

# Northern Ireland Water

Key Outputs

(Commentaries for Tables 2 – 5)

Public Domain Submission

Prepared for  
**Utility Regulator and NI Water**

10 November 2014

**CH2MHILL®**

304 Bridgewater Place  
Birchwood Park  
Warrington WA3 6XG

## Table 2 – Water Service – 2

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

#### 1. Introduction

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

#### 2. Key findings

- After the Company's submission, we agreed with the Company that the confidence grades for Line 1 is B2. Please see our Table 7 commentary for further detail.
- A total of 163 properties were removed from the register, due to a combination of mains rehabilitation (132) and better information (31).
- The DG2 Register contains full documentary evidence for properties that remain, are added or are removed from the register.
- NI Water has reported the number of properties on the register with pressure below 7.5m, and this number has again increased slightly to 169 properties (from 138 at AIR13).
- NI Water has estimated the cost of removing properties by considering the costs of components related to hydraulic issues. This remains an approximation as the cost is derived from schemes that have a range of different investment drivers.
- NI Water has calculated the average cost of removing properties from the DG2 register as £9.1k/property. Over recent years this has shown significant variability (from a low of £0.8k/property in AIR13 to a high of 13.7k/property in AIR11, with £3.0k/property in AIR12). We consider this variability is due to both the method of calculation and the different mix of schemes undertaken through the report year, when removing properties from the DG2 register is often not the key driver for the investment. Given this uncertainty we consider confidence grade for Line 4c should be C4, and not B2 as indicated by the Company.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

#### 2.1 Key recommendations

- We recommend a top-down approach is developed for AIR15, possibly making use of the scheme approval analysis that presents the contribution from each of the investment drivers (structural improvements, water quality, operational issues (leakage) and hydraulic drivers (DG2).
- We consider that the Company should investigate the use of the pressure data now available within Netbase to undertake a regular refresh of the data used to identify properties at risk of receiving pressure or flow below reference level.

### 3. Audit approach

The audit consisted of interviews with the NI Water system holders 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. Company methodology

#### 4.1 General

NI Water has collected DG2 information using a representative network of critical pressure monitoring points and details 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 is aware of the various low pressure events that can be excluded from the DG2 Register. However, in the absence of comprehensive monitoring systems it has not reported any allowable exclusions. Since 2010/11 NI Water no-longer excludes properties that are located within 15m elevation of the service reservoir.

#### 4.2 DG2 - Properties receiving pressure/flow below reference level (Lines 1 to 4c)

##### Line 1 – Total properties connected at year end

Please refer to our Table 7 commentary for the methodology of the property numbers in Table 2. It is not changed from AIR13.

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

The total number of properties at the end of AIR13 Report Year was 1,420.

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

We examined the DG2 register and extract used to complete this table and confirm that the Company has an audit trail to confirm the removal of the 163 properties as a result of the schemes, with 1,257 being the number of properties on the DG2 register at the end of the year.

We examined one scheme in detail [ x ] and confirm that the number of properties removed from the DG2 register has been assessed correctly.

Overall, we found that for AIR14:

- 132 properties were removed from the DG2 Register as a result of mains rehabilitation schemes.
- 31 properties were removed due to better information.

The properties within the DG2 register are only revised following the implementation of schemes. We recommend that with the improved availability of pressure data within Netbase the Company could refresh the DG2 register on a more regular basis.

We confirm that the Company has correctly entered the number of properties removed through company action (132) in Table A (Line 1). The number of properties on the DG2 register at the end of

the year (1,257) has been entered in Table 44 (Line 2). This represents 0.15% of total properties, which has been entered in Table 44 (Line 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 do not currently 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.

#### **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 169 properties (an increase of 31 properties from AIR13).

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

A total of 132 properties were removed from the register following company action. The 31 properties removed due to better information have not been included in the line 4b entry.

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

As discussed above, the removal of properties from the DG2 register through Company action is as a result of mains rehabilitation. The majority of the main rehabilitation schemes have multiple drivers for investment (such as structural improvements, water quality and operational issues (leakage) in addition to hydraulic drivers (DG2)).

The Company has calculated the average overall cost of removing a DG2 property from the register. During the year eight schemes resulted in the removal of properties from the DG2 register. Although a number of the schemes were actually completed in 2011/12 the properties were only removed from the register in 2013/14 following pressure logging.

The average cost of removal was calculated by combining the total cost of the hydraulic driven components of the mains rehabilitation schemes (£1,203,215) and dividing this by the total number of properties removed by company action i.e. 132. This gives the average cost per DG2 removal of £9,115 (£9.1k).

As shown in the following table there is a large variation in unit costs for DG2 removals within each scheme. This varied from “free” removals where properties were removed from the register by investment that was driven by other benefits [ x ] to another scheme [ x ] where the average cost was almost £30k per property removed.

**Table 2.1:** [ x ]

[ x ]

The Company explained that the relatively small number of properties removed from the DG2 register each year will lead to large variability in the estimated cost of removal. In our opinion, the wide variation in estimates is also due to the removal of properties from the DG2 register being only one of a number of drivers for mains rehabilitation.

We examined the [ x ] pre-tender approval documents and found that the removal of properties from the DG2 register was identified as one of the benefits of the scheme. The documents identified £122k of investment (1.3km of mains) to remove 35 properties from the DG2 register. This represented 8.3% of the total contract value. Although in the time available we were unable to review the details of the scope of the works as constructed we consider the pre-tender assessment to be inconsistent with zero cost allocated to [ x ] within the calculation for this line.

At AIR13 we recommend that the Company should develop a top-down assessment, which allocates all costs within a work package to one of the four investment drivers. [ x ] this analysis is already undertaken for scheme approval, and may provide a more consistent approach and result in more robust estimates of the cost of DG2 removals. At the time of the AIR13 audits the Company explained that it would consider a top-down analysis when it was reviewing the cost estimates for AIR14, although we saw no evidence of this analysis.

However, we also consider the significant year-on-year variability in the average cost, from £13.7k/property in AIR11 to £3.0k/property in AIR12 to £0.8k/property in AIR13 and to £9.1k/property in AIR14 reflects the relatively small number of schemes with mixed investment drivers.

### 4.3 Reporting procedures

Properties at risk of receiving low pressure or flow are recorded in the Company's DG2 register; this contains full documentary evidence for properties that remain, are added or are removed from the register.

### 4.4 Quality assurance

We note that the Company's methodology demands that the table and commentary are 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 internal data challenge and consistency checks built into the calculation spreadsheet.

## 5. Audit findings

Line 1 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 7,000 (0.9%) properties connected to water supply from AIR13. The number of properties is derived from NI Water's billing system (Rapid).

We observed that the Rapid Property Summary sheet shows a number of properties not connected to water supply (i.e. sewerage only, no water/well water, trade effluent). Removing these properties from this line is correct.

The properties within the DG2 register are only revised following the implementation of schemes. We recommend that with the improved availability of pressure data within Netbase the Company could refresh the DG2 register on a more regular basis.

We consider the high year-on-year variability in the average cost of removing properties from the DG2 register is due to the different mix of schemes with various investment drivers that are undertaken each year.

## 6. Assumptions

There are no assumptions to disclose.

## 7. Confidence grades

The Company submitted their confidence grade of A2 for Line 1, however after their submission we agreed that the confidence grade is B2. Please see our detailed comments on the confidence grades in Table 7.

The Company proposed a B2 confidence grade for Line 4c, however given the uncertainty surrounding the calculation of the average cost of DG2 removal and the high year-on-year variability that we have observed we do not consider an improvement from the AIR13 confidence grade of C4 has been justified.

The Company has not changed the confidence grade for any of the remaining lines in this table; we consider the values reported for AIR13 are still appropriate for AIR14.

## 8. Consistency checks

We confirm that the Table 2 Line 1 is consistent with the sum of Lines 6 and 7 of Table 4.

We can also confirm that the Table 2 Line 1 is consistent with the Table 7 Lines 7 and 11 (but at year end figure). Please our Table 7 commentary for detail.

The value from Line 3 has been correctly transferred to Table 44 (Line 2).

## Block B – DG3 Supply Interruptions

### 1. Introduction

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

- In general, NI Water reported a decrease in the number of properties experiencing a supply interruption. The Company explained that this decrease is due to the mild weather in winter as well as initiatives aimed at reducing reported interruption durations.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

#### 2.1 Key recommendations

- Continuation of initiatives to develop root cause analysis.
- Continuation of quality assurance checks on unplanned and planned interruption data to assist in ensuring reported data is reliable, accurate and complete.

### 3. Audit approach

To verify the data reported by the Company, our audit consisted of an interview with the NI Water system holder and an area manager, 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.

### 4. Company methodology

#### 4.1 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. In practice the start time is the point at which activity (such as a valve turn) is recorded by field staff.
- **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 to the tap.
- **End time** – when the Company is satisfied that water has been fully restored to an acceptable pressure to the affected properties.

### ***Interruption end time***

During the audit the Company demonstrated the checks they undertake to verify the end time of unplanned interruptions of 5 hours or more by comparing customer contacts (from Rapid) relating to no water incidents and times input onto OMIS by field staff. If the call logs show a no water complaint after the noted restored time than a query is raised by the line owner with the field staff and if the field representative approves the interruption duration for that particular contact(s) the duration is amended.

### ***Interruption classification***

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. Any planned interruption that is started before the planned date and time is also to be classified as unplanned.
- **Overruns of planned interruptions** - When a planned interruption and warned interruption continues beyond the end of the warned time, for whatever reason and whether or not a customer has been advised during the 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 indirectly results in an unplanned loss of supply to enable the damage to be repaired.

### ***Property estimates***

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 confirm the property types extracted from the Company's GIS system are detailed within their methodology.

NI Water carries out checks customer complains of 'no water' from Rapid (see end time comments above) and where anomalies exist these properties are added onto the DG3 register. During our audit, we observed that the Company does not include properties on the same streets which might not had supply but did not contact the Company. We believe that there is a small risk that the number affected by supply interruptions could be under reported but this is likely to be within the tolerances of the confidence grades assigned.

### ***DG3 Register***

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.



