Northern Ireland Water Ltd

Annual Information Return 2011

To the

Northern Ireland Authority for Utility Regulation

Public Domain Version

Part 2 of 10 containing:

Key Outputs - commentaries for tables 1 - 5

Reporter's Submission

By

CWJ Turner
Halcrow Management Sciences Ltd

Halcrow

Table 1 – Water Service – 1

Commentary by REPORTER

1. Background

The information and data collected in this table describes and quantifies the activities carried out by the Company in promoting water efficiency. A summary of other companies' performance is published annually by Ofwat in the 'Service and Delivery – performance of the water companies in England and Wales'. This provides a reference to track and monitor the NI Water's performance and to compare strategies and practices across the industry.

2. Key Findings

- We believe that the Company methodology and its application are appropriate to meet the Reporting Requirements.
- The Company explained the significant increase in supply pipe repairs since the previous year was due to the freeze/thaw incident in December 2010 and January 2011.
- The number of water efficiency devices distributed is based on actuals, with appropriate assessments of savings that are likely to be achieved, based on Ofwat report (Water Supply and Demand Policy, Ofwat, November 2008).
- The Company's Water Efficiency policies are in-line with those employed by water companies in England & Wales. NI Water makes more use of "face-to-face" techniques to distribute measures, so would be expected to achieve a higher installation rate and therefore be more efficient. However, the lack of domestic metering (customer have less incentives to save water) and not being funded to provide a free/subsidised supply-pipe repair/replacement policy limit the success of some of the measures.
- The Company's water efficiency focus is on education, with close relationships with schools and use of the water bus. We consider it would be appropriate to follow UKWIR guidance to estimate likely savings of the "softer" measures.
- Block D is mistakenly calculated without Block A figures.

3. Audit Approach

The audit comprised of an interview with the NI Water's system holders, a review of the Company methodology and a review of the table entries. We also undertook a consistency check between the table entries, commentary and the NIAUR Reporting Requirements.

4. Audit Findings

4.1 General

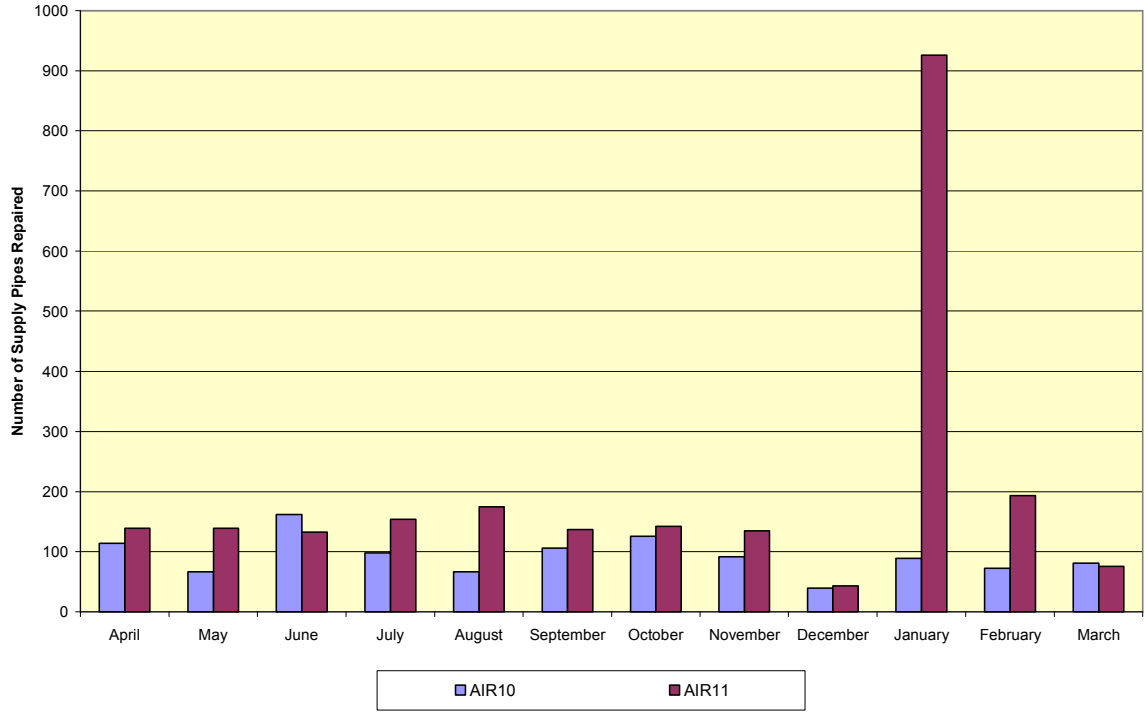
During the audit the Company explained its water efficiency strategy. We discussed the range of activities the Company has promoted and it outlined several initiatives which have taken place during the year. These activities have focussed on

education (working both with the children and the schools themselves) and on face-to-face methods to distribute water efficiency measures via school and at shows and through community talks. These initiatives are detailed below in 'Section 4 – Audit Findings and 5 – Company Methodology'.

4.2 Household Leakage

Unlike water companies in England & Wales, NI Water is not funded to offer a free/ subsidised repair or replacement of domestic supply pipes. This policy has remained unchanged since AIR08. We are advised that the customer is liable for the entire cost of the repair. When a leak in a supply pipe is identified NI Water sends a Leakage Notice to customers which allows the customers to repair the leakage within 28 days. After 28 days upon issue of final notice NI Water may undertake a repair and recover the cost from the customer. The policy is only applicable to domestic customers and does not apply to properties that are used wholly for commercial purposes. The policy applies to the point of entry to the household, except for common supplies, and does not include the customer's plumbing losses.

The number of household supply pipes repaired reported in line 1 (2,392) is approximately double the value reported in pervious years of 1,114 in AIR10 and 975 in AIR09. The increase is almost entirely due to the high number of repairs during the freeze/thaw incident, with 1,119 repairs being undertaken during January/February 2011; an increase of 975 from these two months in the previous year. This can be seen in the following graph:



We discussed a number of points relating to leak notices, and undertook a sample audit of the waste notice database for October 2010. The database is used by leakage inspectors to check repairs have been undertaken after the 28-day notice period has expired.

The Company does not offer its customers free or subsidised repairs or replacements of supply pipes, however during the free/thaw incident a small number (37) of supply pipes were repaired during the 1st Call inspections. This does not represent a change in policy by the Company, but a response to the extreme event; 1,252 1st Call inspections were made, and only 37 of these resulted in the repair of the supply pipe where this could be undertaken quickly and provide an immediate saving in lost water. Lines 3 – 6 are still reported as zero as the company does not offer subsidised repairs or any form of replacement.

As a result of the 37 supply pipes repaired by 1st Call, the Company has estimated the saving in lost water by assuming the leak run time is reduced from 28 days to the actual number of days the leak ran after being identified. The total saving was 18.84 Ml, which equates to an annual average of 0.05 Ml/d; this value is considered a reasonable estimate and is entered in line 7. The cost of each repair is estimated at £290, based on hours and materials, and is considered reasonable.

Not withstanding the small number of repairs undertaken during the freeze/thaw incident there is a marked difference in supply pipe repair policies between those in England and Wales and in Northern Ireland. In England and Wales companies offer free/subsidised supply pipe repairs/replacements to its customers. As such the savings reported in England and Wales are larger than those reported by NI Water. Due to this constraint there is little more NI Water can do to manage/reduce supply pipe leakage from current levels.

4.3 Household Water Efficiency Methods

Cistern devices (Lines 9 to 12)

The number of cistern devices distributed by the Company has decreased slightly from last year. In total 2,536 devices were distributed in the Report Year.

The Company policy is to distribute cistern devices to customers who request a device. Customers can order cistern devices through the Company's Customer Relations Centre (CRC), however the number of cistern devices requested through CRC is a small proportion every year. As the Company does not issue bills directly to customers there is less opportunity to facilitate awareness of water efficiency. NI Water prefers to use face-to-face distribution of devices to ensure they are only given to customers with appropriate cisterns. As highlighted above, the Company has continued to promote water efficiency, including cistern device distribution, through schools and community visits and shows with a number of promotional days throughout the year.

For line 10 - "number of cistern devices installed by household customers" the Company has assumed a fit installation rate of 20% for those distributed at shows and

70% for those requested through schools and community visits and CRC. These are from the Ofwat report 'Water efficiency targets 2010-11 to 2014-15" and means that the Company assumes that 1,215 devices (i.e. 0.2 * 1,121 + 0.7 * 1,415) have been installed during the year. We discussed with the Company the appropriateness of this assumption and they outlined that they have followed the recommendations given in the Ofwat Good Practice Register.

The Company has made several other assumptions relating to the savings assumed and these are described below:

- percentages of devices installed (shows) – 20%
- percentage of devices installed (customer request) – 70%
- occupancy rate – 2.5
- numbers of flushes per person per day – 5
- saving per toilet flush – 2.5 litres

To align with other parts of the Annual Information Return the average occupancy rate has been assumed to be 2.5.

During the audit, the Company illustrated how they had calculated the costs for this initiative. We found a clear audit trail was evident and confirm the Company has only included unit costs of production. We have not undertaken a detailed check on the derivation of these unit costs but these appear reasonable. We confirm the Company's calculation is as stated in its methodology.

Water Butts (Lines 13 to 16)

The Company promotes the use of water butts through the distribution of advice leaflets but does not subsidise the sale of water butts to its customers. Lines 13 to 16 are therefore reported as zero.

The Company has developed a relationship with a large DIY retailer to promote water efficiency within the house & garden. However, NI Water could not obtain data whether this has worked to sell more water efficiency products such as water butts.

Self Water Audit Packs (Lines 17 to 19)

The Company has reported 1,967 packs as being distributed during the Report Year. This is a significant decrease (35%) over the number distributed in 2009/10. The focus has always been on schools, shows and hits to water audit on website.

The Company has received 17% of responses from the 1,690 packs distributed to schools. NI Water assumes that these customers will save 10 litres of water a day. Different installation rates were assumed for schools (70%), shows (20%) and website (10%) and we confirm that these are appropriate. We also confirm that the amount of water saved a day is in line with the assumption within Ofwat's 'Water efficiency targets 2010-11 to 2014-15' report. Using this assumption the calculated savings from the water audit packs is 0.0123Ml/d.

In summary, the assumptions are as follows:

- installation rate (schools): 70%
- installation rate (shows): 20%
- installation rate (website): 10%
- saving per day – 10 litres

We confirm the costs reported in line 19 relate to production of the self audit packs and prizes of £150 to schools who returned the audit packs. We have checked the audit trail and confirm the number reported is consistent with that reviewed during the audit.

Water Audits carried out by the Company (Lines 20 to 22)

The Company has not carried out water audits during the Report Year, as the focus has been on distributing self-audit packs to schools and at shows. Lines 20 to 22 are therefore reported as zero.

NI Water advised that, in conjunction with the Housing Executive (HE) they have endeavoured to install water efficient products in the HE houses. However at the time of audit, HE's budgetary constraints have prevented this.

4.4 Non household Water Efficiency Methods

Self Water Audit Packs (Lines 23 to 25)

As part of its overall programme of working with schools, the Company has reported 319 packs as being distributed to schools during the Report Year. NI Water assumes that customers will save 10 litres of water a day with an implementation rate of 20%. These two assumptions are consistent with the values presented in "Water efficiency targets 2010-11 to 2014-15" published by Ofwat. Using these assumptions the calculated water savings are 0.000638 Ml/d (which is displayed as 0.00 Ml/d to 2 decimal places on the table).

In summary, the assumptions used are as follows:

- installation rate: 20%
- saving per day – 10 litres

We confirm the costs presented in line 25 relate to production of the self audit packs. We have checked to audit trial and confirm the number reported is consistent with that reviewed at audit.

Water audits at commercial premises (Lines 26 to 28)

The Company outline that they did not undertake any non-household water audits during the Report Year. Lines 26 to 28 are therefore reported as zero.

4.5 Other water saving initiatives

The Company has outlined other water efficiency actions directed at households and non-households which includes leaflets, bookmarkers, pencils, games, fridge magnets, shower timers, and its 'Water Bus' exhibition. The Company has presented the costs of each of the measures and estimated the assumed water savings achieved from the shower timers alone.

During the audits we discussed the Company's water efficiency focus, which is on education, and some of the more "softer" measures that should bring long-term benefits. We also reviewed the Company's Water Efficiency Plan (which is downloadable from the website) which highlights the range of measures being implemented by the Company.

We consider that the water savings associated with these water efficiency actions are reasonable given the inherent difficulties in calculating water savings from such activities. The Company also discussed the recent UKWIR Report "Cost Benefit of Water Efficiency Measures" which suggests an approach whereby the savings from these "softer" measures could be estimated and traded-off against the "harder" measures such as cistern devices and water audits. We consider an approach that provides incentives for implementing the "softer" measures would also be appropriate for NI Water.

The Company has reported 3,230 shower timers being distributed during the Report Year. NI Water assumes these will save 5 litres per property today, with an installation rate of 23%, which results in a total water saving from this initiative of 3,230 x 0.23 * 5 = 3,714.50 l/day (i.e. 0.0037 Ml/d).

The Company has made the following assumptions according to the Ofwat's 'Water efficiency targets 2011- to 2014-15' which are:

- saving per property per day from shower timer – 5 litres
- installation rate of shower timer – 23%

Total costs of these initiatives include costs of production (£5,071.10), the Water Bus exhibition (£22,917), and NI Water staff costs (2 Water Education staff, i.e. £55,745). The Company explained that this is consistent with AIR10 and we confirm that this appears reasonable.

4.6 Water efficiency initiatives

During the audit we discussed both the outcome of these schemes with the Company. Our main findings are detailed below.

Water Bus – The Company advised NI Water's Water Education Team has visited schools with the 'Water Bus'. It was explained that the bus is in great demand with a long waiting list.

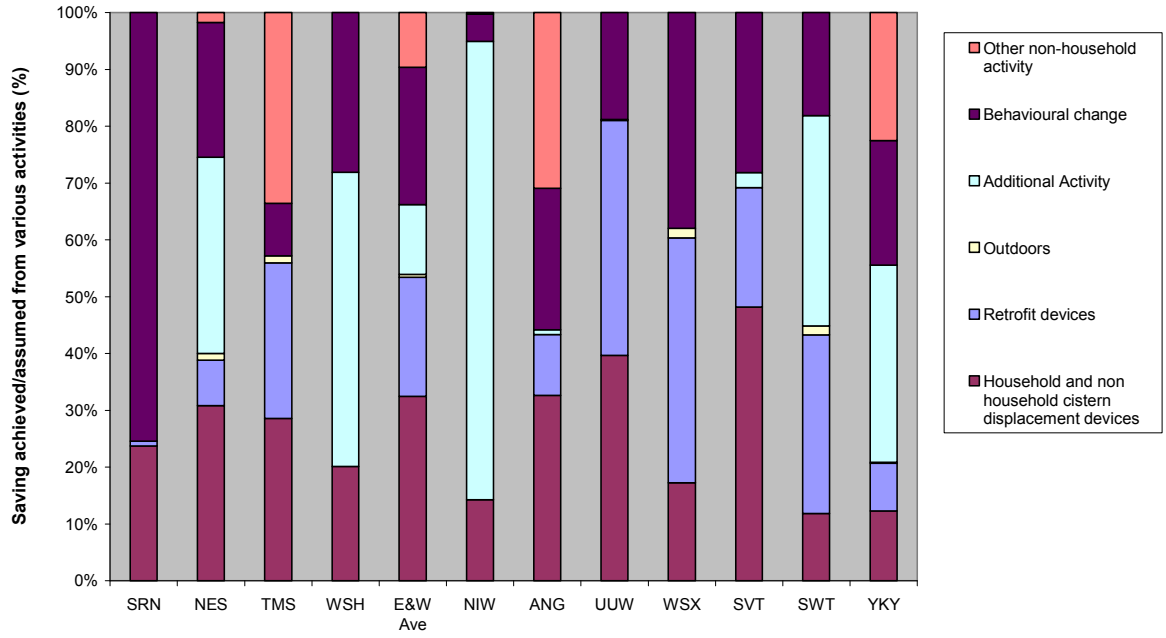
Water Efficiency Plan – We reviewed the water efficiency plan and confirm that this represents an accurate description of the initiatives implemented by the Company during the Report Year. This also highlights the focus on education through working with schools and pursuing other opportunities to increase awareness of water efficiency issues.

NI Water is focusing on activities which are high level of engagement with customers. We were asked by the Company what would be the most appropriate water efficiency products for NI Water. We suggested looking at some of E&W water companies' regulatory returns such as Wessex, Yorkshire or Welsh with similar geographies and populations to NI Water provide further assistance. Figure 1.2 can also be used to help identify potential comparators.

NI Water has purchased a large number of Hippo's which are only suitable for older and larger cisterns. NI Water advised that until this stock has been depleted, additional purchases of water efficiency devices will be limited. We have suggested the Company may wish to consider circulating internally within NI Water to help increase device penetration levels.

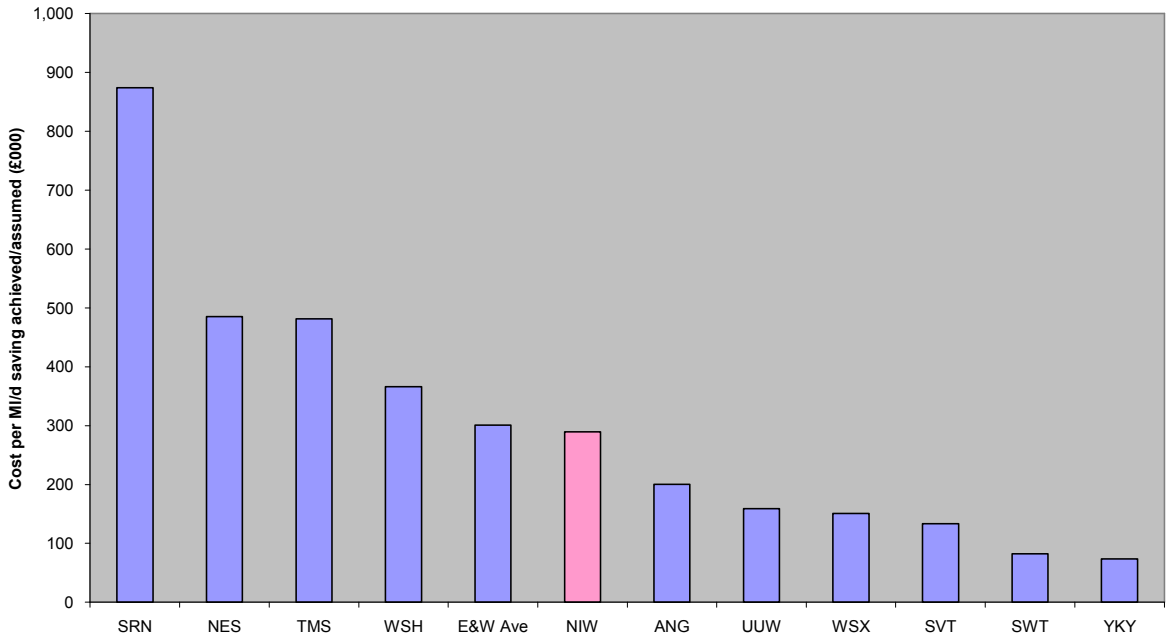
A longer term issue for NI Water is that customers do not pay water bills according to their usage. Customers surely feel that there is no need for reducing water consumption. Unless billing and charging become enforcement, we could not see any significant savings from NI Water's activities.

Figure 1.2 Water Efficiency Savings Analysis



We also analysed the cost of Ml/d saving (Figure 1.2 below). The cost of NI Water's water efficiency programmes is similar to the average cost in E&W.

Figure 1.3 Water Efficiency Savings Analysis



5. Company Methodology

We have reviewed the Company's methodology for reporting Table 1 in order to confirm that it is appropriate and meets the Reporting Requirements issued by NIAUR for AIR11.

5.1 Household Leakage

The Company methodologies are satisfactory and described in their commentary. The Company recorded actual numbers of leakage notice issued and repairs completed monthly and provided annual figures for AIR11.

In the final checks and reconciliations, we identified an error in the data for numbers of supply pipe repairs where some internal leaks had been erroneously included, resulting in a correction from 41 to the 37 as stated in the final table submitted. Given the extreme nature of the freeze/thaw incident and the fact that free repairs supply pipe repairs are not part of the Company's policy we do not consider this to be a significant failing of the Company's data systems.

