	0.022	0	-0.002	0	100	0	0	100	0	0
1277	100	0	0	0	0	0	0	0	0	0. 15	0.183	-0 005	0	0	100	0	0	100	0	0
1278	0	100	0	0	-0.001	0	0	0	0	0	0 02	0 008	-0.001	0	100	0	0	0	0	0
1279	0	100	0	0	0	0	0	0	0	0 006	0.016	-0 001	0	0	0	100	0	0	0	0
1280	0	0	0	100	-0.001	0	0	0	0	0	0	0 0 2	-0.001	0	100	0	0	0	0	0
1281	0	100	0	0	0	0	0	0 215	0.013	0 019	0.001	0	0	0	0	100	0	0	0	0
1282	0	100	0	0	0	0	0	0.173	0.009	0	0.011	0	0	0	0	100	0	0	0	0
1283	0	50	0	50	0	0	0	0	0.26	0 265	-0 01	0	0	0	0	100	0	0	0	0
128	0	100	0	0	0	0	0	0	0 06	0 015	0.002	0	0	0	0	100	0	0	0	0
1285	0	50	0	50	0.111	0	0	0	0	1. 72	0.831	0 535	0.111	0	0	100	0	0	0	0
1286	0	50	0	50	-0.001	0	0	0	0	0 399	0.031	0	-0.001	0	50	50	0	0	0	0
1287	0	9	0	51	0	0	0	0.195	0	0	0	-0 001	0	0	100	0	0	0	0	0
1288	25	25	25	25	-0.01	0	0	0	0	0	0.132	0.118	-0.01	0	0	100	0	0	0	0
1289	0	100	0	0	0	0	0	0	0	0	0.061	0 063	0	0	100	0	0	0	0	0
1290	0	9	0	91	-0.002	0	0	0	0	0	0.197	0 012	-0.002	0	55	5	0	0	0	0
1291	0	50	0	50	0.2 8	0	0	0	0	0	0	0	0.2 8	0	0	0	100	0	0	0
1292	0	9	0	51	0	0	0.06	0 007	0	0	0.008	0	0	0	0	100	0	0	0	0
1293	0	100	0	0	0	0 01	0.097	0.08	0.105	0.185	0.013	0	0	100	0	0	0	0	0	0
129	100	0	0	0	-0.001	0	0	0	0	0	0	0	-0.001	0	0	100	0	0	0	0
1295	0	70	0	30	0	0 0 3	-0.006	0	0	0	0.017	0	0	0	100	0	0	0	0	0
1296	0	0	0	100	0	0	0	0	0	0	0.006	0	0	0	0	100	0	0	0	0
1297	0	100	0	0	0	0	0.02	0 0 2	0	0	-0 02	0	0	0	100	0	0	0	0	0
1298	0	50	0	50	0	0	0	0 032	0.017	0	0.006	0	0	0	100	0	0	0	0	0
1299	0	100	0	0	0	0	0.02	0	0.00	0	0.001	0	0	0	100	0	0	0	0	0
1300	0	50	0	50	0	0	0	0	0.039	0.156	0.01	0	0	0	0	100	0	0	0	0
1301	0	50	0	50	0	0	0	0.101	0.009	0	0.009	0	0	0	100	0	0	0	0	0
1302	0	0	0	100	-0.002	0	0	0 001	0.007	-0 006	0.005	0	-0.002	0	0	100	0	0	0	0
1303	0	100	0	0	0	0	0	0	0	0.1 5	0.008	0	0	0	90	10	0	0	0	0
130	0	100	0	0	0	0	0	0 025	0.001	0	0.006	0	0	0	0	100	0	0	0	0
1305	0	100	0	0	0	0	0	0 022	0.00	0	0.005	0	0	0	100	0	0	0	0	0
1306	0	50	0	50	0	0	0	0	0.039	0 069	0.001	0	0	0	0	100	0	0	0	0
1307	0	100	0	0	0	0	0	0	0.015	0	0.008	0	0	0	0	100	0	0	0	0
1308	0	50	0	50	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0
1309	0	100	0	0	0	0	0	0	0.006	0	0.007	0	0	0	100	0	0	0	0	0
1310	0	100	0	0	0	0	0	0	0 03	0	0.002	0	0	0	100	0	0	0	0	0
1311	0	100	0	0	-0.008	0	0	0	0	0	0.0	0	-0.008	0	72	28	0	0	0	0
1312	0	100	0	0	-0.001	0	0	0	0	0	0.006	0	-0.001	0	0	100	0	0	0	0
1313	0	0	100	0	0	0	0	0	0	0	0	0 035	0	0	100	0	0	0	100	0
131	0	100	0	0	0	0	0	0	0	0	0	0	0	0	10	90	0	0	0	0
1315	0	9	0	51	-0.008	0	1.29	0 2	0.093	0	0	0 005	-0.008	0	100	0	0	0	0	0
1316	0	23	0	77	0	0 208	0.168	0.167	0.065	0 065	0.001	0	0	3	26	10	30	0	0	0
1317	0	50	0	50	-0.001	0	0	0	0	0	0	0	-0.001	0	0	100	0	0	0	0

SOR	CIM_Sub	I_Project_ID	I_Project_Name	I_C_Period	I_PARENT_ID	I_SUBSTITUTE_ID	I_Asset_Cat	I_C0_Prog	I_Reg_Signo
	2	3	4	5	6	7	8	9	0
A			T a a aex e ee e						
1318	2017_18 Q	BT021	Enhancement program for End of Life equiptments 7 Ethernet	01			15	20	
1319	2017_18 Q	BT023	HVCA Imp emen at on Project	01			15	20	
1320	2017_18 Q	BT026	Business Serv ces O fice S gnage Requirements				15	20	
1321	2017_18 Q	CE00	SME support or Capi al Efficiency Portfolio	06			15	20	
1322	2017_18 Q	CE006	In sourcing Network Mode ling Into Stra eg c C ient					20	
1323	2017_18 Q	CO001	Commerc al Exce lence					20	
132	2017_18 Q	CS001	Customer Connections	02			06	20	
1325	2017_18 Q	CS007	Account Services Case Mgmt	01			15	20	DRD
1326	2017_18 Q	CS008	Se f Serv ce Phase 2	01			1	20	DRD
1327	2017_18 Q	CU001	1CEX1 Metering & B lling	06			0	20	
1328	2017_18 Q	CU002	PC15 ICAT Delivery - Omagh / Cookstown Area	0	BE01		06	20	
1329	2017_18 Q	CU003	PC15 ICAT Delivery - Bel ast Area	06	BE01		0	20	
1330	2017_18 Q	CU00	PC15 ICAT Delivery - Newry Area					20	
1331	2017_18 Q	CU005	PC15 ICAT Delivery - Enn ski len Area					20	
1332	2017_18 Q	CU006	PC15 ICAT Delivery - Ards / Bangor Area	06			0	20	
1333	2017_18 Q	CU007	PC15 ICAT Delivery - Derry / Co eraine Area	06			0	20	
133	2017_18 Q	CU008	PC15 ICAT Delivery - Pilot Stud es					20	
1335	2017_18 Q	CU011	Service Incen ive Mechanism (SIM) Improvements	06			15	20	
1336	2017_18 Q	CU012	IVR	06			15	20	
1337	2017_18 Q	CU013	Se f Serv ce Web Enhancements	06			15	20	
1338	2017_18 Q	CU01	Knowledge Centre	06			15	20	
1339	2017_18 Q	CU015	Digital Cl ent Side Support	06			15	20	
13 0	2017_18 Q	CU016	Customer Interface Renewal				15	20	
13 1	2017_18 Q	CU017	ESRI Network Schema ics				15	20	
13 2	2017_18 Q	EP013	Capitalisat on of Estates Maintenance	00			15	20	
13 3	2017_18 Q	EP017	Elect ic ty generation from wind power or a ternative green ene	06			09	02	
13	2017_18 Q	EP031	In el igent Pump Manager IWWF West Region	02	EP0 6		12	20	DRD
13 5	2017_18 Q	EP037	Climate Change Mi igation - Reducing Em ssions	02			15	20	
13 6	2017_18 Q	EP038	Addit onal Accommoda ion and Upgrades at West and House	00			1	20	DRD
13 7	2017_18 Q	EP039	NIW Contaminated Land Remed al Project	06			15	20	
13 8	2017_18 Q	EP0 0	Ba lycast e Depot - Remediation of Contaminat on.	01			15	20	NIEA
13 9	2017_18 Q	EP0 3	Capital Maintenance 13/1 & 1 /15	03			15	20	
1350	2017_18 Q	EP0 5	Ennisk llen Area: Provision of M P Faci it es	03			06	20	DRD
1351	2017_18 Q	EP052	CPMR imps PC15	06			11	20	
1352	2017_18 Q	EP053	Estates management PC15	06			15	20	
1353	2017_18 Q	EP056	CALM Network Faci ity					20	
135	2017_18 Q	ER002	Purachse of Automatic Sampling Machines for TE Charging an	06			1	20	
1355	2017_18 Q	FR01	Oracle E-business suite minor enhancements during PC13	03			15	20	
1356	2017_18 Q	FR015	Capital allowance review	05			15	20	
1357	2017_18 Q	FR017	Computer Associa es upgrade related to new Orac e E-busines	05			15	20	
1358	2017_18 Q	FR018	Enhancements to the Oracle E-Business Suite and Assoc ated	06			15	20	
1359	2017_18 Q	FR020	16/17 Enhancement o Oracle E-Bus Suite and Assoc ated Sys	06			15	20	
1360	2017_18 Q	FR021	M gration of Oracle EBS & OBIEE to new OVM/Linux hardwar	06			15	20	
1361	2017_18 Q	FR022	17/18 Minor enhancements to the Oracle E-business suite and	06			15	20	
1362	2017_18 Q	FR025	18/19 Oracle Minor Enhancements					20	
1363	2017_18 Q	HR002	Creation of Interface between NI Water's payroll and Capita Er	03			15	20	
136	2017_18 Q	HR005	Payro l Changes in re at on to CARE 2015 pens on introduc ion	06			15	20	
1365	2017_18 Q	HR006	Oracle OLM Change Request	06			15	20	
1366	2017_18 Q	HR007	Oracle 2016 enhancements	06			15	20	
1367	2017_18 Q	IA001	Data Analytics Solution	06			15	20	
1368	2017_18 Q	IT002	Provision and support of corporate AutoCAD MAP 3D License	00			1	20	
1369	2017_18 Q	IT00	PC Refresh Programme	01			06	20	
1370	2017_18 Q	IT010	ICT – Telemetry Base Maintenance	02			15	20	
1371	2017_18 Q	IT017	Upgrade Programme for the Protection of Lightning Protec ion	01			15	20	
1372	2017_18 Q	IT038	MWM Toughbook Refresh Project	03			15	20	
1373	2017_18 Q	IT039	Mob le Work Management MWM) Contract Renewal	03			15	20	
137	2017_18 Q	IT0 3	In ormat on Flows 2	03			15	20	
1375	2017_18 Q	IT0	Crit cal Security Contro s	03			15	20	
1376	2017_18 Q	IT050	Telecoms Infrastructure Improvement	03			15	20	
1377	2017_18 Q	IT052	In ernet Web Server Refresh	03			15	20	
1378	2017_18 Q	IT053	Windows Servers & Storage Array (2013)	03			15	20	
1379	2017_18 Q	IT055	MC2 Imp emen at on	03			15	20	DRD
1380	2017_18 Q	IT056	Sl eve Ga lion mast si e refurbishment	06			15	20	
1381	2017_18 Q	IT068	Si e SCADA Upgrade	03			1	20	
1382	2017_18 Q	IT069	ICT Base Maintenance	05			15	20	
1383	2017_18 Q	IT070	EMCI	03			15	20	
138	2017_18 Q	IT071	MC1 Exit P an	03			15	20	
1385	2017_18 Q	IT072	Implementation of PCI DSS	0			15	20	
1386	2017_18 Q	IT073	EMCI Phase 2	0			15	20	
1387	2017_18 Q	IT076	ICT Base Maintenance 15/16	06			15	20	
1388	2017_18 Q	IT077	SCADA Serv ces Prov s on	06			15	20	
1389	2017_18 Q	IT082	Telemet y Server Hardware Rep acement	03			15	20	
1390	2017_18 Q	IT08	End of L e Hardware and Software upgrade – Db Autho se inv	03			15	20	
1391	2017_18 Q	IT085	M crosoft Ente prise Agreement	06			15	20	
1392	2017_18 Q	IT086	ICT Base Maintenance	06			15	20	
1393	2017_18 Q	IT087	Addit onal Blades and Finance Netbackup Licenses	06			15	20	
139	2017_18 Q	IT089	Corpora e Wifi	06			15	20	
1395	2017_18 Q	IT090	Mob le Phone Refresh 2016	06			15	20	
1396	2017_18 Q	IT091	Desk op & Laptop Refresh	06			15	20	
1397	2017_18 Q	IT093	CSD Dashboa d	06			15	20	
1398	2017_18 Q	IT09	ICT Base Maintenance 17 18	06			15	20	
1399	2017_18 Q	IT095	Desk op Hardware Refresh	06			15	20	
1 00	2017_18 Q	IT099	Telemet y Ou station Refresh Project - Phase 2	06			15	20	
1 01	2017_18 Q	IT101	ICT Telemetry and Telecoms Base Main enance	06			15	20	
1 02	2017_18 Q	IT102	MC2 XRM Pi ot	06			15	20	
1 03	2017_18 Q	IT105	Mob le Phone Refresh 2018	06			15	20	
1 0	2017_18 Q	IT106	ICT Base Maintenance 18/19					20	
1 05	2017_18 Q	IT107	Data Centre Refresh					20	
1 06	2017_18 Q	LC001	Si ent Va ley Park Enhancement	01			06	20	
1 07	2017_18 Q	NA00	Labo atory Capi al Equipment	01			15	20	
1 08	2017_18 Q	NA006	NIAMP Project Support	02			15	20	
1 09	2017_18 Q	NA018	LIMS Server Upgrade	06			15	20	
1 10	2017_18 Q	NA020	Remote Samp er Hardware Refresh	03			15	20	
1 11	2017_18 Q	NA025	Upgrade of LIMS AQC Module to AqcTools	05			15	20	
1 12	2017_18 Q	NA035	Purchase of Automatic Sampling Equipment and Batter es	06			1	20	
1 13	2017_18 Q	OP0 1	Meter Reading Hand Held Uni s & Software	05			06	20	
1 1	2017_18 Q	OP0 2	TMG - F eet Purchases 13/1	03			15	20	DRD
1 15	2017_18 Q	OP0 8	Toughbook Refresh Project – Crad e purchase & instal at on	03			15	20	DRD
1 16	2017_18 Q	OP058	M&E Stores Rat onal sa ion	06			15	20	
1 17	2017_18 Q	OP060	TMG Fleet Purchases - 15/16	06			15	20	
1 18	2017_18 Q	OP061	Emergency Planning 15 16	06			15	20	
1 19	2017_18 Q	OP063	Emergency Emergency Ho ding line 16/17	06			15	20	
1 20	2017_18 Q	OP06	TMG - Vehicle & Plant Rep acemen s 16/17	06			15	20	
1 21	2017_18 Q	OP065	Lone Worker Refresh	06			15	20	
1 22	2017_18 Q	OP067	TMG - V&P Requirements (17 18)	06			15	20	
1 23	2017_18 Q	OP068	TMG - V&P Requirements (18 19)					20	
1 2	2017_18 Q	PL001	Ops Contracts Mater al Testing	06			15	20	
1 25	2017_18 Q	PL002	2PL2 Wastewater PL Phase 1	06			15	20	
1 26	2017_18 Q	PL005	Energy Eff c ency - Process Optim sation	06			15	20	
1 27	2017_18 Q	PL006	Repair & Maintenance Rev ew Project	06			06	20	
1 28	2017_18 Q	QC011	Labo atory Capi al Equipment 12/13	01			15	20	
1 29	2017_18 Q	QC012	Labo atory Equipment 13/1 & 1 /15	03			15	20	DWI
1 30	2017_18 Q	QC015	Defibr llators for NIW depots & Hubs	03			06	20	
1 31	2017_18 Q	QC018	Labo atory Capi al 15 16	06			15	20	
1 32	2017_18 Q	QC019	2015 16 SCAMP NI (Sustainab e Ca chment A ea Managemer	06			06	03	
1 33	2017_18 Q	QC020	Watson Mar ow pump - Cryp o	06			15	20	
1 3	2017_18 Q	QC021	2016 17 SCAMP NI (Sustainab e Ca chment A ea Managemer	06			06	03	
1 35	2017_18 Q	QC022	Labo atory Capi al 16 17	06			06	20	
1 36	2017_18 Q	QC023	Labo atory Capi al 17 18	06			06	20	
1 37	2017_18 Q	QC02	2017 18 SCAMP NI (Sustainab e Ca chment A ea Managemer	06			06	03	
1 38	2017_18 Q	QC026	Labo atory Capi al 18 19					20	
1 39	2017_18 Q	QC027	2018 19 SCAMP NI Projects					03	
1 0	2017_18 Q	BN051	PC15 Ops Capital (Sewerage) BSP & SDB Parent	06			07	18	
1 1	2017_18 Q	CF11	Installation of wa er meters and separat ons Baseline	06			03	19	
1 2	2017_18 Q	LN13	Leakage Parent PC15	06			03	09	
1 3	2017_18 Q	WS121	Ops Capital (Water) BSP & SDB Parent PC15	06			03	10	
1	2017_18 Q	CS020	Capitalised Sa aries and On-Costs	00				00	
1 5	2017_18 Q		Leakage-Detec ion	00			03	09	
1 6	2017_18 Q		Leakage-Repairs	00			03	09	
1 7	2017_18 Q		Leakage-Other	00			03	09	
1 8	2017_18 Q		Water Supply	00			02	10	
1 9	2017_18 Q		Wastewater	00			09	18	
1 50	2017_18 Q		Customer Field Services	00			03	19	
1 51	2017_18 Q		DSCT-Water	00			03	10	
1 52	2017_18 Q		DSCT-Sewerage	00			07	18	
1 53	2017_18 Q		M & E	00			09	18	
1 5	2017_18 Q		Networks Water	00			03	10	
1 55	2017_18 Q		Lead Pipe	00			03	10	
1 56	2017_18 Q		Cost of connections sewerage	00			07	18	
1 57	2017_18 Q		Cost of connnect ons wa er	00			03	10	
1 58	2017_18 Q		Cost of watermains rel gnment	00			03	10	
1 59	2017_18 Q		Cost of Sewer real gnment	00			07	18	

SOR	BSA_WI%	BSA_WNI%	BSA_SI%	BSA_SNI%	B_Capex_20 0-_£m	B_Capex_20 -2_£m	B_Capex_20 2-3_£m	B_Capex_20 3-4_£m	B_Capex_20 4-5_£m	B_Capex_20 5-6_£m	B_Capex_20 6-7_£m	B_Capex_20 7-8_£m	B_A_Q%	B_A_B%	B_A_E%	B_A_G%
	8	9	20	2	22	23	24	25	26	27	28	29	36	37	38	39
A					7 99	2 9	24 949	4	9	47 7	4	4 2				
13 3	0	0	0	100	0	0	0	0	0	0	0	1.9 5 573	0	0	100	0
1 0	0	0	23	77						7.3268691	7 2829079	7.2392105	0	91. 836271	0	8.51637295
1 1	0	100	0	0						3 779818	3 708672	3.6 59526	0	88.62 68	0	11 3753156
1 2	5	55	0	0						2.6868816	2 6871512	2.55 10 9	0	79.9866 63	0	20 0133537
1 3	56		0	0						6.199965	6.1627652	6.1257886	.8 577735	52.5113819	0	2 6 28 07
1	29	12	11	8						11.283935	11.216232	11 202815	23.1896065	57. 85721	3.86 93 2	15. 597377

SOR	CAM_A	CAM_Approval	CASA_WI%	CASA_WNI%	CASA_SI%	CASA_SNI%	CA_Capex_D_£m	CA_Capex_20 0-_£m	CA_Capex_20 -2_£m	CA_Capex_20 2-3_£m	CA_Capex_20 3-4_£m	CA_Capex_20 4-5_£m	CA_Capex_20 5-6_£m	CA_Capex_20 6-7_£m	CA_Capex_20 7-8_£m	CA_A_Q%	CA_A_B%	CA_A_E%	CA_A_G%	CA_IRE_W%	CA_IRE_S%	NOM_Output
	40	4	47	48	49	50	5	52	53	54	55	56	57	58	59	66	67	68	69	70	7	72
A							2 2	7 7	47	92 9	4 79	7	4 7	4 27	2 2							
1318	0828	083	0	0	0	60	0	0	0.295	0.138	0.226	0	0.033	0	0	0	100	0	0	0	0	0
1319	1031	1037	0	50	0	50	-0.01	0	0	0 335	0	0	0.021	0	-0 01	0	0	100	0	0	0	0
1320	3111	3117	0	50	0	50	0.01	0	0	0	0	0	0	0	0 01	0	0	100	0	0	0	0
1321	2397	2397	25	25	25	25	0.382	0	0	0	0	0	0 01	0 225	0.382	0	0	100	0	0	0	0
1322	2760	2871	0	10	0	10	0.039	0	0	0	0	0	0	0	0.039	30	0	20	50	0	0	0
1323			0	50	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
132	0808	0815	0	50	0	50	0	0	0.103	0.126	0.013	0.05	-0 05	0	0	0	0	100	0	0	0	0
1325	0870	0892	0	100	0	0	0	0	0.031	0 0 8	0.025	0.03	0.017	0	0	0	100	0	0	0	0	0
1326	0870	0892	0	60	0	0	0	0	0.13	0. 63	0.158	0 00	0.002	0	0	0	0	100	0	0	0	0
1327	2360	2373	0	100	0	0	0.955	0	0	0	0	0	0.19	0 726	0.955	0	0	100	0	0	0	0
1328	2 11	2 11	0	100	0	0	0.102	0	0	0	0	0	0	0 851	0.102	0	72	28	0	0	0	0
1329	2933	2933	0	100	0	0	0.609	0	0	0	0	0	0	0	0.609	0	71	29	0	0	0	0
1330			0	100	0	0	0	0	0	0	0	0	0	0	0	0	71	29	0	0	0	0
1331			0	100	0	0	0	0	0	0	0	0	0	0	0	0	71	29	0	0	0	0
1332	3187	3187	0	100	0	0	0	0	0	0	0	0	0	0	0	0	73	27	0	0	0	0
1333	3187	3188	0	100	0	0	0	0	0	0	0	0	0	0	0	0	73	27	0	0	0	0
133			0	100	0	0	0	0	0	0	0	0	0	0	0	0	71	29	0	0	0	0
1335	2530	25 2	0	50	0	50	0.021	0	0	0	0	0	0	0	0.021	0	0	100	0	0	0	0
1336	2891	2891	0	50	0	50	0.002	0	0	0	0	0	0	0	0.002	0	0	100	0	0	0	0
1337	2891	2891	0	50	0	50	0.02	0	0	0	0	0	0	0	0 02	0	0	100	0	0	0	0
1338	30 7	30 7	0	50	0	50	0.011	0	0	0	0	0	0	0	0.011	0	0	100	0	0	0	0
1339	3111	3112	0	50	0	50	0.01	0	0	0	0	0	0	0	0 01	0	0	100	0	0	0	0
13 0			0	50	0	50	0	0	0	0	0	0	0	0	0	0	0	60	0	0	0	0
13 1	3067	3067	0	100	0	0	0.015	0	0	0	0	0	0	0	0.015	0	0	100	0	0	0	0
13 2	0715	076	0	50	0	50	0	0	0.136	0.121	0.1 7	0 002	0.001	0	0	0	100	0	0	0	0	0
13 3	0 23	0 1	0	20	0	80	0.017	0.08	-0.0 5	0 028	0 05	0 051	0.003	1.173	0.017	0	0	100	0	0	0	0
13	1199	1200	0	0	0	100	0	0	0	0.186	0.0 1	0 012	0.001	0	0	0	100	0	0	0	0	0
13 5	22 8	22 9	0	50	0	50	-0.002	0	0	0 001	0.0 1	0 003	0.096	0 06	-0.002	0	100	0	0	0	0	0
13 6			0	50	0	50	0.003	0	0	0 005	0.015	0 013	0	0 007	0.003	0	100	0	0	0	0	0
13 7			0	50	0	50	0	0	-0.002	0	0.033	0	0.001	0	0	0	100	0	0	0	0	0
13 8			0	60	0	0	0	0	0	0	0.017	-0 002	0	0	0	0	100	0	0	0	0	0
13 9	1 39	1 9	0	50	0	50	0	0	0	0	0.236	0.17	0.008	0	0	0	100	0	0	0	0	0
1350	1568	1571	0	100	0	0	0	0	0	0	0.015	0 09	0.009	0	0	0	100	0	0	0	0	0
1351	2151	2153	0	50	0	50	0.065	0	0	0	0	0	0.085	0 055	0.065	0	50	50	0	0	0	0
1352	2095	2097	0	50	0	50	0.061	0	0	0	0	0	0.108	0 088	0.061	0	100	0	0	0	0	0
1353	3083	3090	0	100	0	0	0.132	0	0	0	0	0	0	0	0.132	0	0	100	0	0	0	0
135			0	0	0	100	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1355	1596	16 1	0	50	0	50	-0.001	0	0	0	0 05	0 075	0.001	0	-0.001	0	0	100	0	0	0	0
1356	1725	1726	0	50	0	50	0	0	0	0	0.088	0 078	0.027	0	0	0	100	0	0	0	0	0
1357	2206	2277	0	50	0	50	0	0	0	0	0	0.01	0.029	0	0	0	0	100	0	0	0	0
1358	22 8	2277	0	50	0	50	0	0	0	0	0	0	0.088	0	0	0	100	0	0	0	0	0
1359	2 79	2559	0	50	0	50	-0.005	0	0	0	0	0	0	0.157	-0.005	0	100	0	0	0	0	0
1360	2712	2807	0	50	0	50	0.275	0	0	0	0	0	0	0.1	0.275	0	100	0	0	0	0	0
1361			0	50	0	50	0.0 3	0	0	0	0	0	0	0	0.0 3	0	0	100	0	0	0	0
1362			0	50	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1363	1992	1992	0	50	0	50	0	0	0	0	0	0.176	0.002	0	0	0	100	0	0	0	0	0
136	2236	2256	0	50	0	50	0	0	0	0	0	0	0 09	0	0	0	100	0	0	0	0	0
1365	2233	2256	0	50	0	50	0	0	0	0	0	0	0 01	0	0	0	0	100	0	0	0	0
1366			0	50	0	50	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0
1367	2 31	2 31	0	50	0	50	0	0	0	0	0	0	0	0 007	0	0	0	100	0	0	0	0
1368	07 2	07 6	0	9	0	51	0	0	0.051	0	0	0 0 5	0	0 059	0	0	100	0	0	0	0	0
1369	0779	0781	0	51	0	9	-0.001	0	1.105	0.36	0	0	0	-0 00	-0.001	0	100	0	0	0	0	0
1370	1228	1232	0	50	0	50	0.127	0	0	0 039	0.052	0 392	1.552	1.116	0.127	0	100	0	0	0	0	0
1371	1116	112	0	73	0	27	-0.001	0	0	0	0	0	0	0	-0.001	0	100	0	0	0	0	0
1372	1516	1519	0	51	0	9	-0.00	0	0	0	0.877	0 059	0 05	-0 009	-0.00	0	0	100	0	0	0	0
1373	1326	1332	0	51	0	9	0	0	0	0	0.128	0	0	-0 019	0	0	100	0	0	0	0	0
137	1555	1562	0	50	0	50	0	0	0	0	0.026	0 008	0.002	0	0	0	100	0	0	0	0	0
1375	1 91	1 93	0	50	0	50	-0.00	0	0	0	0	0	0	0	-0.00	0	100	0	0	0	0	0
1376	1618	162	0	50	0	50	0	0	0	0	0.095	0 015	0	-0 003	0	0	100	0	0	0	0	0
1377	1520	1523	0	100	0	0	-0.008	0	0	0	0	0	0	0	-0.008	0	100	0	0	0	0	0
1378	15 3	1550	0	50	0	50	-0.003	0	0	0	0	0	0	0	-0.003	0	100	0	0	0	0	0
1379	160	1610	0	51	0	9	-0.006	0	0	0	0.60	1 998	0.615	0 035	-0.006	0	100	0	0	0	0	0
1380	2171	2178	0	100	0	0	-0.003	0	0	0	0	0	0.087	0.152	-0.003	0	100	0	0	0	0	0
1381	1687	1688	0	9	0	51	0	0	0	0	0.706	0.1 1	0	-0 002	0	0	100	0	0	0	0	0
1382	1772	1772	0	50	0	50	-0.003	0	0	0	0	0 637	0.029	0 001	-0.003	0	100	0	0	0	0	0
1383	1767	1772	0	9	0	51	0	0	0	0	0	0 02	0	-0 008	0	0	0	100	0	0	0	0
138	1808	1809	0	50	0	50	0	0	0	0	0	0.11	0 05	-0.022	0	0	0	100	0	0	0	0
1385	1809	1810	0	55	0	5	-0.009	0	0	0	0	0 037	0.0 8	0 0 5	-0.009	0	0	100	0	0	0	0
1386	189	189	0	9	0	51	0	0	0	0	0	0 262	0.001	-0 002	0	0	0	100	0	0	0	0
1387	21 6	2150	0	50	0	50	-0.023	0	0	0	0	0	0.576	0 0 6	-0.023	0	100	0	0	0	0	0
1388	2118	2118	0	9	0	51	0.057	0	0	0	0	0	0.057	0.17	0.057	0	9	51	0	0	0	0
1389	2069	2072	0	50	0	50	0	0	0	0	0	0 005	0.033	0	0	0	100	0	0	0	0	0
1390	2076	2076	0	50	0	50	-0.009	0	0	0	0	0	0	0	-0.009	0	100	0	0	0	0	0
1391	2102	2102	0	50	0	50	0.2 5	0	0	0	0	0	0.777	0	0.2 5	0	100	0	0	0	0	0
1392	2517	2523	0	50	0	50	0.02	0	0	0	0	0	0	0 673	0.02	0	100	0	0	0	0	0
1393	239	239	0	50	0	50	0	0	0	0	0	0	0.119	0	0	0	100	0	0	0	0	0
139	2 31	2 31	0	50	0	50	-0.002	0	0	0	0	0	0	0 327	-0.002	0	0	100	0	0	0	0
1395	2 85	2 88	0	50	0	50	0	0	0	0	0	0	0	0 0 1	0	30	30	20	20	0	0	0
1396	2682	2682	0	50	0	50	-0.006	0	0	0	0	0	0	0. 12	-0.006	0	100	0	0	0	0	0
1397	2695	2695	0	51	0	9	0	0	0	0	0	0	0	0 038	0	0	100	0	0	0	0	0
1398	2859	2859	0	50	0	50	0.137	0	0	0	0	0	0	0	0.137	0	100	0	0	0	0	0
1399	2788	3006	0	50	0	50	0. 07	0	0	0	0	0	0	0	0. 07	0	100	0	0	0	0	0
1 00	2797	2802	0	50	0	50	0.996	0	0	0	0	0	0	0 011	0.996	0	100	0	0	0	0	0
1 01	2892	2892	0	50	0	50	0.265	0	0	0	0	0	0	0	0.265	0	100	0	0	0	0	0
1 02	2872	2873	0	50	0	50	0.0 5	0	0	0	0	0	0	0	0.0 5	0	100	0	0	0	0	0
1 03			0	50	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1 0			0	50	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1 05			0	50	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1 06	1292	1310	0	100	0	0	0	0	0	0 059	-0.003	-0 066	0.005	0	0	0	100	0	0	0	0	0
1 07	0589	0589	0	9	0	51	0	0.106	0.003	0	0	0	0.001	-0 001	0	0	100	0	0	0	0	0
1 08	1 17	1 21	25	25	25	25	0	0	0	0.02	0.568	0 35	0.002	0	0	0	100	0	0	25	25	0
1 09	2668	2670	0	50	0	50	0.007	0	0	0	0	0	0	0 067	0.007	0	100	0	0	0	0	0
1 10	1558	1569	0	50	0	50	-0.002	0	0	0	0.069	0 061	0.00	0	-0.002	0	100	0	0	0	0	0
1 11	19 7	19 9	0	50	0	50	0	0	0	0	0	0 029	0.001	0 002	0	0	100	0	0	0	0	0
1 12	2786	2786	0	0	0	100	-0.001	0	0	0	0	0	0	0.02	-0.001	0	100	0	0	0	0	0
1 13	169	169	0	100	0	0	0	0	0	0	0.216	0 079	0.016	0	0	0	70	30	0	0	0	0
1 1	1536	15 0	0	62	0	38	0	0	0	0	1.885	0	0.006	0	0	0	100	0	0	0	0	0
1 15	1577	1582	0	50	0	50	0	0	0	0	0. 5	0 098	0.0 7	-0 032	0	0	0	100	0	0	0	0
1 16	2666	2675	0	30	0	70	0.179	0	0	0	0	0	0	0	0.179	0	100	0	0	0	0	0
1 17	2227	223	0	62	0	38	0	0	0	0	0	0	0.816	-0 005	0	0	100	0	0	0	0	0
1 18	2268	2269	0	100	0	0	-0.001	0	0	0	0	0	0.058	0	-0.001	0	100	0	0	0	0	0
1 19	2660	2662	0	100	0	0	0	0	0	0	0	0	0	0.02	0	0	100	0	0	0	0	0
1 20	2555	2556	0	62	0	38	0	0	0	0	0	0	0	1 791	0	0	100	0	0	0	0	0
1 21	2662	2662	0	50	0	50	0	0	0	0	0	0	0	0 012	0	0	100	0	0	0	0	0
1 22	3116	3116	0	60	0	0	0.59	0	0	0	0	0	0	0	0 59	0	100	0	0	0	0	0
1 23			0	50	0	50	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1 2	2258	2258	0	100	0	0	-0.001	0	0	0	0	0	0.001	0 001	-0.001	0	100	0	0	0	0	0
1 25	2380	2380	0	0	0	100	0	0	0	0	0	0	0.088	0	0	0	0	100	0	0	0	0
1 26	2382	2382	0	0	0	100	0.00	0	0	0	0	0	0.176	0 072	0.00	0	55	5	0	0	0	0
1 27	2916	2927	0	100	0	0	0.067	0	0	0	0	0	0	0	0.067	0	100	0	0	0	0	0
1 28	0935	09 2	0	51	0	9	0	0	0	0 071	0	0	0.00	0	0	0	100	0	0	0	0	0
1 29	1 30	1 37	0	51	0	9	0	0	0	0	0.223	0 23	0.022	0 087	0	0	100	0	0	0	0	0
1 30	1 91	1 98	0	50	0	50	0	0	0	0	0.015	0	0.003	0	0	0	0	100	0	0	0	0
1 31	2159	2159	0	51	0	9	-0.001	0	0	0	0	0	0.0 6	0 00	-0.001	0	100	0	0	0	0	0
1 32	2132	2135	0	100	0	0	-0.002	0	0	0	0	0	0.15	0 001	-0.002	30	20	0	10	0	0	0
1 33	2109	2109	0	100	0	0	0	0	0	0	0	0	0.002	0	0	0	100	0	0	0	0	0
1 3	2 75	2 76	0	100	0	0	-0.015	0	0	0	0	0	0	0 207	-0.015	30	20	0	10	0	0	0
1 35	2579	2579	0	51	0	9	0.003	0	0	0	0	0	0	0 0 1	0.003	0	100	0	0	0	0	0
1 36	2818	2823	0	51	0	9	0.039	0	0	0	0	0	0	0	0.039	0	100	0	0	0	0	0
1 37	2725	2739	0	100	0	0	0.199	0	0	0	0	0	0	0	0.199	0	30	50	20	0	0	0
1 38			0	51	0	9	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
1 39	316	3167	0	100	0	0	0	0	0	0	0	0	0	0	0	0	30	50	20	0	0	0
1 0					23	77											91		9			
1 1				100													89		11			
1 2			5	55													80		20			
1 3			56													5	52		3			
1			18.6962751	23.0659026	17.7650 3	0. 72779	13 9566 6				11.5 3	11 72 37	12. 6	12.31827	13.9566 6	16.0 58 53	59. 55587	12.8939828	11.60 58 5			
1 5			100	0	0	0	0. 8				0.538	0 5 1	0.56	0 51	0. 8	0	100	0	0			
1 6			100	0	0	0	0.309				0.229	0 229	0.309	0 309	0.309	0	100	0	0			
1 7			50	50	0	0	1.629				2. 2	2 309	1.895	1 872	1.629	0	80	0	20			
1 8			0	100	0	0	1.206				1 9736	1. 25	1.80	1 7	1.206	0	100	0	0			
1 9			0	0	62	38	3.901				.191	3 693	.792	851	3.901	0	100	0	0			
1 50			0	100	0	0	1.0 5				2.301	2. 77	3 25	2 7 7	1.0 5	0	98	0	2			
1 51			100	0	0	0	2.17				1. 19	1 211	1 33	1 716	2.17	0	0	0	100			
1 52			0	0	100	0	0.25				0. 6	0 561	0.357	0.10	0 25	0	0	0	100			
1 53			0	1	0	99	5.069				6.9229018	6 298	6.56	6 52	5.069	0	100	0	0			
1 5			52	8	0	0	1.885				2.3002856	2.171	2.299	2. 16	1.885	0	100	0	0			
1 55			100	0	0	0	0.37				0.331	0 368	0. 21	0 281	0 37	100	0	0	0			
1 56			0	0	100	0	1 678761				0.6770196	0 827	0.951	0 919	1.678761	0	0	0	100			
1 57			100	0	0	0	2.3763018				1.73955 6	1 787	1.722	2.102	2.3763018	0	0	0	100			
1 58			100	0	0	0	0.0 28581				0.1100535	0 0 5	0.082	0 013	0.0 28581	0	100	0	0			
1 59			0	0	100	0	0.0027857				0.096359	0 018	0	0 015	0.0027857	0	100	0	0			

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:
    - o Capital works Programme
    - o Management and General
    - o 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 15.

- 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 tables data is more reliable than table 40 for accuracy.

Total Asset Additions reconciliations

- Total asset additions – Water Service – Check to Table 25 line 5 col 4.
  For AIR 17 the reported numbers in these two tables are as follows:
  Table 25 – £47.634m
  Table 36 – £46.197m

The main variances in the above two figures are explained as follows:

a) PPP Alpha Capital maintenance of [redacted]k is not included in Table 36
b) £9k included in Table 25 relates to Decapitalised projects in 2017/18

- Total asset additions – Sewerage Service – Check to Table 25 line 5 Col 8.
  For AIR 17 the reported numbers in these two tables are as follows:
  Table 25 – £111.634m
  Table 36 – £110.405m

The main variances in the above two figures are explained as follows:

c) PPP Omega [redacted] and PPP Kinnegar [redacted] residual asset additions were not included in Table 36.
d) £7k included in Table 25 relates to Decapitalised projects in 2017/18

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 PC15 outputs.

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN - TABLE 40A
NOMINATED OUTPUTS DELIVERED BY PC15 CAPITAL PROJECTS AND PROGRAMMES OF WORK

A								B																		
Project Information								Project Outputs																		
Project ID Reference	Project Name	PC13 Programme	Quality Regulator Date (if appropriate)	BU Date per FD (if appropriate)	BU Date per 15/16 MP (if appropriate)	BU Date per 16/17 MP (if appropriate)	Projected BU Date (if appropriate)	PC13 Output Ref Code	Output Units	PC10			PC13 in PC15FD		PC15 FD Baseline						PC13 Actual		PC15 Current Actual/ Forecast						
PI Project ID	PI Project Name	PI PC13 Prog								2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	UID Status
1	2	3	4		5			6	7	8	9	10	11	12	13	14	15	16	17	18	11	12	13	14	15	16	17	18	
	Water Treatment Base Maintenance																												
JA271	Killylane WTW	1			31/12/2014			7	nr					1								1							
	Water Treatment Works																												
JN390	Lough Bradan WTWs Upgrade	4			02/03/2011			7	nr	1																			
JL723	Carmoney Water Treatment Works Upgrade	4			30/03/2011			7	nr	1																			
JP669	Killyhevlin WTW - Enforcement Order	4			31/03/2015			7	nr					1								1							
JR463	Dorisland WTW GAC plant	4			27/03/2015			7	nr					1								1							
JI052	Glenhordial Treatability	4		30/09/2015	29/01/2016	29/01/2016		7	nr						1								1						
JI052	Dorisland Treatability	4		31/12/2020	n/a		31/03/2020	7												1							1		
JI052	Killyhelvin Treatability	4		31/12/2020	n/a		31/03/2020	7												1							1		
JL772	Caugh Hill Treatability	4		31/01/2019	n/a		31/03/2020	7										1									1		
	Trunk Mains																												
JR416	CTM Extension - Barnetts Park to Purdysburn	5			29/11/2010			6	nr	1																			
JG036	Castor Bay to Dungannon Strategic Trunk Mains	5			24/05/2011			6	nr	1																			
JG035	Ballydougan to Newry Main Link Reinforcement Phase 1	5			04/12/2012			6	nr			1																	
JG035	Ballydougan to Newry TM - Phase 2A	5			17/12/2012			6	nr			1																	
JR460	Gravity II McVeighs Well to Oldpark SR	5			30/11/2014			6	nr					1								1							
JG035	Ballydougan to Newry TM - Phase 2B	5		28/08/2015	31/03/2016	31/03/2016		6	nr						1								1						
JR342	Castor Bay to Belfast TM	5		27/03/2015	08/05/2015	08/05/2015		6	nr					1									1						
JB693	Carland to Cookstown Trunkmain	5		31/03/2021	n/a	31/03/2017	21/09/2016	6												1				1					
JL715	Carmoney to Strabane Strategic Link Watermain	5		31/01/2019	n/a		31/01/2020	6										1									1		
	Service Reservoirs																												
JB665	Tullaghans SR, Dunloy, New Reservoir	6			13/08/2010			8	nr	1																			
JC381	Altnahinch WTP, Ballymoney, New CWB.	6			10/11/2010			8	nr	1																			
JC378	Glenlough SR, Ballymoney, New SR	6			20/12/2010			8	nr	1																			
JR151	West Belfast/ North Lisburn (Crew Hill)	6			18/01/2011			8	nr	1																			
JB648	Dungonnell Command Service Reservoir	6			31/03/2011			8	nr	1																			
JF583	Carland Service Reservoir	6			11/04/2011			8	nr		1																		
JS179	Ballykine Gravity Distribution	6			20/04/2011			8	nr		1																		
JV827	Tullyhappy SR	6			09/12/2011			8	nr		1																		
JB649	Tully SR	6			06/12/2012			8	nr			1																	
JV830	Crieve SR	6			27/03/2015			8	nr					1								1							
JS274	Drumaroad WTW Clear Water Tank	6		31/03/2021	n/a		31/03/2021	8												1								1	
JP631	Killyhelvin Clear Water Tank	6		30/09/2017	n/a	29/03/2019		8									1									0	0	1		
JB709	Lough Fea CWB	6		30/09/2019	n/a			8											1								1		
	Monaclogh SR (additional output in 16/17 draft adjusted outputs submission)	6		n/a	n/a		01/08/2017	8																		1			
	Major Incident Mitigation Water Main Projects																												
JI024	MIMP West (Major Incident Mitigation Project West Region) Freeze Thaw Improvements	8			14/02/2014			15	nr				1								1								
JI025	MIMP South (Major Incident Mitigation Project West Region) Freeze Thaw Improvements	8			24/01/2014			15	nr				1								1								
JI027	MIMP Central (Major Incident Mitigation Project Central Region) Freeze Thaw Improvements	8			28/03/2014			15	nr					1							1								
JI028	MIMP East (Major Incident Mitigation Project East Region) Freeze Thaw Improvements	8			09/02/2015			15	nr				1									1							
JI026	MIMP North (Major Incident Mitigation Project North Region) Freeze Thaw Improvements	8			18/08/2014			15	nr					1								1							
	Unsatisfactory Intermittent Discharges																												
KR403	Whitehouse DAP Phase 1	11			13/04/2010			12	nr	3																			
KR402	Joymount WWPS	11			01/06/2010			12	nr	1																			
KR400	Lukes Point DAP Phase 1	11			23/06/2010			12	nr	1																			
KL450	Londonderry DAP : Strathfoyle & Drmahoe Work Package : Caw WWPS	11			01/07/2010			12	nr	1																			
KB428	Draperstown DAP	11			02/07/2010			12	nr	2																			
KG153	Gilford Road, Portadown, Sewerage Upgrades	11			10/08/2010			12	nr	3																			
KL449	Londonderry DAP : Strathfoyle & Drmahoe Work Package : Drumahoe Old WWPS	11			02/09/2010			12	nr	1																			
KR440	Ballywalter DAP Phase 1	11			30/09/2010			12	nr	1																			
KL445	Londonderry DAP: Victoria road Work Package - UID's	11			11/10/2010			12	nr	1		1																	
KL448	Londonderry DAP : Victoria Road Work Package : CSO Rationalisation	11			29/10/2010			12	nr	3																			
KL428	Londonderry Sewer Imps Stage 2 - Duke St PS Group Schemes - UID's	11			28/03/2011			12	nr	3																			
KR441	Montgomery Rd, Flood Alleviation - UID's	11			27/04/2012			12	nr		4																		
KS807	Kilkeel Harbour SPS and Sewerage Improvements - UID's	12			04/06/2012			12	nr			2																	
KS379	Murlough SPS Upgrade & Network Improvements - UID's	12			29/04/2011			12	nr		8	1																	
KR452	Baroda Street/Ormeau Park, Belfast CSO	12			07/09/2011			12	nr		2																		
KT138	Beechlawn SPS Hillsborough Upgrade - UID's	12			30/11/2011			12	nr		1																		
KL443	Londonderry DAP Duke Street Work Package - UID's	12			02/12/2011			12	nr		4																		
KR432	Beechmount Avenue/Gortfin Street Belfast Hydraulic Upgrade. - UID's	12			02/12/2011			12	nr		4																		
KL444	Londonderry DAP, Buncrana Road, Work Package Stage 1- UID's	12			07/05/2012			12	nr			2																	
KL446	Londonderry DAP, Duke Street Work Package, Flood Alleviation	12			13/12/2011			12	nr		3																		
KS377	Downs Road/Castle Park Sewer Upgrade/ Attenuation - UID's	12			23/01/2012			12	nr		4																		
KC404	Coleraine DAP Phase 1 - UID's	12			31/01/2012			12	nr		5																		
KR434	Annadale Flats, Belast	12			30/03/2012			12	nr		4																		
KS878	Bangor DAP Work Package 7: WWPS - UID'S	12			28/03/2012			12	nr		3																		
KA201	Ballyeaston, Sewerage System Upgrade	12			23/04/2012			12	nr		1																		
KL447	Londonderry DAP: Foyle Road Work Package: CSO Rationalisation - UID's	12			24/09/2012			12	nr			10																	
KS373	Church Street, SPS Upgrade, Downpatrick - UID's	12			06/05/2013			12	nr																				
KS373	UID046 Meadowlands CSO3	12			06/05/2013			12	nr				1								1								
KS373	UID047 Church Street CSO1	12			06/05/2013			12	nr				1								1								
KS373	UID048 Scotch Street CSO4	12			06/05/2013			12	nr				1								1								
KS373	UID049 Scotch Street CSO11	12			06/05/2013			12	nr				1								1								
KS373	UID050 Rathkeltair Terr CSO12	12			06/05/2013			12	nr				1								1								
KS835	South Street Newtownards WWPS Refurbishment - UID'S	12			28/01/2013			12	nr			1																	
KG184	Portadown Drainage Area Network Improvements - Obins Street and Park Road - UID's	12			31/08/2012			12	nr			4																	
KR488	Linen Gardens Belfast CSO Screening - UID's	12			01/01/2014			12	nr				1								1								
KN595	Brookmount Road, Hunters Cresent, Omagh	12			31/05/2011			12	nr			5																	
KS812	Greyabbey DAP Phase 1 - UID's	12			24/09/2012			12	nr			2																	
KV014	Castlewellan DAP - UIDs	12			19/08/2010			12	nr			2																	
KG178	Annaghanoon Road WWPS, Waringstown	12			05/09/2011			12	nr			1																	
KL451	Londonderry DAP, Strathfoyle + Drumahoe Package: CSO Abandonments - UID's	12			24/09/2012			12	nr			3																	
KR439	Millisle DAP 1	12			29/11/2012			12	nr			1																	
KV063	Newry Rehab	12			05/09/2011			12	nr			1																	
KV159	Water Street/Horners Lane Rostrevor	12			24/06/2011			12	nr			1																	
KN646	Winters Lane, CSO Upgrade - UID	12			27/03/2013			12	nr			1																	
KT415	Glenmore WwPS Lisburn CSO upgrade	12						12	nr																				
KT415	UID065 Glenmore SPS CSO 22	12			25/06/2013			12	nr				1								1								
KS939	Central Promenade, Newcastle CSO Upgrade (Pattons Bridge)	12						12	nr																				
KS939	UID259 Pattons Bridge (Blackrock WwPS	12			31/03/2016	24/03/2016	24/03/2016	12	nr					1										1					PC13
KV154	Newry Road SPS Warrenpoint - UID's	12						12	nr																				
KV154	UID095 Newry Road TPS CSO	12			14/01/2014			12	nr					1							1								
KV154	UID234 Drumsesk Road Header Tank CSO	12			14/01/2014			12	nr					1							1								
KS372	Market Street SPS Upgrade, Downpatrick - UID's	12						12	nr																				
KS372	UID044 Market Street SPS Upgrade, Downpatrick - UID's	12			18/12/2015	18/02/2016	18/02/2016	12	nr					1										1					PC13
KF037	Annagher Sewage Pumping Station and Rising Main - UID's	12						12	nr																				
KF037	UID245 Annagher SPS	12			28/03/2014			12	nr				1								1								
KF037	UID246 Campbells Garage WwPS CSO	12			28/03/2014			12	nr				1								1								
KF037	UID247 Washing bay Road WwPS CSO	12			28/03/2014			12	nr				1								1								
KF037	UID359 Canal Quay WWPS (not required)	12			x			12	nr				1								x								
KV161	Castlewellan DAP Stage 1 - UIDs	12						12	nr																				
KV161	UID033 Mill Hill CSO 04	12			31/03/2014			12	nr				1								1								
KV161	UID031 Ballylough CSO 04	12			31/03/2014			12	nr				1								1								

A								B																					
Project Information								Project Outputs																					
Project ID Reference	Project Name	PC13 Programme	Quality Regulator Date (if appropriate)	BU Date per FD (if appropriate)	BU Date per 15/16 MP (if appropriate)	BU Date per 16/17 MP (if appropriate)	Projected BU Date (if appropriate)	PC13 Output Ref Code	Output Units	PC10			PC13 in PC15FD		PC15 FD Baseline							PC13 Actual		PC15 Current Actual/ Forecast						
PI Project ID	PI Project Name	PI PC13 Prog								2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	UID Status
1	2	3	4		5			6	7	8	9	10	11	12	13	14	15	16	17	18	11	12	13	14	15	16	17	18	
KV161	UID036 Annesborough Park CSO 01	12			31/03/2014			12	nr				1									1							
KS937	Annesborough Park WWPS Upgrade	12						12	nr																				
KS937	UID032 Annesborough Park WwPS	12			31/10/2016	30/09/2016	30/06/2016	12	nr						1									1					PC15 FD
KT403	Drumbeg Drive, Lisburn WWPS Enhancement	12						12	nr																				
KT403	UID070 Maralin Ave CSO 02	12			30/09/2014			12	nr					1								1							
KS875	Bangor DAP Works Package 6: Lukes Point WWPS UIDs	12						12	nr																				
KS875	UID189 Bangor DAP Works Package 6: Lukes Point WWPS UIDs	12			30/09/2014			12	nr					1								1							
KT391	Lisburn DAP Stage 1 - UID's	12						12	nr																				
KT391	UID066 Waterside 2 CSO 07	12			12/03/2015			12	nr					1								1							
KT391	UID067 B Hilden PS CSO 13B	12			30/03/2015			12	nr					1								1							
KT391	UID068 Hilden PS CSO 13A	12		31/03/2015	30/10/2015	22/02/2016	15/10/2015	12	nr					1									1						PC13
KT391	UID069 Antrim St CSO 25	12		22/02/2016	31/08/2016	30/10/2016	22/08/2016	12	nr						1									1					PC15 FD
KT391	UID072 New Holland WWT (not required)	12			01/01/2015			12	nr						1								x						PC15 FD
KT391	UID073 Duncans Rd CSO 15 (not required)	12			01/01/2015			12	nr						1								x						PC15 FD
KT391	UID074 Laws Yard CSO 14	12		22/02/2016	30/10/2015	22/02/2016	30/10/2015	12	nr						1								1						PC15 FD
KT391	UID221 Waterside 1 CSO 01	12			12/03/2015			12	nr					1								1							
KT391	UID222 Linenhall Street CSO 03	12			30/03/2015			12	nr						1							1							PC15 FD
KT391	UID223 Antrim Street CSO 05	12		22/02/2016	31/10/2016	20/09/2017	30/06/2019	12	nr						1												1		PC15 FD
KT391	UID224 Clonevin Park CSO 10	12		22/02/2016	09/09/2015	22/02/2016	09/09/2015	12	nr						1								1						PC15 FD
KT391	UID225 Sprucefield WWPS Screen CSO 20	12			30/03/2015			12	nr					1								1							
KT391	UID226 Antrim Road CSO 24 + flooding	12		22/02/2016	30/10/2015	22/02/2016	30/10/2015	12	nr						1								1						PC15 FD
KT391	UID227 Bow Street CSO 26	12		22/02/2016	30/10/2015	22/02/2016	22/03/2016	12	nr						1								1						PC15 FD
KT391	UID228 Ballynahinch Rd 2 CSO 27	12			18/03/2015			12	nr					1								1							
KT391	UID229 Grand Street Screen CSO 28	12		31/03/2015	30/10/2015	22/02/2016	20/11/2015	12	nr					1									1						PC13
KT391	UID423 Eglantine WWPS CSO 16	12			30/03/2015			12	nr					0								1							
KT391	UID424 Culcavy WWPS CSO 17	12			30/03/2015			12	nr					0								1							
KT391	UID425 Ballinderry WWPS CSO 23	12			30/03/2015			12	nr					0								1							
KT391	UID421 Edgewater WWPS	12		31/03/2015	04/09/2015	22/02/2016	04/09/2015	12	nr					1									1						PC13
KT391	UID422 Hoggs Weir CSO 04	12		n/a	30/10/2015	30/10/2015	30/10/2015	12	nr														1						PC15 New
KS873	Bangor DAP Work Package 2: Rathmore Stream UIDs	12						12	nr																				
KS873	UID013 Westburn Cresc. CSO 3A	12		01/03/2015	31/03/2016	27/04/2017	31/03/2019	12	nr					1												1			PC13
KS873	UID014 Crawfordsburn Rd CSO 03B	12		01/03/2015	29/04/2016	22/05/2017	31/03/2019	12	nr					1												1			PC13
KS873	UID015 Crawfordsburn Rd CSO 03C	12		01/03/2015	29/04/2016	09/05/2017	31/03/2019	12	nr					1												1			PC13
KR480	Holywood Sewer Catchment Investigations - UIDs	12						12	nr																				
KR480	UID218 Palace Barracks CSO 110	12		31/12/2015	29/06/2016	30/11/2016	07/09/2016	12	nr						1									1						PC15 FD
KR480	UID219 Jackson Road CSO 52	12			06/10/2014			12	nr					1								1							
KR640	Holywood Sewer Network Improvements- Phase 2	12						12	nr																				
KR640	UID220 Strathearn Court CSO 53	12		31/12/2015	29/06/2016	31/10/2017	20/12/2016	12	nr						1									1						PC15 FD
KS930	Millisle DAP Stage 2 Phase 2	12						12	nr																				
KS930	UID076 Millisle SPS CSO 02	12		18/01/2016	31/03/2016	30/03/2017	12/12/2018	12	nr						1												1			PC15 FD
KR417	Ormeau Avenue Sewer investigation and feasibility study for pollution resolution - UID's	12						12	nr																				
KR417	UID191 Cromac Street CSO 95	12		31/03/2017	30/06/2016	31/06/2018	31/03/2020	12	nr							1												1		PC15 FD
KR417	UID192 Outside Holiday Inn CSO97	12		31/03/2017	30/06/2016	31/06/2018	31/03/2020	12	nr							1												1		PC15 FD
KR417	UID193 Dublin Road Cinema CSO 96	12		31/03/2017	30/06/2016	31/06/2018	31/03/2020	12	nr							1												1		PC15 FD
KR417	UID194 Bankmore Street / Dublin Road CSO 81	12		31/03/2017	30/06/2016	31/06/2018	31/03/2020	12	nr							1												1		PC15 FD
KR417	UID265 Sandy Row CSO 94	12		31/03/2017	30/06/2016	31/06/2018	31/03/2020	12	nr							1												1		PC15 FD
KG183	Portadown Drainage Area Network Improvements - Meadow Lane and Bann Street - UID's	12						12	nr																				
KG183	UID081 Meadow Lane CSO 06	12		30/09/2017	27/03/2017	04/05/2018	31/03/2020	12	nr								1											1		PC15 FD
KG183	UID082 Meadow Lane CSO 07	12		31/03/2017	27/03/2017	25/05/2018	31/03/2020	12	nr							1												1		PC15 FD
KG183	UID083 Portmore Street CSO 08	12		30/09/2017	27/03/2017	28/09/2018	31/03/2020	12	nr								1											1		PC15 FD
KG183	UID085 Clonavon Avenue CSO 11	12		30/09/2017	27/03/2017	28/09/2018	31/03/2020	12	nr								1											1		PC15 FD
KG183	UID233 Meadow Lane WWPS CSO 32	12		31/03/2017	27/03/2017	06/04/2018	31/03/2020	12	nr							1												1		PC15 FD
KG183	UID086 Meadow Lane CSO 12	12		30/09/2017	27/03/2017	06/04/2018	31/03/2020	12	nr								1											1		PC15 FD
KF330	Armagh DAP Stage 1 - UID's	12						12	nr																				
KF330	UID001 Scotch Street CSO. 2	12		31/03/2016	22/02/2016	31/03/2016	25/03/2016	12	nr						1									1						PC15 FD
KF330	UID002 Scotch Street. CSO 1	12		31/03/2016	18/12/2015	31/03/2016	25/03/2016	12	nr						1									1						PC15 FD
KF330	UID003 Courthouse 1 CSO	12		31/03/2015	30/11/2015	31/03/2016	30/11/2015	12	nr					1										1						PC13
KF330	UID005 The Mall East CSO	12		31/03/2016	31/05/2016	31/03/2017	14/10/2016	12	nr						1										1					PC15 FD
KF330	UID006 English St CSO. Scheme 2	12		31/03/2015	31/07/2016	10/03/2017	21/01/2017	12	nr					1											1					PC13
KF330	UID007 Drumcairn SPS. Scheme 3	12		31/03/2015	30/03/2015			12	nr					1								1							
KF330	UID431 Ballycrummy WWPS	12			30/03/2015			12	nr					0								1							
KF330	UID430 Longstone WWPS	12			30/03/2015			12	nr					0								1							
KF330	UID010 Newry Road SPS	12		31/03/2016	29/04/2016	31/03/2017	28/04/2017	12	nr						1												1			PC15 FD
KF330	UID173 Mall West CSO	12		31/03/2016	30/11/2015	31/03/2016	23/03/2016	12	nr						1									1						PC15 FD
KF330	UID175 Alexender Road CSO	12		31/03/2015	13/11/2015	31/03/2016	13/11/2015	12	nr					1										1						PC13
KF330	UID176 Gillis Lane CSO	12		31/03/2015	30/03/2015			12	nr					1								1							
KF396	UID008 Milford SPS	12		31/03/2015	30/03/2018	30/04/2019	04/08/2017	12	nr					1													1		0	PC13
KF397	UID009 Kilylea SPS	12		31/03/2015	30/03/2018	30/03/2020	31/03/2020	12	nr					1															1	PC13
KS879	Bangor DAP Work Package 4: Bangor Marina UIDs	12						12	nr																				
KS879	UID018 Somerset Ave. CSO 11	12			27/08/2014			12	nr					1								1							
KS879	UID019 Bridge St CSO 13	12			27/08/2014			12	nr					1								1							
KS879	UID020 Quay St CSO 14	12			27/08/2014			12	nr					1								1							
KS879	UID021 Tennyson CSO 10	12			27/08/2014			12	nr					1								1							
KS879	UID022 Queens parade CSO 12	12			27/08/2014			12	nr					1								1							
KS877	Bangor DAP Works Package 5 - Clandeboye Stream UIDs	12						12	nr																				
KS877	UID023 Castle Park CSO 07	12		31/12/2015	27/10/2016	29/01/2018	31/03/2018	12	nr						1												1			PC15 FD
KS877	UID179 13 Rugby Avenue CS0 8A	12		31/03/2015	27/10/2016	29/01/2018	31/03/2018	12	nr					1													1			PC13
KS877	UID180 11 Brunswick Road CSO 8B	12		31/03/2015	27/10/2016	29/01/2018	31/03/2018	12	nr						1												1			PC15 FD
KS877	UID181 104 Abbey Street CSO 8F	12		31/12/2015	27/10/2016	29/01/2018	31/03/2018	12	nr						1												1			PC15 FD
KS877	UID182 114 Abbey Street CSO 8E	12		31/12/2015	27/10/2016	29/01/2018	31/03/2018	12	nr						1												1			PC15 FD
KS877	UID183 Railway View Street CSO 8G (not required)	12		31/03/2015	27/10/2016	29/01/2018	31/03/2018	12	nr					1													x			PC13
KS877	UID184 Abbey Park CSO 9	12		31/12/2015	27/10/2016	29/01/2018	31/03/2018	12	nr						1												1			PC15 FD
KS877	UID263 57 Belfast Road CSO 8C	12		31/03/2015	27/10/2016	29/01/2018	21/03/2017	12	nr					1												1				PC13
KS877	UID264 17 Belfast CSO 8D	12		31/03/2015	27/10/2016	29/01/2018	21/03/2017	12	nr					1												1				PC13
KS958	Bangor DAP Works Package 5 Clandeboye Stream UIDs Phase 2	12						12	nr																				
KS958	UID185 Avonlea Park CSO 6	12		31/03/2015	30/10/2015	31/03/2016	30/03/2016	12	nr					1										1						PC13
KS958	UID186 Rosemary Crescent / Inglewood Pk CSO 5	12		31/03/2015	30/10/2015	31/03/2016	30/03/2016	12	nr					1										1						PC13
KS958	UID187 Clandeboye Road CSO 5B	12		31/03/2015	30/10/2015	31/03/2016	30/03/2016	12	nr					1										1						PC13
KS902	Dundrum DAP, UID Upgrades - UID's	12						12	nr																				
KS902	UID237 Parochial House CSO 02	12		31/12/2016	21/08/2017	29/06/2018	31/03/2020	12	nr								1												1	PC15 FD
KS902	UID238 Main Street CSO 04	12		31/12/2016	21/08/2017	29/06/2018	31/03/2020	12	nr								1												1	PC15 FD
KS902	UID239 Flynn's WWPS CSO 05	12		31/12/2016	21/08/2017	05/04/2019	31/03/2020	12	nr								1												1	PC15 FD
KT114	Hillsborough WWTW	16						12	nr																				
KT114	UID071 Magherageery PS CSO 18	16			18/03/2014			12	nr				1									1							
KS848	Newcastle WwTW	16						12	nr																				
KS848	UID 260 Harbour WwPS	16			09/12/2013			12	nr				1									1							
KR501	Carrickfergus WWTW Upgrade	2						12	nr																				
KR501	UID272 Carrickfergus CSO	2			19/03/2015			12	nr					1								1							
KL468	Strathfoyle, Londonderry Syphon Inlet Screen	12						12	nr																				
KL468	UID114 Caw Park CSO 023	12		23/05/2014	31/03/2016	31/03/2016	21/03/2016	12	nr					1										1						PC13
KL468	UID380 Gransha Park WwPS No. 2	12		23/05/2014	31/03/2016	31/03/2016	22/03/2016	12	nr					1										1						PC13
KC415	Coleraine	12						12	nr																				
KC415	UID043 Screen Road CSO	12		31/03/2016	30/03/2015			12	nr						1								1							PC15 FD
KC415	UID040 Ballysally CSO	12		31/03/2016	30/11/2016	31/03/2017	31/03/2018	12	nr						1												1			PC15 FD
KA248	Ballygally Sewer Rehabilitation	12						12	nr																				
KA248	UID190 Brustin Lee WWPS	12			30/03/2015			12	nr					1								1							
KA248	UID319 Croft Manor WWPS	12			30/03/2015			12	nr					1								1							
KA248	UID320 Ballygalley Slipway WWPS	12			30/03/2015			12	nr					1								1							
KA248	UID321 Ballygalley North WWPS	12			30/03/2015			12	nr					1								1							