## 4.2 Reporting procedures

OMIS is used as the main tool for recording supply interruptions. We found the system is used only by Customer Service Delivery Directorate as the contractors working for Engineering and Procurement Directorate (EP) and Customer Field Services do not currently have access. However, any interruption data is provided by representatives of these functions on a monthly basis via spreadsheet templates to the line owner. Information from the two EP regions and Customer Field Services is provided for input each month on spreadsheets and transferred to the Composite Interruption Data File by the DG3 line owner.

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 work streams to form a complete listing.

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 a replacement system CIMS is due to be implemented. From our discussion we understand that the new facility will be able to record more precise times on each interruption. We will check this in AIR15 audit.

## 4.3 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 has only carried out a limited number of checks, we saw evidence of the start time of an interruption (and duration) being amended. We believe these are useful check to verify and challenge the recording of interruption recording on OMIS. We note that due to a shortage of field staff at later stage of FY2013, checks on planned interruptions by their contractors have not been completed and would recommend tests to check the reliability, accurateness and completeness of data founded by NI Water's contracting partners. NI Water advised that a replacement has recently been appointed and checks are due to resume.

## 5. Audit findings

### 5.1 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 used only by Customer Service Delivery Directorate as the contractors working for Engineering and Procurement Directorate (EP) and Customer Field Services do not currently have direct access. However, interruption data is provided by representatives of these functions on a monthly basis via spreadsheet templates. Interruption details are transferred to the Composite Interruption Data File along with information extracted from OMIS for Networks Water and Leakage Services.

### 5.2 Unplanned Interruptions (Lines 5 to 8)

#### 5.2.1 DG3 Performance

NI Water reports a decrease in the number of properties experiencing a supply interruption. The Company explained that a proportion of this decrease is due to the mild weather throughout of the year and the application of updated methodology. The reported 13/14 performance achieved the PC13 targets which are illustrated below.

**Table 2.2: PC13 - Interruptions to supply targets**

	PC13 13/14 target	13/14 reported outturn
Composite Score	1.12	0.964
% properties > 12 hours	0.19	0.145

The number of mains burst per 1000km (Table 11 Line 11) has also reduced which at a strategic level accords with the reducing in the DG3 score for AIR14.

#### 5.2.2 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
[ x ] <i>Int. number 21989</i>	✓	>3hrs (<6hrs)	<ul style="list-style-type: none"> <li>Burst occurred in location which made excavation difficult</li> <li>155 properties affected by interruption greater than 3 hours (but less than 6 hours)</li> <li>Event recorded in DG3 register</li> </ul>
[ x ] <i>Int. numbers EP047a, b, c</i>	✓	Various	<ul style="list-style-type: none"> <li>Burst</li> <li>Property numbers reconciled to DG3 register and evidence supplied by the field (including upward report)</li> </ul>
[ x ] <i>Int. number 22417</i>	✓	Various	<ul style="list-style-type: none"> <li>Burst trunk main</li> <li>Property numbers reconciled to DG3 register and evidence supplied by the field (inc upward report, rezoning maps and pressure data)</li> <li>Discussed with a field manager on DG3 recording process</li> </ul>

Incident	Unplanned Categorisation	Duration	Comment
[ x ] <i>Int. numbers (not available)</i>	✓	Various	<ul style="list-style-type: none"> <li>Burst</li> <li>Property numbers reconciled to DG3 register and evidence supplied by the field (including upward report)</li> <li>Interruption References were manually assigned due to the timing of analysis completion.</li> </ul>
[ x ] <i>Int. number 24104</i>	✓	>3hrs (<6hrs)	<ul style="list-style-type: none"> <li>Burst main</li> <li>Originally start time was recorded at 11am on OMIS. After checking customer complaints (1012am), it was changed to 10am.</li> <li>Property numbers reconciled to DG3 register and evidence supplied by the field</li> </ul>
[ x ] <i>Int. number 24409</i>	✓	>6hrs (<12hrs)	<ul style="list-style-type: none"> <li>Burst trunk main</li> <li>OMIS report originally showed 23 props affected. After checking customer complains, 1 prop was added.</li> <li>Property numbers reconciled to DG3 register and evidence supplied by the field (including upward report)</li> </ul>
[ x ] <i>Int. number 24404</i>	✓	>12hrs (<24hrs)	<ul style="list-style-type: none"> <li>Burst trunk main</li> <li>Property numbers reconciled to DG3 register and evidence supplied by the field (including upward report)</li> </ul>
[ x ] <i>Int. numbers 24383, 24384</i>	✓	Various	<ul style="list-style-type: none"> <li>Burst trunk main</li> <li>Original duration was from 630am to 1130am. After checking customer complains it was changed from 615am to 430pm, and 52 props were added.</li> </ul>

During the Report Year NI Water brought the [ x ] incident to our attention as they wished refer their reporting methodology for particularly high impact events in the past where rezoning had taken place we were advised that the impact on the whole DMA would be reported for the [ x ] event. NI Water opted to use telemetry data and known elevation levels to determine whether supply had been maintained or not to particular parts of the DMA.

We reviewed the Company's reporting of this event and believe it to be reasonably based a telemetry and property elevation have been subject to detail assessment. The approach taken is also consistent with reporting practices we have reviewed elsewhere. A key factor in the Company's approach is the level of service they assume that supplies have been restored. We queried this and NI Water outlined that properties deemed to be without 15m/hd were considered to have no supply. This is an important assumption which governs the end time of an interruption and recommend that is built into the Company's methodology statement.

During the audit we also discussed other initiatives to reduce supply interruptions. NI Water outlined that they have been collating root cause analysis information for last 2 years. In 2012/13, information was collated for unplanned interruptions >12hrs & in 2013/14, information was collated for unplanned interruptions >6hrs. We reviewed examples of these and NI Water explained the next stage of this process is to analyse these and develop an improvement strategy aimed at reducing interruption durations. We believe this is a worthwhile initiative and would urge the Company to continue

developing this initiative as this should prove to be a useful tool by which solutions to commonly experienced issues can be shared.

Similarly, we have reviewed practices elsewhere where as part of the supply interruption recording process asset failure information is collected. Typically for bursts this would be detail on pipe material, size, location etc. Information is then fed into asset maintenance strategies and would recommend that, if similar information is not collected elsewhere in NI Water then some form of data collection system is introduced.

### **5.3 Planned and warned interruptions (Lines 9 to 12)**

For Lines 9 to 12 – “Planned and warned interruptions” there has been a significant decrease (circa by 30%) in the number of properties affected by scheduled interruptions. NI Water notes this is associated with a decline in activity associated with their mains rehabilitation programme. Corroborative evidence of this is seen in Table 11 where the reported mains activity has reduced.

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 observed 12 cases where ‘Types of Warning’ were missing but classified as Planned and warned. NI Water explained that the ‘Warning Issued’ date and time can still be taken as evidence that a warning was issued. They added that they carry out analysis and if unclear, they query the field managers for details and reclassify if necessarily. We reviewed their analysis and these 12 incidents were classified according to the Reporting Requirements.

Following previous audit findings where we identified some discrepancies in the audit trail NI Water commenced a routine audit exercise to check the accuracy of the data presented. We briefly reviewed the checks carried out (including checks to the carding notice) and believe them to be reasonably based. We recommend these checks are continued as they should assist in maintaining confidence in the data reported.

### **5.4 Interruptions caused by Third Parties (Lines 13 to 16)**

We checked two incidents from the small number of incidents classed as third party and confirm each were correctly reported as third party (caused by contractors or persons not acting on behalf of NI Water). On the basis of the checks carried out we are content the Company's methodology in this area is in accordance with the reporting guidance.

### **5.5 Overruns of planned interruptions (Lines 17 to 19)**

As in previous years, the Company has reported a small number of overruns of planned interruptions. These are generally identified by the line owner as part of the data collation process and during the audit we discussed the methodology and checks used to identify overruns and believe these to be satisfactory. We have checked one incident reported by NI Water and confirm it is in accordance with the reporting guidance.

## **6. 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 each of the lines relating to supply interruptions NI Water provides a detailed overview of their justification for this within their commentaries. 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.

## Block C – Winter Population (Line 20)

### 1. Audit findings

The estimate of winter population is based on NI *Department of Enterprise, Trade and Investment (DETINI)* data.

The Company provided 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 but note it is reliant upon a number of external data sources and assumptions.

In terms of overall population reported in this line, NI Water estimate there has been a small increase of 0.4%.

### 2. Methodology

The configuration and availability of the source data means that the Company has had to rely on interpolating several figures to derive their estimate of winter population. The methodology to undertake this estimate is detailed in NI Water's commentary and we confirm that we have, where possible, traced data back to a published source e.g. DETINI data. 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.

Acknowledging weaknesses in the methodology were suggested by the Company including a simple % increase/decrease simple estimate on tourist figures which could be prorated each year. We discussed that whilst the methodology is not ideal, basing the population estimate on DETNI data is preferred, as consistency to a source will be maintained rather than an assumption which may result in divergence of estimates over time. The Company added that although the reports used to estimate the winter population are published on the Department of Enterprise, Trade and Investment NI (DETINI) website, the data contained within the reports is compiled by the NI Statistics & Research Agency (NISRA). We will carry out consistency checks of DETINI data with other data sources for next year. We are aware that English and Welsh companies use a range of methodologies to report on this line. Some rely on ONS census data and modelling of tourism data whilst others, like NI Water relies on tourism surveys. Before enacting any change in approach we recommend the Company consult with the Regulator to ascertain what significance this estimate has within their econometric models.

### 3. Confidence grades

The Company have assigned a confidence grade of C2 to this line, which we consider to be appropriate. This is based on the Company's reliance on a third party data sources and acknowledges weaknesses in the approach to derive the estimate.

## **Block D – DG4 Restrictions on use of water (Lines 21 to 23)**

### **1. Audit findings**

There have been no DG4 restrictions on the use of water during the report year (which we also validated from the company website and a search of the internet news sites). 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 has assigned a confidence grade of A1 to this line. We consider this confidence grade to be appropriate.