5.2 Household/Non-household water efficiency

Spreadsheets held by the system holder are used to obtain the information for Blocks B, C and E. This spreadsheet collects all data on cistern devices, self water audit packs distributed, other promotional materials (such as magnets and shower timers) dispatched.

We have reviewed the Company methodology and believe that the practice adopted is consistent with the stated methodologies and in line with the Reporting Requirements, except Block D.

Reporting Requirements states that the Block D '*should include, 1 – water savings from activities in blocks A, B and C of the table 1; 2 – water savings associated with the activities entered by the company in block E of table 1; and 3 – any water savings that can be estimated for further water efficiency activities that are only described in the company's commentary to table 1'*. NI Water's submission does not seem to include savings and cost from block A. We have checked this with the Company and they concur with our observation. Therefore, Line 29 should be 0.26 Ml/d and Line 30 should be £78.09k

6. Company Assumptions

In relation to cistern devices the Company has made several assumptions relating to the savings assumed. These are as follows:

- percentages of devices installed (shows) – 20%
- percentages of devices installed (customer requested) – 70%
- occupancy rate – 2.5
- numbers of flushes per person per day – 5
- saving per toilet flush – 2.5 litres

For household and non-household Self Audit Packs, the Company has made several assumptions relating to the savings assumed. These are as follows:

- implementation rate (schools) – 70%
- implementation rate (shows) – 20%
- implementation rate (website) – 10%
- saving per day – 10 litres

For savings associated with the shower timer initiative, the assumptions used are:

- saving per property per day from shower timer – 5 litres
- installation rate of shower timer – 23%

7. Confidence Grades

The confidence grades assigned by the Company are consistent with those used for AIR10. The company has assigned the following confidence grades:

- numbers of items distributed: B3
- installation rate: B4
- water savings achieved: B4
- cost: B3

The number of items distributed (waste notices issued, cistern devices, self water audits, leaflets and shower timers) are recorded by the Company on a monthly basis, with annual values entered in line 1, 9, 17, 23, 31a, 31b, 31c and 31d. Therefore the confidence grade of B3 is appropriate.

Total savings assumed in lines 11, 18 and 29 were calculated according to Ofwat guidance. Therefore the confidence grade of B4 is appropriate as the actual numbers distributed are B3.

The costs of the efficiency programmes reported in lines 12, 19, 25, 30 and 33 have been assigned a B3 confidence grade. As these rely on cost estimation we believe a B3 grade is reasonable.

Date: 29 July 2011
Prepared by: HMS

Table 2 – Key Outputs - Water Service – 2

Block A – DG2 Properties receiving pressure/flow below reference level

Commentary by REPORTER

1. Background

The information included in this table is used to monitor and compare company performance against the DG indicators.

2. Key Findings

- Following clarification from the Regulator an additional 94 properties were added to the register at the start of the year. These properties are within 15m of an existing service reservoir. Under Section 105 of the Water and Sewerage Services (NI) Order 2006 these properties do not need to be provided with a constant supply of water but there is a requirement for them to be included in the DG2 register.
- A total of 304 properties were removed from the register, due to rehabilitation (237), infrastructure improvements (46) and better information (21). However, 76 properties were added to the register as a result of better information leading to a net removal of 228 properties.
- The DG2 Register contains full documentary evidence for properties that remain, are added or are removed from the register.
- NI Water has investigated properties on the register with pressure below 7.5m, and this number has increased slightly to 173 properties.
- NI Water has estimated the cost of removing properties, although this request was made retrospectively and can only be considered an initial estimate. We would expect the Company to prepare a more robust estimate for AIR12.

3. Audit Approach

The audit consisted of interviews with the NI Water system holder and the NI Water Consultant, which included a discussion on the Company methodology for data collection and collation, a review of the estimated cost of removing properties from the register and a demonstration of the DG2 Register and supporting documents.

4. Audit Findings

4.1 Properties connected at year end (Line 1)

This line contains the total number of properties (domestic and non-domestic) connected to the distribution system at the end of the report year. We note an increase of 7,700 (1%) properties connected for water supply only from AIR10. The number of properties is derived from Northern Ireland Water's billing system (Rapid). This estimate made includes properties which are connected but not billed (for example, temporarily unoccupied) but excludes properties which have been permanently disconnected.

We confirm that whilst the total property numbers quoted in this table are "year-end" figures they are in-line with the sum of lines 6, 7 and 8 of Table 4 which are average for the year. The year-on-year change for both tables is consistent.

4.2 DG2 - Properties receiving pressure/flow below reference level (Lines 2-4c)

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

The total number of properties at the end of AIR10 Report Year was 2,154. For AIR10 NI Water had excluded 94 properties that are within 15m of an existing service reservoir as, under Section 105 of the Water and Sewerage Services (NI) Order 2006 NI Water does not need to supply these properties with a constant supply of water.

Following guidance from the Regulator these properties have now been added back into the DG2 register, so the line 2 entry is therefore 2,248.

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

In order to confirm the validity of the DG2 Register we reviewed the results of two randomly selected DMAs: Craigavon (68 properties removed from the DG2 Register) and Wanstead (11 properties removed from the DG2 Register). The Company provided full details (all hyper-linked documents from the DG2 Register).

For each of the sample of DMAs we reviewed a GIS plot of the DMA, the affected properties and the logger locations, to confirm the Company's assessment. We found the documentation contained evidence of the pressure logging (a copy of the logger trace was available for each logging point). The location and elevation of all properties, not just those on the original DG2 Register where shown on GIS outputs which also showed the DMA and pressure logging boundaries. A report was also included for each DMA that documented the surrogate pressure at each property, justifying its inclusion, removal or valid exclusion from the DG2 Register.

Overall, we found that for AIR11:

- 237 properties were removed from the DG2 Register as a result of mains rehabilitation schemes.
- 46 properties were removed due to infrastructure improvements.
- 21 properties were removed due to better information.
- 76 properties were added to due to better information.

We note that the logging exercises were undertaken over a 7-day period generally during the autumn/winter months. With water companies in England & Wales we would have concerns that this period would have lower demands, and hence higher pressures so may lead to an under-reporting of properties on the DG2 Register this is not the case for NI Water. We have been shown historic distribution input values which demonstrate that the autumn/winter months typically have higher demands than the summer months.

4.2.3 Line 4 – Properties receiving low pressure but excluded from DG2

For AIR10 NI Water excluded 94 properties from the DG2 Register on the basis that they are located within 15m elevation of the service reservoir. Following guidance from the Regulator these do not form allowable exclusions, so these properties are included within the DG2 Register and zero is reported for this line.

NI Water advised that they currently do not have the infrastructure in place to validate other allowable exclusions, such as; abnormal demand, planned outages, one-off incidents and short-duration low pressure incidents.

4.2.4 Line 4a – DG2 properties with a pressure below a surrogate level of 7.5m

The DG2 Register was interrogated to identify those properties below a surrogate level of 7.5m; this identified 173 properties (an increase of 4 properties from AIR10).

4.2.5 Line 4b – DG2 properties at risk of low pressure removed from the register by company action

A total of 283 properties were removed from the register following company action; 237 following mains rehabilitation and 46 following infrastructure improvements. The 21 properties removed due to better information have not been included in the line 4b entry.

4.2.6 Line 4c – Average cost of permanent solutions to DG2 problems

The requirement to provide the average cost of permanent solutions to DG2 problems was only made after the end of the financial year. NI Water was therefore unable to put the necessary data capture systems in place for the calculation that supports this line, but has provided an estimate based on available information.

Therefore, the average overall cost of removing a DG2 property from the register was calculated by combining the total cost of the mains rehabilitation schemes (£3,867,551) and the infrastructure improvement schemes (£27,225) and dividing by the total number of properties removed i.e. 237 (mains rehabilitation) + 46 (Infrastructure Improvements) = 283. This gives the average cost per DG2 removal of £13.7k.

We consider this to be an over-estimate, as much of the investment will provide future benefits, whereas the calculation only allows actual properties removed to be accounted for. For example, the Castor Bay Shanmoy scheme had a total cost of [x] but only removed 5 properties from the DG2 Register ([x] per property) whereas the scheme has been designed to ensure a total of 503 properties will be either removed or not added to the DG2 Register within the 25 year planning horizon; this results in an average cost of [x] per property.

We would expect to see more robust analysis for AIR12.

5. Company Methodology

NI Water has collected DG2 information using a representative network of critical pressure monitoring points, details from which have been converted into numbers of properties at risk of receiving low pressure, by using its GIS system.

We found that the DG2 Register contains hyperlinks to all available information to support each property within the DG2 Register. This includes reports, logging traces, GIS plots and details of pressure analysis. This information is also retained for any properties originally on the DG2 Register and subsequently removed due to better information.

In terms of allowable exclusions, NI Water are aware of the various low pressure events that can be excluded from the DG2 Register, however, in the absence of comprehensive monitoring systems. For AIR11 NI Water no-longer exclude properties that are located within 15m elevation of the service reservoir.

6. Confidence Grades

The Company has changed the confidence grade for line 1 from A2 to C2, reflecting uncertainty in the process for estimating year-end property counts (this contrasts with A2 for the property counts on Table 4, which are mid-year values).

The Company has not changed the confidence grades for lines 2 – 4a from AIR10; we consider these are still appropriate. A confidence grade of B3 is appropriate for line 4b as this number is derived from the DG2 Register.

A confidence grade of C4 is appropriate for line 4c as this analysis was undertaken on limited data, without time available to develop a robust methodology/data collection process.

Date: 29 July 2011
Prepared by: HMS

Table 2 – Key Outputs - Water Service – 2

Block B – DG3 Supply Interruptions, Lines 5 to 19

Commentary by REPORTER

1. Background

The aim of this indicator is 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.

2. Key Findings

- A review of the data reported by the Company in their commentary and tables shows that DG3 performance has deteriorated during the year. However, the Company's performance has been materially affected by the severe weather experienced during the Report Year.
- We reviewed the Company's methodology to quantify the impact of the severe weather in December 10. Due to the scale of the interruptions experienced NI Water has utilised a bespoke methodology to allocate properties affected into the various interruption time bands. An audit trial was evident and whilst some uncertainties in the confidence of the data prevail, we believe the Company's approach is both pragmatic and reasonable.
- We discussed NI Water's interpretation of planned, unplanned, overruns on planned interruptions and on the basis of the discussions held (and incidents reviewed) we are satisfied that the Company's interpretation of the guidance is sound.
- We also verified the details of a number of the largest unplanned events affecting NI Water's customers which were recorded using the Company's reporting tool, OMIS. To test the application of the Company's methodology we were able to follow an audit trail to verify the details of each incident selected.

2.1 Key Recommendations

- We noted the start and end times reported on OMIS are rounded to the nearest 15 minutes. The Company advised that this is a limitation of OMIS but that discussions are ongoing regarding a replacement system. We recommend that consideration is given to the facility to record more precise times in the design of a new process as currently there is a potential for a +/- 30 minute error due to rounding on each interruption.
- We recommend that, to assist in ensuring the future accuracy of reporting, NI Water clarifies which property types are included in their GIS property counts.

3. Audit Approach

To verify the data reported by the Company, our audit consisted of an interview with the NI Water system holder, a review of the current Company methodology for data

collation and an audit of the data from the Company's systems to the final table. This year's data has been compared with last year's table entries to identify significant areas of change.

As unplanned interruption data is used as a key performance metric we have reviewed this data with greater scrutiny than the other interruption categories.

4. Audit Findings

4.1 Reporting System

As we have found in previous years, OMIS is used as the main tool for recording supply interruptions. We found the system is managed by Operations Directorate as Engineering and Procurement Directorate (EP) and Customer Services Directorate (CSD) do not currently have access. However, interruption data is provided by representatives of these directorates on a monthly basis. Interruption details are transferred to the Composite Interruption Data File along with information extracted from OMIS for Networks Water and EP.

4.2 Unplanned Interruptions (lines 5 to 8)

4.2.1 DG3 Performance

The effects of the winter weather had a significant impact on NI Water's DG3 reported performance. Review of the data reported by the Company illustrates that their DG3 has increased materially and to an all time high (95.8 versus a score of 2.2 in 09/10).

Nevertheless, if the freeze/thaw event of December 10 was discounted, the Company's performance would have deteriorated marginally from that reported previously and also above the Company's PC10 target.

4.2.2 Winter Freeze/Thaw

The effects of the winter weather have had a significant impact on the Company's reported DG3 performance. In December 10 Northern Ireland experienced a sustained period of cold weather which led to significant disruption of services during these temperatures and the resulting thaw. Within their commentaries (see DG3 p.9), the Company has quantified the impact of this by reporting properties affected both from the incident at the end of December 10 but also earlier in that month.

We also note that the severity of this event and the impact it had on the Company's ability to maintain supplies were unprecedented and called for the adoption of abnormal working practices in extreme weather. Thus, it is not surprising and indeed understandable that the accuracy of information being recorded to report on this was given a low priority. Given the scale of the event and the magnitude of customers affected, we would accept that the quality of information is much less relevant.

The focus of our audit has been to verify the properties affected by the former event, which was the most significant in terms of interruptions to supply. For this event, the

Company has estimated that over 39k properties were affected by supply interruptions greater than 24 hours, 210k properties greater than 12 hours and 450k properties greater than 6 hours. To quantify these, the Company has assessed those properties a) affected by supply rotations b) affected by service reservoir drain down and c) properties affected by burst repair activities. Each of these categories are reviewed in turn below.

a) Properties affected by supply rotation

During the audit the Company was able to demonstrate the numbers of properties affected by a supply rotation by way of summary spreadsheets (one for the western and one for the eastern area) giving details of interruptions on a DMA by DMA basis over the period 27 December 2010 to 2 January 2011. We understand this data was also shared with the Regulator during their recent review.

NI Water explained that part of their management of the event was to rotate supplies between various DMA's and that the option to isolate a distribution area or selection of DMAs served from the service reservoir were dependent on a number of factors including the special needs customers are not be interrupted if possible, ensuring hospitals are not to be affected and consideration of the benefit to conservation of supplies i.e. a DMA with very high waste would have been a priority to isolate. In terms of DG3 supply interruptions, the properties affected may be summarised as follows.

	Properties			
Duration	>3hrs	>6hrs	>12hrs	>24hrs
west	38,717	34,862	1,702	1,184
east	404050	396187	179438	23257
total	**442,767**	**431,049**	**181,140**	**24,441**

Despite some interruptions warnings being given on the Company website, NI Water has opted to classify all rotational cuts as unplanned interruptions. We believe this to be an appropriate classification given that the warnings were not necessarily provided with adequate warning as stipulated by the reporting guidance.

Key points from the discussions held on supply rotations include:

- The spreadsheet listed the DMA's affected and the start and end times and the Company confirmed that these were based on valve operating times.

- We also noted that the times quoted were to the nearest hour or half hour. The Company advised the times for supply rotation were necessarily rounded and interruptions would theoretically commence when the first valve was shut and would end when the valve was subsequently reopened. We believe the impact on a specific customer might be immediate (if remote from the valve and at the highest elevation) to several hours if the customer is at the lowest elevation within the DMA. Whilst this applies to valve closing the opposite for

valve opening would occur so the affect is probably broadly neutral. However, the interruption experienced between the valve operations is likely to be longer, especially given the volume of leakage experienced.

- We reviewed a number of interruptions which were recorded as being exactly 6 hours in duration and confirm that these have been reported in the greater than 3 hours but less than 6 hour duration bracket. Given the finding above that timings may be subject to rounding there is a probability that interruptions could be reported in a lesser duration category.

- Given both of the findings above there are uncertainties in the allocation of properties affected by interruptions into the appropriate interruption durations. Under normal circumstances i.e. for much smaller events we may have expected the Company to undertake further analysis to quantify this uncertainty. However, given the scale and volume of properties such an exercise is impractical and a more pragmatic approach appears reasonable for such a significant event. We comment in Section 7 below on the confidence grades assigned to the overall population of unplanned interruption data.

- We also queried the basis of the estimated property numbers affected in each DMA. The Company explained the property counts were derived from their GIS system. NI Water further explained a member of Asset Information Development was on hand throughout the freeze/thaw response to provide such information.

- As expected we found that a number of DMA's had been listed in the Company's spreadsheet. This is because a number of DMA's were affected by rotational interruptions more than once.

- The two summary spreadsheets provided by NI Water reconcile to the total number of properties affected by supply rotations which are reported in the Company's commentary.

- As the methodology adopted does not use the Company's usual reporting system (OMIS), the properties affected are not listed on the DG3 Register. From the data collected though the Company does have reasonably appropriate listings of properties affected.

b) Properties affected by service reservoir drain down

In some areas, supplies to properties were interrupted where service reservoirs drained down (but where supply rotations were not introduced). The Company advised that these were generally properties in DMA's served exclusively by one service reservoir. In terms of DG3 supply interruptions, the properties affected are summarised as follows.

	Properties			
Duration	>3hrs	>6hrs	>12hrs	>24hrs
total	**25,439**	**25,439**	**25,439**	**13,622**

During the audit the Company explained their methodology to estimate the number of properties above. Key points from the discussions held are summarised below.

- The precise times (and therefore interruption durations) are not known. However the Company supplied an analysis which stated the days on which they believe service reservoir drain down affected supplies to a particular DMA.

- The Company has assumed that where properties were recorded as being affected by reservoir drain down on two consecutive days then properties were deemed to be affected for greater than 24 hours. Conversely, if properties were shown as being affected for only one day then the total interruption duration is deemed to be greater than 12 hours (but less than 24).

To demonstrate the Company's methodology we have illustrated several examples below.

	Properties		
	27/12/2010	28/12/2010	Interpretation
Ballyhome WPS	100	100	Interruption greater than 24 hours – 100 properties

	Properties		
	31/12/2010	01/01/2011	Interpretation
Hannahstown Upper SR	253	0	Interruption greater than 12 hours but less than 24 hours – 253 properties

- There are circumstances where NI Water has deemed the interruption to be split i.e. the total number of properties reported as being affected on consecutive days are different. On such occasions the Company methodology assumes that the number of properties affected on the second day of the interruption would have been subject to an interruption of greater than 24 hours. The difference between the number reported on the second and first day has been subsequently reported as an interruption greater than 12 hours but less than 24 hours. This is demonstrated in the example below.

	Properties		
	29/12/2010	30/12/2010	Interpretation
Ballylagan SR	289	200	One Interruption greater than 12 hours but less than 24 hours: 89 properties. Second interruption greater than 24 hours : 200 properties

- We checked the Company's application of these assumptions and confirm they have been applied as described above. In the absence of more detailed information we believe this approach is both reasonable and pragmatic. There is an inherent assumption that the same properties affected over consecutive days are the same but in the absence of further information this also appears rational as any other assumptions would potentially present a less conservative position.

- We also queried why in certain cases the total number of properties affected by a service reservoir drain down was much lower than the total number of properties served by the service reservoir e.g. Alt Service Reservoir supplies over 1100 properties but only 25 are reported as being affected by a supply interruption. NI Water explained this can be due to variances in the numbers of properties able to be back-fed or the numbers of properties dependent on a full reservoir to keep them in supply. For example, it may have been possible to back-feed all but 25 of the properties served by Alt SR or it may be that the 25 affected properties required the reservoir to be full to keep them in supply. We believe the Company's explanation to be reasonable but we have not undertaken any checks on the specific rationale for each service reservoir listed.

- Based on the findings above, there are uncertainties in the allocation of properties affected by interruptions into the appropriate interruption durations. Under normal circumstances i.e. for much smaller events we may have expected the Company to undertake further analysis to quantify this uncertainty. However, given the scale and volume of properties such an exercise is impractical and a more pragmatic approach appears reasonable for such a significant event. We comment in Section 7 below on the confidence grades assigned to the overall population of unplanned interruption data.

- As the methodology adopted does not use the Company's usual reporting system (OMIS), the properties affected are not listed on the DG3 Register. From the data collected though the Company does have reasonably appropriate listings of properties affected.

c) ***Properties affected by burst repair activity***

During the audit we queried what processes the Company employed at the height of the freeze/thaw event to facilitate reporting on interruptions caused by bursts on the network. NI Water confirmed that their normal reporting procedures we in place and all interruptions were reported via OMIS. Whilst difficult to ascertain whether all properties affected by interruptions had been captured in this way, comfort is gained from the sharp rise in the number of OMIS records which were completed during December.