A								B																							
Project Information								Project Outputs																							
Project ID Reference	Project Name	PC13 Programme	Quality Regulator Date (if appropriate)	BU Date per FD (if appropriate)	BU Date per 15/16 MP (if appropriate)	BU Date per 16/17 MP (if appropriate)	Projected BU Date (if appropriate)	PC13 Output Ref Code	Output Units	PC10			PC13 in PC15FD		PC15 FD Baseline							PC13 Actual		PC15 Current Actual/ Forecast						
PI Project ID	PI Project Name	PI PC13 Prog								2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	UID Status
1	2	3	4		5			6	7	8	9	10	11	12	13	14	15	16	17	18	11	12	13	14	15	16	17	18	
KA248	UID322 Ballygalley Coast Road CSO	12			30/03/2015			12	nr					1								1							
KI488	Removal of Inlet Screens and Installation of Solid Handling Pumps	02						12	nr																				
KI488	UID400 Braeside WWPS	02			01/08/2013			12	nr				1								1								
KI488	UID401 Cloughy Road WWPS	02			01/09/2013			12	nr					1							1								
KI488	UID402 Old Mill Race WWPS	02			01/08/2013			12	nr				1								1								
KI488	UID403 Glen Park WWPS	02			01/09/2013			12	nr				1								1								
KI488	UID404 Kerries Glen	02			01/01/2014			12	nr				1								1								
KI488	UID405 Carnesure Terrace WWPS	02			01/04/2014			12	nr					1								1							
KI488	UID406 Hillside WWPS	02			01/10/2013			12	nr				1								1								
KI488	UID407 Chimera Wood WWPS	02			01/12/2013			12	nr				1								1								
KI488	UID408 Ballystockart WWPS	02			01/11/2014			12	nr					1								1							
KI488	UID409 Milltown WWPS	02			01/10/2014			12	nr					1								1							
KI488	UID419 Ratalla WWPS	02			01/04/2013			12	nr					1							1								
KS374	Hunter's Mill Storm Attenuation and Network Improvements	12						12	nr																				
KS374	UID045 Downpatrick - Stream St CSO	12			19/02/2015			12	nr					1								1							
KS374	UID124 Hunters Mill Attenuation Stream Street CSO2	12			19/02/2015			12	nr					1								1							
KA251	Umry Lodge CSO	12						12	nr																				
KA251	UID394 Clotworthy House CSO	12			22/01/2014			12	nr				1								1								
KT139	River Road SPS Upgrade	02						12	nr																				
KT139	UID276 River Road WWPS	02			09/04/2014			12	nr					1								1							
KS867	Copeland Road, Comber, Tank Sewer	12						12	nr																				
KS867	UID343 Copeland Road CSO 61	12			30/10/2014			12	nr					1								1							
KA252	Glynn WWPS	02						12	nr																				
KA252	UID398 Glynn WWPS	02			19/02/2015			12	nr					1								1							
KS900	WwPS Upgrades at Groomsport, Killinchy & Craigavad	12						12	nr																				
KS900	UID410 Glencraig WWPS	12			01/05/2014			12	nr				0									1							
KF354	Dernagh WWPS Upgrade	02						12	nr																				
KF354	UID416 Dernagh WWPS	02			01/09/2014			12	nr					1								1							
KN644	Greenbridge WWPS Upgrade	02						12	nr																				
KN644	UID417 Greenbridge WWPS	02			14/11/2013			12	nr				1								1								
KF360	Blackwater Town WWPS Upgrade	02						12	nr																				
KF360	UID418 Blackwatertown WWPS	02			31/03/2014			12	nr				1								1								
KN628	Carrickmore WWPS Upgrade	02						12	nr																				
KN628	UID427 Carrickmore WWPS	02			27/08/2014			12	nr					0								1							
KL504	Londonderry DAP : Buncrana Road Work Package, Stage 2	12						12	nr																				
KL504	UID273 Knockalla New WWPS	12		31/03/2015	29/02/2016	31/08/2016	13/09/2016	12	nr					1										1					PC13
KL504	UID274 Upper Galliagh Road WWPS	12		31/03/2015	31/03/2016	31/03/2016	31/03/2016	12	nr					1									1						PC13
KL504	UID275 Glen Road CSO	12		31/03/2015	24/04/2015	24/04/2015	24/04/2015	12	nr					1									1						PC13
KL504	UID433 Fairview Knockalla CSO	12		n/a		21/03/2016	21/03/2016	12	nr														1						PC15 New
KS872	Bangor DAP Work Package 1	12						12	nr																				
KS872	UID011 Carnalea Golf Club CSO 1	12		30/09/2018	30/07/2018	31/03/2019	31/03/2020	12	nr									1									0	1		PC15 FD
KS872	UID012 KillaneyWWPS 3	12		30/09/2018	30/07/2018	31/03/2019	31/03/2020	12	nr									1									0	1		PC15 FD
KS872	UID177 Killaire WWPS 1	12		30/09/2018	30/07/2018	31/03/2016	31/03/2016	12	nr									1						1						PC15 FD
KS874	Bangor DAP Works Package 3	12						12	nr																				
KS874	UID016 Maxwell CSO 4	12		30/09/2016	03/06/2019	29/03/2019	31/03/2020	12	nr							1											0	1		PC15 FD
KS874	UID017 Stricklands Glen WWPS	12		30/09/2016	03/06/2019	29/03/2019	31/03/2020	12	nr							1											0	1		PC15 FD
KS874	UID178 Brompton Road SPS (PS06)	12		30/09/2016	03/06/2019	29/03/2019	31/03/2020	12	nr							1											0	1		PC15 FD
KG177	Portadown DAP Stage 2	12						12	nr																				
KG177	UID090 Annagh Catchment CSO 20	12		31/12/2018	04/12/2017	30/09/2020	31/03/2022	12	nr									1									x			PC15 FD
KG177	UID091 Annagh SPS CSO 20	12		31/12/2018	04/12/2017	03/04/2020	31/03/2022	12	nr									1									x			PC15 FD
KG177	UID092 Chambers Park CSO 01	12		31/12/2018	04/12/2017			12	nr									1									x			PC15 FD
KG177	UID093 Ballynacor CSO21	12		31/12/2018	04/12/2017	03/04/2020	31/03/2022	12	nr									1									x			PC15 FD
KR489	Glenmachan Strategic Project Phase 1a	12						12	nr																				
KR489	UID411 Balmoral Avenue CSO63	12		31/03/2016	19/06/2017			12	nr						1								x						PC15 FD
KR489	UID412 Balmoral Court CSO54	12		31/03/2016	19/06/2017			12	nr						1								x						PC15 FD
KR489	UID413 Lisburn Road Golf Club CSO58	12		31/03/2017	19/06/2017			12	nr							1								x					PC15 FD
KR489	UID414 Park Royal CSO57	12		31/03/2017	19/06/2017			12	nr							1								x					PC15 FD
KR489	UID415 Priory Park CSO55	12		30/09/2017	19/06/2017	30/09/2017		12	nr								1												x	PC15 FD
KR504	Portaferry Road, N.Ards WWPS Upgrade	12						12	nr																				
KR504	UID351 Portaferry Road WWPS	12		31/03/2019	31/03/2017	31/08/2017	31/03/2019	12	nr									1										1		PC15 FD
KB486	Galgorm WWPS Upgrade	12						12	nr																				
KB486	UID399 Galgorm Raphael WWPS	12		30/09/2016	31/03/2017	20/03/2018	20/03/2018	12	nr							1											0	1		PC15 FD
KS903	Annalong DAP	12						12	nr																				
KS903	UID266 Halfway House CSO	12		n/a	31/03/2016	21/03/2016	21/03/2016	12	nr															1						PC15 New
KS903	UID267 Marine Park CSO	12		n/a	31/03/2016	21/03/2016	21/03/2016	12	nr															1						PC15 New
KL527	Manorwood WWPS Replacement	12						12	nr																				
KL527	UID432 Manorwood WWPS	12				31/10/2016	01/12/2016	12	nr																1					PC15 New
KL524	Bleachgreen WWPS, Londonderry, Upgrade/Replacement	12						12	nr																				
KL524	UID420 Bleachgreen WWPS	12				30/04/2017	60/06/2017	12	nr																	1	0			PC15 New
KA260	Muckamore WWPS Upgrade	12						12	nr																				
KA260	UID389 Muckamore WwPS	12				04/04/2017	04/04/2017	12	nr																	1				PC15 New
KA261	Milltown Road WWPS Upgrade	12						12	nr																				
KA261	UID388 Milltown Road WWPS Upgrade	12					21/03/2017	12	nr																	1				PC15 New
KA247	Crumlin Town WWPS Upgrade	12						12	nr																				
KA247	UID387 Crumlin Town WWPS Upgrade	12					01/03/2020	12	nr																			1		PC15 New
KA262	Islandreagh WWPS Upgrade	12						12	nr																				
KA262	UID391 Islandreagh WWPS Upgrade	12					30/03/2019	12	nr																			1		PC15 New
KA263	Dunadry WWPS Upgrade	12						12	nr																				
KA263	UID390 Dunadry WWPS Upgrade	12					30/03/2019	12	nr																			1		PC15 New
	Wastewater Treatment Works																												
KT102	Dunmurry WwTW Modifications	15			19/03/2012			13	nr		1																		
KB436	Whitehead, Ballystruder & Ballycarry Rationalisation	15			16/02/2012			13	nr		1																		
KR389	Ballyhalbert WwTW Interim Solution	15			28/03/2013			13	nr			1																	
KA195	Mullaghboy WWTW	15			04/04/2011			13	nr		1																		
KR391	Portavogie WwTW Interim Solution	15			24/09/2012			13	nr			1																	
KS253	Drumaness WwTW	15			31/08/2010			13	nr	1																			
KB282	Magherafelt WwTW	15			28/03/2011			13	nr	1																			
KT125	Hook's Corner WwTW	15			28/03/2011			13	nr	1																			
KL393	Ballymonie WwTW	15			18/03/2011			13	nr	1																			
KB269	Toome (Creagh) Sewerage Scheme	15			22/03/2011			13	nr	1																			
KS307	Loughries WWTW	15			25/01/2011			13	nr	1																			
KB281	Maghera WwTW	15			03/02/2011			13	nr	1																			
KL363	Feeny WwTW	15			25/11/2011			13	nr		1																		
KR310	Newtownbreda WwTW	15			04/02/2011			13	nr	1																			
KG145	Derrytrasna WwTW Upgrade	15			29/11/2010			13	nr	1																			
KB333	Cargan WwTW	15			30/11/2010			13	nr	1																			
KC284	Cloughmills WwTW	15			30/11/2010			13	nr	1																			
KB322	Martinstown WwTW	15			13/12/2010			13	nr	1																			
KF005	Coalisland WwTW	15			01/12/2010			13	nr	1																			
KC299	Bushmills + Portballintrae WwTW	15			06/12/2010			13	nr	1																			
KB279	Stewartstown WwTW Improvements	15			10/11/2010			13	nr	1																			
KB284	Coagh WwTW Improvements	15			10/11/2010			13	nr	1																			
KL300	Dungiven WwTW	15			10/11/2010			13	nr	1																			
KV064	Lurganare WwTW	15			30/09/2010			13	nr	1																			
KN533	Rousky Sewerage Scheme	15			09/09/2010			13	nr	1												0							
KB278	Moneymore STW Imps	15			18/08/2010			13	nr	1																			
KS224	Downpatrick WwTW	15			14/12/2009			13	nr	1																			
KF319	Annaghmore WwTWs	15			27/09/2010			13	nr	1																			
KS225	Ardglass WWTW	15			20/03/2015			13	nr					1								1							

A								B																							
Project Information								Project Outputs																							
Project ID Reference	Project Name	PC13 Programme	Quality Regulator Date (if appropriate)	BU Date per FD (if appropriate)	BU Date per 15/16 MP (if appropriate)	BU Date per 16/17 MP (if appropriate)	Projected BU Date (if appropriate)	PC13 Output Ref Code	Output Units	PC10			PC13 in PC15FD		PC15 FD Baseline							PC13 Actual		PC15 Current Actual/ Forecast							
PI Project ID	PI Project Name	PI PC13 Prog								2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	UID Status
1	2	3	4		5			6	7	8	9	10	11	12	13	14	15	16	17	18	11	12	13	14	15	16	17	18	
KT377	New Holland WwTW	16			28/03/2011			13	nr	1																			
KS374	Darragh Cross WwTW	16			07/09/2010			13	nr	1																			
KC338	Causeway/Aird (New Pumping Station)	16			23/08/2011			13	nr		1																		
KC416	Glenstall WwTW - Nutrient Reduction	16			25/02/2013			13	nr			1																	
KN622	Omagh WwTW - Nutrient Reduction	16			25/02/2013			13	nr			1																	
KL465	Limavady WwTW - Nutrient Reduction	16			25/02/2013			13	nr			1																	
KF329	Ardress WWPS Upgrade	16			31/03/2012			13	nr		1																		
KS857	Glassdrumman WWTW	16			23/12/2011			13	nr		1																		
KS216	Dunmore Sewerage - EC Compliance	16			30/06/2011			13	nr		1																		
KF320	Bush WwTW	16			03/06/2010			13	nr	1																			
KF028	Keady Wwtw	16			29/11/2012			13	nr			1																	
KL482	Tamnaherin Wwtw	16			28/01/2013			13	nr			1																	
KV105	Newry WwTW Extension Phase 1	16			28/01/2013			13	nr			1																	
KF060	Brockagh Terrace/Mountjoy WtWT	16			13/08/2012			13	nr			1																	
KV125	Forkhill WwTW	16			28/03/2013			13	nr			1																	
KV045	Mullaghbane WwTW	16			28/03/2013			13	nr			1																	
KB287	Swatragh WwTW	16			21/03/2013			13	nr			1																	
KB314	Gulladuff WwTW	16			16/12/2013			13	nr				1										1						
KT114	Hillsborough WWTW	16			18/03/2014			13	nr				1										1						
KS848	Newcastle WwTW	16			09/12/2013			13	nr				1										1						
KR501	Carrickfergus WWTW Upgrade	2			31/03/2014			13	nr				1										1						
KR530	Belfast WwTW Base Maintenance Phase 2	2			18/03/2014			13	nr					1									1						
KN631	Strabane WWTW's Refurbishment	2			20/12/2013			13	nr				1										1						
KL350	Benone Area Sewerage	16			16/09/2013			13	nr																				
KL350	Decommission Benone WwTW & construct WwPS	16			16/09/2013			13	nr				1										1						
KL350	Decommission Drumavelly WwTW & construct WwPS	16			16/09/2013			13	nr				1										1						
KL350	Decommission Aughil WwTW & construct WwPS	16			16/09/2013			13	nr				1										1						
KL350	Decommission MoD WwTW & construct WwPS	16			16/09/2013			13	nr				1										1						
KL350	Decommission NIPS WwTW & construct WwPS	16			16/09/2013			13	nr				1										1						
KL350	Provision of new Magilligan WwTW	16			16/09/2013			13	nr				1										1						
KP672	Tempo WwTW	16			06/01/2015			13	nr					1										1					
KS844	Ballyhornan Outfall - NIEA Enforcement	16			31/12/2013			13	nr				1										1						
KL424	Magheramason Wwtw	16			20/03/2015			13	nr					1										1					
KR409	Moneyreagh WwTW (Storm Pumping station)	16			12/12/2013			13	nr				1										1						
KP586	Clabby Wwtw	16		30/09/2015	31/03/2017	31/03/2017	30/03/2018	13	nr							1									1				
KN599	Donaghmore Wwtw	16			19/03/2015			13	nr					1										1					
KL487	Nixon's Corner	16			30/01/2015			13	nr					1										1					
KL386	Gortnahey Wwtw	16			24/07/2014			13	nr					1										1					
KS389	Ballymartin & Blackrock WwTWs	16						13	nr																				
KS389	Ballymartin WwTW	16			31/03/2015			13	nr						0									1					
KS389	Blackrock WwTW	16		31/03/2016	31/03/2016	30/06/2016	20/10/2016	13	nr						1										1				
KS355	Ballynahinch Wwtw	16			21/03/2014			13	nr				1										1						
KS905	Kilmore & Annacloy WwTW	16						13	nr																				
KS906	Kilmore WwTW	16			10/03/2015			13	nr					1										1					
KS907	Annacloy WwTW	16			11/03/2015			13	nr						1									1					
KS887	Ards South (Ballycranbeg WwTW load reduction)	16			31/03/2015			13	nr					1										1					
KL496	Feeny WwTW - Replacement Secondary Treatment	16			08/08/2014			13	nr				1											1					
KF346	Robinsonstown WwTW	16		01/01/2020	30/06/2019	31/03/2018	31/03/2021	13	nr										1										1
KN596	Ballymagory WWTW	16			30/03/2015			13	nr					1										1					
KL493	Artigarvin WwTW	16		31/03/2015	21/12/2015	21/12/2015		13	nr					1											1				
KN640	Dromore (Tyrone) WWTW	16			20/03/2015			13	nr					1										1					
KT402	Dunmurry WWTW Sludge Facility	16			18/03/2014			13	nr				1										1						
KB459	Maghera WwTW: Phase 2	16			04/02/2014			13	nr				1										1						
KL394	Drumsurn Wwtw	16			16/12/2014			13	nr					1										1					
KP668	Lisnarrick Wwtw	16			01/12/2014			13	nr					1										1					
KT126	Stoneyford Wwtw	16			28/11/2014			13	nr					1										1					
KI508	UWWTR MCERT compliance	16		31/03/2016	31/01/2016	31/01/2016		13	nr					1	1										1				
KC296	Ballycastle WwTW	16		01/01/2017	30/12/2017	31/03/2018	31/12/2017	13	nr							1										1			
KN656	Castle Archdale WwTW	16		31/03/2015	30/03/2016	30/03/2016		13	nr					1											1				
KG202	Aghagallon WwTW	16			31/03/2015			13	nr					1										1					
	Waringsford	16			30/09/2014			13	nr					0										1					
KC302	Ballintoy WwTW	16		31/03/2018	31/01/2017	31/01/2018	29/03/2019	13									1												
KS235	Ballygowan/Moneyreagh WwTW	16						13																					
KS235	Ballygowan WwTW	16		31/03/2018	28/02/2017		31/03/2020	13									1												
KS235	Moneyreagh WwTW	16		31/03/2018	28/02/2017		31/03/2020	13									1												
KS111	Ards South - Cloughey	16		31/03/2017	n/a	31/03/2019	31/03/2020	13								1													
KL489	Ballykelly WwTW	16		31/03/2017	n/a	30/10/2018	31/03/2020	13								1													
	Dundrum WwTW	16		31/12/2017	n/a		31/03/2019	13									1												
KS113	Ards North - Carrowdore, Ballywalter, Ballyhaskin	16						13																					
KS113	Carrowdore WwTW	16		31/03/2021	n/a		31/03/2021	13													1								1
KS113	Ballywalter WwTW	16		31/03/2021	n/a		31/03/2021	13													1								1
KS113	Ballyhaskin WwTW	16		31/03/2021	n/a		31/03/2021	13													1								1
KF350	Dungannon WwTW	16		01/01/2021	01/01/2021		31/03/2021	13													1								1
KC463	Ballybogy WwTW	16		31/01/2021	31/01/2021		31/03/2021	13													1								1
KA239	Mullans WwTW (Antrim)	16		31/03/2021	n/a	30/09/2017	29/03/2018	13													1								
	Greyabbey WwTW	16		31/03/2021	31/03/2021		31/03/2021	13													1								1
	Maghaberry WwTW (additional output in 16/17 draft adjusted outputs submission)	16				02/04/2018	29/03/2019	13																					
	The Loup	16					15/03/2017	13																					
	Small Wastewater Treatment Works																												
	Small Wastewater Treatment Works - PC10 Programme >250pe to be detailed																												
KI486	Annahugh WwTW	17			2010/2011			13	nr	1																			
KI486	Galbally WwTW	17			2010/2011			13	nr	1																			
KI486	Maghery WwTW	17			2010/2011			13	nr	1																			
KI486	Montieth WwTW	17			2011/2012			13	nr		1																		
KI486	Orritor WwTW	17			2011/2012			13	nr		1																		
KI486	Garvaghy WwTW	17			2011/2012			13	nr		1																		
KI486	Donagheady WwTW	17			2010/2011			13	nr	1																			
KI486	Attical Tullyframe WwTW	17			2011/2012			13	nr		1																		
KI486	Donagh WwTW	17			2011/2012			13	nr		1												0	0					
KI486	Glack WwTW	17			2012/2013			13	nr			1																	
KI486	Teemore WwTW	17			2011/2012			13	nr		1																		
	Small Wastewater Treatment Works - PC10 Programme <250pe to be detailed	17			2010-2013			14	nr	11	23	14																	
	Small Wastewater Treatment Works - PC13 Programme <250pe to be detailed	17			2013-2015			14	nr				7	18	7	8	7	8	7	8	7	18							
	Small Wastewater Treatment Works - PC15 Programme <250pe to be detailed	17			2015-2021			14	nr														4	8	4	10			

BP T4.1	Water Outputs		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
19	Completion of nominated trunk main schemes	6	2	0	2	0	2	1	0	0	1	0	1	0	1	2	1	0	0	1	0
20	Completion of nominated water treatment works schemes	7	2	0	0	0	3	1	0	0	1	0	2	0	3	1	0	0	0	3	0
21	Completion of nominated improvements to increase the capacity of service reservoirs and clear water tanks	8	5	3	1	0	1	0	0	1	0	1	1	0	1	0	0	1	0	2	1

BP T4.2	Sewerage Outputs		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
8	Delivery of improvements to nominated UIDs as part of a defined programme of work	12	20	43	38	25	59	27	16	5	8	0	0	28	39	26	11	11	8	22	0
9	Delivery of improvements to nominated WwTWs as part of a defined programme of work	13	29	14	13	17	18	3	4	4	0	1	7	17	18	3	2	3	3	4	7
10	Small wastewater treatment works delivered as part of the rural wastewater investment programme	14	11	23	14	7	18	7	8	7	8	7	8	7	18	4	8	4	10	0	0

Table 40a – Nominated Outputs

The following tables identify those PC15 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 yet to complete.

The information is presented by Sub-Programme and reflects the layout as submitted in Table 40a.

NIW project Code	Project title	Year claimed	Outstanding outputs/ comments
Sub programme 1 – Base Maintenance Water			
N/A	N/A	N/A	
Sub programme 4 – WTW			
JI052	Glenhordial Treatability	2015/16	
JI052	Dorisland Treatability		
JI052	Killyhelvin Treatability		
JL772	Caugh Hill Treatability		
Sub programme 5 – Trunkmains			
JG035	Ballydougan to Newry TM – Phase 2B	2015/16	
JB693	Carland to Cookstown Trunkmain	2016/17	
JL715	Carmoney to Strabane Strategic Link Watermain		See note b
JR342	Castor Bay to Belfast TM	2015/16	See note a
Sub programme 6 – Service Reservoirs and Towers			
JS274	Drumaroad WTW Clear Water Tank		
JP631	Killyhelvin Clear Water Tank		
JB709	Lough Fea CWB		

Note:

a) Castor Bay to Belfast TM – this was a PC13 output. Whilst the trunk main pipeline was complete by the end of March 2015, the new pumps associated with the scheme could not be installed by the PPP contractor without first emptying the Magheraliskmisk service reservoir. This could not be done due to the risk of industrial action. Once the risk of industrial action had ended, the new pumps were installed and the trunk main achieved beneficial use by May 2015. This was included in AIR 16 as a PC15 output.

b) Carmoney to Strabane Strategic Link Watermain – the scope and start date of this scheme will be informed by the conclusions of the Water Resource and Supply Resilience plan.

Summary (Sub programme 12 – UIDs)

UID performance 2017/18

The table below presents UID performance during 2017/18.

UID delivery	2017/18
PC15 FD UIDs delivered in 2017/18	7
PC13 UIDs delivered in 2017/18	2[1]
Non PC15 baseline UIDs delivered in 2017/18	2[2]
Total	**11**

Complete PC15 UID programme

	Category of output	Number of UIDs in category	
		PC15 scope	Outside PC15
	PC15 baseline, delivery in PC15	43	
	PC15 baseline, cannot claim		3
	PC15 baseline, delivery in PC21		8
	PC15 baseline, delivered in PC13	2	
	New, added to PC15	11	
	PC13 carryover, delivery in PC15	24	
	PC13 carryover, cannot claim		1
	Totals	**80**	**12**

[1] This will be added to PC15 outputs through a forthcoming Change Control.
[2] This will be added to PC15 outputs through a forthcoming Change Control.

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KA260	UID389	Muckamore WwPS		2017/18	NO	YES	Was part of original DAP - had been land issues when the PC15 baseline was set but these were subsequently resolved.
KA261	UID388	Milltown Road WWPS Upgrade		2016/17	NO	YES	Was part of original DAP - had been land issues when the PC15 baseline was set but these were subsequently resolved.
KA247	UID387	Crumlin Town WWPS Upgrade		2019/20	NO	YES	Will assist with completion of Antrim DAP
KA262	UID391	Islandreagh WWPS Upgrade		2018/19	NO	YES	Was part of original DAP - had been land issues when the PC15 baseline was set.
KA263	UID390	Dunadry WWPS Upgrade		2018/19	NO	YES	Was part of original DAP - had been land issues when the PC15 baseline was set.
KB486	UID399	Galgorm Raphael WWPS	2016/17	2018/19	YES	YES	
KC415	UID040	Ballysally CSO	2015/16	2017/18	YES	YES	
KC415	UID043	Screen Road CSO	2015/16	2014/15	YES	YES	Delivered during PC13
KF330	UID001	Scotch Street CSO. 2	2015/16	2015/16	YES	YES	
KF330	UID002	Scotch Street. CSO 1	2015/16	2015/16	YES	YES	
KF330	UID003	Courthouse 1 CSO	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KF330	UID005	The Mall East CSO	2015/16	2016/17	YES	YES	
KF330	UID006	English St CSO. Scheme 2	2014/15	2016/17	NO	YES	Originally PC13, delivery in PC15
KF330	UID010	Newry Road SPS	2015/16	2017/18	YES	YES	
KF330	UID173	Mall West CSO	2015/16	2015/16	YES	YES	
KF330	UID175	Alexender Road CSO	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KF396	UID008	Milford SPS	2014/15	2019/20	NO	YES	Originally PC13, delivery in PC15
KF397	UID009	Killylea SPS	2014/15	2019/20	NO	YES	Originally PC13, delivery in PC15

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KG177	UID090	Annagh Catchment CSO 20	2018/19	PC21	YES	NO	Modelling has highlighted issues - constraints regarding flows. This scheme has an interdependence with Meadow Lane which must be addressed first.
KG177	UID091	Annagh SPS CSO 20	2018/19	PC21	YES	NO	Modelling has highlighted issues - constraints regarding flows. This scheme has an interdependence with Meadow Lane which must be addressed first.
KG177	UID092	Chambers Park CSO 01	2018/19	N/A	YES	NO	The area of Chambers Park WwPS and CSO manhole was acquired by ASDA to erect their new store. ASDA designed their site drainage to cater for all flows previously running toward Chambers Park WwPS. The new sewers carry these flows to the new (as yet unadopted) pumping station to the rear of the ASDA site. The pipework was sized to accommodate all flows without the need to retain the existing CSO. On 22/09/2016, NIEA stated that NI Water could not claim this UID.
KG177	UID093	Ballynacor CSO21	2018/19	PC21	YES	NO	Modelling has highlighted issues - constraints regarding flows. This scheme has an interdependence with Meadow Lane which must be addressed first.
KG183	UID081	Meadow Lane CSO 06	2017/18	2020/21	YES	YES	
KG183	UID082	Meadow Lane CSO 07	2016/17	2020/21	YES	YES	
KG183	UID083	Portmore Street CSO 08	2017/18	2020/21	YES	YES	
KG183	UID085	Clonavon Avenue CSO 11	2017/18	2020/21	YES	YES	
KG183	UID086	Meadow Lane CSO 12	2017/18	2020/21	YES	YES	

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KG183	UID233	Meadow Lane WWPS CSO 32	2016/17	2020/21	YES	YES	
KL468	UID114	Caw Park CSO 023	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KL468	UID380	Gransha Park WwPS No. 2	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KL504	UID273	Knockalla New WWPS	2014/15	2016/17	NO	YES	Originally PC13, delivery in PC15
KL504	UID274	Upper Galliagh Road WWPS	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KL504	UID275	Glen Road CSO	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KL504	UID433	Fairview Knockalla CSO		2015/16	NO	YES	Was discovered during delivery of related UID273 – was spilling and was endorsed by NIEA. A pumping station was originally in place but was one pump - pump was removed, benched and manhole constructed. It was only during upgrade of new pumping station that overflow was located. Costs associated with this UID were incurred through the delivery UID273.
KL524	UID420	Bleachgreen WWPS		2018/19	NO	YES	Was not identified in DAP but a large number of NIEA pollution incidents were recorded against this site discharging to the River Faughan. Driven and requested by NIEA: pressure also raised by Loughs Agency due to heavy pollution incidents. Had been raised to highest priority by NIEA.

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KL527	UID432	Manorwood WWPS		2016/17	NO	YES	NIEA recognised that this WwPS was problematic and approved that this was a legitimate and UID and that it should be addressed during PC15. NIEA had identified spillage from overflow of WwPS to the Ardnabrocky Burn.
KR417	UID191	Cromac Street CSO 95	2016/17	2019/20	YES	YES	
KR417	UID192	Outside Holiday Inn CSO97	2016/17	2019/20	YES	YES	
KR417	UID193	Dublin Road Cinema CSO 96	2016/17	2019/20	YES	YES	
KR417	UID194	Bankmore Street / Dublin Road CSO 81	2016/17	2019/20	YES	YES	
KR417	UID265	Sandy Row CSO 94	2016/17	2019/20	YES	YES	
KR480	UID218	Palace Barracks CSO 110	2015/16	2016/17	YES	YES	
KR489	UID411	Balmoral Avenue CSO63	2015/16	PC21	YES	NO	Changes to the design of scheme KR489 (Sicily Park) mean that this UID will not be addressed through that particular project. This UID may be included within the scope of a different project at a later date.
KR489	UID412	Balmoral Court CSO54	2015/16	PC21	YES	NO	Changes to the design of scheme KR489 (Sicily Park) mean that this UID will not be addressed through that particular project. This UID may be included within the scope of a different project at a later date.

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KR489	UID413	Lisburn Road Golf Club CSO58	2016/17	PC21	YES	NO	Changes to the design of scheme KR489 (Sicily Park) mean that this UID will not be addressed through that particular project. This UID may be included within the scope of a different project at a later date.
KR489	UID414	Park Royal CSO57	2016/17	PC21	YES	NO	Changes to the design of scheme KR489 (Sicily Park) mean that this UID will not be addressed through that particular project. This UID may be included within the scope of a different project at a later date.
KR489	UID415	Priory Park CSO55	2017/18	PC21	YES	NO	This UID may be included within the redefined scope of scheme KR489 (Sicily Park) but will not achieve Beneficial Use during PC15. Project KR489 is primarily a DG5 project with only a small fraction of the budget used to address UIDs. The project was 100% Enhanced Service Levels in the PC15 baseline.
KR504	UID351	Portaferry Road WWPS	2018/19	2019/20	YES	YES	
KR640	UID220	Strathearn Court CSO 53	2015/16	2016/17	YES	YES	
KS372	UID044	Market Street SPS Upgrade, Downpatrick - UID's	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KS872	UID011	Carnalea Golf Club CSO 1	2018/19	2019/20	YES	YES	
KS872	UID012	Killaney WWPS 3	2018/19	2018/19	YES	YES	
KS872	UID177	Killaire WWPS 1	2018/19	2015/16	YES	YES	
KS873	UID013	Westburn Cresc. CSO 3A	2014/15	2018/19	NO	YES	Originally PC13, delivery in PC15

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KS873	UID014	Crawfordsburn Rd CSO 03B	2014/15	2018/19	NO	YES	Originally PC13, delivery in PC15
KS873	UID015	Crawfordsburn Rd CSO 03C	2014/15	2018/19	NO	YES	Originally PC13, delivery in PC15
KS874	UID016	Maxwell CSO 4	2016/17	2018/19	YES	YES	
KS874	UID017	Stricklands Glen WWPS	2016/17	2018/19	YES	YES	
KS874	UID178	Brompton Road SPS (PS06)	2016/17	2018/19	YES	YES	
KS877	UID023	Castle Park CSO 07	2015/16	2017/18	YES	YES	
KS877	UID179	13 Rugby Avenue CS0 8A	2014/15	2017/18	NO	YES	Originally PC13, delivery in PC15
KS877	UID180	11 Brunswick Road CSO 8B	2015/16	2017/18	YES	YES	
KS877	UID181	104 Abbey Street CSO 8F	2015/16	2017/18	YES	YES	
KS877	UID182	114 Abbey Street CSO 8E	2015/16	2017/18	YES	YES	
KS877	UID183	Railway View Street CSO 8G (not required)	2014/15	N/A	NO	NO	Although initially identified as a UID, subsequent modelling indicated that it did not spill with sufficient frequency to be categorised in this manner. There is no financial impact due to the removal of this UID from scope.
KS877	UID184	Abbey Park CSO 9	2015/16	2017/18	YES	YES	
KS877	UID263	57 Belfast Road CSO 8C	2014/15	2016/17	NO	YES	Originally PC13, delivery in PC15
KS877	UID264	17 Belfast CSO 8D	2014/15	2016/17	NO	YES	Originally PC13, delivery in PC15

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KS902	UID237	Parochial House CSO 02	2016/17	2019/20	YES	YES	
KS902	UID238	Main Street CSO 04	2016/17	2019/20	YES	YES	
KS902	UID239	Flynn's WWPS CSO 05	2016/17	2019/20	YES	YES	
KS903	UID266	Halfway House CSO		2015/16	NO	YES	Had potential to pollute Annalong Harbour – delivery endorsed by NIEA. UID advanced following Cross party Councillor complaints regarding discharges.
KS903	UID267	Marine Park CSO		2015/16	NO	YES	Had potential to pollute Annalong Harbour – delivery endorsed by NIEA. UID advanced following Cross party Councillor complaints regarding discharges.
KS930	UID076	Millisle SPS CSO 02	2015/16	2020/21	YES	YES	
KS937	UID032	Annesborough Park WwPS	2015/16	2016/17	YES	YES	
KS939	UID259	Pattons Bridge (Blackrock WwPS	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KS958	UID185	Avonlea Park CSO 6	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KS958	UID186	Rosemary Crescent / Inglewood Pk CSO 5	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KS958	UID187	Clandeboye Road CSO 5B	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KT391	UID068	Hilden PS CSO 13A	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KT391	UID069	Antrim St CSO 25	2015/16	2016/17	YES	YES	

NIW Project Code	Nominated outputs reference	Title	Delivery year (as stated in PC15 FD)	Current Actual/ Forecast BU	PC15 FD Baseline Nom. Output?	Revised PC15 Nom. Output?	Change description
KT391	UID072	New Holland WWT	2015/16	N/A	YES	NO	Investigations established that this was not a network UID – it is located within the boundary of the site: this was not a KT391 UID. This was incorrectly carried through into the PC15 outputs.
KT391	UID073	Duncans Rd CSO 15	2015/16	N/A	YES	NO	Investigation during DAS discovered that no CSO exists at this location: it was established that this was not a UID - was a bifurcation. This was incorrectly carried through into the PC15 outputs.
KT391	UID074	Laws Yard CSO 14	2015/16	2015/16	YES	YES	
KT391	UID222	Linenhall Street CSO 03	2015/16	2014/15	YES	YES	Delivered during PC13
KT391	UID223	Antrim Street CSO 05	2015/16	2019/20	YES	YES	
KT391	UID224	Clonevin Park CSO 10	2015/16	2015/16	YES	YES	
KT391	UID226	Antrim Road CSO 24 + flooding	2015/16	2015/16	YES	YES	
KT391	UID227	Bow Street CSO 26	2015/16	2015/16	YES	YES	
KT391	UID229	Grand Street Screen CSO 28	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KT391	UID421	Edgewater WWPS	2014/15	2015/16	NO	YES	Originally PC13, delivery in PC15
KT391	UID422	Hoggs Weir CSO 04		2015/16	NO	YES	Was identified in DAP but was not included in baseline list of PC15 UIDs

Sub-programme 15 and 16 WwTW			
NI Water project Code	**Project title**	**Year claimed**	**Outstanding outputs/ comments**
KP586	Clabby WwTW	2017/18	
KS389	Blackrock WwTW	2016/17	
KS907	Annacloy WwTW	2014/15	See note a
KF346	Robinsonstown WwTW		
KL493	Artigarvin WwTW	2015/16	See note b
KI508	UWWTR MCERT compliance	2015/16	
KC296	Ballycastle WwTW	2017/18	
KN656	Castle Archdale WwTW	2015/16	See note c
KC302	Ballintoy WwTW		
KS235	Ballygowan WwTW		
KS235	Moneyreagh WwTW		
KS111	Ards South - Cloughey		
KL489	Ballykelly WwTW		
KS962	Dundrum WwTW		
KS113	Carrowdore WwTW		
KS113	Ballywalter WwTW		
KS113	Ballyhaskin WwTW		
KF350	Dungannon WwTW		
KC463	Ballybogy WwTW		
KA239	Mullans WwTW (Antrim)	2017/18	
	Greyabbey WwTW		
	Maghaberry WwTW		See note e
KC427	Ballyvoy WwTW		
	The Loup	2016/17	See note d

Notes

a) Land issues necessitated combined Kilmore/ Annacloy solution. It is significant to note that Annacloy WwTW was originally scheduled to deliver during PC15 but was successfully delivered during PC13.
b) Artigarvin was originally a PC13 output but a review of the delivery approach delayed completion until 2015/16.
c) Castlearchdale WwTW was added to PC13 scope through change control but carried through into PC15: re-profiling into PC15 was due to the requirement for a wildlife survey.
d) The Loup was initially included in the scope of the Rural Wastewater Treatment Works programme. The actual PE of the site has exceeded the 250 PE threshold and a Change Control has re-designated it as a Sub Programme 16 output.
e) Maghaberry WwTW was added to PC15 scope through a change control.

Sub programme 17 – Small Wastewater Treatment Works			
CAR Site Reference	Project title	Year claimed	Outstanding outputs
S00320	Drumlough	2016/17	
S01462	Glenoe WwTW	2016/17	
S04118	Trench Road	2016/17	
S02111	Acton	2016/17	
S02276	McKinley Park	2016/17	
S01160	Longs Glebe	2016/17	
S01622	Kilross	2016/17	
S02593	Milltown (Aghory)	2016/17	
S02284	Oliver Plunkett	2017/18	
S00332	Bresagh	2017/18	
S02987	Ardgarvan	2017/18	
S03037	Carnabane	2017/18	

NORTHERN IRELAND WATER LIMITED - ANNUAL INFORMATION RETURN

ANNUAL INFORMATION RETURN- TABLE 41 KEY OUTPUTS
HEALTH & SAFETY INFORMATION (NIW only)

	DESCRIPTION	UNITS	DP	1 REPORTING YEAR 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**OCCUPATIONAL ILL HEALTH**																				
1	Employee total	nr	0	1,304	A2	1,250	A2	1,240	A2	1,230	A2	1,246	A2	1,261	A2						
2	Total days lost due to sickness, accident and occupational ill health	nr	0	9,081	A2	9,962	A2	9,767	A2	10,395	A2	10,188	A2	11,268	A2						
3	Total days lost - rate per 1000 employees	nr	2	6,963 96	A2	7,969.60	A2	7,876.61	A2	8,451.22	A2	8,176 57	A2	8,935.77	A2						
4	Number of incidents of occupational ill health	nr	0	137	A2	142	A2	131	A2	134	A2	135	A2	143	A2						
5	Incidents of occupational ill health - rate per 1000 employees	nr	2	105 06	A2	113.60	A2	105.65	A2	108.94	A2	108 35	A2	113.40	A2						
B	**RIDDOR REPORTS**																				
6	Total RIDDOR incidents	nr	0	10	A1	6	25	5	A1	7	A1	4	A1	6	A1						
7	RIDDOR - rate per 1000 employees	nr	2	7 67	A1	4.80	A1	4.03	A1	5.69	A1	3 21	A1	4.76	A1						
8	3-day accident rate per 1000 employees	nr	2	7 67	A1	4.80	A1	5	A1	5.68	A1	3 21	A1	4.76	A1						
9	Major/fatal accident rate per 1000 employees	nr	2	0 00	A1	0.00	A1	0.00	A1	0.00	A1	0 00	A1	0.00	A1						
C	**AND INCIDENCE OF OCCUPATIONAL ILL HEALTH**																				
10	Contractors' employees total	nr	0	No data		No data		NA		NA		NA		N/a							
11	Total days lost due to sickness, accident and occupational ill health	nr	0	No data		No data		NA		NA		NA		N/a							
12	Total days lost - rate per 1000 employees	nr	2	No data		No data		No data		No data											
13	Number of incidents of occupational ill health	nr	0	No data		No data		NA		NA		NA		N/a							
14	Incidents of occupational ill health - rate per 1000 employees	nr	2	No data		No data		No data		No data											
D	**CONTRACTORS' RIDDOR REPORTS**																				
15	Total RIDDOR incidents	nr	0	6	B2	6	B2	5	BX	7	BX	9	BX	6	BX						
16	RIDDOR - rate per 1000 contractors' employees	nr	2	No data		No data		No data		No data											
17	3-day accident rate per 1000 contractors' employees	nr	0	No data		No data		NA		NA		NA		N/a							
18	Major/fatal accident rate per 1000 contractors' employees	nr	2	0 00	B2	0 00	B2	0.00	A2	0.00	A2	0 00	A2	0.00	A2						

Table 41 – Health and Safety Information (NI Water only)

Lines 1 - 5 - Lost time

In 2017/18 financial year NI Water lost a total of 11268 working days due to sickness which was equivalent to 8.9 working days lost per employee. The KPI attendance in 17/18 was 96.5% and NI Water delivered an actual rate of 95.9%, 0.6% 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 NI Water Employee Support Officer, Independent Occupational Health, Inspire (our Employee Assistance Programme 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 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. Previously this was reported as days lost. A further addition on the report is highlighting the top 3 reason for absence in the reporting month and also year to date. These changes were made to highlight trends.

Our attendance rate has decreased from 96.3% in 16/17 to 95.9% in 17/18. There was an increase in staff absence due to Cold/Flu/Respiratory illnesses. 1097 working days were lost to these illnesses during 2017/18). (Compared to 724 working days during 2016/17). The increase 17/18 in Cold/Flu/Respiratory absences may be attributed to the greater incidence of flu epidemics during the winter of 17/18 than the previous winter. The Flu vaccine was offered to all employees and 252 employees took up the offer, approximately 20% of the workforce.

There were no deaths in service this year. There were 4 medical retirements after periods of long-term absences.

Frontline Operatives attended yearly medical assessments for Hand Arm Vibration, Audio and working in confined spaces. NI Water also provided medical assessment for driving and HGV which is currently carried out by Independent Occupational Health.

Psychiatric/psychological absences remain the highest reason for days lost due to sickness in 2017/18 at 20.2%, however this is a decrease from 2016/17 when the percentage of total working days lost due to Psychiatric/psychological illness was 25.1%.
There are a number of Health and Wellbeing initiatives that were continued during 2017/2018, which are as follows:

- Introduction of the flu vaccine on a yearly basis during autumn/winter seasons since October 2016.
- Health and Wellbeing training delivered by Inspire (Managing Mental Health in the Workplace, Building Emotional Resilience, Dealing with Difficult Situations, Mindfulness). These sessions continued throughout 2017 from the previous financial year.

- A Mental Health week took place in October 2017 to promote awareness of Mental health illnesses
- Dedicated Workplace Counselling on site though Inspire Workplaces, Wellbeing Champions representing employee views on wellbeing and providing input to our the Health and Wellbeing programme
- Mental Health First Aid training provided to over 60 employees, and the introduction of a network of 12 Specialist Mental Health First Aiders who help colleagues experiencing mental health problems
- Health awareness campaigns though our dedicated 'Wellbeing Works intranet wellbeing site, poster campaigns and targeted employee communications
- Provision of facilities for mindfulness, yoga, keep-fit classes, slimming clubs, company choir and sports teams

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.

Due to our failure to meet our KPI, improving attendance remains of high importance to both EC and Board along with further developing and implementing a continued programme of initiatives to improve the health and well-being 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 (DATIX) is utilised for recording and tracking of all incidents and has been in place since April 2009.

It is the relevant Line Manager's responsibility to ensure all incident details are recorded and managed within the DATIX system.

DATIX 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, at H&S Focus Group, Executive Committee and Board for consideration and discussion.

There were 6 RIDDOR (greater than) >3 Lost Day reportable incidents within NI Water during 2017/18, all of which resulted in more than 3-day work activity-related absences.

Datix Ref	Date of Incident	Brief Description	Incident Category	Underlying / Root Cause	RIDDOR Classification
NIW2445	10/04/17	Back injury whilst removing a lorry wheel in garage workshop.	Reportable	Failure to use equipment provided.	> 3 day absence
NIW2451	28/04/17	Head injury sustained when young person fell from 1.6m Control Kiosk	Reportable	Trespass/Site Security.	Member of Public hospitalised overnight
NIW2501	07/06/17	Shoulder Strain while carrying out valving operations. Spindle slipped.	Reportable	Spindle of the valve key came off the top of the crown head on valve.	> 3 day absence
NIW2605	20/09/17	Back & head injury resulting fall from a fixed ladder.	Reportable	Failure to recognise risk and follow safety procedures.	> 3 day absence
NIW2646	20/10/17	Cut to arm resulting in tendon damage	Reportable	Failure to use due care & attention.	> 3 day absence
NIW2682	27/11/17	Slip on wet grass, resulted in broken ankle.	Reportable	Failure to use due care & attention.	Fracture & > 3 day absence

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 DATIX 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 1260. This gives the RIDDOR Rate per 1000 employees as 4.76 for 2017/18.

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 2017/18.

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 2017/18 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 DATIX and for 2017/18 the total number of RIDDOR related incidents reported to NI Water by all contractors was 6 with a one further reported incident being regarded as Dangerous Occurrence but where no harm or injury resulted, (see table). This was a decrease in reports on last year when 9 incidents were recorded. 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.

Datix Ref	Date of Incident	Brief Description	RIDDOR Classification
NIW2461	04/05/2017	Moving site excavator made contact with overhead power line. No injury or harm resulted.	Dangerous Occurrence
NIW2559	04/08/2017	Dumper driver thrown from moving dumper and suffered broken leg.	Fracture & > 3 days
NIW2580	12/06/2017	Operative suffered fractured finger requiring stitches when helping place security fencing at work area.	> 3 day absence
NIW2724	28/11/2017	Operative suffered injury to shin when hinged coverlid fell forward str king his leg. Infection resulted from injury.	> 3 day absence
NIW2785	30/01/2018	Operative got foot partially trapped under track of moving site excavator. Suffered bruising of ankle and foot.	> 3 day absence
NIW2819	09/03/2018	Electrician working from stepladder suffered minor electric shock leading to a fall.	> 3 day absence
NIW2838	20/03/2018	Operative stumbled in grass verge str king his face against a tree branch, which required stitches.	> 3 day absence

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 were no major or fatal incidents connected with NI Water contractors or sub-contractors, including transient workers, during 2017/18. This allows this rate to be calculated as zero.

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		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	Alpha	Kinnegar	Omega	Water Service	Sewerage Sevice
2	Service Area	text	na		na		WT	WT	WT	WT	WD/WT	WD	WD	WWT	WWT	WWT	WWT	WWT	WWT	WWS	WWS	WWS	WWS	All	All	All		
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																							
8	Unitary Charge Variable	£m	3		na																							
9	Unitary Charge Deductions	£m	3		na																							
10	Atypical expenditure	£m	3		na																							
11	Efficiency Gains, included in 7 & 8	£m	3		na																							
12	Total PPP Payments (7to 10)	£m	3		na	Sum 7 to 10																						
13	Capital repayment	£m	3		na																							
14	Maintenance	£m	3		na																							
15	Residual interest	£m	3		na																							
16	Atypical payments capitalised	£m	3		na																							
17	Total capitalised (13 to 16)	£m	3		na	Sum 13 to 16																						
18	Total PPP Expensed (12-17)	£m	3		na	Lines 12-17																						
19	Interest	£m	3		na																							
20	Total PPP Opex (18-19)	£m	3		na	Line 18-19																						
C	WATER DISTRIBUTION DATA																											
21	Distribution input	Mld	2	B2	Table 10 Line 26		29.43	116.69	108.85	14.69														269.66			269.66	
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	N/A													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	N/A													4 x W4			4 x W4	
27	Average pumping head	m.hd	1	B3	Table 12 Block A		131.6	147.2	173.0	146.5	N/A													155.9			155.9	
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	B3	Table 17b line 2									71	2	14	118	64	47						71	245		316
31	Load received by STW's	kg BOD/day	0	B3	Table 17d									4259	116	848	7084	3822	2802						4259	14672		18931
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									N/A	02/10	02/10	7.5/32	N/A	N/A									
36	Phosphates consent	mg/l	0	A1	Table 17b line 7									N/A	N/A	<1 Ann Avg	<1 Ann Avg	N/A	N/A									
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										N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.634	30.264	34.898		N/A	34.898		34.898
40	Sludge produced by the PPP facility	ttds	3	B2										0.331	0.068	0.534	1.882	1.629	1.246	0.000	N/A	N/A	0.000		0.331	5.359		5.690
41	Sludge exported to Duncrue Incinerator	ttds	3	B2										0.331	0.068	0.534	1.882	1.629	1.246	0.000	N/A	N/A	0.000		0.331	5.359		5.690
42	Sludge exported to other PPP facilities	ttds	3	A1										N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000		N/A	0.000		0.000
43	Sludge exported to NI Water	ttds	3	A1										N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000		N/A	0.000		0.000
44	Sludge disposed of from site to - Farmland Untreated	ttds	3	A1	Table 17G Col 1									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000		N/A	0.000		0.000
45	Sludge disposed of from site to - Farmland Convestional	ttds	3	A1	Table 17G Col 2									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000		N/A	0.000		0.000
46	Sludge disposed of from site to - Farmland Advanced	ttds	3	B3	Table 17G Col 3									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.788		N/A	0.788		0.788
47	Sludge disposed of from site to - Incineration	ttds	3	B2	Table 17G Col 4									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39.618		N/A	39.618		39.618
48	Sludge disposed of from site to - Landfill	ttds	3	B3	Table 17G Col 6									0.035	0.002	0.010	0.096	0.055	0.027	0.000	0.000	0.043	0.268		0.035	0.233		0.268
49	Sludge disposed of from site to - Composted	ttds	3	A1	Table 17G Col 7									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000		N/A	0.000		0.000
50	Sludge disposed of from site to - Land Reclamation	ttds	3	B3	Table 17G Col 8									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.183		N/A	0.183		0.183
51	Sludge disposed of from site to - Other (Willow Coppice)	ttds	3	A1	Table 17G Col 9									N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000		N/A	0.000		0.000
52	Sludge disposed of from site - Total	ttds	3	B2										0.366	0.070	0.544	1.978	1.684	1.273	0.000	4.634	30.307	40.857		0.035	40.822		40.857

Table 42 – PPP Reporting

Preface

The Company highlights that on the 20 November 2017 a newly formed hold 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.

Line 4 & Line 5

No change.

Note: As the atypical expenditure, efficiencies, performance deductions (Omega) and residual interest (Omega) were not divisible by site the cross tots on lines 9,10, 11, 12, 15, 17, 18 and 20 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

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 on this line have increased by an inflationary amount from 2016/17.

Line 8 - Unitary charge variable

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 increased by 5.6% from 2016/17 driven by a combination of inflation and flow variations in the year. In terms of flow variations, the movements are as follows:

Alpha DI – increased by 4.8% (272.4 ML/D vs 259.9 ML/D in AIR17)
Omega WwTW – flows increased by 19.2% (33.9 Mm3 vs 28.4 Mm3 in AIR17)
Omega SDS – volume reduced by 3.4% (40.6k TDS vs 42.0k TDS in AIR17)

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 2017/18 were £0.339m, an increase of £0.051m on the 2016/17 amount of £0.288m.

Omega

No credits for performance deductions have been received in the 2017/18 year.

Kinnegar

No credits for performance deductions at Kinnegar have been received in the 2017/18 year.

Line 10 - Atypical expenditure

Alpha [redacted]

	£m
Quality Monitoring Change credit	[redacted]
EIB Step-down	
Refund in respect of reorganisation costs	
Total	

- 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 £0.457m in 2017/18.
- In 2017/18 a reduction of £0.112m 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 2017/18 were £0.080m.

Kinnegar £nil

- There was no atypical expenditure relating to Kinnegar in 2017/18

Omega [redacted]

	£m
Performance Deductions Re-Accrued	[redacted]
Performance Deductions Released	
North Down & Ards Disinfection Change	
Supplemental 4 agreement	
Change in calibration frequency	
Out of spec sludges (2017/18)	
Total	

- £0.084m in relation to re-accrual of performance deductions which were previously accepted and credit notes received.

- [redacted] performance deductions released after agreement with the contractor. These amounts relate to the 2013/04 and 2014/15 periods.
- The North Down Disinfection Change implemented in Sept 2011 resulted in a [redacted] efficiency saving in 2017/18. 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 2017/18.
- 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 2017/18.
- [redacted] was accrued in relation to the cost of out of specification sludges in the 2017/18 year. A further [redacted] was invoiced by the contractor.

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 2017/18 against the baseline contract at award:

Alpha

The reorganisation costs credit [redacted], quality monitoring change [redacted]) all detailed above are efficiency gains arising in the 2017/18 year.

Omega

The North Down Disinfection Change implemented in Sept 2011 resulted in a [redacted] efficiency saving in 2017/18.

Supplemental Agreement 4 executed in 2011/12 reflecting a change in wastewater flow management performance requirements resulted in a [redacted] deduction in 2017/18.

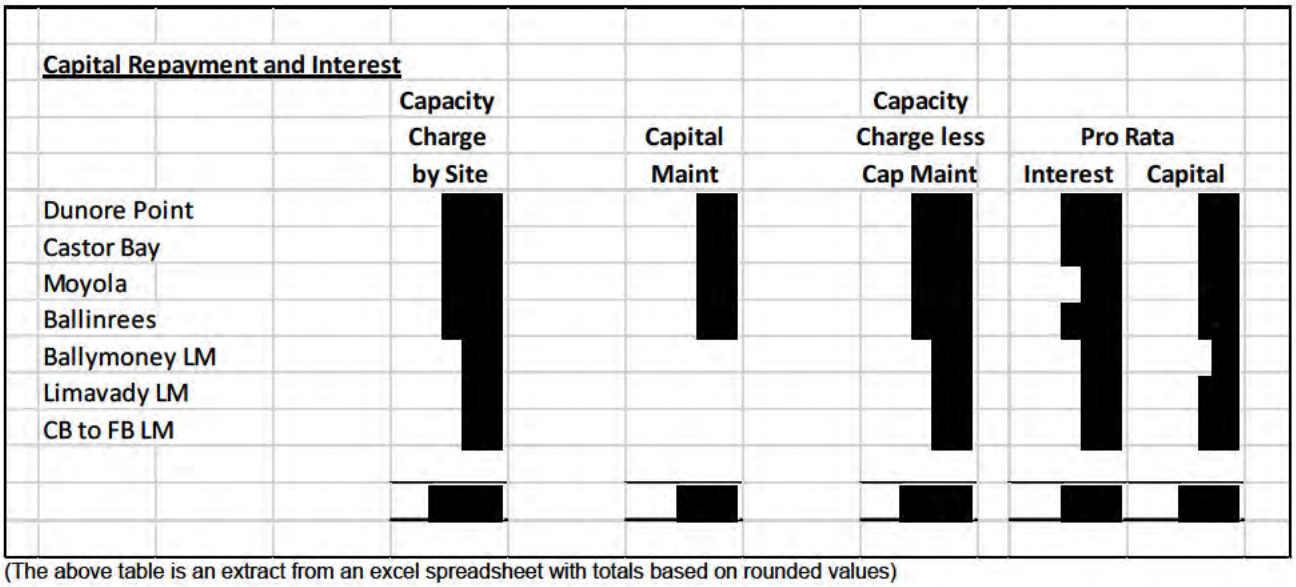
The change in weighbridge calibration frequency implemented in 2013/14 resulted in [redacted] of saving this year.

Kinnegar

No Contract Changes for cost reduction have been implemented during the Reporting Period.

Line 13 - Capital repayments

This line reflects the element of Alpha payments paying off 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:

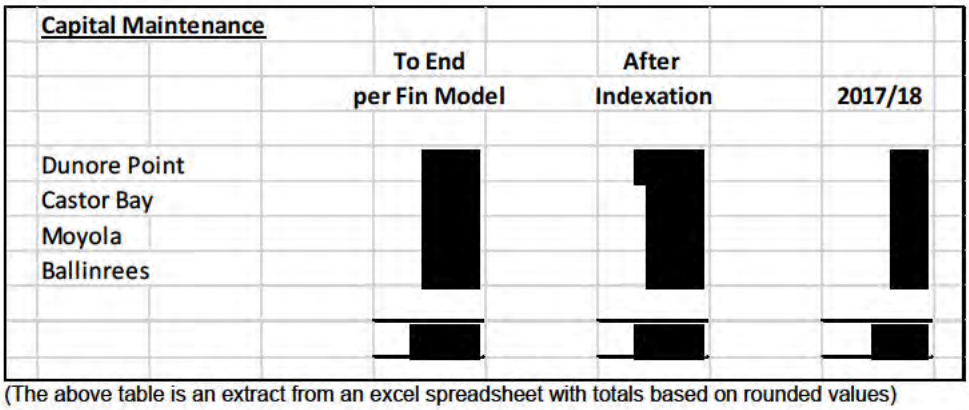


Capital Repayment and Interest	Capacity Charge by Site	Capital Maint	Capacity Charge less Cap Maint	Pro Rata Interest	Pro Rata Capital
Dunore Point					
Castor Bay					
Moyola					
Ballinrees					
Ballymoney LM					
Limavady LM					
CB to FB LM					

(The above table is an extract from an excel spreadsheet with totals based on rounded values)

Line 14 - Capital maintenance

Capital maintenance is allocated straight line across the life of the contract 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 Alpha financial model as follows:



Capital Maintenance	To End per Fin Model	After Indexation	2017/18
Dunore Point			
Castor Bay			
Moyola			
Ballinrees			

(The above table is an extract from an excel spreadsheet with totals based on rounded values)

Line 15 - Residual interest

As Kinnegar and Omega are off balance sheet an element of the unitary charge is capitalised to reflect residual value in NIW accounts at the end of the contract – figures taken from Contractors Financial Models. The total for Omega is not divisible by Facility (Scheme).

Line 16 - Atypical payments capitalised

Nil

Line 19 - Interest

As Alpha is an on-balance sheet PFI contract the Company has recognised a finance lease creditor on its balance sheet - this figure represents the notional interest on the finance

lease. The data is consistent with the Company's financial accounts. See point 13 above for site allocation workings.

Additional Information

The Company's statutory accounts have been prepared on an IFRS basis in 2017/18. The amounts disclosed in lines 12, 13, 14, 15, 19 and 20 are all consistent with the figures in the Company's financial accounts pre IFRS adjustments.

A breakdown of the accruals included in the year end accounts in relation to each of the PPP contracts is as follows:

	Alpha	Omega	Kinnegar	Total
	£m	£m	£m	£m
Unitary Charge	[redacted]	[redacted]	[redacted]	[redacted]
Disputed Amts				
Claims				
Other				

An amount of £4.375m included in unitary charge accruals of £4.481m relates to the outstanding monthly invoices for February and March unpaid at 31 March 2018. Also included in this amount is £0.106m 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.

The £0.359m of disputed amounts largely arise from 2013/14 - 2017/18 Omega disputes in relation to performance deductions.

The £11.991m has moved from the previous year as follows.

Accrual at 31 March 2017	11,870,775
2017/18 New Accrual	[redacted]
Accrual at 31 March 2018	[redacted]

The other accruals include £0.175m for contractor claims for additional costs associated with the industrial action which has been held to cover the risk that Water Treatment Residuals to sewer was otherwise a breach of contract.

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 £170/day 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 Condensor 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.

- **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.

- **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] per year 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.

Contractual Performance Failures during AIR17 Period

- **Alpha Performance Deductions: 2017/18**
  - 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 has provided a supporting CD with all 12 monthly Payment Calculation Schedules for the AIR year). Total deductions:* [redacted] *[AIR17 period total deductions* [redacted] *].*
  - Water Quality Failures can be referenced on Payment Calculation Tab 9 under the column headed 'QRF' for each Facility *(The Company has provided 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 has provided a supporting CD will all 12 LIM's*

Exceedance Reports for the Alpha Facilities. Total deductions: [redacted]
[AIR17 period total deductions [redacted] *].*

- **Kinnegar Performance Deductions 2017/18:**

  The Company had determined no failures in the AIR18 period.

- **Omega Performance Deductions 2017/18:**
  - The Company has determined and the Contractor has accepted the following failures on the Wastewater services during the period:
    - OR1 Deductions applied at Bullayshill WwTW [July, Sept 2017; Jan, Feb & Mar 2018]: [redacted].
    - FM7 Deduction [Primary Deduction] at Armagh WwTW [Feb 2018]: [redacted]
    - TE8-95 Treated Effluent Retention (not deduction) at Ballyrickard WwTW [Mar 2018]: [redacted]
  - The Company has determined and the Contractor has not accepted the following failures on Sludge Services during the period:
    - OR4 Deductions applied at Ballynacor WwTW [July to March 2018]: [redacted] Note: in agreement with the Contractor, these Deductions have not been applied as there is a significant upgrade of the Odour Treatment facility at BNC on-going. This upgrade has the endorsement of the NIEA.

The Contractor disputes the application of the 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] have not been included in this line, as credit notes has not been received. The remaining disputed sums; and those of previous AIR periods, totalling [redacted] have not been credited and are not therefore reflected in Line 9.
- Project Kinnegar; there are no disputed deductions to require an accrual

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

Kinnegar PFI: There have been material changes to the PPP Facilities at Kinnegar WwTW due to the provision of Holywood C Pumping Station which collects the flow from the Huttons Field Inlet and conveys it to the Inlet Channel at Kinnegar WwTW. In addition, the Concessionaire has replaced the sludge dewatering belt presses with a centrifuge installation.

The Descriptive reports for the Alpha and Omega Contracts remain unaltered.

Line 4 & Line 5:
No Change from AIR17 data.

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 Ballinrees WTW Distribution Input for AIR17 was 10,740 Ml while the Distribution Input for AIR18 was 10,743 Ml which results in the same Average DI for both periods at 29.43 Mld. 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 AIR 17.

Lines 23 – 24 - Turbidity

Background – Year on Year

During the period 2005 to date, a number of non-compliant water treatment works (WTWs) and small sources have either been completely replaced with new works, or else taken out of service as and when a replacement supply is available. During 2008, 5 existing major WTWs were replaced/upgraded as part of the Alpha PPP project. This contributed to the closure during 2009 of 6 non-compliant small water treatment works/sources.

During 2010 a further 2 non-compliant small water treatment works/sources were also closed. However, these were temporarily reinstated during the 2010-11 freeze/thaw incident to supplement strained water supplies.

During 2011 a further 3 non-compliant small water treatment works/sources were also closed.

During 2016 one further non-compliant small water treatment works was also closed.

At the end of 2016, the WTWs in service have now stabilised with 19 NIW sites and 5 PPP.

The guidance now requires that the PPP sites are solely assessed in this table.

The calculations were carried using the following data criteria:

- Only scheduled audit final water samples lifted to meet Water Supply regulatory requirements during the calendar year were used, and using accredited laboratory analyses rather than onsite analyses.
- Only those WTWs which had more than 11 months' worth of data or had temporary out of service gaps were included. This led to no PPP sites being excluded.

2017 PPP WTW Included in calculations

WTW Code	WTW Name	Turbidity 95 %ile	>= 0.5 NTU
W1301P	Moyola PPP	0.151	0
W1701P	Ballinrees PPP	0.195	0
W2308P	Castor Bay PPP	0.279	3
W3301P	Dunore Point PPP	0.226	0
W3315P	Forked Bridge PPP	0.236	2

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 AIR 15. The changes have been reflected in Table 12.

Line 26 – Treatment type

No change to the data since AIR17.

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 AIR18. 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. This year, as a result of the acquisition of the business, there was limited resources to complete the dynamic pumping head calculation for the site. As highlighted there has been a step change in flow at Dunore Point – however we have used the previous year's dynamic head figure for the purposes of AIR reporting. While the DI for Ballinrees WTW has remained roughly the same as for AIR17 the B2 average flow has reduced from 7.78 Ml/d to 7.29 Ml/d [pumped flow to Break Pressure Tank at Moys – 117m head lift] The reduction in B2 flow contributes less to the overall head at site and was compensated by increased flows at B1 and B3. The % of Pumped Flow had reduced from 26.5% [AIR17] to 24.7% [AIR18].

Lines 28 – 29 – Sewerage data

No Change from AIR17 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.

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.

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 AIR17

Line 38 - Size band of sewage treatment works

No change to the treatment Facility size banding since AIR17

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 34.898 TTDS for the AIR18 period (last year the figure was 36.357 TTDS).

Lines 40 - Sludge produced by the PPP facility

Whilst the total sludge production recorded against each PPP contract and PPP as a whole is consistent with last year's records, the records for each of the individual Omega sites are different from those recorded in AIR17. The reporter also requested that an estimate of the re-cycled solids from the Incinerator be produced, this has equated to 1.660ttds and was returned via Duncrue WwTW for further processing [See Table 15 Line 17 Commentary].