## Table 3 – Sewerage Service – Internal Flooding (Total)

### 1. Introduction

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 findings

#### 2.1 Internal flooding

- After the Company's submission, we agreed with the Company that the confidence grades for Line 1 is B2. Please see our Table 7 commentary for further detail.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.
- The 2013/14 report year has seen further consolidation of the overall sewer flooding process for NI Water. Whilst incident reporting is now part of 'business as usual' operations, the quality of data collected is still of relatively poor quality. The number of 'false' internal flooding contacts referred to the Maintenance Contractor by the Customer Response Centre (CRC) is still of concern to us and should continue to be a primary area of focus for the Company.
- During the year, NI Water received 490 internal flooding contacts. Whilst this represents a 26% decrease on the 656 contacts reported in AIR13, the proportion of 'false' internal flooding contacts (i.e. 419 out of 490) is significantly higher than we would expect to see. We note the introduction of the 'Flood Incident Line' (FIL) following recommendations in the PEDU Report, with call handlers, who have not received the same level of training as CRC staff, referring calls, which may explain the sustained level of 'false' internal flooding contacts received during the year.
- For AIR14, NI Water has reported 6 incidents of internal flooding (due to overloaded sewers), of which 5 were attributed to severe weather, and 55 incidents of flooding due to other causes. As previously highlighted NI Water continues to be an outlier in terms of internal flooding when compared to the rest of the UK, supporting the view that the overall sewerage design and network configuration may be the main explanatory factor for the low levels of internal flooding reported in NI.
- Whilst the Company's process for investigating and understanding the true nature of the 'false' contacts is quite robust, it is very labour intensive, requiring a member of the Wastewater Business Unit team to complete a desktop investigation of each contact to identify whether flooding has occurred. The need to undertake this secondary verification is symptomatic of the poor quality incident records collected by the Maintenance Contractor whilst attending each incident.
- It appears that the Maintenance Contractor only places emphasis on the completion of the FIR and collection of evidence, for incidents where there is confirmed flooding and a clean-up is



required. For all non-flooding or non-clean-up incidents, records are often incomplete or non-existent, making it difficult to assess why the contact was made in the first place.

- During our AIR13 audit of Table 3, we identified a section of main that was subject to frequent repeat blockages. In response to this, the Company are now proactively targeting repeat blockages, whereby a dedicated CCTV crew has been assigned to each area to complete CCTV inspections on all blockage hotspots and carry out cleaning, desilting and repairs, where problems are identified. In addition to this, we believe the Company should also consider a targeted SMRP, delivered in conjunction with the above, to help further reduce the number of blockages and collapses.
- During the course of our review, we noted that NI Water is tending to take full responsibility for flooding issues (particularly across Belfast), with multiple flooding mechanisms over and above sewer surcharge, such as overland flow from adjacent natural watercourses. In many cases, the solution proposed for this type of catchment wide problem is both large and expensive, with a long lead-in time to develop the proposed solution. As such, customers continue to be left at risk of flooding. We recommend that mitigation should be considered in these instances to reduce the risk of subsequent incidents of internal flooding.
- For 2013/14, the Company completed 4 schemes during the year, whereby 3 properties were removed from the 1in10 Register and 3 properties from the 1in20yr Flooding Register. A further 5 properties were removed from the 1in20 Register, when investigations confirmed that 5 properties have been protected from a DAP rehabilitation scheme completed in 2012.
- Against a PC13 Year 1 target of 23 capital removals, NI Water delivered 11 removals by company action (of which 5 were actually delivered in PC10). Overall, NI Water has committed to deliver 67 capital removals over PC13, which would require them to deliver 56 outputs in Year 2 of PC13. On this basis, we consider the Company are unlikely to deliver their PC13 DG5 programme.
- NI Water has reported an average capex cost per output of £234k for the 2in10/1in10 outputs and £144k for the 1in20 outputs in AIR14. However, the average cost for the 1in20 outputs is not a reflection of actual cost. For KL469, which enabled the removal of 2 properties [ x ], there was no allocation to ESL and have therefore been claimed as zero cost outputs, despite the scheme costing £263k to deliver.
- The Company has once again assigned a confidence grade of B2 to Lines 2 to 11, on the basis that all data is derived from Ellipse, and that the Company undertakes an investigation of all reported incidents. We have previously challenged this on the basis the number of reported incidents is so small and any variance in numbers (due to errors) would be considerably greater than +/-5%. However, based on our findings for AIR14, which broadly supports the Company's assessments, we are minded to support a B2 for Lines 2 to 11, 15a and 17 for AIR14.

## 2.2 External flooding

- Historically, there has been very little focus on the management and reporting of external flooding data, and this position has not changed for AIR14. The process is still heavily dependent on the assumption that information provided by the maintenance contractor is accurate and complete.
- During the year, NI Water received 7,770 external flooding contacts, and an additional 1,780 potential incidents, referred to the CRC by Network Operations staff, of which 6,021 were not deemed to be external flooding incidents. For AIR14, 115 contacts were found to relate to external flooding incidents (due to overloaded sewers) and 3,389 contacts related to external flooding incidents (other causes).

- The Company currently places very little importance on the collection and reporting of external flooding data and are primarily relying on the Contractor collecting an appropriate level of evidence/information at the time of the incident. However, this is not consistently occurring, therefore the Company should endeavour to ensure sufficient information/evidence is collected to enable the true nature of each contact to be determined.
- A confidence grade of D6 has been assigned to Lines 1 to 15 on the basis that the raw data has been taken from Contractor records with limited investigation completed to verify the Contractor records.

## 2.3 Key recommendations

- There is an inconsistency between Line 1 and DG5 figures. Number of **domestic** properties connected to sewerage service (Line 1) should include non-household properties that receive **domestic** allowance. NI Water should seek further guidance from the UR.

## 3. Audit approach

Our review of the Company's AIR14 Table 3 submission consisted of a meeting with the key NI Water system holders, including representatives from Wastewater Operations and Asset Management.

In order to assess the effectiveness of the Company's DG5 processes and appropriateness of the allocation of properties to the various Flooding registers we reviewed a large selection of properties that were:

- Initially reported as internal flooding, but subsequently deemed to have not flooded internally
- Confirmed as internal flooding due to overloaded sewers
- Confirmed as internal flooding due to severe weather
- Confirmed as internal flooding due to other causes
- DG5 Register additions, removals and movements.

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

## 4. Audit findings – Internal flooding DG5

### 4.1 Properties connected at year end (Line 1)

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 5,000 properties (or 0.8%) connected from that reported in 2012/13, while an increase in household properties connected to water services is 7,600 (or 0.9%).

We observed that the number reported in this line includes only household (domestic) properties. However as DG5 includes non-household properties except the properties which do not have domestic facilities (e.g. kitchen or toilets). Therefore we believe that this line should include properties who receive domestic allowance NHH. There is an inconsistency between Line 1 and DG5 figures.

## 4.2 DG5 Annual flooding summary

### 4.2.1 General

The 2013/14 report year has seen further consolidation of the overall sewer flooding process for NI Water. Whilst incident reporting is now part of 'business as usual' operations, the quality of data collected is still of relatively poor quality.

The number of 'false' internal flooding contacts referred to the Maintenance Contractor by the Customer Response Centre (CRC) is still of concern to us and should continue to be a primary area of focus for the Company. With this in mind, the Company has continued to monitor performance of the CRC on a monthly basis and provides training as and when required, particularly when new staff are introduced to the CRC.

During the year, NI Water received 490 internal flooding contacts. Whilst this represents a 26% decrease on the 656 contacts reported in AIR13, the proportion of 'false' internal flooding contacts (i.e. 419 out of 490) is significantly higher than we would expect to see, suggesting the CRC is either incorrectly capturing contact details or the incident is not being appropriately responded to by the Maintenance Contractor. If it was the latter, however, you would expect a significant number of complaints, which is not apparent. Following the widespread flooding reported in Belfast in 2013, the PEDU report was commissioned by the DRD to review the province's response to all types of flooding. One of the recommendations of the PEDU report was the introduction of the 'Flood Incident Line' (FIL). We understand that the FIL has been in operation during the year and has been receiving and forwarding flooding contacts to NI Water. NI Water advised that the FIL call handlers have not received the same level of training as CRC staff, which may explain the sustained level of 'false' internal flooding contacts received during the year. We recommend the Company separately captures the number of FIL referrals and assesses the accuracy of the calls received. Should there be an issue identified, the Company should consider providing separate training to FIL staff on the DG5 indicator.

Notwithstanding the above, the Company has continued to review and assess every internal flooding related contact received during the year in order to establish the cause of all 'false' internal flooding contacts. We found, that for every contact, investigations were carried out using information from the Maintenance Contractor, Flood Incident Report (FIR) Forms, Field Manager reports, Customer Field Manager reports and modelling provided by Drainage Area Plan consultants. In addition, Wastewater Operations also contacted the customer, where possible, to establish the nature of the contact and to obtain evidence of flooding. We reviewed the analysis undertaken during the year and found the following.

Of the 490 internal flooding contacts received, we note that:

- 195 related to external flooding
- 100 related to follow on contacts relating to a previously reported incident
- 54 related to cancelled jobs
- 47 related to incidents on private sewers
- 25 related to repeat calls, and
- 7 related to NIHE contacts

On the basis of the above, 429 contacts did not relate to internal flooding. Of the remaining 61 contacts, 5 related to a severe weather event, 55 FOC and only 1 actual DG5 incident.