4.2.3 Frozen Supply Pipes

In 2009/10, NI Water carried out an analysis to estimate the numbers of properties affected by frozen supply pipes by undertaking an analysis of complaints logged to

assess what proportion of complaints were deemed to be Company and customer responsibility. The resultant analysis was then extrapolated to derive the number of DG3 interruptions and those which would be excluded from the indicator.

The Company advised that for 2010/11 they are not able to repeat this exercise due to the scale of the winter freeze thaw event. However, to estimate the number of properties which can legitimately be excluded from the indicator (due to the cause being the customer responsibility) the Company has assumed that any DMA where there were less than 8 complaints between the 15 and 25 December (and no other network issue reported) then each of these instances were deemed to be customer's responsibility.

This results in circa 2,500 properties being excluded from Table 2. Whilst we have not specifically checked the application of this methodology the rationale appears reasonable and the numbers are immaterial in the context of the total number of properties reported. We also confirm the methodology adopted is similar to that we have reviewed elsewhere in the industry to report on the 10/11 winter event.

Where more than 8 complaints have been received the Company confirmed that these have been reported via the usual processes and recorded on OMIS.

4.2.4 Other Unplanned Interruptions

During the audit we reviewed the nature of a number of the largest unplanned events affecting customers. The audit checks carried out for each incident are detailed below. We were able to follow an audit trail to verify the details of each incident. Where possible these incidents were reconciled to 'Upward Reports' produced at the time of the interruption.

A summary of our findings are detailed below.

Incident	Unplanned Categorisation	Duration	Comment
Crocknafeola (03/02/11)	✓	various	• Unplanned interruption associated with burst on 500mm trunk main feeding 4 SR's. • 1781 properties affected >24hrs, 3211 properties affected >12hrs
Crumlin (25/01/2011)	✓	>6hrs (<12hrs)	• Whilst carrying out rehab work 200mm PVC main split whilst attaching tapping saddle. • 2,130 properties affected for 8 hours.
Cabragh Road Bushmills (20/12/2010)	✓	>6hrs (<12hrs)	• Trunk main burst • 29 properties affected for 11.5hours
Kilkeel (06/02/2011	✓	various	• Planned repair on trunk main encountered difficulties which led to various areas fed off the trunk main suffering interruptions. • 27 properties affected >24hrs. • 99 properties affected >12hrs(but > 24hrs).

To help verify these incidents we challenged the Company to demonstrate the data held on OMIS and various upward reports available. We noted some inconsistencies in the information documented in the upward reports e.g. property numbers and times but the Company outlined that the upward reports are prepared at the time of the incident and are not necessarily fully verified. Nevertheless, these help to provide supporting evidence and we confirm the OMIS records for each of these incidents have been accurately transposed into Table 2.

4.3 Planned and Warned Interruptions

For lines 9 to 12 – "Planned and warned interruptions" there has been a decrease in the number of properties affected. NI Water advised this is primarily to associated with a reduction in activity in their Water Mains Rehabilitation Programme.

During the audit the Company representative demonstrated how data is collated from the various directorates and input in to OMIS. During the process interruption data is checked to ensure adequate warning has been provided and if not then the interruption is re-categorised as unplanned or an planned overrun. On the basis of the checks carried out we are content that the Company's reporting process is sound. We do however propose that our future audit programme will include a complete end to end review of the process to warn customers of planned interruptions to supply.

4.4 Interruptions caused by Third Parties (lines 13 to 16)

During the audit we reviewed a number of interruptions the Company had classified as being caused by a third party during the year. Following errors indentified in the Company's interpretation of third party interruptions in 2008/09 we checked a number of interruptions within this category within our AIR11 audits. We checked a small number of incidents from across the year and confirm these incidents were correctly reported as third party (caused by contractors or persons not acting on behalf of NI Water). On the basis of the checks carries out we are content the Company's methodology in this area is sound.

4.5 Overruns of Planned Interruptions (lines 17 to 19)

As in previous years, the Company has reported a small number of overruns of planned interruptions. During the audit we discussed the methodology and checks the Company uses to identify overruns of planned interruptions and believe them to be satisfactory. We have not reviewed any specific incidents reported by NI Water.

5. Company Methodology

5.1 General

As reported above, the Company issued the Reporter with a copy of their updated methodology to derive data reported in for supply interruptions. This document contains several definitions which are replicated below for clarity. We believe the

definitions used are in line with the Reporting Requirements.

- Interruption - An interruption to supply is defined as the actual loss of water supply to a property, whether planned or unplanned, warned or unwarned.
- Start Time - For a planned interruption the start time is the time at which water is unavailable at the first cold tap in a property; for an unplanned interruption it is when customers first notice the loss of supply or if this is not available the time a 'no water' complaint is logged by the Customer Relation Centre.
- 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 is restored.

We also reviewed how the Company classify interruption and believe these are in line with the Reporting Requirements. Again, the definitions used have been replicated below for clarity.

- Planned and warned - This is where notice of an interruption (more than 3 hours) is provided to properties affected at least 48 hours in advance of the beginning of the interruption.
- Unplanned/unwarned interruption - This is when an unplanned, or a planned and unwarned, interruption to supply occurs. Properties receiving less than 48hrs notice of a planned interruption (more than 3 hours) are to be counted as 'unplanned' and reported under this category.
- Overruns of planned interruptions - When a planned interruption and warned interruption begins before or continues beyond the end of the warned time, for whatever reason and whether or not a customer has been advised during the shut down that an overrun is going to occur, the interruption is described as an overrun and is reported separately.
- Third party interruptions - A third party is defined as anyone who does not act for, or on behalf of NI Water. This category is intended to cover damages to NI Water's mains or other equipment which directly or in indirectly results in an unplanned loss of supply to enable the damage to be repaired.

We challenged the Company on whether a planned interruption which starts before the warned time should be classified as an overrun or an unplanned interruption. The Company advised this would be classified as an unplanned interruption. We believe this is in line with the Reporting Requirements.

We also questioned the Company on the structure and content of the DG3 Register and we believe it contains the information demanded by the Reporting Requirements. We noted that the Company does not detail each property affected by an interruption but tends to group the listing by particular house numbers in a street or cluster.

We discussed with the Company their approach to counting the number of properties affected by an interruption and they advise properties are identified from either a manual count from network maps and in other cases are estimated using a GIS polygon. We have not reviewed the accuracy of the property counts made by the

Company but have queried what property types are included in the Company's assessment. NI Water confirmed the following properties types:

- 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

We sought clarity on which of these property counts are included in the DG3 property counts and recommend that, to assist in ensuring the future accuracy of reporting, NI Water clarifies which property types are included.

5.2 Reporting Procedures

OMIS is used as the main tool for recording supply interruptions. We found the system is managed by Operations Directorate and Engineering and Procurement Directorate (EP) and Customer Services Directorate (CSD) do not currently have access. However, interruption data is provided by representatives of these directorates on a monthly basis. Information from the two EP regions and Customer Services Directorate is provided for input each month on spreadsheets and entered on OMIS by the DG3 system holder.

NI Water's reporting procedures require field engineers to record events on standard proformae. The data collected on these sheets is subsequently uploaded on OMIS via the defined input screens on a monthly basis. The DG3 system holder extracts data from OMIS each month and transfers it into a worksheet entitled the 'Composite Interruption Data' file, which is the DG3 Register. This data is combined with data from other Directorates to form a complete listing. Whilst we consider the Company has sound and centralised collation methodologies in place, further checks to enhance the controls in place could be carried out by further testing the interpretation of the DG3 definitions and recording methodologies of field staff responsible for recording the nature, type and duration of a supply interruptions.

We also questioned NI Water on several aspects of their reporting protocol and specifically how they ensure interruption which may been uploaded into OMIS late or remained open (and therefore editable) on the system when the data is extracted. The Company representative advised that controls are in place to track late returns and the previous months report is re-run at the end of the following month to ensure that any late entries are picked up.

We noted the start and end times reported on OMIS are rounded to the nearest 15 minutes. The Company advised that this is a limitation of OMIS but that discussions are ongoing regarding a replacement system. We recommend that consideration is given to the facility to record more precise times in the design of a new process as currently there is a potential for a +/- 30 minute error due to rounding on each interruption.

5.3 Quality Assurance

We note that the Company's methodology demands that each monthly return of DG3 data is signed off by senior management.

The Company demonstrated the quality assurance controls they have in place to ensure the data collation process is robust. Over the course of our audits we saw evidence of data challenge and the correction of interruption details received from field operatives. We therefore believe that interruption data is being appropriately administered.

During the audit we also discussed some specific checks the Company undertakes to assure itself the start time of an unplanned interruption is correct. The Company advised they had continued to undertake analysis of when the time of no water calls into their customer contact centre and compared these to the start time reported by field managers within OMIS. Whilst the Company have only carried out a limited number of checks, we saw evidence of the start time of an interruption (and duration being) being amended. We believe these are useful check to verify and challenge the recording of interruption recording on OMIS. Following our recommendation made in AIR10 we are pleased to confirm that the Company has focussed its sampling around the time boundaries of the 6, 12 and 24 hour interruption durations. This should assist in providing additional assurance in the accuracy of reporting.

We suggested that assessing low pressure calls and no-water calls may add extra rigour to the Company's assurance checks on the basis that there may be a risk that incoming calls could be logged as low pressure complaints when in fact they are no-water calls. NI Water advised the DG3-Rapid comparison process is a labour intensive exercise given the complexity of some interruptions and they would be reluctant to extend these checks, given that the work to date has not resulted in a recognised improvement in confidence grade. We acknowledge the Company's position but believe an initial exercise to fully understand how agents interpret and log 'no water/low pressure' complaints may be beneficial to ascertain the risks of any potential errors in logging contacts.

6. Company Assumptions

The Company assumptions relating to the classification and duration of incidents have been discussed above.

7. Confidence Grades

The Company has assigned a B3 (5% to 10%) grade to the majority of the lines in line 5 to 18. NI Water provides a detailed overview of their justification for this within their commentaries and we concur with their assessment.

Except for line 8, the grades assigned are the same as reported in AIR10. The magnitude of the unplanned interruption numbers due to the freeze/thaw is much greater this year and the confidence grades thus provide a much greater numeric tolerance. Clearly there have been some exceptional events in the year which have necessitated the use of abnormal assumptions. During our review of the winter event, we highlighted a number of areas where the methodology adopted creates a risk that actual interruption durations are not reported accurately. As the focus is around the allocation of properties to time durations it is important to consider various off setting factors, including the size of the population of data reported. For example, uncertainties have been raised about interruption end times (see section 4.2) but given that some of these interruptions lasted greater than 24 hours the importance of reporting the precise end time for DG3 purposes diminishes somewhat.

After high level consideration of these and other factors, we believe that a B3 grade is reasonable. In brief it is difficult to assess the level of accuracy/inaccuracy inherent but we believe it is appropriate to retain the grades which relate to NI Water's underlying methodologies. We have however not undertaken any specific statistical analysis to fully verify this.

Date: 29 July 2011
Prepared by: HMS

Table 2 - Water Service – 2

Block C - Population – Winter (Line 20)

1. Audit Findings

The estimate of winter population is based on NI Tourist Board statistics. The Company provide a detailed explanation of the approach adopted to derive winter population in their commentary for Table 2. We have followed the methodology laid out by the Company in their commentaries and believe the approach taken is reasonable. The methodology and calculations used by the Company are outlined within their commentary.

In terms of overall population reported there has been a small increase of 0.5%.

2. Assumptions

The Company assume the bed spaces sold during the winter are for those months with the lowest percentage of bed spaces sold. Given that calendar year data is only available for 2010 the Company has assumed these months are between January 10 to April 10 and November 10 to December 10. We believe this is reasonable as it is in line with our expectations of when visitor numbers are likely to be at their lowest.

The Company's calculated figure is dependent upon the resident population reported in Table 7 and we confirm the estimate used in the calculation is consistent with that reported within this table (1,798,480)

3. Confidence Grades

The Company have assigned a confidence grade of C2 to this line. We consider this confidence grade to be appropriate, based on the Company's reliance on a third party data sources to derive the number of non-resident visitor nights.

Date: 29 July 2011
Prepared by: HMS

Table 2 - Water Service – 2

Block D - DG4 - Restrictions on use of water (Lines 21-23)

1. Audit Findings

There have been no DG4 restrictions on the use of water during the report year. As such the entries for lines 21, 22 and 23 are correctly recorded as zero.

2. Assumptions

There are no assumptions to disclose.

3. Confidence Grades

The Company have assigned a confidence grade of A1 to this line. We consider this confidence grade to be appropriate.

Date: 29 July 2011
Prepared by: HMS

Table 3 – Sewerage Service – Internal Flooding

Commentary by REPORTER

1. Background

The information included in this table is used to monitor and compare company performance against the DG indicators.

The DG5 – Annual Flooding Summary includes properties internally flooded as a result of overloaded sewers and other causes

The DG5 – Properties on the "at risk" register cover properties at risk of flooding more frequently than once in twenty years and once or twice in ten years, problem status of the properties on the register and annual changes to the register.

2. Key Issues and Recommendations

Flooding Incidents

- We believe the Company has made considerable improvements and introduced significantly more rigour to the overall flooding process for AIR11. However, we believe there remain a number of improvements which can still be made to make application of the DG5 methodology more effective and efficient.
- Out of 687 internal flooding contacts referred to the maintenance contractor for action, only 44 (6%) were confirmed internal flooders. On this basis, we believe there is a significant education/training issue, whereby the front line call centre staff do not appear to understand the DG5 indicator. We would recommend specific DG5 familiarisation training of all front line staff, to ensure; the correct line of questioning is followed; and call centre staff understand the information provided to them by the customer
- Despite the concerns we raised in AIR10, the maintenance contractor is still not substantively completing the FIR, requiring NI Water to make detailed DG5 assessments based on scant / non-existent evidence after the incident has cleared.
- Whilst the content of NI Water's Flooding Incident Report form is broadly fit for purpose, we believe there are a number of areas in which it could be further improved.
- The verification and assessment of every 'flooding incident' is currently the responsibility of a single NI Water staff member, which may impact on the degree of rigour that can be applied to each 'incident'. We believe the Customer Field Manager, may be able to take on responsibility for the verification of incidents within his/her area.
- The introduction of the 'DG5 Panel' is a positive initiative, which adds further rigour to the reporting process and demonstrates improved governance. We consider there is scope for additional value to be derived from the collective technical/operational skills of the Panel, through a more active challenge of proposed additions and severe weather exclusions.
- We remain concerned that the number of confirmed incidents of internal flooding still seems disproportionately low for a company of NI Water's size – suggesting

incidents are either being missed or there are other factors affecting what would appear to be 'exceptional' performance. These factors could include a lack of public awareness of the Company's responsibilities w.r.t DG5, overall sewerage design (network configuration and inherent capacity), topography, impermeable area ratios and differing weather patterns to E&W, however we have not observed differences in such explanatory factors

- We have concerns over the Company's assessments of the majority of the incidents attributed to severe weather during the year and would recommend that the properties affected are reconsidered.
- Whilst we are unsure of the availability or costs associated with the acquisition of raw radar data for NI to assess severe weather events, we would recommend the Company explore the feasibility of this approach as a future initiative.
- We highlighted to the Company that all incidents of internal flooding (overloaded sewers) need to be reported in Table 3 Line 3, including those attributed to severe weather. As such, on the basis of the numbers reviewed at year end, Line 3 should be 16 not 6.

DG5 Flooding Register

- The Company has almost completed an exercise to investigate, assess and cleanse the 742 historic flooding records that were on the Flooding Register as at 31/3/08
- Although there was often a fairly limited audit trail available to verify the Company's assessment, it was apparent that NI Water had investigated each incident, reviewed all available information and where possible spoken to the customer affected. However;
    - Our review further exposed a deficiency of evidence collected at the time of an incident. We consider that processes need to be further improved to ensure basic levels of information are captured re: nature of flooding, impact of flooding and where possible, flooding mechanism.
    - We found the investigation and assessment process to not be particularly well structured or comprehensive, eg. use of CCTV. The Reporter made some obvious challenges that should have been identified during the appraisal process and if not then, by the DG5 Panel
    - Where the Customer Field Manager (CFM) has taken an interest in an incident, the level of information available has increased significantly, enabling a reasoned assessment to be completed. We recommend the CFM and/or technical support staff attends all incidents of internal flooding and ensures the FIR is fully completed, at least until they are confident the maintenance contractor is responding appropriately.
- At year end, we found that 174 historic properties were either confirmed to be at risk of flooding or subject to further investigation. In addition to this, a further 37 properties, where mitigation (mainly NRV) had previously been installed, were also included on the 1in20yr Flooding Register, resulting in a total of 211 properties on the DG5 1in20 Flooding Register for AIR11.
- We found that 59 of the most likely flooders have been forwarded to E&P for independent review by consultants. We reviewed the Appraisal document for one area and found that a comprehensive investigation had been completed,

including a flooding extent assessment and would recommend that a similar review is completed for all properties on the Flooding Register, going forward
- The Company has assigned a confidence grade of B3 to Lines 2 to 11. Based on the observations/challenges made, highlighting the possible movement in numbers, we consider a B4 to be more appropriate for these lines.

3. Audit Approach

Our review of the Company's AIR11 Table 3 submission consisted of a series of meetings with the key NI Water system holders, including representatives from Network Operations, Asset Management and Asset Performance Directorates.

At the request of the NIAUR, as part of our AIR11 Table 3 and 3a audit, we undertook a detailed review of the work undertaken during the year to:

- Assess the re-categorisation of historic flooding incidents, resulting in a significant reduction in the number of properties on the DG5 Flooding Register, &
- Review and comment on the methodology refined during the year to categorise new flooding events

In order to assess the effectiveness of the improved processes and appropriateness of the allocation of properties to the various Flooding registers we reviewed a large (randomly selected) sample of properties that were:

- Confirmed as not at risk of flooding (due to overloaded sewer) and removed from the Flooding Register.
- Confirmed as flooding internally (due to overloaded sewer) and retained on the Flooding Register
- Confirmed as flooding internally, but due to other causes / severe weather, and removed from the Flooding Register.
- Reported as flooding internally during the year and added to the Flooding Register
- Reported as flooding internally during the year and not added to the Flooding Register

Detailed summaries of our findings and resultant conclusions are contained within the body of our commentary below.

4. Audit Findings

4.1 Properties connected at year end

This line contains the total number of domestic properties connected to the sewerage system at the end of the Report Year. The number of properties is derived from NI Water's billing system (Rapid).

We note an increase of 8,700 properties connected from that reported in 2009/10. We queried why the increase in the number of properties connected to sewerage

service was larger than the equivalent increase in properties connected to the water service, however, the Company did not respond prior to submission.

4.2 DG5 Annual Flooding Summary

4.2.1 General

In response to Reporter concerns raised in AIR10, NI Water has reviewed and further refined its flooding incident management process. In summary, the process is now designed to work as follows:

- NI Water customer contacts NI Water' customer call centre to report an incident of internal flooding.
- Call details are logged onto Ellipse and work order is raised
- Maintenance Contractor attends site, facilitates a clean up (if necessary) and completes a 'Flooding Incident Report' (FIR) form.
- On a monthly basis, all flooding incidents stored on Ellipse are downloaded and sent to the maintenance contractor for verification, additional information and confirmation of flooding status.
- All confirmed flooding incidents are forwarded to the NI Water Asset Performance (NIAP) team for investigation and confirmation of status. This investigation generally entails a desktop review of historic incident information on Ellipse and a review of GIS to identify any network configuration anomalies, followed by a site inspection (to assess the topography) and where possible an interview of the affected customer.
- For incidents recorded as internal flooding on Ellipse, but deemed to be not internal by the maintenance contractor, the NI Water 'system owner' will complete a cursory review of Ellipse records and the FIR for assurance that the assessment is correct. To ensure the process is robust, circa 10% of these incidents are then investigated in more detail and where possible the affected customer is contacted to confirm the nature and extent of the incident. Where there is an element of uncertainty, incidents can also be forwarded to NIAP for investigation.
- Confirmed internal flooders are then presented to the recently formed 'DG5 Panel' for review and allocation to the DG5 Flooding Register, which is now an Oracle database represented on the Corporate Asset Register as a GIS layer on CARtomap.