The variations are tabulated below;

PPP Production	AIR18	AIR17	AIR16	AIR15	AIR14	AIR13	AIR12	AIR11	AIR10
Armagh WWTW	0.534	0.605	0.535	0.579	0.547	0.535	0.570	0.759	0.840
Richhill WWTW	0.068	0.071	0.071	0.063	0.071	0.065	0.066	0.213	0.210
Ballynacor WWTW	1.882	1.739	1.564	2.269	2.007	2.069	3.330	2.468	2.290
Ballyrickard WWTW	1.246	1.293	1.064	1.337	1.126	1.158	1.225	1.627	1.717
NDA WWTW	1.629	1.656	1.818	1.633	1.920	1.628	1.559	1.753	1.654
Kinnegar WWTW	0.331[1]	0.302[1]	0.501	0.668	0.643	0.726	0.823	0.792	0.700
Omega Screenings/Grit	0.233	0.206	0.083	0.083	0.088	0.106			
Kinnegar Screenings/Grit	0.035	0.058	0.049	0.057	0.047	0.022			
Totals	**5.958**	**5.930**	**5.685**	**6.689**	**6.449**	**6.309**	**7.573**	**7.612**	**7.411**

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)

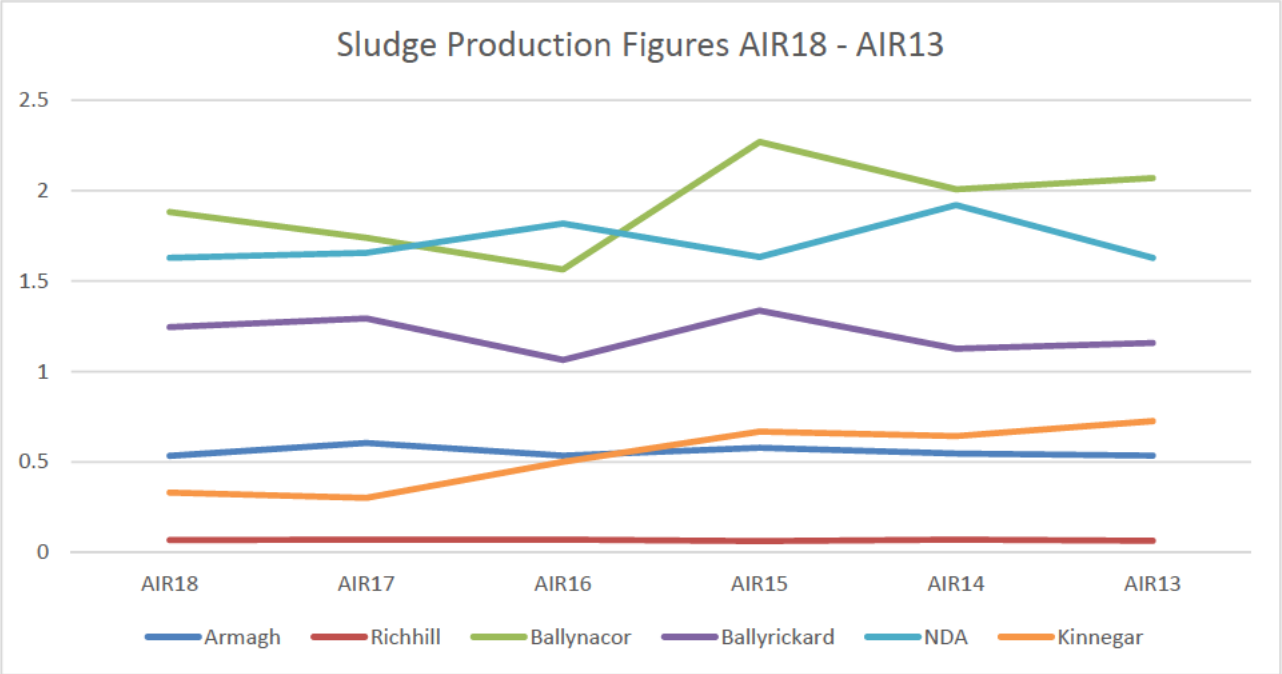
(ii) a mix of improved methodologies and record keeping systems for liquid and cake movements (as demanded by the Omega contract payment processes) implemented by end of AIR11, and

(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.

The notable exception to the trend is Ballynacor WwTW, which presents a clear downward trend with some recent recovery. Given the treatment processes have not changed in the same period and effluent compliance has been maintained, it can be deduced the overall loading on the WwTW decreased from within the catchment and/or from tankered imports, and has recently shown signs of recovery. This is supported by the data behind Line 2 (Load Receiving Secondary Treatment).

Refer to Table 15 Commentary for a fuller explanation.



Line 41 - Sludge exported to Duncrue Incinerator
Variances are accounted for in Line 40 commentary above.

Line 42 - Sludge exported to other PPP facilities
No change from AIR17

Line 43 - Sludge exported to NI Water
No change from AIR17

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 0.788 TTDS arising from the Contractor's choice of alternative compliant disposal routes. This is at variance from the 2.714 TTDS report in AIR17.

Lines 47 - Sludge disposed of from site to - Incineration
A full year service resulted in 39.618 TTDS being incinerated as the contractor's preferred method of disposal, this being a slightly larger amount than reported in AIR17 [39.085 TTDS].

Lines 48 - Sludge disposed of from site to - Landfill
A full year service resulted in 0.268 TTDS [0.233 TTDS Omega and 0.035 TTDS Kinnegar] arising from the Contractor's choice of alternative compliant disposal routes. The value represents only both PPP Contractors sludges arising from grit and/or screenings removed directly from the sites to landfill; which is larger than that 0.264 TTDS reported in AIR17. 0.000 TTDS of dewatered sludge cake was disposed to landfill.

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.

Lines 50 - Sludge disposed of from site to - Land Reclamation

A full year service resulted in 0.183 TTDS arising from the Contractor's choice of alternative compliant disposal routes. AIR17 reported a disposal of 0.225 TTDS.

Lines 51 - Sludge disposed of from site to - Other (Willow Coppice)

A full year service resulted in 0.000 TTDS arising from the Contractor's choice of alternative compliant disposal routes. AIR17 reported a disposal of 0.000 TTDS.

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	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 Poin	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	[redacted]																				
5	Payment by Concessionaire to Operating Company	£m	3		[redacted]																				
C	DIRECT COSTS TO NI WATER																								
6	Power	£m	3		0.745	2.372	1.943	0.409	0.000	0.000	0.000	0 000	0 038	0.118	0.695	1.000	0.227	0.000	0.076	1.445	5.469	0.000	3.599	5.469	3.599
7	Other direct costs	£m	3		0.057	0.009	0.009	0.009	0.000	0.000	0.000	0.000	0 000	0 000	0.000	0.000	0.000	0.000	0.000	0.000	0.084	0.000	0.000	0.084	0.000
8	Total direct costs	£m	3	sum 6 + 7	0.802	2.381	1.952	0.418	0.000	0.000	0.000	0.000	0 038	0.118	0.695	1.000	0.227	0.000	0.076	1.445	5.553	0.000	3.599	5.553	3.599
9	General and support expenditure	£m	3		0.011	0.012	0.012	0.011	0.011	0.011	0.011	0.037	0 024	0 024	0.024	0.024	0.024	0.024	0.000	0.024	0.079	0.037	0.168	0.079	0.205
10	Total functional expenditure	£m	3	sum 8 + 9	0.813	2.393	1.964	0.429	0.011	0.011	0.011	0.037	0 062	0.142	0.719	1.024	0.251	0.024	0.076	1.469	5.632	0 037	3.767	5.632	3.804
D	OPERATING EXPENDITURE - NI WATER																								
11	Scientific services	£m	3		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0 002	0 002	0.006	0.002	0.003	0.000	0.000	0.053	0.000	0.020	0.068	0.000	0.088
12	Rates	£m	3		0.832	3.323	3.098	0.421	0.000	0.000	0.000	0.151	0 022	0.098	0.318	0.160	0.111	0.000	0.088	0.152	7.674	0.151	0.949	7.674	1.100
13	Estimated terminal pumping costs	£m	3									0.000	0 000	0 000	0.162	0.264	0.000	0.000	0.000	0.000		0.000	0.426		0.426
14	Estimated sludge costs	£m	3									0.000	0 000	0 000	0.000	0.000	0.000	0.000	0.164	7.958		0 000	8.122		8.122
E	TOTAL PPP OPERATING EXPENDITURE																								
15	Total PPP operating expenditure	£m	3	Sum 5, 10, 11 and 12	[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 AIR17 have been commented on in the commentary to that table.

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:

Quality Monitoring Change credit
EIB Step-down
Refund in respect of reorganisation costs
Total

[redacted]

Kinnegar

The data is provided as an aggregate of the monthly invoiced amounts by the Contractor to the Company. There are no atypical amounts recorded in the 2017/18 year.

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 2017/18 no performance deductions were recognised by the contractor.

In addition this line includes atypical amounts as follows:

Performance Deductions Re-Accrued
Performance Deductions Released
Supplemental 4 Agreement
Change in Calibration Frequency
2017/18 out of spec sludges
North Down & Ards Disinfection Change
Total

[redacted]

Line 5 - Payment by concessionaire to operating company

Preface

The Company highlights that on the 19 November 2017 a newly formed hold 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.

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 during AIR18 [redacted]d with AIR17 but this [redacted] directly to the reduction in Sludge processed [AIR18 – 40.9TTDS; AIR17 – 42.3 TTDS].

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.

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 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 arrived at by running a report on P101 cost centre. Costs were allocated by scheme on the basis of percentage time spent by each staff member working on each scheme 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 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 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 2012-13	CG	2 REPORTING YEAR 2013-14	CG	3 REPORTING YEAR 2014-15	CG	4 REPORTING YEAR 2015-16	CG	5 REPORTING YEAR 2016-17	CG	6 REPORTING YEAR 2017-18	CG	7 REPORTING YEAR 2018-19	CG	8 REPORTING YEAR 2019-20	CG	9 REPORTING YEAR 2020-21	CG
A	**WATER SUPPLY**																				
	DG2 PROPERTIES RECEIVING PRESSURE/FLOW BELOW REFERENCE LEVEL																				
1	Total connected properties at year end	nr	0	817,960	A2	824,974	B2	828,060	A2	839,710	A2	852,399	A2	862,988	A2						
2	Properties below reference level at end of year	nr	0	1,420	B3	1,257	B3	1,082	B3	900	B3	862	B3	711	B3						
3	% of total properties at risk of low pressure (OPA Low pressure value)	%	2	0.17	B3	0.15	B3	0.13	B3	0.11	B3	0.10	B3	0.08	B3						
	DG3 PROPERTIES AFFECTED BY UNPLANNED INTERRUPTIONS																				
4	More than 6 hours	nr	0	10,487	B3	6,742	B3	43,767	B3	8,699	A3	5,128	A3	6,097	A3						
5	More than 12 hours	nr	0	2,607	B3	1,195	B3	25,693	B3	841	A3	494	A3	861	A3						
6	More than 24 hours	nr	0	1,554	B3	12	B3	13,788	B3	32	A3	0	A3	0	A3						
7	Total connected properties at year end	nr	0	817,960	A2	824,974	B2	828,060	A2	839,710	A2	852,399	A2	862,988	A2						
8	OPA supply interruption value	nr	2	1.98	B3	0.97	B3	11.72	B3	1.14	A3	0.66	A3	0.81	A3						
	DRINKING WATER QUALITY																				
9	% iron compliance at consumers tap	%	2	97.36	A1	98.28	A2	98.90	A2	98.40	A2	98.66	A2	98.85	A2						
10	% manganese compliance at consumers tap	%	2	99.83	A1	99.79	A2	99.82	A2	99.89	A2	99.84	A2	99.90	A2						
11	% aluminium compliance at consumers tap	%	2	99.59	A1	99.60	A2	99.80	A2	99.25	A2	99.36	A2	99.79	A2						
12	% turbidity compliance at consumers tap	%	2	99.70	A1	99.84	A2	99.85	A2	99.73	A2	99.95	A2	100.00	A2						
13	% faecal coliforms compliance at consumers tap	%	2	99.89	A1	99.86	A2	99.99	A2	99.98	A2	100.00	A2	99.94	A2						
14	% trihalomethanes compliance at consumers tap	%	2	97.50	A1	98.50	A2	99.00	A2	99.74	A2	96.94	A2	98.48	A2						
15	Average overall compliance figure (Drinking Water Quality OPA value)	nr	2	98.98	A1	99.31	A2	99.56	A2	99.50	A2	99.13	A2	99.49	A2						
B	**SEWERAGE SERVICE**																				
	DG5 SEWER FLOODING - OVERLOADED																				
16	Flooding incidents in the year (overloaded sewers)	nr	0	189	B2	6	B2	29	B2	4	B2	3	B2	0	B2						
17	Flooding incidents (overloaded sewers attributed to severe weather)	nr	0	181	B2	5	B2	3	B2	1	B2	2	B2	0	B2						
18	Number of domestic properties connected to sewerage system	000	1	623.3	A2	628.3	B2	630.0	A2	638.1	A2	648.6	A2	657.9	A2						
19	% of domestic properties flooded by overloaded sewers (Overloaded sewers OPA value)	%	4	0.0013	B2	0.0002	B2	0.0041	B3	0.0005	B3	0.0002	B2	0.0000	B2						
	DG5 SEWER FLOODING - OTHER CAUSES																				
20	Flooding incidents (other causes - equipment failures)	nr	0	15	B2	14	B2	2	B2	1	B2	1	B2	0	B2						
21	Flooding incidents (other causes - blockages)	nr	0	22	B2	36	B2	38	B2	34	B2	38	B2	26	B2						
22	Flooding incidents (other causes - collapses)	nr	0	4	B2	5	B2	12	B2	3	B2	8	B2	7	B2						
23	Number of domestic properties connected to sewerage system	000	1	623.3	A2	628.3	B2	630.0	A2	638.1	A2	648.6	A2	657.9	A2						
24	% of domestic properties flooded by other causes (Other causes OPA value)	%	4	0.0066	B2	0.0088	B2	0.0083	B3	0.0060	B3	0.0072	B2	0.0050	B2						
	DG5 PROPERTIES ON THE FLOODING REGISTER																				
25	2 in 10 register at end of year	nr	0	30	B2	62	B2	60	A2	59	B2	61	B2	57	B2						
26	Problems solved due to ESL funding	nr	0	20	A1	3	B2	5	A2	3	B2	3	B2	6	B2						
27	1 in 10 register at end of year	nr	0	10	B2	8	B2	8	A2	7	B2	6	B2	4	B2						
28	Number of domestic properties connected to sewerage system	000	1	623.3	A2	628.3	B2	630.0	A2	638.1	A2	648.6	A2	657.9	A2						
29	% of domestic properties considered to be at risk of flooding by sewage (At risk OPA value)	%	4	0.0088	B2	0.0110	B2	0.0110	A2	0.0103	B2	0.0103	B2	0.0099	B2						
C	**SECURITY OF SUPPLY**																				
	DG4 HOSEPIPE RESTRICTIONS																				
30	Hosepipe retrictions (OPA value)	%	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1						
	LEAKAGE																				
31	Leakage (Target)	nr	2	168.00		169.00		165.00		163.00		161.00		159.00							
32	Leakage (Actual)	nr	2	161.75	B4	167.21	B3	165.99	B3	161.99	B3	163.43	B3	162.43	B3						
33	% of leakage target not met (Leakage OPA value)	nr	2	0.00	B4	0.00	A1	0.00	B3	0.00	B3	0.49	B3	0.99	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	100	A2						
	SECURITY OF SUPPLY - PERFORMANCE AGAINST TARGET																				
35	Security of supply index - planned (target) levels of service	nr	0	97	A2	97	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	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	0.00	A2						
D	**CUSTOMER SERVICE**																				
	DG6 - RESPONSE TO BILLING CONTACTS																				
38	Number dealt with within 5 working days	nr	0	77,118	B2	78,398	B2	75,520	B2	75,462	B2	77,679	B2	71,386	B2						
39	Total billing contacts	nr	0	77,051	B2	78,463	B2	75,545	B2	75,490	B2	77,698	B2	71,409	B2						
40	% of billing contacts answered within 5 working days (DG6 OPA value)	%	2	100.09	B2	99.92	B2	99.97	B2	99.96	B2	99.98	B2	99.97	B2						
	DG7 - RESPONSE TO WRITTEN COMPLAINTS																				
41	Total written complaints	nr	0	3,173	B2	2,505	B2	2,364	B2	2,269	B2	2,375	B2	2,274	B2						
42	Number dealt with within 10 working days	nr	0	3,166	B2	2,498	B2	2,363	B2	2,266	B2	2,375	B2	2,271	B2						
43	% of written complaints answered within 10 working days (DG7 OPA value)	%	2	99.78	A1	99.72	A1	99.96	A1	99.87	A1	100.00	A1	99.87	B2						
	DG8 - BILLING METERED CUSTOMERS																				
44	Company or customer readings (or both)	nr	0	66,622	A1	66,840	A1	66,916	A1	67,366	A1	68,051	A1	68,420	A1						
45	Total metered accounts	nr	0	110,164	A1	115,227	A1	118,732	A1	123,763	A1	127,807	A1	128,705	A1						
46	Metered accounts excluded from indicator	nr	0	42,688	A1	47,784	A1	51,214	A1	55,875	A1	59,428	A1	60,060	A1						
47	% of metered accounts which have meter based bills (DG8 OPA value)	%	2	98.73	A1	99.11	A1	99.11	A1	99.23	A1	99.52	A1	99.67	A1						
	DG9 TELEPHONE CONTACT																				
48	Total of calls not abandoned	nr	0	216,006	A2	223,256	A2	226,204	A2	209,284	A2	216,015	A2	211,061	A2						
49	Total calls received on customer contact lines	nr	0	219,399	A2	226,881	A2	230,847	A2	210,487	A2	217,023	A2	212,095	A2						
50	% calls not abandoned (0.25 of DG9 OPA value)	%	2	98.45	A2	98.40	A2	97.99	A2	99.43	A2	99.54	A2	99.51	A2						
51	All lines busy	nr	0	0	A2	0	A2	32	A2	159	A2	63	A2	18	A2						
52	% calls not engaged (0.25 of DG9 OPA value)	%	2	100.00	A2	100.00	A2	99.99	A2	99.92	A2	99.97	A2	99.99	A2						
53	Call Handling Satisfaction - not used	nr	2	4.54	A1	4.63	A1	4.65	A1	4.59	A1										
E	**ENVIRONMENTAL PERFORMANCE**																				
	POLLUTION INCIDENTS																				
54	Number of High & Medium category pollution incidents (Sewage)	nr	0	18	A1	26	A1	25	A1	21	A1	22	A1	20	A1						
55	Equivalent population served (resident)	000	2	2,107.96	C5	2,131.81	C5	2,110.77	C5	2,119.20	C3	2,098.83	C3	2,101.35	C3						
56	Number of High and Medium sewage incidents per million resident population equivalent (pe) served (H&M sewage incidents OPA value)	nr	2	8.54	C5	12.20	C5	11.84	C5	9.91	C5	10.48	C5	9.52	C3						
57	Number of Low category pollution incidents (Sewage)	nr	0	163	A1	188	A1	136	A1	117	A1	114	A1	109	A1						
58	Number of Low sewage incidents per million resident population equivalent (pe) served (Low sewage incidents OPA value)	nr	2	77.33	C5	88.19	C5	64.43	C5	55.21	C5	54.32	C5	51.87	C3						
59	Number of High & Medium category pollution incidents (Water)	nr	0	0	A1	0	A1	0	A1	0	A1	0	A1	0	A1						
60	Winter population	000	2	1,842.61	C2	1,850.54	C2	1,862.72	C2	1,874.73	C2	1,887.10	C2	1,896.46	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	C5	0.00	C5	0.00	C5	0.00	C3						
	SEWAGE - SLUDGE DISPOSAL																				
62	Percentage unsatisfactory sludge disposal (Sludge disposal OPA value)	%	2	0.00	A2	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	1.10	C5	1.89	C5	1.54	C5	1.38	C5	1.08	C5	1.33	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	105,504	A2	80,934	A2	186,438	A2
2	Grid electricity purchased - renewable energy	MW.hr	0	102,208	A2	5,206	A2	107,414	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	1,255	A2	148	A2	1,402	A2
5	Total electricity consumption	MW.hr	0	208,967	A2	86,288	A2	295,255	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	1,025	A2	0	A2	1,025	A2
8	Total renewable enegry generated	MW.hr	0	2,280	A2	148	A2	2,428	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	3,251.45	C3	2,796.76	A2	6,048 21	B3
10	Process and fugitive emissions	$t.CO_2 e$	0	3,181.43	C3	5,052.71	A2	8,234.14	B3
11	Transport: company owned or leased vehicles	$t.CO_2 e$	0	2,604.79	A2	267 04	A2	2,871 83	A2
B.2	**Scope 2 Emissions**								
12	Total grid energy used (including CHP electricity purchased).	$t.CO_2 e$	0	67,076.72	A2	36,229 94	A2	103,306 66	A2
B.3	**Scope 3 Emissions**								
13	Business travel on public transport and private vehicles used for company business	$t.CO_2 e$	0	594 50	A2	16 50	A2	611 00	A2
14	Outsourced activities (if not included in Scope 1 or 2) Energy and other	$t.CO_2 e$	0	0 00	A2	12,760 50	A2	12,760 50	A2
15	Not used								
16	Not used								
17	Gross operational emissions	$t.CO_2 e$	0	76,708 89	A2	57,123.45	A2	133,832 34	A2
C	**Net annual operational emissions**								
18	Exported renewables (generated on-site and exported)	$t.CO_2 e$	0	-279 38	A2	0 00	A2	-279 38	A2
19	Green tariff electricity purchased	$t.CO_2 e$	0	-35,261.78	A2	-1,134 21	A2	-36,395 99	A2
20	Net operational emissions	$t.CO_2 e$	0	41,167.73	B3	55,989 24	A2	97,156 97	B3
D	**ANNUAL OPERATIONAL GHG INTENSITY RATIO VALUES**								
21	Operational GHG per Ml of treated water	$t.CO_2 e/Ml$	0	0.127	B3	0.271	A2	0.176	A2
22	Operational GHG per Ml of sewage treated (flow to full treatment)	$t.CO_2 e/Ml$	0	0.487	B3	0.701	A2	0.611	B3
23	Operational GHG per Ml of sewage treated (based on water distribution input)	$t.CO_2 e/Ml$	0	0.302	B3	0.435	B3	0.379	B3
E	**RENEWABLE INCENTIVES**								
24	Revenue from renewable energy sales and incentives	£000	3	158.788	A2	0.000	A2	158.788	A2

Table 45 - Energy Consumption and Greenhouse Gas Accounting

Table 45 contains data relevant to the Company's energy consumption and greenhouse gas accounting as requested for the AIR18 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, GHG intensity ratios and revenue from the sale of renewable electricity and other incentives.

Lines 1 – 8 Electricity Consumption

This section provides data relevant to the total electricity consumption within NI Water 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 35.06% 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 outputs are detailed in Table 1

Table 1

Site	kWhrs
Hydro – Silent Valley (REGO)	794,700
Hydro – Oaklands (Non-REGO)	230,632
Hydro – Fofanny (Non-REGO)	358,431
Steam (Non-REGO)	147,658
56 Solar PV Installations (Non-REGO)	896,299

Further investigatory work is ongoing to enable installation of hydro and wind turbine systems at other sites. These will likely occur within the next Regulatory period.

The level of self-generation is further complemented by procurement of renewable electricity from the SEM. NI water has built into the electricity contract that approximately 30% of consumption would be electricity from a renewable source and covered by Renewable Energy Guarantees of Origin (REGO). This is achieved by placing a specific schedule of c280 sites on a green supply.

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 NI Water and PPP concessions, broken down as follows:

- direct emissions from burning fossil fuels;
- process and fugitive emissions 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 - 14) 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)

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 provides 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 have been provided for sewerage service, one using table 14 data as a denominator and one using additional road drainage in-flow. Confidence grading around the latter figure is at B3 as the accuracy is not verifiable. Details of intensity ratios 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	0.127	0.271	0.176	A2
Annual operational emissions intensity ratio per Ml of treated sewage (FFT)	tonnes CO_2e/ ML	0.487	0.701	0.611	B3
Annual operational emissions intensity ratio per Ml of treated sewage (DI Input)	tonnes CO_2e/ ML	0.302	0.435	0.379	B3

Calculations for the tonnes CO_2e/ML intensity ration have been generated from the UK Water Industry Carbon Accounting Workbook 12.0 (March 2018) outputs using data from AIR18 Table 10 and Table 14. The confidence grading for the FFT is at B3 due to uncertainty over the accuracy of the data provided.

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 Annual Information Return Reporting Requirements and guidance within the UK Water Industry Carbon Accounting Workbook 12.0

Processing rules and Emissions Conversion Factors:

The Company has provided output data within Table 45 as calculated using the Water UK Carbon Accounting Workbook Version 12.0 (March 2018) for greenhouse gas emissions associated with the provision of water, wastewater, sludge disposal, administrative function and transport in its AIR18 return.

Data sources for the AIR18 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 Carbon Accounting Workbook 12.0 and are aligned to the DECC/Defra 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 Carbon Accounting Workbook 12.0

Gross operational emissions reported in Table 45 are the company's total carbon emissions resulting from operational activities.

Nett 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 t.CO_2e/ML GHG intensity output figure for treated water emissions includes all carbon emissions from the abstraction, treatment and distribution of water, associated administrative and transport emissions divided by the volume of treated water.

The t.CO_2e/ML GHG intensity output figure for treated waste water includes all carbon emissions from waste water 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 waste water for the calculations above have been derived from the volumes of water and waste water as reported in tables 10 and 14 of the Company's AIR18 data.

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 the Company's

developing climate change strategy and in particular it is aligned to Company reporting under the new UK Government Legislation, the Carbon Reduction Commitment Energy Efficiency Scheme.

Assistance to the Auditor and Reporter

The Company has assisted the Auditor to enable informed judgments about the validity of energy usage and carbon emissions return data.

The Company has assisted the Auditor to confirm that the reporting methodology has been applied correctly and has assisted in the audit process as required to confirm that:

- the Company has adhered to the correct carbon accounting boundaries;
- the Company has used appropriate greenhouse gas conversion factors;
- the Company has appropriate and documented systems, management responsibly and sign off, for its carbon accounting submissions;
- the Company can validate the assumptions made and the reasons behind any omissions; and

The Company will assist the Reporter to enable informed judgments about the validity and necessity of returned data.

Omissions

The following areas have been omitted from the AIR18 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.
- Emissions from leakage/maintenance of refrigerant gases from refrigeration and air conditioning equipment.

The GHG emissions associated with the omissions above are believed to be a very small part of the overall GHG emissions reported and as such have no material impact on the data provided.

The GHG omissions above will be addressed in year to enable a fuller return for AIR18 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 (formally DECC) 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 103,527,115 kWhrs recorded in CAW 12.0 sourced from 100% renewable electricity generation for the period 01.04.17 to 31.03.18. 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 company for AIR13 to AIR16 purchased green energy by the same principal though did not have the appropriate evidence to support the green energy as being verified by REGOs.

As the inclusion of green energy in CAW 11.0 (AIR17) drastically reduces the Net Operational Emissions the company has included Table 3 detailing the change in emissions and other applicable data from AIR14 to AIR18 inclusive had the green purchased energy been supported by REGOs and included in all CAWs since 2014.

Table 4 demonstrates the change in Annual operational GHG intensity ratio values as supported by REGO accredited green purchased electricity.

Table 3

Description	Unit	AIR14	AIR15	AIR16	AIR17	AIR18
Gross Operational Emissions	tonnes CO_2e	168,108	187,099	175,585	160,447	143,491
Green Tariff electricity purchased reduction	tonnes CO_2e	-43,511	-74,482	-54,112	-41,296	-36,396
Net Operational Emissions	tonnes CO_2e	123,969	111,526	120,327	118,778	106,816

Table 4

Description	Unit	AIR14	AIR15	AIR16	AIR17	AIR18
Annual operational emissions intensity ratio per Ml of treated water	tonnes CO_2e/ ML	0.154	0.185	0.141	0.143	0.176
Annual operational emissions intensity ratio per Ml of treated sewage (FFT)	tonnes CO_2e/ ML	0.410	0.561	0.467	0.574	0.611
Annual operational emissions intensity ratio per Ml of treated sewage (DI Input)	tonnes CO_2e/ ML	0.638	0.366	0.490	0.376	0.379

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 AIR16 reporting year to AIR18 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. Also, the development of Integrated Constructed Wetlands (ICW) to replace inefficient Wastewater Treatment works. The company has also been able to provide evidence from the 2017/18 reporting year that the green purchased energy is certified REGO accredited electricity.

Taking all these factors in consideration alongside a reduction in the emission factors for 2017/18 against the emission factors for 2016/17 has seen 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	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
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	1,827.79	1,840.54	1,850.27	1,861.58	1,869.17			
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	825.0	828.1	839.7	852.4	863.0			
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	26,710.55	26,712.44	26,728.83	26,778.15	26,837.45			
4	Number of mains bursts (incl Active leakage)	nr	0			5,054	3,611	3,764	3,910	3,634	2,665	2,474	2,299	2,266	1,972	2,135	2,444			
5	Mains bursts per 1000km	nr	1		-	194.6	138.5	142.9	147.9	137.4	100.6	92.7	86.1	84.8	73.8	79.7	91.1			
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	44,499	70,272	98,979	85,239	94,549			
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	1,195	929	841	494	190			
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	0.14	0.11	0.10	0.06	0.02			
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	1,876	1,896	1,876	1,868	1,916			
10	Number of regulatory Iron samples exceeding the drinking water standard PCV	nr	0	46	41	45	34	41	43	35	30	47	36	20	30	25	23			
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	62	43	54	45	48			
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	3.30	2.27	2.88	2.41	2.51			
13	Customer contacts (Discoloured water)	nr	0					4,085	3,840	3,010	2,344	2,464	3,465	2,744	3,179	3,029	2,632			
14	Customer contacts per 1000 population (Discoloured water)	nr	2				-	2.30	2.15	1.67	1.30	1.35	1.90	1.49	1.72	1.63	1.41			
15	Distribution losses	Ml/d	2	141.90	127.76	118.74	111.38	131.49	140.55	130.66	122.02	115.44	127.31	126.08	122.08	123.55	125.44			
16	Company's overall serviceability assessment for water infrastructure	Text	N/A								Stable	Stable	Stable	Stable	Stable	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	4,795	4,635	4,510	4,550	6,245			
18	Number of regulatory samples taken for Turbidity at operational WTWs which exceed 1.0 NTU (excluding PPP)	nr	0					9	16	11	15	8	11	10	3	6	10			
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	40	23	23	16	29	21	19	14	22			
20	Percentage of regulatory samples taken for Turbidity at operational WTWs which exceed 0.8 NTU (excluding PPP)	%	2					0.28	0.76	0.45	0.46	0.33	0.60	0.45	0.42	0.31	0.35			
21	Number of regulatory samples taken for THMs at customer taps	nr	0	1,057	952	704	752	765	784	432	408	392	396	391	388	392	397			
22	Number of regulatory THM samples exceeding the drinking water standard PCV	nr	0	358	239	150	243	141	30	8	3	10	6	4	1	12	6			
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	31	34	44	53	44			
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	7.83	8.70	11.34	13.52	11.08			
25	Events at WTW resulting from treatment difficulties or ineffective treatment categorised as 'significant' or higher	nr	0				14	27	28	12	28	26	15	23	24	15	12			
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	16,118	15,640	15,433	15,213	14,996			
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	26	17	20	15	15			
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	0.16	0.11	0.13	0.10	0.10			
29	Unplanned (reactive) maintenance	%	1										96.4	97.4	98.3	99.0	98.5			
30	Company's overall serviceability assessment for water non-infrastructure	Text	N/A								Stable	Stable	Stable	Stable	Stable	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	15,410.44	15,581.51	15,625.13	15,777.29	15,890.63			
32	Total number of rising main failures	nr	0					25	25	37	26	41	16	11	9	5	12			
33	Total number of gravity sewer collapses	nr	0					1,368	988	1,229	1,191	1,081	1,104	1,325	1,218	1,243	1,192			
34	Total number of sewer collapses	nr	0				677	1,393	1,013	1,266	1,217	1,122	1,120	1,336	1,227	1,248	1,204			
35	Sewer collapses per 1,000km	nr	1			-	47.3	96.3	68.7	84.9	80.6	73.6	72.7	85.7	78.5	79.1	76			
36	Total number of sewer blockages	nr	0				16,912	28,010	26,409	26,230	24,444	20,801	18,062	16,729	15,991	15,755	14,393			
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	1,172.1	1,073.6	1,023.4	998.6	906			
38	sewers)	nr	0						38	34	30	14	14	17	11	15	13			
39	Number of H, M and L pollution incidents from sewer network (CSOs, rising mains and foul sewers)	nr	0						244	221	199	137	149	126	86	102	96			
40	Properties flooded in the year (other causes)	nr	0				366	23	5	28	23	41	55	52	38	47	33			
41	Areas flooded externally in the year (other causes)	nr	0				4,283	7,968	6,872	1,314	Not reported	3,212	3,348	4,379	3,889	3,819	3,466			
42	Total number of equipment failures repaired	nr	0				11,715	10,965	10,882	11,492	11,476	10,333	10,899	11,245	9,986	9,883	9,262			
43	Number of pumping station emergency overflows triggered by equipment failure	nr	0									21	18	22	15	8	9			
44	Number of sewer repairs	nr	0						1,013	1,266	1,217	1,122	1,120	1,336	1,227	1,248	1,204			
45	Company's overall serviceability assessment for sewerage infrastructure	Text	N/A								Stable	Stable	Stable	Stable	Stable	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	8.2	7.8	7.4	6.6	6.6			
47	% of total p.e. served by WwTWs not compliant with numeric consents excluding upper tier failures	%	2	37.00	33.20	23.10	15.50	9.80	8.60	5.08	4.80	1.68	2.40	1.85	1.71	1.31	1.60			
48	Number of BOD, SS and Ammonia sample results recorded for compliance reporting at WwTWs with numeric consents	nr	0	11,234	11,251	11,461	11,524	9,088	8,747	8,585	8,863	9,161	8,938	8,528	8,738	7,027	7,369			
49	Number of BOD, SS and Ammonia compliance sample results which exceeded their numeric consent value	nr	0	652	817	444	297	363	333	361	279	302	370	299	276	283	290			
50	Percentage of BOD, SS and Ammonia compliance sample results which exceeded their numeric consent value	%	2	5.80	7.26	3.87	2.58	3.99	3.81	4.21	3.15	3.30	4.14	3.51	3.16	4.03	3.94			
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	87	60	55	44	51			
52	Small WwTW compliance (works greater than or equal to 20p.e. but less than 250p.e.)	%	2										72.64	76.87	80.72	83.99	87.21			
53	Unplanned (reactive) maintenance	%	1										94.5	96.4	97.8	97.6	98.2			
54	Company's overall serviceability assessment for sewerage non-infrastructure	Text	N/A								Stable	Stable	Stable	Stable	Stable	Stable	Stable			

Table 46 – Serviceability

Line 16 - Company's overall serviceability assessment for water infrastructure

The number of Burst Mains per 1000 km is 91.1 for AIR 18
The output figure for this serviceability indicator for AIR18 shows that the recent trend remains at a level between the lower control limit and the median line for Line 5.

The burst rate shows evidence of an overall declining average trend over the last 5 years
The output for this serviceability measure is "Stable"

In relation to Line 6 "Interruptions to Supply > 3hrs resulting from Equipment failure",

We believe the recent apparent deterioration since AIR 14 is maybe due to the transition to the CIMS methodology, this may require an adjustment to the reference level.
Due to the analysis above, this indicator is considered Stable but we will continue to monitor trends and review as necessary.

All other metrics suggest that the ongoing trends demonstrated above are within their respective upper and lower tolerances (Note: Line 12 AIR 17 figure, for iron samples is below the lower limit.

The burst rate (the Primary Indicator) shows evidence of an average declining average trend (improvement) over the last 5 years with a slight increase over last year's total.
NIW will 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 total annual number of bursts has fallen by approximately 40% in the last 8 years there is a slight increase in the figures since AIR 16 but not thought to be significant as the AIR 18 return is still below the median threshold. The recent slight upward trend needs to be monitored to see if the trend is due to deterioration or increased Leakage activity	Stable

Serviceability Indicator	Line	Current Trend in Relation to Control Parameters	Output
Interruptions to Supply > 3hrs	Line 6	We believe the recent apparent deterioration since AIR 14 is maybe due to the transition to the CIMS methodology, this may require an adjustment to the reference level. Due to the analysis above, this indicator is considered Stable but we will continue to monitor trends and review as necessary. An adjustment to the reference levels may need to be considered for the PC 21 period, in light of better automated data capture systems since 2014.	Stable
DG3 % of Properties Interrupted supply > 12 hrs	Line 8	Although this trend continues to improve, the more recent improvements in the last two years may be more likely to be attributed to changes in a more focused work practice than improved asset performance.	Stable
% of iron Samples Exceeding 75% of PCV	Line 12	The AIR 17 output shows that the ongoing trend has fluctuated around the lowest control boundary for the last 3 years and is therefore stable	Stable
Number of Customer Contacts per 1000 population (Discoloured Water)	Line 14	The graph demonstrates fluctuation of the trend between the upper and median control limits since AIR 15. See above the decreasing number of calls on this issue in an environment of increasing Customer Contacts due to new social media access portals. The Company has arrived at a 'Stable' assessment for this measure.	Stable
Water Distribution Losses	Line 15	Explanatory factor	Explanatory factor
Overall Rating		**Final Explanatory Text**	**Stable**

Primary Indicator

Line 5 – Number of Burst Mains per 1,000km

The number of Burst Mains per 1000 km is 91.1 for AIR 18.
This assessment suggests that burst rates have dropped significantly since AIR10 with six consecutive previous year-on-year improvements between AIR 10 and AIR 16 .Whilst the AIR 18 total remains within the Control Limits.

Detailed data for the reporting period April 17 – March 18 was collated using MWM system reports which when checked and confirmed were transferred onto a summary spread sheet. *A number of 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
2510 – 66 (rechargeable) / 26,837.45km = 0.0911 x 1,000 = 91.07

Total Mains Bursts

The total number of Mains Repairs carried out by NIW was 2510 (including 66no. due to third party damage).

The number of mains repairs carried out by Networks Water function due to non-proactive leakage detection methods was 1394.
The number of mains repairs carried out due to proactive leakage detection methods was 1116.

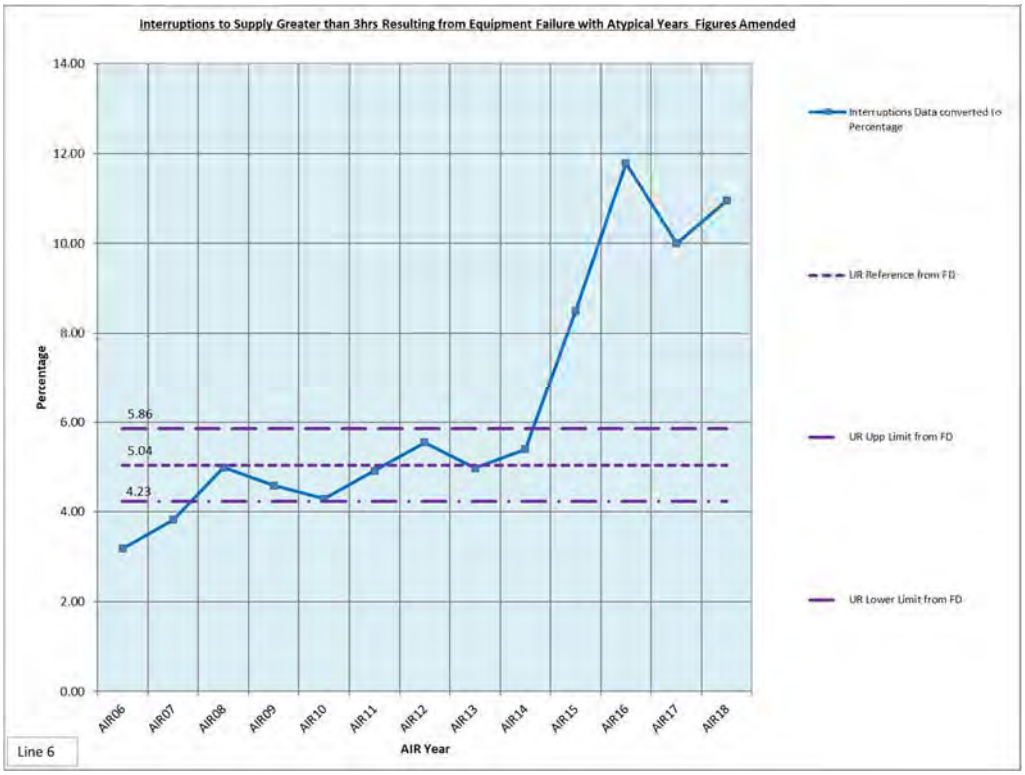
There is a significant increase in the figures across the four months from December through to March compared to AIR 17. During this four month period there were several instances of negative temperatures followed by sharp rises resulting in a noticeable increase in the number of defects. This resulted in elevated burst numbers through both proactive leakage

detection and those reported by customers. The winter period, on the whole, has been markedly more severe than the previous 3 – 4 years.

This Serviceability Indicator is considered as Stable (with two slight increases in the last two years). This trend needs to be monitored and would be a concern if the trend continues upwards in AIR 19 to see if the trend is due to deterioration or increase Leakage activity.

Secondary Indicators

Line 6 – Interruptions to Supply > 3hrs resulting from Equipment failure



The AIR18 outturn has been calculated using the same methodology previously used to calculate the outturns for AIR 8 to AIR 17.
In the AIR 17 period, 14% fewer properties were affected than in the AIR 16, period this decrease was mainly due to a reduction in the number of interruption events involving more than 2,000 properties.

The final figure is calculated from: 94 549 nr divided by 862 988 (The number of communications pipes) = 10.96%.
The output figure is greater than last year, however the weather during the winter of 17/18 was significantly worse than 16/17.

The overall pattern here may suggest a deterioration in Network performance however, on 4 July 2014, the Company introduced the Central Incident Management System (CIMS), aimed at addressing any outstanding issues relating to the reliability of its data on supply interruptions.
The new system ensures that more unplanned, unwarned interruptions are being captured than would previously have been the case and this is helping to improve the accuracy of NI Water's return.

The decision has been taken to exclude from the assessment, all properties affected by interruptions attributed to:

- proactive work, new work and third party interference and

- all properties affected by planned and warned interruptions where it was not possible to positively ascertain the precise cause of interruption from the comments provided
- all properties affected by interruptions attributed to human error
- all properties affected by interruptions to facilitate third parties/NI Water contractors
- all properties affected by interruptions involving the 'above ground' infrastructure since this is the subject of a separate assessment in Table 46

Another reason for the increase in outturn since 2014, is likely to have been the introduction of the weekly circulation of 'no water' complaint reports in the AIR 14 period, enabling Field Managers to determine more accurately, the times and affected properties associated with each interruption event. This is resulting in the identification of additional properties and longer durations than would possibly have been recorded for historical interruptions.

We believe the recent apparent deterioration since AIR 14 is maybe due to the transition to the (C)IMS methodology, this may require an adjustment to the reference level in PC 21. NIW do not believe that the annual figures represented in the graph indicate a deterioration in the Network but rather reflect an improved reporting methodology as:

- The OMIS data consistently indicated stability.
- (C)IMS data shows 3 full years of stability (excluding atypical events such as August Flooding 2017 and atypical cold weather in March 2018) Note: the Dec 2017 cold snap impact is included.
- In this period there were a significant number of single events with large outages. of 2000 properties or so .(See the detailed Commentary for Lines 6,7 and 8)

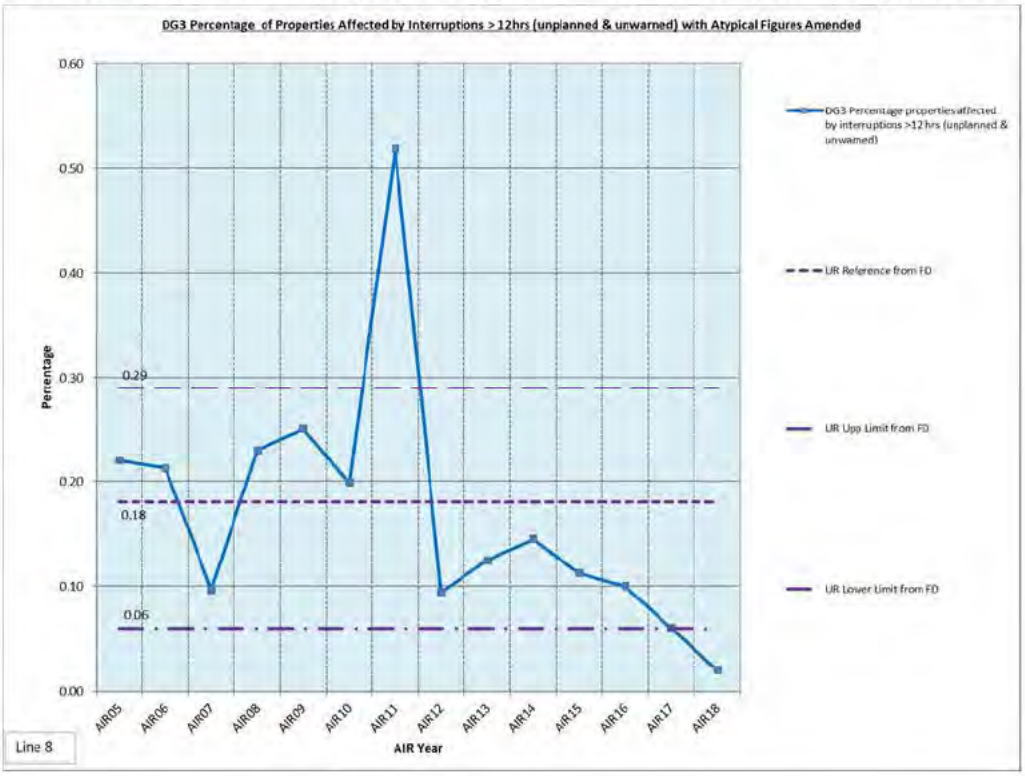
Bearing in mind the above issues which affected the Network in this period ,the following table lists the unadjusted annual actual outturn numbers of unplanned interruption **events** lasting more than 3 hours, more than 6 hours and more than 12 hours in 2015/16, 2016/17 and 2017/18.

	2015/16	2016/17	2017/18
More than 3 hours	781	779	803
More than 6 hours	119	95	81
More than 12 hours	17	12	9

This table further suggests stability in the network for the > 3hours category

Due to the analysis above, this indicator is considered as Stable but we will continue to monitor trends and review as necessary.

Line 8 – DG3 Percentage of Properties Affected by Interruptions > 12hrs



The Figure of 190 properties divided by the number of connected props of 862988 =.0.02%. This suggests a further improvement to this trend.

This figure is looked on a very accurate output, as it has been arrived at by a thorough examination of several individual incidents on a one by one basis by NIW staff.
Therefore, unlike the 3 hour figure above which has been compiled from the new CIMS system which came into use between AIR 15 AND AIR 16, this pattern of improvement is not affected by the automated CIMS data collection.

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 improve, this may be more likely to be attributed to changes in more focused work practices in addressing issues as they happen rather than an improvement in the Network performance.

The outturns are similar for unplanned interruption events lasting more than 3 hours, an indication that the number of asset-related unplanned interruptions has remained unchanged and that asset performance has continued to be stable.

This is consistent with the conclusion reached for Table 46: Line 6: Interruptions to supply greater than 3 hours resulting from equipment failure. The outturn 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.

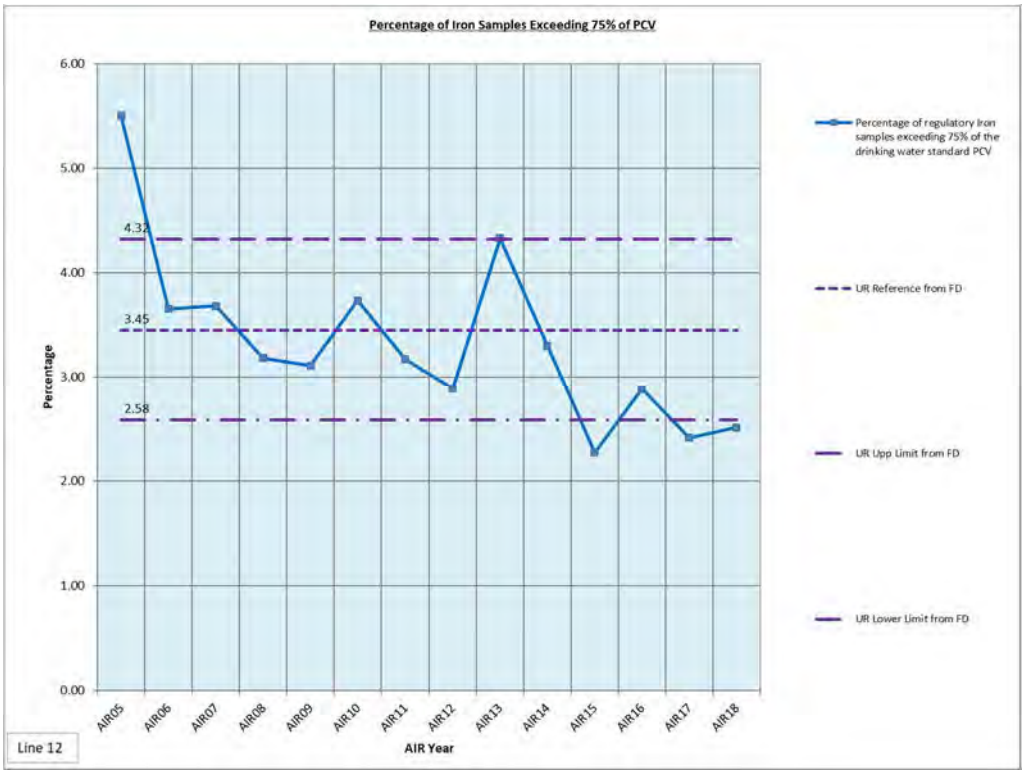
Comment : To date, the impact of initiatives targeted towards improving performance has been greatest on the 'more than 12 hour' time band as the main focus has been on those interruptions that last the longest and which therefore have the greatest potential to inconvenience customers. The Company has a Service Failure Analysis process where all unplanned interruption events lasting more than 12 hours are fully investigated to determine

the root cause and to establish if any lessons can be learnt which could prevent a repeat occurrence of incidents in the future.

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 improve, the continuing 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 AIR 18 output 2.51 % Calculated from a total of 48 (similar to previous years) shows that the ongoing trend has fluctuated around the lowest control boundary for the last 4 years and is therefore **Stable.**

Line 14 – Number of Customer Contacts per 1000 population (Discoloured Water)

The Company has arrived at a 'Stable' assessment for this measure =1.41
(Calculated from the number of Customer Contacts = 2632 divided by the population figure of 1 869 170 = 0.00141 –multiplied by 1000 for this measure = 1.41)

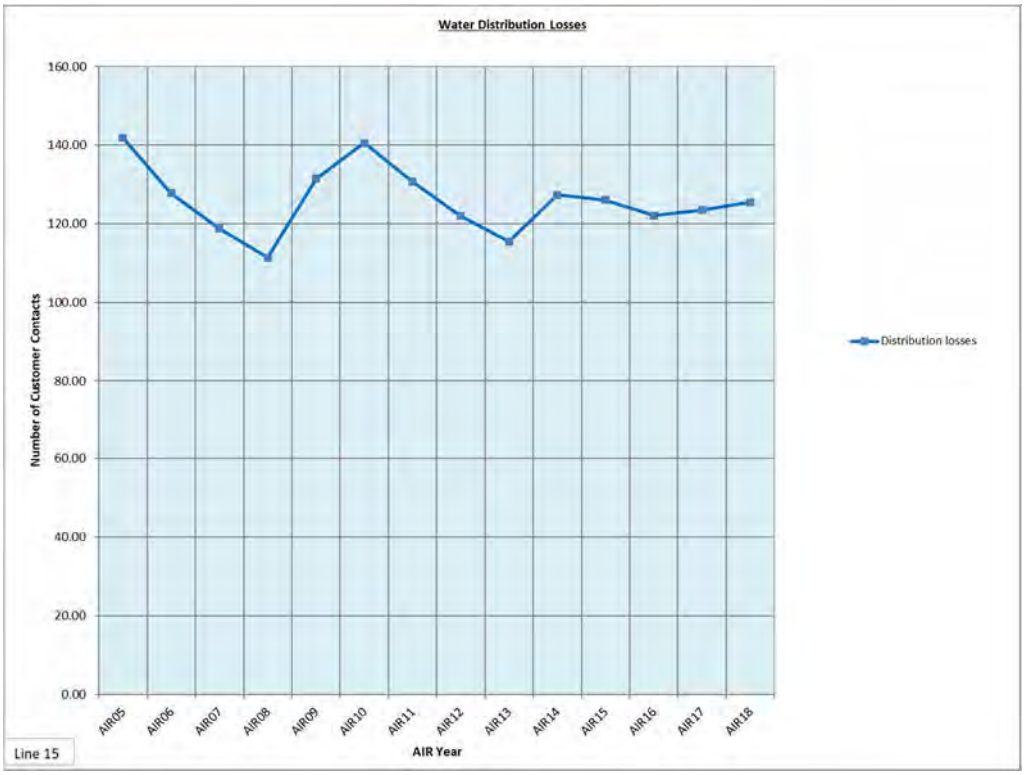
This output suggests that this trend is **Stable** with the current figure just below the median point of the graph with the trend remaining between the upper and median ranges of the graph since AIR 15.

See the actual contacts numbers on this specific issue in the table below showing a reducing annual total over the past three years, in an environment of increasing customer awareness on contacting NIW through telephone and social media.

	AIR 16	AIR 17	AIR 18
Total Customer Contacts in Relation to the Clean water network	62086	64764	67601
Total Customer Contacts on Water Network for Discolouration Issues	**3183**	**3029**	**2632**

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 AIR 18 =125.44 ML/day
The pattern for the past 3 years has been:
AIR 15 = 126.08, AIR 16 = 122.08, AIR 17 =123.55, AIR 18 = 125.44

Distribution losses have risen in AIR 18 because of an increase in reported leakage however, the output for this period is comparable to the previous 3 years level of Water Distribution Losses.

Detailed commentary regarding Leakage reporting is available in AIR 18 Table 10.

Comment –There is an increasing trend in this indicator, in the last two reporting period. The extreme weather events of the past two years have contributed to this pattern. (See more detailed commentary in Table 10).

Line 30 – Company's overall serviceability assessment for water non-infrastructure

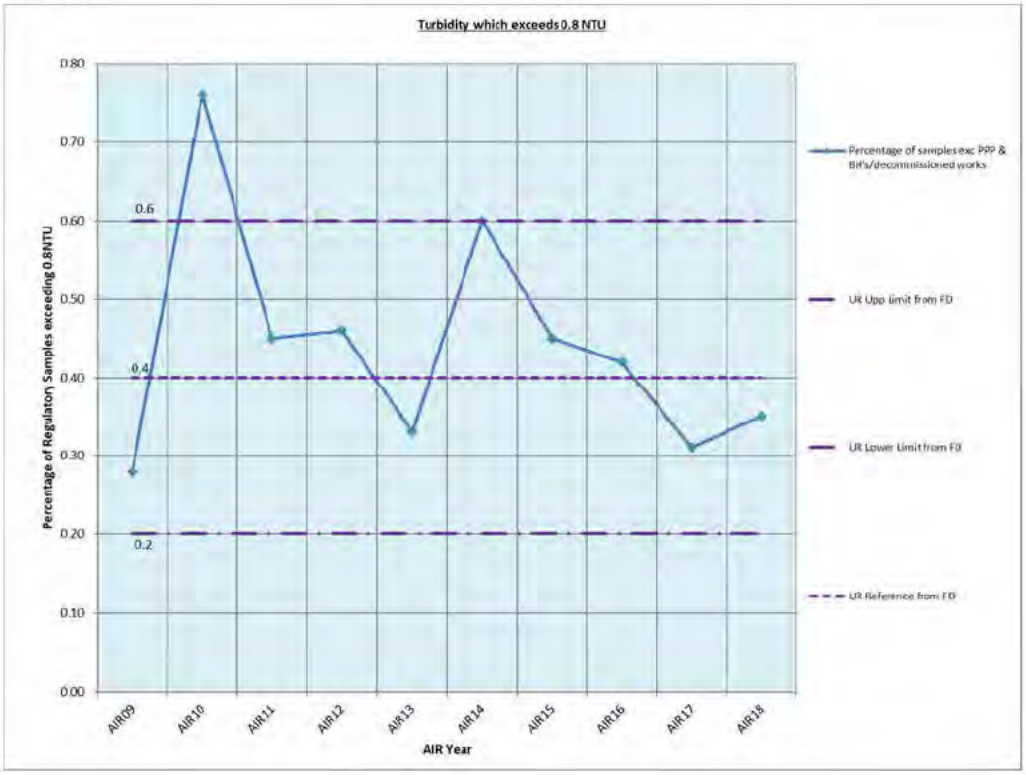
The serviceability assessment has been designated as Stable as the trend analysis associated with the basket of serviceability indicators, used to assess serviceability for water non-infrastructure, with the exception of THM's, are either within, or have outperformed the control limits based on the latest AIR18 information.

This can be seen in the serviceability graphs:

Primary Indicator

Line 20 – Turbidity which exceeds 0.8NTU – excluding PPP & BH's/decommissioned works

The AIR18 figure has remained within the agreed Limits, therefore viewed as Stable.
As the figure for AIR16 was unusually elevated, the Regulator requested NIW 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 above graph depicts the amended reduced figure for AIR16.



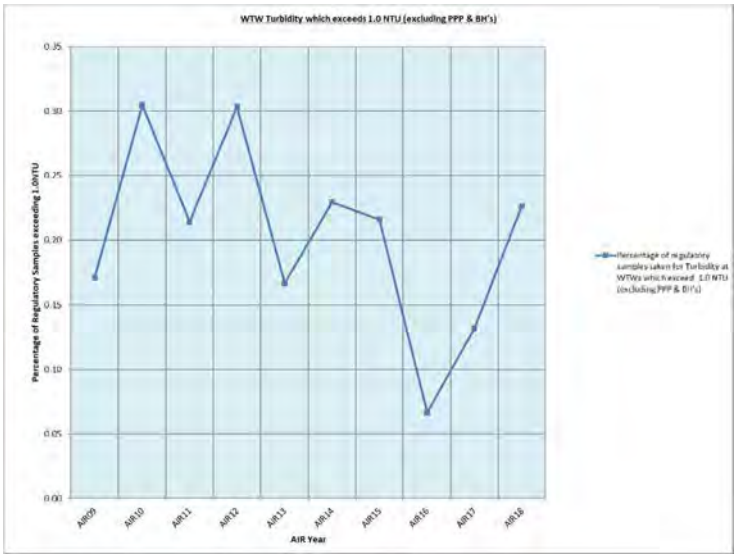
Secondary Indicators

Line 18 - WTW Turbidity which exceeds 1.0 NTU

The "WTW Turbidity which exceeds 1.0 NTU – excluding PPP & BH's/decommissioned works" indicator is neither commented or have limits/references set by the Regulator. It has been included for illustrative purposes only.

As the figure for AIR16 was unusually elevated, the Regulator requested NIW 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 above graph depicts the amended reduced figure for AIR16.



Line 24 - THM Compliance - percentage of samples exceeding 75% of the drinking water standard PCV

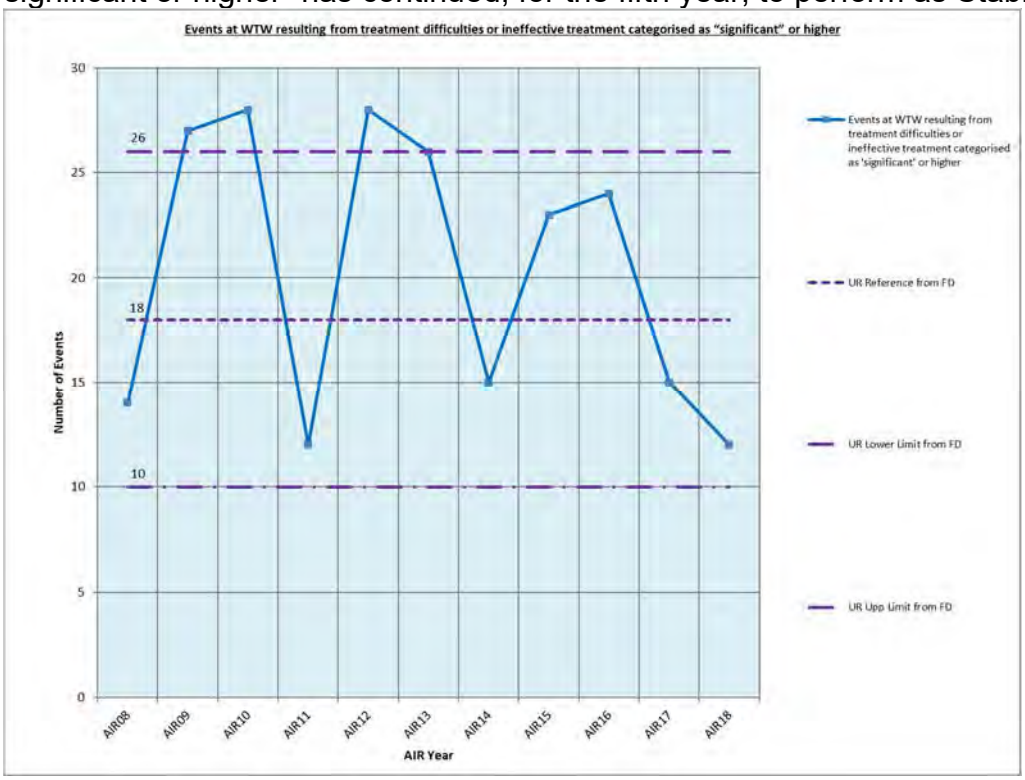
As the AIR17 figure had resulted in a significant cumulative rise above the Upper Limit for the second consecutive year, serviceability for this indicator was seen as Deteriorating. AIR18 has shown improvement from AIR17, but still remains above the Upper Limit, and therefore still Deteriorating.

AIR17 Comments for Information - However as a Secondary Indicator it does not influence the overall Serviceability assessment. It has been noted that there was a slight increase in THM > 75% of the PCV in 2016/17, which was attributed to 12no. exceedances of the THM PCV at customer taps supplied from the following WTW's – Derg, Dungonnell, Caugh Hill, Killylane & Rathlin. 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 was higher in 2016 than in previous years, which would contribute to the increase in concentration and the further exceedance to greater than 75% of the PCV.

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.

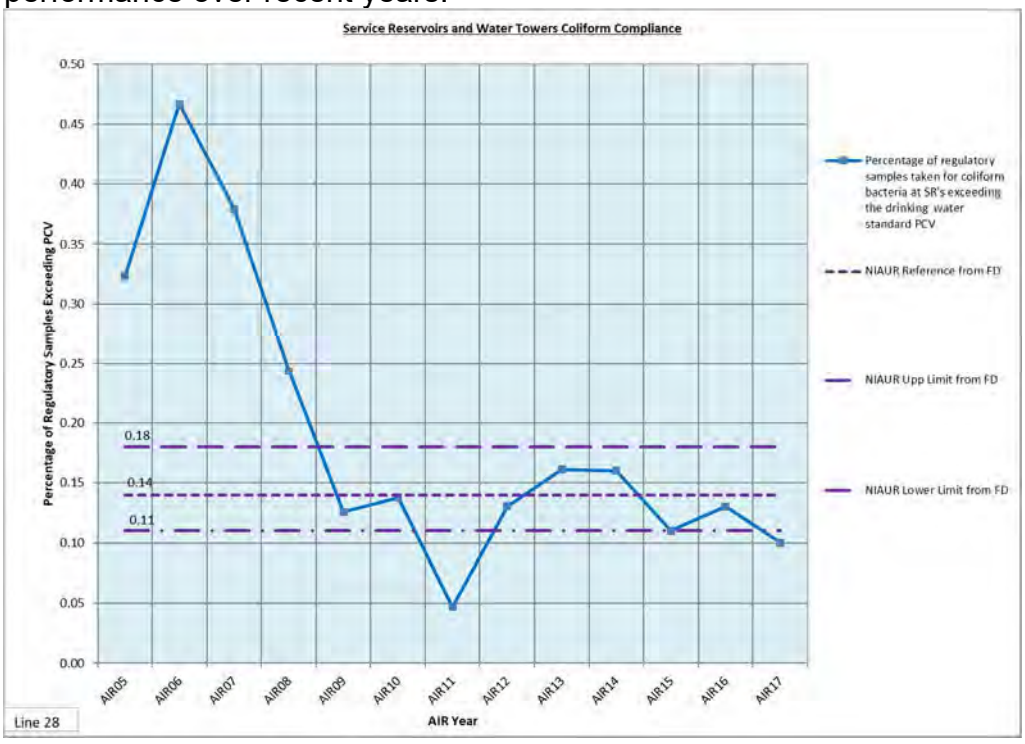
Line 25 - Events at WTW resulting from treatment difficulties or ineffective treatment categorised as "significant" or higher

"Events at WTW resulting from treatment difficulties or ineffective treatment categorised as significant or higher" has continued, for the fifth year, to perform as Stable.



Line 28 - Service Reservoirs and Water Towers Coliform Compliance – Secondary Indicator

"Service Reservoirs and Water Towers Coliform Compliance" has continued to show Stable performance over recent years.

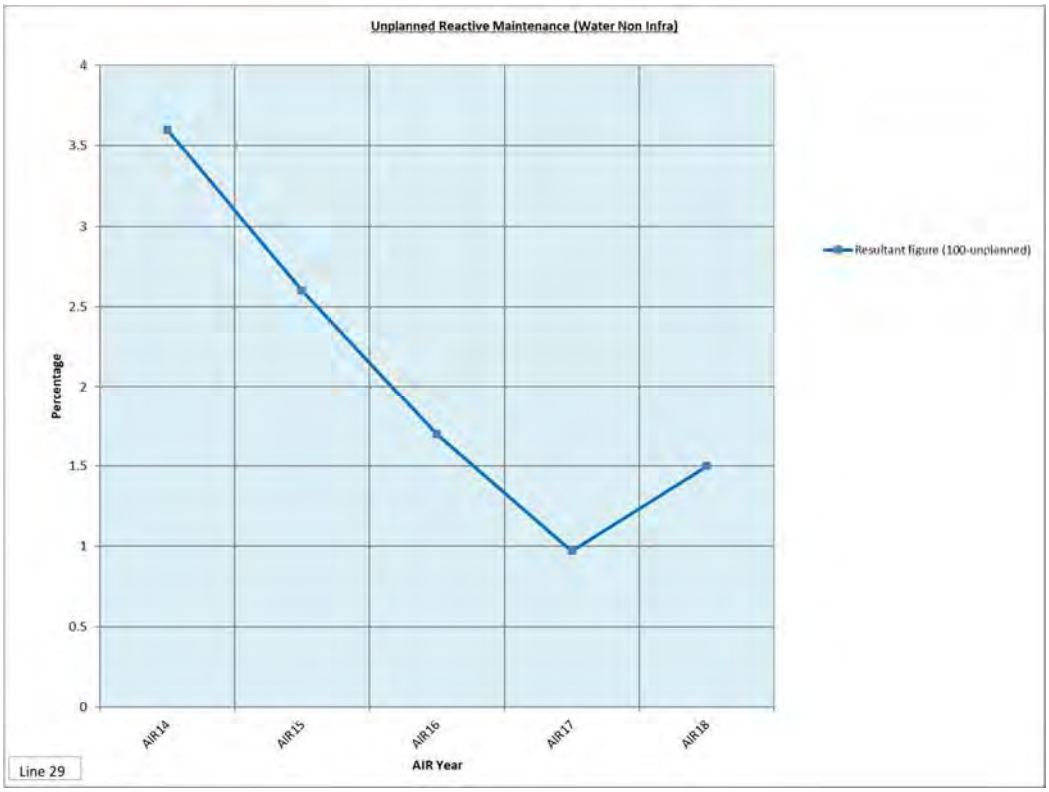


Line 29 – Unplanned Reactive Maintenance (Water Non Infra) – Percentage of Availability of Critical Assets

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, 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/or the prioritisation of capital investment to sites/assets where most required.