As part of our AIR14 review, we reviewed a number of the 426 contacts deemed not to relate to internal flooding, the results of which are summarised below:

Incident Location	Date of Contact	Result	Reason for Exclusion
[ x ]	16/07/2013	Exclude	<ul style="list-style-type: none"> <li>• Maintenance Contractor confirmed blockage only</li> <li>• Customer unavailable for contact, and did not respond to message</li> <li>• No flooding - NAR</li> </ul>
[ x ]	04/07/2013	Exclude	<ul style="list-style-type: none"> <li>• Initially reported as internal flooding.</li> <li>• Customer contacted, who confirmed external flooding only</li> <li>• Maintenance Contractor (and FIR) stated blockage only</li> <li>• Correctly reported as external flooding.</li> </ul>
[ x ]	29/07/2013	Exclude	<ul style="list-style-type: none"> <li>• Initially reported as internal flooding.</li> <li>• CFM attended site and confirmed external flooding to property as a result of storm runoff</li> <li>• No sewer surcharge</li> <li>• NAR</li> </ul>
[ x ]	07/01/2014	Exclude	<ul style="list-style-type: none"> <li>• Customer reported internal flooding</li> <li>• FIR confirmed blockage, but no flooding</li> <li>• Investigation confirmed external flooding</li> <li>• Recommend incident reported as external flooding</li> </ul>
[ x ]	30/01/2014	Exclude Private	<ul style="list-style-type: none"> <li>• Maintenance Contractor completed FIR and confirmed there were no issues with the public sewer</li> <li>• Follow up investigation located a deodorant can stuck in the soil stack, causing sewer to back up into property.</li> <li>• Private issue. Not NIW responsibility.</li> </ul>
[ x ]	26/01/2014	Exclude	<ul style="list-style-type: none"> <li>• FIR stated No Flooding</li> <li>• Investigation confirmed surface water flooding caused by surcharging road service gully.</li> <li>• No internal flooding</li> <li>• Not NIW responsibility</li> </ul>

Whilst the Company's process for investigating and understanding of the true nature of the 'false' contacts is quite robust, it is very labour intensive, requiring a member of the Wastewater Business Unit team to complete a desktop investigation of each contact to identify whether flooding has occurred. The need to undertake this secondary verification is symptomatic of the poor quality incident records collected by the Maintenance Contractor whilst attending each incident. We have previously recommended that effort is focussed on improving performance of the Maintenance Contractor attending each incident, particularly the non-DG5 incidents, to ensure sufficient information is recorded on the Flooding Incident Report (FIR). However, performance is unchanged from previous years. It appears that emphasis is still only placed on the completion of the FIR and collection of evidence, for incidents where there is confirmed flooding and a clean-up is required. For all non-flooding, and non-clean-up incidents, records are often incomplete or non-existent, making it difficult to assess why the contact was made in the first place. For the process to be effective, it is important that sufficient levels of detailed information are collected at the time of the incident and whilst on site, to ensure appropriate categorisation and to ensure any other affected properties are identified. On this basis, we consider it should be a priority for either; the Maintenance Contractor to not just clean-up and move on, but to establish a root cause for each contact; or for the Company to take responsibility for incident reporting. We understand the Maintenance Contract was recently retendered, with the incumbents retained. We understand that requirements have been built into the new contract to ensure the FIR is satisfactorily completed, with mechanisms that would allow for the contractor to be penalised for poor data collection. We encourage the Company to not only enforce the new contract, but to also provide further training to the Maintenance Contractors to ensure they understand the need and requirement to collect sufficient evidence/data for each incident attended to substantively verify and close out each flooding contact.

#### 4.2.2 AIR14 Flooding Incidents (overloaded sewers)

For AIR14, NI Water has reported 6 incidents of internal flooding (due to overloaded sewers) during the year, of which 5 were attributed to severe weather. Again, this performance is out of step with the rest of the industry, supporting the view that the overall sewerage design and network configuration may be the main explanatory factor for the low levels of internal flooding reported in NI. We are increasingly of the view that the network must contain a number of integral relief points, which protect properties from internally flooding, by instead surcharging to roads, parks, waterways etc. As the Company's understanding of external flooding improves, we would expect to see a higher proportion of external flooding events reported in NI, when compared to E&W. Furthermore, as the Company continues to deliver UID improvements, it would be interesting to see if the level of internal flooding proportionately increases. It may be that resolution of UIDs may reduce the number of relief points within the network.

##### 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 properties identified as flooding during the year, details of which are summarised below:

Incident Location	Date of Incident	Incident Summary
[ x ]	29/07/2013	<ul style="list-style-type: none"> <li>Internal flooding reported on 29/7/13</li> <li>FIR stated external flooding only</li> <li>CFM attended site and identified internal flooding to shower tray, located below ground level at the rear of the house.</li> <li>Flooding extent assessment completed, confirming no other properties were affected</li> <li>Model confirms flooding 1in5yrs. On this basis DG5 Panel added property to 2in10 Register</li> </ul>
[ x ]	25/7/2013	<ul style="list-style-type: none"> <li>Internal flooding reported at 3 props</li> <li>Severe Weather Event – see below</li> </ul>
[ x ]	25/7/2013	<ul style="list-style-type: none"> <li>Internal flooding reported at 3 props</li> <li>Severe Weather Event – see below</li> </ul>

On the basis of our findings, we believe the correct assessment have been made, although it continues to highlight that the FIR was not being consistently completed.

#### 4.2.3 AIR14 Flooding Incidents (overloaded sewers attributed to severe weather)

For AIR14, NI Water has reported 5 incidents of internal flooding (overloaded sewers) that were attributed to a single severe weather event at 2 separate locations.

The severe weather event occurred on the 25<sup>th</sup> July 2013, and resulted in flooding to 5 properties around Lough Neagh. As summarised in the table below, we reviewed the Met Office rainfall reports obtained for each of the affected areas, and confirm the appropriateness of the Company's assessment.

Date of Event	Location	Met Office Result	Properties Affected
25/7/13	Antrim	1 in 273 yrs	3
25/7/13	Moy	1 in 500 yrs	2
		Total	5

As highlighted previously, the assessments provided by the Met Office are expensive to procure and do not always reflect the rainfall conditions experienced. With this in mind we have previously encouraged the Company to explore the use of real time radar based rainfall depth and duration data from the Met Office Nimrod system to assess the storm return period for each event. We also highlighted that given the relatively low number of incidents reported, this approach may be uneconomical. However, NI Water has assessed the relative costs and opted to follow the 'real time radar' approach, although, the process of procuring the raw radar data and data analysis service has been problematic. Whilst it was expected that raw data would be available during the Report Year, we understand the procurement process is still ongoing.

#### 4.2.4 AIR14 Flooding Incidents (other causes)

For AIR14, NI Water has reported 55 incidents of flooding due to other causes, 36 due to blockages, 5 due to collapses and 14 due to equipment failure. As per overloaded incidents, NI Water is an outlier in terms of FOC (blockage) performance, and despite consistently experiencing circa 3-4 times more blockages/km than Scotland and E&W, continues to experience a very low number of FOC serviceability failures.

During our AIR13 audit of Table 3, we identified a section of main that was subject to frequent repeat blockages, suggesting structural issues with the sewer, and recommended that NI Water considers the implementation of a targeted Sewer Main Replacement Programme, whereby a prioritised replacement programme is based on blockage hotspots. In response to this, the Company is now proactively targeting repeat blockages, whereby a dedicated CCTV crew has been assigned to each area to complete CCTV inspections on all blockage hotspots and carry out cleaning, desilting and repairs, where problems are identified. For AIR14, the Company has reported a 17% reduction in blockages, which the Company attributes to this new renewed focus on repeats. Whilst this appears to be delivering improvements, we consider the introduction of a targeted SMRP (as recommended in AIR13) will deliver further improvements.

Following on from AIR13, the Company has continued to report a proportionately high number of FOC due to equipment failure. We queried whether the high number of incidents reported continue to relate to the ongoing failure of Sydenham WwPS in Belfast. The Company confirmed that Sydenham WwPS continues to be manned on a 24hour basis to ensure any faults are identified and pump operation is maintained. We found that the FOC due to equipment failure reported during the year, primarily related to 2 WwPS failures at [ x ] WwPS in Downpatrick and [ x ] WwPS in Belfast. It appears that both sets of pumps failed on the 17<sup>th</sup> April 2013, causing flooding to 11 properties.

##### 4.2.4.1 Audit checks

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

Incident Location	Date of Incident	Incident Summary
[ x ]	5/1/2014	<ul style="list-style-type: none"> <li>FIR stated blockage in 'private sewer' caused internal flooding to shop. Blockage was identified and cleared</li> <li>Flooding caused by surcharge of manhole located inside the shop. Appears that shop was built over an NIW sewer that was not identified on GIS</li> <li>Photographic evidence confirmed internal flooding</li> <li>Investigation confirmed NIW sewer and history of blockages on main sewer</li> <li>Correctly reported - FOC - Blockage</li> </ul>

Incident Location	Date of Incident	Incident Summary
[ x ]	2/10/2013	<ul style="list-style-type: none"> <li>Internal flooding to integral garage</li> <li>FIR confirmed blockage was identified and cleared</li> <li>Correctly reported FOC – Blockage</li> </ul>
[ x ]	26/7/2013	<ul style="list-style-type: none"> <li>Blockage on inlet of nearby WwPS, caused sewer to back up and surcharge to property.</li> <li>FIR stated external flooding due to blockage</li> <li>Subsequent discussions with customer confirmed internal flooding had occurred and was cleaned up by customer</li> <li>Correctly reported FOC – Blockage</li> </ul>
[ x ]	25/7/2013	<ul style="list-style-type: none"> <li>Collapsed sewer on road, caused internal flooding to property</li> <li>FIR stated FOC – Blockage</li> <li>Investigation by CFM confirmed FOC –collapse</li> <li>Collapse was repaired on w/c 1/8/13</li> <li>Correctly reported FOC – Collapse</li> </ul>
[ x ]	17/4/2013	<ul style="list-style-type: none"> <li>Pumps failed at [ x ] WwPS, causing internal flooding at 5 properties along [ x ]</li> <li>Correctly reported FOC – Equipment Failure</li> </ul>
[ x ]	17/4/2013	<ul style="list-style-type: none"> <li>Pumps failed at WwPS, causing internal flooding at 6 properties along [ x ]</li> <li>Correctly reported FOC – Equipment Failure</li> </ul>

The above sample of incidents reviewed, confirms the poor standard of FIRs completed by the Maintenance Contractor, and the often inaccurate detail provided; with the majority of incidents requiring further follow up by the Company, in order to ascertain the root cause and effect of the incident.

### 4.3 AIR14 DG5 Properties on the At Risk Register

#### 4.3.1 Verification of Historic Risk Register

Over the previous few years, the Company has undertaken to investigate, assess and cleanse all historic flooding records, by completing the following tasks for each property:

- A site visit is completed
- The occupant of the affected property and neighbouring properties are interviewed and a questionnaire completed
- CCTV survey completed of network
- Local operations staff are interviewed
- Historical complaints data (from Ellipse) for the area is reviewed
- DAS model reviewed/updated

Through this process (and a targeted capital removal programme), NI Water has been able to remove a large proportion of the properties initially included on the historic flooding register, with the Register reducing from 825 properties in 2008/09 to 192 in 2013/14.

In AIR13, we highlighted that the final 71 'historic' flooders were forecast for assessment during 2013/14. We queried the progress that had been made in assessing the final batch of 'historic' flooders and the Company advised that all remaining 'historic' properties on the Flooding Register have been incorporated into projects, and are currently subject to full feasibility assessment by E&P.