We believe the Company has made considerable improvements and introduced significantly more rigour to the overall flooding process for AIR11, however, we believe there remains a number of improvements which can still be made to make application of the DG5 methodology more effective and efficient, including;

1. Despite further revisions to the 'sewer flooding script' used by call centre staff when receiving calls from affected customers, we are concerned that there still appears to be an extremely high proportion of incorrect internal flooding referrals. As discussed further below, out of 687 internal flooding contacts referred to the maintenance contractor for action, only 44 (6%) were confirmed internal flooders. The Company would argue that this is a significant improvement on AIR10 performance, where 1233 contacts translated to 11 confirmed incidents (1%),

however, this and other findings detailed below, suggests the script is still not appropriate and that there is an overall lack of understanding of the DG5 indicator amongst call centre staff. In order to assess the effectiveness of the revised script, we requested a number of recordings of actual calls, however at the time of writing, these had not been made available to us. Not withstanding this, we would recommend specific DG5 familiarisation training of all front line staff, to ensure; the correct line of questioning is followed; and call centre staff understand the information provided to them by the customer. Incorrect assessments at the point of contact incorrectly divert maintenance resources away from where they're needed.

2. When the maintenance contractor attends a flooding incident, they are required to complete a 'Flooding Incident Report' (FIR), providing sufficient information relating to the incident to enable NI Water to make an accurate assessment of flooding risk. Despite the concerns we raised in AIR10, the maintenance contractor is still not substantively completing the FIR, requiring NI Water to make detailed DG5 assessments based on scant / non-existent evidence after the incident has cleared. The collection of relevant information at the time of an incident, would simplify the DG5 reporting process, and reduce the level of follow up customer verification required from NI Water. We believe the structure and content of the FIR is broadly okay (although a few additional improvements are suggested below), however it needs to be fully populated for each incident. Supporting photographic/sketch evidence should also be attached to each FIR and evidence provided to confirm that the full extent of flooding has been determined. Where there is no evidence of flooding, the contractor must make contact with the customer on site to determine the true nature of the operational problem, and document this on the FIR.

3. The verification and assessment of every 'flooding incident' is currently the responsibility of a single NI Water staff member (the system owner), which may impact on the degree of rigour that can be applied to each 'incident', demonstrated by a number of possible errors identified in the selection of incidents reviewed below. This is hardly surprising; given the large number of incidents reported and the fact the 'system owner' is detached from the incident. We consider it would be prudent for the local Customer Field Manager (CFM) to take ownership of the flooding incidents reported in his/her area. During our audit we reviewed a few examples where the CFM was involved in the incident investigation. The CFM was able to utilise their operational experience to assess the flooding mechanism, discuss the incident with the customer and fully complete the FIR, providing a comprehensive audit record to assist in incident assessment. We have seen evidence of this approach at other companies, resulting in an improved understanding of flooding incidents and mechanisms, facilitating improved data confidence and network understanding.

4. The introduction of the 'DG5 Panel' is a positive initiative, which adds further rigour to the reporting process and demonstrates improved governance. We consider there is scope for additional value to be derived from the collective technical/operational skills of the Panel, through a more active challenge of proposed additions and severe weather exclusions. The Reporter's review and challenge of [x], is a case in point (see details in

Annex 3 below), where an independent review of the GIS and other records may have resulted in a different assessment.

In addition to the general observations and recommendations made above, we have also undertaken a critical desktop evaluation of the Company's DG5 methodologies and processes, based on our understanding of processes in E&W. This review was completed by another Halcrow Reporter team, to provide a different perspective.

- **Incident Definition**

NI Water defines a single incident as: "*a single incident includes recorded complaints from the same property on the same day or within three days*".

In comparison, the Ofwat definition is: "*a flooding incident is defined as an event of internal flooding from a public sewer (whether foul, combined or surface water)*". A flooding incident would be confirmed by the operations gang attending – multiple reports of the same incident should be filtered out by the call centre.

- **Incident attendance**

The LoS Methodology flow chart is short on detail about what happens when the operations contractor attends the incident. This should be enhanced to detail NI Waters' expectations of the contractor attending the incident.

Some E&W water companies will leave a leaflet with customers who have suffered sewer flooding explaining their rights and entitlement to compensation. NIW could consider leaving something similar.

NI Water's stated response time to an internal flooding incident is 4 hours. For leading E&W companies it is 2 hours.

- **Flooding Incident Report Form**

Whilst the content of NI Water's Flooding Incident Report form is broadly okay, it is poor compared to those used by leading E&W water companies. It is a paper format, the tick boxes are poorly set out, there is no clear guidance on completing the form and it is missing some key data requirements.

Specific comments on NI Water's form include:

- Nowhere for other affected properties to be included/reference to other incident forms, or recording number of affected properties
- Basement/cellar not defined as inhabited/uninhabited (for reporting purposes)
- No tick-box for "Not NI Water problem" or private sewer. Therefore there is uncertainty if the contractor arrives and determines that problem is not what customer described or problem is not caused by NI Water asset.
- Good practice to include estimate of extent of the area effected by external flooding (e.g. 5m x 3m 100mm depth).
- Cause of flooding: no space to describe "other". "Overloaded sewer" and "overloaded pumping station" are key causes that are missing. Add "Burst rising main", "Third Party", and "Land Drainage". Amend "defective road gully" to "highway run-off due to blocked gulley or inadequate highway drainage."

- M&E equipment failure could be better defined, broken down to “Pumping Station Failure”, “CSO / Overflow failure”, and “Anti-flood device failure” (could include additional equipment types).
- There is nowhere to record if a pollution incident has occurred as well.
- Could include “consequence of flooding” in anticipation of a future risk based approach to sewer flooding.
- Need to clearly identify if follow-up work is required. Could be specific tick-boxes, e.g. “sewage clean-up, “repair collapsed sewer.”
- “5. Previous History” – clarify, previous history of flooding. Include space for comments.
- “6. Weather conditions” could be simplified, say “dry”, “wet”, “heavy rain.”
- Need to record action taken by contractor.
- Need to identify if mitigation measure (e.g. non-return valve) fitted at property.
- Photos of flooding incident should be provided electronically.

- **Investigation of internal flooding incidents**

The methodology flow chart states that the customer should be contacted to confirm the incident was internal flooding. This infers that the flooding report from the contractor is uncertain or confidence is the data provided is low.

“Wastewater Business Unit carries out site investigations to confirm….cause of flooding”. This should include CCTV survey of surrounding sewers to check if there are any sewer defects or infiltration issues that could have caused flooding. Operational assessment should be carried out to check network equipment (e.g. pumping stations, tidal valves, storage tanks) operating correctly at time of incident.

The Maintenance Rules Report states “*Where a property has flooded as a result of failure of a mitigation device, it should be reported as an overloaded sewer flood*”. This is incorrect; we believe it should be reported as an equipment failure.

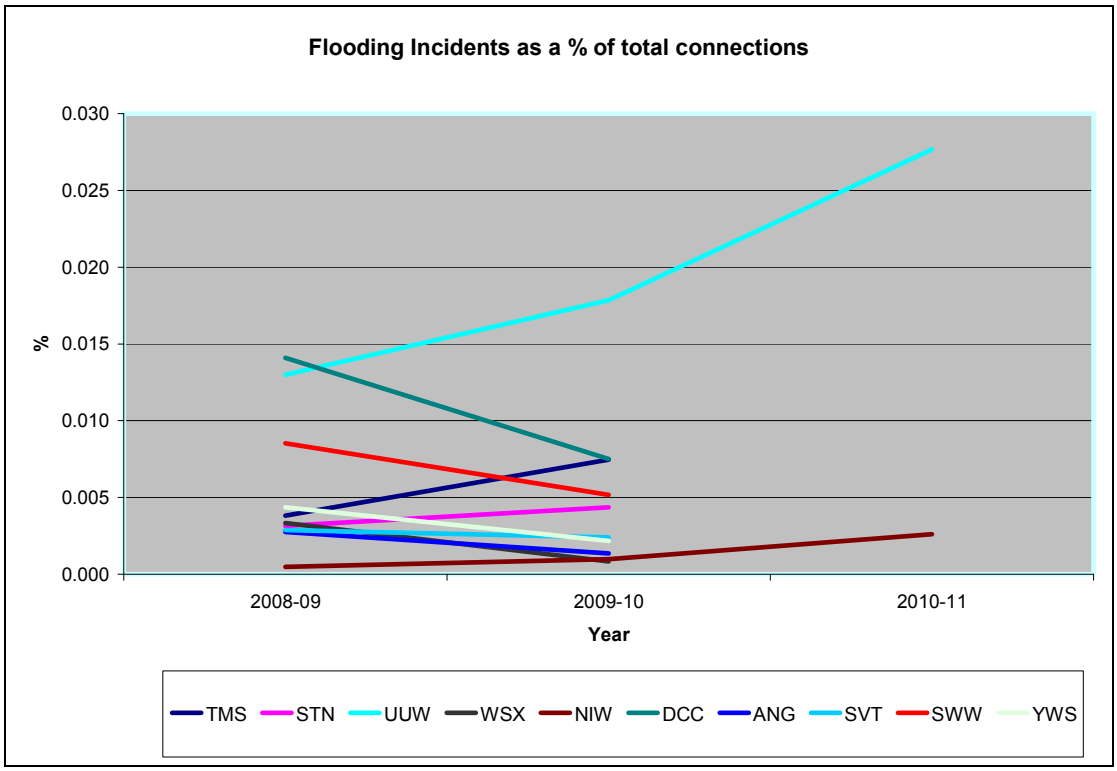
The “Asset Performance DG5 Determination Report” template (as included in the appendix to the Maintenance Rules Report) could be improved to be more concise, but without reviewing some actual reports it is difficult to comment fully on their adequacy.

4.2.2 AIR11 Flooding Incidents (overloaded sewers)

For AIR11, NI Water has reported six confirmed incidents of internal flooding, affecting four properties, of which [x], experienced three incidents during the year.

In AIR10, we highlighted the low proportion of confirmed incidents of internal flooding when compared to the number of contacts from customers reporting incidents of internal flooding. Whilst the number of contacts has reduced significantly for AIR11 (1233 down to 687), thanks in part to further revisions to the ‘sewer flooding script’ (as discussed above), we remain concerned that the number of confirmed incidents of internal flooding still seems disproportionately low for a company of NI Water’s size. In order to assess our concerns, we compared the number of internal flooding incidents (overloaded sewers) per domestic property connected to the sewerage system (T3 L3 / T3 L1) for NI Water and E&W WASCs.

As demonstrated in the graph below, our concerns appears to be borne out, with NI Water experiencing a lower proportion of internal flooding incidents (overloaded sewers) than E&W. Although it could be argued that performance is in line with some of the better performing E&W companies, NI Water has not had the benefit of >10 years of targeted investment to resolve known flooding issues.



* NES removed from analysis as extreme outlier

We discussed these findings with the Company who stated that the reported numbers should be a true reflection of performance during the year. They correctly argued that the NI Water sewerage maintenance contractors are financially incentivised to carry out internal flooding cleanups and that customers would be inclined to escalate complaints to the Company should the initial response not meet the customers expectations. This, and the improved rigour applied to incident assessment, as evidenced by the Reporter during the year, would suggest that the performance is broadly in line with the reported numbers. Assuming the above assertions are correct, there must be other factors affecting what would appear to be 'exceptional' performance. These could include a lack of public awareness of the Company's responsibilities w.r.t DG5, overall sewerage design (network configuration and inherent capacity), topography, impermeable area ratios and differing weather patterns to E&W, however we have not observed differences in such explanatory factors

4.2.2.1 Audit Checks

In order to test the process adopted by NI Water to assess and correctly verify all properties that have flooded during the year we undertook a detailed review of the

majority of properties identified as flooding during the year, or identified during the year as historically flooding. Our detailed findings can be found in Annex 1 below

In addition to those incidents that occurred during the year and were added to the DG5 Register, we also reviewed a random sample of incidents (reported during the year) that were excluded from the DG5 Flooding Register, the results of which can be found in Annex 2 below.

On the basis of our findings, we believe the correct assessment appears to have been made on most of the occasions, particularly for those properties confirmed to have flooded internally.

However, for the excluded incidents (Annex 2) the NI Water 'system owner' took it upon himself to contact all customers associated with the above selected incidents, in order to confirm the nature and mechanism of flooding. If the proactive work of the system owner had not occurred prior to our audit, there would have been very limited information available to confirm the assessment made.

On the basis of our findings, we believe there is a significant education/training issue, whereby the front line call centre staff do not appear to understand the DG5 indicator. This may also explain why the NI Water maintenance contractors do not consider it necessary to collect sufficient information whilst on site.

4.2.3 AIR11 Flooding Incidents (overloaded sewers attributed to severe weather)

For AIR11, NI Water has reported 10 incidents of internal flooding (overloaded sewers) that were attributed to severe weather.

We were advised that NI Water has obtained an ad-hoc radar based storm analysis report from the Met office, providing a storm return period (SRP) for all internal flooding (overloaded sewer) incidents. Confirmed internal flooders with an SRP >1in20yrs are then reported in Line 4. Whilst this represents an improvement in approach from that adopted previously, the industry approach to severe weather assessment has moved on significantly in recent years. In our experience, we have found the ad-hoc Met Office reports to be expensive and not always representative of a given storm event at a particular location. Rainfall, by it nature, is variable in concentration and intensity, as such a single point assessment of SRP will often not be representative of the true intensity of a rainfall event. On this basis, the Company's approach will, in all likelihood, understate the number of properties flooding which could be excluded from the DG5 Register as a result of severe weather. We have found that companies in E&W now utilise real time radar based rainfall depth and duration data from the Met Office Nimrod system, which is provided for each 1km^2 within the region. In order to assess the SRP for a given location, companies typically adopt the highest SRP recorded in the immediate 1km^2 grid and the surrounding eight 1km^2 grids. This approach has highlighted the variability of SRP across a drainage area, and thus the impact of that particular storm event on the network.

We are unsure of the availability or costs associated with the acquisition of raw radar data for NI, and given the relatively low number of incidents reported, may be

uneconomical, but would recommend the Company explore the feasibility of this approach as a future initiative.

4.2.3.1 Audit Checks

As above, we reviewed nine of the 10 incidents attributed to severe weather, and have summarised our findings in Annex 3 below

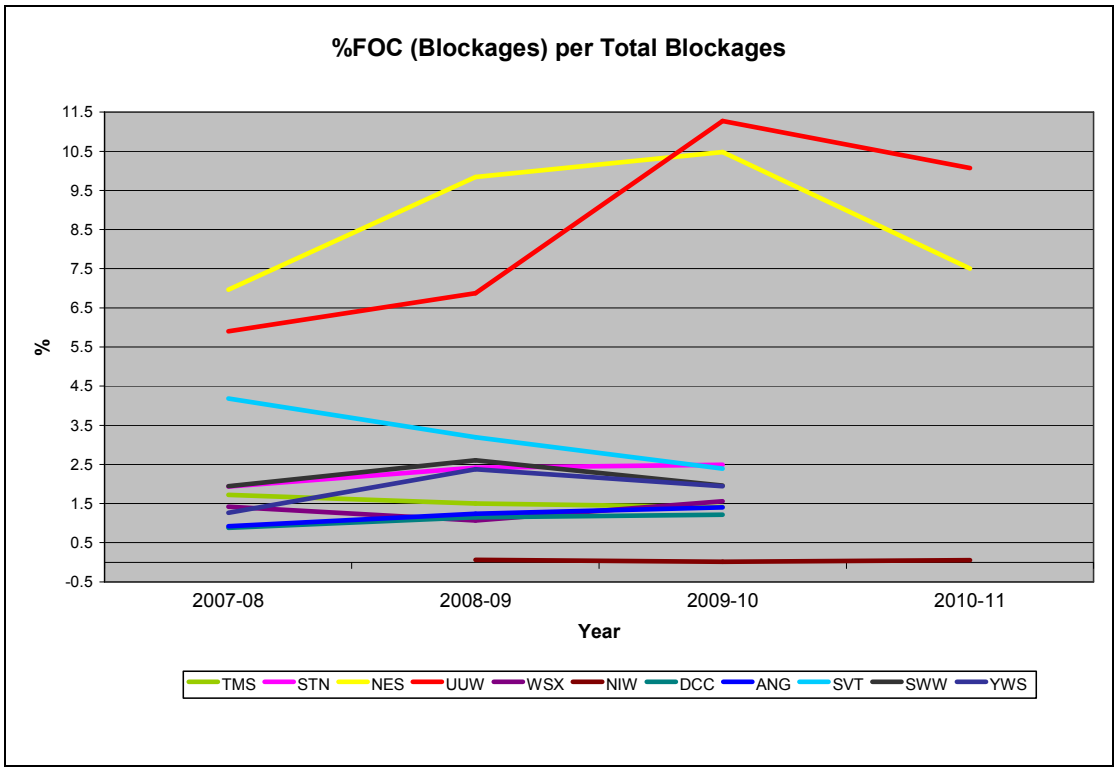
As can be seen in Annex 3, we have concerns over the Company's assessments of the majority of the incidents attributed to severe weather during the year and would recommend that the properties affected are reconsidered.

Not withstanding the above, we highlighted to the Company that all incidents of internal flooding (overloaded sewers) need to be reported in Table 3 Line 3, including those attributed to severe weather. As such, on the basis of the numbers reviewed at year end, Line 3 should be 16 not 6. However, as we have highlighted above (and in Annex 3 below), we do not consider 9 of the 10 severe weather exclusions to be correctly assessed

4.2.4 AIR11 Flooding Incidents (other causes)

For AIR11, NI Water has reported 28 incidents of flooding due to other causes, 14 due to blockages, 10 due to collapses and 4 due to equipment failure. As above, we queried the relatively low number of flood causing blockages when compared to the total number of blockages reported during the year, and compared overall performance with that experienced in E&W.

As demonstrated in the graph below, NI Water is an outlier in FOC (blockage) performance, experiencing a negligible number of FOC serviceability failures over the past few years.



4.2.4.1 Audit Checks

As above, we reviewed a selection of FOC incidents reported during the year. As summarised in Annex 4 below, our findings, are generally supportive of the Company's assessment.

4.3 AIR11 DG5 Properties on the At Risk Register

4.3.1 Restatement of Historic At Risk Register

We reported in AIR10 that NI Water had developed an appraisal procedure which they were in the process of applying to the historic Flooding Register in order to verify the nature, frequency and extent of flooding at each property.

We found that for each property/flooding location, the following review/investigation process was proposed:

- Assess the history of flooding incidents at each property from 'Operations' records
- Interview local Operations staff to gather any local knowledge on the flooding history of the property
- Interview local residents – A questionnaire based concentric ring survey will be undertaken to confirm the validity and extent of historic flooding incidents
- Assess topography surrounding affected property
- Run/review results from existing network model to assess theoretical flooding volumes and locations
- Compile report with recommended 'at risk' status for each property.

In 2009/10 (AIR10), NI Water held a series of workshops with relevant 'Operations' staff to review and assess each of the properties on the Flooding Register as at 31/12/08. In summary, we found that each of the 823 properties on the 2in10 and 1in10 'At risk' register was placed in one of four categories, as follows:

Category	Category Definition	No. of Properties
Category 1	High probability that flooding caused by overloaded sewer	243
Category 2	Unsure whether flooding caused by overloaded sewer	118
Category 3	High probability that flooding not caused by overloaded sewer	290
Category 4	Work has already been implemented to address the problem	163
Not Categorised		9

During the year, we found that the Company has almost completed an exercise to investigate, assess and cleanse the 742 historic flooding records that were on the Flooding Register as at 31/3/08. The balance of the 823 properties highlighted above (81), were reviewed and allocated during the course of AIR10.

During the course of our audits, we held detailed discussions with the Asset Performance team, who were responsible for completion of the investigation of the 742 historic properties, and found that the investigation phase entailed the following activities:

- Analyse operational workshop findings for each property
- Undertake a site visit; including customer interview and review of topography
- Review of GIS details of surrounding network, to identify any network configuration anomalies that would cause hydraulic capacity issues
- Review of non-infrastructure performance within the drainage area
- Review existing network models, where available, to assess the hydraulic performance of the network adjacent to the property. We found that existing models have only been available for circa 5% of properties on the historic flooding register
- Forward suspected flooders to E&P for detailed investigation and solution development.