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 AIR18 information.

Wastewater Infra Serviceability

Primary Indicator

Line 35 – Sewer collapses per 1,000km

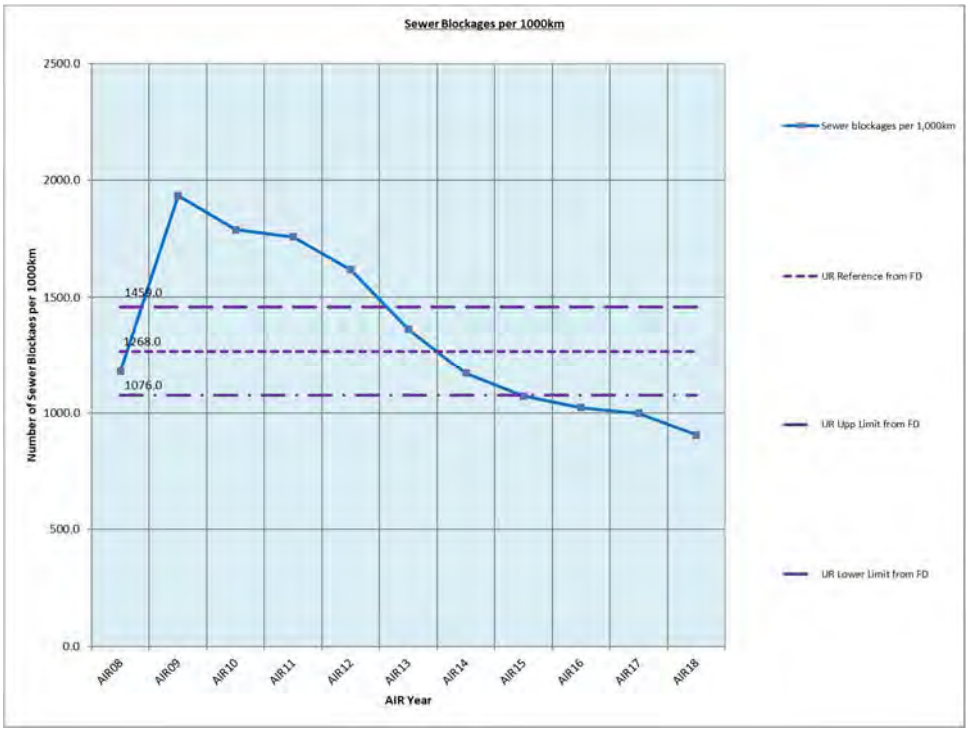
This graph shows the number of collapses reported over the AIR return periods, which would indicate a stable output.

Secondary Indicators

Line 37 – Sewer blockages per 1,000km

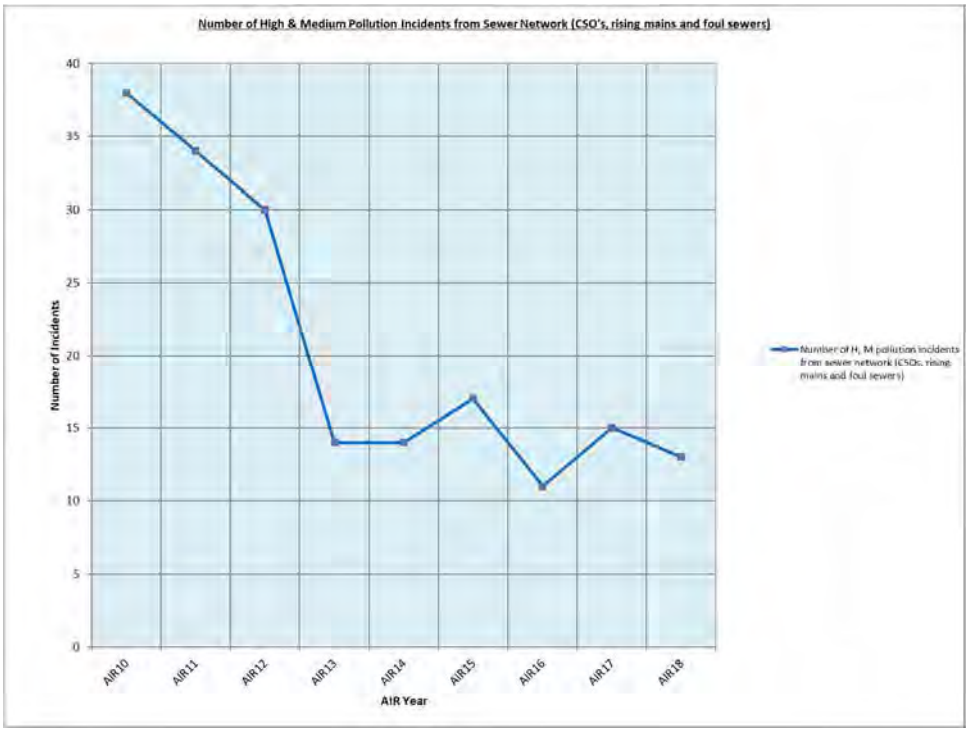
This graph indicates the number of blockages per 1000km over the different AIR return periods, which would indicate an improvement on the output.

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 catchment and an increase programme of CCTV. Is reducing the number of blockages.



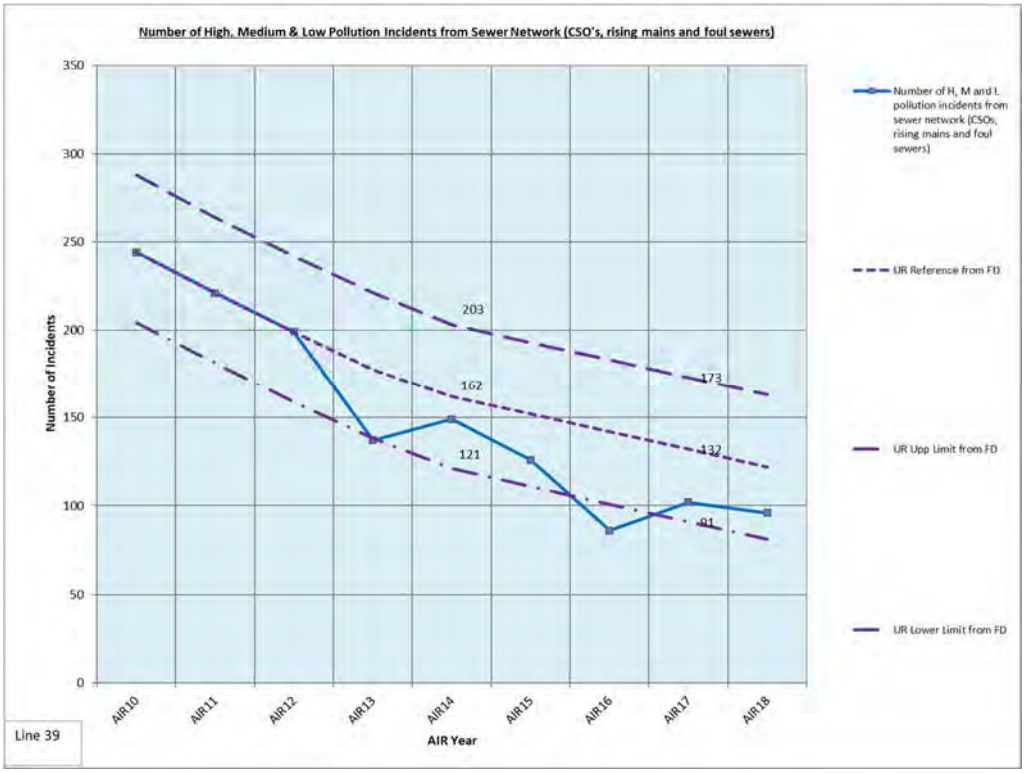
Line 38 – Number of H, M pollution incidents from sewer network

This graph has been submitted for information purposes only.



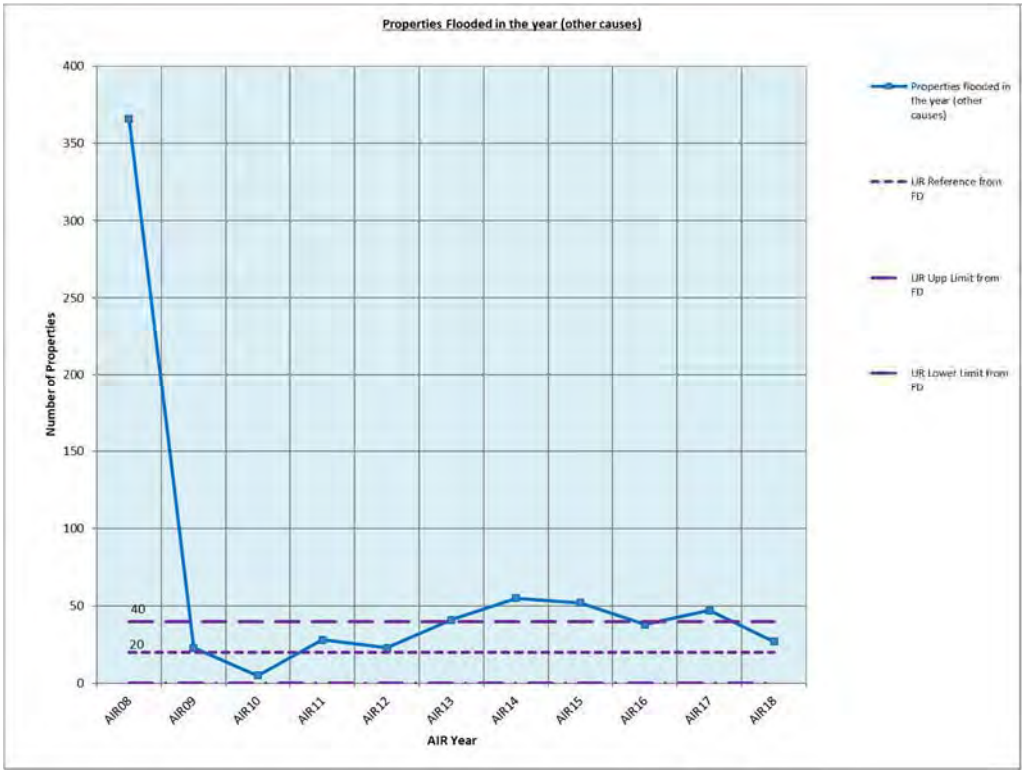
Line 39 - Number of H, M and L pollution incidents from sewer network

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.



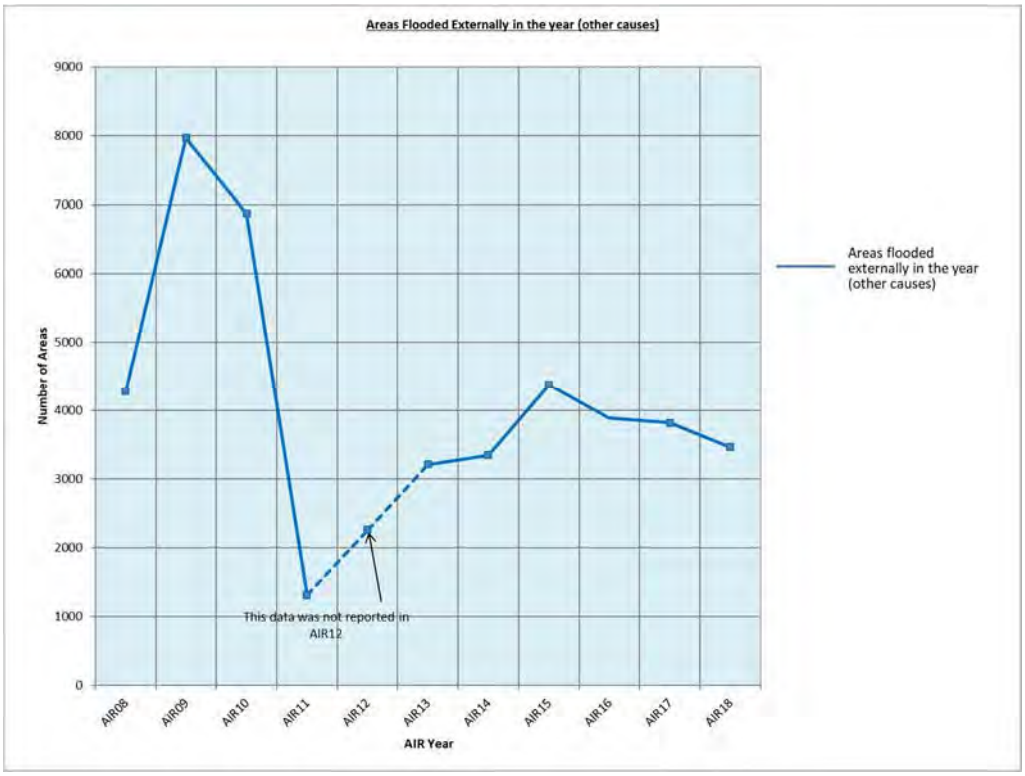
Line 40 – properties flooded in the year

This indicator is to monitor performance and not incorporated in the serviceability assessment. We have kept the reference level and control limits from the FD for information only.



Line 41 – Areas flooded externally in the year

This graph is included for information only.

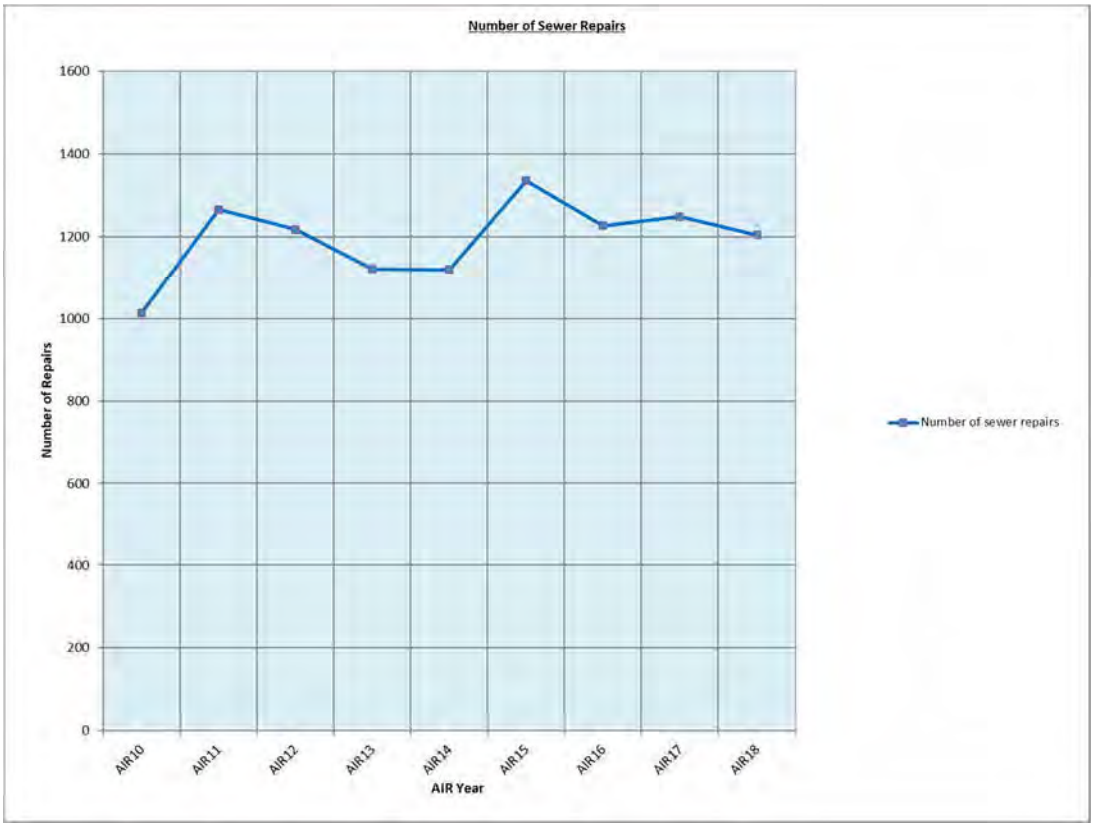


Line 42 – Serviceability - Stable

This graph shows the total number of sewerage equipment failures repaired. Which would indicate an improvement in performance.

Line 44 – Number of sewer repairs

This graph is included for information only.



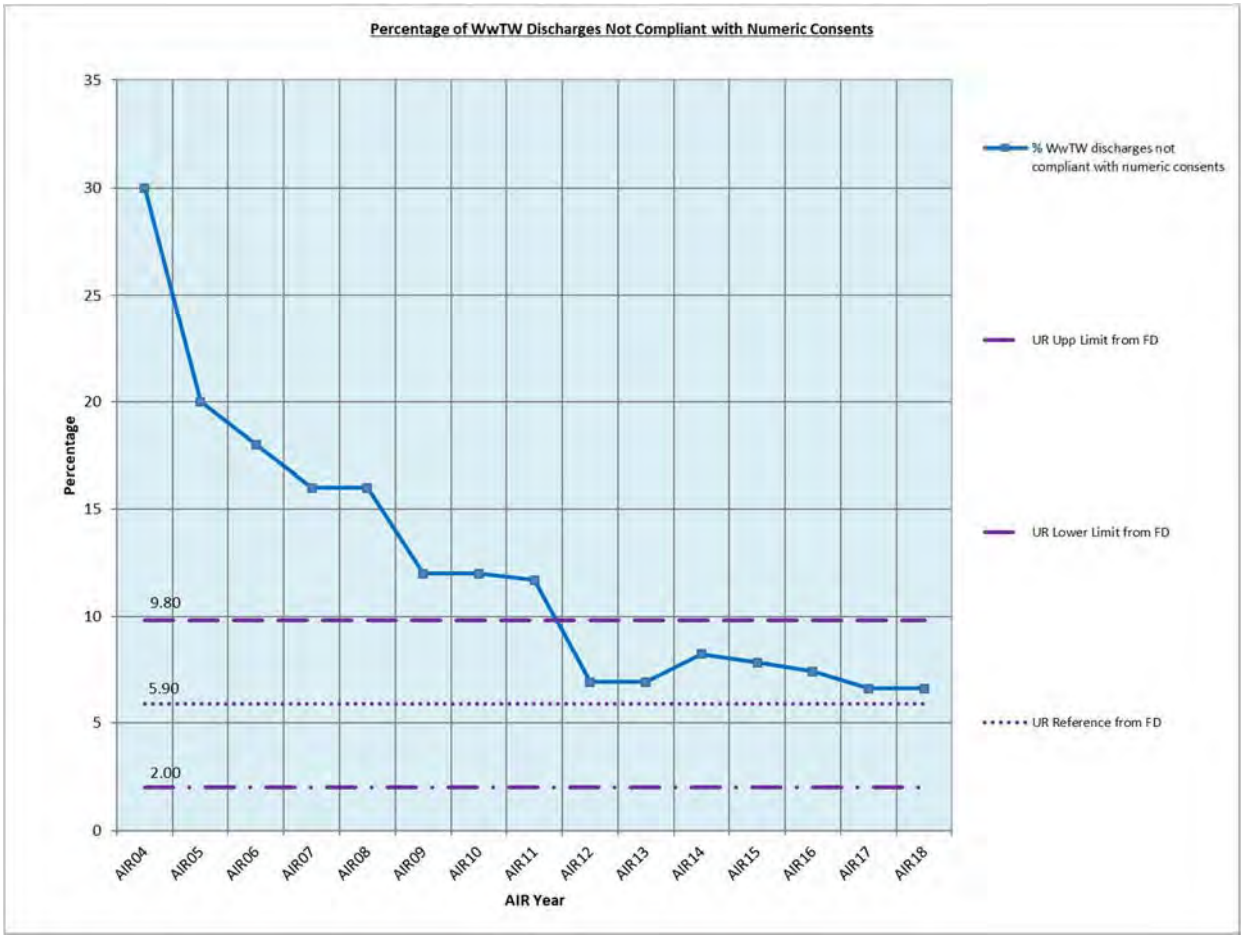
Line 54 – Company's overall serviceability assessment for wastewater non-infrastructure

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 all the indicators are within or below control limits.

Primary Indicator

Line 46 – Percentage of WwTW Discharges Not Compliant with Numeric Consents

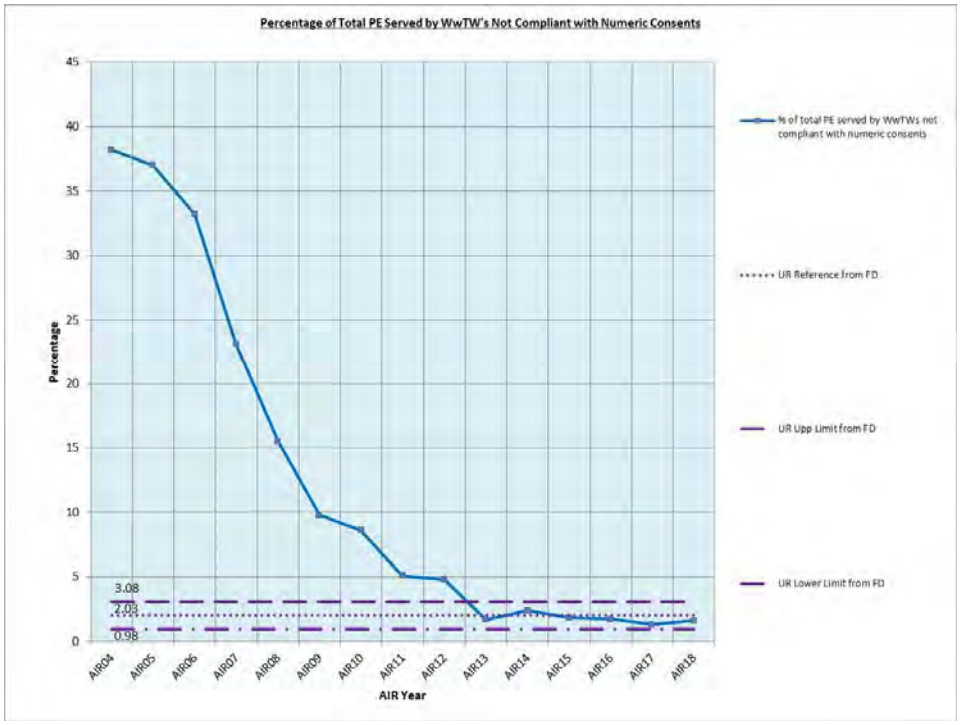
"Percentage of WwTW Discharges Not Compliant with Numeric Consents" has continued to show Stable performance over recent years. The regular investment from Capital Maintenance and Quality driven projects has helped maintain this Stable output.



Secondary Indicator

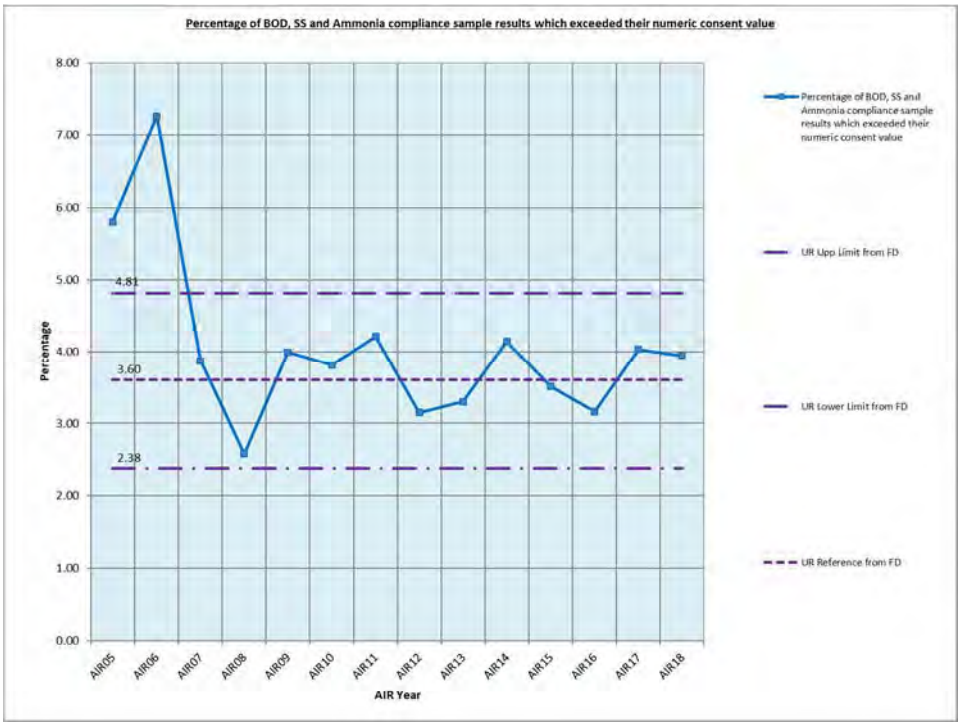
Line 47 – Percentage of Total PE Served by WwTWs Not Compliant with Numeric Consents

"Percentage of Total PE Served by WwTWs Not Compliant with Numeric Consents" has again shown Stable performance.



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 as Stable.



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 the fourth consecutive year out-performed the Lower Limit. This has become evident by both the annual investment in assets and the extensive operational effort.

This has been assessed as Improving.

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 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.

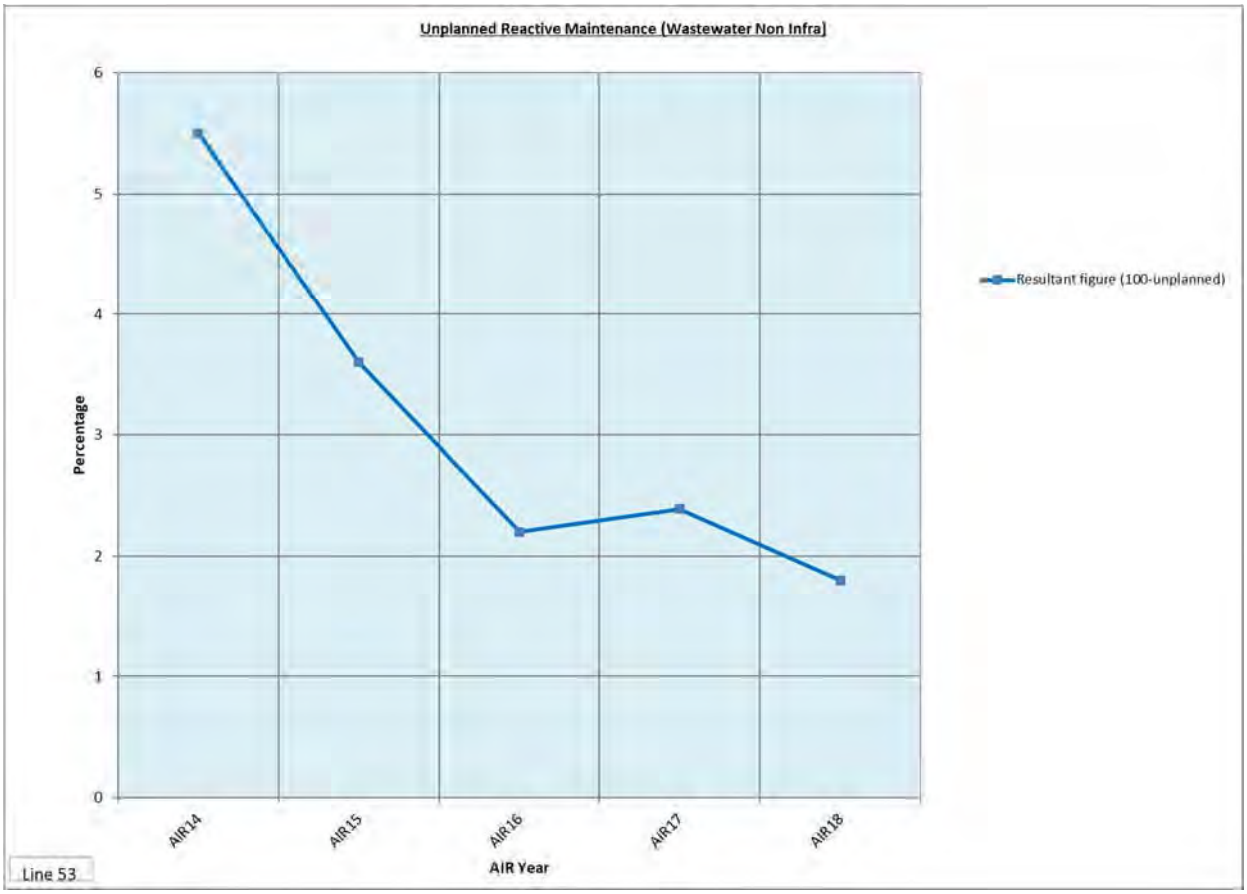


Table 47 - Development Outputs

DEVELOPMENT OUPUT			
1. Development of new consumer measures			
Final Determination: *The company shall report progress on the development of new consumer measures and satisfaction survey outlined in Section 3.7 of the PC15 final determination.*			
GOVERNANCE			
Directorate	**SRO**	**Project Lead**	**Aooroving Authority**
CSDD	Des Nevin	Rod Neill	EC
Additional Details:			
N/A			
PROJECT **SUMMARY**			

• New consumer measures have been developed in conjunction with stakeholders as part of the joint CEOG/CSat working group.
• 4 new metrics were initially agreed by CEOG - 3 Quantitative and 1 Qualitative:
  • total contacts
  • first point of contact resolution (FPOCR)
  • repeat contacts
  • Net promoter score (NPS) style measure
• This was then amended by the CSat group to 3 measures - 2 Quantitative and 1 Qualitative:
  • total contacts (which may move to unwanted contacts)
  • first point of contact resolution (FPOCR)
  • customer advocacy measure (CAM)
• The trial for the new metrics was completed and reported in AIR16.
• They continue to be measured and reviewed by NIW, the UR and CSat group members.
• Although there is currently 2yrs worth of data, it is insufficient to set targets (based on trendline analysis) at the PC15 mid-term review for performance reporting during the second half of PC15.
• The PC15 mid-term review may also result in further adjustments.
• It is anticipated that performance targets for the new measures will now be proposed for inclusion in the PC21 business plan and draft/final determinations.			

KEY MILESTONES		Target	Status
1. Development of new consumer measures and approval by CEOG			**Complete**
2. Complete a trial of new consumer measures		30 Sep 15	**Complete**
3. Complete a trial of a new consumer satisfaction survey		31 Dec 15	**Complete**
4. Go live with a new consumer satisfaction survey		01 Apr 16	**Complete**
5. Report new measures in AIR16		15Jul 16	**Complete**
6. Provide update for PC15 Mid-Term Review (via AIR17)		15Jul 17	**Complete**
7. Propose targets in PC21 Business Plan		Q3 2019/20	On target

Development of new consumer measures

The company shall report progress on the development of new consumer measures and satisfaction survey outlined in Section 3.7 of the PC15 final determination. The company shall:

- *Complete a trial of new consumer measures by 30 September 2015;*
- *Go-live with new consumer measures on 1 April 2016;*
- *Complete a trial of a new consumer satisfaction survey by 31 December 2015; and*
- *Go live with a new consumer satisfaction survey 1 April 2016.*

Activity Completed to date and its outcome

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.

Customer Services has been working extensively on providing an improved customer experience. Under the auspices of the Customer Engagement Oversight Group (CEOG), Customer Services has 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, including the merits (or otherwise) of the current (OPA/DG) regulatory measures.

These new measures include the development of targets and methodologies for:

- Reducing unwanted contacts,
- Resolving customer queries at first point of contact (FPOCR), industry trends show that Customer Satisfaction increases in line with FPOCR increase,
- Reducing repeat contacts, by analysing and understanding the reasons for these contacts, and
- Developing a solution to obtain 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.

The measures above were trialled and reported on for the first time in AIR16.

The customer satisfaction measure has been further developed through the implementation of Voice of the Customer (supported by Watermelon), which will eventually replace the current Allto Survey. This survey will allow us to significantly increase the sampling of customer satisfaction above the current 800 per annum (possibly around 10,000 per annum). It is expected that Voice of the Customer data will be used for AIR 19.

CEOG is currently working on the development of PC21 Customer Research in support of the above.

DEVELOPMENT OUPUT		
2. Plan for Asset Maintenance		
Final Determination: *The company shall provide a clear plan of how it will develop its approach to* asset *maintenance by 30 June 2015 with an interim update by 30 April 2015.* *The plan shall meet the basic requirements set out in Section 4 of the final determination. The company shall report progress against the plan throughout PC15. We shall determine the frequency of reporting once the plan has been developed.*		
PROJECT **SUMMARY**		
A detailed PIO and programme plan have been developed and progress is monitored by the Proiect Board.		
KEY MILESTONES	Target	Status
1. Interim update to UR	30 Apr 15	**Complete**
2. Aooroach document to UR	30 Jun 15	**Complete**
3. Complete visits with sample E/W/S water Co.s	31 Jan 2017	**Complete**
4. Update EC and gain approval on way forward	8 Mar 17	**Complete**
5. Verbal update to UR on progress to date and way forward	16 Mar 17	**Complete**
6. Business Case for Development of CMP Tools AO CIP Aooroval	May 17	**Complete**
7. Provide update for PC15 Mid Term Review (via AIR17)	15 Jul 17	**Complete**
8. Award Contract for Development of CMP Tools	Sep 17	**Complete**
9. Scenario Analysis to inform PC21 draft capital submission	Feb-May 19	On target
10.PC21 Business Plan - Capital Maintenance Plan	Sep-Dec 2019	On target

Summary of Progress since AIR17

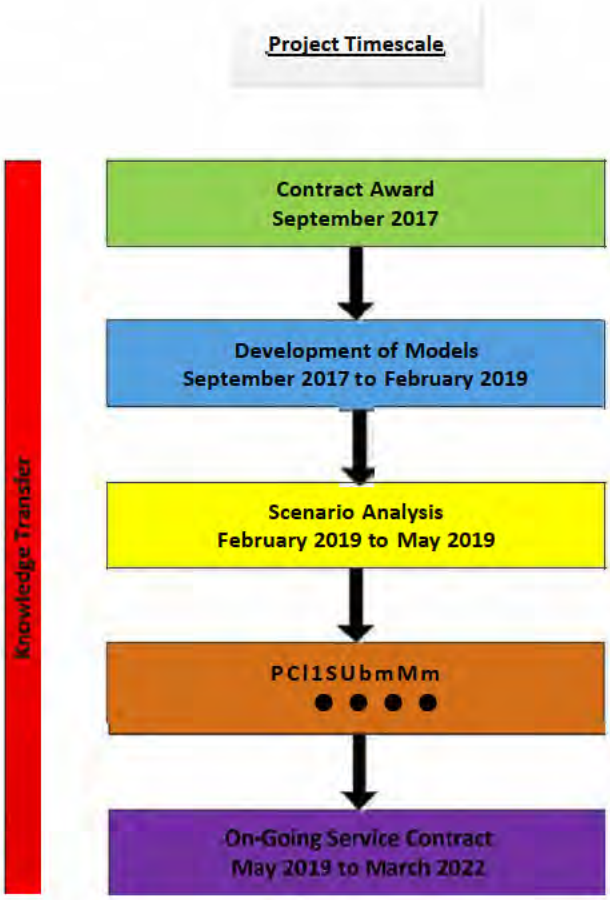
In previous correspondence, NI Water set out its approach to asset maintenance in accordance with the Final Determination Main Report 2014. There have been a number of formal updates since this time including the Development Output update for AIR17 and at a meeting with the Utility Regulator (UR) on the 16th March 2017.

The Development Output update for AIR17 highlighted that a stepped approach for the development of Strategic Planning Tools had been developed. This involved implementing:

- Deterioration Modelling
- Service Impact & Reliability Modelling
- Service Measure Framework

Since this time, NI Water has completed a procurement process to appoint a Service Provider to implement Deterioration Models and Service Impact & Reliability Modelling for all service areas. This also includes knowledge transfer so subsequent to the PC21 submission the tools and systems can be incorporated in-house as BAU.

The contract was awarded to a partnership of Atkins and Servelec Technologies (formerly Tynemarch) who have experience in similar projects within United Utilities and Southern Water. The contract will run from September 17 to March 2022 with key milestones as detailed below:-

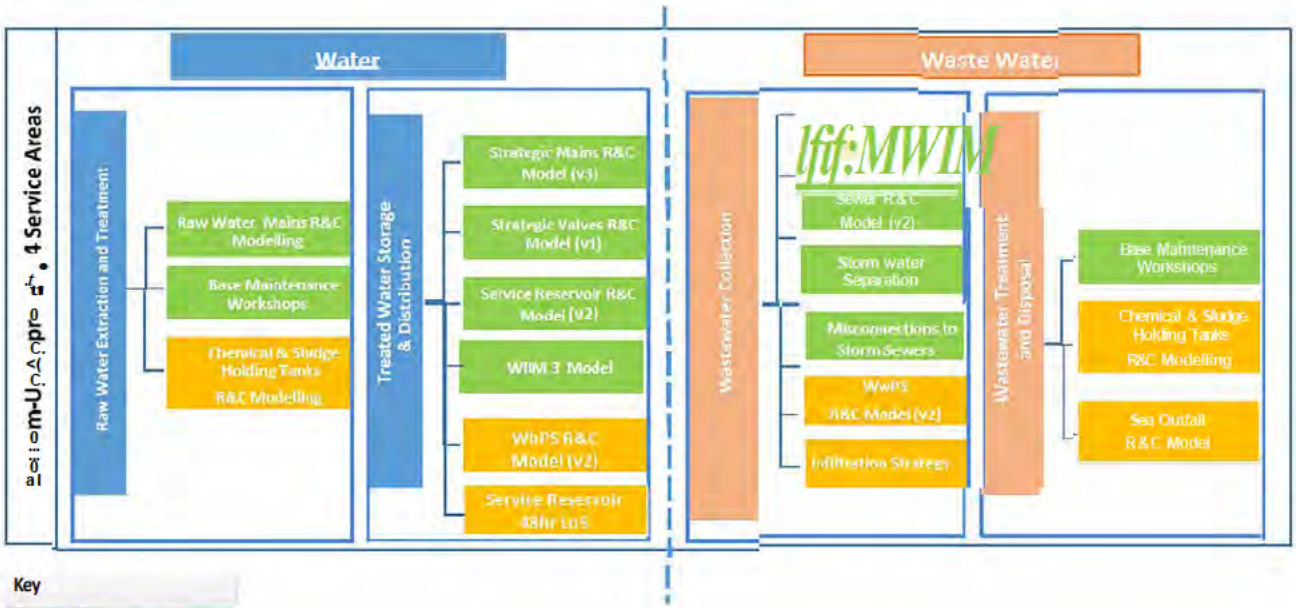


The initial step in the process has been an in-depth review of the NI Water data required to operate the models with infill and elicitation being carried out were required. To date the Service Provider has been impressed with the quality of NI Water data and compares favourably with other Water Utilities they have been involved with. As such they can see no impediment with the development of robust models.

The Service Measure Framework this was completed prior to the procurement of the above models, through the early contractor involvement process, as it shaped the tendered brief. This framework provides a consistent means for NI Water to articulate how the asset base performs now and in the future, and how future expenditure may impact upon service risk. The service risk provides a direct link to Customer Service and was developed using the companies KPIs as the basis.

The various models require cost data to be populated, with draft costs initially required by Mid-.June 2018 and finalised costs by Mid-October 2018. The costs will be based on the outputs of the NI Water Unit Costs Database (UCO) where appropriate, which is currently in development, but given the timeframes it will also necessitate the inclusion of industry data. It should be noted that an element of industry data will be required into the future for those assets we have not built in the recent past such as impoundments or WTWs.

There has also been further development of NI Waters Tactical Investment Planning Tools and the table below highlights the Tactical Investment Tools that are currently in use or under development to assist Capital Maintenance Planning.



These tools have all been developed or enhanced since the PC15 submission and are continuously being refined were appropriate during the current planning period. Since the AIR17 update the 3rd iteration of the Water Investment Infrastructure Model (WIIM3) has been developed and this now incorporates a scoring system which promotes mains for rehabilitation with bursts that cause significant DG3 events.

The Sewer Risk & Consequence Model is currently being reviewed and updated to enable better targeting of sewer assets with a greater emphasis on siltation and Fat,Oil and Grease issues. A Sea Outfall Risk & Consequence model is currently being developed the outputs of which will enhance the PC21 submission.

Since the formal submission of the CMP High Level Roadmap to the UR, the Roadmap information had been translated into a tracking spreadsheet, which was used for detailed project reporting to the Capital Maintenance Planning Group, which has been meeting on a regular basis. However at the Capital Maintenance Project Board Group meeting in December 17 it was agreed that it would be an appropriate time to review the original key initiatives submitted to the UR. This would give an opportunity to simplify these, of which there were 110, and would enable greater clarity to the Project Board and UR.

This work has taken place and in general terms the number of initiatives have reduced to 25 through the amalgamation of various initiatives and 24 of the initial initiatives have been removed as it is thought they are no longer required or relevant. The table below highlights those initiatives no longer included:-

Key Initiative	Reason for Removal
Distribution Mains - Instigate a process for data capture and root-cause analysis associated with future failures and/or adverse service impacts.	This initiative is not deemed practical for Distribution Mains and more relevant for Larger/Strategic Mains
Rising Mains - Develop SIIM to ascertain burst probability based on characteristics of rising main cohorts.	This element will be superseded by the Deterioration and Risk & Reliability model

Key Initiative	Reason for Removal
Rising Mains - The need for a specific Deterioration Model for sewers will also be assessed	This element will be superseded by the Deterioration and Risk & Reliability model
Strategic Mains - Create high-risk system schematics, to link and inform the DWSP risk assessments	Following discussion this aspect would have very little influence on DWSP and therefore can be removed
Strategic Mains - Carry out hydraulic 'critical link analysis' for high-risk systems including modelling of flood impact and review/validate at a high level against actual incident data	This initiative is no longer deemed to be required at this stage. Clean water Flooding was considered a Service Measure but not being taken forward at this stage
Distribution Mains – Develop the risk and consequence aspect of WIIM and determine population at risk of interruption from failure of each main using critical link analysis and review/validate at a high level against actual incident data. WIIM will subsequently be developed with improved data, consequence understanding and validation.	The Risk & Consequence element of WIIM does not require to be developed at this stage as will be covered by the Deterioration and Risk & Reliability Project
SR & CWT - Develop DWSP contingency and mitigation plans (capex / opex), by prioritised SR / CWT risk assessment score	The current DWSP do not link to Capital Maintenance needs and therefore not a relevant initiative
Critical Sewers – Review published repair cost factors against cost of historical repairs	This element is superseded by the development of the UCD
Strategic Mains - Identify contingency plans and potential capex & opex solutions for high-risk systems based on priorities following model updating, linking to the Water Resource Supply Resilience Plan and the DWSPs	This initiative is not deemed relevant to the current Capital Maintenance Planning Process
Intervention Cost Model - Develop a model for analysing opex / capex data	A model for analysing opex/capex data is not deemed appropriate at this stage.
WWTWs > 250PE (inc STCs) – Assess, select and implement a best value planning model	This element will be superseded by the Deterioration and Risk & Reliability models and the subsequent Scenario Analysis carried out after development of the models
WWTWs < 250 PE - Develop a simplified planning spreadsheet.	This element will be superseded by the Deterioration and Risk & Reliability models and the subsequent Scenario Analysis carried out after development of the models
Distribution Mains – Develop the WIIM to model mitigation impacts as performance measures, linking performance and deterioration to impacts, to enable full cost benefit analysis of schemes	This initiative not required as will be covered by the Deterioration and Risk & Reliability Project
WTW – Assess, select and implement a best value planning model	This element will be superseded by the Deterioration and Risk & Reliability models and the subsequent Scenario Analysis carried out after development of the models

Key Initiative	Reason for Removal
Integrated CMP Tool - Define strategic objectives for the Capital Maintenance Planning tool that incorporate regulatory, shareholder and stakeholder views in relation to priorities, risk and balancing investment	These actions would all appear to link to SCIM either directly/indirectly. Based on the agreed stepped approach an Overall Optimising tool is not being developed in this stage. Regulatory, shareholder and stakeholders views are directly incorporated within the Service Measure Framework that is being used to develop models and also Cost of Failure should include outputs from Customer Willingness to pay were appropriate. These are covered in other actions.
Integrated CMP Tool - Develop a formal methodology to balance capital maintenance needs, projects and budgets	
Integrated CMP Tool - Review and assess existing (SCIM) and potential capital investment prioritisation tools	
Integrated CMP Tool - Develop and implement the appropriate capital investment prioritisation methodology or tool by March 2017	
Integrated CMP Tool - Implement trial run of the prioritisation tool with available data	
Top Down Methodology- Build on the PC15 top down approach (using serviceability and capital maintenance costs) to include consideration of excess opex costs incurred in maintaining service	The Risk & Reliability modelling should identify the Opex costs associated with Asset Failure and predict, if no interventions, what these are likely to be in the future. The excess operational costs incurred in maintaining service would not currently be possible to predict given the systems available. This element is unlikely to progress for PC21.
Top Down Methodology - Review alternative top-down benchmarks in context of the S&EG and other (ministerial) constraints to validate bottom up capital maintenance outputs	Unsure how this could be actioned in PC21 and currently not deemed relevant to the robustness of the developed solution.
Sea Outfalls - Develop a simplified planning spreadsheet. Best Value Planning Tools Wastewater Non-Infra	This element will be superseded by the Deterioration and Risk & Reliability models and the subsequent Scenario Analysis carried out after development of the models
Raw Water Trunk Mains Best Value Planning Tools Water Infrastructure	This element will be superseded by the Deterioration and Risk & Reliability models and the subsequent Scenario Analysis carried out after development of the models
Raw Water Intakes and Pumping Stations - Best Value Planning Tools Water Non-Infra	This element will be superseded by the Deterioration and Risk & Reliability models and the subsequent Scenario Analysis carried out after development of the models

The table below highlights the rationalised list of Key Initiatives with the latest update

Number	Initiative Type	Key Initiative Overview	Delivery Milestone	Complete	Latest Update
1	General	Development of a CMP High Level Roadmap and an initial framework of Key Service Targets	Q4 16/17	Y	A high level Roadmap & PID were developed for the project and have been approved by the Project Board, this included an initial framework. Subsequently it was agreed at Dec 17 Project Board it would be an appropriate time to review the original key initiatives submitted to NIAUR. This would give an opportunity to simplify these, of which there are a 110, and would enable greater clarity to the Project Board and NIAUR.
2	General	A Capital Maintenance Planning Guide to be developed to ensure developed models can be maintained, enhanced in the future and support future Business Plans	Q1 18/19	On-Going	As part of the Deterioration and Risk & Reliability Modelling Project an assessment of NI Water data is on-going. This assessment will highlight areas were data issues/gaps and indicate what improvements should take place. In relation to the Tactical Models these in the main are established as BAU with on-going review/improvements were appropriate.
3	General	The Development a Service Measure Framework that links to NI Waters KPIs. The Service Measure Framework should be used shape any risk and reliability models developed and link to the latest customer priorities where appropriate.	Q2 19/20	Y	A Service Measure Framework based around NI Waters KPIs has been developed and reviewed/approved by the Project Board. The current Risk & Reliability Models are based around these Service Measures were appropriate.
4	General	The Development of both Capex and Opex Cost Models are required to support the PC21 Capital Maintenance Submissions. This should include proposals for continual improvement and enhancement	Q3 18/19	On-Going	The development of Cost Models are on-going. To ensure the outputs are available to support Deterioration and Risk & Reliability Modelling Project additional resource has been procured to accelerate the process.
5	General	Consequence of Failure Costs linked directly to the Service Measure Framework to be developed. These are to be used to support the Risk & Reliability Modelling.	Q3 18/19	On-Going	Following a series of meetings with staff from across the business an initial draft of consequence of failure costs has been developed in-house based om the Service Measures. This is currently being reviewed by the Service Provider.
6	General	Implement an annual review of serviceability performance and assess how the capital maintenance delivered in Pc15 has influenced the indicators.	Q4 18/19	On-Going	This is ongoing as BAU as part of the AIR process.
7	General	Where appropriate staff development should be arranged to develop in-house skills to ensure the continued maintenance and enhancement of various models. This should be balanced against outsourcing additional resources and capabilities were required.	Q2 19/20	On-Going	As part of the Deterioration and Risk & Reliability Project there is a specific element of Knowledge Transfer. This will be delivered throughout the life of the project and will ensure NI Waters ownership of the process without an ongoing dependence on 3rd parties.

Number	Initiative Type	Key Initiative Overview	Delivery Milestone	Complete	Latest Update
8	Water Infra - Raw Water Trunk Mains, Trunk Mains & Strategic mains	Improve Asset Knowledge through available techniques such as root-cause analysis of failure, pro-active condition assessment, enhanced processes for data capture and using all relevant datasets were appropriate.	Q4 18/19	On-Going	As BAU all bursts are linked to specific Assets The models are updated regularly to reflect the latest Carto Map data, including third party data. A project was initiated to assess cut-outs for condition grading of mains >300mm, however the current costs of these inspections are somewhat prohibited to advance the process as BAU. The Deterioration and Risk & Reliability Models will identify data gaps and develop infill and elicitation techniques to improve the data. This data will subsequently fed back into Cartomap.
9	Water Infra - Raw Water Trunk Mains, Trunk Mains & Strategic mains	Assess the Likelihood & Impact of Asset failure to include consequential cost/score linked to developed Service Measure Framework were applicable	Q4 18/19	On-Going	The Deterioration and Risk & Reliability Project is currently ongoing and this will model the predicted failure and consequence of all Raw Water Trunk Mains, Trunk Mains & Strategic Mains. The consequence is directly linked to the Service Measure Framework and there are 10 Service Measures relating to these assets. In addition there have been ongoing improvements to the Strategic Main Tactical Models (incl Trunk Mains) including ongoing review of scores and weightings, updates with latest data were applicable.
10	Water Infra - Raw Water Trunk Mains, Trunk Mains & Strategic mains	Identify Intervention Options and Impacts/Benefits of Approach	Q4 18/19	On-Going	Cost/Benefit exercises of the various potential approaches are being assessed for Pc21
11	Water Infra - Sluice Valves	Prioritise critical sluice valves for intervention (based on risk and consequence approach) and identify capital need	Q4 18/19	On-Going	NI Water has recently embarked on a Strategic Valve Pilot analysis. The initial Project identified 100 critical valve interventions on the top 100 critical strategic mains. The associated site work will take place in Q3 18/19. This scheme could potentially be extended dependant on the assessed cost/benefits of the pilot and the outputs could form part of the PC21 submission for additional investment. In addition a new sluice valve layer in Car2Map and an associated app is currently being developed. This app will enable the leakage section to record the open/close status of valves on a live layer and identify those were an intervention is required.
12	Water Infra - Distribution Mains	Improve Asset Knowledge through enhanced processes for data capture, development of cohorts were applicable	Q4 18/19	On-Going	All models are updated regularly to reflect the latest CartoMap data, including the latest available third party data that will improve the model outputs. There have been ongoing improvements to WIIM and the 3rd iteration of the model has been developed and this now incorporates a scoring system which promotes mains for rehabilitation with bursts that cause significant DG3 events. The outputs from the model are used to identify the schemes for inclusion within the Water Mains Rehab programme for which £20m is invested annually The Deterioration and Risk & Reliability Models will identify data gaps and develop infill and elicitation techniques to improve the data. This data will subsequently fed back into Cartomap. Rather than use cohorts individual pipes or parent lengths will be modelled and this will enable the models to identify specific mains for improvement.

Number	Initiative Type	Key Initiative Overview	Delivery Milestone	Complete	Latest Update
13	Water Infra - Distribution Mains	Assess the likelihood and Impact of Asset failure to include consequential cost/score linked to developed Service Measure Framework were applicable	Q4 18/19	On-Going	The Deterioration and Risk & Reliability Project is currently ongoing and this will model the predicted failure and consequence of all distribution mains. The consequence is directly linked to the Service Measure Framework and there are 10 Service Measures relating to these assets. To further improve the process available network models are being used to provide additional data for use in the clean water infra deterioration and risk models which will result in significant improvements to the modelling of the mains failures / consequences over the original scope approach. In addition there have been ongoing improvements to the Tactical Models including ongoing review of scores and weightings, updates with latest data were applicable
14	Water Infra - Distribution Mains	Identify Intervention Options and Impacts/Benefits of Approach	Q4 18/19	On-Going	Cost/Benefit exercises of the various potential approaches are being assessed for Pc21
15	Water Infra - Service Reservoirs & CWTS	Improve Asset Knowledge through available techniques such as integrating SR Inspections with Cleaning/Maintenance Programme and development of robust Risk Assessments	Q4 18/19	On-Going	In regards to the Tactical SR & CWT model the cleaning maintenance programmes have been integrated with the SR inspections as BAU. Robust Risk Assessments have been developed for data capture as part of the inspections and a review group has been established. The DRRM project will look at CWTs as part of the WTWs aspect but does not cover SRs which are sufficiently covered by the Tactical SR & CWT models.
16	Water Infra - Service Reservoirs & CWTS	Continual development of the SR Risk and Consequence Model including costed asset condition assessment programme and assessment of economic level of service risk	Q4 18/19	On-Going	The SR Risk and Consequence models are established as BAU with on-going improvements.
17	Water Infra - Service Reservoirs & CWTS	Identify Intervention Options and Impacts/Benefits of Approach	Q4 18/19	On-Going	Cost/Benefit exercises of the various potential approaches are being assessed for Pc21
18	Waste Water Infra – Critical Sewers/Rising Sewers/Other Sewers/CSO & Ancillaries	Improve Asset Knowledge through enhanced processes for data capture, the prioritising of CCTV Surveys, Sensitivity of CSO Locations, etc.	Q4 18/19	On-Going	In regards to the Tactical Sewer Risk and Consequence and SIIM Models, critical sewers are included within these. CSO monitoring project is ongoing which should eventually cover all CSOs within 2km of Shellfish & Bathing waters. A Risk and Consequence Model for Rising Mains is currently under development. CCTV surveys are being prioritised and the information is being used to feed back into models. The information is also being recorded on the corporate systems. The Deterioration and Risk & Reliability Models will identify data gaps and develop infill and elicitation techniques to improve the data (with the exception of CSOs). This data will subsequently fed back into Cartomap.
19	Waste Water Infra – Critical Sewers/Rising Sewers/Other Sewers/CSO & Ancillaries	Assess the Likelihood & Impact of Asset failure to include consequential cost/score linked to developed Service Measure Framework were applicable	Q4 18/19	On-Going	The Deterioration and Risk & Reliability Project is currently ongoing and this will model the predicted failures associated with Sewers and the consequence of these failures. The consequence is directly linked to the Service Measure Framework and there are 7 Service Measures relating to these assets. The Weightings used for the tactical models are reviewed on an annual basis
20	Waste Water Infra – Critical Sewers/Rising Sewers/Other	Identify Intervention Options and Impacts/Benefits of Approach	Q4 18/19	On-Going	Cost/Benefit exercises of the various potential approaches are being assessed for Pc21

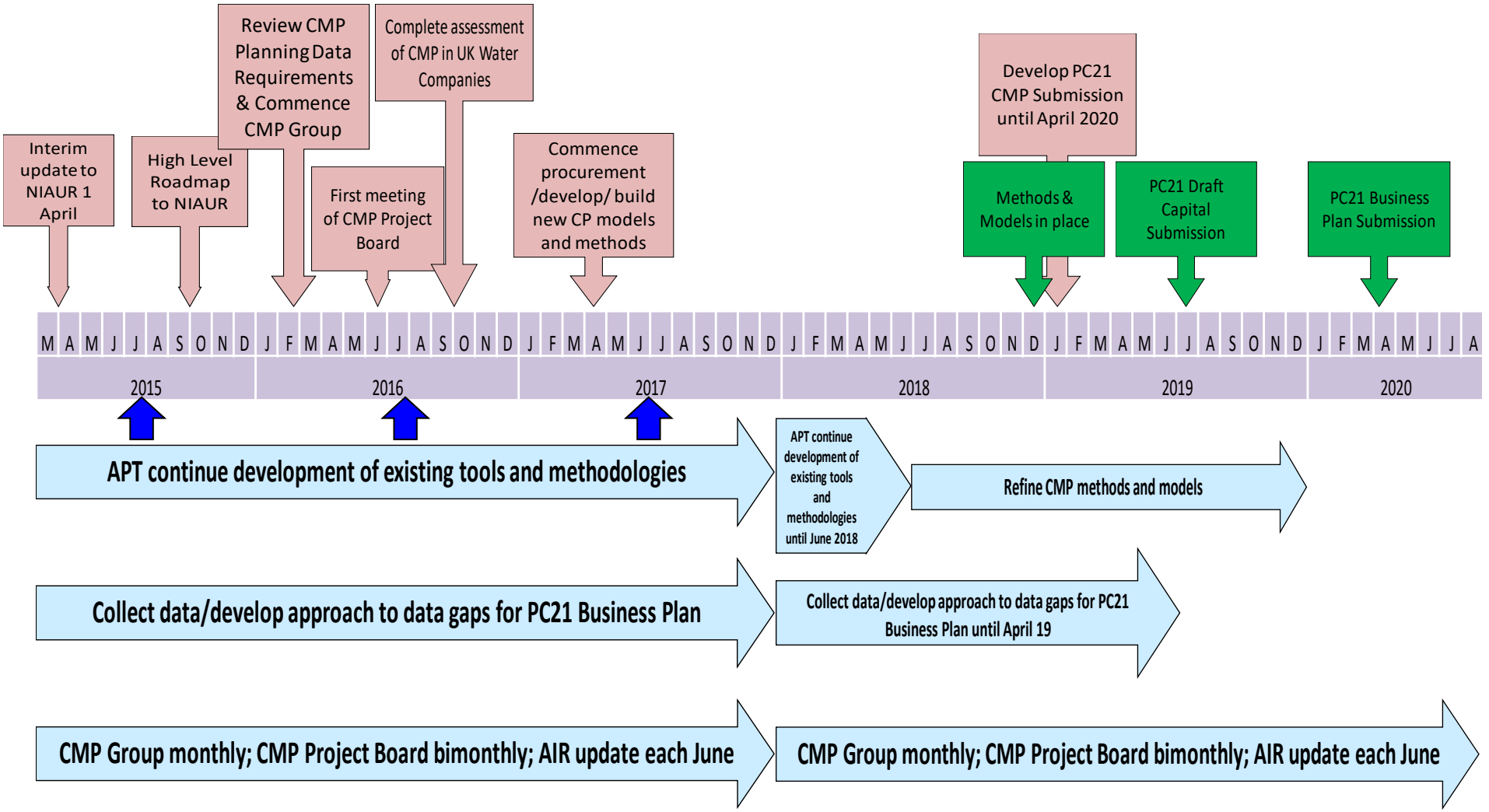
Number	Initiative Type	Key Initiative Overview	Delivery Milestone	Complete	Latest Update
	Sewers/CSO & Ancillaries				
21	Water and Wastewater Non-Infra - WTWs/Raw Water Intakes/PS/WWTWs/WWPS/Sea Outfalls	Improve Asset Knowledge through enhanced processes for data capture This to include improve data capture from MWM, enhanced access to corporate systems, through Business Analytics, such as telemetry data were applicable	Q4 18/19	On-Going	In regards to the Tactical Non-Infra Base Maintenance a risk methodology has been developed. This captured Criticality and Time to Repair/Replace from Expert Panels. The Asset Data Quality Sustainability group has been established to ensure the information on repair/interventions at Asset Level are being recorded correctly and feeding back to corporate systems. Asset Performance have carried out some preliminary work with ICT to develop Asset Performance Business Analytics to assist in improved processes. A 'Data Specification' document is being developed to identify the most beneficial data to be collating. The SCADA system has been investigated to establish how beneficial this data maybe to assist in the CMP Process. Currently there is no way to access data on a global scale and therefore will not be used to assist the PC21 submission. The Deterioration and Risk & Reliability Models will identify data gaps and develop infill and elicitation techniques to improve the data. This data will subsequently fed back into Cartomap.
22	Water and Wastewater Non-Infra - WTWs/Raw Water Intakes/PS/WWTWs/WWPS/Sea Outfalls	Assess the Impact of Asset failure to include consequential cost/score linked to developed Service Measure Framework were applicable	Q4 18/19	On-Going	The Deterioration and Risk & Reliability Project is currently ongoing and this will model the predicted consequences associated with the failure of Non-Infra Assets. The consequence is directly linked to the Service Measure Framework and there are upwards of 9 Service Measures relating to these assets. The Weightings used for the tactical models are reviewed on an annual basis
23	Water and Wastewater Non-Infra - WTWs/Raw Water Intakes/PS/WWTWs/WWPS/Sea Outfalls	Identify Intervention Options and Impacts/Benefits of Approach	Q4 18/19	On-Going	Cost/Benefit exercises of the various potential approaches are being assessed for Pc21
24	Water and Wastewater Non-Infra - WTWs/Raw Water Intakes/PS/WWTWs/WWPS/Sea Outfalls	Review and Develop the approach to standard asset lives, include benchmarking were possible	Q4 18/19	On-Going	Asset Performance have carried out some preliminary work with ICT to develop Asset Performance Business Analytics to assist in improved processes and this will include Asset Lives were applicable. As part of the outputs of the Deterioration and Risk & Reliability Model asset life information will be assessed. This will look at the Maximum/Minimum/Median age of replacement.
25	General	MEAV analysis to be carried out for PC21, to provide an alternative top down assessment of future replacement costs of non-infrastructure assets	Q4 18/19	On-Going	Initial discussions taking place to establish how best to take MEAV forward.

The Next Steps

The next steps in the development of NI Water's 'Plan for Asset Maintenance' include:

1. The initial draft Water & Wastewater Deterioration Models to be completed by June 18 and an initial draft of cost data is required at this time.
2. A series of Water & Wastewater Non-Infra workshops to be held with key CSDD staff during June 18. The outputs of these workshops will assist in the development of the Service Impact and Reliability Modelling for Non-Infra Assets.
3. Further development of the CMP methodologies and tools which currently exist within NI Water
4. Continuation of Project Board Meetings to review progress, understand risks and endorse the key strategic decisions.

Capital Maintenance Planning - Key Inputs & Milestones



DEVELOPMENT OUPUT		
3. Preservation of Services and Civil Emergency Measures Direction (PSCEMD)		
Final Determination: *The company will report progress on delivery of PSCEMD enhancements agreed with the Department for Regional Development.* *The Utility Regulator will seek updates from ORD to confirm that the agreed work has been completed.*		
Additional Details:		
The NI Water Security & Resilience Manager works closely with DfI and CPNI to ensure compliance with PSCEMD.		
PROJECT SUMMARY		
PSCEMD is a Regulatory Instrument directing NI Water to undertake such works as are necessary to preserve services and mitigate the effects of a Civil Emergency. On an annual basis, NI Water appoints an approved external Certifier to prepare a Statement of Compliance and provide a supplementary report for DfI, detailing progress on delivery of key measures previously notified. In-year progress reporting, on an exception basis, is directly to DfI via regular QSM Reports.		
KEY MILESTONES	Target	**Status**
1. External Certifier has ore-audit meetina with WDPD staff	Dec 17	**Complete**
2. External Certifier completes PSCEMD Audit	Feb 18	**Complete**
3. Submission of Compliance Statement & PSCEMD Report to DfI	1st **April 18**	**Complete**
4. In-Year reporting to DfI by exception	**As** Reauired	**Complete**

Executive summary

With respect to activity completed to date and its outcome, details were provided to ORD Water Policy Shareholder Division as part of the Quarterly Shareholder Meeting Report for Quarter 2 (16/17) for the period to 30 September 2016. A subsequent joint review to refine reporting arrangements concluded that going forward, reports for PSCEMD Critical Sites will, as requested by Water Drainage Policy Division, be by exception only.

Regarding Planned Next Steps for Delivery, this was the subject of extensive bilateral discussion with WPSD staff commencing in July 2014 and continuing through various iterations and changes requested by the Department, until a programme was agreed, as confirmed in writing by the Director of Water Policy and Shareholder Division dated 12th April 2016.

The independent PSCEMD Audit Report and CNI Sites Audit Reports submitted to The Department for Infrastructure, Water Drainage Policy Division on 16th March 2018 included assessment of work done to date and endorsement of future work programme.

Detailed update

On 31st March 2016, NI Water wrote to The Department enclosing a programme of security hardening work to be completed during the remainder of the PC15 period, comprising

- 13 Non-CNI Water Treatment Works (5 Enhanced & 8 Basic Plus)
- 54 Service Reservoirs all Enhanced
- 2 Wastewater Treatment Works (2 Basic Plus)

It was agreed that the programme would be subject to ongoing review throughout the PC15 period to capture and reflect changes in the distribution network and in some instances reappraisal of needs.

For example, the number of Service Reservoirs to security hardened has changed due to decommissioning and overlap with other capital projects on the Base Maintenance Programme, the nett effect being a reduction from 54 to 53 sites requiring security hardening under this programme.

The most recent programme review indicated that:

- 13 Non-CNI Water Treatment Works will complete by April 2019 –previously reported as November 2018- delay due to budgeting alignment and the rescheduling of work programmes on site.
- 53 Enhanced Service Reservoirs will complete by August 2018- previously reported as January 2018- delay due to further work required to integrate alarm signals from site to a single user interface at our Alarm Receiving Centre
- 2 Wastewater Treatment Works, sites confirmed as Omagh Transfer Pumping Station and Newton Stewart WWTW, delivery programme still to be confirmed but will complete during PC15 period

Changes to the original estimated delivery timetable reflect actual time spend on issues such as programme scheduling, in-year budgeting alignment and revising design elements in light of experience gained from previous security hardening projects.