### 4.3.2 AIR14 At Risk Summary

For AIR14, NI Water has reported 70 properties on the 2in10/1in10yr Flooding Registers. We reviewed a sample of these incidents, all of which have been presented to the 'DG5 Panel' for review and allocation, and have included summaries below.

Location	B.I Addition	Findings
[ x ]	Added to 2in10 Register	<ul style="list-style-type: none"> <li>Property flooded in 2010. Investigation completed in 2013/14.</li> <li>Customer interview confirms property suffered internal flooding on one occasion in 2010 and external flooding on 6 other occasions</li> <li>Model confirmed property should flood during a 1in5yr event</li> <li>Model indicates surcharge from upstream manhole, causing overland flow and flooding of property – consistent with customer description</li> <li>Added to 2in10 Register on basis of model results and customer survey</li> <li>Reporter agrees</li> </ul>
[ x ]	Added to 1in10 Register	<ul style="list-style-type: none"> <li>History of internal and external flooding at this address, with last internal incident reported in 2010. Investigation completed in 2013/14</li> <li>Customer interview confirms regular external flooding, with 1 internal incident in 2010, requiring temporary re-housing</li> <li>Model confirmed property should flood during a 1in10yr event</li> <li>Other properties on [ x ] already on the 1in10 and 1in20 Register</li> <li>Added to 1in10 Register on basis of model results and customer survey</li> <li>Reporter agrees</li> </ul>
[ x ]	Added to 2in10 Register	<ul style="list-style-type: none"> <li>History of internal and external flooding at this address, with internal incident reported in 2011, 2012 &amp; 2013. Investigation completed in 2013/14</li> <li>Customer interview confirms frequent external flooding, with internal flooding reported in 2011, 2012 &amp; 2013</li> <li>Model confirmed property should flood during a 1in1yr event and predicts surcharge from manhole adjacent to property</li> <li>Other properties on [ x ] already on the 2in10 Register</li> <li>Added to 2in10 Register on basis of model results and customer survey</li> <li>Reporter agrees</li> </ul>
[ x ]	Added to 2in10 Register	<ul style="list-style-type: none"> <li>History of internal and external flooding.</li> <li>Customer survey confirmed internal flooding on 4 separate occasions in 2000, 2007, 2008 &amp; 2009</li> <li>Model confirmed property should flood during a 1in5yr event</li> <li>Customer survey suggests flooding primarily caused by adjacent water course</li> <li>Added to 2in10 Register on basis of model results and customer survey</li> <li>Reporter considers root cause of flooding may be adjacent water course. A future capital scheme may therefore not resolve flooding issue</li> </ul>
[ x ]	Added to 2in10 Register	<ul style="list-style-type: none"> <li>Internal flooding reported on 29/7/13</li> <li>FIR stated external flooding only</li> <li>CFM attended site and identified internal flooding to shower tray, located below ground level at the rear of the house.</li> <li>Flooding extent assessment completed, confirming no other properties were affected</li> <li>Model confirms flooding 1in5yrs. On this basis DG5 Panel added property to 2in10 Register</li> </ul>

Overall, we consider the DG5 Panel' decisions have been appropriate and properties have been correctly allocated to the Flooding Register. However, possibly in the case of [ x ] (and for other properties reviewed as part of our PC15 review (namely, [ x ])), we are increasingly of the view that NI Water is taking full responsibility for flooding issues (particularly across Belfast), with multiple flooding mechanisms. We have seen instances of widespread flooding that do not appear to be primarily caused by sewer surcharge, but are more influenced by overland flow from adjacent natural watercourses with capacity issues. In many cases, the solution proposed for this type of catchment wide problem is both large and expensive, with a long lead-in time to develop the proposed solution. As such, customers continue to be left at risk of flooding. We have previously highlighted the benefit of providing mitigation to these properties to prevent subsequent incidents of internal flooding. Whilst mitigation does not resolve the capacity/drainage problem, it does reduce the risk of internal flooding to the particular property at risk. In E&W, companies are funded to provide flooding mitigation to flooders in advance of a permanent solution, and they have found this to be a good, low cost initiative that both



reduces the frequency of internal flooding but also ensures good customer relations. In advance of a wider permanent solution to address a number of flooding mechanisms (which is often catchment wide), we recommend the Company considers offering mitigation in the future, to protect properties from repeat incidents of internal flooding.

### 4.3.3 AIR14 Annual Changes to the Flooding Registers

Register movements reported during the year related primarily to investigations and capital schemes completed during the year.

In terms of removals due to company action (Lines 22 and 30), the Company has completed 4 schemes during the year, whereby 3 properties were removed from the 1in10 Register and 3 properties from the 1in20yr Flooding Register. A further 5 properties were removed from the 1in20 Register, when investigations confirmed the 5 properties have been protected from a DAP rehabilitation scheme completed in 2012.

Against a PC13 Year 1 target of 23 capital removals, NI Water delivered 11 removals by company action (of which 5 were actually delivered in PC10). Overall, NI Water committed to deliver 67 capital removals over PC13, which would require them to deliver 56 outputs in Year 2 of PC13. On this basis, we consider the Company is unlikely to deliver their PC13 DG5 programme. This apparent poor performance is due primarily to the fact; the number of arisals year on year are much lower than were initially anticipated and; the fact that over half the properties on the DG5 Register are located within the Belfast/Sydenham drainage network where the overall flooding mechanism is complex and difficult to resolve with simple standalone solutions.

Whilst there have been very few schemes delivered during the year, the Company has been working to group all properties on the DG5 Register into projects and complete feasibility assessments in order to develop solutions for delivery in the future. At year end, we found that 31 separate schemes have been identified by the Company to address 169 properties, and the solutions were at various stages of development.

We reviewed the details for the five schemes delivered during the year, and have summarised our findings below.

Location	Removal due to Company Action	Findings
[ x ]	Removed from 1in10 Register	<ul style="list-style-type: none"> <li>Frequent flooding to [ x ], during heavy rainfall.</li> <li>Photographic evidence of severe flooding on 23/7/09 and 20/8/09, although Met Office report confirms a 1in2yr and 1in0yr event</li> <li>Model of catchment confirmed insufficient capacity in the network.</li> <li>Scheme (KR460) developed to construct 800m x 300mm gravity storm sewer to relieve the flooding.</li> <li>Scheme was completed on 25/10/2013 at a cost of 659k for ESL element and output claimed on 19/11/2013.</li> <li>No flooding incidents since scheme. Properties removed from 1in10 Register.</li> </ul>
[ x ]	Removed from 1in10 Register	<ul style="list-style-type: none"> <li>Flooding reported on 1/4/10. Due to ground levels, external flooding leads to internal flooding through air bricks</li> <li>Flooding caused when adjacent WwPS backs up and surcharges into garden of No. 8</li> <li>Scheme (KL488) developed to upgrade [ x ] WwPS - deepen the sump to provide additional storage and construct an emergency relief overflow</li> <li>Scheme was completed in August 2013 at a cost of £41.5k for ESL element and output claimed in February 2014</li> </ul>

Location	Removal due to Company Action	Findings
		<ul style="list-style-type: none"> <li>No flooding incidents since scheme. Properties removed from 1in10 Register.</li> </ul>
[ x ]	Removed from 1in20 Register	<ul style="list-style-type: none"> <li>Widespread flooding in Derry, west of the River Foyle, with incidents reported between 2007 and 2009 – multiple properties affected</li> <li>The Londonderry DAP identified a number of capacity and sewer condition issues across the catchment, causing out of sewer flooding at various locations</li> <li>Scheme (KL455) was developed to rehabilitate and replace pipework to the west of the River Foyle that was identified of being subject to structural, capacity and serviceability issues.</li> <li>The scheme was completed on 23/3/2012 at a cost of £981k for the ESL element, and various DG5 outputs claimed.</li> <li>Following completion of the scheme, it was identified that a number of additional properties on the DG5 Register had benefited from the scheme, and these outputs (as listed) were subsequently claimed on 11/12/13</li> <li>No flooding incidents since scheme. Properties removed from 1in20 Register.</li> </ul>
[ x ]	Removed from 1in20 Register	<ul style="list-style-type: none"> <li>Flooding reported on 7/3/08, properties on historic DG5 Register</li> <li>As a result of development in the upstream catchment, flows in excess of 3 l/s (current PFF rate) gravitate to Maydown WwPS. Due to insufficient capacity, the upstream sewers surcharge and cause flooding to the 2 properties</li> <li>Scheme KL469 was developed to upgrade Maydown WwPS (and provide increased storage a PFF rate of 6l/s) to ensure sufficient capacity to address current and future demand.</li> <li>The scheme was completed during the report year and claimed on 11/12/13. The scheme had no allocation to ESL, therefore no cost has been attributed to these DG5 outputs</li> <li>No flooding incidents since scheme. Property removed from 1in20 Register</li> </ul>
[ x ]	Removed from 1in20 Register	<ul style="list-style-type: none"> <li>Suggestion that property has flooded on 3 previous occasions, although only recorded event was reported on 8/4/08, hence allocation to qin20 Register.</li> <li>DAP model confirms out of sewer flooding at [ x ] in a 1in5yr rainfall event</li> <li>A scheme (KR454) to lay 49m of 300mm link sewer and repair SPG4's was delivered during the report year at a cost of £167k for the ESL element and claimed on 5/3/14.</li> <li>No flooding incidents since scheme. Property removed from 1in20 Register</li> </ul>

NI Water has reported an average capex cost per output of £234k for the 2in10/1in10 outputs and £144k for the 1in20 outputs in AIR14.

When compared to previous years, the average cost per output is increasing, as you would expect, as the solutions delivered become more complex, however, as identified in the summary above, the average cost for the 1in20 outputs is not a reflection of actual cost. For KL469, which enabled the removal of 2 properties [ x ], there was no allocation to ESL and the outputs have therefore been claimed as zero cost outputs, despite the scheme costing £263k to deliver. On the basis of the above, we would expect an average cost for the 1in20 outputs of circa £155k, assuming ~30% of the scheme cost for KL469 is allocated to ESL.

The Company has also reported 43 removals as a result of better information, of which we reviewed 3 examples, affecting 6 properties, as summarised below.