At year end, we found that 174 historic properties were either confirmed to be at risk of flooding or subject to further investigation. In addition to this, a further 37 properties, where mitigation (mainly NRV) had previously been installed, were also included on the 1in20yr Flooding Register, resulting in a total of 211 properties on the DG5 1in20 Flooding Register for AIR11.

At the time of audit (June 2011), we found that investigation of the historic Flooding Register has continued by NI Water Asset Performance section (NIAP), with circa 85 historic properties remaining on the DG5 1in20yr Flooding Register.

Of the 174 historic properties (those without mitigation) on the 1in20yr Flooding Register, we found that 59 of the most likely flooders have been forwarded to E&P for independent review by Consultants. We reviewed the Appraisal document for [x] and [x], and found that a comprehensive investigation had been completed, including a flooding extent assessment and would recommend that a similar review is completed for all properties on the Flooding Register, going forward

4.3.1.1 Audit Checks

In order to test the process adopted by NI Water to assess and correctly allocate all properties that have historically been on the NI Water Flooding Register, we undertook a review of a random sample of properties that were:

- Confirmed as not at risk of flooding (due to overloaded sewer) and removed from the Flooding Register.
- Confirmed as flooding internally (due to overloaded sewer) and retained on the Flooding Register.
- Confirmed as flooding internally, but due to other causes / severe weather and removed from the Flooding Register.

For convenience, we have appended our detailed findings in Annex 5 below, but summarised our observations and recommendations for each block of incidents reviewed below. Overall recommendations have then been summarised below that.

Historic properties removed from Flooding Register

- In undertaking our review of properties confirmed as not at risk of flooding (due to overloaded sewer) and removed from the Flooding Register, we found that NI Water has not retained formal records of the investigation, and our findings detailed in Annex 5 are based on anecdotal recollections and individual team members notes.
- Although there was a limited audit trail available to verify the Company's assessment, it was apparent that NI Water had investigated each incident, reviewed all available information and where possible spoken to the customer affected.
- We broadly agree with the Company's decision to remove these properties from the historic flooding register, but would recommend that the decision process is formally documented and retained

Historic properties retained on the Flooding Register

- In undertaking our review of historic properties retained on the DG5 Flooding Register, we found that NI Water has prepared and retained a 'flood pack' of information supporting the Company's decision. These records have also been digitised and hyperlinked to the Company GIS system.
- Although there was a limited audit trail available to verify the Company's assessment, it was apparent that NI Water had investigated each incident, reviewed all available information and where possible spoken to the customer affected.

- It was apparent that some properties have been ignored, despite anecdotal evidence suggesting they have flooded.
- We found the investigation and assessment process to not be particularly well structured or comprehensive, eg. use of CCTV. Reporter made some obvious challenges that should have been identified during the appraisal process and if not then, by the DG5 panel.
- Some incidents of double counting were identified
- Our audit exposed the inadequate level of information/evidence collected at the time of an incident. Processes need to be improved to ensure basic levels of information are captured re: nature of flooding, impact of flooding and where possible, flooding mechanism
- Where the CFM has taken an interest in an incident, the level of information available has increased significantly, enabling a reasoned assessment to be completed – recommend CFM and/or staff attend all incidents of internal flooding and complete FIR

Historic Properties (Internal Flooding – Other Causes or Severe Weather) removed from the Flooding Register

- A limited audit trail is available to confirm the nature and mechanism of incidents
- Assessment is primarily based on initial customer contact, and what is said by the customer.
- We would expect the detailed completion of a FIR, identifying the impact of the incident, investigations undertaken (i.e lift MH inspect flow etc), and actions taken (i.e clear blockage between MH 1 and MH2).

General Observations and Recommendations

In summary, for each property on the historic flooding register it was apparent that:

- NI Water had investigated each incident, reviewed all available information and where possible spoken to the customer affected.
- However, our review further exposed a deficiency of evidence collected at the time of an incident. We consider that processes need to be further improved to ensure basic levels of information are captured re: nature of flooding, impact of flooding and where possible, flooding mechanism.
- Where the Customer Field Manager (CFM) has taken an interest in an incident, the level of information available has increased significantly, enabling a reasoned assessment to be completed. We recommend CFM and/or technical support staff attend all incidents of internal flooding and ensure the FIR is fully completed, at least until they are confident the maintenance contractor are responding appropriately.

4.3.2 AIR11 At Risk Summary

For AIR11, NI Water has reported nine properties on the 2in10/1in10yr Flooding Registers, of which four properties experience flooding during the Report Year. We reviewed the majority of these incidents, all of which have been presented to the 'DG5 Panel' for review and allocation, and have included summaries in Annex 1

below. Overall, we consider the allocation of the 9 properties to the 2in10 and 1in10 Flooding Registers to be appropriate.

As highlighted above, all historic properties, verified in the recent review have been included on the 1in20 Flooding Register, which is in accordance with the Reporting Requirements for Table 3.

Where flooding incidents occurred towards the end of the Report Year, but a decision was pending at year-end, subject to further investigation, these properties have been reported in Line 15a. At year-end, eight properties were still subject to further investigation. We reviewed the details surrounding [x] (summarised in Annex 1 below) and confirm further investigation is still required.

We queried why the Company has not reported any properties with 'Restricted Toilet Use' despite RTU being identified in a number of the incidents reviewed during our audit. The Company advised that their systems did not comprehensively capture all properties affected by RTU, however for AIR12 all identified properties affected by RTU will be separately captured.

4.3.3 AIR11 Annual Changes to the Flooding Registers

Register movements reported during the year related primarily to the restatement of the historic flooding register.

In terms of removals due to company action (Lines 22 and 30), the Company are currently amending their processes in order to capture the beneficial use of each scheme in each year on CPMR. However, for AIR11, the Company has identified two schemes completed during the year, whereby four properties were removed from the 1in20yr Flooding Register. The schemes, completed in [x] (3 props) and [x] (1 prop), involved the upgrade of 605m of sewers, construction of 432m of new sewers, and the closure of 2 CSOs; and the upsize of 200m of 450mm sewer to 750mm respectively. The works were completed at a total estimated cost of £850k and £820k respectively, although both schemes delivered additional benefits, to those claimed in Table 3.

We were also advised that a number of other DG5 schemes were delivered on properties that were subsequently removed from the Register as a result of the NIAP review or were proven to be external flooders only.

4.4 Confidence Grades

The Company has assigned a confidence grade of B3 to Lines 2 to 11, on the basis that all data is derived from Ellipse, and that the Company undertakes a desktop investigation of 10% of all reported incidents. We acknowledge the additional layer of investigation undertaken in order to verify each incident, but would expect to see additional information captured at the time of the incident, in order to improve the accuracy grade, to the level suggested by the Company. Furthermore, as the number of reported incidents is so small, we would consider any variance in numbers would be greater than +/-10%. Based on the observations/challenges made (summarised above), highlighting the possible movement in numbers, we consider a B4 to be more appropriate for these lines.

A confidence grade of B4 has been assigned to Lines 12 to 15 and 22 to 34, which we consider to be appropriate, given the considerable amount of work that has been carried out in 'cleansing' the historic internal flooding records, and the increased rigour applied by the 'DG5 Panel' to assess all 'in year' incidents.

A confidence grade of B2 has been assigned to Line 15a, which is appropriate, based on the fact these are actual known properties.

All other confidence grades are consistent with our understanding of the systems used to derive the data.

5. Consistency Checks

- Line 14 = Line 14 previous year – (Line 22 + Line 23) + (Line 24 + Line 25)
- Line 15 = Line 15 previous year – (Line 30 + Line 31) + (Line 32 + Line 33)

Date: 29 July 2011
Prepared by: HMS

ANNEX 1

[x] – Not previously on DG5 Flooding Register

Background

- Flooding reported on 4 occasions during the year – 27/1/10, 23/4/10, 26/4/10 and 27/12/10
- CFM confirmed 75m^2 cleanup completed

NIW Investigation

- No evidence that FIR was completed
- NIAP visited the site to assess the topography / 'lay of the land'
- NIAP interviewed the customer in order to assess flooding frequency and mechanism – customer confirmed internal flooding

Decision

- DG5 panel recommend addition to 2in10yr Flooding Register
- **Reporter Agrees ✓**

[x] – Not previously on DG5 Flooding Register

Background

- Internal flooding reported on 2 occasions during the year – 23/8/10 and 25/8/10
- Customer confirmed that they protect property using sandbags, preventing internal flooding on a monthly basis. Evidence of external flooding on Ellipse confirms this

NIW Investigation

- No evidence that FIR was completed
- CCTV inspection completed.
- Investigation ongoing, although capacity issues with network and receiving WwTW identified.
- Scheme already proposed

Decision

- DG5 panel recommend addition to 2in10yr Flooding Register
- **Reporter Agrees ✓**

[x] – Not previously on DG5 Register

Background

- NI Water has no historic record of internal flooding at this location, although 6 incidents of external flooding reported

NIW Investigation

- Properties along [x] were investigated as part of an unrelated scheme development
- Customer Field Manager visited customer, who confirmed 3 separate internal flooding incidents – 15/6/07, 3/2/08 and 30/3/10
- Met Office reports confirm SRP 1in10-50yr on 15/6/07 and 1in3yr on 30/3/10
- DAP model for the area confirmed a network capacity issue, with risk of flooding 1in10yr.
- Recommendation to add property to 1in10yr Register presented to DG5 Panel.

Decision

- Because of frequency of events, DG5 panel recommend addition to 2in10yr Flooding Register
- **Allocation is okay, pending further investigation, although the Reporter is concerned that is there still some uncertainty as to the nature of the flooding (internal or external) and the mechanism of flooding. An SRP of 1in10-50yr was reported for the 15/6/07 incident suggesting possible severe weather.**

[x] – Not previously on DG5 Register

Background

- NI Water has no historic record of flooding at this location, although other [x] properties on the historic Flooding Register.
- Incident reported by Belfast City Council on 29/7/10, as local government building affected.

NIW Investigation

- Customer Field Manager (CFM) visited site, and confirmed that property is 600mm below the sewer cover level, resulting in flooding even when sewer was not at peak capacity. FIR completed.
- Anecdotal evidence of very heavy rainfall on the day of flooding, although Met Office only confirmed an SRP of 1in9yr, highlighting the vagaries of rainfall.

Decision

- DG5 panel recommend addition to 1in10yr Flooding Register
- **Reporter agrees, although letter from Belfast City Council confirmed flooding at [x] and [x] as well. No evidence that [x] has been investigated and assessed and [x] has been excluded due to severe weather, which is not consistent with our findings above.**

[x] – Not previously on DG5 Register

Background

- NI Water has no historic record of flooding at this location on Ellipse, although multiple external incidents reported at [x]
- Incident identified by Customer Field Manager on 1/4/10.

NIW Investigation

- Customer Field Manager (CFM) visited customer, who confirmed frequent incidents of flooding (although not always reported), whereby external flooding enters airbricks, leading to internal flooding of the sub-floor
- CFM inspection confirmed evidence of internal flooding at the property. FIR completed.
- Met Office reports confirm SRP 1in2yr on 1/4/10.

Decision

- DG5 panel recommend addition to 1in10yr Flooding Register
- **Reporter Agrees ✓ although could argue that on the basis of CFM evidence, the property could be moved to the 2in10yr Flooding Register**

[x] – Not previously on DG5 Register

Background

- NI Water has no historic record of flooding at this location
- Internal flooding reported on 3/2/11, with subsequent incident on 7/6/11

NIW Investigation

- Surcharging MH, causing internal flooding of shop through roller shutter door
- Comprehensive FIR completed by CFM
- Good photographic evidence of the second flooding incident
- CCTV completed on 7/6/11, multi sized pipe causing possible blockage
- Sewer cleaned on 7/6/11

Decision

- Investigation still ongoing, currently reported in T3 L15a
- **Reporter Agrees ✓ although could argue that on the basis of CFM evidence, the property could be moved to the 2in10yr Flooding Register**

ANNEX 2

[x]

Background
- Flooding reported on 27/10/10

NIW Investigation
- Conflicting information – FIR suggests internal flooding did not occur, whilst post incident investigation suggests internal flooding – although no evidence to confirm
- Met Office SRP 1in113yrs reported

Decision
- Internal flooding – severe weather
- **Reporter Agrees ✓ although uncertain as to whether internal flooding actually occurred**

[x]

Background
- Flooding reported on 1/4/10

NIW Investigation
- Only evidence available to make assessment are initial customer caller notes
- Customer contacted after incident was selected for review – confirmed heavy rainfall and nearby river in flood. Manhole in basement surging.
- Subsequently confirmed that NI Rivers Agency opened flood gates upstream of property, causing flooding of combined system.
- NI Water advised new separate system in area under construction

Decision
- Not at risk
- **Reporter Agrees ✓ although there was no evidence available to make the assessment, until customer was contacted by data provider.**

[x]

Background
- Flooding reported on 6/4/10

NIW Investigation
- SPS failed causing sewer to back up
- Customer contacted – confirm external flooding to grassed area
- SPS trip levels re-set to a higher level. No subsequent incidents

Decision
- External Flooding – Equipment Failure
- **Reporter Agrees ✓**

[x]

Background
- Flooding reported on 8/4/10

NIW Investigation
- Only evidence available to make assessment is initial customer caller notes. No information on FIR
- Subsequent review confirmed external flooding to garden only
- Blockage cleared, flooding coincided with burst water main, that exacerbated the problem

Decision
- External Flooding – Blockage
- **Reporter Agrees ✓**

[x]
Background • Flooding reported on 17/4/10 NIW Investigation • Contractor reported internal flooding in order to extradite CCTV inspection • Customer contacted who confirmed external flooding only • Still awaiting CCTV report, despite incident occurring over 12months ago Decision • External Flooding – Blockage • **Reporter Agrees ✓**

[x]
Background • Flooding reported on 9/5/10 NIW Investigation • Customer contacted who confirmed external flooding only • Blockage cleared Decision • External Flooding – Blockage • **Reporter Agrees ✓**

[x]
Background • Flooding reported on 5/6/10 NIW Investigation • Private jetting on neighbouring property cause surge in toilet • Maintenance contractor states no flooding, but customer states flooding of toilet Decision • ????? • **Reporter believes there is insufficient evidence to make an assessment**

[x]
Background • Flooding reported on 22/8/10 NIW Investigation • Reported as external flooding causing internal, but only external to customers garden • Seems to be a misunderstanding of what constitutes internal and external flooding • Customer and call centre operator , defined internal as being within the customers property boundary Decision • External Flooding – Overloaded sewer • **Reporter agrees, however this exposes a significant education/training issue, whereby the front line staff do not appear to understand the DG5 indicator. This may also explain why the NI Water maintenance contractors do not consider it necessary to collect sufficient information whilst on site.**

[x]
Background • Internal flooding reported on 29/8/10 NIW Investigation • Incident reviewed as part of NI Water 10% top slice audit • NIAP confirmed flooding occurred on a private sewer, therefore not NI Water responsibility Decision • Not at Risk • **Reporter agrees**

[x]
Background • Internal flooding reported on 3/2/11 NIW Investigation • NIAP confirmed flooding occurred on a private sewer, responsibility of NI Housing Authority • Currently reported as FOC – Blockage on flooding register Decision • Not at Risk • **Reporter agrees with ultimate decision, although property needs to be removed from the AIR11 figures.**

ANNEX 3

[x] – Not previously on DG5 Flooding Register

Background
- Flooding reported on 26/12/10, during freeze/thaw event
- 7 properties affected

NIW Investigation
- Overland flow caused by snow melt (following rapid jump in temperature)
- Surface water drains were blocked with ice, causing flooding to properties
- CCTV inspection showed no faults/defects

Decision
- DG5 panel recommend reporting against; internal flooding – severe weather
- **Reporter does not believe this to be an NI Water problem. Flooding caused by overland flow (snow melt) and has nothing to do with the performance of the NI Water sewerage network. Incorrect reporting of 7 incidents of internal flooding – severe weather**

[x]

Background
- Flooding reported on 2/11/10

NIW Investigation
- External flooding initially recorded, although Ellipse stated flooding to integral garage – assessment changed to internal
- Customer suggested heavy rainfall – no SRP to support this

Decision
- Internal flooding – severe weather
- **Reporter disagrees. We undertook a detailed review of this incident and found the following:**
  - **Ellipse confirmed that multiple (internal and external) flooding incidents have occurred at this address (circa 20) suggesting this property should be on the DG5 flooding register**
  - **Review of GIS infers storm water drain passes under garage and a MH is located in garage, suggesting flooding caused by storm water surcharge**
  - **Review of network configuration (3 sewers converging into 1) suggests sewer could back up during periods of high flow**
  - **On the basis of the above, we believe further investigation should be undertaken to confirm flooding mechanism, but incident should be included on DG5 Register and not attributed to severe weather**

[x]

Background
- Flooding reported on 27/10/10

NIW Investigation
- Conflicting information – FIR suggests internal flooding did not occur, whilst post incident investigation suggests internal flooding – although no evidence to confirm
- Met Office SRP 1in113yrs reported

Decision
- Internal flooding – severe weather
- **Reporter Agrees ✓ although uncertain as to whether internal flooding actually occurred**

ANNEX 4

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 3/2/11 NIW Investigation • Flooding caused by blockage, although no evidence to confirm blockage located and cleared or that a CCTV inspection was completed Decision • Internal flooding – blockage • **Reporter Agrees ✓ although limited audit trail to support decision**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 11/2/11 (overflowing toilet) NIW Investigation • Flooding caused by SPS failure Decision • Internal flooding – equipment failure • **Reporter Agrees ✓ although limited audit trail to support decision**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 13/12/10 NIW Investigation • Flooding caused by collapse, which was subsequently repaired on 1/3/11 Decision • Internal flooding – collapse • **Reporter Agrees ✓ although duration between collapse and repair seems too long**

ANNEX 5

Historic properties removed from the DG5 Register

[x] – On historic 1in10yr Flooding Register

Background

- Initial assessment based on information derived from historic CEMS records
- Flooding reported on a single occasion only – 1/12/05, with no subsequent incidents reported.

NIW Investigation

- In reviewing the incident, we found that NI Water's 'Asset Performance' section (NIAP) reviewed the network configuration on GIS to identify any configuration anomalies that would cause hydraulic capacity issues – none found
- NIAP visited the site to assess the topography / 'lay of the land'
- NIAP interviewed the customer in order to assess flooding frequency and mechanism – customer indicated flooding originated from road gully
- Subsequent review of CEMS record, suggested blocked road gully – not NI Water responsibility.

Decision

- Remove from Flooding Register
- **Reporter Agrees ✓**

[x] – On historic 1in10yr Flooding Register

Background

- Flooding reported on a single occasion only – 1/12/05, with no subsequent incidents reported, although a further incident was recorded at [x] on 17/05/09 (but not on Flooding Register)
- A review of CEMS suggested that flooding occurred at [x] (but not on Flooding Register)

NIW Investigation

- In reviewing the incident, we found that NI Water's 'Asset Performance' section (NIAP) reviewed the network configuration on GIS to identify any configuration anomalies that would cause hydraulic capacity issues – none found
- NIAP visited the site to assess the topography / 'lay of the land'
- NIAP interviewed the customer in order to assess flooding frequency and mechanism – customer confirmed that no flooding had occurred
- Ellipse records suggested blockage was cleared on [x] at time of flooding.

Decision

- Remove from Flooding Register
- **Reporter agreed that flooding probably due to blockage, but concerned that incidents to neighbouring properties not identified or captured.**

[x] – On historic 1in10yr Flooding Register

Background

- CEMS records inferred that property affected by internal flooding
- Record of external flooding occurring on 11/08/07, with no subsequent incidents reported.

NIW Investigation

- NIAP identified that a repair of the sewer was completed in 2009, with no further flooding reported

Decision

- Remove from Flooding Register
- **Reporter Agrees ✓**

[x] - On historic 1in10yr Flooding Register

Background

- Record of internal flooding occurring on 02/12/06, with no subsequent incidents reported.