DEVELOPMENT OUPUT		
4. ICAT Strateav		
Final Determination: *The company shall report progress on the development and implementation of the /CAT strategy including implementation of the trial projects proposed for PC15 and its benefits and the economic case for extendina the strateav.*		
PROJECT **SUMMARY**		
The Instrumentation, Control, Automation and Telemetry (ICAT) Strategy is focussed on enabling NIW to become more customer focussed, to improve compliance and become more resilient, whilst simultaneously reducing costs. This project addresses this through development of reliable automation and controls, to minimise manual input and on site presence, for process and plant controls and to facilitate remote monitoring and control of plant and processes that is not currently available for our assets, (focusing on Service Reservoirs). The project is divided into 6 phases based around WTW supply zones. The full programme overview for the 6 phases for PC 15 was provided in AIR 16. A shorter milestone proaramme is outlined below.		
KEY MILESTONES	Taraet	Status
1. PC15 ICAT Business Case Approval	30/11/15	Complete
2. First PC15 ICAT Delivery Programme Board Meeting	06/05/16	Complete
3. PIO Aooroval (Phase 1 Omaah / Cookstown)	06/05/16	Complete
4. ICAT delivery team fully established	18/07/16	Complete
5. First task order issued to contractors (Phase 1)	08/08/16	Complete
6. First Site started - Brigh SR (ACE Key milestone)	22/08/16	Complete
7. Update to BIPB - Midway through Omagh/ Cookstown (ACE Key milestone)	30/11/16	Complete
8. 2nd ICAT Deliverv Proaramme Board Meetina	30/11/16	Complete
9. 3rd ICAT Delivery Programme Board Meeting	21/03/17	Complete
10. Approval of Business case for phase 2 (Belfast)	31/05/17	Complete
11. Completion of listed Service Reservoir in Omaah / Cookstown	30/06/17	Complete
12. PPE1 - Omagh/ Cookstown Work Package	31/07/17	Complete
13. Update to BIPB - Completion of Omagh/ Cookstown	31/08/17	Complete
14. PPE2 - Omaah / Cookstown Work Packaae	31/07/18	On target
15.Ards Work Package Start (ACE Roadmap Milestone)	01/04/18	On target
16. North West Work Package Start (ACE Roadmap Milestone)	01/04/18	On target
17. Completion Belfast Work Package	30/05/18	On target
18. PPE1 Report completion for Belfast Work Packaae	30/06/18	On target
19. PPE2 - Omagh / Cookstown Work Package	31/07/18	On target
20. North West Work Package Finish (ACE Roadmap Milestone)	31/03/19	On target
21.Ards Work Packaae Finish (ACE Roadmap Milestone)	31/03/19	On target

Activity completed to date and its outcome

PC15 ICAT delivery programme business case was approved by the NI Water Business Improvement Project Board (BIPB) on the 30th November 2015 with £4.784M of funding to install ICAT technology at approximately 200 sites. The delivery programme is divided into 6 phases based around water supply zones.

The overall project will deliver improved resilience through increased overall network storage volume, reservoirs spending less time in low-low level alarm, potentially quicker reaction time in operational incidents through remote intervention, remote access to controls in poor weather conditions and better overall management of the water network through the ability to manage storage and balance flows across the network.

The project will also contribute to reducing corporate risks and acting as an enabler for Customer Relations Centre (CRC) and Production lines benefit realisation.

The total nett financial savings of the total project is estimated at £1,317K over 10 years made up of reductions in base maintenance, overflows, site visits, overtime and truck rolls.

A dedicated ICAT delivery team was established in July 2016 and Phase 1 of the project consisted of the installation of ICAT technology into 50 sites at a cost of £1,032K within the Lough Fea, Moyola, Lough Braden, Loughmacrory, Lough Derg and Glenhordial supply zones.

Phase 2 Belfast supply zone, saw the installation of ICAT technology into 21 Service Reservoirs and the automation of a number of valves in the Dunore, Drumaroad and Dorisland supply areas at an expected cost of £710K. This phased commenced in July 2017 and is planned to be completed at the end of July 18.

Phase 3 of the project is divided over two geographical areas Ards and North West. The business cases for these areas were approved in January 18 and commenced in April 18.

To date feedback from Customer Services Delivery Directorate (CSDD) on these sites has been very positive. In addition other issues (eg hydraulic issues) within the network system have been identified and addressed.

Detailed baseline figures for estimating benefits in Phase 1 have been established and will be used to complete PPE stage 2 in July 19.

NI Water provided the Utility Regulator with a presentation on 13 October 2016 giving an overview of the PC15 ICAT programme.

Standardisation of the design has enabled a single, detailed user manual to be developed which covers all ICAT SR sites.

A dedicated training rig connected to telemetry and associated mimics allow staff to be trained, gain experience and familiarise themselves with the system..

NI Water have applied for Patent to protect the IP of the system and its unique controls.

Planned next steps for delivery

Delivery of Phase 3 Ards and Northwest areas at a total cost of £910K during 18/19.

During October 18 to December 18 Phase 4 (Enniskillen area) business case will be developed.

DEVELOPMENTOUPUT

5. Water resource management plan and drought plan

Final Determination:
The company shall complete a Water Resource Resilience Plan that combines a Water Resource Management Plan and Drought Plan.
- A draft plan should be available for consultation by June 2016;
- A plan should be complete for publication by April 2017.
When developing its plan, the company should set out and incorporate its water demand management strategy and its policy on water efficiency measures in homes and businesses.

PROJECT **SUMMARY**

The WR&SR Plan sets out how NI Water intends to maintain the balance between the supply and demand for water over the long-term, and the operational and management options and activities available to respond to the short-term critical events such as droughts and freeze-thaw issues.

Final Determination target dates have been amended with the agreement of the WR&SR steering group: reflected in the milestones below.

KEY MILESTONES	Target	Status
1. Demand Forecast Results	Nov-15	**Comolete**
2. Deployable Output Results	Mar 16	**Complete**
3. Outage & Headroom Results	May 16	**Comolete**
4. Options Workshops	June 16	**Comolete**
5. Resilience Workshops	Oct 16	**Complete**
6. Multi-Criteria Assessments of Options & Strategies	Jan 17	**Complete**
7. Draft Plan for Internal Review	Feb 18	**Complete**
8. Plan available for consultation	June 17	**Complete**
9. Plan published	Oct 18	On Target

Activity completed to date and its outcome

The Water Resource Management Plans & Drought Plan is currently on-going. The Draft Plan has been completed and is now available for consultation.

The Steering Group, including various external stakeholders, have been involved in all key decisions throughout the process including a detailed review of the Draft Plan prior to issue for formal consultation.

Planned next steps for delivery

The start of the formal consultation process is dependent upon permission from Dfl. Once permission has been received the 8 week consultation period will begin. Once the consultation responses have been reviewed and actioned as appropriate the Final Plan will be issued.

The steering group will continue to be involved in all decisions throughout the process.

DEVELOPMENT OUPUT

6. Sustainable Economic level of Leakage

Final Determination:
The next economic level of leakage assessment shall be prepared in 2016-17 to inform the Water Resource Resilience Plan and revised leakage targets for PC15 from the mid-term review onwards. This should be updated in 2019-20 to inform the company's business plan submission and the establishment of leakage targets for the PC21 period.

Additional Details:

NIW developed its PC15 business plan based on the SELL 2014 assessment, proposing a leakage reduction profile to reduce leakage below the SELL to reach 153 Mlid by 2021.

PROJECT **SUMMARY**

The SELL determination will incorporate all relevant findings with respect to data and methodology improvements and accounting for leakage review comments and relevant changes to the industry best practice since the 2014 SELL determination.
The outline scope of work for delivery includes:
1. Data Collection and Quality Assessment
2. Cohort Definition
3. AZNP / HOF
4. Background / Policy Minimum Leakage & Infrastructure Correction Factor determination
5. NRR 2015-16 (already completed)
6. ALC Cost Functions per HDZ
7. Asset Renewal Functions
8. Pressure Management Functions
9. MCoW Calculation
10. Social & Carbon Leakage Management Externalities
11. Environmental & Carbon LR Externalities (short-cut estimation)
12. SR ELL & SELL Calculation
13. SELL Sensitivity & Uncertainty Analysis (climate, MCoW etc.)
14. ELL/SELL Monte Carlo Analysis
15. Draft and Final Executive Reporting
16. Household night use allowances update
17. Customer supply pipe leakage update
18. Review of non-household night use calculations and data/logging requirements to update.

The SELL review takes into account the potential for further leakage reductions into the next PC period as part of a least cost plan to meet the future demand for water, whilst minimising environmental impacts.

KEY MILESTONES	Taraet	Status
1. Project initiation	Apr-16	**Complete**
2. Phase 1 scoping study documentation	Jul-16	**Complete**
3. Phase 2 SELL refresh initiation	Jul-16	**Complete**
4. Draft & Final Executive Reporting	Apr-17	**Complete**
5. Household night use & customer supply pipe updates	Apr-17	**Complete**

Activity completed to date and its outcome

NI Water have procured an SELL study, which commenced in April 2016, has completed its scoping stage and currently in process of collating Company data for analysis.

NI Water have met with the WRMP project team, will align with the proposed 7 resource zone boundaries and understand the WRMP project leakage requirements.

SELL analysis completed in June 2017 with outcome agreed. Final Executive Reporting and supplementary technical annexes to be completed July 2017.

Household night use and customer supply pipe update analysis complete. Final project reports and technical annexes to follow in July 2017.

Planned next steps for delivery

Outcomes for the SELL study and the supplementary review of customer supply pipe leakage, household night use and hour-to-day values are complete with final reports and technical annexes received in July 2017.

NI Water plans to undertake a review of SELL in 2018/19 – 2019/20.

DEVELOPMENT OUPUT

7. Controlled Reservoir Safety

Final Determination:
The company shall report progress on the inspection and maintenance of controlled reservoirs under the proposed Reservoir Bill addressing:
- Remedial work on Camlough Reservoir (see Annex K [of the Final Determination]);
- Implementation of the inspection requirements of the proposed Reservoir Bill for controlled reservoirs by the end of 2017118;
- Completion of maintenance requirements arising from these inspections by 2020121.Report on any material issues identified in the surveys which require immediate attention which cannot be delivered within the estimate PC15 funding.

PROJECT **SUMMARY**

- **Remedial Work on Camlough Reservoir.**
  - All work completed in June 2017
- **Implementation of Inspection Requirements of the Proposed Reservoir Bill for controlled reservoirs by the end of 2017-18.**
  - The new consultancy framework has been awarded
  - Section 10 inspections are underway and will be completed by the end of June 2018 and reports will be completed by the end of August 2018
- **Completion of Maintenance Requirements Arising from Inspections by 2020121.**
  - The intention is to complete all maintenance requirements identified by the Panel Engineer's reports within the PC15 period.
  - However, without knowing the Panel Engineer recommendations it is not yet possible to provide full assurance. Any remedial work requiring extension beyond PC15 will be identified, when known.
  - Previously, extensive consultation with NIEA, Dfl Rivers etc. resulted in a long lead-time for the construction work. Planning may also be an issue.
- **Designation of Service Reservoirs and Clear Water Basins Capacity> 10,000m^3 yet to be confirmed by Dfl Rivers.**
  - The category designation of individual SRs and CWBs is still to be confirmed and agreed with Dfl Rivers, as they require NI Assembly approval.
  - Panel Engineer inspections for these assets are not currently programmed as a PC15 output

KEY MILESTONES	Target	Status
1. Remedial Work on Camlough reservoir	June 2017	**Complete**
2. The award of new consultancy framework	June 2017	**Complete**
3. Implementation of inspection requirements of the Proposed Reservoir Bill for controlled reservoirs	March 2018	To be completed June 2018
4. Inspection Reports identifying improvement options and scope completed	Dec 2018	**On Target**
5. Complete all maintenance requirements identified by the Panel Engineer's reports within the PC 15 period subject to funding availability	March **2021**	**On Target**

1. Remedial work on Camlough Reservoir

A contract (JV853 - Camlough Impounding Reservoir Refurbishment) was awarded to rehabilitate the dam core and outlet pipework. The contract was commenced in May 2016 and completed in June 2017.

2 Implementation of the inspection requirements of the proposed Reservoir Bill for controlled reservoirs by the end of 2017-18

The Reservoirs Act (Northern Ireland) 2015 received Royal Ascent on the 24th July 2015. Although not all parts of the Act have commenced, Dfl Rivers intend to bring forward

further regulations in relation to the act within the next couple of years. Previously NIW worked under the spirit of the Reservoirs Act 1975.

NI Water presently has 47 Impounding Reservoirs, in service and out of service, which are recognised by the act as being 'controlled reservoirs'. The definition of this term now broadly includes structures and areas that are capable of holding 10,000m3 or more of water above the natural level of any part of the surrounding land. This covers SRs & CWBs, which is an important change from the 1975 act that only covered Impounding Reservoirs. Although DfI Rivers has a list of SRs and CWBs, belonging to NI Water, both the list and the process of designation between Rivers Agency and NI Water has yet to be agreed. Hence, NI Water has not reported any SRs or CWBs as 'controlled reservoirs' for AIR18.

A contract has been let (Aug 2017) for the Section 10 inspections of the in service and out of service Impounding Reservoirs. Inspections are now underway and will be completed by the end of June 2018, with reports due for completion by the end of August 2018

3. **Completion of maintenance requirements arising from these inspections by 2020-21. Report on any material issues identified in the surveys that require immediate attention that cannot be delivered within the estimate PC15 funding.**

   Not yet applicable

4. **Plans for Delivery of the inspection requirements of the proposed Reservoir Bill for controlled reservoirs**

   The plans as set out in the PC15 Business Plan submission for the inspection requirements, for the Impounding Reservoirs, and the delivery of any maintenance requirements arising from these inspections are still on target for 2020-21. However, it is to be noted that the extent of the maintenance requirements will not be known until the inspections are carried out. NI Water will advise the UR on any material issues identified in the surveys that require immediate attention that cannot be delivered within the estimated PC15 funding.

DEVELOPMENT OUPUT
8. Water mains prioritisation
Final Determination: *The company shall engage with stakeholders on the development of its water mains prioritisation process to incorporate the outcome of PC15 consumer engagement including interruption to supply and dirty water complaints by 31 March 2015.* *The company shall provide updates on the implementation of the prioritisation annually throughout PC15.*
PROJECT **SUMMARY**
• For PC15, NI Water developed a Watermains Infrastructure Investment Model (WIIM) to identify and prioritise water network rehabilitation investment. WIIM is now operating as a BAU tool for Capital Maintenance Planning. • The model is refreshed every two years using updated corporate datasets (e.g. bursts customer contacts, water quality sampling exceedances, etc.) to inform the next year's investment programme. • WIIM1 incorporated dirty water complaints but not DG3 within the methodology. With the exception of DG3, there was a strong alignment between the original WIIM 1 methodology and CEOG analysis (Note: WIIM1 refers to the initial methodology used to identify the investment programmes for 2015/16 and 2016/17). WIIM2 model was modified to incorporate DG3 in April 2016 and used to identify the 2017/18 and 2018/19 investment programme. • NI Water acknowledged the omission of DG3 data in the original WIIM1 analysis. NIAUR was informed of the company's intention to revise the methodology approach in a detailed response in September 2014. • A formal presentation delivered to CCNI in September 2014 to provide an update of the WIIM process, including plans to incorporate DG3 in the WIIM2 methodology. Further formal presentations to external stakeholders (CCNI, DWI and UR) were again undertaken recently to achieve buy-in to the WIIM2 methodology. • Ongoing review of the WIIM process ensures the methodology remains focused on NI Water's customer promises.

KEY MILESTONES	Target	Status
1. DG3 incorporated into WIIM 2	March 15	**Completed Apr 16**
2. WIIM methodology now operating as a BAU.		**BAU**
3. WIIM2 methodology to be communicated to key stakeholders	May 17	On Target
4. WIIM methodology shared with key stakeholders when changes are made to methodology	As required	**BAU**

Activity completed to date and its outcome

The company shall engage with stakeholders on the development of its water mains prioritisation process to incorporate the outcome of PC15 consumer engagement including:

A. Interruption to Supply

- CEOG analysis ran in parallel with development of WIIM 1 in 2014
- Gap analysis established that strong alignment existed, however DG3 alignment DG3 needed to be addressed. Other than DG3, no recalibration of WIIM was required as a result of CEOG (see document 141006 WTC WIIM).
- Although it had initially been considered that issues around gee-coding historic DG3 data would prevent effective incorporation of DG3 into WIIM, this was incorporated into the WIIM 2 procedure ,as the outages were mapped by utilising the Project resources
- The UR was informed of the proposed approach regarding incorporation of DG3 into WIIM in a detailed response to this and a number of related queries in September 2014 (see PC15 DD Response Annex K 5 11 9 V1 .4 Watermain Rehab.doc availab,le

on request). A formal Presentation was also delivered to CCNI in September 2014 in order to inform them of progress around WIIM and explain plans regarding incorporation of DG3 into analysis
- In addition there was a further Stakeholder presentation on 10th May 2017 in which the WIIM 2 and the proposed WIIM 3 approach was presented and discussed

B. Dirty Water Complaints
- Dirty water complaints were incorporated into the model from the outset – this was something which DWI was satisfied with from the outset of the development of WIIM.
- DWI, CCNI, NIAUR and DRD Water Policy were members of a group who were invited to review the tender specification of the first WIIM contract. Engagement continued throughout the development of WIIM.

C. The company will provide updates on the implementation of the prioritisation annually throughout PC15.
- The WIIM 2 methodology incorporates the “Interruption to Supply” requirement .See above where the updates were provided to the external stakeholders

Improvements contained in WIIM2 (from WIIM 1 Methodology) are summarised below:
- Parent Length segments of water mains are now based initially on Road Junction information, resulting in construction of a NIW corporate dataset which better models or represents the distribution network for ease of analysis.
- Feedback from recent customer engagement has been incorporated into the WIIM2 approach, ensuring that methodology is customer focused.
- DG3 interruption to supply data is now captured and scored in alignment with NI Water KPIs.
- Scoring matrix is better defined, containing increased weighting for issues relating to Water Quality and DWI involvement.
- Unit Rates can be more easily programmed.
- Pipeline flushing has been incorporated.
- WIIM 2 has the ability to insert ad-hoc pipeline queries in relation to assessment of high priority customer feedback issues, in conjunction with rescoring of programme elements. Ad hoc schemes can be flagged up and separately identified from those generated through ‘bottom up’ analysis.
- Rather than the static list of outputs created during WIIM1, WIIM2 outputs are captured under a Scheme Management Tool, allowing for dynamic management of the overall programme. This will enable reaction to changes in regulatory environment or public expenditure.
- Schemes outputs are now bound into geographical work packages for delivery rather than leaving this to the Verification stage to allow for analysis of the makeup of the Workpackage at an earlier stage than WIIM 1
- DG2 schemes are dealt with in a separate methodology/process approach .The ongoing DG2 targets are being achieved by this methodology

Maximum WIIM 2 Scoring matrix summarised below:
- Scoring for each category is compiled by accruing scores from multiple drivers, with an indication of <u>maximum</u> scores available in each category, shown in the table and diagram below.

WIIM2 category	Maximum Score
Water Quality	2350
Flushing	200
Structural	1100
DG3 interruption to supply	400
DG2 low pressure	450
Complaints	200

NOTE ON SCORING IMPACT: The chosen cut-off score (based on annual Budget and the geographical bundling required for AD integrated capital delivery) may also skew the makeup of the WO/Structural Split.

WIIM 2.2 Work Package Overview (passed to the Asset Delivery Team on the 8/11/17)

Works Package	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

WIIM 2.2 Green Workpackage Overview, Further High-Level Breakdown

Justification	Schemes Count	Length	Cost	% Total Length
Water Quality	**112**	**46,010**	**£4,603,978**	**28.8**
Structural	**248**	**109,005**	**£10,807,745**	**68.4**
Hydraulic (Inc. Ooerationan	**8**	**4,547**	**£503,680**	**2.8**

- **Note:DG2 Workpackages are analysed separately but some DG2 solutions arise out of nearby rehabilitation of the network**

Improvements contained in WIIM3 (from the WIIM 2 Methodology) are summarised below:

- Some manual interventions have been implemented on the DG3 analysis related to the top 12 DG 3 issues
- Buffering to nearest main was improved by adding a verification process to allocate Water Quality and complaints data to specific mains rather than a global buffering map approach.
- The Watermains Infrastructure Scheme Tracker is now used to identify previous schemes and avoid double handling of work
- Other than the above ,the same matrix shown above for WIIM2 was utilised for WIIM 3

Schemes Tool

The Schemes Management Tool, developed under the WIIM project is held by NIW Asset Delivery Team and is available for analysis on request. The Tool has been developed to hold all vital scheme information and produce outputs as required by the end-user.

DEVELOPMENT OUPUT

9. Sustainable Catchment Management

Final Determination definition:
The company shall report progress on Sustainable Catchment Management annually. The report shall set *out the action the company has taken and its plans for subsequent action. The report shall identify the benefits in terms of activity, improvements in raw water quality and reduction of peak flows.*

PROJECT **SUMMARY**

- **Catchment Management Studies:**
  Aim is to undertake a scoping and planning study in each drinking water catchment, using the UKWIR framework, identifying future SCaMP projects to sustainably improve raw water quality. In PC15 period 21 Catchment Management Studies have been completed, as follows:
  - 2013/14 - Killylane, Dorisland and Clay Lake WTW's
  - 2014/15 - Derg, Lough Braden, Caugh Hill, Carmoney and Seagahan WTW's
  - 2015/16 - Altnahinch, Drumaroad and Fofanny WTW's
  - 2016/17 - Dunore Point, Castor Bay, Moyola, Ballinrees, L Macrory, L Fea and Glenhordial WTW's
  - 2017/18 - Carran Hill, Rathlin and Dungonnell WTW's
- **SCaMP NI Interventions:**
  - Actions to reduce pesticides in raw water; best practice advice at agricultural shows, rush control events, farm engagement visits, press articles and amenity sector liaison. A farm liaison officer has been temporarily employed and a the 'Rush Solution Without Pollution' weed-wiping trial in Seagahan Catchment was carried out in summer 2017. Approx 500 acres treated preventing 320 litres of MCPA being applied in the catchment. A further weed-wiping project is planned for Summer 2018 in Glenhordial catchment.
  - CAFRE & NIW joint trials carried out to research rush control methods with pollution monitoring. These trials are ongoing. Results will inform strategy for DAERA and NIW.
  - Wildfire initiatives have been undertaken in the Mournes to carry out effective wildfire control to prevent damage to habitats and raw water quality.
  - A number of riparian planting projects have been undertaken to reduce bankside erosion and create wildlife buffer strips along watercourses to reduce diffuse pollution.
  - Habitat enhancement projects carried to meet environmental targets and improve water quality.
- **'Source To Tap' INTERREG VA Project:**
  - EU Interreg VA funding application successful in partnership with Irish Water, East Border Region, The Rivers Trust, Ulster University & AFBI for funding involving cross border catchment projects.
  - It will involve extensive 5 year SCAMP projects in cross border catchments; Derg and Erne WTW's Catchments. - Value €5.2m.
  - Project will involve Land Incentive Scheme, Peat pilot project, forestry pilot project, UKWIR Catchment analysis and large community engagement aspect to develop community led initiatives to improve raw water quality.
  - Project Manager, Finance Manager and 3 project officers have been appointed
  - Development of Land Incentive Scheme currently underway
- **'Cooperating Across Borders for Biodiversity' INTERREG VA project:**
  - RSPB are lead partner and NIW are a partner, along with several others as it is part of a wider project doing work in ROI, NI and Scotland. €175k funding obtained by NI Water

- The project is planned from 2017 with completion by 31st Dec 2021. The project will be implemented in NI, ROI and Scotland, with each partner responsible for individual elements.
- Aims to work on a cross border basis to bring about the recovery of protected habitats (active raised and blanket bog) and priority species (breeding waders and marsh fritillary) at specific key sites.
- This project on Garron Plateau will involve blocking 38473 metres drains to raise water levels using plastic sheet piling and peat dams. Basically a restoration of the entire Dungonnell catchment.
- Project Launch event was held on 11th Dec 2017
- Drain blocking contractor has been procured by NI Water and 173 dams completed in Feb 2018. Work will recommence in Sept 2018 after the bird nesting season.

KEY MILESTONES	Target	Status
1. Completion of Catchment Management Studies as per schedule	March 2018	On Target
2. Commencement of programme for completion of SCaMP NI interventions as a result of Catchment Management Studies	March 2018	On Target

Sustainable Catchment Management (SCaMP)

The NI Water strategic approach has been shaped around our identification of 8 key customer promises as detailed in the 'Our Strategy' document. The objectives of SCaMP NI are closely connected to these customer promises as follows:

- **We provide you with clean, safe water to drink:**
  The SCaMP NI program seeks to improve the quality of raw water in the environment prior to it being extracted. This results in fewer contaminants entering the WTW's and thus improves water quality compliance and reduces the risks of water quality exceedances in the final water.
- **We seek to give you value for money:**
  The potential benefits of catchment management for improving drinking water quality are widely recognised and evidence is beginning to show that this is a cost-effective way to reduce the costs of treatment.

  By working with others to make environmental enhancements, improve agricultural practices and reduce pollution run-off, we seek to improve the quality of raw water in the environment prior to it being extracted. This in turn helps to reduce the chemical, power and sludge costs associated with water production.
- **We adapt to deal with the effects of climate change:**
  Reduced energy requirements for treating water will contribute to our Climate Change targets and our aims to reduce our carbon footprint and greenhouse gas emissions.

  One of the successful SCaMP NI approaches is the re-wetting of blanket bog. This retains water in the catchment and reduces the effects of the heavier rainfall events and flooding downstream. The restored peat acts a carbon sink, preventing the release of CO2 into the atmosphere.
- **We want to protect and enhance the natural environment:**
  SCaMP NI environmental projects go hand in hand with our environmental objectives to enhance habitats, protect endangered species, meet legislative requirements on designated landholdings and also help achieve good ecological status water quality targets as required under the Water Framework Directive.

Preservation and restoration of bog features will provide a habitat for a wide variety of plant and animal species, enhancing biodiversity and reversing the decline of species such as hen harrier, merlin and the perennial herb marsh saxifrage.

- **We supply you with the water you need:**
  SCaMP NI environmental projects such as bog restoration, pollution control or habitat restoration help achieve a more stable and reliable water source, which in turn results in a less problematic water treatment and improved compliance.

  NI Water is currently developing Catchment Management Studies for each of its active water catchments and will follow this with catchment plans for 'mothballed' impounding reservoirs. These plans will give the detail on how the catchment land will be managed going forward to give maximum benefit to NI Water and ensure that legislative requirements are met.

Diffuse water pollution and insensitive land management may pollute surface and ground water supplies with substances such as nutrients, pesticides and microbial pathogens and increase colour, turbidity and suspended solids in abstracted water. These increase capital and operating costs of water treatment, increase the quantity of effluent and waste produced, and increase the carbon footprint of the industry. The aim of the Catchment Management Studies is to undertake a scoping and planning study of the catchment, using the approach advocated in the UKWIR framework for quantifying the benefits of catchment management, to establish the basis for a programme of catchment management that provides business benefit to NI Water. The outcome of this project will provide a basis for the preparation of business plans for catchment management in support of drinking water source protection and, in part, for meeting other WFD and corporate obligations for PC15 and beyond.

The Catchment Management Studies are being undertaken on a prioritised basis. The prioritisation rationale involves collating a series of details on each catchment and drivers needed to justify SCaMP projects, as follows:

- PRIMARY DRIVER 1 - Protect or improve the raw water quality abstracted by NI Water (Factors considered: DWI CPEO, Algae Blooms, Colour/Turbidity, TOC, Pesticides)
- PRIMARY DRIVER 2 - Protect or improve the reliability or quantity of raw water abstracted by NI Water (Factors considered: Reliability of source, Potential to improve reliability risk, Quantity, Drought Risk, Potential to remedy quantity risk.
- PRIMARY DRIVER 3 - Reduce the risk to the quality, reliability or quantity of raw water abstracted by NI Water (Factors considered: Tourism, Livestock Agriculture, Arable Agriculture, Forestry, Residential Dwellings, Industrial, Hydrocarbons, Rubbish / Fly tipping, Effluent, Septic Tanks.
- PRIMARY DRIVER 4 - Aid NI Water in managing its land portfolio and deliver its statutory responsibility under national and international obligations to protect and manage the natural environment (Factors Considered: ASSI, AONB, SPA, SAC, RAMSAR, percentage of catchment land owned by NI Water, Habitat protection or creation, Managing lands as 'carbon sink', Biodiversity management, Invasive species management).
- SECONDARY DRIVER - NI Water working with other stakeholders to improve the overall quality of the catchments from which it draws water (Non-NI Water Owned Land in Catchment). (Factors Considered: Habitat protection or creation, Biodiversity management, improved farming practices, Recreational activities, Revenue creation for NI Water.

Programme for delivery of Catchment Management Studies

During PC15 NI Water will deliver:

- *23 catchment plans (live catchments) to be delivered in first 3 years of PC15.*
- *23 catchment plans (unused catchments) to be delivered in years four to six.*

NI Water is on track to meet the delivery of the catchment plans as detailed in the programme below:

Category	Priority	Water Treatment Work Name	Catchment Management Study	Target Delivery Date	Comments
Operational WTW's	1	Killylane	2013/14	31/03/2014	Completed 31/03/14
Operational WTW's	2	Dorisland	2013/14	31/03/2014	Completed 31/03/14
Operational WTW's	3	Clay Lake	2013/14	31/03/2014	Completed 31/03/14
Operational WTW's	4	Derg (Inc Strule)	2014/15	31/03/2015	Completed 31/03/15
Operational WTW's	5	Lough Braden	2014/15	31/03/2015	Completed 31/03/15
Operational WTW's	6	Caugh Hill	2014/15	31/03/2015	Completed 31/03/15
Operational WTW's	7	Carmoney	2014/15	31/03/2015	Completed 31/03/15
Operational WTW's	8	Seagahan	2014/15	31/03/2015	Completed 31/03/15
Operational WTW's	9	Altnahinch	2015/16	31/03/2016	Completed 31/03/16
Operational WTW's	10	Drumaroad (inc Silent Valley, Annalong & Lough Island Reavey)	2015/16	31/03/2016	Completed 31/03/16
Operational WTW's	11	Fofanny	2015/16	31/03/2016	Completed 31/03/16
Operational WTW's	12	Dunore Point	2016/17	31/03/2017	Completed 31/03/17
Operational WTW's	13	Castor Bay	2016/17	31/03/2017	Completed 31/03/17
Operational WTW's	14	Moyola	2016/17	31/03/2017	Completed 31/03/17
Operational WTW's	15	Ballinrees	2016/17	31/03/2017	Completed 31/03/17
Operational WTW's	16	Lough Macrory	2016/17	31/03/2017	Completed 31/03/17

Category	Priority	Water Treatment Work Name	Catchment Management Study	Target Delivery Date	Comments
Operational WTW's	17	Lough Fea	2016/17	31/03/2017	Completed 31/03/17
Operational WTW's	18	Glenhordial	2016/17	31/03/2017	Completed 31/03/17
Operational WTW's	19	Carron Hill	2017/18	31/03/2018	Completed 31/03/18
Operational WTW's	20	Rathlin	2017/18	31/03/2018	Completed 31/03/18
Operational WTW's	21	Dungonnell	2017/18	31/03/2018	Completed 31/03/28
Operational WTW's	22	Killyhevlin	2018/19	31/03/2019	Being done as part of Source To Tap INTERREG VA Project - Target Catchment Characterisation Completion 31/03/19
Operational WTW's	23	Belleek	2018/19	31/03/2019	Being done as part of Source To Tap INTERREG VA Project - Target Catchment Characterisation Completion 31/03/19
Abandoned WTW's	24	Altmore (High)	2018-19	31/03/2019	Planned
Abandoned WTW's	25	Altmore (Low)	2018-19	31/03/2019	Planned
Abandoned WTW's	26	Ballintemple IR	2018-19	31/03/2019	Planned
Abandoned WTW's	27	Ballydoolagh (IR)	2018-19	31/03/2019	Planned
Abandoned WTW's	28	Ballysallagh Lower	2018-19	31/03/2019	Planned
Abandoned WTW's	29	Ballysallagh Upper	2018-19	31/03/2019	Planned
Abandoned WTW's	30	Ballyversall	2018-19	31/03/2019	Planned
Abandoned WTW's	31	Boomers Reservoir	2018-19	31/03/2019	Planned
Abandoned WTW's	32	Church Road	2019-20	31/03/2020	Planned

Category	Priority	Water Treatment Work Name	Catchment Management Study	Target Delivery Date	Comments
Abandoned WTW's	33	Conlig Lower (IR)	2019-20	31/03/2020	Planned
Abandoned WTW's	34	Conlig Upper	2019-20	31/03/2020	Planned
Abandoned WTW's	35	Craigahulliar	2019-20	31/03/2020	Planned
Abandoned WTW's	36	Creightons Green (IR)	2019-20	31/03/2020	Planned
Abandoned WTW's	37	Dunalis	2019-20	31/03/2020	Planned
Abandoned WTW's	38	Killea (WTW)	2019-20	31/03/2020	Planned
Abandoned WTW's	39	Knockbreckan	2019-20	31/03/2020	Planned
Abandoned WTW's	40	Leathemstown	2020-21	31/03/2021	Planned
Abandoned WTW's	41	Lough Cowey	2020-21	31/03/2021	Planned
Abandoned WTW's	42	Lough Money	2020-21	31/03/2021	Planned
Abandoned WTW's	43	Portavoe IR	2020-21	31/03/2021	Planned
Abandoned WTW's	44	Quolie (North)	2020-21	31/03/2021	Planned
Abandoned WTW's	45	Quolie (South)	2020-21	31/03/2021	Planned
Abandoned WTW's	46	Stoneyford Reservoir	2020-21	31/03/2021	Planned

Benefits of Catchment Management

NI Water manages 8,615 hectares of land. NI Water has embraced and adopted Sustainable Catchment Area Management Planning (SCaMP) and is seeking to build on the foundations of this put down in PC10 and PC13. Through the SCAMP NI approach, NI Water seeks to:

- Maximise the ecosystem services gained from its land holdings
- Meet its obligations under environmental legislation
- Improve operational efficiency through innovative projects
- Improve raw water consistency and quality

The benefits of the SCaMP project will be realised in the long-term, but the Catchment Management Studies completed to date have recommended a number of key outputs or recommendations, which are now being implemented in the form of the SCaMP projects and resultant benefits listed below:

Benefit 1 - NI Water will, over time, have improved raw water quality arriving at its Water Treatment Works.
Example Project – Seagahan Weed Wiping Trial Project

As a trial project NI Water are carrying out a weed-wiping project in Seagahan WTW drinking water catchment area in Co Armagh. NI Water is working with The Water Catchment Partnership and the farming industry as part of an innovative campaign to help reduce levels of MCPA in the Seagahan Reservoir catchment area. It is planned to offer a free weed-wiping service using Glyphosate, as an alternative to spraying MCPA, to demonstrate an alternative effective rush control method which causes less pollution.

The overall aim is to show that pesticide levels can be reduced in the reservoir without the need for more expensive water treatment processes. This can then be used as a test project to demonstrate the benefits of NI Water working together with farmers and possibly doing more of these type of initiatives in future in other areas. The project will have a Farm Liaison Officer working with farmers and land managers to manage the weed-wiping and promote better advice on handling, applying and disposing of grassland sprays, guidance on mechanical control of rushes and improving land condition to addressing the underlying causes of infestations. The project will be beneficial in comparing best techniques with other projects in N Ireland and used to inform individual aspects of the INTERREG VA Source to Tap project and other SCaMP NI projects going forward to ensure value for money in effectively reducing MCPA levels in watercourses.

The 2-year project in Summer 2017 and 2018 is managed by NI Water but will be carried out in conjunction with the Water Catchment Partnership. This involves representatives from Ulster Farmers Union, Northern Ireland Environment Agency, Department of Agriculture, Environment and Rural Affairs, College of Agriculture, Food and Rural Enterprise and the Voluntary Initiative. All of these stakeholders will input knowledge and expertise, which are vital to the success of the project and their cooperation, and assistance is appreciated and valued by NI Water. The aim of the WCP is to deliver one message incorporating the ethos from all organisations to effectively tackle the problem of pesticides in the water environment, particularly in Drinking Water catchment areas, communicating with householders and farmers to raise awareness and provide best practice guidance on grassland pesticide use.

The project has brought the following benefits for NI Water:
Water Quality benefits - Ongoing water sampling of the reservoir throughout Phase 1 has shown a marked decrease in MCPA found in raw water. Analysis of the results demonstrated a MCPA residual reduction of more than 50% in the 2017 period, in comparison with the average for the previous 5 years. The graph in Appendix 2 shows average monthly MCPA levels for 2015, 2016 and 2017. A significant drop in average MCPA levels was demonstrated in 2017. April and May show the largest decrease with only a quarter of the average MCPA recorded in 2017 in comparison to 2016. Raw water MCPA levels increased slightly in August but were below the 2016 average. September MCPA results are uniform across the three years. October showed a marked decrease in MCPA levels from 2016. Detrimental weather conditions experienced in August 2017 onwards must be considered.

Project development and implementation – The trial demonstrated that NI Water have the capabilities and governance structure to allow this type of work to be carried out.

Project Promotion – The rollout event in April in the local community hall proved to be an effective tool with 60 farmers signing up from which 38 famers took advantage of the free weed-wiping trial. Promoting the project using the UFU and NI Water web pages, UFU Newsletter articles, BBC report and targeting Markethill Mart was very successful. Whilst the website was a useful tool, the project would not have been a success without the rollout event and the face-to-face engagement.

Partnership Working – NI Water worked closely with the WCP to ensure its success during project promotion, rollout event, contractor selection, field mapping and the weed-wiping. The partnership opened channels of expertise to be utilised in all areas of the project. Close liaising with the UFU and CAFRE was particularly beneficial to the success of the project.

Contractor selection – The correct contractor selection resulted in rush treatments being carried out in a professional and competent manner demonstrating best practice use of round up energy being applied through a weed-wiper. The decision to use a local contractor situated in the heart of the catchment area was beneficial, as the contractor had a working knowledge of the land and a personal relationship with the farmers.

Rush Reduction – Across the 426 acres of rush treated in the Seagahan catchment there has been a successful rush reduction between 60% and 90%. See Appendix 1 for photographs. Feedback from farmers has been very positive with zero complaints to NI Water. Rush coverage and compromising of viable grazing areas can have a direct effect on farming subsidies based on 'eligible' land (currently assessed under the Basic Payment Scheme (BPS)). Rush removal therefore is of great benefit to them.

Pesticide choice – The pesticide 'Round-up Energy' was used for the project following trials and advice from CAFRE. This proved very successful for the rush treatment as the pesticide stayed on the leaf of the rush due to the adjuvant (sticking agent). With the adverse weather conditions from July onwards, the fact that the pesticide was rain-fast in one hour was valuable.

Farm Liaison visits/contractor treatments – It was necessary and constructive for the first visit to be carried out with the farmer present allowing discussions to be carried out about the project and discuss eligibility issues. Delegating responsibility to the farmer for timing of the weed-wiping was successful as treatments were arranged with the contractor when conditions were at an optimum and no livestock were present in the treated area. Feedback from farmers and UFU has been excellent.

Benefit 2 - NI Water will, over time, reduce the risks of raw water quality incidents effecting WTW output capability

Example Project 1 - Extensive areas of Forest Service lands exist within NI Water drinking water catchment areas. Forest Service felling and replanting activities require careful planning in order to avoid any detrimental impacts on raw water quality, which is abstracted for water treatment. In order to minimise risk to water quality guidelines have been agreed between NIW and Forestry Service in order to protect the raw water quality at each catchment. Work is ongoing with Forestry Service to improve tree felling and replanting techniques resulting in fewer high colour and turbidity incidents when forestry activities are carried out, particularly at Lough Bradan WTW. This improvement will be particularly evident during times of peak flows and high rainfall events.

Example Project 2 – A pilot project is being developed at Lough Bradan WTW to monitor quality at each of the individual intakes, then install online quality monitors and automatically control flows to the WTW, maximising use of technology to ensure that the best possible water quality is received at the WTW intake point. Improving the raw water quality in the water supply network and monitoring water quality at each abstraction point will allow the best quality water to be abstracted and will assist in reducing treatment costs.

Benefit 3 - NI Water will, over time, see an improvement in the reliability of water quantity from its upland sources

Example Project - 'Co-operation Across Borders for Biodiversity Project' INTERREG VA Project

NI Water have been working in partnership with Royal Society for the Protection of Birds Northern Ireland (RSPB NI) and other partners on a project funded by INTERREG VA and managed locally by the Special European Union Programmes Board (SEUPB). The project is called the 'Co-operation Across Borders for Biodiversity' (CABB) Project and began in 2017, with completion in late 2021.

The overall objective of the CABB project is to bring about the recovery of protected habitats (active raised and blanket bog) and priority species (breeding waders and marsh fritillary at key sites) on a cross border and cross country basis. The overall CABB project has been awarded €4.6m of EU funding for projects in Scotland, N Ireland and the Republic of Ireland. CABB will contribute to delivering the EC Birds and Habitats Directives and Biodiversity Strategies in each of the three countries and will link with strategies for climate change mitigation and adaptation and sustainable development in the three countries, as well as Programme for Government targets.

The NI Water aspect of the project will involve a €1.75k project to restore of the entire Dungonnell WTW catchment area at Garron Plateau on the Antrim Hills, which is in the catchment of Dungonnell WTW. NI Water owns 2000ha of the Garron Plateau SAC and previously 72ha of land has had drain-blocking work done. Through CABB, an additional 444ha of blanket bog will be managed by blocking 38.4km of drains. NI Water will oversee the drain blocking and aim to produce an information booklet highlighting how the work was done and the benefits delivered.

Garron Plateau is the largest expanse of intact blanket bog in Northern Ireland and it is home to protected birds of prey and rare plants such as marsh saxifrage and bog orchid. NI Water, working with the assistance of the RSPB NI and INTERREG VA aim protect and restore the peatland on the plateau, ensuring that the whole catchment is managed sustainably.

The CABB project will restore the natural hydrological conditions by blocking drains using peat, stone and sheet dams to raise the water table. This results in raising the water table and the "re-wetting" of the bog, promoting colonisation by Sphagnum moss, an essential component of a functioning bog. The creation of these peat dams reduces the water velocity in the drains and allows more settlement time. This reduces runoff and improves raw water quality and reliability by improved regulation of supply through the retention effects of the bog. This will result in cost savings at the treatment works, as the requirement for chemical treatment to remove colour from the raw water will be reduced.

Benefit 4 - NI water will work toward meeting its environmental obligations in its catchments

Example Project - There is an annual plan to control invasive species, rhododendron and cotoneaster, in the Mournes catchment landholding to ensure designated land is managed and environmental obligations are met. Work is currently underway to digitally map this work and monitor the progress in controlling these invasive species.

Benefit 5 - NI Water will work with stakeholders to improve the overall condition of its catchments

The Eastern Mournes Wildfire project is carried out to reduce the risk of wildfires damaging wildlife habitats and adversely affecting raw water quality from the catchment. This project was carried out with a range of stakeholders, e.g. NIFRS, NIEA, Mourne Heritage Trust, UFU, DAERA, etc. Work is currently underway to digitally map the areas affected by wildfires and monitor areas where deliberate actions have been undertaken to control wildfires.

Benefit 6 - The people of Northern Ireland will benefit from improved biodiversity in Northern Irelands Water's land and, over time, and a reduction in the costs associated with treating raw drinking water.

Example Project – Work is ongoing in liaison with the Woodland Trust to plant riparian strips along watercourses to enhance habitats, resulting in enhanced biodiversity and improved raw water quality. This improves raw water quality through buffer zones to protect from pesticide pollution, bankside erosion and livestock encroachment/excretion in the waterway. This improvement will be particularly evident during times of peak flows and high rainfall events. One example is the riparian planting project at the Glenedra River where NI Water, The Woodland Trust and The Loughs Agency co-operated to complete a riparian tree-planting project. NI Water abstract water from the Glenedra River, where water quality can frequently be poor due to bankside erosion and instability of the river. In order to improve water quality for abstraction, wildlife habitats and aquatic life, a 3.89 ha site was planted with native broadleaf trees along the banks of the river. Trees planted along riverbanks can provide many water management benefits, acting as a physical barrier, preventing pesticides drift from reaching watercourses and tree roots help stabilise riverbanks and create structural complexity in the water habitat. There is a resultant reduction in the water discolouration and sediment coming into Water Treatment Works. The cost of this type of project is small to NI Water as the other partners involved contribute significantly through internal and external funding sources.

The following SCAMP projects are planned for 2018/19:

1. Recommendations from Catchment Management Studies – Throughout the PC15 period we have engaged consultants to assess and collate information on all WTW's catchments where raw water is abstracted for treatment. The Catchment Management Plans were completed using the UKWIR approach, "Quantifying the Benefits of Water Quality Catchment Management Initiatives". By the end of the 2017/18, financial year 21 catchment studies have been completed and the 2 remaining studies will be completed in 2018/19 as part of the INTERREG VA Source to Tap Project. The completion of the Catchment Management Studies has resulted in a wide range of recommendations to improve raw water quality, meet DWI enforcement requirements and enhance ecosystems/habitats, thus helping NI Water meet the environmental and water quality customer promises. It is a requirement as part of the PC15 determination to implement these recommendations, which it is planned to begin in 2018/19. These recommendations firstly need to be investigated to determine if they are feasible, and then implemented, subject to funding and resource availability.
2. Mourne Wildfire Containment - The Silent Valley drinking water catchment area has been subject to wildfires, which damaged large areas of upland heath, impacting both the environment and water treatment costs due to the carbon run-off. NI Water, in conjunction with Mourne Heritage Trust (MHT), NIEA and NI Fire and Rescue Service (NIFRS), have commissioned a report by Wildfire Advisory Services. This paves the way for a focused and structured approach to managing wildfire outbreaks in the wider Eastern Mournes area, considering practical wildfire management and emergency response within the drinking water catchment. This report has been adopted and NIW

are committed to proceeding with implementation as part of the partnership. During the 2018/19 period, it is proposed to carry out controlled burns to reduce the risk to the water catchment area and consider fencing of risk areas to allow livestock grazing to sustainably manage vegetation fuel loads for fires.

3. Mourne Invasive Species Control - The expansion of invasive species such as Rhododendron and Cotoneaster is of concern to upland heath land management as it causes damage to the designated habitats and erosion, which impacts on raw water quality. There is a legal obligation for NI Water to control these invasive species on our landholdings. Work has been ongoing in recent years, but the work needs to continue to further control invasive species and prevent re-colonisation. This is particularly important to help ensure that native plants have the opportunity to establish within the catchment.
4. Mournes Heathland Management - NI Water have developed a successful working relationship with Mourne Heritage Trust (MHT) and work together to mutual benefit in managing the Silent Valley catchment which is owned by NI Water. MHT have recently been successful in obtaining funding of €100k annually over the next 3 years through an INTERREG VA Northern Periphery and Arctic programme (NPA) EU funding application, which was supported by NI Water. This will involve a project to carry out environmental enhancements work on NI Water owned land in the Mournes, maintenance on paths where works have been done, stitch in time to prevent erosion, some larger erosion work, develop a management plan and use the project to develop knowledge and skills and training. This will bring in a significant value of work on our catchment land at minimal cost to NI Water. It is proposed that NI Water carry out some habitat restoration work under the SCaMP NI project to add value and support the MHT project and to help develop a ‘leverage’ ethos, whereby NI Water can contribute a relatively small amount, allowing NGO’s to attract larger funding sources.
5. Riparian Planting – The SCaMP NI team has carried out successful riparian planting at a number of catchment areas in recent years. These areas enhance biodiversity and help raw water quality by reducing erosion and livestock encroachment. These projects were carried out alongside NGO’s and were able to avail of match funding. It is proposed to do more of this type of sustainable work in 2018/19 as opportunities arise.
6. Pesticide Risk Mapping - Over the past 5 years there is an increasing MCPA pesticide residual problem at many of NI Water’s drinking water sources, which has resulted in a number of water quality exceedances and DWI Enforcement actions. NIW have an undertaking with DWI to do catchment measures in these areas to address the problem, in the form of engagement visits or other initiatives to reduce the pesticide levels. It is not practical to resource this engagement across the entire catchment area, so a mapping exercise is needed to highlight the high-risk areas for pesticides. This will be done by investigating land use, soil types, rainfall, proximity to watercourses and then using this information to specifically target the identified high-risk areas. The resultant targeted engagement will aim to raise the profile of the risks to our drinking water supplies from pesticide use and also to educate farmers and other landowners in best practice and correct methods when using pesticides or spraying.
7. Weed Wiper Trials – The innovative weed-wiping that was carried out in Seagahan catchment area in summer 2017 has been largely successful. This trial will need to be continued in 2018, as there is an obligation in the landowner agreements. In summer 2017 there have also been a number of MCPA raw and final water exceedances at Glenhordial WTW. This is the first time that Glenhordial has had an MCPA problem and there is a risk of DWI enforcement at this site if this is repeated in 2018. It is now a priority to take pro-active catchment management action to address this and reduce the risk of further failures of the drinking water standards. It is planned to do an additional weed-wiping trial in the Glenhordial Catchment in 2018, as part of a 4-year project to address this problem.

8. Farm Liaison Officer Recruitment – The farm liaison officer has been recruited on a temporary basis for the past few years to carry out farm visits to raise the profile of the risks to our drinking water supplies from pesticide use and also to educate farmers and other landowners in best practice and correct methods when using pesticides or spraying. It will be necessary to extend this post to carry out the following duties:
    - Ballinrees WTWs - In July 2017, there was a Consideration of Provisional Enforcement Order by DWI in relation to MCPA contraventions. NIW have an undertaking to do catchment measures in this area to carry out additional sampling at various locations on the River Bann and to carry out targeted engagement visits within the catchment area. The Farm Liaison Officer will be needed to do this work on the ground, firstly to establish the high-risk MCPA areas in the catchment and then to identify suitable sample locations on the Bann system. It will also be needed to source suitable passive sampling equipment and then carry out targeted farm engagement visits.
    - Glenhordial WTW - The Farm Liaison Officer will be needed to investigate the sources of MCPA and to manage the proposed weed-wiping project.
    - Seagahan WTW - The temporary SCaMP NI Farm Liaison Officer is managing the ‘Rush Solution Without Pollution’ weed-wiping trial in Seagahan Catchment in summer 2017 & 2018. This project was successful in 2017 and there is an agreement with landowners to continue this work in summer 2018 in order to address MCPA / catchment issues.
9. Catchment plans for ‘mothballed’ impounding reservoirs. These plans will give the detail on how the catchment land will be managed going forward to give maximum benefit to NI Water and ensure that legislative requirements are met.

DEVELOPMENT OUPUT
10. Minimising the water quality risk from lead pipes
Final Determination: *The company shall provide an annual report detailing how the implementation of its strategic lead policy and lead replacement programme is progressing. This should explain how the company is managing this actMty and targeting hotspots to maximise benefits and how it is assessing the improvements delivered by the work undertaken.* *The report shall also provide details of the activity undertaken by the company, in conjunction with other stakeholders, to develop and implement a strategic risk based approach for addressing compliance issues associated with private supply pipes and domestic distribution* systems.
Additional Details:
The lead replacement programme is 'Business As Usual' with analysis being undertaken by Asset Management and briefed for delivery to Engineering Procurement. To date the target number of lead replacement pipes per annum has been achieved.
PROJECT **SUMMARY**
• Annual update on the lead pipe replacement programme is provided through the company's AIR Return: *'AIR 16 Submission -2015-2016 Table 47 - Line 1O- Minimising the Water Quality Risk from Lead Pipes'.* • To better inform DFI Water Policy Unit, as part of the Long Term Water Policy Strategy, a Lead Service Replacement Pilot has taken place at Craigyhill Bungalows, Lame. As part of the pilot the complete service pipes, including the Supply Pipes, were replaced to assess the cost and benefits of such an approach with a view to grant scheme being established. A Report on the pilot has been produced and issued to Dfl for policy consideration.

KEY MILESTONES	Target	Status
1. Annual reporting provided through the AIR Return process.	Annually	**BAU**
2. Complete pilot study for Dfl policy development.	March 16	**Complete**
3. Develop summary document and recommendations to assist Dfl in developing policy.	Sent to Dfl April 18	**Complete**

Minimising the water quality risk from lead pipes

Part 1 - Progress of the Implementation of Strategic Lead Policy and Lead Replacement Programme

The NIW Lead Project comprised a desk top survey (alongside proactive targeted sampling) of available data from NI Water Corporate Systems relevant to lead services and analyse and collate information and data obtained onto Mapinfo layers (In Open Format) to compile a prioritised and costed schedule of lead replacements for PC15.

Work also included Scheme Prioritisation and Site Verification work including visual inspections and sampling work.

The methodology includes: -

- Prioritise by highest exceedances and densest clusters
- Desktop exercise to help focus on the areas required for further sampling verification and review
- If the network distribution pipe is considered unsuitable - pass the scheme over to Engineering Procurement Watermains Rehabilitation Team for replacement of the distribution main and the related communications pipes together.
- On site sampling and inspections to further verify priority areas
- Ensure value for money in delivery of this work by clustering work where possible

Prioritisation

The Asset Performance Networks Water Team compiled a Specification for this approach and, following a Tender exercise; Consultants were appointed to deliver the required outputs.

A quantitative, risk-focussed analysis procedure to identify lead “hotspots” across Northern Ireland was then commenced. The focus of this approach was to use available datasets in a transparent and cost effective process, which is easily repeatable or editable in the future using updated datasets or incorporating new data as it becomes available.

Taking cognisance of best industry practise and recent DWI guidance it was agreed between NIW and the Consultant, that greater emphasis be placed on using an evidence based approach, such that once the initial hotspots were prioritised, a second stage involving customer site surveys and a water quality sampling exercise be undertaken to validate the assumptions. This approach facilitates an assessment of risk based on the combination of the likelihood (probability) of occurrence and the consequence (extent and seriousness) of the failure on the quality of water received by NI Water’s consumers.
The following staged approach was adopted.

1. Data Gathering and Desktop Analysis,
2. Prioritisation of those hotspots based on probability of lead occurrence,

The various datasets were spatially analysed using MapInfo software to create “hotspot” areas based on combining clusters of unusually high concentrations of point data, such as water quality lead exceedances (>10µg/l) and watermains of a known age (i.e. those installed pre 1920). The digitisation of hotspot polygons allowed the large datasets to be rationalised into a manageable number of areas which contained a high probability of lead occurring. A range of polygons was initially created by spatially querying various lead indicator criteria or where lead piping was confirmed to be present. They were then manually reviewed to validate the information and edited by enlarging or enclosing each, based on similar cohorts

Assignment of a prioritisation score to each dataset was derived based on the significance of each as an indicator of the likelihood of lead occurring or its impact to public health. An iterative sensitivity analysis process was also conducted to test the robustness of each assessment criteria and understand the causal relationships between datasets.
The scoring matrix assigned to each is described below.

Watermains Age

Lead was used throughout Northern Ireland up until ~1975 for connecting a property to the water supply main and for internal plumbing. Lead’s availability, inherent strength, malleable nature and corrosion resistance properties meant it was favoured over other metals such as copper and brass.

Accordingly, watermains of a certain age have been assessed as a good indicator of the presence of lead and the criteria in Table 1 below were used to score the age of watermain criteria. To ensure that each polygon was assessed using its predominant watermain age type, those polygons that contained only a small % of a differing age type were discounted, by applying a rule that selected the most common type of watermain age within the polygon.

Criteria Age of watermains	Score
Majority of Mains in Polygon laid after 1975	0
Majority of Mains in Polygon 1970 to 1975	1
Majority of Mains in Polygon laid 1950 to 1970	2
Majority of Mains in Polygon laid 1920 to 1949	3
Majority of Mains in Polygon laid before 1920	4

Table 1: Age of Watermain Score

Historical LIMS Water Quality Data

NI Water LIMS data provided information on 25,800 water quality sample records from 2002 to 2014, which were scored based on the total numbers of samples per polygon (likelihood) and the lead parameter result (severity of impact).

Criteria Lead Result (µg/1)	No of Occurrences within Polygon<1>	Weighting Factor<2>	Score <3>
0	x	0	0
0.00 - 9.99 µg/1	x	0.1	1
10 -14.99 µg/1	x	1.0	2
15 - 49.99 µg/1	x	3.0	3
> 50 µg/1	x	5.0	4

('Note The overall score 'is = (1 x2 x 3)

Table 2: Historical Lead Water Quality Density Score

Weighting factors were used to negate the influence of large numbers of sample data skewing the overall scores.

In order to prioritise the water quality samples based on the severity of identified water quality results the polygons were also assigned a score based on the highest exceedances. Approximately 4% of the total water quality records exceeded the Prescribed Concentration Value (PCV) of 10µg/l, with 1% (approximately 250 samples) exceeding 39µg/l.

Water quality results were also analysed to remove,

- Where a new main had been laid since the sample had been taken, (typically under the Watermains Rehabilitation Programme). In this case it has been assumed that the communication pipe was replaced during the process. A more recent sample at the same location superseded the previous sample,

Lead Failures by OMA

In order to apply a holistic approach across the entire water distribution system each OMA was initially scored by the percentage of lead exceedances within its boundary, relative to the total number of water quality samples taken. NI Water has approximately 1,380 DMAs which encompass its distribution network and each OMA with the exception of some trunkmain DMA's, has water quality results with which to compare. Analysis would identify

the worst performing OMA, such that any potential replacement scheme would provide water quality betterment to customers within the entire OMA, and potential neighbouring or cascading OMA. The scoring system is presented in Table 3 below.

Criteria Lead Result (µg/1)	Weighting Factor ≤l	Score (3)*
<10 (contains 97% of WO samples)	0	0
10-20.19 (contains 1% ofWQ samples)	0.5	1
20.20 - 38.99 (contains 1% of WQ samples)	1.5	2
> 39 (contains 1% of WO samples)	2.0	3

(* Note The overall score= 2 x 3)

Table 3: Water Quality Results

A thematic illustration of those OMA's ranked by the highest percentage of water quality failure is available on request. The output showed that the largest numbers of OMA with a higher percentage of failures are concentrated in the Greater Belfast area.

Northern Ireland Housing Executive (NIHE) Properties

NIHE has endeavoured to provide an extract from its digital asset dataset, which details the ownership of properties in Northern Ireland and the age of the dwelling. Once received this data can be used to verify assumptions regarding the age of watermains and identify additional areas where lead may be present.

NIHE has confirmed that it has no capital works planned in the short-term (2015) to replace kitchen or private supply pipes. Accordingly, there appears to be limited opportunity to coordinate the replacement of customer communication pipes with NIHE private supply pipes where practical, in the short term.

Watermains Rehabilitation Programme

The NI Water Watermains Rehabilitation Programme Team provided detailed information in relation to the numbers of lead communications pipes replaced on each rehabilitation / replacement scheme installed between the years 2005 to 2014. Once cleansed the data provided details on some 8,150 lead pipe replacements undertaken during the Watermains Rehabilitation Programme and following a digitisation exercise the information was spatially mapped to link to the NI Water PC13 Schemes Core MapInfo table.

92% of the WMRP schemes which involved replacement of lead communication pipes occurred in the Greater Belfast area.

In contrast to the other data sources which were potential indicators of lead presence, this source confirmed that lead didn't exist and as such it wasn't possible to assign a score to each polygon. In this case the data was used to manually review each lead hotspot to,

- identify hotspots for removal following confirmation of rehabilitation (For the most part the NI Water AIC GIS data confirmed this, though this process captured any recently constructed mains that hadn't yet been returned to the NI Water AIC),
- Identify additional (neighbouring) polygons where lead was likely to be present using similar water main cohorts.

Corporate Asset Register (CAR)

NI Water staff queried the Corporate Asset Register (CAR) to identify those properties which had lead communication pipes replaced or had combined services separated through opportunistic or business as normal services, since 2009.

The information was gee-referenced and analysis was targeted to identify the polygons with the largest remaining numbers of lead communication pipes, such that any potential replacement scheme would provide maximum water quality betterment to customers within the entire OMA. The scoring system is presented in Table 4 below.

Criteria Opportunistic Lead Communication Pipe Replacement	Number of Polygon Properties with Lead Communication Pipes replaced	Score
Polygon Contains confirmed Lead Communication Pipe Replacements	No of Properties	5
Polygon Contains no confirmed Lead Communication Pipe Replacements	No of Properties	0

Table 4: Opportunistic Lead Communication Pipe Replacement Score

Sensitive Customers

Given the well documented increased risk to children from increased levels of lead in drinking water (*Childhood Lead Poisoning, World Health Organisation, 2010)* a list was created of sensitive non-domestic properties from the Pointer NI dataset, which may present increased levels of risk to children. Such non-domestic properties include,

- Primary Schools,
- Nursery Schools/ Day Care Centre,
- Sure Start Centre's,
- Children's Activity Centre's,
- Playgroups.

The scoring system is presented in Table 5 below.

Criteria Sensitive Property	Score
Yes	3
No	0

Table 5: Sensitive Property Score

Visible Lead Score

A dataset was then created by combining information obtained from previous NIW water quality customer surveys and Customer Complaints, which details where lead pipe material has been confirmed at either the communication pipe, the service pipe or internal riser (typically at the kitchen or first floor bathroom). Given this was the only data source which confirmed the presence of lead at a particular property (in advance of the site surveys) it received the highest weighted score, where lead was deemed to be present. The scoring is provided in Table 6 below.

Criteria Lead Pipes Visible	Score
Yes	10
No	0
Unknown	0

Table 6: Lead Pipe Visible Score

To date this Project has identified and assessed 1,680 lead hotspot areas which encapsulate some 92,400 properties across Northern Ireland (average of 55 properties per polygon). The hotspots have been prioritised for the next phase of the Lead Pipe Replacement Programme (Water Quality and Customer Site Survey) using the prescribed scoring methodology.

DWI Stakeholder Discussion

This approach was presented in detail, alongside the proposed Work packages, to DWI on 26th March 2015

The "Mapinfo" geographical presentation of the outputs and this associated methodology were very positively received at this session.

Pilot Study "Craigyhill Bungalows"

A Lead Service Pilot has been completed at a small development (40 or so properties)," Craigyhill Bungalows", Lame, to identify the benefits and associated costs of replacing the communications pipe within private property.

As part of the pilot, in addition to replacing the public side communications pipe, NIW replaced the private communications pipe to internal boundary of the properties. It should be noted this did not include the internal pipework. This was carried out at the 18 privately owned houses within the development. The remaining houses within the development are NIHE owned, and NIHE replaced both private communications pipework and the internal pipework. NIW carried out first draw sampling at the properties, both pre and post work.

A draft report following the pilot lead-replacement project at "Craigyhill Bungalows" has been completed and has been reviewed by NI Water Governance mechanisms. As suggested in last year's report the initial outputs suggest there is limited benefit in replacing private communications pipe unless all internal lead within a property is removed. This report was forwarded to DFI in April 18 for further consideration.

These activities and the associated forums will then inform the future review strategy in this area and will help inform the approach in terms of how frequently NIW might re-sample and also the timing and volume of samples that are required, to get a clear picture of the effect that this programme of work has had on Lead reduction.

Planned next steps for delivery-

The company will continue with its Proactive Communications Lead Pipe Replacement Programme at circa £1 million per year.

Overall, NIW is on target for the 1844(annual target) x 6 years of PC 15 = 11064
The 3 year target is therefore 11 064/2 = 5532nr as the running total for the three years of PC 15.

The 3 year target has been achieved, as the number of lead communications pipe replacements respectively from AIR 16, 17 and 18 is: 192 2 + 1867 + 1767 = 5556nr from table 6b.

50% of the Lead Communications pipes to be replaced in PC 15 (12 796 is the PC 15 total) have been completed by March 2018

30% of the total was under construction by March 2018

15% of the total was very difficult to access or had resistance from local residents *(Those on the table below which have a grey background)*

5% of schemes had yet to be assigned to a Contractor by March 2018

NIW are now looking at reviewing the potential 15% shortfall above, and looking into identifying 2 000 or so new Lead Communications pipe replacements to fill the PC 15 “hopper” and also further Lead Communications pipes to start off the PC 21 requirement.

Also included below is a list of possible areas to be reviewed and sampled for PC 21 if the current methodology remains (i.e. identified as Year 7 to Year 12 replacements.