Location	B.I Removal	Findings
[ x ]	1in20	<ul style="list-style-type: none"> <li>Properties originally added to the DG5 Register in 2008 as historic flooders identified in workshops</li> <li>Network Operations confirm the problem is caused by blockages not hydraulic incapacity.</li> <li>Removed from 1in20 Register and added to FOC</li> </ul>
[ x ]	1in20	<ul style="list-style-type: none"> <li>Properties originally added to the DG5 Register in 2008 as historic flooders identified in workshops</li> <li>DAP model predicts properties not at risk of flooding</li> <li>Network Operations confirm no history of flooding</li> <li>Removed from 1in20 Register</li> </ul>
[ x ]	1in20	<ul style="list-style-type: none"> <li>Property originally added to the DG5 Register in 2008 as a historic flooders identified in workshops</li> <li>Property flooded on 8/11/2010. Customer interviewed as part of investigation and confirmed property affected by surface water flooding from road gully. Surface water trapped between speed bumps and diverted to the property.</li> <li>Removed from 1in20 Register</li> </ul>

We also reviewed 2 movements between the Registers, summarised as follows:

Location	B.I Movement	Findings
[ x ]	FOC Equipment Failure to 2in10 Register	<ul style="list-style-type: none"> <li>Internal flooding of numerous properties on 6/8/11, caused by failure of pumps in downstream [ x ] WwPS which resulted in sewerage backing up and flooding nearby properties</li> <li>Initially reported as FOC – Equipment Failure due to the fact the flooding was caused by the failed pumps</li> <li>Subsequent investigation confirmed that due to the shallow physical layout of the existing WwPS and the pump switch on/off levels; during periods of heavy rainfall the WwPS inlet pipework becomes heavily surcharged and would result in sewage flows backing up into the catchment causing flooding</li> <li>DG5 Panel recommend movement from FOC to 2in10 Register, which is consistent with other similarly affected properties in the area.</li> </ul>
[ x ]	Move from 1in20 to 2in10 Register	<ul style="list-style-type: none"> <li>History of internal and external flooding at this address, with last internal incident reported in 2011. Initially added to 1in20 Register</li> <li>Investigation completed in 2013/14</li> <li>Customer interview confirms frequent external flooding, with internal flooding to integral garage reported in 2011</li> <li>Model confirmed property should flood during a 1in5yr event</li> <li>Surface water flooding from surcharging manhole, down drive and through integral garage</li> <li>Moved to 2in10 Register on basis of model results and customer survey</li> <li>Reporter agrees</li> </ul>

#### 4.3.4 Allocation to the Flooding Register

In AIR10 we highlighted that the DG5 Panel were tending to err on the side of caution and allocating new flooding arisals to the 1in10 Register by default, rather than allocate initially to the 1in20 year register as recommended in the UR guidance. In their guidance to Reporter's for AIR14, the UR sought an update on the Company's response. We confirm that as a result of this challenge, the Company reviewed their processes for AIR11 and first time flooders now default to the 1in20 Register. Should subsequent investigation/modelling confirm the properties are at a greater risk of flooding, then properties are

moved to the appropriate risk category, following submission of evidence to the DG5 Panel and subsequent agreement.

Historically, the Company have also defaulted a number of properties to the Flooding Register pending further investigation and assessment, and Line 15a was created to capture the extent of properties pending allocation. We confirm that all properties on the Register have been assessed, verified and allocated for AIR14, hence a Nil return has been reported for L15a.

## **5. Audit findings – External flooding**

### **5.1 General**

Historically, there has been very little focus on the management and reporting of external flooding data, and this position has not changed for AIR14.

Whilst NI Water has a written methodology for the collection and reporting of external flooding incidents, the process is still heavily dependent on the assumption the information provided by the maintenance contractor is accurate and complete. All data reported in Table 3a has been taken directly from the maintenance contractor's monthly returns, with a small number of the incidents independently investigated and verified by the Company each month. We have suggested improvements to the internal assurance of contractor-reported data, which is not consistently occurring, so that NI Water can ensure sufficient information (evidence) is collected to enable the true nature of each contact to be determined. Although we noted no issues with the data once provided to NI Water by the contractor we consider an internal assurance regime for contractor-reported data is needed.

During the year, NI Water received 7,770 external flooding contacts, and an additional 1,780 potential incidents, referred to the CRC by Network Operations staff, which is almost identical to the number received in 2012/13. In order to assess the validity of each flooding contact, NI Water has reviewed the contractor's monthly returns and cross checked with the Flooding Incident Reports (FIR) completed for each incident. Where the FIR has not been sufficiently completed, or the monthly returns do not identify a cause, NI Water has investigated the incident to establish the nature of the incident. The approach used to investigate each incident is similar to the approach adopted to review historic internal incidents on T3 and involves the following:

- Check and confirm details included in FIR (including photographic evidence)
- Desktop analysis of sewer records on GIS to determine pipe type, size, gradient and performance history
- Discuss site with Field Manager to understand flooding history
- Visit the site to assess topography and interview residents/neighbours, leaving a questionnaire if resident is not available
- Review the DAS where available
- Commission CCTV survey if deemed appropriate

For AIR14, we found that the Company investigated circa 150 incidents during the year. As the Company only retains hand written, paper records of the investigations completed, it was difficult to review the complete set of investigations completed, however, we reviewed the investigations completed in January, February and March of 2014. We found that 43 incidents were investigated over the 3 month period and reviewed the details of the investigation completed, finding that 8 of the 43 incidents related to external flooding (due to overloaded sewers).

On the basis of this high level review described above, the Company has identified that:

- 115 of the 9,550 contacts related to external flooding incidents (due to overloaded sewers)

- 3,389 contacts related to external flooding incidents (other causes), and
- 6,021 contacts were either not deemed to be external flooding incidents, or repeat calls/follow ups.

We note a 25 contact discrepancy, however this falls within the bounds of the reported confidence grades.

Through our review of the investigation process, we note that NI Water has not provided guidance to the Maintenance Contractor on what constitutes external flooding, and we noted a number of incidents where small surcharges may have been reported as non-flooding. The reporting requirements require NI Water to capture and report all incidents of external flooding, regardless of the extent, and we recommend the Company provides further clarification to the Contractor. We note that companies in E&W initially interpreted the Ofwat external flooding guidance to exclude minor flooding events, where the surcharge did not extend more than 1m from the manhole, however, subsequent clarification ensures all incidents are now reported.

As highlighted above, the Company currently places very little importance on the collection and reporting of external flooding data, with only a single FTE staff member committing circa 50% of his time to assess and verify all external flooding incidents. For this to be sufficient, the Company is reliant on the Contractor collecting an appropriate level of evidence/information at the time of the incident. Whilst there is a contractual obligation for maintenance contractor to collect sufficient levels of detail at each incident, we have seen little evidence of improvement over the years, severely restricting the Company's ability to understand and report on the true flooding liability. For every contact received the Company should collect sufficient information/evidence to identify the true nature of each contact, which would simplify the overall reporting process. As highlighted in previous AIR Reporter Commentaries for T3 and 3a, we consider it may be prudent to take responsibility for data collection away from the maintenance contractor, and for the local Customer Field Manager (CFM) to take ownership of the flooding incidents reported in his/her area. The CFM should be 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.

## 5.2 DG5 Annual flooding summary

For AIR14, 3,389 areas were reported to have flooded externally during the year, of which 115 were deemed to have flooded due to overloaded sewers. The balance were deemed to have flooded as a result of 'other causes', primarily blockages. Whilst the Company reported a single incident caused by severe weather, they were unable to identify the location of the incident, or provide evidence of the event during the audit. We consider the incident may relate to a severe weather event at [ x ] (reported in T3) but were unable to clarify prior to submission.

As highlighted above, the analysis for AIR14 has primarily been made on the basis that the information supplied by the external contractor is accurate. Whilst some investigation has been carried out in relation to individual incidents, the results of the investigation has identified that a number of the incidents initially reported as hydraulic were actually FOC. As a consequence the data continues to have a low Confidence Grade of D6.

## 5.3 DG5 Properties on the At Risk Register

For AIR14, those incidents which occurred during the year and were deemed to have been caused by 'hydraulic overloading', and were not due to severe weather have been transferred to the At Risk Register.

On this basis, 113 areas were added to the Register as a result of flooding in 2013/14, 77 of which were identified as a result of the high level investigation completed by the Company and 36 identified following the completion of Consultant Feasibility studies or DAS reviews. We were also advised that a further 113 areas were removed from the Register as a result of better information, but no details were available at the time of review.

## 6. Assumptions

Except where disclosed above, no assumptions have been identified.

## 7. Confidence grades

The Company submitted their confidence grade of A2 for Line 1, however after their submission we agreed that the confidence grade is B2. Please see our detailed comments on the confidence grades in Table 7.

The Company has once again assigned a confidence grade of B2 to Lines 2 to 11, on the basis that all data is derived from Ellipse, and that the Company undertakes an investigation of all reported incidents. We have previously challenged this on the basis the number of reported incidents is so small and any variance in numbers (due to errors) would be considerably greater than +/-5%. However, based on our findings for AIR14, which broadly supports the Company's assessments, we are minded to support a B2 for Lines 2 to 11, 15a and 17 for AIR14.

As per Lines 2 to 11, a confidence grade of B2 has been assigned to Lines 12 to 16 and 22 to 34, based on the rigour applied by the 'DG5 Panel' to assess all 'in year' incidents, with the exception of Lines 15, 16 and 33 where a B3 was reported. As all data in Table 3 is captured using the same process, we consider the same confidence grade should apply to all line entries. On this basis, a B2 should apply to the Flooding Register data.

A confidence grade of D6 has been assigned to Lines 1 to 15 on the basis that the raw data has been taken from Contractor records with limited investigation completed to verify the Contractor records.

## 8. Consistency checks

We can confirm that

- 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)

## Table 4 – Customer Service 1

### 1. Introduction

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 report a 2% increase in billing contacts received.
- We have reviewed a number of written contacts to satisfactorily test various aspects of the Company's methodology (see Section 5 for details). On the basis of the checks carried out and discussions held we believe the Company's approach is as described in their methodology statement and is in accordance with the reporting guidance.
- The methodology for reporting DG6 has changed from AIR13 to AIR14 (see Section 4 for details).
- After the Company's submission, we agreed with the Company that the confidence grades for Lines 6 to 8 are B2. Please see our Table 7 commentary for further detail.