NIW Investigation

- NIAP identified that the flooding incident occurred during the laying of a new sewer in the street and thus caused by a third party.
- No evidence of hydraulic incapacity

Decision

- Remove from Flooding Register
- **Reporter agrees, although we queried whether flooding was caused by the act of a laying a new sewer, or was the problem rectified by the new sewer.**

[x] - On historic 1in10yr Flooding Register

Background

- Record of internal flooding occurring on 21/08/00, with no subsequent incidents reported. 16 properties flooded on this street on this date

NIW Investigation

- Anecdotal evidence suggested very heavy rainfall
- A Met Office report for the location confirmed a 1in73yr SRP

Decision

- Remove from Flooding Register due to severe weather
- **Reporter Agrees ✓**

[x] – On historic 1in10yr Flooding Register

Background

- Record of internal flooding occurring on 28/01/08, with no subsequent incidents reported.

NIW Investigation

- [x] is a large village – no address details available – property un-locatable.

Decision

- Remove from Flooding Register
- **Reporter Agrees ✓**

[x] - On historic 1in10yr Flooding Register

Background

- Record of internal flooding occurring on 21/06/02, with no subsequent incidents reported. 29 properties flooded on this street on this date

NIW Investigation

- Anecdotal evidence suggested very heavy rainfall
- A Met Office report for the location confirmed a SRP > 1in100yr

Decision

- Remove all 29 properties from Flooding Register due to severe weather
- **Reporter Agrees ✓**

[x] - On historic 1in10yr Flooding Register

Background

- Record of internal flooding occurring on 21/06/02, with no subsequent incidents reported. 25 properties flooded on this street on this date

NIW Investigation

- Anecdotal evidence suggested very heavy rainfall
- A Met Office report for the location confirmed a SRP > 1in100yr

Decision

- Remove all 25 properties from Flooding Register due to severe weather
- **Reporter Agrees ✓**

[x] - On historic 1in10yr Flooding Register

Background

- Record of internal flooding occurring on 21/08/00, with no subsequent incidents reported. 6 properties flooded on this street on this date

NIW Investigation

- Anecdotal evidence suggested very heavy rainfall
- A Met Office report for the location confirmed a SRP of 1in73yr

Decision

- Remove all 6 properties from Flooding Register due to severe weather
- **Reporter Agrees ✓**

[x] - On historic 2in10yr Flooding Register

Background

- Record of internal flooding occurring on 01/12/05, with 24 properties flooded on this street on this date. Records suggest neighbouring 7 properties flooded on other dates in 2000 and 2007.

NIW Investigation

- NIAP advised these were high profile incidents, caused by an operational problem with the [x] SPS, where screens were blinded, causing inundation of the SPS.
- A scheme was subsequently delivered (KR370) involving the upgrade and renewal of the SPS
- No problems reported since scheme completion

Decision

- Remove all 31 properties from Flooding Register due to company action.
- **Reporter Agrees ✓**

[x] - On historic 2in10yr Flooding Register

Background

- Record of internal flooding occurring on 01/12/05, with 23 properties flooded on this street on this date.

NIW Investigation

- NIAP advised these were high profile incidents, caused by an operational problem with the [x] SPS, where screens were blinded, causing inundation of the SPS.
- A scheme was subsequently delivered (KR370) involving the upgrade and renewal of the SPS
- No problems reported since scheme completion

Decision

- Remove all 23 properties from Flooding Register due to company action.
- **Reporter Agrees ✓**

Historic properties retained on the DG5 Register

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding initially reported on 09/10/00, with suggestion of subsequent incident on 17/08/08 on GIS notes.
- No details on Ellipse to verify nature of flooding.

NIW Investigation

- Internal flooding workshop suggested history of flooding on [x], although no evidence to support this. NI Water has understandably erred on the side of caution and retained property on Register.

Decision

- Add to the new 1in20yr Flooding Register
- Referred to E&P for completion of feasibility study
- **Reporter concerned that nature of flooding not confirmed and that records are not available to support incident. Feasibility study should confirm whether property is at risk of flooding.**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding initially reported on 02/08/00, with subsequent incidents reported on 14/06/07 and 14/07/09.
- Nature of flooding not clear on Ellipse.

NIW Investigation

- In reviewing the incident, we found that NI Water's 'Asset Performance' section (NIAP) reviewed the network configuration on GIS to identify any configuration anomalies that would cause hydraulic capacity issues – a tight (acute angled) bend downstream of the property may cause flow backup.

Decision

- Add to the new 1in20yr Flooding Register
- **Reporter concerned that nature or frequency of flooding not confirmed. We were also concerned that FIR was not completed to confirm whether internal cleanup was completed. Furthermore, the property was included on the Flooding Register twice (internal & mitigation), thus overstating the number of properties on the Flooding Register.**

[x] - On historic 1in10yr Flooding Register (albeit different post code), added to new 1in20yr Flooding Register

Background

- NI Water has no historic record of flooding at this location.

NIW Investigation

- In reviewing the incident, the local Field Manager confirmed that a NRV had been installed on this property to alleviate internal flooding
- NIAP interviewed the customer in order to assess flooding frequency and mechanism and the customer confirmed that the property experienced frequent flooding prior to installation of NRV, but no flooding since installation

Decision

- Add to the new 1in20yr Flooding Register
- **Reporter is concerned that anecdotal evidence confirms frequent flooding at this location, which suggests property should be allocated to the 2in10/1in10 Flooding Registers rather than the 1in20 Register. Furthermore, the property was included on the Flooding Register twice (internal & mitigation), thus overstating the number of properties on the Flooding Register.**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Internal flooding initially reported on 05/10/07, followed by 6 external incidents.

NIW Investigation

- NI Water records confirms a history of blockages at this location, suggesting allocation should be to FOC
- However, DAP model predicts hydraulic flooding in the area (200m from property)

Decision

- Add to the new 1in20yr Flooding Register, due to predicted flood risk
- **Reporter is concerned that flooding history suggests FOC rather than hydraulic causes. Recommend that model is verified to confirm that property is at risk of flooding due to overloaded sewers.**

[x] – On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Single incident of internal flooding at this location, reported on 31/08/05

NIW Investigation

- No NIAP appraisal report for this property, although report found for [x]
- Appraisal Report suggested that a customer questionnaire had been completed, although we were unable to locate it.
- Appraisal report suggested that 6 x downstream and 4 x upstream properties were affected by flooding, but there was no evidence that these properties were contacted/investigated.

Decision

- Add No. [x] to the new 1in20yr Flooding Register
- **Reporter is concerned that there is a very limited audit trail available for this property (and other properties on the street). Although the Appraisal report suggests that 11 properties potentially at risk of flooding, only 3 disparate properties have been added to the Flooding Register. We are concerned that NI Water has under reported the true flooding liability at this location.**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding initially reported on 28/07/00, with no subsequent incidents reported.

NIW Investigation

- Internal flooding workshop suggested history of flooding at this location, although no real evidence to support this. NI Water has understandably erred on the side of caution and retained property on Register.

Decision

- Add to the new 1in20yr Flooding Register
- **Reporter concerned that nature of flooding not confirmed and that records are not available to support incident. Feasibility study should confirm whether property is at risk of flooding.**

[x] – Not previously on DG5 Register

Background

- NI Water has historic record of flooding at this location on 14/7/09, although reported as a blockage only.
- Letter of complaint from resident suggests repeated internal flooding, at least monthly.
- Letter also confirms that contact has previously been made with NI Water CFM (21/5/09) – who confirmed a local sewer capacity issue, but took no further action

NIW Investigation

- Customer Field Manager (CFM) visited property, and confirmed repeated internal flooding through air-vents to sub-floor. FIR completed.
- Suggestion in audit that E&P have already completed remedial work at this location to alleviate the problem, but no evidence available to support this.

Decision

- DG5 panel recommend addition to 1in20yr Flooding Register
- **Reporter Agrees ✓. Feasibility study should confirm whether property should be moved to >1in10yr Flooding Register**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding reported on 15/05/06 and 11/01/08.

NIW Investigation

- Internal flooding workshop suggested history of flooding at this location, although no real evidence to support this. NI Water has understandably erred on the side of caution and retained property on Register.

Decision

- Add to the new 1in20yr Flooding Register
- Referred to E&P for completion of Feasibility Study
- **Reporter concerned that nature of flooding not confirmed and that records are not available to support incident. Feasibility study should confirm whether property is at risk of flooding.**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding reported on 28/07/00, no subsequent incidents reported.

NIW Investigation

- Internal flooding workshop suggested history of flooding at this location, although no real evidence to support this. NI Water has understandably erred on the side of caution and retained property on Register.

Decision

- Add to the new 1in20yr Flooding Register
- Referred to E&P for completion of Feasibility Study
- Subsequent CCTV inspection confirmed blockage – FOC.
- Recommended for AIR12 register movement
- **Reporter agrees ✓**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding reported on 28/07/00, no subsequent incidents reported
- Large number of flooding incidents reported on this date, suggesting severe weather

NIW Investigation

- Internal flooding workshop suggested history of flooding at this location, although no real evidence to support this. NI Water has understandably erred on the side of caution and retained property on Register.
- SRP >1in10yr

Decision

- Add to the new 1in20yr Flooding Register
- Referred to E&P for completion of Feasibility Study
- **Reporter concerned that nature of flooding not confirmed and that records are not available to support incident. Feasibility study should confirm whether property is at risk of flooding.**

[x] - On historic 1in10yr Flooding Register, added to new 1in20yr Flooding Register

Background

- Flooding reported on 02/08/00, no subsequent incidents reported
- GIS suggests recurring flooding

NIW Investigation

- Internal flooding workshop suggested history of flooding at this location. NI Water has understandably erred on the side of caution and retained property on Register.

Decision

- Add to the new 1in20yr Flooding Register
- Referred to E&P for completion of Feasibility Study
- **Reporter concerned that nature of flooding not confirmed and that records are not available to support incident. Feasibility study should confirm whether property is at risk of flooding.**

Internal Flooding – FOCs or Severe Weather

[x] – Not previously on DG5 Flooding Register

Background
- Flooding reported on 1/11/09
- 16 properties affected

NIW Investigation
- Flooding caused by failure of terminal pumping station

Decision
- Internal flooding – equipment failure
- New terminal pumping station has now been constructed and flow transferred to new WwTW
- **Reporter Agrees ✓**

[x] – Not previously on DG5 Flooding Register

Background
- Flooding reported on 10/7/08

NIW Investigation
- Flooding caused by collapse, which was subsequently repaired

Decision
- Internal flooding – collapse
- **Reporter Agrees ✓ although no evidence to confirm repair was completed**

[x] – Not previously on DG5 Flooding Register

Background
- Flooding reported on 10/7/08

NIW Investigation
- Flooding caused by blockage
- Field notes suggest blockage was cleared

Decision
- Internal flooding – blockage
- **Reporter Agrees ✓ although limited audit trail to support decision**

[x] – Not previously on DG5 Flooding Register

Background
- Flooding reported on 21/10/08
- No evidence of incident on Ellipse

NIW Investigation
- FIR suggests this is a recurring problem
- CCTV inspection completed
- Blockage located and cleared

Decision
- Internal flooding – blockage
- **Reporter Agrees ✓ although failing of process evident**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 29/10/08 • No evidence of incident on Ellipse NIW Investigation • Flooding caused by collapse of road and subsequent flow back up. • Nature and mechanism of flooding confirmed with customer Decision • Internal flooding – collapse • **Reporter Agrees ✓ although failing of process evident**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 11/2/11 (overflowing toilet) NIW Investigation • Flooding caused by SPS failure Decision • Internal flooding – equipment failure • **Reporter Agrees ✓ although limited audit trail to support decision**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 1/11/09 NIW Investigation • Flooding caused by failure of terminal pumping station Decision • Internal flooding – equipment failure • New terminal pumping station has now been constructed and flow transferred to new WwTW • **Reporter Agrees ✓**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 19/6/08 NIW Investigation • Flooding caused by blockage • Field notes suggest blockage was cleared Decision • Internal flooding – blockage • **Reporter Agrees ✓ although limited audit trail to support decision**

[x] – Not previously on DG5 Flooding Register
Background • Flooding reported on 11/9/08 NIW Investigation • Flooding caused by jetting in road – toilet surcharge Decision • Internal flooding – equipment failure • **Reporter Agrees ✓ although limited audit trail to support decision**

Table 3a – Sewerage Service – External Flooding

Commentary by REPORTER

1. Background

The information included in this table is used to measure the frequency of actual flooding of external areas from the public sewerage system by foul water, surface water or combined sewage

The Table 3a – Annual External Flooding Summary includes properties externally flooded as a result of overloaded sewers and other causes

Areas on the external "at risk" register cover areas at risk of flooding more frequently than once in twenty years and once or twice in ten years, problem status of the external areas on the register and annual changes to the register.

2. Key Findings and Recommendations

- For AIR11, we have primarily focussed on the verification of the methodology to capture and report against the DG5 (internal flooding) indicator, as reported in Table 3. However, as the procedures used for reporting internal and external flooding are essentially identical, our findings and recommendations in our Table 3 commentary also apply to Table 3a.
- NI Water has reported zero incidents of external flooding due to overloaded sewers for AIR11, and 1440 incidents of external flooding due to other causes
- We would recommend specific DG5 familiarisation training of all front line staff
- As the Company are still in the early stages of developing an external flooding register, they have not populated lines 12 to 25 for AIR11.

3. Audit Approach

The audit consisted of a brief discussion with the NI Water system holder to discuss the methodology and data that has been used to populate this table.

4. Audit Findings

4.1 DG5 Annual Flooding Summary

As highlighted in our commentary for Table 3, NI Water has reviewed and further refined its flooding incident management process for all flooding incidents. In summary, the process for external flooders is now designed to work as follows:

- NI Water customer contacts NI Water' customer call centre to report an incident of internal flooding.
- Call details are logged onto Ellipse and work order is raised
- Maintenance Contractor attends site, facilitates a clean up (if necessary) and completes a 'Flooding Incident Report' (FIR) form.

- On a monthly basis, all flooding incidents stored on Ellipse are downloaded and sent to the maintenance contractor for verification, additional information and confirmation of flooding status.
- For incidents recorded as external flooding on Ellipse, but deemed to be not external by the maintenance contractor, the NI Water 'system owner' will complete a cursory review of Ellipse records and the FIR for assurance that the assessment is correct.

For AIR11, NI Water captured 8,951 reported incidents of external flooding on Ellipse. Of these, we found that 6,863 were confirmed by the maintenance contractor to not be flooding related, with a further 650 deemed to be repeat calls for an incident already reported. Whilst the remaining 1,440 reported incidents were confirmed to have flooded externally, all were deemed to have flooded as a result of 'other causes', primarily blockages. NI Water has reported zero incidents of external flooding due to overloaded sewers for AIR11.

Based on our understanding of network performance, the numbers of confirmed external flooding incidents do not appear to be reflective of a company the size of NI Water. On this basis, we remain concerned that there is a significant education/training issue, whereby the front line staff (both call centre and maintenance) does not appear to understand the DG5 indicator. As such, we would recommend specific DG5 familiarisation training of all front line staff, to ensure; the correct line of questioning is followed; the call centre staff understand the information provided to them by the customer, and the maintenance contractors, correctly apply the Company's methodology.

4.2 DG5 Properties on the At Risk Register

As the Company are still in the early stages of developing an external flooding register, they have not populated lines 12 to 25 for AIR11.

5. Confidence Grades

A confidence grade of B3 has been assigned to lines 1 to 11 on the basis that the data that has been derived using the same approach as defined for Table 3. However, NI Water does not undertake the same level of investigation for reported external incidents, relying primarily on the view of the Maintenance Contractor. For this reason, we would recommend a BX for Lines 1 to 6a and B4 for Line 7 to 11

Date: 29 July 2011
Prepared by: HMS

Table 4 - Customer Service – 1

Commentary by REPORTER

DG6 Response to billing contacts (lines 1 to 5)

1. Background

These lines collect data on the number of billing contacts received and the time taken to respond to them. This information is used to inform and compare performance for the DG6 indicator.

2. Key Findings

- NI Water document that they have received 104,987 billing contacts during the 10/11 Report Year. When compared to the previous Report Year the overall number of billing contacts has increased by approximately 5,771 or circa 6%.
- We have reviewed a number of written contacts to satisfactorily test various aspects of the Company's methodology. (see Section 4 for details).

2.1 Key Recommendations

- As reporting methodologies evolve, value may be brought from reviewing the reporting clarifications raised by companies in England and Wales in relation to the customer service tables. These have acted to supplement the reporting guidance and improve consistency of reporting over time. If deemed to be of benefit we recommend that NIAUR consults with Ofwat to obtain copies
- If automation and web based facilities are introduced in the future, we recommend that consultation takes place prior to their introduction to ensure that the reporting the service is agreed i.e. whether contacts to various automated services are included in DG6 and DG9 reporting.
- Further consideration is given to the treatment of remittance notes to ascertain the corrected allocation and materiality in terms of DG6 reporting.

3. Audit Approach

To verify the data reported our audit consisted of an interview with the NI Water system holders, an audit of the data from the Company's systems to the final table and a review of the current Company methodology for data collation. This years data has been compared with last years table entries to identify significant areas of change.

We have checked data reported in the final submission for consistency with previously audited information.

4. Audit Findings

During our AIR10 audits, NI Water advised that they intend revise their current customer service delivery model and bring in-house from their service provider their

Account Services department. We confirm that this change became effective from December 10 and all written DG6 contacts and DG7 complaints as a result are now dealt with directly by NI Water. As part of this initiative NI Water has commenced a DG6 improvement plan and details of this are detailed in the Company's commentary. All customer contact via the telephone is still dealt with and reported by Echo.

In our AIR11 audits we have reviewed a number of aspects of the Company's methodology. We have documented our audit findings below in the following structure:

- Section 4.1 – DG6 performance
- Section 4.2 – Dealing with paper based contacts
- Section 4.3 – Other correspondence types
- Section 4.4 – Telephone billing contacts
- Section 4.5 – Contacts from multiple account holders
- Section 4.6 – Web based and automated services
- Section 4.7 – QA procedures

4.1 DG6 Performance

NI Water document that they have received 104,987 billing contacts during the 10/11 Report Year. When compared to the previous Report Year the overall number of billing contacts has increased by approximately 5,771 or circa 6%. A large increase was reported in the previous year due to the introduction of full charging for non-domestic sewerage but the small increase this year is thought to be due to a number of factors including the severe winter delaying meter reads and a large number of meters being re-designated as part of a categorisation project undertaken by NI Water. Despite the Company's efforts to reduce the contact volumes both issues highlighted are likely to precipitate increased levels of customer contact.

In terms of responding to DG6 billing contacts, the Company has reported that they dealt with 98.9% of contacts within 5 working days 0.1% were dealt with in more than 10 working days. This represents a improvement in performance from that reported in AIR09. Using the Ofwat's performance classification, the NI Water's reported performance in 2008/09 is classified as 'good' (>95% within five working days and less than 1.5% over ten working days). The performance reported in AIR11 is also better than the DG6 target which was >98% within five working days.

NI Water report in line 1, the actual number of complaints received in the Report Year whilst the those contacts reported in lines 2 and 3 are the number of open contacts responded to in the Year (please see Section 5 below for additional detail on the Company's reporting methodology).

4.2 Paper based correspondence

All Customer contact information is managed through customer contact and billing system Rapid.

We reviewed the operation of Rapid and confirm the principles of the Company's methodology are appropriate to meet the Reporting Requirements. All incoming correspondence is scanned and indexed before being passed to an Agent. The Rapid system subsequently offers work allocation, tracking and retrieval functions to the Company.

During our audits we reviewed a sample of correspondence received by the Company during the year. This sample was chosen at random from contacts closed in March 11. Our audit checks were designed to check the following:

- Correct categorisation
- Correct application of the DG6 Reporting Requirements, which included:
  - dispatch
  - substantive replies
  - application of response criteria
  - date recording on systems.
- Evidence of appropriate audit trails

In total we reviewed a sample of 18 contacts to review the criteria set out above.

A summary of our audit findings are detailed below.

We reviewed the audit trail for all of the contacts selected and confirm that they were all correctly reported as DG6 contacts and were treated in line with the Reporting Requirements.

We found that all written contacts received by the Company are logged on day of receipt. We specifically challenged the Company's treatment of email contacts received on non-working days (such as weekends) and we confirm that the methodology employed should ensure that contacts received at these times are reported in line with the reporting guidance i.e. the date of receipt is classed as day zero. In our audit checks we noted one instance where the receipt date of an email was incorrectly recorded but we do not believe that this is a widespread issue.