PC15 Proactive Replacement Programme Proposed by Asset Management for PC15 -See Table 11 for Installaf10n Progress

	Prioritised Hotspot Locations for PC15	Works Package Issued to E&P	Date Issued to E&P	Water Quality Survey	Lead Comms Pipes Submitted	Cost@ £500/pipe
YEAR 1	Marina Park	Yes	Feb-15	Jan-15	356	£178,000.00
	Orangefield Crescent	Yes	Jun-15	Jan-15	301	£150,500.00
	Gilnahirk Ph1	Yes	Jun-15	Feb-15	437	£218,500.00
	Ulsterville Gardens	Yes	Jun-15	Jan-15	414	£207,000.00
	Ebor Street	Yes	Jun-15	Feb-15	428	£214,000.00
	West Wind Terrace	Yes	PC13 LPRP	PC13	27	£13,500.00
	Victoria Gardens	Yes	PC13 LPRP	PC13	16	£8,000.00
	Ransevyn Park	Yes	PC13 LPRP	PC13	84	£42,000.00
	Derryvolgie Avenue	Yes	PC13 LPRP	PC13	66	£33,000.00
	Ballycraigy Park	Yes	PC13 LPRP	PC13	52	£26,000.00
	Victoria Court Donaghadee	Yes	PC13 LPRP	PC13	79	£39,500.00
TOTAL					**2260**	**£1,130,000.00**
YEAR2	Roseberi Road (Dh 1)	Yes	Seo-15	Feb-15	603	£301.500.0[]
	Irwin Avenue	Yes	Seo-15	Mar-15	445	£222.500.0[]
	Morven Park (Dh1)	Yes	Mar-16	Feb-15	199	£99.500.00
	Gilnahirk nh2	Yes	Mar-16	Feb-15	434	£217.000.00
	Grand Parade	Yes	Seo-15	Jan-15	412	£206.000.0[]
TOTAL					**2093**	**£1.048.500.00**
YEAR3	York Park	No	Mar-16	Dec-15	301	£150,500.00
	Tates Avenue	No	Mar-16	Feb-15	1391	£695,500.00
	Cregaah Road	No	May-16	Feb-16	449	£224,500.00
TOTAL					**2141**	**£1,070,500.00**
YEAR4	Deramore Avenue	No	Mar-16	Dec-15	684	£342,000.00
	Roseberry Road (Ph 2)	No	Mar-16	Feb-15	722	£361,000.00
	Willowholme Drive	No	Mar-16	Mar-15	445	£222,500.00
	Mvrtlefield Park	No	Mar-16	Jan-16	204	£102,000.00
	Cranmore Gardens	No	Mar-16	Jan-16	128	£64,000.00
TOTAL					2183	**£1,091,500.00**
YEARS	Bramcote Street	No	Mar-16	Mar-15	375	£187,500.00
	Beechmount Crescent	No	Mar-16	Dec-15	722	£361,000.00
	Kirkliston Park	No	Mar-16	Jan-16	419	£209,500.00
	Ravenscroft Avenue	No	Mar-16	Jan-15	493	£246,500.00
	Eastleigh Crescent	No	Mar-16	Jan-16	90	£45,000.00
	Breda Gardens	No	Mar-16	Jan-16	50	£25,000.00
TOTAL					**2149**	**£1,074,500.00**
YEAR6	Ainsworth Street	No	Mar-16	Jan-16	**444**	£222,000.00
	Dunlambert Park	No	Mar-16	Mar-15	285	£142,500.00
	Hay park Avenue	No	Mar-16	Dec-15	260	£130,000.00
	Windsor Avenue	No	Mar-16	Feb-15	82	£41,000.00
	Birch Drive	No	Mar-16	Feb-15	210	£105,000.00
	Ormiston Crescent	No	Mar-16	Jan-16	151	£75,500.00
	Wandsworth Parade	No	Mar-16	Jan-16	291	£145,500.00
	Cherryvallev Park	No	Mar-16	Jan-16	335	£167,500.00
	Lynnwood Park	No	Mar-16	Jan-16	39	£19,500.00
	Schomberg Park	No	Mar-16	Jan-16	53	£26,500.00
TOTAL					**2150**	**£1,075,000.00**
				Totals	**12,976**	**£6,488,000.00**

	Potential Prioritised Hotspot Locations for Review for PC21	Works Package Issued to Asset Performance	Works Package Issued to E&P	Water Quality Survey	Lead Comms Pipes Submitted	Cost@ £500/pipe
YEAR7	Orpen Drive	Mar-16	No	To be Surveyed	351	£175,500.00
	Ethel Street	Mar-16	No	To be Surveyed	567	£283,500.00
	Balfour Avenue	Mar-16	No	To be Surveyed	385	£192,500.00
	Thomas Street	Mar-16	No	To be Surveyed	316	£158,000.00
	Wellington Park	Mar-16	No	To be Surveyed	115	£57,500.00
	Milfort Avenue	Mar-16	No	To be Surveyed	167	£83,500.00
	Beechland Drive	Mar-16	No	To be Surveyed	221	£110,500.00
TOTAL					**2122**	**£1,061,000.00**
YEARS	Castlereagh Street	Mar-16	No	Tobe Surveyed	99	£49,500.00
	Montgomery Road	Mar-16	No	Tobe Surveyed	122	£61,000.00
	Castledona Crescent	Mar-16	No	Tobe Surveyed	479	£239,500.00
	Portallo Street	Mar-16	No	Tobe Surveyed	433	£216,500.00
	Avoniel Road	Mar-16	No	Tobe Surveyed	126	£63,000.00
	Braeside Grove	Mar-16	No	Tobe Surveyed	448	£224,000.00
	Onslow Gardens	Mar-16	No	Tobe Surveyed	215	£107,500.00
	Ravenhill Park	Mar-16	No	Tobe Surveyed	109	£54,500.00
	Hillsborough Drive	Mar-16	No	Tobe Surveyed	62	£31,000.00
TOTAL					**2093**	**£1,046,500.00**
YEAR9	Kent Avenue	Mar-16	No	To be Surveyed	73	£36,500.00
	Glenbank Drive	Mar-16	No	To be Surveyed	185	£92,500.00
	Glenbryn Drive	Mar-16	No	To be Surveyed	277	£138,500.00
	Joanmount Park	Mar-16	No	To be Surveyed	583	£291,500.00
	Eastleigh Drive	Mar-16	No	To be Surveyed	106	£53,000.00
	Veryan Gardens	Mar-16	No	To be Surveyed	263	£131,500.00
	Thorndale Avenue	Mar-16	No	To be Surveyed	74	£37,000.00
	Crumlin Road	Mar-16	No	To be Surveyed	177	£88,500.00
	Somerton road	Mar-16	No	To be Surveyed	93	£46,500.00
	Kelvin Parade	Mar-16	No	To be Surveyed	170	£85,000.00
TOTAL					**2001**	**£1,000,500.00**

YEAR 10	Knockwood Park	Mar-16	No	To be Surveyed	355	£177,500.00
	Northwick Drive	Mar-16	No	To be Surveyed	818	£409,000.00
	Orangefield Avenue	Mar-16	No	To be Surveyed	654	£327,000.00
	Cyprus Avenue	Mar-16	No	To be Surveyed	95	£47,500.00
	Clonlee Drive	Mar-16	No	To be Surveyed	84	£42,000.00
TOTAL					**2006**	**£1,003,000.00**
YEAR 11	Cherryhill Avenue	Mar-16	No	To be Surveyed	346	£173,000.00
	Cabin Hill Gardens	Mar-16	No	To be Surveyed	210	£105,000.00
	Holywood Road	Mar-16	No	To be Surveyed	368	£184,000.00
	Ardcarn Way	Mar-16	No	To be Surveyed	222	£111,000.00
	Knocktern Gardens	Mar-16	No	To be Surveyed	89	£44,500.00
	Victoria Road	Mar-16	No	To be Surveyed	192	£96,000.00
	Kings Road	Mar-16	No	To be Surveyed	424	£212,000.00
	Strandburn Drive	Mar-16	No	To be Surveyed	196	£98,000.00
	Leven Park	Mar-16	No	To be Surveyed	50	£25,000.00
TOTAL					**2097**	**£1,048,500.00**
YEAR 12	Abbey Ring	Mar-16	No	To be Surveyed	535	£267,500.00
	Church Avenue	Mar-16	No	To be Surveyed	97	£48,500.00
	Clifton Road	Mar-16	No	To be Surveyed	301	£150,500.00
	Lancaster Avenue	Mar-16	No	To be Surveyed	143	£71,500.00
	Bloomfield Road	Mar-16	No	To be Surveyed	612	£306,000.00
	Newtownards Road	Mar-16	No	To be Surveyed	315	£157,500.00
TOTAL					**2003**	**£1,001,500.00**
				Totals	**12,322**	**£6,161,000.00**

DEVELOPMENT OUPUT
11. Water Meter Renewal
Final Determination: *The company shall report progress against its programme of water meter renewal, targeted to deliver a uniform rate of replacement to ensure that all revenue* meters *are no more than 17* years *old by the end of PC15.*
PROJECT **SUMMARY**

NIW in accordance with the company policy on Proactive Meter Exchanges (PME) set out its PC15 programme of replacements over a 6 year period,

- The data obtained from the Rapid corporate billing system indicated 29059 water meters would meet the PME criteria during the period 2015-2021. These meters were across all of the billing status.
- It was envisaged that 4843 meter per year would be targeted for replacement over a 6 year period
- During 15/16 NIW due to better than expected success rates decided to increase the pace of replacement and was able to exchange 6,920 meters as opposed to the planned 4843
- During 16/17 NIW was again due to better than expected success rates able to increase the pace of replacement and was able to exchange 7,399 meters as opposed to the planned 4843
- At the start of 17/18 NIW started to target status's other than supplied and issued 75 domestic meters for replacement. As NIW is no longer installing domestic meters senior management determined that proactive replacement of domestic meters should also cease. As a consequence of this NIW were able to replace 272 non-domestic meters based on age profile.
- Due to the accelerated rate of replacements during 15/16 &16/17 NIW plans to scale back replacements for the remainder of PC15. The target of 29,058 meters included all status, PME will now only target supplied billable meters which excludes domestic non-billed customers.

KEY MILESTONES	Target	Status
1. 2015/16	4.843	**6,920**
2. 2016/17	9,686	**14,319**
3. 2017/18	14,529	**14,591**
4. 2018/19	19,372	
5. 2019/20	24,215	
6. 2020/21	29,058	

- As part of its PC15 Business Plan submission, NI Water stated that the company has a policy to proactively replace customers' meters which are >17 years old and or have a recorded consumption of >8000m^3.
- NI Water is aware having completed research involving extracting and testing sample numbers of customer meters that meters have the propensity to under record consumption as they get older. Wider water industry research also supports this position with many GB companies proactively replacing their meter stock from the age of 10 up to 17+ years.
- The numbers of meters matching the NI Water criteria as extracted from the company billing system and quoted to NIAUR are detailed below.

PC15 - PME Numbers							
Due for Reolacement	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	
Install Year	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	Total
Meeting Age Criteria	11,634	1,682	2,105	2,905	3,038	3,712	**23,426***
Meeting Consumption Criteria							**5,633**
Overall Total							**29,059**
Proposed Replacement Programme	4,843	4,843	4,843	4,843	4,843	4,843	

*23,426 total = 25,076 - 1,650 ongoing PME jobs between Oct14-Mar15

- Pre-empting the PC15 mid-term review and in response to the regulators T47 query NI Water has to report the following progress.
- NI Water based on the above numbers has been more proactive in its PME programme during 2015/16 than originally proposed replacing 6920 meters as reported in AIR16. Up until 17/18 the proposed number of meters has been replaced but since it has been decided that only billable meters are eligible for PME there are only approx. 1500 to be proactively replaced until the end of PC 15 - some of these may be replaced reactively on failure.
- The reason for completing more replacements is that NI Water was able to secure better contract rates following the amalgamation of two former maintenance contracts used for metering into a single and more competitive meter installation and replacement contract.
- he billing system has the entire customer meter stock listed against various fields known as water statuses. Examples of these meter statuses are described in the table below.

NI Water - Corporate Billin		System Water Status	
1	Combination meter-low	8	RFR - compensation supply
2	Dom sub meter	9	RFR - no billable name/address
3	Domestic supplied	10	RFR - shared supply
4	ORD supply	11	RFR - unable to locate
5	Free supply	12	Sub meter
6	Not supplied	**13**	**Supplied**
7	Retain For Review (RFR)	14	Trade Effluent

- NI Water has to date focused its PME programme on the water status numbers contained within the supplied category. It has now been decided that unless there is a change in legislation NIW will only be replacing billable meters
- Being able to better the original anticipated profile has enabled NIW to address the potential under recording of consumption due to the age of the meter and thus improve the accuracy of its measured consumption.
- NI Water will continue to further review its meter data associated with the other water status categories. NI Water will where appropriate issue meter exchange batches to the metering contractor through the remainder of PC15.

DEVELOPMENT OUPUT

12. Targeting sewerage 'hotspots'

Final Determination:
The company shall report on its plans to target sewerage hot spots of blockage and collapse and the development of its sewerage intervention prioritisation to incorporate the outcome of PC15 consumer engagement. The company shall provide updates on the implementation of the prioritisation annually through PC15.

Additional Details:

The Sewerage Hotspot tool is now BAU activity.

PROJECT **SUMMARY**

- Hot-Spots of Blockages
  - Monthly reports generated automatically to inform Asset Performance and CSDD.
  - Joint AP/CSDD liaison to determine and agree further root cause investigation needs.
- Sewer Collapses
  - Sewer collapses are repaired as and when they occur; either through CSDD intervention or through AP for EP delivery of remedial for larger scale repair needs.
- Sewer Infrastructure Investment Model (SIIM) is operating as a BAU tool to identify and prioritise sewer Structural Grade 4s & 5s sewer lengths for consideration for rehabilitation as one of the Capital Maintenance Planning tools.
- The SIIM is refreshed annually using updated corporate datasets (e.g. collapses, blockage, out of sewer flooding, pollution, and customer contacts etc.). Annual updates are used to inform the next year's rehabilitation investment programme.
- The rehabilitation programme is risk-based and focused on individual sewer lengths classified as 'High Risk' and 'High Consequence'.
- Asset Performance undertakes a targeted CCTV programme and then liaises with CSDD to confirm sewer condition and agree the extent of rehabilitation required prior programme submission to EP.
- From April '17, the rehabilitation programme will be forwarded to EP on a quarterly basis (as opposed to annually). This will allow improved delivery programming.
- Methodology reviewed periodically as BAU to maintain best practice. Review of SIIM has commenced.

KEY MILESTONES	Target	Status
1. Sewer blockaae 'Hot-Soot' Reoortina	Monthly	BAU
2. Review SIIM methodology.	June'18	BAU

Planned next steps for delivery

The next steps for delivery include determining whether richer data sets and information are required in order to generate more accurate reports. The purpose being to further reduce the number of blockages across the various catchments in the Province.

DEVELOPMENT OUPUT
13. Polluted Storm Water Overflows
Final Determination: *The company shall report progress on the investigation and remediation of storm-water overflows including enforcement action taken by various authorities and any remediation action undertaken.*
Additional Details:
NIEA identified 47 priority catchments where there appear to be issues with misconnections. To date NI Water has investigated 24 and has been able to resolve a number of pollution issues through "quick wins". However, it has not always been possible to close out issues, as there is a gap in the legal powers available to NI Water to remedy misconnections.
PROJECT **SUMMARY**
• A Working Group has been established comprising DfI's Water and Drainage Policy Division (WDPD), NI Water and NIEA have agreed a new policy for dealing with misconnections. • WDPD, NIEA and NI Water have produced a shortened version of the good practice document titled "Investigation and rectification of drainage misconnections", condensing it to reflect present agreed procedures for dealing with misconnections. • WDPD to liaise with DfI Planning Group to establish how best to promote / educate on the problems associated with misconnections. • Continued development and refinement by NI Water and NIEA has strengthened the investigatory process and working practices. • Where practicable NI Water has dealt with misconnections on a case-by-case basis. However, the vast majority of misconnections are related to washing machine connections. The Working Group is reviewing policy and legal aspects of correcting misconnections.

KEY MILESTONES	Target	Status
1. Joint Liaison Meetinas	Onaoina	
2. Prepare draft good practice document	Nov17	
3. Agree and implement good practice document	Nov17	

Activity completed to date and its outcome

Stage 1 of this project has been completed which was the investigation of 24 catchments using CCTV techniques, dye testing and engaging with the public. Following on from these activities, NI Water has requested advice from its Shareholder on the next step to take on corrective actions.

The present position on Polluted Storm Water Overflows is detailed below:

- 24 Catchments out of 47 catchments highlighted with NIEA have been surveyed regarding pollution of nearby rivers.
- The surveys highlight that most of the pollution is from private connections e.g. washing machines located in garages, which are connected to the roof gully, which in turn discharges into a storm water sewer.
- A meeting took place in September 2016 between NIEA, NI Water and DfI with the purpose of developing a policy to address misconnections on private properties. At this meeting, NIEA highlighted that they had identified quick wins concerning some of the misconnections. However, following further investigation by NI Water it was determined that these quick wins were not viable as they involved diverting storm water into foul sewers, which did not have the necessary hydraulic capacity.

- The Working Group continue to meet to establish how best to address private connections.
- Until a policy is developed, NI Water has not conducted any further catchment studies. This decision was made with the agreement of NIEA (2015),
- Misconnections located by NI Water on the public highway are being addressed i.e. they are being redirected to foul sewers.
- NI Water is continuing to investigate and address pollution of storm water overflows where the misconnection is on public property with the help off NIEA.

Planned next steps for delivery

The next step for delivery entails a request for clarification from DfI Water Policy Unit on the way forward: regarding potential enforcement actions.

DEVELOPMENT OUPUT

14. Storm water separation

Final Determination:
The company shall develop a plan for investing the funding allocated for storm-water separation by September 2015 which sets *out the target projects and the benefits they deliver. The company shall* assess *the scope for storm-water separation and* assess *benefits it could deliver to support further investment.*

Additional Details:

This is now Business As Usual

PROJECT **SUMMARY**

- Stormwater separation is an option considered in all new project appraisals.
- A plan has been developed using SudStudio methodology to prioritise storm separation across the Province.
- The project considered a phased approach as follows:
  - Phase 1 - considered schools but this proved to be undeliverable due to issues with Education Authority acceptance and buy-in.
  - Phase 2 - consisted of major industrial premises and terraced housing. Phase 2 has been forwarded to EP to develop detailed solutions - i.e. AO (KI605) issued to EP in December '16 for delivery of Phase 2 work. Final output costs will only be known after detailed design has been completed.
  - Desktop assessment of Phase 2 has the potential area removal identified as circa 1,077, 150m².

KEY MILESTONES	Target	Status
1. PC 15 Plan has been developed		**Complete**
2. Phase 2 schemes identified to EP for detailed design and delivery	Dec '16	**Complete**
3. Delivery scheduled by EP	Mar '18	On target
4. Provide input to PC21 asset management plan	Sep-Dec 2019	On target

During PC15 NI Water has planned to remove 19 hectares of impermeable area develop by implementing a variety of projects which also inform the business of the cost effectiveness of storm water separation in a range of situations and catchments. For example:

- where separate systems have been merged when they join the old combined network
- industrial areas and roofs
- areas of terraced housing
- areas of semi-detached housing
- roads.

NI Water's primary aim is to identify the priority locations across Northern Ireland where the retrofitting of storm water separation/ SuDS technologies would remove significant volumes of storm water from the combined sewer system. To facilitate this NI Water has employed an innovative tool: SUDS Studio™ ,

The SUDS Studio™ tool works by using GIS data to identify sources of runoff (for example roof, roads, carparks, hardstandings, etc.), sinks (locations where SuDS solutions can be installed or nearby watercourses), and pathways which connect the two. The tool has been designed to incorporate a range of complex relationships that are used to determine what SuDS are considered feasible on any given site, and those, which are not. SuDS Studio™ assesses the best solution for each source and site, and outputs its results as GIS layers

containing tables that can quickly and easily be summarised in reports and easy to understand figures.

The basis of the Suds Studio™ analysis in Northern Ireland is the OSNI Vector mapping dataset. However, NI Water wishes to emphasise that SuDS Studio™ has been developed based on OS Master Map data, which is significantly more detailed and functional than OSNI Vector mapping. A significant amount of pre-processing of the data has therefore been required to supplement the OSNI Vector maps in an attempt to replicate the quality of information contained in OS Master Map. It is our understanding that there is a current project within OSNI to develop a polygon based mapping dataset that is similar to OS Master Map which when finished will enhance the output derived from SuDS Studio in Northern Ireland in the future.

However, based on the current situation significant pre-processing is required due to the GIS data available in Northern Ireland (plus time to acquire and purchase additional data sets) and has extended the time taken to conduct the SUDS Studio™ analyses. This in turn has resulted in the slower identification of storm water / SuDs opportunities in Northern Ireland with which to develop NI Water's Storm Water Separation Programme of work.

Since its launch at the start of PC15, a fundamental goal of NI Water's Storm Water Separation Programme has been to develop a robust approach for identifying priority locations across Northern Ireland. This is essential for the successful retrofitting of SuDS technologies / storm water separation infrastructure for the removal of significant volumes of storm water from the combined sewer system. Time taken in developing the system is considered well spent by NI Water and will drive a successful programme going forwards.

During 2015 and 2016, NI Water's consultant has adapted SUDS Studio™ into a bespoke tool for identifying large surface areas in public ownership across Northern Ireland with potential for storm water separation / SuDS Technologies. This resulted in the identification of a large number of schools as potential pilot project sites with high estimated project costs and unfortunately did not yield the range of situations and catchments desired by NI Water. The four schools short-listed for separation and the recommended solutions summarised from the consultant report are presented below:

- Campbell College: SuDS Studio recommends bioretention, swales and the disconnection of downpipes. Recommendations are likely to be delivered entirely within the existing Campbell College boundary. Further work required to investigate ground conditions, quantification of flows within SuDS features, quantification of benefits to the sewer system (including DG5 impacts), design development to determine footprint and landtake, costings.
- St Louise's: SuDS Studio™ recommends bioretention and potential green roofs / disconnection of downpipes. Recommendations are likely to be delivered entirely within the existing St Louise's boundary. Further work would require investigation into ground conditions, quantification of flows within SuDS features, quantification of benefits to the sewer system (including DG5 impacts), design development to determine footprint and landtake, costings. It is also to be noted about this site that it is adjacent to an extensive area of wetland (Bog Meadows) managed by the Ulster Wildlife Trust.
- Ballycastle, SuDS StudioTM recommends bioretention, potential green roofs / disconnection, of downpipes and swales. Recommendations are likely to be delivered entirely within the existing Ballycastle High School boundary. Further work is required to investigate ground conditions, quantification of flows within SuDS features, quantification of benefits to the sewer system (including DG5 impacts), design development to determine footprint and landtake, costings. Other

considerations include the existing infrastructure in place on this site in that much of the system is already separately drained with only the ultimate connection point combined. As this is already, a piped system consideration should be given to continuing the piped network within Moyle Road to a suitable discharge point such as an existing storm sewer or RA culvert. Consideration will need to be given to the impact of this flow on the discharge location. Buildability constraints should be considered when determining any extension to the outfall pipeline route corridor

- Dromore, SuDS StudioTM does not recommend any feasible option in this instance due to limitations with the input data. In this instance therefore, engineering judgement has recommended that Disconnection of Downpipes be considered. Recommendations are likely to be delivered entirely within the existing Dromore Central Primary School boundary. Further work is required to investigate ground conditions, quantification of flows within SuDS features, quantification of benefits to the sewer system (including DG5 impacts), design development to determine footprint and landtake, costings.

It is important to note that NI Water has already encountered significant stakeholder issues, notably with the Education Board, regarding the safety of SuDs (often used to enable storm water separation) which are yet to be resolved. One of these sights have now been agreed by NI Water at Clandeboye School, Bangor. NI Water is working closely with the Water and Drainage Policy Division of DfI regarding engagement with the Education Board and their legal representatives.

Subsequently NI Water initiated Phase 2 of planning NI Water's Storm Water Separation Programme with the SUDS Studio^{TM} tool. The tool was further modified and the initial SUDS Studio^{TM} run identified a broader range of potential storm water separation opportunities to address the bias, which resulted in the identification of a large number of schools in Phase 1:

- 32 high density housing sites
- 61 Industrial estates and
- 28 potential quick win sites

Through the short listing process this was refined down to:

- 14 high density housing sites,
- 14 industrial estates and
- 6 potential quick win sites.

These sites were then packaged into geographically similar study areas and progressed for ground truthing connectivity checks.

Following on from the ground truthing exercise the sites which were assessed as suitable for further consideration were modelled with Infoworks to quantify the benefit that might be achieved from storm water separation / SuDS retrofit. This has allowed us to model and assess the following sites (Table 1) which are now being considered as pilot studies from Phase 2. In total, the *maximum potential* area, which could be removed as a result of the Phase 2 assessment, is 1,077,210 m^2.

The Phase 2 opportunities mainly originate in High Density Housing areas and only one Industrial estate. Industrial estates have proven to be, on the whole, already separate systems. It should be noted that it is unlikely that the 100% separation figure modelled (total area = 1,077,210 m^2) could be achieved in reality. Therefore, these figures should be

considered as an initial over estimate, which will reduce during the feasibility and implementation phases.

Furthermore, stakeholder issues will be key in determining the viability, likelihood of success and speed at which solutions can be realised. There are a number of other industrial estates and quick win sites, which are also suitable for further consideration (having been ground truthed), and these will be brought forward to NI Water in a Report. The sites and potential impermeable area removal (m^2) have been presented in Table 1. It should be noted that consents are yet to be negotiated with a key stakeholder, Rivers Agency, where storm water is being separated and directed into a river or culvert.

Table 1: Phase 2 Sites identified with potential for storm water separation and SUDS solutions, including the associated potential maximum area removal values (m^2).

Location	Potential Area Removal m^2	Potential Percentage Removal Options	
		Storm Water Separation	SuDS Solutions
Alliance Avenue / Brompton Park Area, Belfast	121,000	100%	56%
Lincoln Court, Derry	76,200	100%	60%
Carnhill Area, Derry	95,290	100%	55%
Norglen Parade, Belfast	110,160	100%	64%
Springfield Rd / Cavendish Road Area, Belfast	124,660	100%	49%
St James Road, Belfast	50,860	100%	45%
Tates Avenue / Donegal Rd / Dunluce Avenue Area, Belfast	461,980	100%	52%
Maydown Industrial Estate, Derry	37,060	100%	39%

Significant delays in Phase 2 have been experienced in relation to the ground truthing connectivity checks being undertaken by a CCTV contractor.

As part of Phase 1 Asset Management also engaged within the NI Water Capital Works Programme requesting that stormwater separation should be considered as part of the options analysis regarding drainage solutions i.e. a business as usual process. This has yielded six projects in 2016/17 & 2017/18 and the impermeable area removal has been presented in Table 2.

Table 2 NI Water Capital Works Programme: storm water separation projects delivered in 2016/17 & 2017/18 and impermeable area removal (m^2) values.

Sub Programme	Scheme	Impermeable Area Removal m^2
24	PC15 Sewer Rehabilitation Unplanned	39
24	Olympia Leisure Centre Windsor Park Belfast	70,500
24	8-20 Sloans Street, Dungannon	16,460
24	Ben Crom Place Kilkeel	3,865
24	Foyle College, Limavady Road, Londonderry	82,000
24	Fitzroy Avenue, Belfast,	1,200
	Total Impermeable Area Removed, m^2	174,064

NI Water is endeavouring to move the Storm Water Separation Programme forward and feasibility studies for the sites identified in Phase 2 have now commenced. Once completed NI Water will be in a position to provide a more detailed programme of work which will be complemented by other NI Water Capital Works schemes containing storm water separation that arise during PC15.

DEVELOPMENT OUPUT
15. Strategic drainage study
Final Determination: *The company shall report progress on its strategic drainage study programme to complete a business case for investment to resolve strategic drainage issues by March 2020.*
Additional Details:
This work is undertaken as Business As Usual
PROJECT **SUMMARY**
• The PC15 prioritised programme of Drainage Area Studies has been agreed between NI Water and NIEA. (See attached Excel Spreadsheet). A copy was provided to the UR in January 2017. DAP Model Programme for PC15. • Newry DAS awarded to consultant. • Belfast DAS awarded to consultant.

KEY MILESTONES	Target	Status
1. DAS Prioritisation Programme Agreed with NIEA	Nov '16	Complete
2. Modelling and "Needs & Options" work to be used to inform PC21 asset management plan.	Sep-Dec 2019	On target

Activity completed to date and its outcome

Strategic Drainage Area Studies are under way with agreement of NIEA on the catchments to be taken forward. At present, NI Water has twenty seven MBV and N&Os underway to meet the required outputs. Expenditure to date is in the region of £1200k. NI Water is also involved in the Living With Water Programme (LWWP). The LWWP requires the completion of an integrated catchment, hydrodynamic water quality model for Belfast Lough and it seems that this will also require the upgrade/ development of several MBVs to provide nodal inputs concerning sewer overflows. The estimate for the overall Belfast OAP is £800k, in addition, 3rd Party costs.

NI Water has developed a joint prioritisation list of drainage area studies with NIEA. A data-driven approach has been employed to facilitate the integration of both network and wastewater treatment work needs to enable the whole catchments to be addressed.

Planned next steps for delivery

The next step involves completing innovative Risk Based Needs and Options studies for the agreed catchments to enable a programme of work to be taken into the next PC Period i.e. PC21. This is essential as the programme identifies NI Water projects required to address Quality drivers and Base Maintenance issues. Note that under the risk-based approach NI Water is developing solutions to address New Development in catchments with hydraulic capacity issues/risks.

DEVELOPMENT OUPUT
16. Sewer flooding report
Final Determination: *The company shall provide an annual report on property flooding alleviation and mitigation providing an update on the* DGS *flooding register, progress on feasibility studies to identify solutions and progress in delivery of investment and delivery of outputs.*
Additional Details:
This is Business As Usual through the DG5 panel
PROJECT SUMMARY
• Properties added / removed from DG5 registers reported annually through the AIR submission. • Target of 31 removals for 2015/16, 2016/17 & 2017/18 achieved. • Update on progress on feasibility studies to identify solutions. EP have currently 5 feasibility projects ongoing; - KI 529 - One remaining property feasibility assessment outstanding - Lisnevenagh Rd. - KI 531 - One feasibility reports outstanding: Tullagh Rd, Cookstown. - KI 564 - Feasibility is ongoing, estimated submission date to NIW, August 2017. - KI 515 - One remaining property feasibility assessment outstanding - The Beeches, Portadown. - KI 509 - One remaining property feasibility assessment outstanding - Brough Road, Magherafelt. • DG5 properties resulting from the live feasibility projects have been progressed for delivery within the PC15 DG5 delivery programme. • Target for 18/19 projected for 8 removals.

KEY MILESTONES	Target	Status
1. DG5 Removals 2015/16 & 2016/17.	31	On Target

Activity completed to date and its outcome

The company supports the implementation of the Home Owner Flood Protection Scheme being delivered by NI Executive through the Rivers Agency. NI Water contributes to the Home Owner Flood Protection Scheme process by assessing whether homeowners are on NI Water's DG5 Register and whether there is a capital scheme that will alleviate the flooding over the next 5 years. NI Water retains a register of these enquiries and they are discussed at monthly DG5 Panel meetings. The DG5 Register is updated monthly with additions and removals as approved by the DG5 Panel. DG5 Register movements are recorded and provided in the Annual Information Return by NI Water. The AIR18 summary of register movements is provided in the attached document for the period 1st April 2017 to 31st March 2018.

The solutions to address DG5 Internal Flooding properties are being developed and delivered and the investment is commensurate with the PC15 funding provided.

Planned next steps for delivery

The next step involves amassing a programme of fully appraised, detailed solutions thereby enabling NI Water to implement the removal of properties from the DG5 register as set out in the PC15 Business Plan. This will facilitate the meeting of the PC15 regulatory requirements for DG5 internal flooding property removals. Furthermore, this approach will

enable NI Water to develop the detailed DG5 programme, populated with accurate costings and numbers of properties to be addressed in the PC21 Business Plan.

DEVELOPMENT OUPUT		
17. Sustainable Urban Drainage Systems (SUDS)		
Final Determination: *The company shall record information on* SUDS *applications and report annually on:* - *The number of applications received; and* - *The number of schemes adopted.* *The company shall maintain* a *register of its decisions on* SUDs *applications, highlighting the reasons any application was refused.*		
PROJECT **SUMMARY**		
NI Water does not receive stand-alone SuDS applications. However, NI Water receives applications for future adoption of development sewers, some of which may have an integral SuDS system. • The reporting mechanism records the number of applications received and authorised for future adoption of development sewers where SuDS is an integral part of the application. • The number of development sewers adopted with a SuDS element. • Development sewers with SuDS are not refused, rather encouraged, so this value will invariably be 'nil'.		
KEY MILESTONES	Target	Status
1. Report on SUDs applications in AIR	Annually	BAU

Activity completed to date and its outcome

NI Water does not have SUDS approval forms we have Art. 161 application forms 'Application for Agreement to Connect Sewers in a New Development' forms. Developer Services did not record adopted SUDS system for 15/16 AIR returns as it was not a requirement. For 16/17 AIR returns we will record the number of Art 161's approved which incorporate SUDS, we will record the number of adopted SUDS systems. We have updated sewer adoption forms to capture this information. Formal recording of SUDS included in adopted sewerage systems began at the start of 2016/17. A complete year's data will be available for AIR17.

2017/18 Housing sites adopted, incorporating SUDS utilising hyrobrake/vortex flow control. 23 sites.
2017/18 Housing A161 sites approved, incorporating SUDS utilising hyrobrake/vortex flow control 137 sites.

DEVELOPMENT OUPUT

18. Implementation of the PPC requirements for Odour Management

Final Determination:
The company shall develop a plan for the implementation of PPG requirements for Odour Management by 31 March 2015, which shall be prioritised and agreed with NIEA. The company shall report progress against the delivery of this plan.

GOVERNANCE

Directorate	SRO	Project Lead	Aooroving Authority
Asset Delivery	Paul Harper	Angela Halpennv	EC

Additional Details:

N/A

PROJECT **SUMMARY**

NI Water holds 29 Pollution Prevention Control (PPC) permits for WwTW sludge centres for thickening or dewatering wastewater sludges. The permits require odour modelling to be undertaken to assess the impact from the facility on the surrounding sensitive receptors. Recognising the financial impact and resources required to undertake the necessary modelling, a prioritised list was initially agreed with NIEA in June 2015.

NIEA ranked the 29 PPC sites into the following categories:
- Priority 1 (4 sites),
- Priority 2 (8 sites),
- Priority 3 (12 sites) and
- odour modelling not required (5 sites).

The modelling is divided into 2 phases.

The first phase is a library data based, screening exercise. If this exercise identifies an impact on surrounding sensitive receptors, the site will progress to the second phase, which involves collection of site-specific olfactometry data.

Whilst NIEA asked for odour modelling of Priority 1 sites to be completed in 2015/16, delays were incurred due to the time of year for undertaking the site based odour survey during the summer months, when emissions are likely to be at their highest (May/June to September). The odour modelling is now complete for all Priority 1 sites and Priority 2 sites with the exception of Ballymena WwTW which is currentlv beina uoaraded.

KEY MILESTONES	Taraet	Status
1. Develop a plan for the implementation of PPC requirements for Odour Manaaement	31 Mar 15	**Complete**
2. Completion of 2nd Phase odour models for priority 1 sites: Carrickferaus, New Holland, Dunaannon and Whitehouse.	31 Dec 16	**Complete**
3. 2nd Phase odour model for the upgraded Newcastle WwTW	31 Mar 17	**Complete**
4. 1st Phase modelling based on library data for Priority 2 and 3 sites	31 Mar 18	**Complete**
5. Develop list of sites requiring 2nd Phase modelling	31 Mar 18	**Complete**
6. Undertake 2nd Phase modelling for sites identified in No. 4 above, selecting the priority 2 sites first, followed by the priority 3 sites	31 Mar 19	On Target
7. Using 2nd phase modelling develop and deliver a programme of work reauired to meet PPC odour reauirements	31 Mar 21	On Target

NIW currently operates 28 WWTWs with PPC permits that fall under the regulations.
A collaborative working group, the PPC Compliance Group, has been established between the NI Environment Agency (NIEA) and NIW to agree, progress and monitor the implementation of PPC requirements for Odour Management. This group meets on a quarterly basis to review actions, which have been agreed and prioritised by the group. NIW has been working closely with NIEA over the past 12 months in the development of feasibility studies and identification of outputs. The following spreadsheet details the Odour Modelling Implementation Plan and the programme of work required to meet PPC odour requirements.
The sites, within the spreadsheet, have been prioritised based on:

- whether an appropriate assessment has already been completed in line with the H4 guidance;
- whether an assessment has already been completed, but it was not in accordance with the H4 guidance;
- whether the site is already a priority site;
- whether the site imports sludges from minor works or septic tank etc., as these sites have a greater potential for odour generation; and,
- then further by the calculated throughputs.

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	Mar-17	Mar-17	2016/17	Complete
Culmore	2	Yes	Jun-17	31/05/2017	Oct-17	Dec-17	Jan-18	2017/18	Complete
Ballymena (Tullygarley)	2	Yes	Jun-18		Summer 18	TBC		2018/19	Potential Delay
Antrim	2	Yes	Jun-17	31/05/2017	Not required	Not required	Not required	2017/18	Complete
Dunmurry	2	Yes	Jun-17	31/05/2017	Not required	Not required	Not required	2017/18	Complete
Cookstown	2	Yes	Jun-17	31/07/2017	Oct-17	Dec-17	Jan-18	2017/18	Complete
Glenstall (Ballymoney)	2	Yes	Jun-17	31/07/2017	Not required	Not required	Not required	2017/18	Complete
Limavady	2	Yes	Oct-17	02/11/2017	Not required	Not required	Not required	2017/19	Complete
Downpatrick	2	Yes	Dec-17	31/07/2017	Not required	Not required	Not required	2017/18	Complete
North Coast	3	No	Nov-17	15/11/2017	Not required	Not required	Not required	2017/19	Complete
Enniskillen	3	No	Apr-18		Summer 18	TBC		2018/19	On Target
Omagh	3	No	Apr-18		Summer 18	TBC		2019/20	On Target
Banbridge	3	No	TBC		Summer 18	TBC		2019/20	On Target
Larne	3	No	Nov-17	17/11/2017	Not required	Not required	Not required	2017/19	Complete
Tandragee	3	No	TBC		Summer 18	TBC		2019/20	On Target
Magherafelt	3	No	Oct-17	02/11/2017	Summer 18	TBC		2020/21	On Target
Waringstown	3	No	TBC		Summer 18	TBC		2020/21	On Target
Greenisland	3	No	Apr-18		Summer 18	TBC		2020/21	On Target
Ballyclare WwTW	3	No	Apr-18		Summer 18	TBC		2020/21	On Target
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	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	Complete
Lisnaskea	N/A	No	N/A	N/A	N/A	N/A	N/A	N/A	Complete

Plans for Delivery of the PPC requirements for Odour Management

NI Water has initiated a project to address two major outputs agreed by the PPC Compliance Group;

1. *Odour modelling prioritisation*, with reference to the above prioritised spreadsheet, this project will provide odour assessment and modelling for the WWTWs assets contained therein. The list, at present, identifies 8 WWTWs in need of odour appraisal/modelling and the priority in which they are to be completed.
2. *Joint Inspection*; NIW and NIEA complete a schedule of inspections of the WWTWs assets falling under the regulations. Outputs from the inspections are collated by NIEA and captured on the PPC Investment spreadsheet. The asset deficiencies identified will be prioritised by the group. These deficiencies could prevent NIW meeting its statutory obligation in respect of the Regulations.
3.

The project will procure the odour assessment and modelling in point 1 above and the WWTW PPC site investment required, predominantly identified as capital base maintenance, associated with the asset deficiencies that are identified using the method described in point 2 above.

The above project commenced in 2016 to deliver PPC appraisal, odour modelling and assessment and will continue during the rest of the PC15 period. Civil work required as a result of the latter commenced in 2017/18, with the main investment from 2018/2019 through to 2020/21.

Social and Environmental Guidance for Water and Sewerage Services (2015-21)

Drinking Water Quality			
Priority	**Drinking Water Directive**	**Update on Delivery**	**AIR Ref**
WQ1	Maintain existing water assets and infrastructure and complete any upgrades needed to sustain overall compliance levels.	NI Water maintain assets as a BAU action within our base maintenance programme. The total base maintenance funding being invested has been maintained in line with the PC15 FD to ensure customer service is maintained. This investment includes replacements and repairs to sustain water compliance levels. Whilst this was not a nominated output the UR had set aside funding within the FD for examples like this. Upgrades to achieve new compliance standards are prioritised from the 'Enhancement' investment programmes. This funding envelope has been reduced from the PC15 FD due to PE cuts and is delaying investment at sites including Derg WTW where Pesticides are now requiring an additional treatment process to remove.	AIR Table 11 and Table 40a
WQ2	Complete any water infrastructure and treatment upgrades necessary to address enforcement notices and other statutory obligations from the Water Supply (Water Quality) Regulations (NI) 2007 (as amended).	Water infrastructure investment (watermains rehab) is prioritised using our WIIM progress which includes for a range of issues including water quality. Any enforcement notices relating to watermains infra should they arise will be accommodated as must do investments within the watermains rehab programme which is a blend of Base Maintenance and Enhancement investments. PC15 has to date completed the GAC installations at Dorisland and Killyhelvin WTW's which achieved beneficial use in PC13. The PC15 programme also includes for investment at Derg WTW to fit out existing filters and ensure the chemical arrangements are available to treat the river intake from the Strule. In addition a PEO ref MCPA has added a further project not funded within the PC15 FD nominated outputs. It is planned to progress this project in PC15 as an agreed additional output providing funding is guaranteed.	AIR Table 11 and Table 40a
WQ3	Identify and program any infrastructure and treatment upgrades necessary to meet new or emerging drinking water quality issues or legislative changes (e.g. Radon).	NI Water will continue to respond to emerging risk identified in the Drinking Water Safety plans and to respond to issued raised by the Drinking Water Inspectorate in its consideration of provisional enforcement orders or other enforcement action. Any resultant outputs will be agreed with stakeholders via change protocol to prioritise investment not currently funded in	
Priority	**Water Fittings Regulations**		**AIR Ref**
WQ4	Effectively monitor and regulate compliance with the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 and manage the risk of contamination or waste of public water supplies through defective water fittings.	NI Water monitor and regulate compliance with Water supply Regs as a BAU item. 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.	

Priority	Drinking Water Safety Plans and Drinking Water Protected Areas		AIR Ref
WQ5	Continue raw water monitoring programme at abstraction sites to manage drinking water quality risks and work with NIEA to designate Drinking Water Protected Areas to help prevent future deterioration of drinking water sources in line with WFD principles.	Raw water monitoring is in place and ongoing. Sampling frequencies are reviewed in line with regulatory requirements and on risk assessment. The is managed as BAU. DWPAs have been assigned by NIEA for our drinking water catchments in line with WFD principles. NIW worked with NIEA during this process.	AIR Table 9 Section B 6
Priority	**Drinking Water Safety Plans and Drinking Water Protected Areas**		**AIR Ref**
WQ6	Through the ongoing review of Drinking Water Safety Plans (DWSPs), develop and implement a prioritised programme of mitigation measures to build resilience against contamination risk for all aspects of the water supply chain (from catchment through to tap) to protect public health.	As BAU we implement a prioritised investment programme to manage drinking water quality risks informed by DWSPs. This is a Core Business activity.	
Priority	**Managing Raw Water Quality Risks**		**AIR Ref**
WQ7	Continue rolling out a prioritised SCAMP NI programme across all drinking water catchments to reduce raw water contaminants through interactive stakeholder working to improve or prevent deterioration of abstracted drinking water quality (e.g. natural organic matter, pesticides) and provide for more cost-effective treatment solutions in the future.	Catchment Management Plans being developed by NIW for all drinking water catchments. Catchment Management Plans will be completed for all live catchments in the PC15 period. Year 1, 2 & 3 targets delivered. Continued roll out of the WCP and work with organisations such as Rivers Trust. SCAMP NI and the work with NGOs and the WCP is progressing well. In addition the Interreg VA funded Source to Tap project is ongoing and aimed at improving border catchments.	AIR Table 9 and 47
WQ8	Implement the recommendation of the Inter-departmental Group on Wildfires to introduce Bye-laws on NI Water's land and work with the proposed Strategic Wildfire Forum and other stakeholders to manage the risk of wildfires within its catchments (and the risks to raw water quality).	Participation with the Inter-departmental Group on Wildfires is ongoing and implementation of recommendations to manage the risk of wildfires within catchments are being carried out on an annual basis as agreed at the group.	AIR table 47
Priority	**Managing Quality Risks from the Distribution System**	**Continued roll out of the WCP and work with organisations such as Rivers Trust. SCAMP NI and the work with NGOs and the WCP is progressing well. In addition NI Water have secured Interreg VA funding for the Source to Tap project, aimed at improving border catchments.**	**AIR Ref**
WQ9	Continue a maintenance programme to ensure all service reservoirs are cleaned and checked for integrity on a regular basis. The company should also ensure that for the protection of human health microbiological quality is not compromised; residual disinfection is maintained throughout the distribution system, and disinfection by-products are kept to a minimum.	NI Water have a rolling programme of Potable water storage structures cleaning and inspection as a BAU item. The inspection programme informs the Base Maintenance investment at Potable Water storage structures which is progressing as per PC15 FD plans. All Water Quality parameters are monitored and managed within the water network as a BAU item. An action to have a number of single cells SR's cleaned during 17/18 has been successfully completed using robotic technology.	AIR Table 11 line 19
WQ10	Work with DRD, DWI and stakeholders through the PC15 planning process to develop and agree a PC15 investment programme and targets to address iron exceedances & drinking water quality complaints, in particular colour, taste & odour.	This action is complete. Stakeholder engagement took place during the development of the plan to inform the PC15 plan.	

Priority	Managing the Quality Risks from Lead Pipes		AIR Ref
WQ11	Continue implementing its strategic lead policy and lead pipe replacement programme focused on improving compliance with EU Lead standard (10µg/l).	NI Water continues to invest in lead 'communication pipe' (NI Water owned pipe, excluding private customer pipe) replacement on a prioritised basis within the funding constraints of PC15. The prioritisation is completed on a risk based approach to target the investment.	AIR Table 11 Section B 8a-9
WQ12	Work with DRD, DWI and 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 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	

Drinking Water Supply			
Priority	**Water Framework Directive**		**AIR Ref**
WS1	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.	
WS2	Implement any drinking water resource-related measures set out in the Executive's River Basin Management Plans.	Ongoing work with NIEA. Member of the WFD Strategic Planning and Resources Group (SPAR)	
Priority	**Water Resource Management (& Drought) Plan**		**AIR Ref**
WS3	Prepare a revised Water Resource Management Plan (WRMP) to identify the long-term water resource management and security of supply investment needs. The WRMP should incorporate drought planning requirements, identify adaption measures in response to climate change predictions and take account of the review of water abstraction and impoundment licences. DRD will provide Guidance on this to NI Water.	NI Water have completed a draft Water Resource and Supply Resilience Project which includes for a Water Resource Management Plan, Strategic Drought Plan and a Critical Period Plan, in accordance with the guidance provided by DRD. The Draft Plan will be issued for consultation once approval is granted by DfI, with the final plan informing investment in the final PC15 years and PC21.	AIR Table 10 Section C & AIR Table 47
WS4	Develop and implement a water supply investment programme to ensure long-term security of supply (informed by revised WRMP).	This is included with WS3 above.	AIR Table 44 Section C
Priority	**Water Leakage Detection & Reduction**		**AIR Ref**
WS5	Continue to focus on leakage detection and reduction with the aim of achieving and maintaining the Sustainable Economic Level of Leakage18 (SELL), and driving below this if recommended in the 2017 WRMP.	The Sustainable Economic Level of Leakage (SELL) analysis has now completed and update presented to NIW EC in November. The 2017 WRMP did not recommend going below the current SELL	AIR Table 10 and Table 44 lines 31-33
WS6	Work with DRD and stakeholders to develop and implement policy on reducing private supply pipe leakage (e.g. in conjunction with lead supply replacement).	NI Water have limited powers to repair private supply pipe leakage. If a leak is identified a waste notice is issued which provide the customer a period of c4weeks to complete a repair. The vast majority of repairs are carried out within this period and reducing the time period would have limited benefit. A draft report following the pilot lead replacement project has been completed and has been submitted to DfI. As suggested in last year's report the initial outputs suggest there is limited benefit in replacing private communications pipe unless all internal lead within a property is removed.	
Priority	**Managing Water Consumption**		**AIR Ref**
WS7	Continue with a programme to install meters for non-domestic water and sewerage customers	NI Water was until December 2017 obligated to fit water meters at all newly connected premises under Article 81 of the Water and Sewerage Services Order (2006). In December 2016 the Minister made regulations removing the part of this obligation relating to Domestic premises. As such NI Water will limit the installation of water meters to non-domestic premises going forward.	AIR Table 8 Section B
WS8	Prepare and implement a Water Demand Management Strategy (WDMS) focussed on moving towards the proposed water strategy's long-term target of 130 l/h/day.	This is a long term water strategy action being led by DfI. NI Water will support the development of this strategy.	

Priority	Managing Water Consumption		AIR Ref
WS9	Work with DRD and other stakeholders to develop policies in respect of water efficiency measures in homes and businesses. This includes investigating opportunities to work with other government departments, utility providers or NGOs to find mutually beneficial projects in which water efficiency can be highlighted or implemented (e.g. water efficiency and lower energy bills)	An initial meeting held with DfI and other associated stakeholders on the 23rd May 2017 to discuss this measure in relation to the LTWS. Following this discussion it was agreed that NI Water would highlight the current Education campaigns to assess if there were further opportunities. In addition work on Demand Management options was carried out as part of the 2017 WR&SRP and once the plan has been finalised these measures will be actioned.	

Environmental Protection & Improvement			
Priority	**Urban Waste Water Treatment Directive (UWWTD)**		**AIR Ref**
WW1	Continue improving overall levels of compliance with Water Order Consents(including flow compliance from 2015), the PPC Regulations and the CSO spill requirements of the UWWTD, WFD (including Priority Substances &SWD), MSFD & BWD.	The PC15 plan and FD set targets to continue improving overall levels of compliance. Despite public expenditure cuts within the mid term review period, compliance has been maintained.	AIR Table 16 Section D, E and F
Priority	**Urgent Waste Water Priorities**		**AIR Ref**
WW2	Develop and deliver a prioritised investment programme on wastewater treatment facilities, pumping stations and sewerage systems to meet:	The PC15 plan was developed with stakeholder engagement and all WWTW enhancement projects have been prioritised in conjunction with NIEA. The PC15 plan was constrained within the funding limits set for the plan and this has resulted in a significant number of WWTW's not receiving investment during PC15. The additional PE cuts in 15/16, 16/17 and 17/18 are further reducing NI Water's ability to deliver investment at WWTW's and as a result a number of new housing developments are not receiving planning approval as the receiving WWTW has no headroom capacity. The extent of this impact was detailed in the mid term review baseline document compared to the latest plan, illustrating the number of WWTW's where potential investment could have taken place in PC15.	AIR Table 16 Section F and Table 40a
WW2a	- immediate development pressures (& address overloaded works) and compliance with Water Order Consents (WOCs),	Please see WW2 above	AIR Table 16 Section F and Table 40a
WW2b	- flow monitoring requirements (in support of the introduction of flow compliance from 2015); and	Please see WW2 above	AIR Table 16 Section F and Table 40a
WW2c	- any outstanding spill monitoring requirements needed for compliance with the UWWTD, SWD & BWD.	Please see WW2 above	AIR Table 16 Section F and Table 40a
WW2d	And deliver the highest priority schemes during PC15 within the funding constraints.	Please see WW2 above	AIR Table 16 Section F and Table 40a
Priority	**Planning & Modelling**		**AIR Ref**
WW3	Work with DRD, NIEA and other statutory partners in response to the Committee for Regional Development's Inquiry into Unadopted Roads and commence a prioritised investment programme to address unsatisfactory private sewerage infrastructure and treatment facilities	This action has not progressed as no funding was included with the PC15 business plan or FD to take this forward. NI Water continue to collaborate with TNI in respect of Article 11 Enforcement sites (pre 2007) where TNI hold a single bond. NI Water has also identified potential Enforcement sites (post 2007) where separate NIW/TNI bonds apply.	
WW4	Collect accurate and reliable information on wastewater treatment facilities and sewerage infrastructure to inform development of robust holistic drainage area plans (DAPs).	NI Water has agreed with NIEA a prioritised list of Drainage Area Studies for delivery during PC15. The studies will involve a comprehensive model build and verification of catchment operation for various horizons and will be used to inform both DAP capital works and WwTW upgrades. Flow and Composition studies are selectively undertaken as part of WwTW appraisals.	AIR Table 16 Section E

Priority	Planning & Modelling		AIR Ref
WW5	Ensure storm separation and sewer infiltration reduction are considered through the DAPs and that these options are adequately explored and costed before being ruled out	As part of catchment model verification anomalies in hydraulic loading will initiate infiltration investigations. DAS catchment investigations, both reactively and proactively, target opportunities for storm water removal (separation & infiltration). Cost benefit analysis of potential capital works are examined through the Needs & Options report.	
Priority	**Planning & Modelling**		**AIR Ref**
WW6	Work with DRD, NIEA and other statutory partners to develop and implement catchment-based solutions (from Simulated Catchment Management Modelling - SIMCAT) for wastewater collection and treatment	SWELL will deliver a catchment model for Carlingford and Lough Foyle. Living With Water Programme will deliver an ecosystem model for Belfast Lough. NI Water are progressing a model for the Dundrum Catchment.	
WW7	Work with DRD, NIEA and other statutory partners to develop a programme and target for installing appropriate spill monitoring systems across the sewerage network.	PC15 includes for the installation of CSO monitoring at priority sites including those required by revised Bathing Water & Shellfish Directives.	AIR Table 40a
WW8	Undertake work to develop a sustainable economic level of infiltration (SEIL) to inform sewerage investment decisions and deliver infiltration reduction works where this is assessed to be cost effective in addressing issues	NI Water currently exploring SELI methodology with other UK sewerage providers.	
WW9	Develop and maintain a long-term investment programme for the implementation of the PPC requirements for Odour Management. In the first part of PC15 NI Water should:	The PPC Compliance Group, a collaborative working group between NIEA and NIW has been established and Odour Modelling prioritisation for 23 WWTWs has been established in addition to a schedule of inspections.	
WW9a	- assess the cost of complying with the PPC Regulations for all sites that are determined to be 'qualifying sites' under proposed NIEA guidance.	Project Identifier KI583 - PC15 Implementation of Odour & PPC Strategy has identified a spend of £4.4 to rectify deficiencies as identified by the joint inspections.	
WW9b	- develop and agree with NIEA a prioritised programme with the aim of achieving full compliance by the end of the PC15 period (subject to priority & funding constraints).	A prioritised programme has been agreed and this is reviewed quarterly by the PPc Compliance group.	
WW9c	In the second part of PC15 NI Water shall commence the delivery of this programme, with the pace determined by the relative priority of this programme, as guided by the WICG.	The initial delivery of the programme has commenced as per the prioritised programme agreed with the PPC compliance group.	
Priority	**Longer Term Investment Priorities**		**AIR Ref**
WW10	Continue a prioritised long-term maintenance and enhancement programme on wastewater treatment facilities & pumping stations to maintain serviceability and meet:	The PC15 plan was developed with stakeholder engagement and all WWTW enhancement projects have been prioritised in conjunction with NIEA. The PC15 plan was constrained within the funding limits set for the plan and while this has effectively limited the immediate number of sites for capital intervention it has provided for an extended list of wastewater sites for longer term prioritisation with the option of promoting additional outputs as circumstances prevail. Please see WW2 for additional information.	AIR Table 16 and 40a.
WW10 a	- development pressures (& address overloaded works) and compliance with Water Order Consents (WOCs);	Please see WW10 above	
WW10	- reduce pollution incidents;	Please see WW10 above	

Priority	Longer Term Investment Priorities		AIR Ref
WW10	- comply with existing/revised Water Order Consents; and	Please see WW10 above	
WW10	- meet the PPC requirements.	Please see WW10 above	
WW11	Continue to implement a long-term investment programme focused on providing appropriate treatment at small (>250) waste water treatment works	This RWWIP programme is progressing and is planned to achieve the upgrades during PC15 as per the plan targets.	
WW12	Continue to implement a prioritised investment programme on sewage sludge treatment facilities focused on providing appropriate pollution containment and odour abatement.	Capital Maintenance Planning is ongoing at sludge treatment facilities identifying appropriate Base Maintenance on PPC and odour control. For additional information see WW9	
Priority	**Longer Term Investment Priorities**		**AIR Ref**
WW13	Develop and implement a programme to bring existing wastewater pumping stations and treatment works in to compliance with the Water Supply (Water Fitting) Regulations (Northern Ireland) 2009.	NI Water implemented a programme of work for PC15 - 'KI487 Backsyphonage Risks at NIW Sites'. The initial desktop study for the project estimated the cost of meeting the compliance at approximately £16.2 million and this figure was included in the unconstrained PC15 budget but following the identification of a constrained budget, funding for this element of work was reduced to £1.8m, and subsequently included at this funding level with the Final Determination (FD). As a consequence on a limited number of sites will be addressed in PC15.	
WW14	Continue a prioritised long-term programme of Drainage Area Plan work to:	NI Water has established a long list of Drainage Area Studies. Priority catchments have been agreed with NIEA and will be undertaken during PC15. Ongoing prioritisation from the long list will apply to future Price Control periods. The studies will involve a comprehensive model build and verification of catchment operation for various horizons and will be used to inform both DAP capital works and WwTW upgrades to target essential drivers e.g. flooding, pollution, headroom and serviceability.	AIR Table 16 Section E
WW14	- maintain the serviceability of the sewerage system;		AIR Table 16
WW14	- meet development pressures (& address capacity issues);		
WW14	- reduce sewer related flooding; and		AIR Table 3
WW14 d	- reduce UIDs and pollution incidents in line with UWWTD, MSFD, BWD & SWD.		AIR Table 16 and Table 40a.
WW15	Work with DRD and NIEA to develop and implement a policy for addressing crossed connections to storm sewers focussed on the WFD's 'the polluter pays' principle.	NI Water and NIEA to produce a prioritised list of misconnections and establish a protocol for keeping this up to date. NI Water and NIEA produced a misconnections leaflet to publicise the issue of misconnections to wherever appropriate.	AIR Table 47 line 13
WW16	Implement any sewerage or potable water related measures set out in the Executive's River Basin Management Plans (RBMPs).	Please see details WS2 for further information	
WW17	Continue to reduce the number of pollution incidents through effective investment and operation of the water and sewerage assets.	NI Water has developed some additional management tools now being used in PC15, which will reduce the potential number of pollution incidents. An example is the hotspotting tool which identifies areas where repeat blockages occur enabling full route cause analysis to be completed, allow for corrective action and remove the potential for future events. In addition to ongoing targeted capital maintenance and DAP works NI Water has introduced some supporting management tools which will reduce the potential number of pollution incidents. An example is the sewer hotspotting tool which identifies areas where repeat blockages occur enabling full root cause analysis to be completed, allow for corrective action and remove the potential for future events. Work in progress also includes the development of a DWF capacity mapping tool which will provide an alert of capacity exceedance from new development proposals.	AIR Table 47 line 12

Flood Risk Management & Drainage

Priority	The European Floods Directive		AIR Ref
FRM1	Develop & implement individual sewerage and drainage measures applicable to NI Water as set out in the Executive's FRMPs (2015-21).	Ongoing meetings take place with River Agency when required. Within the new Risk Base approach to Needs and Options and MBVs specification part of this new specification is meetings with Rivers Agency regarding flooding and solution to address this flooding with a joint approach where possible.	
FRM2	Implement the inspection and maintenance requirements of the Executive's proposed Reservoirs Bill for controlled reservoirs.	NI Water have historically completed panel engineers inspections and subsequent required investment at our impounding reservoirs, without legislation being in place. the next round of inspections to inform PC21 is currently taking place. NI Water will continue to implement the other elements of the Reservoirs Act as the commencement orders are enacted, in particular in relation to potable water storage structures larger than 10ML.	AIR table 47 Line 7
Priority	**Drainage Planning & Modelling**		**AIR Ref**
FRM3	Contribute to the development of integrated drainage models and plans to manage flood risk in urban areas including completing any necessary Pilot Projects (e.g. Ballyclare).	NI Water continue to participate within Living With Water Programme and particularly Work Package 9 which seeks to integrate Rivers Agency and NI Water hydraulic models contributing to the management of flood risk through the identification and provision of protection measures.	
FRM4	Work with DRD, NIEA and Rivers Agency through the Stormwater Management Group (and through implementation of PPS 15 – Planning and Flood Risk) to progress and implement the utilisation of SuDS NI, design for exceedance and other policies for sustainable storm water management.	NI Water continue to attend and contribute to the Storm Water Management group to develop approach's to extend the utilisation of SuDS NI. NI Water are finalising a new 'Sewers for Adoption' manual for developers which will include for Suds design. This document will be complete by September 2018.	Table 47 line 17
Priority	**Urban Drainage Provision**		**AIR Ref**
FRM5	Consider the costs and benefits of widening the scope of Drainage Area Studies Plans to include 'design for exceedance' in high flood risk areas and include an emphasis on improving sewerage records held on the Corporate Asset Register (CAR).	DFI led Storm Water Management Group are progressing a range of initiatives to promote flood mitigation in high risk areas. NI water continue to assess Design for Exceedance within new development drainage proposals.	
FRM6	Contribute to the development and implementation of a prioritised Government programme of integrated drainage schemes to manage surface water flooding in urban areas (incorporating storm drains, sewers and watercourses). This includes assisting in the development of integrated flood modelling in specific locations on a case by case basis, where Stakeholders agree that this is necessary, and the apportionment of appraisal, modelling, and survey costs can be agreed in advance.	NI Water is exploring opportunities for integrated / shared solutions for the management of stormwater. Additionally, via the Living With Water Programme a work package is to progress on integrated catchment modelling combining drainage area and receiving waters.	
Priority	**Sewer Flooding (DG5)**		**AIR Ref**
FRM7	Continue to address out-of-sewer flooding problems attributed to NI Water's sewerage and drainage networks	NI Water are continuing to invest, as per the PC15 plan in providing engineering solutions to remove internal flooding of properties attributed to NI Water's sewerage network.	AIR Table 3 Section A

Priority	Combined Sewer Separation and Infiltration Reduction		AIR Ref
FRM8	Work with DRD, NIEA, Rivers Agency and other stakeholders to develop and commence a long-term storm water separation and infiltration reduction programme focussed on addressing UIDs, pollution incidents, sewer flooding, surface water flooding and providing capacity for development.	NI Water is developing a programme of storm separation projects using bespoke software to identify opportunities. The objective is to complete a range of projects e.g. urban housing, large commercial, educational campus etc. An examination of cost/benefit relationship will be used to inform a more focussed business case for PC21 projects.	Table 47 line 14
Priority	**Emergency Flood Response**		**AIR Ref**
FRM9	Contribute to the delivery of an efficient and effective coordinated response from Government during flooding incidents (in line with PEDU).	NIW has a well-developed Major Incident Plan that provides a fully planned reactive response to all types of emergency incident. The annual audit of NIW's emergency planning arrangements has been completed by an independent Certifier for 2017/18, and the final Audit Report submitted to the Department for Infrastructure's Water & Drainage Policy Division. NIW continues to be represented on the DfI 'Emergency Planning Steering Group' which includes three main drainage agencies: DfI Rivers, DfI Roads and NIW. NIW has participated in the August 2017 multi-agency flood-response to the North West flooding and contributed to subsequent lessons learned reviews. NIW continues to be a member of the multi-agency 'Flood Strategy Steering Group' (led by DfI Rivers) and contributes to the 30 related multi-agency 'Regional Community Resilience Group' forums across Northern Ireland. NIW continues to engage with multi-agency partners through the three, newly reconfigured, Northern Ireland 'Local Emergency Preparedness Groups' (EPGs) (Belfast, Southern, and Northern) and related working groups (e.g. flooding and communications working groups). During 2017/18, NIW has fully participated in further development of EPG Coastal Flood Plans and in the newly drafted Northern Ireland Severe Weather Plan. The Company is also 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 with UK water industry emergency planning groups.	

Service Delivery, Improvement and Affordability

Priority	Customer Priorities for Customer Service, Information & Communication		AIR Ref
CS1	Continue to review and improve performance in customer service quality and effectiveness through the development of better data and information systems and customer focussed processes and policies	With regard to customer data, there is a programme of projects being progressed in respect of data accuracy and data validation. In addition, there are data accuracy obligations imposed on the service provider under the CBC contract. NI Water has embarked on a series of new initiatives under it 'Digital Strategy' proposals.	
CS2	Improve the accuracy, reliability, security, and consistency of billing information including enabling customers to self serve	With regard to customer data, there is a programme of projects being progressed in respect of data accuracy and data validation. In addition, there are data accuracy obligations imposed on the service provider under the CBC contract. There is an extensive data quality programme on-going through the ACE programme to improve the overall accuracy of the information held on NIW's corporate systems relating to various customer accounts. NIW have deployed a modern meter data management system to collect record meter reads on site and return to the corporate billing system in real-time. We are starting deployment of automatic meter reading equipment and utilising mobile telephone technology to remotely read key meters.	
CS3	Adopt any proven technology or systems that provide tangible benefits in terms of improving service performance or reducing operational costs, whilst ensuring the resilience and security of essential control and monitoring networks. (e.g. ICAT programme)	The delivery of the ICAT programme has commenced with a large number of Potable storage tanks having ICAT technology installed during PC15. This technology is to be used to control inlet flows to maximise storage, improve resilience and enable remote control during operational events. The technology will also enable system control functionality where a number of sites are grouped into an overall system to improve performance. The Omagh, Cookstown and Belfast areas are now complete and we are now focusing on the North Coast area.	Table 47 line 4
CS4	Continue improvements in handling customer queries, complaints and billing (DG6-9).	FPCOR (First Point of Contact Resolution) functional targets have been set, these are monitored at monthly meetings to ensure improvements in handling customer queries, complaints and billing	AIR Table 4 Section A
CS5	Work with stakeholders through the Customer Measures and Satisfaction Group (CM/SAT) to develop more consumer focussed performance measures, including:	We have agreed the following quantitative and qualitative measures with the CM/CAT group : Unwanted Contacts, FPOCR and Customer Advocacy score. The remainder of PC15 will be used to understand trends with a view to having hard performance measures in place for the beginning of PC21	
CS5a	i) New consumer satisfaction (CSAT) Key Performance Indicator which gives a measure of customers' overall satisfaction with the service provided by NI Water; and		
CS5b	ii) Adoption of industry best practice measures for performance on handling customer contacts for example:		
CS5bi	- customer contact levels (through all communication channels);		
CS5bii	- first point of contact solutions; and		
CS5biii	- repeat contacts		

Priority	Customer Priorities for Water Service Levels		AIR Ref
CS6	Develop quality drivers and measures for the water mains rehabilitation programme informed by drinking water quality monitoring and customer complaints (iro colour, taste & odour).	The WIIM methodology for prioritising replacement pipelines in the distribution network , includes WQ failures as drivers for pipeline replacement. This a Core Business Activity. For the 2017 reporting year NI Water achieved its drinking water quality targets and is on profile to achieve its targets in 2018.	AIR Table 47 line 2 and 8
CS7	Continue to reduce the number of properties that experience unplanned and unwarned interruptions to drinking water supply in excess of 3/6/12/24 hrs (DG3).	WIIM process already in place as developed for PC15 but will continue to refined. Latest WIIM review of the methodology (WIIM3) now includes better informed DG3 analysis. This is one element of the overall Capital Maintenance Planning process. The Water Resource & Supply Resilience Plan includes a number of resilience project proposals. A DG3 strategy is being developed to inform the final years of PC15 and PC21.	AIR Table 2 Section B 5-8 and AIR Table 47
CS8	Target areas of low pressure to increase the number of customers who benefit from at least the minimum levels of supply.	NI Water continues to invest in watermains rehab and within this sub prog properties on the DG2 register are targeted to ensure that post investment they receive the minimum levels of supply. The PC15 investment is currently on track as per the agreed investment levels.	AIR Table 2 Section A
CS9	Continue to maintain a Register (DG2) of properties at risk of receiving low pressure and reduce the number of properties on the register over the PC15 period	NI Water has by assessing pressure across its water network prepared a the DG2 register of properties at risk of receiving low pressure. Following capital investment verification is completed to determine if properties can be removed from the register.	AIR Table 2 Section A
Priority	**Customer Priorities for Sewerage Service Levels**		**AIR Ref**
CS10	Establish and maintain a Register (DG5) of properties at risk from internal & external sewer flooding and reduce the number of properties on the register over the PC15 period.	NI Water developed a register of properties at risk of internal sewer flooding during PC10. This confidence in the data originally was low but this has improved significantly over recent years. The DG5 external register has been developing. PC15 investment is focused on removing properties from the internal flooding register.	AIR Table 3 Section B
CS11	Work with Roads Service, Rivers Agency and other relevant drainage providers to develop a register of properties at risk of surface water flooding to be actioned 'jointly' during PC15 and beyond. NI Water should provide the information on out-of-sewer flooding from sewerage and relevant drainage assets.	NI Water maintain its DG5 register of properties at risk of internal flooding. PC15 & FD include targets for the removal of properties from this list. Additionally, NI water hold information on properties at risk of external flooding.	AIR Table 3 Section B
Priority	**Customer Priorities for Affordability & Efficiency**		**AIR Ref**
CS12	Explore opportunities to reduce the cost of its existing Public Private Partnership contracts to reduce their long-term running costs.	On going BAU. Current activities include; Project Alpha: A reduction in treated water sampling requirements complete May 2018, as an enabler to cost savings within NIW Alpha Ltd for laboratory services. Project Omega: Ongoing Facilitation process up designed to reduce increased costs/claims exposure to NIW as well as generate a reduction in NIW electricity costs associated with Duncrue St Sludge Facility. Kinnegar: No proposals significant activities at this stage as the management focus has been on stabilising operations following Administration of a number of parent companies within the Lagan Group.	