#### 2.1 Key recommendations

- We recommend that the Company documents the procedures in place for when items need to be re-categorised between regulatory categories within their methodology.

### 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 year's data has been compared with last year's table entries to identify significant areas of change.

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

### 4. Company methodology

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 their stated methodology.

On the basis of our audits from AIR14 we have provided a summary of our findings and the Company's methodology below.

- As in previous years', NI Water deals with all written correspondence which is categorised as being billing related. Contacts received via the telephone, and which can be resolved at point of contact, are dealt with by the Company's Contractor, Echo. Telephone contacts requiring further investigation, or which otherwise cannot be resolved at point of contact, are transferred to one of the Account Services teams with NI Water's Customer Services department.
- 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.
- Once correspondence has been opened and indexed it is allocated to an Agent for action. Managers have the ability to run reports from Savvion providing 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.
- A high proportion of billing contacts are counted from the telephone system. Calls to these lines are recorded on Rapid and recognised by CMS types.
- Contacts are recorded on Rapid and this system is interrogated to produce the data reported.

The Company reports all billing contacts received during the Report Year within Line 1. To report Lines 2 to 4 NI Water changed the methodology in 13/14 to which they report the number of contacts 'closed' in the year which were received in the year. Therefore, the percentage dealt with within 5 working days should be equal or below 100%.

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. From this discussion:

- We understand for AIR14, if a contact was received in the 2013/14 Report Year then this would be included Line 1 of Table 4. If a response is sent out in the 2014/15 year the response time will be reported in AIR14. NI Water had circa 1,000 contacts fall into this category. NI Water explained that they checked 10% of these contacts and they were all closed within 5 working days. They therefore make the assumption that the remaining 90% were closed for regulatory purposes in less than 5 days and included as such in the AIR14 DG6 performance summary.
- We queried the treatment of contacts received in the 2012/13 year and closed in the 13/14 year, whether these responses are reported in AIR13 or AIR14. NI Water explained that there were 433 contacts received in 2012/13 and remained open at the end of 12/13. They have checked 10% of these and they confirm these samples have been closed within 5 working days but they are not included in AIR13 or AIR14. The Company should clearly state this in their commentary.



## 5. Audit findings

In our AIR14 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 5.1 – DG6 performance
- Section 5.2 – Dealing with paper based contacts
- Section 5.3 – Non-DG correspondence
- Section 5.4 – Telephone billing contacts
- Section 5.5 – Dispatch of items by third parties
- Section 5.6 – Number of connected properties

### 5.1 DG6 Performance

NI Water document that they have received 78,463 billing contacts during the 13/14 Report Year. When compared to the previous Report Year the overall number of billing contacts has slightly increased by 2,412 or circa 2%. NI Water advised that they have seen an increased contact in VAT related and domestic allowance applications. Details on various initiatives that were to reduce contact volumes are provided in the Company commentary.

In terms of responding to DG6 billing contacts, the Company has reported that they dealt with over 99.92% of contacts within 5 working days 0.04% were dealt with in more than 10 working days. Due to a change in their methodology (please see Section 4 above for additional detail on the Company's reporting methodology), care should be taken when interpreting relative performance.

### 5.2 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 allocated to an Agent. The Rapid and Savvion systems subsequently offer work allocation, tracking and retrieval functions to the Company.

We queried the measures the Company takes to ensure guidance on the regulatory definitions (e.g. what constitutes a billing contact and written complaint) are provided to Agents. NI Water provided a guidance document which had been recently communicated across the business detailing the regulatory requirements for the allocation of customer contact. We reviewed this document previously and concurred with the Company's interpretation of the guidance as this was largely based on the AIR reporting requirements.

Despite the controls in place to mitigate the risk of mis-classification, there is possibility that contacts may need to be reclassified. We queried what controls the Company employs around the reclassification of contacts. NI Water explained that if an Agent is allocated an item from their work queue and recognises the CMS type is incorrect they are able to change the CMS code and would, if required, seek approval to transfer the case to the correct team. Whilst documentation of the procedures of re-categorisation was provided after AIR13 audit, we have not tested the process described. We recommend that these instructions are incorporated into future methodology statements.

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 over the course of the year. Our audit was 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 20 contacts. These were selected at random and included written billing contacts (18) and telephone contacts (2). For the latter contact type, we did not undertake any call listening exercises but did review the audit trail for each contact. A summary of our audit findings are detailed below.

We reviewed the audit trail for all of the contacts selected and confirm each contact was correctly reported as DG6 contacts and treated in line with the Reporting Requirements, except one contact. We found one contact where the Company received a receipt of bill paid in cash at the Capital House. There is no further action to take by NI Water therefore we believe this is a non DG contact.

We found that all written contacts received by the Company are logged on day of receipt. We reviewed the Company's treatment of email contacts and believe this to be in line with the guidance. We also reviewed the methodology received on non-working days (such as weekends) and confirm 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.

### **5.2.1 Use of holding replies**

NI Water explained that they do use holding replies to close out contacts for reporting purposes. 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 AIR14 audit checks did also review replies of this kind and from the evidence reviewed and 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'.

### **5.3 Telephone billing contacts**

As anticipated the vast majority of DG6 billings contacts are received by NI Water over the phone. The Company did provide a list of high level CMS types which are used to allocate calls to DG6 categories and we undertook a brief review of this listing. Using the CMS type title to confirm the allocation to billing contacts we believe the allocations to be reasonable. We have not undertaken any call listening exercises but understand the Company undertakes similar exercises during their monthly reporting which should help to ensure consistency to the reporting guidance.

### **5.4 Number of connected properties**

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 also confirm that the methodologies adopted are same as AIR13.

We check the total number of increase/decrease with Lines 6 and 7 and this is consistent with the difference of Table 2 Line 1 between AIR13 and AIR14.

## **6. Assumptions**

Except where disclosed above, no assumptions have been identified.

## **7. Confidence grades**

The Company has applied a confidence grade of B2 to all the DG6 related information in the table. This is consistent with the grade reported in AIR13. Whilst we have not undertaken any statistical tests, this grade appears reasonable. Further control and reassurance is also gained from checks undertaken by the Echo Contract Management Team, Internal Audit and the external quality certification held by the Company service agents.

The Company has submitted with the confidence grades of A2 to Lines 6 to 8. After their submission, we agreed with the Company that the CGs for unmeasured household are B2 and those for non-household are A2. Over 80% of properties are household therefore we believe that the CGs for Table 4 should also be B2. Please see our Table 7 commentary for further detail.

## **8. 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.

## Table 5 – Customer Service – 2

### DG7 Response to Written Complaints

#### 1. Introduction

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

#### 2. Key findings

- The Company report that the total volume of written complaints received has decreased. Overall the number of complaints has decreased by 21% or 668 complaints in real terms.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

#### 3. Audit approach

To check the accuracy of the information reported, our audit consisted of an interview with the NI Water line holder, 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 year's data has also been compared with last year's table entries.

#### 4. Company methodology

##### 4.1 Overview

To confirm the methods used by the Company are as described 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 and is in accordance with the Reporting Requirements.

We have provided a summary of our findings and the Company's methodology below:

- The definition of a written complaint is aligned to that stated in the reporting guidance.
- 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.
- All mail is logged on the day it is received.
- Once correspondence has been opened and indexed it can then be allocated to an Agent for action. Managers have the ability to run reports from Savvion providing 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 final response is sent to the customer. 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.

## 4.2 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 closed in the year (which have been received during the Report Year).

To report data the Company relies on data extracted from CorVu reports.

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. NI Water explained its methodology for reporting complaints received in one reporting period but not closed until the following year. We understand for AIR14, if a contact was received in the 2013/14 Report Year then this would be included Line 1 of Table 5. NI Water changed its methodology for Lines 2 – 5 in 13/14 whereby if a complaint received in 2013/14 is addressed by a holding response in the 2014/15 year the response time will be reported in AIR14. There were 20 complaints open at the end of 2013/14 and they were included in AIR14 Lines 2 – 5 according to its response of the holding letter.

Due to this change in DG7 Reporting methodology, where a contact was received in 2012/13 year, but has not closed by the end of 2012/13, then this contact is not reported in AIR13 nor AIR14. There were 24 complaints that fell in this category. NI Water's representative explained that they checked all 24 complaints and found that they have been closed within 10 working days except for one contact. The Company added that the one complaint not closed within 10 working days was received by email at a department outside of Customer Service Directorate and forwarded to the Customer Service after day 10.

The Reporter is content that the methodology employed is appropriate.

## 4.3 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. We believe these should help to promote good practice, help improve the reporting process and process control.

## 5. Audit findings

We found that the procedures and methodology broadly consistent to that reviewed previously, except the year end reporting change noted in above.

In AIR13, we observed NI Water responded to the majority of complaints by written formats (letter and email). This somewhat differed to our observations elsewhere in the industry where there is an increasing tendency to resolve complaints via telephone. Companies endeavouring to resolve complaints this way believe that increased customer interaction assists in reducing the number of repeat contacts. We suggested it may be worth NI Water considering this alternative and within our AIR14 audits NI Water advised that Agents had been trained and a small number of complaints are responded to via telephone. Where this is the case, Agents are instructed to memo a record the conversation on the system to ensure appropriate audit trails are maintained.

### 5.1 Total written complaints (Line 1)

The volume of complaints has decreased by 21% or 668 complaints in real terms.

Decreases in 2013/14 volumes have been attributed to no major incidents and the relatively mild weather throughout the year.

## 5.2 DG7 Performance (Lines 2 to 5)

The Company has maintained a good level of performance in responding to complaints. Overall, nearly all written complaints were responded to within 10 working days and only two written complaints were dealt with in more than 20 working days.

The Company's reported performance is ahead of their PC13 target (99.25%) of contacts dealt with within 10 working days. Using the equivalent Ofwat assessment criteria for DG7, NI Water's performance for 2013/14 Report Year would be classified as 'good'.

## 5.3 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 throughout the 13/14 year. 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 20 contacts to review the criteria set out above. A summary of our audit findings are detailed below. Our audit checks covered complaints received by both post and email.