- Use of holding replies

NI Water explained that they do use holding replies. In previous audits we have reviewed several examples of these where contacts generally relating to operational matters where additional investigatory work needs to be undertaken. Our AIR11 audit checks did not find any of replies of this kind but from the discussions held we believe the Company's approach to these types of contacts is in line with the Reporting Requirements i.e. a substantive holding response closes the contact for regulatory purposes. We also note the Company's efforts to reduce the number of holding responses and monitoring of the duration a contact is 'open'

4.3 Other correspondence types

During our audit we reviewed a number of contacts which do not necessarily require a customer response e.g. contacts from administrators or remittance notes from business customers). We have previously reviewed the treatment of legal contacts and found that, in terms of DG6 volumes, any allocations errors were immaterial (see AIR10; Table 4; Section 4.4. However, we recommend further consideration is given to how remittance advice notes are categorised in the context of the DG6 measure. Whilst these items do require 'an action' they are not typical DG6 items. Further clarification on their potential impact on DG6 would be beneficial and, if deemed material, consultation should take place on the correct treatment of these.

4.4 Telephone billing contacts

As anticipated the vast majority of DG6 billings contacts are received by NI Water over the phone. We have not undertaken any call listening exercises in AIR11 but discussed the quality checks they Company themselves undertake. NI Water shared details of their monthly checks which included the template used to assess each call. Importantly we note that these checks include how calls are logged and coded on Rapid. These are of particular relevance to DG6 (and DG9) and would encourage the Company to continue this quality checking.

During the year the Company queried whether telephone complaints related to billing matters should be included in their DG6 reporting. We confirmed that this was the case and we can verify that this item has been included in AIR11 DG6 volumes. In total 181 telephone complaints were received and closed in the Report Year.

4.5 Contacts from multiple account holders

The Company queried the treatment of billing contacts from customers who may have multiple accounts. NI Water assurance procedures identified that in certain scenarios one contact may be reported multiple times (one for each account). Going forward the Company has amended its processes to report one DG6 per contact and where actions are required on associated multiple accounts these would be recorded as 'non-reportable'. This approach has been adopted fully for the 11/12 Report Year. For 10/11 there is a risk that DG6 volumes reported could therefore be overstated but we anticipate the materiality of those would be low and well within the tolerances of the confidence grade assigned.

4.6 Dispatch of items by third parties

We have previously queried how they the date of dispatch for items undertaken by a third party e.g. such as re-bills are recorded. We understand the Company's agent has a 2 day Service Level Agreement to action these items, but for reporting purposes the date when the action was requested is used to close the contact. Whilst this is not strictly in accordance with the requirements, we also understand that in this particular case a holding response may also be issued to the customer advising that a re-bill and this would count as the response used for regulatory

reporting (and minimise ant potential reporting inaccuracies caused by any potential delay). However, we recommend the Company investigate what potential may have on DG6 reporting.

4.7 Web based and automated services

During the audit we discussed the Company's approach to offering web based and automated services and it appears that whilst such services are currently limited, enhancements may be introduced in the future. If this is the case, we recommend that consultation takes place prior to their introduction to ensure that the reporting the service is agreed i.e. whether contacts to various automated services are included in DG6 and DG9 reporting.

4.8 Quality Assurance

During out audit work we queried what QA controls NI Water operates on the calls/correspondence received. Following our recommendation in AIR10 we are pleased to report that monthly validation checks on the process have been reinstated.

We reviewed the checks now undertaken by the Performance Team and believe those undertaken are soundly based.

5. Company Methodology

To confirm the methods used by the Company are as described and are generally in line with the Reporting Requirements, we performed a series of reviews and audit checks. From these checks we are content that the approach adopted is in line with their stated methodology.

On the basis of our audits from AIR11 we have provided a summary of our findings and the Company's methodology below.

- In previous years', NI Water outsourced the majority of its' customer contact, billing services and complaint handling to their Service Provider. We confirm that account services have now been brought 'in-house' and all written correspondence is therefore dealt with internally. Contacts received via the telephone are dealt with by the Company's agents, Echo.
- Correspondence is opened and date stamped on the date of receipt. At this point, correspondence is allocated between various categories including correspondence relating to DG6 (billing contact) and DG7 complaints.
- Written complaints about billing are recorded in DG7 (Table 5) not DG6.
- A high proportion of billing contacts are counted from the telephone system. Calls to these lines are recorded on Rapid.
- Contacts are recorded on Rapid and this system is interrogated to produce the data reported.

- Once correspondence has been opened and indexed it is routed to an agent for action. Managers maintain a list of prioritised contacts which ensures that contacts are dealt with in line with the SLA and regulatory timescales.
- Contacts are closed when a response is sent to the customer by the contact team. We discussed with the Company various logistical points of this process including the times of collection and dispatch, resourcing issues and contingency plans to ensure all mail is dispatched on the same day a contact is closed. From these discussions we believe the practice adopted by the Company is suitable (except for automated dispatch items) to ensure satisfactory compliance with the Reporting Requirements.
- The Company's methodology recognises the public and bank holidays applicable in NI. For 10/11 these are: 5th April, 6th April, 3rd May, 31st May, 12th July, 13th July, 30th August, 24 December, 27th December, 28 December, 3rd January and 17th March.

The Company reports all billing contacts received during the Report Year within line 1. To report lines 2 to 4 NI Water reports the number of contacts in the year as the number of contacts 'closed' in the year. The difference between the number of contacts received and the number of contacts closed (circa 2%) is due to contacts being 'open' at year end.

To report data for line 1 the Company relies on data extracted from CorVu reports. To report data for lines 2 to 4 the Company extracts data from Rapid system. NI Water demonstrated how these reports are run and demonstrated the consistency of the audit trail.

The Company advised that whilst holding responses close the contact for reporting purposes the contact remains open on their system until a final response is issued by the contact team. NI Water explained its methodology for reporting contacts received in one reporting period but not closed until the following year. We understand for AIR11, if a contact was received in the 20010/11 Report Year then this would be included line 1 of Table 5. If a complaint received in 2010/11 is addressed by a holding response in the 2011/12 year (and subsequently closed out the Company's system with a final response) the response time will be reported in AIR10.

The Reporter is content that the methodology employed regarding contacts received versus contacts closed in the year is satisfactory as the staggered approach should mean (assuming the methodology is consistent in subsequent AIR's) contacts are reported as received then closed in the subsequent year. Nevertheless in terms of AIR reporting there exists a potential scenario of more contacts being closed than received as the current backlog of contacts is reduced. However, the Company's efforts to reduce the time a contact is open and the use of holding replies has reduced the likelihood of this.

6. Company Assumptions

NI Water publishes a number of telephone numbers for different specific purposes. The Company assumes that all calls on the specified billing contact lines will be billing contacts. It is assumed that there is only a low level of customers dialling the wrong number. We confirm that these are reasonable assumptions, appropriate for the volume of calls received.

7. Confidence Grades

The Company has applied a confidence grade of B3 to all the DG6 related information in the table. Whilst data for this line is derived from corporate system which should provide robust data there are known weaknesses in the reporting process.

Date: 29 July 11
Prepared by: HMS

Table 4 - Connected properties, Lines 6 – 8

1. Background

This section of Table 4 collects details on the number of connected properties broken down by service category.

2. Key Findings

- Our audits indicated satisfactory compliance with the guidance

3. Audit Scope

We carried out an audit with the Company's system holders for these lines. Our audit consisted of a review of the Company's methodology and the systems the Company employs to transpose the data from its billing system data extracts into the table.

4. Audit Findings

As reported elsewhere the Company has derived their estimates of property numbers from extracts produced from their Rapid billing system. We have followed the Company's methodology and believe it to be in accordance with the Reporting Requirements and consistent with the summary information presented to the Reporter during the audit.

We challenged why the confidence grade assigned to these lines was A2 when other property estimates (most notably in Tables 7 and 13) have a confidence grade of C2 for households and B3 for non-households. The Company did not offer a response to our query.

We understand that the recent communication between the Regulator and the Company states that the Regulator has rejected the Company's amendments until our review. We believe that this set of data should have a consistent grade throughout and as similar data is reported elsewhere in the Return and is derived from the same system. We therefore consider a C2 grade to be appropriate.

Specific line comments are as follows:

- *Line 6 – Number of properties connected for water supply only*
  We note an increase of 2,552 properties connected for water supply only from 2009/10.

- *Line 7 – Number of properties connected for water and sewerage services*
  We note that the number of properties connected for both water and sewerage services have increased by 5,152 since 2009/10.

- *Line 8 – Number of properties connected for sewerage services only*
  We note that the number of properties connected for sewerage services has decreased by 8 since 2009/10.

5. Consistency Checks

We confirm that the sum of lines 6 and 7 of Table 4 are consistent with Line 1 – Total connected properties at year end in Table 2.

Date: 29 July 2011
Prepared by: HMS

Table 5 - Customer Service – 2

Commentary by REPORTER

DG7 - Response to written complaints, Lines 1- 5

1. Background

The DG7 indicator shows the total number of written complaints received and the number dealt with within the specified time bands.

2. Key Findings

- For AIR11, the Company report that the total number of written complaints received has increased. Overall the number of complaints has increased by 25% or 858 written complaints in real terms.

3. Audit Approach

To check the accuracy of the information reported, our audit consisted of an interview with the NI Water line holders, an audit of the data from the Company's systems to the final table and a review of the current methodology for data collation. This years data has also been compared with last years table entries. We have not sought to verify the Company's treatment of complaints received during the winter freeze thaw event when email responses were, by necessity, of a nonspecific nature.

4. Audit Findings

During our AIR10 audits, NI Water advised that they intend revise their current customer service delivery model and bring in-house from their service provider their Account Services department. We confirm that this change became effective from December 10 and all written DG6 contacts and DG7 complaints as a result are now dealt with directly by NI Water.

In our previous report we highlighted the Company has established a 'Triage Team' in order to help improve written complaint performance. This team continued operation for a large part of 2010/11 but when Account Services were brought in house at the beginning of December, the complaint handling process was transferred to the Complaints and Executive Mail team. The Company advised that this team still adopt the same triage principals i.e. reducing response time, minimising the use of holding responses and improving the rate of first contact resolution. We believe the adoption of the same principals should help improve the written complaint process going forward.

4.1 Line 1 - Total written complaints

For AIR11, the Company report that the total number of written complaints received has increased. Indeed, overall the number of complaints has increased by 25% or

858 written complaints in real terms. This follows a modest decrease in the volume of complaints received in 09/10.

NI Water explained that they believe the increase in written complaint volumes is predominately related to complaints received following the winter freeze thaw event. The Company demonstrated evidence which highlighted that over half of the total complaints received in the year were sent by customers in December 10.

4.2 Lines 2 to 5 – DG7 Performance

The Company has improved the level of performance in responding to complaints compared to the AIR10. Overall, the Company report that nearly written complaints were responded to within 10 working days and 4 written complaints were dealt with in more than 20 working days. However, please see section 5 below for details on how the Company calculates response times and Section 4.4 for the retrospective adjustment for email receipt dates.

The Company's reported performance is ahead of their SBP target (98%) of contacts dealt with within 10 working days. Using the equivalent Ofwat assessment criteria for DG7, the NI Water's performance for 2009/10 Report Year would be classified as 'good'.

4.3 Audit Checks

During our audits we reviewed a sample of correspondence received by the Company during the year. This sample was chosen at random from contacts received in quarter 4 of 10/11. Our audit checks were designed to check the following:

- the contact has correctly been classified as DG7
- the Rapid system correctly records the incoming and response date
- there was an audit trail evident for each complaint
- the nature of the complaint (to inform table 5a)
- the response to the complaint is substantive.

In total we reviewed a sample of 12 contacts to review the criteria set out above. A summary of our audit findings are detailed below.

In general, we found that the Company's approach is consistent with their stated methodologies. We found all the complaints reviewed were correctly classified as DG7 written complaints. Our audit checks covered complaints received by both post and email. We reviewed the audit trail for all of the contacts selected and confirm that they were all correctly reported as DG7 contacts and were treated in line with the Reporting Requirements.

- Dating of correspondence

During our audit checks, for each compliant we satisfactorily tested the date of receipt was consistent between date stamp on the incoming correspondence and the

date recorded on Rapid. As all incoming date stamped on date of receipt we are content that the Company recording of incoming dates are appropriate.

However, the Company advised that they recognise that the receipt date of some emails may not be in strict accordance with the Reporting Requirements (see Section 4.4) but that their methodology has been revised to record emails received out of hours in line with the guidance. We understand that this has been introduced since April 11 so we propose to review this change as part of our AIR12 audit programme.

- Use of holding replies

Within previous audit checks we noted numerous instances where the Company issues holding responses to customer complaints. This effectively closes the contact for regulatory reporting but the contact remains open on the Company's system to ensure a response is issued to the customer. Our audit sample did not review any holding responses of this type and we believe this is likely to be due to NI Water's efforts to reduce the number of holding responses issued.

An important aspect of the Company's reporting process is when a complaint is closed then the contact is closed back to the first holding response. In previous reviews we have noted errors in this process but following on from our AIR10 recommendation NI Water has initiated a assurance checking process. This has been in place from April 2011. No issues have been brought to the Reporter's attention from the checks undertaken to date.

- Substantiveness of Responses

We confirm that all replies reviewed were considered substantive. Therefore on the basis of the checks undertaken we are content that the Company's interpretation of a substantive response is sound.

- Dispatch

We also questioned the Company on various logistical points of the dispatch process, including the times of collection and dispatch and resourcing issues to ensure all mail is dispatched appropriately. On the basis of these discussions we are content NI Water's approach is consistent with their stated approach and with the NIAUR Reporting Requirements.

4.4 Treatment of emails (and faxes)

We asked the Company to clarify the processes for email communication and found in general it is treated in the same way as written correspondence. Emails are logged, date stamped, indexed and passed to an Agent as per the Company's methodology statement. We tested NI Water's methodology for recording the receipt date of a complaint received via email and the outcomes of these checks were satisfactory.

The Company advises it has updated its' procedures to ensure that all email contacts are logged on the day of receipt. NI Water has found that 20 emails had been logged incorrectly which meant that they were responded to outside of the 10 day performance standard. If these are applied retrospectively the percentage of contacts responded to in 10 days (line 2) falls by 0.5% to 99.5%.

4.5 Exclusions from the DG7 indicator

NI Water advised that they have not excluded any complaints from the DG7 indicator.

The NIAUR Reporting Requirements allow complaints to be excluded for a number of reasons (e.g. about non-appointed activities, are anonymous). We also discussed instances where a complaint may have been escalated through the Company's complaint process (and to CCNI) but continued contact from customers is still received and reported as a DG7 contact. We are aware of practice elsewhere to exclude contacts of this kind as they have fully exhausted the complaints process (and additional information received from the customer would not change the outcome of the complaint).

If in future Returns NI Water excludes complaints from the DG7 indicator, we recommend that clear audit trails are maintained to support the exclusion. The Reporter would normally expect to review and substantiate a sample of such exclusions.

4.6 Postal Strikes

We questioned NI Water as to whether the mail strikes had a material impact on their operations (and performance) as they would not have received incoming mail or been able to dispatch mail on certain days. In response the Company advised that they do not believe interruptions in the postal service have had a material impact on their operations in 2010/11.

4.7 Treatment of contacts from CCNI

During the audit we discussed the treatment of contacts received from customers via CCNI. These can be via phone, email and letter. We understand there is currently ongoing dialogue on how such contacts should be recorded. Once a consensus has been reached, we recommend the Company should update its methodology statement to clarify how such contacts should be reported within the context of the AIR i.e. do they meet the definition of a DG7 (or DG6).

5. Company Methodology

5.1 Overview

To confirm the methods used by the Company are as described and are in line with the Reporting Requirements, we performed a series of reviews and audit checks. From these checks we are content that the approach adopted is in line with NI Water's stated methodology.

On the basis of our audits from, we have provided a summary of our findings and the Company's methodology below:

- Correspondence is opened and date stamped on the date of receipt. At this point, correspondence is allocated between various categories including correspondence relating to DG6 (billing contact) and DG7 complaints.
- All Customer contact information is managed through customer contact and billing system, Rapid Xtra.
- Once correspondence has been opened and indexed it is routed to an agent for action. Managers maintain a list of prioritised contacts which ensures that contacts are dealt with in line with the SLA and regulatory timescales.
- Contacts are closed when a response is sent to the customer by the contact team. We discussed with the Company various logistical points of this process including the times of collection and dispatch, resourcing issues and contingency plans to ensure all mail is dispatched on the same day a contact is closed. From these discussions we believe the practice adopted by the Company is suitable to ensure satisfactory compliance with the Reporting Requirements.
- NI Water methodology now assumes that all mail received after 2pm is logged on the day it is received.

5.2 Reporting

The Company reports all complaints 'received' during the Report Year within line 1. To report lines 2 to 4 NI Water reports the number of contacts in the year as the number of complaints 'closed' in the year.

To report data for line 1 the Company relies on data extracted from CorVu reports. To report data for lines 2 to 4 the Company extracts data from Rapid system. NI Water demonstrated how these reports are run and demonstrated the consistency of the audit trail. The Company did however advise that whilst holding responses close the contact for reporting purposes the contact remains open on their system until a final response is issued. NI Water further explained that the configuration of their system tracks a closed response to a holding response.

Within their commentary, NI Water explains its methodology for reporting complaints received in one reporting period but not closed until the following year. We understand for AIR11, if a complaint was received in the 2010/11 Report Year then this would be included line 1 of Table 5. If a complaint received in 2010/11 is addressed by a holding response in the 20011/12 year (and subsequently closed out

the Company's system with a final response) the response time will be reported in AIR12.

The Reporter is content that the methodology employed regarding contacts received versus contacts closed in the year is satisfactory as the staggered approach should mean (assuming the methodology is consistent in subsequent AIR's) contacts are reported as received then closed in the subsequent year. However in terms of AIR reporting there exists a potential scenario of more contacts being closed than received. This may have the potential to skew performance statistics as the Company work to resolve any backlogs from previous year.

5.3 Quality Assurance

During our audit work we queried what QA controls NI Water operates on complaints received. The Company outlined the various controls in place, including the administration of their customer service contract and the checks undertaken by the Contract Office team. In AIR10 NI Water explained that they tested the allocation of contacts to DG7 and how they intend to extend these checks in the future to include other elements of the complaint handling process and call listening exercises.

We are pleased to report that the Company has extended these assurance checks in the Report Year and during the audit shared a sample of the reviews undertaken. Forming part of the Monthly Business Review packs, NI Water samples a limited number of closed contacts to ascertain adherence to their methodology and the reporting guidance as well as checking the quality of the responses given. We reviewed the checks undertaken and believe they are soundly based. A number of themes were apparent in the Company's findings but evidence of feedback being disseminated back to team leaders was evident. This should help to promote good practice and help improve the reporting process.

6. Company Assumptions

There are no further material assumptions that we have identified.

7. Confidence Grades

The Company has applied a confidence grade of B2 to all the DG7 volume related information in the table. This has been revised from a B4 grade which was reported in AIR10. NI Water advised the basis of the change is based on the fact they now undertake regular assurance checks on the data and processes employed. Whilst we have no doubt the checks undertaken have improved confidence in the data, we recommend that the Company quantifies results from its checking procedures to fully substantiate that a '2' grade is appropriate.

DG8 - Bills for metered customers, Lines 6 – 12

1. Background

This indicator identifies the proportion of metered customers who receive bills during the year based on actual meter readings and the proportion based on estimated readings.

2. Key Findings

- The Company report that 96.1% of customers received a bill based on a meter reading in 2010/11. The reported performance is ahead if the Company's SBP target which was 95% and also an improvement on the previous year.

3. Audit Approach

To verify the information provided by the Company our audit consisted of an interview with the NI Water system holder, a review of the current methodology for data collation, an audit of the data from the Company's systems to the final table and a comparison with last years table entries.

We also checked the data in the final submission for consistency with previously audited data.

4. Audit Findings

4.1 General

The information to derive DG8 data is supplied from reports produced from the Company's billing records. Summary tables are produced from these records to collate figures for the final table. We reviewed the data in the reports and followed the data trail through to the Company's final table.