Priority	Customer Priorities for Affordability & Efficiency		AIR Ref
CS13	Reduce costs by setting targets and developing and implementing action plans to deliver operational efficiencies.	BAU/Core Business. Significant input was completed during PC13 and this will be continually reviewed as part of BAU to ensure the most efficient operational regime is maintained as the supply network changes during periods of normal operation, drought and winter critical periods. PC15 is implementing the first phase of ICAT on the SR asset base. Dedicated energy efficiency team has been established and is pursuing as BAU. Short and medium term energy efficiency targets for NI Water have been developed for the PC15 period. These are under review as challenges such as grid connections, and closure of incentive schemes, are considered. RDI Strategy has and continues to support the identification and implementation of improved performance and efficiencies through collaborative RDI. Continued membership and participation in UKWIR projects and other water industry focused collaborative projects. NIW have deployed a modern meter data management system to collect record meter reads on site and return to the corporate billing system in real-time. We are deploying automatic meter reading equipment and utilising mobile telephone technology to remotely read key meters.	AIR Chapter 30

Sustainability, Climate Change and Resilience			
Priority	**Project Appraisals**		**AIR Ref**
SSR1	Revise the project appraisal process to ensure that investment decisions take account of 'whole-life' costs (including the cost of the CRC Energy Efficiency Scheme) and benefits of proposed solutions. Whole life carbon costs should be factored into appraisals for projects costing over £500k (and any other projects where carbon is likely to be a material consideration). Where there is a marginal NPC difference between a solution with the lowest NPC and a solution that offers significantly lower whole life emissions, the lower emission solution should be selected.	These actions are already included as part of the Capital Appraisal process. NI Water are currently completing a full review of the appraisal process, and will refine the process to improve the overall appraisal process.	
SSR2	Long-term social, economic & environmental sustainability should be considered in all project appraisals.	NI Water are reviewing the Appraisal Report and Business Case Templates ensuring they align with the NIGEAE 10 Step approach including Step 7 – 'Weigh up non-monetary costs and benefits'	
SSR3	Explore opportunities with Forest Service and other partners to offset existing and future energy demands (e.g. carbon offsetting through forestry, green energy production through wind turbines or wood chipping).	NI Water have explored a number of renewable investment types. Due to recent changes in ROC's a number of initiatives have not been deemed economic. Solar installations have been installed across the NI Water estate and other opportunities will be explored as they become known.	
SSR4	For every WWTW site on which NI Water needs to carry out an appraisal to inform capital investment, due to base maintenance or enhancement drivers (quality, growth or service levels), the project appraisal shall assess if a more sustainable solution option is feasible, and determine any land acquisition requirements.	PC15 FD includes for sustainable solution targets. Each WWTW appraisal now examines potential sustainable solutions with examples including ICW's, Reedbeds and similar technology. During PC15 an ICW has been constructed at Castlearchdale and Stoneyford. Further pilot projects are planned with a variety of sustainable solutions to gain confidence in long performance and value for money.	AIR Table 16 section H
Priority	**Project Planning and Risk**		**AIR Ref**
SSR5	NI Water should carefully plan the early stages of project development and consider risks to project delivery, which may include progressing trial projects and working with other stakeholders to identify solutions and secure support that these risks be accepted and managed.	Project planning and risk is managed as a BAU item on all projects. Stakeholder engagement is important on key projects and examples demonstrating this in action include the WR&SR plan (see WS3) where a steering group has met circa every 6 weeks during the project development. For WWTW NI uses a process selection matrix, including processes that are endorsed by stakeholders. For new processes e.g. ICW's NI Water engage with stakeholders to ensure acceptance in principle of the process.	
Priority	**Research Development and Innovation**		**AIR Ref**
SSR6	Maintain and implement a Research Development and Innovation (RDI) strategy.	NI Water have an (RDI) strategy in place. The main emphasis within the strategy is that NI Water operates on a fast follower principle.	
Priority	**Renewable Energy**		**AIR Ref**
SSR7	Explore opportunities to invest in renewable energy generation to reduce running costs at existing high-energy facilities.	NI Water has invested in solar panels at 58 sites around the province, availing of incentive schemes at multiples of 4, 3 and 2 ROCS. This includes the recently completed Solar Farm at Dunore point. Private wire and corporate PPA's are also being considered. Dedicated energy efficiency team has been established and is pursuing as BAU.	AIR Chapter 30

Priority	Renewable Energy		AIR Ref
SSR8	Explore opportunities to generate renewable electricity through innovative management of existing water and sewerage assets such as: generating hydro-power from excess water mains pressure and installing solar panels at facilities.	NI Water has three existing hydro schemes. Business cases for a further 10 hydro schemes have been hampered by the closure of incentive schemes. These business cases are being reviewed to assess viability of hydros without ROCs. Dedicated energy efficiency team has been established and is pursuing as BAU.	AIR Chapter 30
Priority	**Renewable Energy**		**AIR Ref**
SSR9	NI Water shall seek to maintain the level of energy purchased from external renewable sources to that achieved in the PC13 period, whilst increasing the percentage of renewable energy generated by use of its own assets and lands and contribute to achieving the Executive's greenhouse gas emissions reduction target.	Short and medium term energy efficiency targets for NI Water have been developed for the PC15 period. These are under review as challenges associated with grid connections, and closure of incentive schemes, are considered.	AIR Table 45
Priority	**Sustainable Treatment & Regulation**		**AIR Ref**
SSR10	Where NI Water believes that a license, consent, or permit proposed or set by NIEA is unnecessarily stringent or does not adequately consider a catchment based approach, NI Water should seek to challenge and resolve this with NIEA initially, and then if not resolved, by escalating this to the WICG for wider consideration and direction by stakeholders. The objective should be to develop more sustainable treatment solutions	This action is actively challenged for all design standards offered by NIEA under BAU. NIEA are supportive of sustainable solutions, where appropriate, and have supported a deviation from the full RBC approach for small works, below 20pe. Moneyreagh WwTW identification of infiltration and removal from the system is another example where we are working with NIEA to reassess the standards of the discharge from this site, in conjunction with hydrology team in NIEA reassessing the river flows, following rerouting of infiltration directly to the adjacent watercourse, giving a better flow in the watercourse, hence better dilution.	
SSR11	Complete a number of sustainable wastewater treatment 'pilots' early in PC15 to compare the costs and performance of various options. Develop & commence a long-term investment programme of sustainable wastewater treatment schemes (including the land requirements) with the core aim that this reduces NI Water's long-term operating costs and emissions.	Castle Archdale Integrated Constructed Wetland has come into operation and along with Stoneyford ICW and The Loop ICW which are currently undergoing performance monitoring. A further sustainable treatment pilot is not operational at Clabby WwTW, Co Fermanagh using a Phragmifilter Reed Bed System.	AIR Table 16 Section H
SSR12	Identify and secure sufficient land early in the project phase to give the option of the selection of larger footprint process solutions that typically result in lower operating costs. Consider the advanced purchase of land to accommodate future expansion of works using more sustainable solutions.	The project business case will proactively identify land purchase requirements as developed for each Price Control.	
SSR13	Aim to gradually deliver year on year increases in the percentage of new WWTW investment (assessed by Population Equivalent served) delivered by 'more sustainable solutions' so that: By 2020/21 33% of all WWTW upgrades to works serving a PE of <2,000 are delivered by more sustainable solutions. Where viable, more sustainable WWTW solutions should also be used for works serving a PE > 2,000	Castle Archdale Integrated Constructed Wetland has come into operation and along with Stoneyford ICW which are currently undergoing performance monitoring. A further sustainable treatment pilot is not operational at Clabby WwTW, Co Fermanagh using a Phragmifilter Reed Bed System.	AIR Table 16 Section H

Priority	Education & Public Awareness		AIR Ref
SSR14	NI Water should continue to invest in education and campaigns to promote prioritised key messages such as the importance of insulating (freeze-thaw), using water wisely (water efficiency), bag it and bin it (preventing pollution) and measures to prevent flooding due to other causes through continued work of the water bus and school visits, and other educational means. NI Water should learn from the impact of previous campaigns and demonstrate how future campaigns will reach consumers more effectively.	Through the work of the Waterbus and school visits, all schools (both Primary and Secondary) are offered education talks on our key water efficiency messages as well as being taught about the value of water. Communicating our key Bag it & Bin it messages and Freeze/Thaw protection via Radio/Print/Social Media. Also attending community events and delivering community and school talks. The overall objective of the strategy is to educate and increase public awareness by providing important information via all the communication channels at our disposal. Another action of the strategy was the appointment of Environmental Champions enabling the key messages to be delivered to a wider audience. NI Water delivers our key FOG (Fat, Oil and Grease) messages to schools, community groups and businesses. We have a community outreach programme which focus on delivering education programmes and public awareness campaigns on the importance of correct disposal of FOG and highlight how this can reduce the risk of pollution.	AIR Chapter 1
SSR15	NI Water should seek to develop effective partnerships with other organisations where there are shared benefits of the campaign (such as with DSD on Lead).	NI Water work with a range of stakeholders to promote our key messages around Water Quality and the benefits of drinking tap water. These Stakeholders include, Community Groups, Schools, Education Board, Media, CCNI, Regulator, DWI, DfI to name but a few. Water for Health is one of our key campaigns and we deliver it all year round through our Education programme. Water for Health/Water Quality is part of the organisation's CSR, Communications and Education strategy and is a priority for the company.	AIR Chapter 1

Priority	Preservation of Services		AIR Ref
SSR16	Comply with the requirements of the Preservation of Services and Civil Emergency Measures (Relevant Undertaker) (Northern Ireland) Direction 2010 and any supplementary Guidance issued by DRD. • Provide DRD with an annual audit laying out the requirements in the Direction.	Currently still on target to complete all the security hardening measures approved in the PC15 submission, by the due cut-off date March 2021. The PC 15 programme of work comprises: -Security harden 52 Enhanced Service Reservoirs at a budget cost of £2,500k- original target completion date (June 2017) has been revised to June 2018, to take account of programming revisions and contract delivery issues. -Security harden 13 Water Treatment Works at an updated budget cost, following competitive tendering, of £2,200k. The target date for completion has been revised from late 2018 to April 2019, due to funding constraints within the overall capital programme. -Security harden 2 Waste Water Treatment Works at a budget cost of £400k. The 2 sites to be hardened are confirmed as Newtownstewart WwTW and Omagh (Hunters Crescent) WwPS- work to be completed during PC15 In November 2017 Dalriada was purchased by NI Water and now operates as a wholly owned subsidiary (NI Water Alpha), the agreed programme of security hardening work at sites they previously operated will not be impacted by this organisational change and is still on target to complete within PC15. The 2018 PSCEMD Report carried out by the independent Certifier and submitted to DfI on 1st April , reviewed all aspects of the security hardening programme and judged progress to be satisfactory.	AIR Table 47 line 3
SSR17	Ensure:	Please see SSR16 above for information	
SSR17a	• All CNI sites continue to meet latest security advice; and	Please see SSR16 above for information	
SSR17b	• Implementation of a prioritised plan for securing other identified sites to required standards.	Please see SSR16 above for information	
SSR18	Provide training and testing of appropriate protocols and Guidance issued under the Direction. Review and update major incident plans to reflect lessons learned	Please see SSR16 above for information	
Priority	**Resilience**		**AIR Ref**
SSR19	Commence a programme of investment to improve and maintain the resilience of the wider water and sewerage asset base and systems prioritised as follows:	There have been a number of projects across the asset base to assess resilience in relation to Freeze/Thaw, Drought and Flooding events and this includes the 2017 Water Resource and Supply Resilience Plan which includes critical period plans for both Freeze/Thaw and Drought events. WTWs and WwTWs being upgraded during PC15 to insulate key components against extreme cold. There is also programme of investment in PC15 for DG5 (Internal Flooding) & UIDs (Prevention of pollution).	
SSR19a	1) Water supply	Please see SSR19 above for information	

Priority	Resilience		AIR Ref
SSR19b	2) Prevention of internal flooding (e.g. due to a sewer pumping station being flooded)	Please see SSR19 above for information	
SSR19c	3) Prevention of pollution (e.g. due to WWTWs or SPS being flooded)	Please see SSR19 above for information	

Tourism, Recreation & Biodiversity			
Priority	**Estate Management**		**AIR Ref**
TRB1	Contribute to the development and implementation of the NI Biodiversity Plan.	NIW have contributed to and helped develop the NI Biodiversity Plan. This is currently being implemented, complied with and reported on to NIEA.	
TRB2	Develop & implement an estate management strategy to take account of: the primary water and sewerage functions; protected areas; the need to enhance biodiversity; the need to permit public access to support tourism and healthy lifestyles; and the need to increase opportunities for providing recreational amenities for interest groups.	Project created to improve site security; public safety; and enjoyment of permitted recreational activities at several locations. Work includes construction of steps and handrails; accessible fishing stands; construction of paths and walkways; construction of boardwalks; extension and repair of car parks; construction of slipway; erection of fencing and gates; installation of benches, picnic tables and bins; provision of signage; and provision of life saving equipment. Phases 1, 2 & 3 complete.	
TRB3	Continue to develop partnerships (e.g. SCAMP NI) with other public, community & voluntary sector organisations to deliver sustainable catchment initiatives.	Engagement and development of partnerships with key stakeholders is being carried out on an ongoing basis as required to deliver sustainable catchment initiatives.	AIR Table 47 Line 9
TRB4	Explore opportunities for leasing NI Water land and assets for leisure, tourism and income generation where appropriate.	No locations identified as suitable.	
TRB5	Adopt and implement the 'Protocol for the Care of the Government Historic Estate'. Develop a long term plan to bring assets covered by this, where necessary, up to a suitable standard and maintain them going forward.	Specialist architect appointed to undertake Condition Assessment Reports for assets listed on NI Water's historic estate register, in line with the requirements of the Protocol. The recommendations from the survey reports will be used to collate a programme of work to ensure assets are up to a suitable standard, subject to availability of funding. A capital programme has commenced on Mourne Wall to implement repairs to areas of damage.	
TRB6	Explore opportunities to celebrate the local water industries influence on the social, cultural, industrial & natural heritage of Northern Ireland.	NI Water work with a range of stakeholders to promote and celebrate the local water industry's influence on both the natural and built heritage, we do this through a joined-up approach with like minded organisations, such as the MHT, Newry, Mourne and Down Council as well as local 'user groups' . NI Water participate in special designated events to promote the important relationship between Water, Heritage, Social and Culture. These events include-EHOD, WED, WWD, Open Days, Specialised Lecturers etc.	AIR Chapter 1
Priority	**Bathing Waters & Clean Beaches**		**AIR Ref**
TRB7	Contribute to the implementation of the NI Marine Litter Strategy and the protection of Bathing Waters and Shellfish Waters from pollution.	NI Water continues to deliver wastewater education campaigns to highlight education and awareness for appropriate use of sewerage systems. Community engagement projects have been delivered to extend education and awareness for fats, oils and grease and sewage related debris. Compliance with water order standards at coastal works has assisted with protection of protected waters. Ballycastle WwTW being progressed, with provision of secondary treatment. LWWP will contribute to delivery of water quality improvements in Belfast Lough, whilst a capital works upgrade in Dundrum and Carrigs River investigations will contribute to identifying actions and hence assist with driving water quality improvements in Dundrum Bay.	
TRB8	Put a programme in place to reduce the risk of pollution from the sewerage system during PC15, informed by the Marine Conservation Society Pollution Policy and Position Statement on CSOs	There is a programme to install CSO monitors at prioritised sites throughout PC15. The technology is at trial stage in the field, to assess suitability. Following the trial and approval to proceed to the next stage, installation will be rolled out to all CSOs within 2km for designated bathing and shellfish waters. In addition, funding has been allocated for installation of monitors at 65 No. inland CSO's and the same technology will be used for these monitors.	

Priority	Reservoirs		AIR Ref
TRB9	Progress the assessment of 'unused' reservoirs to determine the approach to disposal.	NIW have commissioned Abandonment/Discontinuance Scoping Report to be carried out at a number of reservoirs. The Outputs of this will be available in PC15.	

Annual Information Return 2018

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 NIAUR 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 Leakage Function for processing in relation to the update of the DG2 Register. Leakage Data Management Unit 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 Leakage DMU for investigation.

Leakage DMU 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.

UPRN	Status Date	Status	Building Nr	Primary_Thorfare	Town	Postcode	County	OMA	Pressure
187100513	30-Nov-12	In Register	181	[redacted]	Ardglass	[redacted]	Down	Sentry Hill	13.47
185292371	30-Sep-12	In Register	2	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.97
185292234	30-Sep-12	In Register	2	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	13.87
185292230	30-Sep-12	In Register	1	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.12
185290343	30-Sep-12	In Register	183	[redacted]	Ardglass	[redacted]	Down	Sentry Hill	13.07
185778557	30-Sep-12	In Register	10	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.79
185292251	30-Sep-12	In Register	5	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	13.90
185292239	30-Sep-12	In Register	3	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.01
185292245	30-Sep-12	In Register	4	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	13.82
185292368	30-Sep-12	In Register	16	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.71
185292366	30-Sep-12	In Register	14	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.86
185292364	30-Sep-12	In Register	12	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.89
185292362	30-Sep-12	In Register	10	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.95
185292259	30-Sep-12	In Register	8	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	14.06
185292258	30-Sep-12	In Register	7	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	13.82
185292257	30-Sep-12	In Register	6	[redacted]	Ardglass	[redacted]	Down	Loughrans Tower	13.89
185207712	31-Aug-12	In Register	156	[redacted]	Donaghadee	[redacted]	Down	Portavoe Donaghadee	7.94
185207711	31-Aug-12	In Register	154	[redacted]	Donaghadee	[redacted]	Down	Portavoe Donaghadee	8.07
185207710	31-Aug-12	In Register	152	[redacted]	Donaghadee	[redacted]	Down	Portavoe Donaghadee	8.44
185207709	31-Aug-12	In Register	150	[redacted]	Donaghadee	[redacted]	Down	Portavoe Donaghadee	8.65
185207714	31-Aug-12	In Register	160	[redacted]	Donaghadee	[redacted]	Down	Portavoe Donaghadee	7.51
185207715	31-Aug-12	In Register	162	[redacted]	Donaghadee	[redacted]	Down	Portavoe Donaghadee	7.43

3. Sources of information

For AIR17 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 2016/17 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 AIR18 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 CSD Services in Capital 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

An interruption to supply is defined as the actual loss of water supply to a property, whether planned or unplanned, warned or unwarned.

Supplies may be affected by other factors, for example, lower pressure through the flushing of mains, or restrictions on use. These are also covered under the DG2 and DG4 procedures.

3.2 Start Time Determination

The outage commences when the first customer contacts the contact centre (as per current methodology).

3.3 End Time Determination

The outage is deemed to be fully recovered on the turning of the isolation valve. Although it is acknowledged that, on occasions, there will be a slight lag between the valve operation and all properties having their supply restored, in the majority of cases the opening of the main supplying valve will result in the end of an interruption.

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.

3.4 Duration

The duration is the length of time for which customers are without a continuous supply of water. An interruption starts when water is unavailable from the first cold tap in a property and finishes when the supply to the last property affected by the interruption is restored to the tap.

3.5 Planned Interruption Duration Determination

When calculating the duration of a planned interruption, the Start Time is taken as the time when the valve is turned off and the End Time is taken as the time when the valve is turned on (plus an allowance for mains charging if this is deemed to be necessary). This ensures that reporting is in line with the regulatory definition below:-

'Duration is defined as the length of time for which customers are without a continuous supply of water. **An interruption starts when water is unavailable from the first cold tap in a property and finishes when the supply is restored to the tap.**'

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).

3.6 Event

Event is the term used by NI Water to describe its involvement in an abnormal occurrence in its services to customers.

3.7 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.

3.8 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'.

3.9 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.

3.10 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.

3.11 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.

3.12 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 functions within the Customer Service Delivery Directorate or by functions within other NI Water Directorates. These have been identified as follows:

- Planned interruptions carried out by Networks Water,
- Planned interruptions carried out by Leakage Services,
- 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 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 or Leakage Services

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 CSD Services in Capital 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 CSD 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 or Leakage Services

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 the Networks Water function 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 Networks Water. However, the DG3 Register is compiled and held by CSD Services in Capital House.

Interruption records relating to the Networks Water and Leakage Services functions 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 Interruption Records Report,
- RPT1152 – Historical DG3 Interruption Addresses Report,
- RPT1155 – 'Live' DG3 Unplanned Interruption Records Report
- RPT1156 – 'Live' DG3 Planned Interruption 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 Customer Field Manager for review and approval. The record should then be passed to the Area Manager for review and approval, to the DG3 Customer Services Coordinator for review and approval and finally, to the Head of Networks Water for review and approval. If the CFM, AM, DG3 CS Coordinator or HoF 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 (3rd Draft – 21 Oct 14)

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 Save the event when the incident is closed in the field.	
2	• DG3 CS Coordinator sends the ***Weekly Rapid No Water Complaints Report*** to the FM's on a Monday morning for the previous week.	Every Monday morning.
3	• The weekly ***Rapid No Water Complaints Report***, lists all NIW No Water calls for the week. • FM filters the report for his own area, sorts by date and DMA which then group calls. • The FM opens the IMS / Reports / ***RPT1151 – 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.

6	• Level 4 uses the above monthly ***Unplanned >6hrs Summary*** Report to identify a number of L4 Monthly Audit checks. • L4 meets with the Customer Field Manager 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	• Customer FM discusses the IMS Events highlighted for audit in action 6. • Adjusts as required.	1st working day + 3 days
9	• Customer FM reports back to Level 4. • L4 approves/saves the Audit Events in the IMS system.	1st working day + 5 days
Monthly Sign Off		
10	• L4 emails L3 & DG3 CS Coordinator that Monthly Audit checks have been completed.	1st working day + 7 days
11	• DG3 CS Coordinator produces ***DG3 Rapid Comparison Checks*** report. • This Zip file contains an number of reports; o Individual FM folders with DG3 ID Events checks. o Comparison Checks Summary. ▪ Red/Amber/Green against start/finish/No. prop o Properties not recorded on IMS. ▪ Used to check No. of prop queries.	1st working day + 8 days
12	• L4 discusses above report with Customer FM. • Customer FM discussed above report with FM's. • Customer FM to the Level 4. • L4 reports back to DG3 CS Coordinator.	1st working day + 10 days
13	Level 3 sings off the monthly DG3 Report for the Board.	2nd Tuesday of the new month.

The reports above can be found at G:\NetWat\DG3\Monthly Audit Process

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 CSD Services for

inclusion into the DG3 Register. All pro forma should be stored by Capital Asset Delivery and Customer Field Services for Audit purposes.

Details of the Contractor Return Sheet can currently be obtained from CSD Services in Capital 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 carried out by Leakage Services 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 Leakage Services 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 Leakage Services 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 CSD Services by the same date.

- When a Field Manager approves a IMS DG3 record, an e-mail reminder is automatically forwarded to the Customer Field Manager.
- When a CFM 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, Head of Networks Water, Head of Networks Leakage and Capital Asset Delivery L3 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 and Customer Field Managers and the release of data by the Head of Function. These reports are used by the CSD Services function to compile a DG3 Register for each month and corresponding KPIs.

The following reports are generated by CSD 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, Leakage Services, Capital Asset Delivery and Customer Field Services) and copied to a DG3 Composite Report File held by CSD Services in Capital 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

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 of interruptions have been captured in accordance to the regulatory guidance. For further information on the development of the DG3 Register, please refer to the Line Methodology for AIR Table 2 Lines 5 to 19.

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.

Appendices to the DG3 Supply Interruptions Levels of Service Methodology can be found in the follow section of the document

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 Nor 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.

Contact details:-

[redacted]

Customer Service Delivery Directorate - Networks Water

- The Area Managers and Field Managers are responsible for the procurement of information for DG3 within the Networks Water function.

Customer Service Delivery Directorate - Leakage Services

- The Area Managers and Field Managers are responsible for the procurement of information for DG3 within the Leakage Services function.

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;

Field Technicians (continued)

- 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;
- Sign off DG3 record for submission for approval by Customer Field Manager;
- Update Major Incident records.

Customer Field Managers

- Ensure Field Managers are adhering to the agreed process/ timescales;
- Check/ query records signed off by Field Managers;
- Sign off DG3 Record for approval by Area Manager.

Area Managers

- Ensure Customer Field Managers are adhering to the agreed process / timescales.;
- Check/ query records signed off by Customer Field Managers;
- Sign off DG3 Record for approval by Area Manager.

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.

Bretland Telemetry Control Centre

TCC E-mail Addresses and Telephone Extensions:-

E-mail	Ext.
[redacted]	[redacted]

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, Leakage Services, Capital Asset Delivery and Customer Field Services;

- Checks, audits and queries records signed off by Customer 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 Networks 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 Networks Water

- Final signoff of amalgamated approved IMS interruption records on a monthly basis and release of data for reporting purposes.

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.

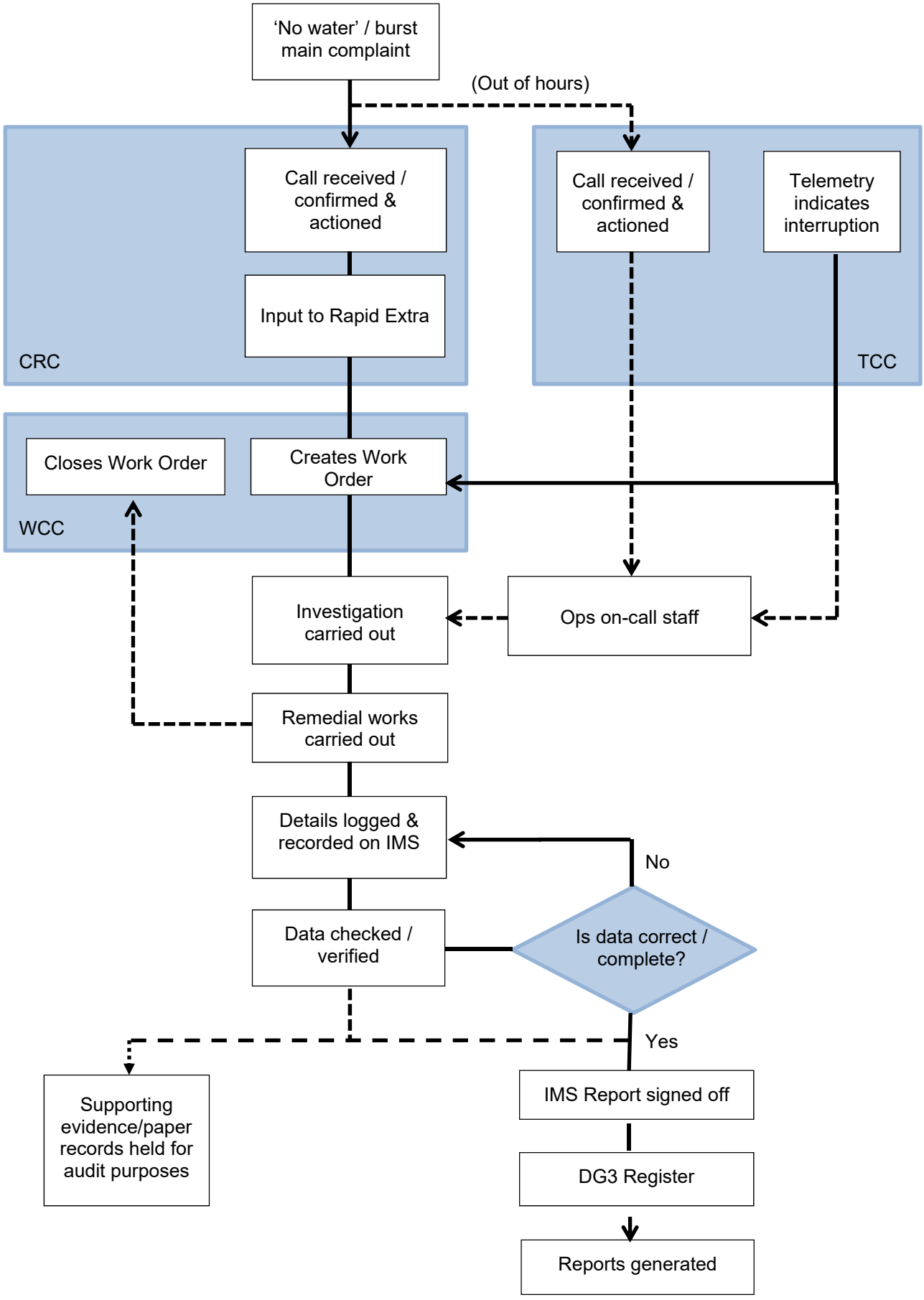
Bronze Team – MIP Only

- 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.

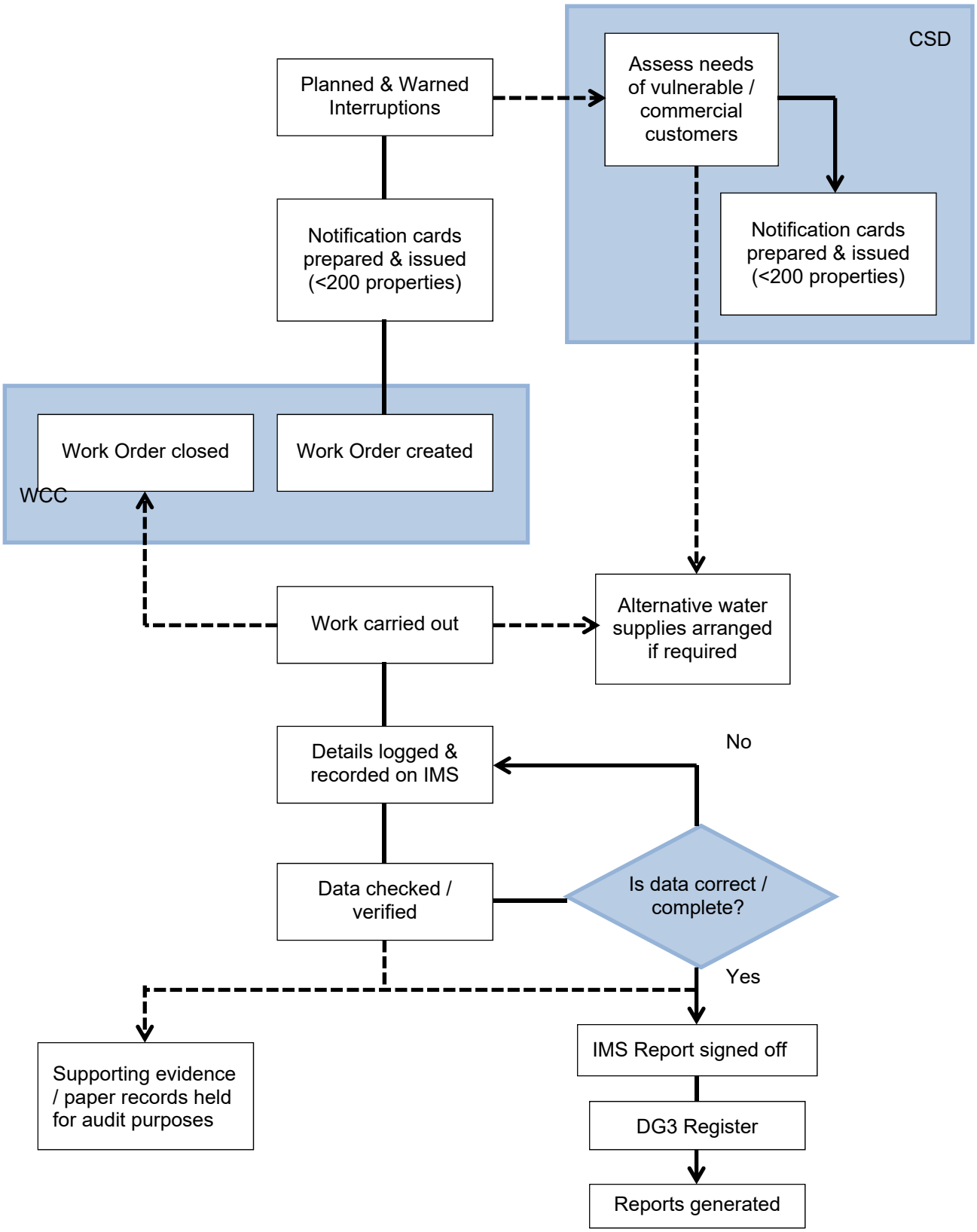
Silver Team

- Interrogate reports to provide status updates as incidents develop.

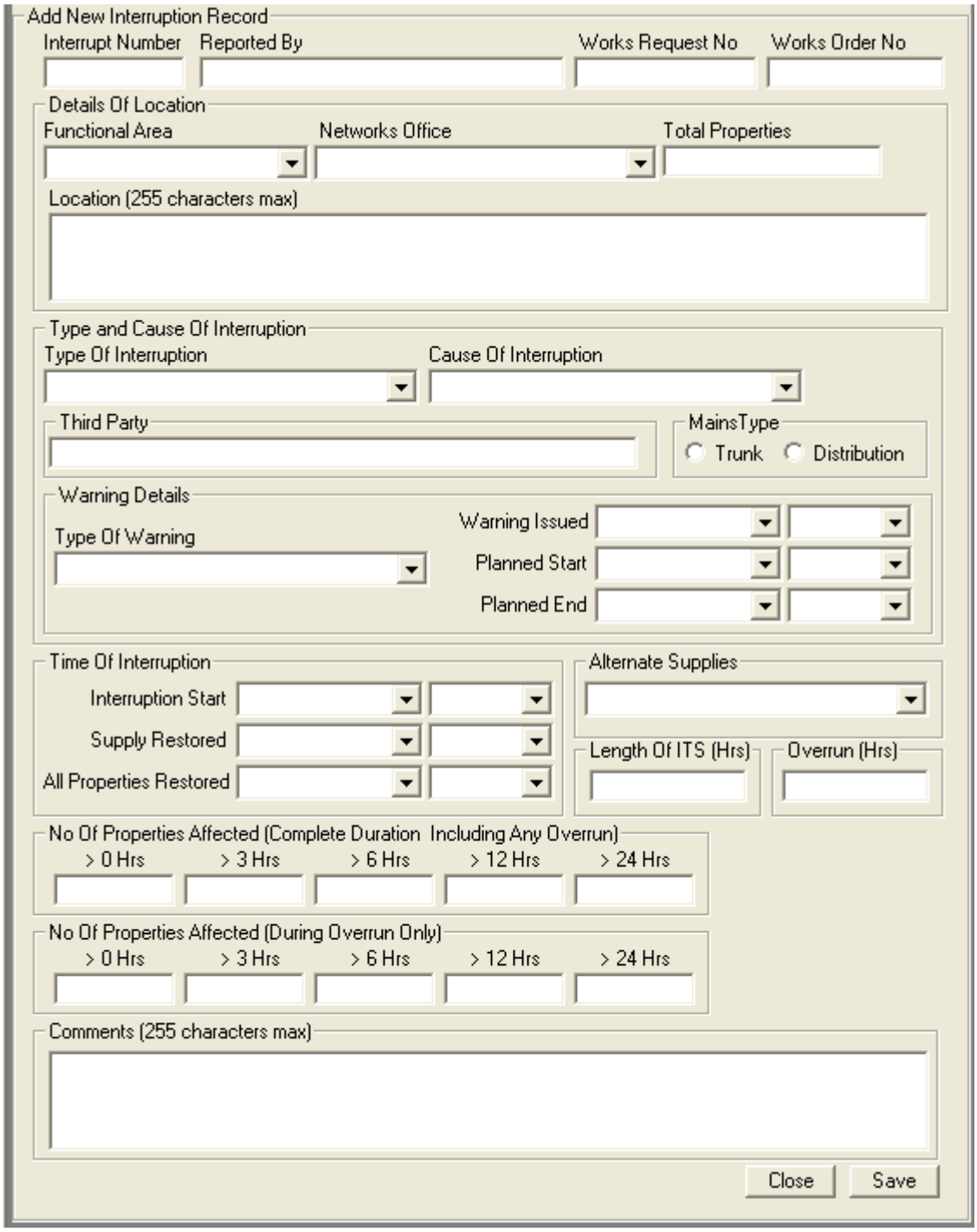
Appendix B – DG3 Process Flow Diagram – Unplanned or Unwarned Interruptions



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:

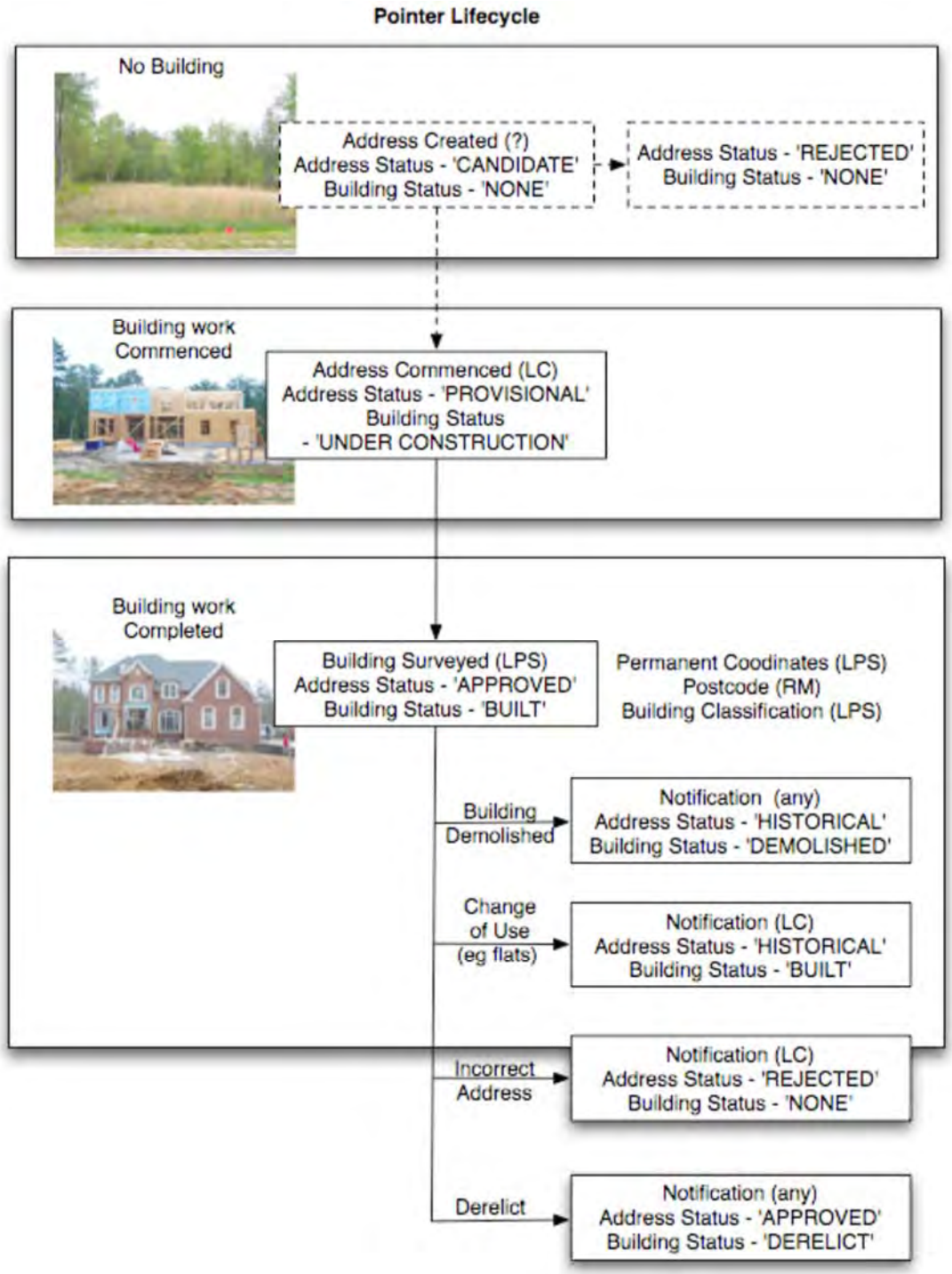
None, Under Construction, Built, Derelict and Demolished

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.

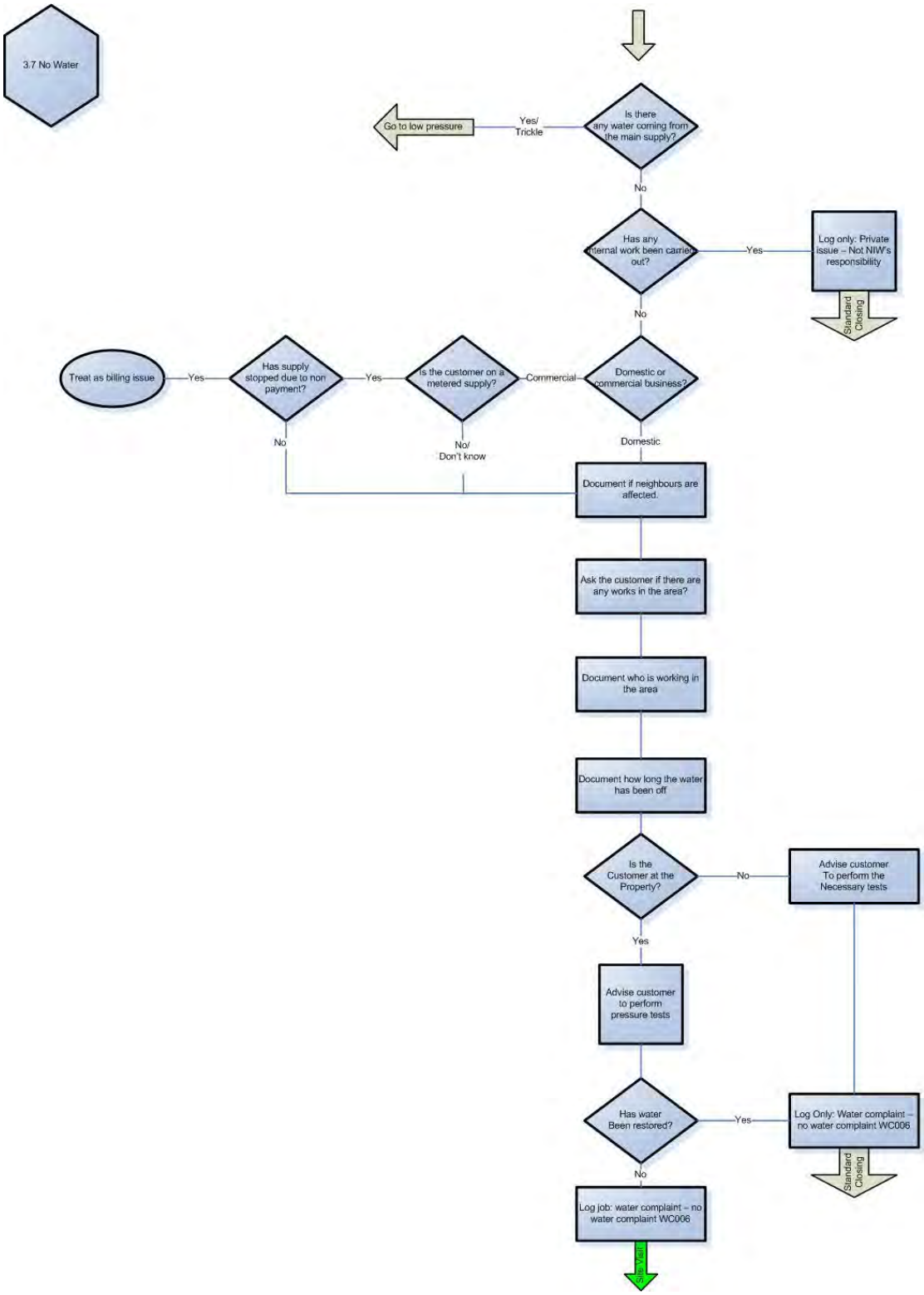
Constraints

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.

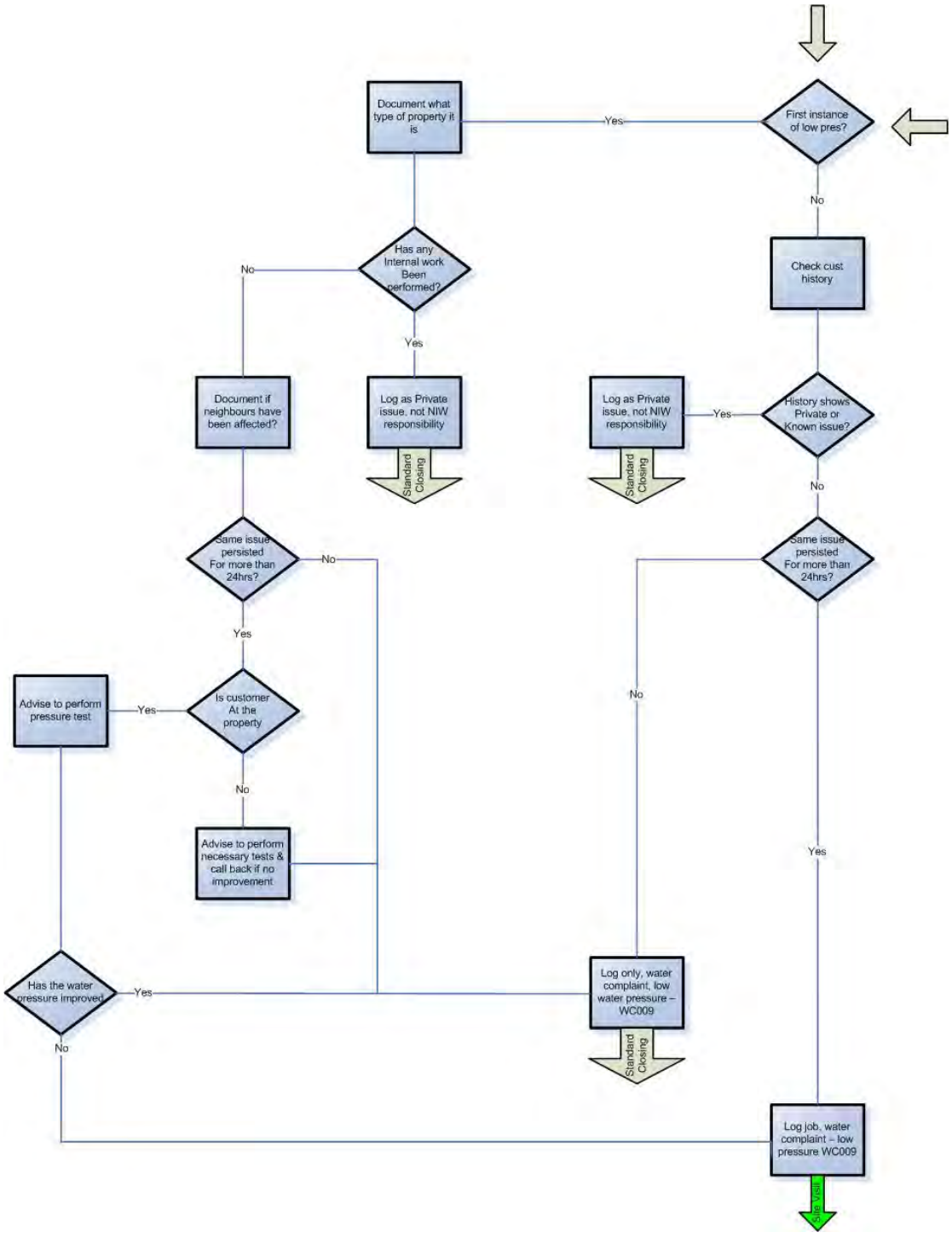
Details

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
01/05/2018 15 21

Unplanned, Unwarned Interruptions

More than 3 hrs **No of Properties** **18,504**

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
243571	171407	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/03/2018 19 30	27/03/2018 22 35	25	25	25	0	0	0	3 Hrs 5 Mins 0 Secs	3	5	0	(UPRN 185191869) - [redacted]	FALSE			Burst Main/Main Repair
233395	171266	Submitted to Customer Field Manager	Networks Water	NW51A	[redacted]	[redacted]	Unplanned Interruption		N/A			10/03/2018 10 54	10/03/2018 14 00	9	9	9	0	0	0	3 Hrs 6 Mins 0 Secs	3	6	0	(UPRN 185538652) - [redacted]	FALSE			Replacement Fitting (e.g. SV, FH)
233219	171129	Submitted to Area Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			01/03/2018 11 18	01/03/2018 14 30	29	29	29	0	0	0	3 Hrs 12 Mins 0 Secs	3	12	0	(UPRN 185557101) - [redacted]	FALSE			Burst Main/Main Repair
243482	171336	Submitted to Area Manager	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/03/2018 08 15	17/03/2018 11 30	10	10	10	0	0	0	3 Hrs 15 Mins 0 Secs	3	15	0	(UPRN 185296755) - [redacted]	FALSE			Burst Main/Main Repair
233257	171162	Registered	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 13 45	04/03/2018 17 00	19	19	19	0	0	0	3 Hrs 15 Mins 0 Secs	3	15	0	(UPRN 185022299) - [redacted]	FALSE			Burst Main/Main Repair
243537	171379	Registered	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			23/03/2018 13 00	23/03/2018 16 15	34	34	34	0	0	0	3 Hrs 15 Mins 0 Secs	3	15	0	(UPRN 185039081) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 12 20	2394	31	31	0	0	0	3 Hrs 20 Mins 0 Secs	3	20	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233377	171248	Submitted to Area Manager	Networks Water	NW51B	[redacted]	[redacted]	Unplanned Interruption		N/A			09/03/2018 09 00	09/03/2018 12 20	16	16	16	0	0	0	3 Hrs 20 Mins 0 Secs	3	20	0	(UPRN 185840963) - [redacted]	FALSE			Burst Main/Main Repair
233228	171137	Submitted to Area Manager	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			02/03/2018 12 35	02/03/2018 16 00	265	265	265	0	0	0	3 Hrs 25 Mins 0 Secs	3	25	0	(UPRN 187130511) - [redacted]	FALSE			Other
243570	171408	Submitted to Area Manager	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			27/03/2018 18 05	27/03/2018 21 30	38	38	38	0	0	0	3 Hrs 25 Mins 0 Secs	3	25	0	(UPRN 185226234) - [redacted]	FALSE			Burst Main/Main Repair
233473	171330	Submitted to Customer Field Manager	Networks Water	NW52B	[redacted]	[redacted]	Unplanned Interruption		N/A			16/03/2018 12 00	16/03/2018 15 29	35	35	35	0	0	0	3 Hrs 29 Mins 0 Secs	3	29	0	(UPRN 185479143) - [redacted]	FALSE			Burst Main/Main Repair
233353	171237	Registered	Networks Water	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 11 00	08/03/2018 14 30	93	93	93	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185965980) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 15 30	08/03/2018 19 00	1822	27	27	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243606	171435	Submitted to Customer Field Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			29/03/2018 19 15	29/03/2018 22 45	92	92	92	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185425492) - [redacted]	FALSE			Burst Main/Main Repair
233323	171228	Submitted to Customer Field Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			07/03/2018 13 00	07/03/2018 16 30	8	8	8	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185068887) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 10 00	08/03/2018 13 30	2394	52	52	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233415	171286	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			13/03/2018 10 00	13/03/2018 13 30	82	82	82	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185999706) - [redacted]	FALSE			Burst Main/Main Repair
243497	171354	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			20/03/2018 11 15	20/03/2018 14 45	43	43	43	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185217241) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 14 30	08/03/2018 18 00	1822	115	115	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 15 00	08/03/2018 18 30	1822	126	126	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 16 00	08/03/2018 19 30	1822	11	11	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 16 30	08/03/2018 20 00	1822	43	43	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243574	171410	Registered	Networks Water	NW51A	[redacted]	[redacted]	Unplanned Interruption		N/A			28/03/2018 07 30	28/03/2018 11 00	13	13	13	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN 185501097) - [redacted]	FALSE			Burst Main/Main Repair
243589	171423	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			28/03/2018 18 30	28/03/2018 22 10	13	13	13	0	0	0	3 Hrs 40 Mins 0 Secs	3	40	0	(UPRN 185207002) - [redacted]	FALSE			Burst Main/Main Repair
233240	171143	Registered	Networks Water	NW52B	[redacted]	[redacted]	Unplanned Interruption		N/A			03/03/2018 10 30	03/03/2018 14 10	28	28	28	0	0	0	3 Hrs 40 Mins 0 Secs	3	40	0	(UPRN 187375243) - [redacted]	FALSE			Burst Main/Main Repair
233249	171153	Submitted to Area Manager	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 06 50	04/03/2018 10 30	38	38	38	0	0	0	3 Hrs 40 Mins 0 Secs	3	40	0	(UPRN 187373559) - [redacted]	FALSE			Broken/Jammed/Misaligned Fittin
243517	171364	Submitted to Area Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/03/2018 13 17	21/03/2018 17 00	68	68	68	0	0	0	3 Hrs 43 Mins 0 Secs	3	43	0	(UPRN 185460043) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 12 45	2394	181	181	0	0	0	3 Hrs 45 Mins 0 Secs	3	45	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233379	171254	Submitted to Area Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			09/03/2018 12 00	09/03/2018 15 45	440	440	440	0	0	0	3 Hrs 45 Mins 0 Secs	3	45	0	(UPRN 185420061) - [redacted]	FALSE			Burst Main/Main Repair
233392	171263	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			10/03/2018 00 30	10/03/2018 04 15	52	52	52	0	0	0	3 Hrs 45 Mins 0 Secs	3	45	0	(UPRN 185231930) - [redacted]	FALSE			Burst Main/Main Repair
233454	171313	Registered	Networks Water	NW51A	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 09 15	15/03/2018 13 00	49	49	49	0	0	0	3 Hrs 45 Mins 0 Secs	3	45	0	(UPRN 185539774) - [redacted]	FALSE			Other
233241	171148	Submitted to Customer Field Manager	Networks Water	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			03/03/2018 15 30	03/03/2018 19 20	756	756	756	0	0	0	3 Hrs 50 Mins 0 Secs	3	50	0	(UPRN 187155597) - [redacted]	FALSE			Burst Main/Main Repair
233261	171164	Registered	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 14 55	04/03/2018 18 45	7	7	7	0	0	0	3 Hrs 50 Mins 0 Secs	3	50	0	(UPRN 185411609) - [redacted]	FALSE			Burst Main/Main Repair
233444	171302	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			14/03/2018 14 00	14/03/2018 17 50	86	86	86	0	0	0	3 Hrs 50 Mins 0 Secs	3	50	0	(UPRN 185661214) - [redacted]	FALSE			Burst Main/Main Repair
243582	171418	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			28/03/2018 11 23	28/03/2018 15 15	23	23	23	0	0	0	3 Hrs 52 Mins 0 Secs	3	52	0	(UPRN 185218723) - [redacted]	FALSE			Burst Main/Main Repair
233238	171145	Submitted to Customer Field Manager	Networks Water	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			03/03/2018 08 37	03/03/2018 12 30	315	315	315	0	0	0	3 Hrs 53 Mins 0 Secs	3	53	0	(UPRN 185620074) - [redacted]	FALSE			Burst Main/Main Repair
233231	171138	Registered	Networks Water	NW52B	[redacted]	[redacted]	Unplanned Interruption		N/A			02/03/2018 13 30	02/03/2018 17 30	20	20	20	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185639422) - [redacted]	FALSE			Burst Main/Main Repair
233268	171183	Registered	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			05/03/2018 08 00	05/03/2018 12 00	623	623	623	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185035362) - [redacted]	FALSE			Other
233356	171239	Registered	Networks Water	NW03B	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 11 00	08/03/2018 15 00	78	78	78	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185251881) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 13 00	2394	243	243	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 11 00	08/03/2018 15 00	2394	62	62	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 15 00	08/03/2018 19 00	2394	43	43	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233480	171335	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			17/03/2018 09 00	17/03/2018 13 00	715	715	715	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	DMA - C0527 - Drumahoy	FALSE			Other
243490	171345	Submitted to Customer Field Manager	Networks Water	NW51A	[redacted]	[redacted]	Unplanned Interruption		N/A			19/03/2018 13 30	19/03/2018 17 30	176	175	175	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185487204) - [redacted]	FALSE			Burst Main/Main Repair
243491	171353	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			20/03/2018 06 00	20/03/2018 10 00	864	864	864	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185063965) - [redacted]	FALSE			Burst Main/Main Repair
243542	171385	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			24/03/2018 11 00	24/03/2018 15 00	73	52	52	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185280735) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 15 00	08/03/2018 19 00	1822	270	270	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 15 30	08/03/2018 19 30	1822	82	82	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243564	171404	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			20/03/2018 12 00	20/03/2018 16 00	251	251	251	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185063965) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 10 00	08/03/2018 14 00	2394	38	38	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233464	171324	Submitted to Area Manager	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 19 00	15/03/2018 23 00	214	20	20	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185312843) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 13 00	08/03/2018 17 00	1822	56	56	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233271	171179	Submitted to Area Manager	Networks Water	NW51B	[redacted]	[redacted]	Unplanned Interruption		N/A			05/03/2018 11 06	05/03/2018 15 10	14	14	14	0	0	0	4 Hrs 4 Mins 0 Secs	4	4	0	(UPRN 185681706) - [redacted]	FALSE			Burst Main/Main Repair
233253	171159	Registered	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 11 40	04/03/2018 15 50	36	36	36	0	0	0	4 Hrs 10 Mins 0 Secs	4	10	0	(UPRN 185039085) - [redacted]	FALSE			Burst Main/Main Repair
233375	171252	Submitted to Area Manager	Networks Water	NW51A	[redacted]	[redacted]	Unplanned Interruption		N/A			09/03/2018 10 50	09/03/2018 15 00	15	15	15	0	0	0	4 Hrs 10 Mins 0 Secs	4	10	0	(UPRN 185538652) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 11 00	08/03/2018 15 15	2394	43	43	0	0	0	4 Hrs 15 Mins 0 Secs	4	15	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233266	171167	Registered	Networks Water	NW52B	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 21 00	05/03/2018 01 15	21	21	21	0	0	0	4 Hrs 15 Mins 0 Secs	4	15	0	(UPRN 185697289) - [redacted]	FALSE			Burst Main/Main Repair
233226	171133	Submitted to Customer Field Manager	Networks Water	NW51B	[redacted]	[redacted]	Unplanned Interruption		N/A			02/03/2018 07 00	02/03/2018 11 20	36	36	36	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185838449) - [redacted]	FALSE			Burst Main/Main Repair
233232	171136	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			02/03/2018 12 10	02/03/2018 16 30	23	23	23	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185215616) - [redacted]	FALSE			Burst Main/Main Repair
233341	171229	Registered	Networks Water	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			07/03/2018 14 00	07/03/2018 18 20	33	33	33	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185592326) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 13 20	2394	115	115	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233459	171316	Registered	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 11 00	15/03/2018 15 20	14	14	14	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185721072) - [redacted]	FALSE			Burst Main/Main Repair
243544	171386	Submitted to Area Manager	Networks Water	NW52B	[redacted]	[redacted]	Unplanned Interruption		N/A			24/03/2018 20 55	25/03/2018 01 15	12	12	12	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185478182) - [redacted]	FALSE			Burst Main/Main Repair
243621	171446	Submitted to Customer Field Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			30/03/2018 20 35	31/03/2018 00 55	478	104	104	0	0	0	4 Hrs 20 Mins 0 Secs	4	20	0	(UPRN 185962729) - [redacted]	FALSE			Burst Main/Main Repair
233465	171320	Registered	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 16 18	15/03/2018 20 40	287	287	287	0	0	0	4 Hrs 22 Mins 0 Secs	4	22	0	(UPRN 185240999) - [redacted]	FALSE			Pump Equipment Failure
233242	171144	Registered	Networks Water	NW03B	[redacted]	[redacted]	Unplanned Interruption		N/A			03/03/2018 10 02	03/03/2018 14 25	439	439	439	0	0	0	4 Hrs 23 Mins 0 Secs	4	23	0	(UPRN 187542694) - [redacted]	FALSE			Airlock in Main
233402	171277	Submitted to Customer Field Manager	Networks Water	NW51B	[redacted]	[redacted]	Unplanned Interruption		N/A			12/03/2018 08 36	12/03/2018 13 00	40	40	40	0	0	0	4 Hrs 24 Mins 0 Secs	4	24	0	(UPRN 185684322) - [redacted]	FALSE			Burst Main/Main Repair
233251	171161	Registered	Networks Water	NW03B	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 11 00	04/03/2018 15 30	677	677	677	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 187345000) - [redacted]	FALSE			Burst Main/Main Repair
233274	171174	Registered	Networks Water	NW03B	[redacted]	[redacted]	Unplanned Interruption		N/A			05/03/2018 08 00	05/03/2018 12 30	80	80	80	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 185303084) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 13 30	2394	126	126	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233464	171324	Submitted to Area Manager	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 16 00	15/03/2018 20 30	214	40	40	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 185312843) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 14 00	08/03/2018 18 30	1822	43	43	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 14 30	08/03/2018 19 00	1822	70	70	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243594	171424	Submitted to Customer Field Manager	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			16/03/2018 04 30	16/03/2018 09 00	551	551	551	0	0	0	4 Hrs 30 Mins 0 Secs	4	30	0	(UPRN 185312843) - [redacted]	FALSE			Burst Main/Main Repair
243499	171349	Submitted to Area Manager	Networks Water	NW01B	[redacted]	[redacted]	Unplanned Interruption		N/A			09/03/2018 12 35	09/03/2018 17 15	103	62	62	0	0	0	4 Hrs 40 Mins 0 Secs	4	40	0	(UPRN 185000825) - [redacted]	FALSE			Burst Main/Main Repair
243507	171357	Submitted to Customer Field Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			20/03/2018 18 58	20/03/2018 23 40	38	16	16	0	0	0	4 Hrs 42 Mins 0 Secs	4	42	0	(UPRN 185404707) - [redacted]	FALSE			Replacement Fitting (e.g. SV, FH)
233332	171224	Submitted to Customer Field Manager	Networks Water	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			07/03/2018 09 17	07/03/2018 14 00	286	286	286	0	0	0	4 Hrs 43 Mins 0 Secs	4	43	0	(UPRN 185597981) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 13 45	2394	33	33	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 16 15	08/03/2018 21 00	1822	37	37	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
243573	171414	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			28/03/2018 09 00	28/03/2018 13 45	90	90	90	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN 185290171) - [redacted]	FALSE			Burst Main/Main Repair
243619	171443	Submitted to Customer Field Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			30/03/2018 11 00	30/03/2018 15 45	36	36	36	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN 185428254) - [redacted]	FALSE			Burst Main/Main Repair
233254	171160	Registered	Networks Water	NW03D	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 11 30	04/03/2018 16 15	601	601	601	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN 185917540) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 15 15	08/03/2018 20 00	1822	86	86	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233462	171321	Submitted to Area Manager	Networks Water	NW51A	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 13 48	15/03/2018 18 37	33	31	31	0	0	0	4 Hrs 49 Mins 0 Secs	4	49	0	(UPRN 185848159) - [redacted]	FALSE			Burst Main/Main Repair
233237	171142	Registered	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			03/03/2018 08 00	03/03/2018 12 55	1093	1093	1093	0	0	0	4 Hrs 55 Mins 0 Secs	4	55	0	(UPRN 185213514) - [redacted]	FALSE			Burst Main/Main Repair
233471	171327	Registered	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			16/03/2018 08 10	16/03/2018 13 05	2127	2127	2127	0	0	0	4 Hrs 55 Mins 0 Secs	4	55	0	(UPRN 185064585) - [redacted]	FALSE			PRV Maintenance
243624	171448	Registered	Networks Water	NW51B	[redacted]	[redacted]	Unplanned Interruption		N/A			31/03/2018 15 30	31/03/2018 20 25	6	6	6	0	0	0	4 Hrs 55 Mins 0 Secs	4	55	0	(UPRN 185670211) - [redacted]	FALSE			Burst Main/Main Repair
233284	171185	Submitted to Area Manager	Networks Water	NW52A	[redacted]	[redacted]	Unplanned Interruption		N/A			05/03/2018 10 34	05/03/2018 15 30	21	21	21	0	0	0	4 Hrs 56 Mins 0 Secs	4	56	0	(UPRN 185425011) - [redacted]	FALSE			Pump Equipment Failure
233325	171223	Registered	Leakage Services	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			07/03/2018 08 00	07/03/2018 13 00	16	16	16	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185636380) - [redacted]	FALSE			Burst Main/Main Repair
243552	171390	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 14 00	08/03/2018 19 00	1822	180	180	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233263	171201	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			04/03/2018 15 00	04/03/2018 20 00	69	19	19	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185230059) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 14 00	2394	168	168	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			08/03/2018 12 00	08/03/2018 17 00	2394	13	13	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185039329) - [redacted]	FALSE			Burst Main/Main Repair
233369	171261	Submitted to DG3 Customer Services Co	Networks Water	NW01B	[redacted]	[redacted]	Unplanned Interruption		N/A			09/03/2018 07 40	09/03/2018 12 40	132	132	132	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185000825) - [redacted]	FALSE			Burst Main/Main Repair
233424	171293	Registered	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			13/03/2018 12 00	13/03/2018 17 00	5	5	5	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185908043) - [redacted]	FALSE			Burst Main/Main Repair
243542	171385	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			24/03/2018 11 30	24/03/2018 16 30	73	3	3	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185280735) - [redacted]	FALSE			Burst Main/Main Repair
243559	171398	Submitted to Customer Field Manager	Networks Water	NW52B	[redacted]	[redacted]	Unplanned Interruption		N/A			26/03/2018 15 00	26/03/2018 20 00	32	32	32	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 187262975) - [redacted]	FALSE			Water Supply Failure
243585	171416	Submitted to Area Manager	Networks Water	NW01A	[redacted]	[redacted]	Unplanned Interruption		N/A			21/03/2018 15 00	21/03/2018 20 00	70	70	70	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN 185068296) - [redacted]	FALSE			Burst Main/Main Repair
233464	171324	Submitted to Area Manager	Networks Water	NW02B	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 16 30	15/03/2018 21 40	214	10	10	0	0	0	5 Hrs 10 Mins 0 Secs	5	10	0	(UPRN 185312843) - [redacted]	FALSE			Burst Main/Main Repair
233322	171217	Submitted to Customer Field Manager	Networks Water	NW03A	[redacted]	[redacted]	Unplanned Interruption		N/A			07/03/2018 04 45	07/03/2018 10 00	452	452	452	0	0	0	5 Hrs 15 Mins 0 Secs	5	15	0	(UPRN 185336008) - [redacted]	FALSE			Burst Main/Main Repair
233467	171323	Registered	Networks Water	NW03B	[redacted]	[redacted]	Unplanned Interruption		N/A			15/03/2018 18 20	15/03/2018 23 40	6	6	6	0	0	0	5 Hrs 20 Mins 0 Secs	5	20	0	(UPRN 185333700) - [redacted]	FALSE			Replacement Fitting (e.g. SV, FH)
243586	171421	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]	[redacted]	Unplanned Interruption		N/A			28/03/2018 14 38	28/03/2018 20 00	182	182	182	0	0	0	5 Hrs 22 Mins 0 Secs	5	22	0	(UPRN 185889678) - [redacted]	FALSE			Burst Main/Main Repair

Appendix G – DG3 Register Extract *(Unplanned Interruption Events – IMS Report RPT1184)*

233248	171155	Submitted to Customer Field Manager	Networks Water	NW51B	[redacted]		Unplanned Interruption		N/A				04/03/2018 06 23	04/03/2018 11 50	23	20	20	0	0	0	5 Hrs 27 Mins 0 Secs	5	27	0	(UPRN 185838503)	[redacted]	FALSE			Burst Main/Main Repair
233431	171295	Submitted to Customer Field Manager	Networks Water	NW51B			Unplanned Interruption		N/A				13/03/2018 16 22	13/03/2018 21 50	137	137	137	0	0	0	5 Hrs 28 Mins 0 Secs	5	28	0	(UPRN 185674072)		FALSE			Burst Main/Main Repair
233263	171201	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				04/03/2018 18 00	04/03/2018 23 30	69	19	19	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 185230059)		FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				08/03/2018 09 30	08/03/2018 15 00	2394	59	59	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 185039329)		FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				08/03/2018 12 00	08/03/2018 17 30	2394	72	72	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 185039329)		FALSE			Burst Main/Main Repair
243542	171385	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				24/03/2018 12 00	24/03/2018 17 30	73	6	6	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 185280735)		FALSE			Burst Main/Main Repair
243622	171447	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A				31/03/2018 05 55	31/03/2018 11 25	78	78	78	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 187352058)		FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				08/03/2018 13 00	08/03/2018 18 30	2394	22	22	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 185039329)		FALSE			Burst Main/Main Repair
243531	171374	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				05/03/2018 07 00	05/03/2018 12 30	40	33	33	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN 185230059)		FALSE			Burst Main/Main Repair
243499	171349	Submitted to Area Manager	Networks Water	NW01B			Unplanned Interruption		N/A				09/03/2018 14 25	09/03/2018 20 00	103	21	21	0	0	0	5 Hrs 35 Mins 0 Secs	5	35	0	(UPRN 185000825)		FALSE			Burst Main/Main Repair
233285	171181	Submitted to Customer Field Manager	Networks Water	NW03B			Unplanned Interruption		N/A				05/03/2018 13 10	05/03/2018 18 50	300	300	300	0	0	0	5 Hrs 40 Mins 0 Secs	5	40	0	(UPRN 185339938)		FALSE			Burst Main/Main Repair
233223	171132	Submitted to Area Manager	Networks Water	NW53A			Unplanned Interruption		N/A				01/03/2018 14 20	01/03/2018 20 00	66	66	66	0	0	0	5 Hrs 40 Mins 0 Secs	5	40	0	(UPRN 185993849)	[redacted]4AN	FALSE			Burst Main/Main Repair
233233	171135	Submitted to Customer Field Manager	Networks Water	NW03A			Unplanned Interruption		N/A				02/03/2018 10 00	02/03/2018 15 40	169	72	72	0	0	0	5 Hrs 40 Mins 0 Secs	5	40	0	(UPRN 185576279)		FALSE			Burst Main/Main Repair
233318	171216	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				06/03/2018 18 02	06/03/2018 23 45	200	200	200	0	0	0	5 Hrs 43 Mins 0 Secs	5	43	0	(UPRN 185063466)		FALSE			Other
233445	171303	Submitted to Area Manager	Networks Water	NW51A			Unplanned Interruption		N/A				14/03/2018 15 30	14/03/2018 21 15	94	1	1	0	0	0	5 Hrs 45 Mins 0 Secs	5	45	0	(UPRN 185565556)		FALSE			Burst Main/Main Repair
233235	171141	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A				02/03/2018 16 00	02/03/2018 21 45	15	15	15	0	0	0	5 Hrs 45 Mins 0 Secs	5	45	0	(UPRN 185213090)		FALSE			Low Service Reservoir
243539	171388	Submitted to Customer Field Manager	Networks Water	NW03D			Unplanned Interruption		N/A				23/03/2018 13 30	23/03/2018 19 15	6	6	6	0	0	0	5 Hrs 45 Mins 0 Secs	5	45	0	(UPRN 185349220)		FALSE			Burst Main/Main Repair
243499	171349	Submitted to Area Manager	Networks Water	NW01B			Unplanned Interruption		N/A				09/03/2018 15 00	09/03/2018 20 48	103	20	20	0	0	0	5 Hrs 48 Mins 0 Secs	5	48	0	(UPRN 185000825)		FALSE			Burst Main/Main Repair
243638	171458	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A				28/03/2018 03 03	28/03/2018 08 52	41	41	41	0	0	0	5 Hrs 49 Mins 0 Secs	5	49	0	(UPRN 185226216)		FALSE			Burst Main/Main Repair
233297	171196	Submitted to Customer Field Manager	Networks Water	NW03B			Unplanned Interruption		N/A				06/03/2018 08 00	06/03/2018 13 50	21	21	21	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN 185331376)		FALSE			Burst Main/Main Repair
233371	171257	Submitted to Customer Field Manager	Networks Water	NW03B			Unplanned Interruption		N/A				09/03/2018 14 30	09/03/2018 20 20	63	63	63	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN 185333420)		FALSE			Burst Main/Main Repair
233391	171262	Registered	Networks Water	NW01A			Unplanned Interruption		N/A				09/03/2018 21 00	10/03/2018 02 50	194	194	194	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN 185172381)		FALSE			Burst Main/Main Repair
243530	171381	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				23/03/2018 10 10	23/03/2018 16 00	339	339	339	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN 185011338)		FALSE			Burst Main/Main Repair
243542	171385	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				24/03/2018 11 45	24/03/2018 17 35	73	12	12	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN 185280735)		FALSE			Burst Main/Main Repair
243609	171445	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A				30/03/2018 07 10	30/03/2018 13 00	223	191	191	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN 185834846)		FALSE			Burst Main/Main Repair
243508	171365	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				21/03/2018 05 34	21/03/2018 11 25	469	469	469	0	0	0	5 Hrs 51 Mins 0 Secs	5	51	0	(UPRN 185068367)		FALSE			Burst Main/Main Repair
233464	171324	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A				15/03/2018 17 42	15/03/2018 23 35	214	36	36	0	0	0	5 Hrs 53 Mins 0 Secs	5	53	0	(UPRN 185312843)		FALSE			Burst Main/Main Repair
233399	171270	Submitted to Area Manager	Networks Water	NW51B			Unplanned Interruption		N/A				11/03/2018 17 33	11/03/2018 23 27	148	148	148	0	0	0	5 Hrs 54 Mins 0 Secs	5	54	0	(UPRN 187181938)		FALSE			Burst Main/Main Repair
233448	171306	Submitted to Customer Field Manager	Networks Water	NW02B			Unplanned Interruption		N/A				14/03/2018 19 15	15/03/2018 01 10	20	20	20	0	0	0	5 Hrs 55 Mins 0 Secs	5	55	0	(UPRN 185246612)		FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				08/03/2018 09 00	08/03/2018 15 00	2394	178	178	0	0	0	6 Hrs 0 Mins 0 Secs	6	0	0	(UPRN 185039329)		FALSE			Burst Main/Main Repair
243610	171437	Registered	Networks Water	NW52A			Unplanned Interruption		N/A				18/03/2018 06 45	18/03/2018 13 45	1	1	1	1	0	0	7 Hrs 0 Mins 0 Secs	7	0	0	(UPRN 185281264)		FALSE			Burst Main/Main Repair
243541	171383	Registered	Networks Water	NW51A			Unplanned Interruption		N/A				24/03/2018 07 45	24/03/2018 15 00	22	22	22	22	0	0	7 Hrs 15 Mins 0 Secs	7	15	0	(UPRN 187536483)		FALSE			Burst Main/Main Repair
233462	171321	Submitted to Area Manager	Networks Water	NW51A			Unplanned Interruption		N/A				15/03/2018 13 48	15/03/2018 21 17	33	2	2	2	0	0	7 Hrs 29 Mins 0 Secs	7	29	0	(UPRN 185848159)		FALSE			Burst Main/Main Repair
233248	171155	Submitted to Customer Field Manager	Networks Water	NW51B			Unplanned Interruption		N/A				04/03/2018 06 23	04/03/2018 14 00	23	3	3	3	0	0	7 Hrs 37 Mins 0 Secs	7	37	0	(UPRN 185838503)		FALSE			Burst Main/Main Repair
243485	171341	Submitted to Customer Field Manager	Networks Water	NW52B			Unplanned Interruption		N/A				18/03/2018 09 10	18/03/2018 17 15	15	15	15	15	0	0	8 Hrs 5 Mins 0 Secs	8	5	0	(UPRN 187170383)		FALSE			Burst Main/Main Repair
233263	171201	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				04/03/2018 14 30	04/03/2018 23 30	69	6	6	6	0	0	9 Hrs 0 Mins 0 Secs	9	0	0	(UPRN 185230059)		FALSE			Burst Main/Main Repair
243507	171357	Submitted to Customer Field Manager	Networks Water	NW52A			Unplanned Interruption		N/A				20/03/2018 16 20	21/03/2018 01 45	38	22	22	22	0	0	9 Hrs 25 Mins 0 Secs	9	25	0	(UPRN 185404707)		FALSE			Replacement Fitting (e.g. SV, FH)
243490	171345	Submitted to Customer Field Manager	Networks Water	NW51A			Unplanned Interruption		N/A				19/03/2018 07 50	19/03/2018 17 30	176	1	1	1	0	0	9 Hrs 40 Mins 0 Secs	9	40	0	(UPRN 185487204)		FALSE			Burst Main/Main Repair
243531	171374	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				05/03/2018 05 15	05/03/2018 15 00	40	7	7	7	0	0	9 Hrs 45 Mins 0 Secs	9	45	0	(UPRN 185230059)		FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				08/03/2018 09 00	08/03/2018 19 15	2394	57	57	57	0	0	10 Hrs 15 Mins 0 Sec	10	15	0	(UPRN 185039329)		FALSE			Burst Main/Main Repair
243566	171409	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A				27/03/2018 14 35	28/03/2018 02 25	10	10	10	10	0	0	11 Hrs 50 Mins 0 Sec	11	50	0	(UPRN 185238218)		FALSE			Burst Main/Main Repair
233293	171194	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A				05/03/2018 20 07	06/03/2018 14 00	3	3	3	3	3	0	17 Hrs 53 Mins 0 Sec	17	53	0	(UPRN 185035369)		FALSE			Other

More than 6 hrs **No of Properties** **149**

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
243610	171437	Registered	Networks Water	NW52A	[redacted]		Unplanned Interruption		N/A			18/03/2018 06 45	18/03/2018 13 45	1	1	1	1	0	0	7 Hrs 0 Mins 0 Secs	7	0	0	(UPRN 185281264)	[redacted]	FALSE			Burst Main/Main Repair
243541	171383	Registered	Networks Water	NW51A			Unplanned Interruption		N/A			24/03/2018 07 45	24/03/2018 15 00	22	22	22	22	0	0	7 Hrs 15 Mins 0 Secs	7	15	0	(UPRN 187536483)		FALSE			Burst Main/Main Repair
233462	171321	Submitted to Area Manager	Networks Water	NW51A			Unplanned Interruption		N/A			15/03/2018 13 48	15/03/2018 21 17	33	2	2	2	0	0	7 Hrs 29 Mins 0 Secs	7	29	0	(UPRN 185848159)		FALSE			Burst Main/Main Repair
233248	171155	Submitted to Customer Field Manager	Networks Water	NW51B			Unplanned Interruption		N/A			04/03/2018 06 23	04/03/2018 14 00	23	3	3	3	0	0	7 Hrs 37 Mins 0 Secs	7	37	0	(UPRN 185838503)		FALSE			Burst Main/Main Repair
243485	171341	Submitted to Customer Field Manager	Networks Water	NW52B			Unplanned Interruption		N/A			18/03/2018 09 10	18/03/2018 17 15	15	15	15	15	0	0	8 Hrs 5 Mins 0 Secs	8	5	0	(UPRN 187170383)		FALSE			Burst Main/Main Repair
233263	171201	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A			04/03/2018 14 30	04/03/2018 23 30	69	6	6	6	0	0	9 Hrs 0 Mins 0 Secs	9	0	0	(UPRN 185230059)		FALSE			Burst Main/Main Repair
243507	171357	Submitted to Customer Field Manager	Networks Water	NW52A			Unplanned Interruption		N/A			20/03/2018 16 20	21/03/2018 01 45	38	22	22	22	0	0	9 Hrs 25 Mins 0 Secs	9	25	0	(UPRN 185404707)		FALSE			Replacement Fitting (e.g. SV, FH)
243490	171345	Submitted to Customer Field Manager	Networks Water	NW51A			Unplanned Interruption		N/A			19/03/2018 07 50	19/03/2018 17 30	176	1	1	1	0	0	9 Hrs 40 Mins 0 Secs	9	40	0	(UPRN 185487204)		FALSE			Burst Main/Main Repair
243531	171374	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A			05/03/2018 05 15	05/03/2018 15 00	40	7	7	7	0	0	9 Hrs 45 Mins 0 Secs	9	45	0	(UPRN 185230059)		FALSE			Burst Main/Main Repair
233345	171244	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A			08/03/2018 09 00	08/03/2018 19 15	2394	57	57	57	0	0	10 Hrs 15 Mins 0 Sec	10	15	0	(UPRN 185039329)		FALSE			Burst Main/Main Repair
243566	171409	Submitted to Area Manager	Networks Water	NW02B			Unplanned Interruption		N/A			27/03/2018 14 35	28/03/2018 02 25	10	10	10	10	0	0	11 Hrs 50 Mins 0 Sec	11	50	0	(UPRN 185238218)		FALSE			Burst Main/Main Repair
233293	171194	Submitted to Area Manager	Networks Water	NW01A			Unplanned Interruption		N/A			05/03/2018 20 07	06/03/2018 14 00	3	3	3	3	3	0	17 Hrs 53 Mins 0 Sec	17	53	0	(UPRN 185035369)		FALSE			Other

Unplanned, Unwarned Interruptions

More than 12 hr **No of Properties** **3**

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
233293	171194	Submitted to Area Manager	Networks Water	NW01A	[redacted]		Unplanned Interruption		N/A			05/03/2018 20 07	06/03/2018 14 00	3	3	3	3	3	0	17 Hrs 53 Mins 0 Sec	17	53	0	(UPRN 185035369) [redacted]	FALSE			Other

Unplanned, Unwarned Interruptions

More than 24 hr **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 Interruption, Third Party Interruption & Overrun Events – IMS Report RPT1184)*

Planned and Warned Interruptions

More than 3 hrs **No of Properties** **3,368**

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
233436	171298	Registered	Networks Water	NW53A	[redacted]		Planned Interruption	08/03/2018 15:20	Card drop	14/03/2018 09:00	14/03/2018 15:00	14/03/2018 11:10	14/03/2018 14:15	9	9	9	0	0	0	3 Hrs 5 Mins 0 Secs	3	5	0	(UPRN: 185800544) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233416	171289	Registered	Networks Water	NW51A	[redacted]		Planned Interruption	09/03/2018 13:00	Card drop	13/03/2018 09:00	13/03/2018 16:00	13/03/2018 12:00	13/03/2018 15:10	17	17	17	0	0	0	3 Hrs 10 Mins 0 Secs	3	10	0	(UPRN: 185560348) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233338	171222	Registered	Networks Water	NW02B	[redacted]		Planned Interruption	05/03/2018 08:00	Card drop	07/03/2018 09:00	07/03/2018 16:00	07/03/2018 10:00	07/03/2018 13:20	4	4	4	0	0	0	3 Hrs 20 Mins 0 Secs	3	20	0	(UPRN: 185313916) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233346	171253	Registered	Networks Water	NW51A	[redacted]		Planned Interruption	05/03/2018 10:00	Card drop	08/03/2018 23:00	09/03/2018 04:00	08/03/2018 23:00	09/03/2018 02:30	656	656	656	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN: 185542819) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
243495	171351	Submitted to Customer Field Manager	Networks Water	NW03B	[redacted]		Planned Interruption	15/03/2018 08:00	Card drop	20/03/2018 09:00	20/03/2018 16:00	20/03/2018 09:30	20/03/2018 13:00	36	36	36	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN: 185335812) - [redacted]	FALSE			Burst Main/Main Repair
233204	171128	Submitted to Area Manager	Networks Water	NW52B	[redacted]		Planned Interruption	23/02/2018 09:00	Card drop	01/03/2018 15:00	01/03/2018 15:00	01/03/2018 10:58	01/03/2018 14:45	158	158	158	0	0	0	3 Hrs 47 Mins 0 Secs	3	47	0	(UPRN: 185465917) - [redacted]	FALSE			Other
243519	171405	Registered	Networks Water	NW52B	[redacted]		Planned Interruption	21/03/2018 08:00	Card drop	27/03/2018 09:00	27/03/2018 16:00	27/03/2018 11:40	27/03/2018 15:30	21	21	21	0	0	0	3 Hrs 50 Mins 0 Secs	3	50	0	(UPRN: 187132788) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233333	171225	Registered	Networks Water	NW53A	[redacted]		Planned Interruption	05/03/2018 08:00	Card drop	07/03/2018 09:00	07/03/2018 16:00	07/03/2018 10:30	07/03/2018 14:30	6	6	6	0	0	0	4 Hrs 0 Mins 0 Secs	4	0	0	(UPRN: 185882495) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233422	171288	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]		Planned Interruption	08/03/2018 15:28	Card drop	13/03/2018 09:00	13/03/2018 16:00	13/03/2018 10:45	13/03/2018 15:00	134	134	134	0	0	0	4 Hrs 15 Mins 0 Secs	4	15	0	(UPRN: 187523224) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233210	171127	Submitted to Area Manager	Networks Water	NW51A	[redacted]		Planned Interruption	26/02/2018 10:00	Card drop	01/03/2018 09:00	01/03/2018 17:00	01/03/2018 10:00	01/03/2018 14:40	125	125	125	0	0	0	4 Hrs 40 Mins 0 Secs	4	40	0	(UPRN: 185533679) - [redacted]	FALSE			Burst Main/Main Repair
243592	171433	Registered	Networks Water	NW53A	[redacted]		Planned Interruption	22/03/2018 15:20	Card drop	29/03/2018 09:00	29/03/2018 17:00	29/03/2018 11:00	29/03/2018 15:45	5	5	5	0	0	0	4 Hrs 45 Mins 0 Secs	4	45	0	(UPRN: 185640848) - [redacted]	FALSE			Burst Main/Main Repair
233438	171301	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]		Planned Interruption	09/03/2018 18:10	Card drop	14/03/2018 09:00	14/03/2018 18:00	14/03/2018 12:40	14/03/2018 17:29	6	6	6	0	0	0	4 Hrs 49 Mins 0 Secs	4	49	0	(UPRN: 185882494) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
243496	171352	Registered	Networks Water	NW03A	[redacted]		Planned Interruption	15/03/2018 08:00	Card drop	20/03/2018 09:00	20/03/2018 15:00	20/03/2018 09:30	20/03/2018 14:30	108	108	108	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN: 187181843) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
243561	171399	Registered	Networks Water	NW03A	[redacted]		Planned Interruption	19/03/2018 08:00	Card drop	22/03/2018 20:00	23/03/2018 06:00	22/03/2018 20:30	23/03/2018 01:30	452	452	452	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN: 187625517) - [redacted]	FALSE			Burst Main/Main Repair
243575	171417	Registered	Networks Water	NW53A	[redacted]		Planned Interruption	23/03/2018 14:12	Card drop	28/03/2018 09:00	28/03/2018 16:00	28/03/2018 09:00	28/03/2018 14:00	21	21	21	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN: 185665557) - [redacted]	FALSE			Other
243591	171431	Registered	Networks Water	NW53A	[redacted]		Planned Interruption	26/03/2018 10:45	Card drop	29/03/2018 09:00	29/03/2018 16:00	29/03/2018 10:00	29/03/2018 15:00	15	15	15	0	0	0	5 Hrs 0 Mins 0 Secs	5	0	0	(UPRN: 185794573) - [redacted]	FALSE			Other
233349	171240	Registered	Networks Water	NW53A	[redacted]		Planned Interruption	05/03/2018 12:30	Card drop	08/03/2018 09:00	08/03/2018 16:00	08/03/2018 09:45	08/03/2018 15:35	16	16	16	0	0	0	5 Hrs 50 Mins 0 Secs	5	50	0	(UPRN: 185791472) - [redacted]	FALSE			Burst Main/Main Repair
233305	171198	Submitted to Area Manager	Networks Water	NW53A	[redacted]		Planned Interruption	02/03/2018 09:32	Card drop	06/03/2018 09:00	06/03/2018 15:00	06/03/2018 09:00	06/03/2018 15:00	21	21	21	0	0	0	6 Hrs 0 Mins 0 Secs	6	0	0	(UPRN: 185801255) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
243502	171362	Submitted to Area Manager	Networks Water	NW51A	[redacted]		Planned Interruption	19/03/2018 07:00	Card drop	21/03/2018 08:00	21/03/2018 18:00	21/03/2018 09:00	21/03/2018 15:00	39	39	39	0	0	0	6 Hrs 0 Mins 0 Secs	6	0	0	Water Treatment Works - S00931 - Ballinrees Gortycavan - Windyhill Road Gortycavan Coleraine Londor	FALSE			Planned Restrictions
243510	171368	Registered	Networks Water	NW03A	[redacted]		Planned Interruption	14/03/2018 09:00	Card drop	21/03/2018 20:00	22/03/2018 06:00	21/03/2018 20:00	22/03/2018 03:00	1137	1137	1137	1137	0	0	7 Hrs 0 Mins 0 Secs	7	0	0	(UPRN: 185583925) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233420	171291	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]		Planned Interruption	08/03/2018 15:24	Card drop	13/03/2018 09:00	13/03/2018 18:00	13/03/2018 09:30	13/03/2018 17:55	382	382	382	382	0	0	8 Hrs 25 Mins 0 Secs	8	25	0	(UPRN: 185667315) - [redacted]	FALSE			Other

Planned and Warned Interruptions

More than 6 hrs **No of Properties** **1,519**

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
243510	171368	Registered	Networks Water	NW03A	[redacted]		Planned Interruption	14/03/2018 09:00	Card drop	21/03/2018 20:00	22/03/2018 06:00	21/03/2018 20:00	22/03/2018 03:00	1137	1137	1137	1137	0	0	7 Hrs 0 Mins 0 Secs	7	0	0	(UPRN: 185583925) - [redacted]	FALSE			Install New Fitting (e.g. SV FH)
233420	171291	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]		Planned Interruption	08/03/2018 15:24	Card drop	13/03/2018 09:00	13/03/2018 18:00	13/03/2018 09:30	13/03/2018 17:55	382	382	382	382	0	0	8 Hrs 25 Mins 0 Secs	8	25	0	(UPRN: 185667315) - [redacted]	FALSE			Other

Planned and Warned Interruptions

More than 12 hr **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

Planned and Warned Interruptions

More than 24 hr **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

Interruptions caused by third parties

More than 3 hrs **No of Properties** **854**

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
233299	171193	Registered	Networks Water	NW03D	[redacted]		Unplanned Interruption		N/A			06/03/2018 10:00	06/03/2018 13:30	67	67	67	0	0	0	3 Hrs 30 Mins 0 Secs	3	30	0	(UPRN: 185346050) - [redacted]	TRUE	Building Co	[redacted]	Burst Main/Main Repair
243493	171350	Registered	Networks Water	NW02B	[redacted]		Unplanned Interruption		N/A			20/03/2018 08:44	20/03/2018 12:45	256	256	256	0	0	0	4 Hrs 1 Mins 0 Secs	4	1	0	(UPRN: 185295876) - [redacted]	TRUE	Gas Contrac		Burst Main/Main Repair
243572	171411	Registered	Networks Water	NW02B	[redacted]		Unplanned Interruption		N/A			28/03/2018 06:39	28/03/2018 11:10	54	54	54	0	0	0	4 Hrs 31 Mins 0 Secs	4	31	0	(UPRN: 185226234) - [redacted]	TRUE	Other		Burst Main/Main Repair
243584	171422	Submitted to Customer Field Manager	Networks Water	NW52A	[redacted]		Unplanned Interruption		N/A			28/03/2018 14:20	28/03/2018 21:55	477	477	477	477	0	0	7 Hrs 35 Mins 0 Secs	7	35	0	(UPRN: 185401069) - [redacted]	TRUE	Building Co		Burst Main/Main Repair

Interruptions caused by third parties

More than 6 hrs **No of Properties** **477**

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
243584	171422	Submitted to Customer Field Manager	Networks Water	NW52A	[redacted]		Unplanned Interruption		N/A			28/03/2018 14:20	28/03/2018 21:55	477	477	477	477	0	0	7 Hrs 35 Mins 0 Secs	7	35	0	(UPRN: 185401069) - [redacted]	TRUE	Building Contractor		Burst Main/Main Repair

Interruptions caused by third parties

More than 12 hr **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

Interruptions caused by third parties

More than 24 hr **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 Interruptions (Overruns of Planned Interruptions)

More than 3 hrs **No of Properties** **4**

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
243605	171441	Submitted to Customer Field Manager	Networks Water	NW53A	[redacted]		Planned Interruption	26/03/2018 15:00	Card drop	30/03/2018 09:00	30/03/2018 18:00	30/03/2018 13:00	30/03/2018 18:30	4	4	4	0	0	0	5 Hrs 30 Mins 0 Secs	5	30	0	(UPRN: 185788843) - [redacted]	FALSE			Other

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	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 Interruptions (Overruns of Planned Interruptions)

More than 12 hr **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 *(Unplanned Interruption Property Records - IMS Report RPT1183)*

••••••
111/111MDt10>52

Event Id	Interruption Id User Friendly	Interruption Status	Managing Function	Field Manager Area	Event Creator	DG3 Creator	Interruption Name	Planned Warning Type	Planned Warning Date Time	Duration H	Duration M	Duration Seconds	Planned Start Date Time	Planned Restoration Date Time	Actual Start Date Time	Estimated Restoration Date	Unplanned Repair Commenced	Actual Supply Restored Date Time	Water Sampler Contacted Date Time	Unplanned Estimated All Properties	PRIMARY THOROFARE	BUILDING NUMBER	BUILDING NAME	SUB BUILDING NAME	SECONDARY THOROFARE	TOWN	POSTCODE	DTM HEIGHT M	Affected Area Property	Affected Area Property	Affected Area Property	Total Affected Properties	Location		Property DMA	Third Party Caused Interruption	Third Party	Description
233219	171129	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]		[redacted]			Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NetwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	49				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	49A				Ballymoney	[redacted]	65.61	1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	49B	[redacted]			Ballymoney	[redacted]	64.65	1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	55				Ballymoney	[redacted]	66.97	1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	57				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwcd:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	59				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	36				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	37				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWM:SW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	[illegible]	01/03/2018 14:30	[redacted]	38				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C1028	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	14:30	01/03/2018 14:30	[redacted]	41				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	N39		[redacted]		Ballymoney			1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWM:SW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	[illegible]	01/03/2018 14:30	[redacted]	55				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	14:30	01/03/2018 14:30	[redacted]	56				Ballymoney	[redacted]	64.22	1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	60				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	61				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	64				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Netwod:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	65A				Ballymoney	[redacted]	77	1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	65B				Ballymoney	[redacted]	77	1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	69		[redacted]		Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Netwod:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	68				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	69		[redacted]		Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	69B				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	70				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	71				Ballymoney	[redacted]	89.36	1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwcd:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	72				Ballymoney	[redacted]	89.45	1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	75				Ballymoney	[redacted]	95.56	1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	80				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233219	171129	Submitted to AreaManag	Nttwcd:sW'attt		[redacted]	[redacted]	Unplanned Interruption	N/A		3	12	0			01/03/2018 11:18	01/03/2018 16:00	01/03/2018 13:15	01/03/2018 14:30	01/03/2018 14:30	01/03/2018 14:30	[redacted]	82				Ballymoney	[redacted]		1	2	10	29	(UPRN: 185557101)	[redacted]	C10	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	101				Garrison	[redacted]	164.76	55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	105				Garrison			55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	109				Garrison	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	54				Belleek	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	61		[redacted]		Belleek		141.85	55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	64				Belleek	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	74				Belleek	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C16	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	75				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	76				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	78				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	82				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	84				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	86				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	89				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	90				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	91				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	96				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	97				[illegible]		169.41	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwcd:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	99				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	111				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	111A				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	119				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	126				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	130				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	135				[illegible]	[redacted]	144.1	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	146				[illegible]	[redacted]	138.71	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	148				[illegible]	[redacted]	152.51	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	161				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	71				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	77				[illegible]	[redacted]	106.91	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	77				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	79				[illegible]			55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	81				[illegible]			55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	83				[illegible]	[redacted]	121.79	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	85				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	87				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	89				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwcd:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	98				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	42				[illegible]	[redacted]	73.69	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			[redacted] 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	46				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	50				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	53				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			[redacted] 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	54				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWM:SW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5		0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	55				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	56				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	59				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	60				[illegible]	[redacted]	124.28	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	61				[illegible]	[redacted]	108.9	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwotbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	65				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	66				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	69				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NetwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	70				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	73				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	74				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NetwM:Swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	75				[illegible]	[redacted]	155.95	55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	78				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwcd:sW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	83				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	84				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	86	[redacted]			[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwod:swattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	87				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	88				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWOrbW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	90				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	NttWM:SW'attt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	[illegible]	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	93				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotkswatet	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	94				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	97				[illegible]	[redacted]		55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep
233223	171132	Submitted to AreaManag	Nttwotbwattt	[illegible]	[redacted]	[redacted]	Unplanned Interruption	N/A		5	40	0			01/03/2018 14:20	01/03/2018 22:55	01/03/2018 16:55	01/03/2018 20:00	01/03/2018 20:20	01/03/2018 22:00	[redacted]	98				[illegible]			55	0	11	66	(UPRN: 185993849)	[redacted]	C1603	FALSE		Burst Main/Main Rep

Appendix G - DG3 Register Extract *(Planned Interruption Property Records - IMS Report RPT1183)*

LastRun
02/05/20 8:09:52

E_ndd	RdMH_	IncmentOrlSbmi		Mana ge PNcal	Field Manager Area	Event Creator	DG3 Creator	Interruption Name	Planned Warning Type	Planned Warning Date Time	Duration Hours	Duration Minutes	Duration Seconds	Planned Start Date Time	Planned Restoration Date Time	Actual Start Date Time	Unplanned Estimated Restoration Date	Unplanned Repair Commenced	Actual Supply Restored Date Time	Water Sampler Contacted Date Time	Unplanned Estimated All Properties	PRIMARY THORFARE	BUILDING NUMBER	BUILDING NAME	SUB BUILDING NAME	SECONDARY THORFARE	TOWN	POSTCODE	DTM HEIGHT M	Affected Area Property	Affected Area Property	Affected Area Property	Total Affected Properties	Location	Prefix OMI	Third Party c....d HIHN1ption	Tl	Description
233210	1 n u]	SubmI:N IOAfU MMge		N_ orbW'Jtaf"	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_ orbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	10				Ballykelly	[redacted]	29.26	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_ orbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	11				Ballykelly	[redacted]	29.49	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_ orbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	12				Ballykelly	[redacted]	29.49	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NtwOIbWrtLW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	13				Ballykelly	[redacted]	29.42	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NtwOIbWrtLW	.WSV	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	14				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-WOIbW'Jte,	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	15				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_, orbW'Jtiw	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	16				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N " orbW'.UW	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	17				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-Mworb Wclw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	18				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N OI'bW'JIIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	19				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N OI'bW'JIIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	2				Ballykelly	[redacted]	28.45	115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne wOrbWJIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	20				Ballykelly	[redacted]	29.58	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW'JIW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	21				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	22				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	23				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	24				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NtwOrbWaLW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	25				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NtwOrbWaLW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	26				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOI bW'Jte,	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	27				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N twOIbW_tw	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	28				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	29				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	3				Ballykelly	[redacted]	28.45	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW'JIIIt	.WW	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	30				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW'JIW	.WW	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	31				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N IwOrbW'JIW	.WSV	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	32				Ballykelly	[redacted]	29.85	115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'JUW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	33				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	34				Ballykelly	[redacted]	30.19	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	35				Ballykelly	[redacted]	30.59	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-to IOrlW.Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	4				Ballykelly	[redacted]	28.3	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NitworbW'aItt	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	5				Ballykelly	[redacted]	28.28	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		-two,'bW,al:JW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	6				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NttworbW'Jte,	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	7				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NttworbW'Jte,	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	8				Ballykelly	[redacted]	28.8	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●● ········	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	9				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●● ·· ●●●●●	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	1				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		-hl:OrbW...itt	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	10				Ballykelly	[redacted]	32.47	115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NehIIOrbW'JIIW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	11				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NehIIOrbW'JIIW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	12				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'JUW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	13				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	14				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	15				Ballykelly	[redacted]	31.57	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	16				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N twOI bWJLIT	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	17				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N wO bWaLW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	18				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOI bW'Jte,	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	19				Ballykelly	[redacted]	31.59	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW'Jte,	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	2				Ballykelly	[redacted]	32.55	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW.1tiw	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	20				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	21				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	23				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NtwOIbWrtLW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	24				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW.JIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	3				Ballykelly	[redacted]	31.94	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'JUW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	4				Ballykelly	[redacted]	32.39	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'JUW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	5				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N orbW'Jiaf"	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	6				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N orbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	7				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-OI'bW,alff	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	8				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-OrbW,al:JW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	9				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NeOWrtLW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N.-WorbW'Jte,	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	2				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N MworbW'.tiw	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	3				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NJMworb Wclw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	4				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	5				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NtwOIbWrtLW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	6				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW.JIW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	7				Ballykelly	[redacted]	28.35	115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N IwOrbW.JIW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	8				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N IwOrbW'Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1				Ballykelly	[redacted]	26.98	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-to IOrlW.Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	10				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	11				Limavady	[redacted]	28.57	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jiaf"	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1-				Limavady	[redacted]	28.8	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		-two,'bW,al:JW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	12				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twoo"tiW..IIW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	13				Limavady	[redacted]	29.15	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twotbWJte,	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1-				Limavady	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-twOrbW'Jtiw	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	17				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NJMworb Wdiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	2				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NJMworb Wdiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	2-				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NJMworb Wclw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	2-				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N OI'bW'JIIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	3				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NetworbWJIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	4				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NCWo bWaLW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	5				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_, orbW'Jtaf"	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	7				Ballykelly	[redacted]	26.88	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N orbW'Jiaf"	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	9				Limavady	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-orbwatiw	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted] d	9-				Limavady	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-OrbW,al:JW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	100				Ballykelly	[redacted]	28.78	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NMwobWaLW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	89				Ballykelly	[redacted]	19.89	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NJMwOIbW'BW	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	96				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_ _o,bW_tw	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	98				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WSV	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	10				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-tworbW'Jtiw	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	11				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N OrbW.JIIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	12				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N rworbW.JIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	13				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N.CWorbW'aIIw	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	14				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_ OrbW'atiw	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	15				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-orbMIIW	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	16				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N... orbMIIW	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	17				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NewOI'UVIaIff	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	19				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NewOI'UVIaIff	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	3				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NewOI'UVIaIff	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	4				Ballykelly	[redacted]	27.32	115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N.-WorbW'te	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	5				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N... orbW.IIW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	6				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N... orbMIIW	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	0 /03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	7				Limavady	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N... orbMIIW	.WS	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	8				Ballykelly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COE	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N-OI'bW.:.Iff	*WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	9				$:lly ly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N_ OrbW.:.Iff	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	1				$:IMktfly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FAUE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N.CWorbW:.IW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	10				BaIl(ol('y	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N.CWorbW:.IW	.wsIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	11				BaIl(ol('y	[redacted]	32.53	115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N tworbW'JIW	.WSV	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	12				Bally(dl('y	[redacted]	32.57	115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne""""W'JIW	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	14				Bally(dl('y	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NetwotbW.:.Iff	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	15				Sc:t(,I)'y	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		NetwotbW.:.Iff	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	16				$tRRX ly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●●●●●●●●●●●●	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]	17				$tRRX ly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●●●●●●●●●●●●	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	18				BaIl(ol('y	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●●●●●●●●●●●●	WWW.	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	19				BaLM(dl'y	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●●●●●●●●●●●●	WWW.	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	2				MlyWclly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		●●●●●●●●●●●●	WWW.	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	21				Myl(ol(ly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne'-1c6W.:.tw	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	27				Mlktclly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	F....		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne'-1c6W.:.tw	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	3				Mlktclly	[redacted]	30.78	115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		IM1-'Ir:IW'JW	WWW.	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	4				BIlL:tdly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		IM1-'Ir:IW'JW	WWW.	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	5				BIlL:tdly	[redacted]	31.88	115		7	I I	(tPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne'-1c6W'Jtw	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	6				Mlyktdly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne'-1c6W'Jtw	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	7				Mlyktdly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		Ne'-1c6W.tw	NWSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	8				Mlyktdly	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N twOI bW.:.Iff	-WSIA	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	0 /0 /2018 10:00			01/03/2018 14:40	0 /03/2018 14:45		[redacted]	9				$:BI(,I)'y	[redacted]		115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
233210	171127	Submitted to Area Manage		N twOrbW.:.Iff	.WSY	[redacted]		Planned Interruption	Card drop	26/02/2018 0:00	4	40	0	01/03/2018 09:00	01/03/2018 17:00	01/0 /2018 10:00			01/03/2018 14:40	01/03/2018 14:45		[redacted]		[redacted]			$tRRX ly	[redacted]	32.72	115		7	125	(UPRN: 85533679) [redacted]	COBS	FALSE		Burst Main/Main Repair
																						[redacted]					I y ly	[redacted]	32.72	115		7	125	(85533679 [redacted]	COE			

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 18:

- 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 AIR18.

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 2017 to March 2018 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 AIR18, 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	AM	KM	
1.0	31 Mar 12	Finalised ahead of sign-off by DG5 Panel	AM	KM	MMcI
1.1	08 Jun 15	Minor revisions and new FIR form inserted	SB	DW	MMcI

7 ONLY CONTROLLED COPY HOLDERS WILL BE ISSUED WITH AMENDMENTS TO THIS DOCUMENT.

8 PLEASE DESTROY ALL SUPERSEDED COPIES OR

9 CLEARLY MARK THEM AS "SUPERSEDED".

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

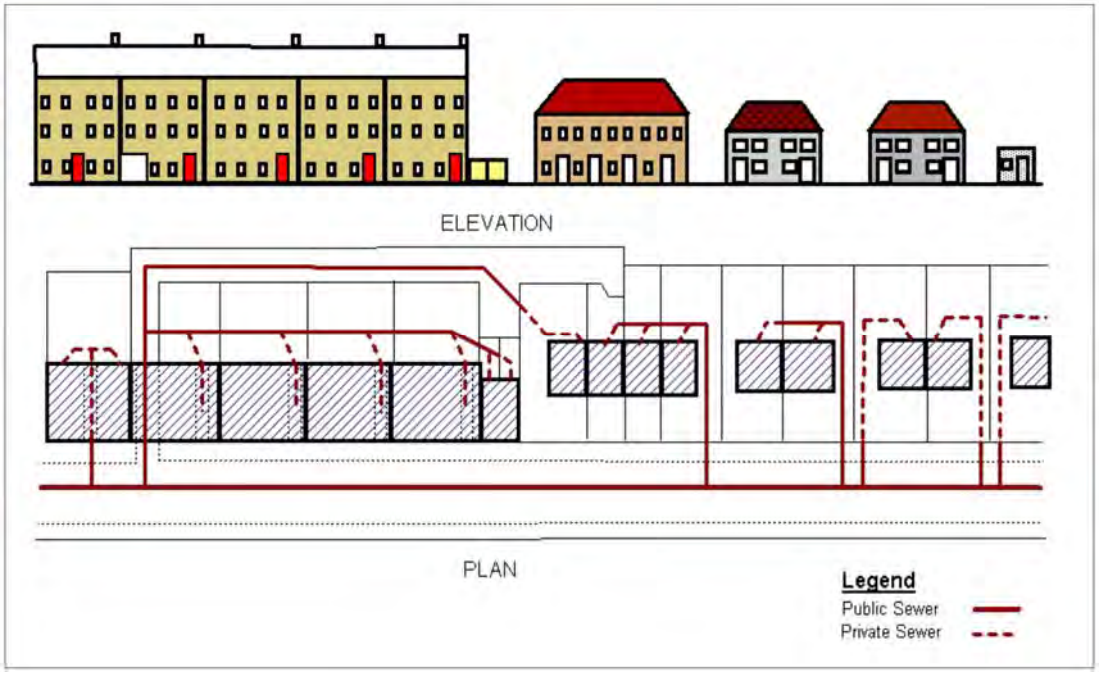
The following definitions are to be applied when recording and reporting properties and incidents held on NI Water's DG5 Internal Flooding Register.

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.

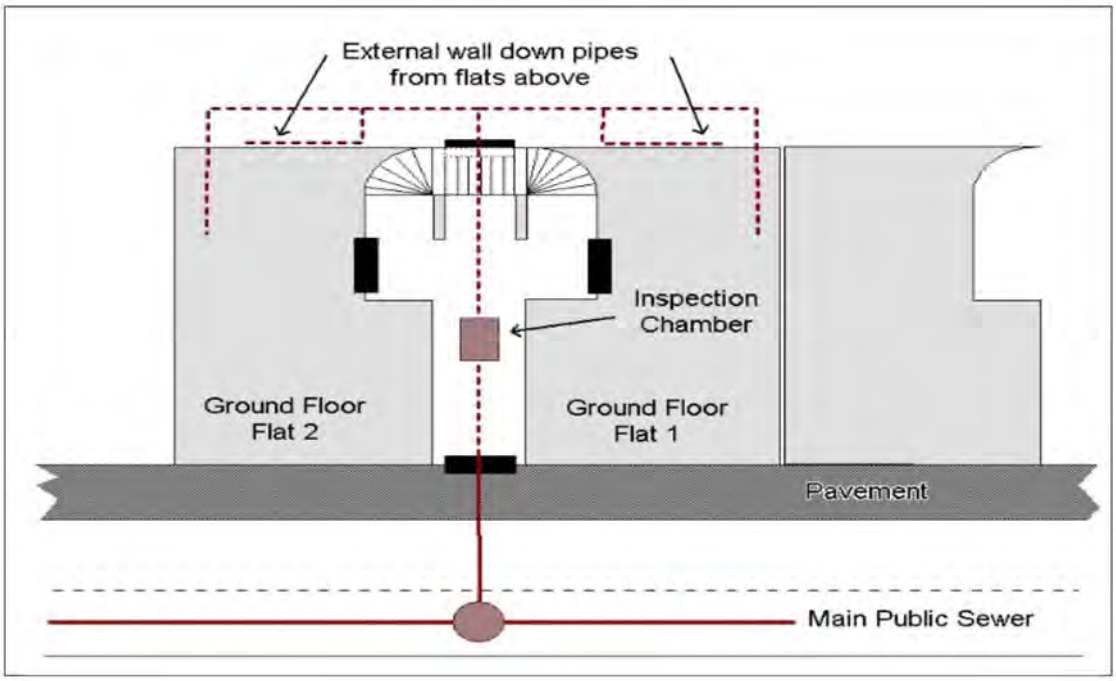
11.1.4 Basement Flooding

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.

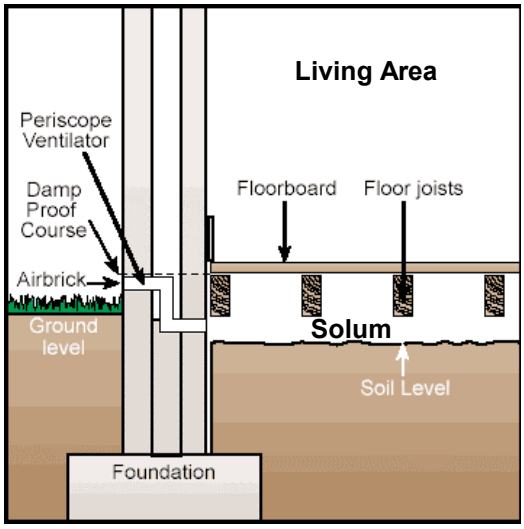
A permanent solution is defined as one that permanently addresses the cause of the hydraulic overload. Permanent works would enable a property to be removed from the DG5 Internal Flooding Register.

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.

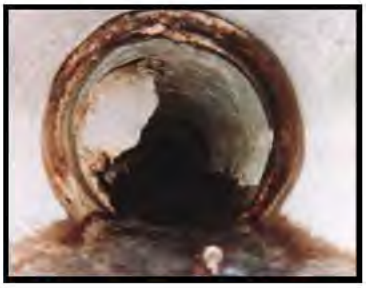
11.3.4 Blockages

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, Engineering and Procurement (EP) 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: [redacted]
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 ☐

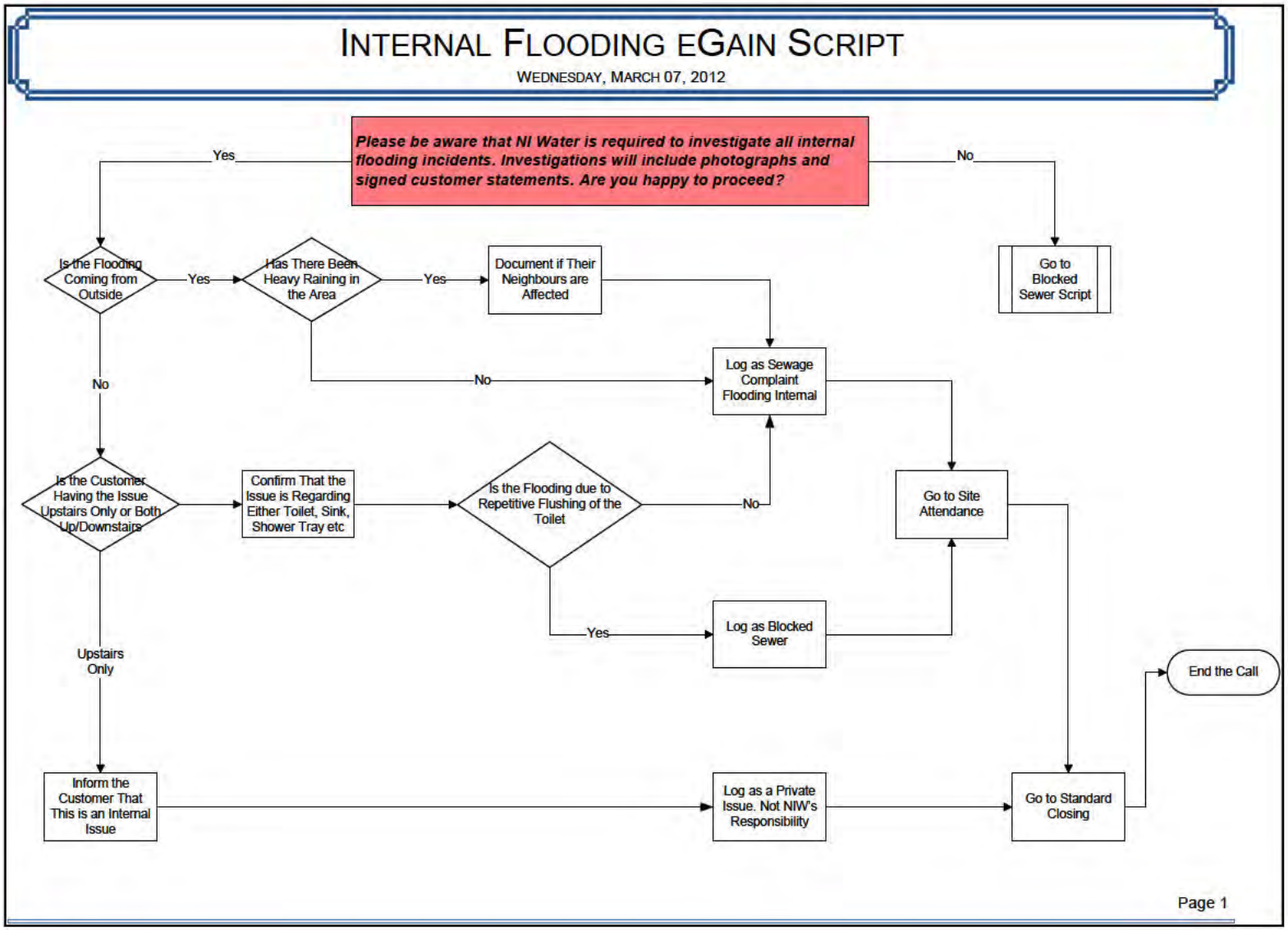
6) Weather Conditions:

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. Feasibility on going.		PC21
		DG5P0002528	[redacted]		1 in 20			
		DG5P0002529			2 in 10			
		DG5P0003700			2 in 10			
		DG5P0003663			2 in 10			
		DG5P0003664			2 in 10			
		DG5P0003665			2 in 10			
		DG5P0002667			2 in 10			
		DG5P0003784			2 in 10			
		DG5P0003781			2 in 10			
		DG5P0003782			2 in 10			
		DG5P0003701			2 in 10			
		DG5P0003702			2 in 10			
		DG5P0003559			2 in 10			
		DG5P0003014			2 in 10			
		DG5P0003699			2 in 10			
		DG5P0003789			2 in 10			
		DG5P0003666			2 in 10			
		DG5P0003667			2 in 10			
		DG5P0000045			1 in 20			
		DG5P0003668			2 in 10			
KR444	Stand Alone Scheme.	DG5P0000131			1 in 20			
		DG5P0000191			1 in 20			
KR442	Glenmachan Street, Belfast					Feasibility Study being carried out.	29/08/2014	PC21
		DG5P0000629	[redacted]		1 in 20			
		DG5P0000630			1 in 20			
		DG5P0003763			2 in 10			
		DG5P0002659			2 in 10			
KR500	Glenmachan Greystown Ave/Upper Malone Road, Belfast					Feasibility Study being carried out.	30/05/2014	PC15
		DG5P0000004	[redacted]		2 in 10			
		DG5P0000634			2 in 10			
		DG5P0000635			1 in 20			
		DG5P0003762			1 in 20			
		DG5P0000640			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 60 of the 307 open DG6 contacts were checked to see if they had a holding letter issued on or before working day 5 and 100% of the 60 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.

NIW Contract Office 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

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

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. The Customer Support Agents within the Complaints & Executive Mail Team scan, log & index documentation whilst Agents within the Complaints & Exec Mail Team case-manage and respond to the DG7 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 the 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 Savvion (BPM solution);
- contacts allocated to Complaints & Exec Mail Team members;
- Complaints & Exec Mail Team Agent assesses, investigates and case-manages 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 Rapid 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

This process falls under the remit of NIW Internal Audit (IA). A “Customer Contacts and Complaints Handling” audit was undertaken during 2017/18. This resulted in no recommendations directly attributed to the handling of written complaints.

NIW MI & Data Team carry out monthly sampling to quality check that contacts are being logged correctly within the Rapid system. The checks include validation that the contact is a DG7, confirmation that the CMS codes are correct, that the date of closure is correct and that the response issued is substantive. Any areas of concern are then fed back to the relevant teams who provide a written response with agreed actions.

Each complaint also undergoes a series of quality assurance checks. The first is carried out by the Complaints & Exec Mail Team member who has the item allocated to them. They check that the item has been:

- correctly categorised as DG7;
- coded using an appropriate CMS code; and
- logged to the correct account(s).

The Complaints & Exec Mail Team member verifies that the information received from within the business is suitable to use in response to the complaint before the response 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 code; 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, thus ensuring security and minimising administration.

Each complaint received is scanned using the Kodak i620 scanner. At the end of each "batch" of correspondence scanned, a batch number is allocated. The images can then be seen by staff on their PC and indexing can begin. During indexing the following details are input by the operator:

- property and/or customer reference;
- date of receipt;
- CMS group;
- CMS description;
- document type and;
- operator id.

It is at the indexing stage that the scanned items are categorised, thus allowing the description to be input above.

Changes in system during the reporting year

There were no changes in system during the reporting year.

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 Director General's 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 (Rapid).

NIW endeavours to answer 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 his/her complaint will be taken if it cannot be done immediately e.g. capital works scheduled for completion months sometime 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 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 scanned, logged and indexed on the next working day. The date of receipt recorded will match the actual date of receipt.

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 defined as a response to a written complaint which advises the customer that NIW 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 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 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.

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 17/18.

System-based report data was used to derive the number of holding responses issued between 01/04/17 and 31/03/18.

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 275 DG7 contacts which were received in 17/18. Therefore, it can be concluded that one or more holding response was issued in relation to 12.09% of the DG7 contacts received during 17/18.

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 Routestar/Temetra, for transfer to Rapid. The Temetra system was introduced on 26th August 2014 to replace Routestar.

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 that are identified as either 'Customer read' or 'Customer web reading'

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 Routestar between April and 25th August, and from Rapid to the Temetra system for 26th August onwards.

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 Routestar/Temetra, which is subsequently updated upon the meter being read.

The data transfer from Routestar/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.

Sewerage only customers, if not TE customers, are charged on an unmeasured basis.

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 Cable & Wireless, however all physical lines in Capital House were switched from C&W to BT on 6th March 2014, with remaining non-geographic services moved to BT on Tuesday 10th of March 2015. No issues were experienced during these switches.

Cable and Wireless Network IVR

NIW introduced a High Volume Call Answering (HVCA) solution to assist answering large volumes of unexpected trouble calls in December 2012. In order to facilitate the solution,

the Cable and Wireless Network IVR was activated on the 'Waterline'. Customers calling this line will hear the following message and be presented with further options:

High Volume Call Answering (HVCA) System

The HVCA 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 HVCA 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 HVCA 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 HVCA Platform. The divert is controlled by the Cable and Wireless intelligent network, calls will divert on busy tone, route failure and no reply.

As each caller hangs up in the HVCA 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.

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.

Reporting:

Reporting the DG9 Position (telephony schematic attached in Appendix 1)
DG9 performance is reported by the NIW MI Data Team on a monthly basis using the MI reports from both HVCA and Call Media systems.

Reporting of Telephone Complaints

NIW MI Data Team use Corvu to report on the volume of telephone complaints received, on a monthly basis, using the agreed Operational Original CMS transaction codes and any other call logged where a complaint flag has been selected by an agent if the customer has expressed dissatisfaction.

Call Listening

NIW MI Data Team listen to 10 randomly selected calls per month, check that they have

been logged on Rapid correctly and feedback any quality issues highlighted to ECHO through the monthly response to the MBRP.

Call Handling:

Practices and Procedures

All calls received are managed by either HVCA 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 HVCA 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 HVCA 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 HVCA system in situations where calls exceed the volume of agents available in the CRC.

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 (HVCA), 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.

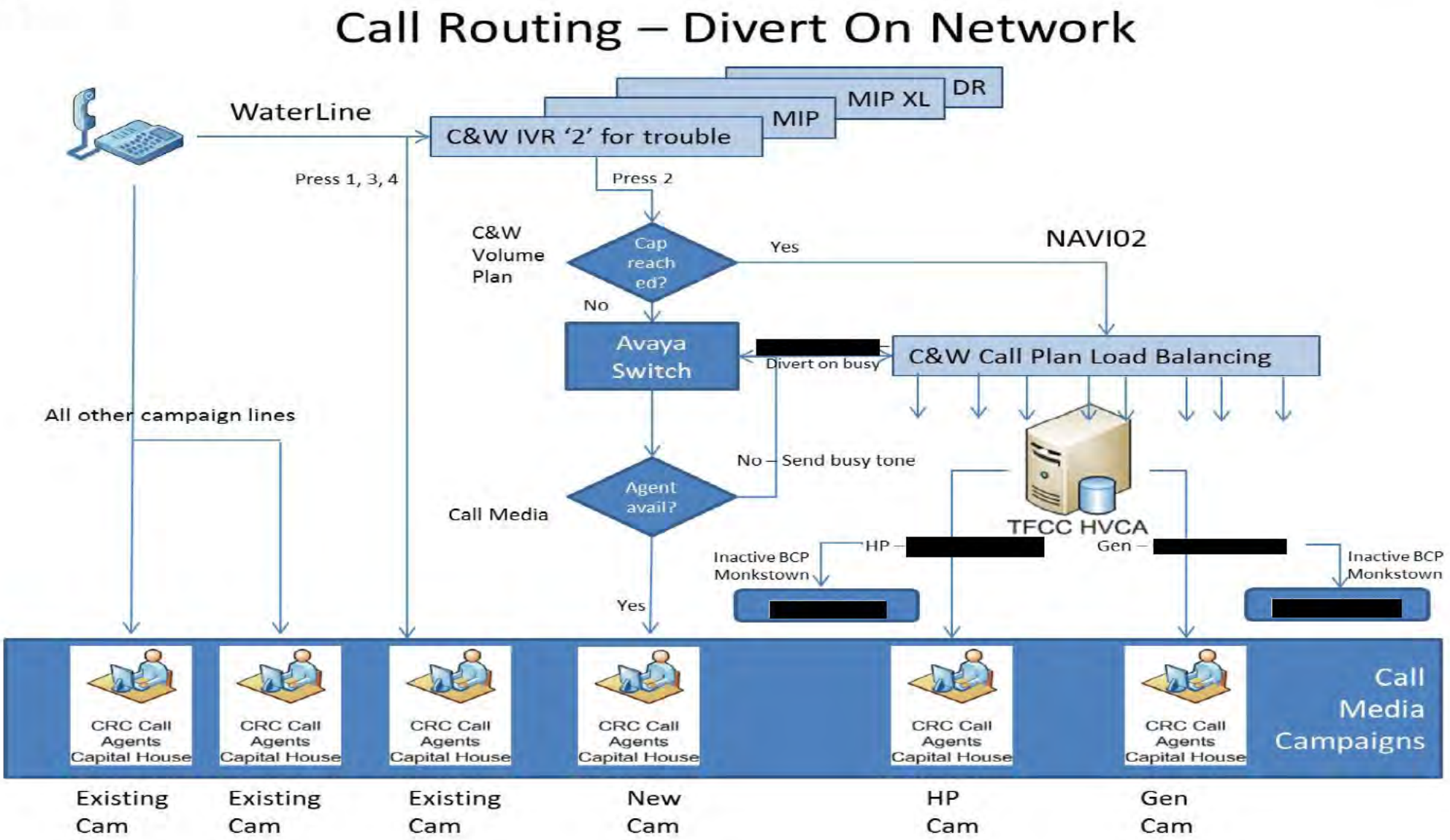
Text Relay Service is a third-party service whereby the customer rings a Text Relay operator, who in turn contacts the Customer Relations Centre via the normal customer line (Waterline/Leakline/Billing, etc.) on behalf of the customer. This is recorded as a call received on the appropriate line.

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


Call Routing – Divert On Network
WaterLine
DR
MIP XL
MIP
C&W IVR '2' for trouble
Press 1, 3, 4
Press 2
C&W Volume Plan
Cap reach ed?
Yes
NAVI02
No
Avaya Switch
[redacted]
Divert on busy
C&W Call Plan Load Balancing
All other campaign lines
No – Send busy tone
Agent avail?
Call Media
TFCC HVCA
HP –
[redacted]
Gen –
[redacted]
Inactive BCP Monkstown
[redacted]
Inactive BCP Monkstown
[redacted]
Yes
CRC Call Agents Capital House
CRC Call Agents Capital House
CRC Call Agents Capital House
CRC Call Agents Capital House
CRC Call Agents Capital House
CRC Call Agents Capital House
Call Media Campaigns
Existing Cam
Existing Cam
Existing Cam
New Cam
HP Cam
Gen Cam

Annual Information Return 2018

Section 4

Customer Research Appendix

Annual Information Return 2018

Customer Research Appendix

Customer Satisfaction

One of the fundamental measures concerning the level of service received by customers is customer satisfaction. NI Water measures customer satisfaction through 3 different surveys.

- Customer Advocacy where Question 71 from the 'Consumer Experience Survey' is used
- In 17/18, the Interim PC15 Research Customer Views Survey was carried out, as part of the regulatory requirement to return at the mid-point of PC15 to determine if customer views and priorities had changed. This replaced the Omnibus Survey, however Question 1 & Question 2 from the Omnibus Survey where included within the piece.
- SIM, where Question 60 is used

For regulatory reporting purposes in 2017/18, only the satisfaction scores from the Customer Advocacy, Question 71 & the Interim PC15 Research Customer Views Survey are used.

Customer Advocacy Measure (CAM)

The Customer Advocacy measure will help NI Water to identify the level of overall satisfaction experienced by our customers from initial contact to resolution of their contact.

The customer advocacy measure is an annual satisfaction score measured through the completion of the SIM 'Consumer Experience Survey' and assessment carried out by Allto, an independent market research company. Allto carry out quarterly surveys (Waves) of customers who have contacted the company for any reason. The score for the answer to survey question 71 ("*Likelihood of recommending Northern Ireland Water 1-10?")* is the customer advocacy score.

The Consumer Experience Survey (SIM) is based on a sample of 800 consumers that have had direct contact with the company to request a service or make a complaint. The sample will be split into a minimum of 200 consumers per Quarter and carried out four times a year.

Allto will issue an email on the Monday after the designated 'un-notified' week requesting the previous week's data. The data set should include 'Resolved and Unresolved' contacts only (from telephone and written channels) in relation to both billing and operational areas.

This data is then supplied to Allto and is password protected for data protection purposes. Data is provided based on an Excel spreadsheet containing the following fields:

- Telephone Number;
- Date of contact (date call made to NIW);

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'. NIW achieved an overall score of 31 for the reporting year 17/18.

Interim PC15 Customer Views Research (in place of Omnibus)

NI Water sought to commission a research study to confirm if the customer priorities in relation to the services provided by NI Water remain valid or if there are any significant changes to be considered at midpoint of PC15 period (31st March 2018).

Following a formal tendering process Kantar Millward Brown was commissioned in June 2017 by Northern Ireland Water to carry out research to assess current views relating to water services. 1,000+ domestic consumers and 250 non-domestic consumers throughout Northern Ireland participated in this research programme.

Research was conducted amongst both Northern Ireland consumers and businesses. The methodology consisted of the following elements:

Domestic customer research

- Ad hoc survey amongst 1026 households.

Non-domestic customer research

- Ad hoc survey conducted amongst 250 businesses.

This replaced the Omnibus Survey, however Question 1 & Question 2 from the Omnibus Survey where included within the piece.

Service Incentive Mechanism (SIM)

We measure the SIM score via Question 60, which asks the customer to rate their ‘Level of Satisfaction taking everything into account.’

Like the Customer Advocacy measure, Question 60 is also within the Consumer Experience Survey (SIM), which is based on a sample of 800 consumers that have had direct contact with the company to request a service or make a complaint. The sample will be split into a minimum of 200 consumers per Quarter and carried out four times a year.

Allto will issue an email on the Monday after the designated 'un-notified' week requesting the previous week's data. The data set should include 'Resolved and Unresolved' contacts only (from telephone and written channels) in relation to both billing and operational areas.

This data is then supplied to Allto and is password protected for data protection purposes. Data is provided based on an Excel spreadsheet containing the following fields:

- Telephone Number;

- Date of contact (date call made to NIW);

Development of new measures

Customer Services has been working extensively on providing an improved customer experience. Under the auspices of the Customer Engagement Oversight Group (CEOG), Customer Services has 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, including the merits (or otherwise) of the current (OPA/DG) regulatory measures.

These new measures include the development of targets and methodologies for:

- Reducing unwanted contacts,
- Resolving customer queries at first point of contact (FPOCR), industry trends show that Customer Satisfaction increases in line with FPOCR increase,
- Reducing repeat contacts, by analysing and understanding the reasons for these contacts, and
- Developing a solution to obtain 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.

The measures above were trialled and reported on for the first time in AIR16.

The customer satisfaction measure has been further developed through the implementation of Voice of the Customer (supported by Watermelon), which will eventually replace the current Allto Survey. This survey will allow us to significantly increase the sampling of customer satisfaction above the current 800 per annum (possibly around 10,000 per annum). It is expected that Voice of the Customer data will be used for AIR 19.

CEOG is currently working on the development of PC21 Customer Research in support of the above.