4.2 Performance and Industry Comparison

After taking the number of exclusions reported in line 6 away from the total number of metered accounts reported in line 7, a total of 67,796 accounts are included with the DG8 indicator. The Company state that of this total, 96% of customers received a bill based on a meter reading in 2010/11. The reported performance is also above that reported in 09/10 and the Company's target of 95%.

The percentage of meters not read by the Company for two years equates to 1.55% of the metered base included in the DG8 indicator. We have checked these calculations and confirm that, using the comparable Ofwat DG8 assessment criteria, this would indicate as performance as 'needing improvement' (<98% of company or customer reads and <0.15% unread by the company for 2 years).

Within their commentary the Company explained some of the difficulties they have encountered in the year achieving their DG8 target, including the impact of the winter freeze where meter reading routes were significantly disrupted.

4.3 Line 6 – Total metered accounts

We noted the number of metered accounts had increased significantly (17%) and queried the rationale for this, given the number of non-household metered properties reported in Table 7 had not increased in a similar proportion. NI Water advised that within the total number of metered accounts reported (100,071) a proportion also include household metered accounts which had been set up on Rapid previously. As these properties are not billed they are excluded by inclusion in line 7 and we noted a subsequent large increase (84%) reported here.

4.4 Line 7 - Exclusions

As highlighted the above the number of exclusions has increased significantly due to some household accounts being reported in line 6.

Overall, NIW excluded approximately 47% of its metered base from the DG8 indicator. This is somewhat higher than the average of accounts excluded by WaSC's in England and Wales, which is circa 11%. However, whilst providing a useful metric for comparison purposes, it is difficult to make any direct comparisons as NIW DG8 statistics included non-domestic accounts only.

During the audit the Company also cited a number of examples where an account would be reported in line 7 and excluded from the DG8 indicator. Whilst the Company advised that these have been previously agreed with the Regulator, we discussed a number of these and believe their exclusion from the DG8 indicator appears reasonable. Examples of such accounts include:

- Meters charged on another basis
- Test meters
- Trade-effluent meters
- DRD or NIW meters
- Fire supplies
- Properties occupied less than six months
- Complex accounts – Including combination meters
- Void properties

To check the Company's methodology in this area, we asked the Company to provide a list of accounts from each exclusion category. NI Water was able to supply this listing and we selected a random sample of accounts to review. For each account reviewed we sought to check the billing history and consumption records on Rapid to ensure the account was correctly interpreted as an exclusion. In all the accounts reviewed the Company was able to demonstrate why these accounts had been excluded. Whilst this represents only a small proportion of the total number of reported exclusions, on the basis of the checks undertaken we are content that the

Company's methodology in this area is satisfactory.

We have previously challenged the Company on their interpretation of the 'less than 6 month' category exclusion category. The Requirements infer that change of occupancy is taken into account when deriving the 6 month exclusion. NI Water confirmed that this is the case and any *meter* occupied for more than 181 days (irrespective of ownership) would be included in the DG8 analysis.

We also questioned the Company on whether they are able to reconcile the number of 'complex' accounts from one report year to the next as under normal circumstances we would expect the types of accounts to remain relatively static over time. NI Water were able to provide evidence to support this assertion.

4.5 Line 8 and 9 - Company readings/Company or customer readings

The Company methodology outlines that that is encourages customers to provide their own readings and these can be register via NI Water's website or by calling their billing line.

During the audit we noticed instances on customer's accounts where the bill date was before the meter reading date. We queried the logic of this and the Company advised that if an estimated bill is raised and is superseded by an actual meter read then the account would be re-billed but the date shown on Rapid would be the original date. We queried what impact this would have on DG8 reporting especially at around year-end when there is potential for bills to be reported in either year. The Company advised that the original bill date (and reading category) would be reported. Based on the expectation that this issue potentially only relates to a small population of accounts we are content the impact of this approach does not have a material impact on reporting.

Therefore on the basis of the discussions held with NI Water we believe the Company methodology is in line with their stated practice and with the Reporting Requirements.

4.6 Line 10 - Estimated Bills only

Whilst the Company has made endeavours to ensure that every non-household customer receives a bill based on at least one meter reading, NI Water report a number of instances where this was not possible.

The proportion of metered accounts of receiving a bill based on a estimated reading has decreased from 7.3% in 09/10 to 3.5% in 10/11. Within their commentaries NI Water highlight a number of initiatives which have helped to improve performance.

4.7 Line 11 - No bills received during the Report Year

NI Water report a small number of accounts where the customer has not received a bill during the year. We have no sought to verify the accuracy of the numbers

reported.

4.8 Line 12 - Unread by the Company for 2 years

The percentage of meters not read by the Company for two years equates to 1.6% of the metered base included in the DG8 indicator. This figure is somewhat higher than that typically reported in England and Wales but meaningful comparisons are difficult given that NI Water only bill non-domestic properties.

5. Company Methodology

The primary source of data is the Company's billing system and we confirm that the Company presents all the annual data and that no sampling techniques have been employed.

To confirm the methods used by the Company are as they describe and are in line with the Reporting Requirements, we performed a series of reviews and audit checks. From these checks we are content that the approach adopted is in line with their stated methodology.

On the basis of our audits from AIR11 we have provided a summary of our findings and the Company's methodology below:

- NI Water outsources its' billing activities to its third party provider.
- The primary source of data is the Company's billing system, Rapid.
- All customers who are eligible for billing are billed, regardless of consumption.
- Before the start of each reading period all meter accounts which need to be read are transferred from the Rapid system onto the Routestar system. These accounts are then transferred onto the PDA's of meter reader who then visits the meter.
- When in the field, all meter readings (including those not able to be read) are input by the meter reader on their PDA.
- Meter readings are uploaded back from the Routestar system onto the Rapid on a daily basis. Bills are then generated on Rapid based on the consumption recorded and appropriate tariff.

The Company described the processes by which meter readings are managed to the Reporter's satisfaction. When meter readings cannot be obtained the meter reader records this on their PDA and this is fed back into Rapid. On such occasions the Company has the facility for customers to enter a reading via the phone or website. If no reading is provided before the subsequent billing run a system estimate is generated and a bill is issued.

6. Company Assumptions

We consider that there are no assumptions to be disclosed and that the data is based on sound procedures.

7. Confidence Grades

The Company previously assigned a confidence grade of B2 to lines 6 to 12. This has been revised in AIR11 to A1. NI Water advised the confidence grades for Table 5 lines 6-12 were amended from B2 to A1 based on the fact that the data used to provide this information is a system based report that does not require any manual interpretation or manipulation. The report is taken directly from the Rapid database source which categorises each account automatically based on the status at the time, therefore using the most current and up to date data. Whilst we have no doubt that system improvements will have improved confidence in the data, we recommend that the Company quantifies results from its checking procedures to fully substantiate that an A1 grade is appropriate.

DG9 - Telephone Contact, Lines 13-17

1. Background

This indicator identifies the ease with which customers can make telephone contact with the Company.

2. Key Findings

- The total number of abandoned calls and instances of all lines busy has increased significantly during the year. NI Water presented evidence which illustrates these metrics were significantly affected by the winter freeze thaw.

3. Audit Approach

Our audit consisted of an interview with the NI Water system holders, a review of the current methodology for data collation, an audit of the data provided and a listening exercise to calls received.

We have also checked the data in the final submission for consistency with previously audited data. We have not attempted to reconcile the numbers of calls received to the number of calls logged on the Company's contact management system.

4. Audit Findings

4.1 General

The Company confirmed that there has been no material change in the methodology for AIR11. We found that as in previous years, the information is supplied from collation reports produced from the Company's telephony system. Data is extracted directly from this system and summary tables are produced from this system to produce figures for the final table.

Under normal circumstances, a call received from a customer is logged by the telephony system and routed directly to an agent. When all agents are busy, the customers call is placed in a queue until the next available agent is free.

For further details on the call services the Company offers and how these are reported within DG9 please see our commentary in Section 5.

4.2 Winter Freeze Thaw

The DG9 measure has been materially affected by the winter freeze/thaw. Contact volumes increased significantly during late December and early January and the Company present evidence in their commentary to quantify the impact of this event. During the audit we requested system data to assist us in verifying the contact volumes reported. This was subsequently provided and we were able to reconcile

the figures reported for the freeze thaw event in the Company's commentary. We noted a small discrepancy in the number of calls abandoned but this equates to less that 0.5% the abandoned volumes and is therefore not deemed material.

We found that the Company has taken all call data between 27 December and the 6 January and attributed these to the winter freeze/thaw event. Whilst there is an inherent assumption that all calls during this period were related to the freeze thaw, we believe this is a reasonable and pragmatic approach to adopt.

We are aware that the Company outsourced a number of calls during the freeze thaw event. NI Water confirmed that calls dealt with by this agent has been included in the reported AIR performance.

4.3 Line 13 - Calls received

NI Water report that they have received 340,989 calls from customers during the year. We confirm the total number of calls received is circa 3% lower than received in 09/10. Excluding the calls assumed to be relating to the freeze thaw, call volumes would have actually decreased by circa 20%.

4.4 Line 14 - All lines busy

Excluding the freeze thaw, NI Water report that 2 calls received an all lines busy tone during the year. When questioned on the configuration of the telephony system the Company representative advised that their system, under normal circumstances, has sufficient capacity to ensure customers should never hear an engaged tone.

However, during the freeze thaw event, NI Water telephony provider recorded 699,564 calls which received an all lines busy tone. This represents a unprecedented increase from performance in previous years and this total is over twice the number of calls answered in the year. During the audit the Company demonstrated how all lines busy data was derived from system reports and we were able to reconcile the figures reported to the Company's analysis.

4.5 Line 15 - Abandoned Calls

The Company report a significant increase in the number of calls abandoned which are again attributable to the winter freeze/thaw.

Over 40,000 calls were abandoned in the year, of which 32,419 were attributable to the freeze thaw. Excluding the freeze thaw event the number of abandoned calls would have decreased slightly from that reported previously.

Overall, Company performance of 88.2% of calls not abandoned falls someway short of the 99% target set. However, the winter/freeze thaw meant a significant number of additional calls were offered to the Company in a short time frame.

4.6 Line 16 - Call Handling Satisfaction

During the audit the Company outlined that they has provided data to the market researcher during the year.

The Company briefly explained the process by which the call data is collated prior to dispatch to the market researcher. All calls are passed to the market researcher and no exclusions are made. In our experience elsewhere, Company's do make a number of small exclusions to the data provided to the market researcher. The possible circumstances where this occurs include

- Calls (mainly operational) that can be identified as "non-customer" calls (e.g. from field staff or contractors).
- Customers who have ex directory phone numbers.
- From customers sharing the same number (e.g. switchboard).
- If there is a "do not phone" indicator on the account.
- Calls from key customers.

It is also worth noting that companies in England and Wales have moved to providing data on 'resolved' contacts rather than all contacts received. Whilst this does have the potential to hinder comparisons to England and Welsh company performance, it does provide consistency of data over time for NI Water.

4.7 Line 17 - Telephone Complaints

In the Company's draft submission we noted that the reported number of telephone complaints had increased significantly. We found that the overall the number of telephone complaints has increased by approximately 14,500 complaints which is a 30% increase on that reported in 09/10

We have not undertaken any specific checks on the coding of complaints but believe the increase is associated with the freeze/thaw incident in December and January.

5. Company Methodology

5.1 Overview

The Company's commentary describes the configuration of its telephony system. NI Water has also identified the telephone numbers and locations against which they are reporting in their Methodology Statement. The volume of each calls received on each line is taken directly from Call Media reports.

In summary:

- For Customer Billing the office hours are 8am to 8pm Monday to Friday, and 8am to 6pm Saturday.
- The Company's debt line office hours are 9am and 5pm weekdays only.

- For Service Enquiries, NI Water's Waterline and Leakline are open 24 hours a day 365 days a year
- Calls received outside of these advertised times are not included are in the report of calls received or calls abandoned.
- NI Water has not utilised any temporary customer contact points during the year.
- No message manager systems or answering machine facilities were used during the reporting year.

5.2 Call Services offered/telephony configuration.

During the audit we questioned the Company on the call services it offered in terms of IVR, TouchTone, Queuing or automated speech recognition facilities as were are aware from other experience that calls via such services are often difficult to track and report. In response NI Water advised that their telephony system has the capability to but does not currently offer such services. We understand that the only option presented when callers contact the 'Waterline' number is to opt for new connections or to hold for all other enquiries.

5.3 Reporting

NI Water advised that the telephony system is configured to produce data required by the Reporting Requirements. As such data is provided for the total number of calls received, calls abandoned, all lines busy and telephone complaints directly from the system itself. We have not undertaken any checks o the configuration of these reports.

During the audit we also met with staff whose responsibility it is to report DG9 and other management information. The Company has a documented methodology of how data is collated from the system and during the audit the representatives outlined the processes they follow.

We have checked and confirm that the totals presented in the DG9 lines of Table 5 are consistent with the summary Call Media reports compiled by the Company.

5.4 Telephone Complaints

The Company use CMS contact type rather than complaint flag on Call Media to report telephone complaints. We have not undertaken any checks on the categorisation of complaint calls in AIR11. We propose that this will form part of our audit in 11/12.

5.5 Call Handling Satisfaction

We found that the Company reports all calls received the market researcher as no exclusions are made. As such it is possible that allowable exclusions are included in the market researchers' sample in each of the three designated weeks.

5.6 Quality Assurance

In AIR10 we queried what QA controls NI Water operates on the calls received. At this time the Company outlined that whilst various checks were carried out by the Performance Team these have ceased.

We are pleased to report that regular performance audits now take place, including checks on the call handling process, the logging of calls and allocation to CMS code. The Company shared several examples of the checks they had completed and believe the checks undertaken are sound. For reporting purposes the checks (and feedback) given on how calls are recorded onto the Rapid are deemed important and we would encourage the Company to continue these checks.

6. Company Assumptions

We believe that all relevant and material assumptions have been disclosed above by either the Company or the Reporter.

7. Confidence Grades

We believe the confidence grades assigned to lines 13 to 17 are appropriate but have not undertaken any specific or statistically significant checks to verify the volume of calls reported.

Special Needs Register - Line 18

1. Background

This table identifies customers registered for special assistance.

2. Key Findings

- We believe the methodology to populate the Special Assistance Register is appropriate and in line with the Reporting Requirements.
- The number of customers registered on the scheme has more than doubled. We believe this is a combination of efforts to promote the scheme and also the winter freeze/thaw event which raised awareness amongst NI Water's customer base.

2.1 Key recommendations

- Whilst the Company is endeavouring to increase the number of customers on the Customer Care Register, we believe it would also be beneficial to consider how going forward data will be maintained to ensure future reporting accuracy.

3. Audit Approach

Our audit consisted of an interview with the NI Water line owners, a review of the current methodology for data collation, an audit of the data provided and a comparison with last years table entries.

We have also checked the data in the final submission for consistency with previously audited data.

4. Audit Findings

4.1 General

The Company's Special Needs Register is called the Customer Care Register. At the end of the 10/11 Report Year the Company advised that 1112 customers were recorded on the Customer Care Register. The number of customers registered on the scheme has therefore more than doubled. We believe this is a combination of efforts to promote the scheme and also the winter freeze/thaw event which raised awareness amongst the customer base. The Company has a target to increase the number of customers registered on the scheme to 2,000 by the end of 2011 and within their commentaries highlight the various initiatives they plan to undertake to achieve this.

During the audit we discussed a number of aspects of the operation of the scheme. The following provides an overview of these discussions:

- The Company maintains a spreadsheet list of those customers registered on the special assistance scheme and to ensure these had been correctly derived we checked a sample of accounts to ensure they were correctly flagged on Rapid. In total, we satisfactorily checked seven accounts and on the basis of the checks undertaken we believe the total number reported from the Company's spreadsheet is therefore sound.
- The Company confirmed that where a customer is registered for more than one service, they are only counted once in the total number of customers reported in Line 18. NI Water advised that prior to the audit they had amended their analysis to ensure that a customer registered for more than one service is only reported once.
- In our checks we noted a number of customers registered were non-household customers. Based on experience elsewhere our expectation would be that all customers registered on the scheme would be domestic/household properties. However, the likelihood is that the unique situation (in terms of establishing billing and customer relationships) in NI has created this anomaly.
- The Company also confirmed that customers are registered on a household rather than individual customer basis.
- Whilst the Company is endeavouring to increase the number of customers on the Customer Care Register, we believe it would also be beneficial to consider how going forward data will be maintained to ensure future reporting accuracy.
- The Company has assigned a confidence grade of A2 to this line. We believe this grade is appropriate.

Date: 29 July 11
Prepared by: HMS

Table 5a – DG7 Response to Written Complaints (complaints data for CCNI)

Commentary by REPORTER

1. Background

This table summarises written complaints received by a company into 5 complaint categories defined by the Consumer Council.

2. Key Findings

- The breakdown of complaints reported by the Company is consistent with the complaint volumes reported in Table 5.
- We have tested the Company's allocation of complaints to the various complaint categories and believe NI Water's methodology is satisfactory. However, there is a risk of misclassification as opening CMS codings are used rather than closed (post investigative) codings.

2.1 Recommendations

- The Company introduces a protocol and methodology to allow the reporting of complaints at stage 2 within their complaint handling process and this is incorporated into their quality assurance checks.

3. Audit Approach

The audit involved an examination of the procedures adopted by NI Water for its customer service activities regarding customer complaints. Whilst the main focus of our audits has been on the work systems and practices used by the Company in preparing data for Table 5, we have carried out a cursory inspection of the methodologies used to populate Table 5a.

4. Audit Findings

4.1 General

During the audit, we discussed with the Company their methodology for completing this requirement. The Company explained that as for the DG7 measure, they extract data from their Rapid billing system.

4.2 Total written complaints - lines 1 to 3

We confirm the source of these lines is Table 5 lines 1, 2 and 4. Please see our DG7 commentary for the derivation of these lines. We also confirm that the totals reported in these lines is consistent with that reported in Table 5.

4.3 Category of written complaints – lines 4 to 13

Allocation to category

During the audit the Company explained that as each complaint is logged it is allocated to a category. The Company should therefore be able to classify all complaints into the high level headings cited in the Reporting Requirements and our audits support this assertion. There is however a risk that as complaints are reported based on their opening CMS type then is the closure code changes as the complaint is investigated e.g. from billing to metering then the contact may be misclassified as the latter categorisation is likely to be more accurate. However, we anticipate such occasions will be minimal and would be most associated with issues relating to metering and billing rather than water or wastewater issues.

We confirm the addition of lines 4, 6, 8, 10 and 12 equal the number of complaints reported in line 1.

Allocation to Stage

In our review of DG7 (see Table 5 commentary) we reviewed a number of complaints and witnessed evidence of complaints being logged at various stages within the Company's complaint handling process on Rapid.

However, we found that NI Water had not populated lines 7, 9, 11 and 13 so queried why this was when complaints are allocated to a stage. The Company explained that whilst complaints were allocated to various stages they are not sufficient reporting controls in place to ensure the stage of each complaint is reported correctly. Going forward we would expect the Company to be able to report such data.

5. Company Methodology

The Company methodology is similar to that it employs for DG7 – written complaints.

In essence, the Company interrogates its Rapid system to extract the required data to populate the table. During our audits of DG7 we reviewed the Company's processes for dealing with written complaints, including the operation of this system. Please see our Table 5 commentaries for further details.

From discussions with the Company and checks carried out we believe the methods used by the Company are as described in their methodologies. CMS codes are used by agents to allocate complaints to a particular category.

6. Company Assumptions

We believe all assumptions have been reported.

7. Confidence Grades

For lines 1 to 3 – "total written complaints", data is copied directly from Table 5 and therefore the grades assigned to these lines are consistent. Please see our commentary on Table 5 on the appropriateness of the confidence grades assigned to these lines.

For lines 4 to 13 – "Category of written complaint", the majority of data is extracted directly from Rapid and therefore the Company methodology does not rely on sampling or extrapolation to populate the table. Whilst a B2 grade has been assigned, there is some concern that the data reported is not accurately reported and a lower grade may be more appropriate. However, we have not investigated this issue sufficiently to make a judgement about whether any misclassifications are within the tolerances of the confidence grade.

Date: 29 July 2011
Prepared by: HMS