We found that the Company's approach is consistent with their stated methodologies. The complaints reviewed were correctly classified as DG7 written complaints. We reviewed the audit trail for all of the contacts selected and confirm that they were treated in line with the Reporting Requirements.

### 5.3.1 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 correspondence is date stamped on date of receipt, we are content that the Company recording of incoming dates is appropriate.

### 5.3.2 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 but we chose to undertake additional testing in this area. We checked a further 5 samples and believe these to be reasonably based and in line with the guidance.

### 5.3.3 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.

#### **5.3.4 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 UR Reporting Requirements.

#### **5.4 Treatment of emails**

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 allocated to an Agent as per the Company's methodology statement. The Company advised its procedures ensuring that all email contacts are logged on the day of receipt which is especially pertinent to emails received on non-working days or out of hours. 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.

#### **5.5 Exclusions from the DG7 indicator**

NI Water advised that they do not generally exclude any complaints from the DG7 indicator however there were 13 exclusions in 13/14. We reviewed all exclusions and we found 3 which should be classified as DG7. NI Water representative agreed and changed these classifications appropriately.

The reporting guidance allows complaints to be excluded for a number of reasons (e.g. about non-appointed activities). Practice elsewhere also excludes contacts where they have fully exhausted the complaints process (where complaints are ongoing over a considerable period and any additional information received from the customer would not change the outcome of the complaint).

Following our recommendation in previous years we understand NI Water does now undertake routine checks on non-reportable categories which should provide further assurance these are categorised correctly.

#### **5.6 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 2013/14.

#### **5.7 Complaints PPP and other contractors**

The Company has implemented a process by which to collate these complaint types, and NI Water confirms that they have been not received any complaints to PPP concessionaries (or other contractors working on NI Water's behalf) in Year 2013/14.

#### **5.8 Complaint reclassifications**

We queried the measures the Company takes to ensure guidance on the regulatory definitions (e.g. what constitutes a billing contact and written complaint) are provided to Agents. NI Water provided a guidance document which had been recently communicated across the business detailing the regulatory requirements for the allocation of customer contact. We reviewed this document previously and concurred with the Company's interpretation of the guidance as this was largely based on the AIR reporting requirements.

Despite the controls in place to mitigate the risk of mis-classification, there is possibility that contacts may need to be reclassified. During our sample audit, we have seen one instance where an Agent mis-classified the stage of the complaint. We queried what controls the Company employs around the reclassification of contacts. NI Water explained that if an Agent is allocated an item from their work queue and recognises the CMS type is incorrect they are able to change the CMS code and would, if required, seek approval to transfer the item to the correct team. We reviewed a methodology document for re-categorisation of DG7. We did not check the procedures in practice however we believe that the methodology seems to be appropriate.

## **5.9 Treatment of contacts from CCNI**

Please see Table 5a.

## **6. Assumptions**

Except where disclosed above, no assumptions have been identified.

## **7. Confidence grades**

The Company has applied a confidence grade of B2 to all the DG6 related information in the table. This is consistent with the grade reported in AIR13. Whilst we have not undertaken any statistical tests, this grade appears reasonable. Further control and reassurance is also gained from checks undertaken by the Contract Management Team and Internal Audit.

## **8. Consistency checks**

We can confirm that:

- Line 1 equals to Table 5a Line 1
- Line 2 equals to Table 5a Line 2
- Line 4 equals to Table 5a Line 3



## DG8 Bills for Metered Customers

### 1. Introduction

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 99.11% of customers received a bill based on a meter reading in 2013/14. This is ahead of the Company's PC13 target which was 98.50% and also an improvement on the percentage reported in the previous year.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

#### 2.1 Key recommendations

- Investigate allocation of voids and consider any consequential impact on void reporting elsewhere in the AIR.

### 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 year's table entries.

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

### 4. 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 AIR14 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 as being 'skipped' and this is fed back into Rapid. Such instances are monitored and managed by way of 'priority list' which a meter reading contractor lists 'unread' customers regularly and prioritise these meters to be read. The Company does also have 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.

## 5. Audit findings

### 5.1 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.

### 5.2 DG8 Performance

After subtracting the number of exclusions reported in Line 6 from the total number of metered accounts reported in Line 7, a total of 67,443 accounts are included with the DG8 indicator. The Company state that of this total, 99.1% of customers received a bill based on company or customer meter readings in 2013/14. The reported performance is also above the PC13 Final Determination target of 98.50%. The percentage of meters not read by the Company for two years equates to 0.16% of the total metered accounts.

### 5.3 Total metered accounts (Line 6)

As we anticipate, the number of metered accounts has once again increased (4.6%) from previously year. This is broadly consistent with the number of household and non-household new connections reported in Table 7. The greatest proportion of this increase relates to household customers which are subsequently excluded from the indicator (see below). The actual number of non-household accounts appears relatively consistent to the previous report year.

### 5.4 Exclusions (Line 7)

As highlighted the above the number of exclusions has increased from 12/13 mainly due to an increase in the number of household accounts being reported in Line 6.

We provide the following breakdown of the exclusions made in the year.

Reason for exclusion	AIR14
Voids	2,763
Charged on other basis	44,420
Properties occupied less than 6 months	315
New property	286
Total	47,784

Overall, NI Water excluded approximately 41% of its metered base from the DG8 indicator. This is somewhat higher than the average of accounts excluded historically 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 NI Water's DG8 statistics include 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. Examples of such accounts include:

- Meters charged on another basis
- Test meters
- Trade-effluent meters
- DRD or NI Water 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 10 accounts to review for the following categories:

- Charged on other basis (4)
- Occupied less than 181 days (3), including 1 New property
- Void (3)

Where appropriate we reviewed we sought to check the billing history and consumption records on Rapid to ensure the account was correctly interpreted as an exclusion. For those properties categorised as void we were also able to trace the categorisation to a void inspectors report.

In most cases we were content that the Company's methodology in this area reliably extracts data relating to the exclusion type. We 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 agree to give this consideration for AIR 15.

## **5.5 Company readings/Company or customer readings (Lines 8 and 9)**

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 the Company provided data from the Rapid system to support the figures presented. Based on this and the audit checks undertaken we are content that the data produced is appropriate for reporting purposes.

## **5.6 Estimated bills only (Line 10)**

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 reports a number of instances where this was not possible.

The proportion of metered accounts of receiving a bill based on an estimated reading has again decreased in the Report Year. Approximately 0.6% of those accounts included in the DG8 measure received an estimated bill.

#### **5.7 No bills received during the Report Year (Line 11)**

NI Water reports 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 number of accounts reported.

#### **5.8 Unread by the Company for 2 years (Line 12)**

The percentage of meters not read by the Company for two years equates to 0.3% of the metered base included in the DG8 indicator. This has reduced from circa 1% last year and demonstrates management of reading process.

### **6. 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 assigned a confidence grade of A1 to lines 6 to 12. We understand this grade is assigned on the basis data used to provide DG8 performance driven by a system based report that does not require any manual interpretation. The report is taken directly from the Rapid database source which categories each account automatically based on its status and therefore using the most current and up to date data. We suggest that the Company endeavours to quantify any error rates to fully substantiate that an A1 grade is appropriate as any inherent anomalies in the dataset or report configuration will be ultimately reflected in the reported performance data.

### **8. Consistency checks**

Not applicable.

## DG9 Telephone Contact

### 1. Introduction

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

### 2. Key findings

- Whilst NI Water point to the introduction of HVCA as an explanatory factor, overall call volumes and the abandonment rate has increased from that reported previously. We have checked and confirmed the DG9 performance reported in Table 5 for the calls not abandoned metric falls marginally below the target set at PC13.
- Scores from the customer satisfaction survey are also marginally below target.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

### 3. Audit approach

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

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. Company methodology

#### 4.1 Overview

The Company's commentary describes the configuration of its telephony system. NI Water has also identified the telephone numbers (PACCP's) and locations against which they are reporting in their Methodology Statement.

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.

## **4.2 Call Services offered/telephony configuration**

During the audit we questioned the Company on the call services it offered in terms of non IVR Queuing or automated speech recognition facilities as we are aware from other experience that calls via such services are often difficult to track and report.

NI Water advised that their telephony system in the report year has been configured so that an HVCA capability can be deployed if required (see HVCA comments) however the other services highlighted are not currently offered.

## **4.3 Reporting**

NI Water advised that the telephony system is configured to produce data required by the Reporting Requirements. As such data, with the exception of HVCA, is provided for the total number of calls received and calls abandoned and is taken directly from the Call Media system. Telephone complaint volumes are derived from CMS logs in Rapid and exported via a Corvu query based on the list of CMS codes identified as a complaint and any other contact that has the complaint indicator selected.

We have not undertaken any checks on the configuration of these reports. 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. Data for the all lines busy indicator is derived from NI Water's telephony provider's systems. Again, we have not tested the reliability or accuracy of this report.

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.

## **4.4 Telephone Complaints**

See Section 5.6

## **4.5 Call Handling Satisfaction**

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

## **4.6 Quality Assurance**

NI Water advised that regular performance audits now take place, including checks on the call handling process, the logging of calls and allocation to CMS code. For reporting purposes the checks (and feedback) given on how calls were recorded onto the Rapid are updated regularly and are used for the reported figures.

These checks are important controls within the reporting process and we would encourage the Company to continue these checks in at least the same level of detail.

## **5. Audit findings**

### **5.1 General**

The volume of calls received on each line is taken directly from Call Media reports (and HVCA reports for calls passed from the Waterline number) and we were able to review the process used to derive call volumes satisfactorily.

Data from monthly Call Media reports are translated into a spreadsheet used to monitor and report on DG9 performance. As an audit test we successfully traced data from the monthly Call Media reports for the last three months of 13/14 into the spreadsheet and then subsequently into Table 5.

The 13/14 year is the first full year in which the High Volume Call Answering System (HVCA) has operated. Designed to improve the customer experience when demand on the telephony system is high e.g. during an operational incident, the DG9 reporting methodology has been revised to include calls handled by this system. We have consolidated our comments on the HVCA system in Section 5.7 below.

## 5.2 Calls received (Line 13)

NI Water reported that they have received 226,881 calls from customers during the year. We confirm the total volume of calls received is circa 3.4% higher than received in 12/13.

## 5.3 All lines busy (Line 14)

The Company report that no calls received an engaged tone during the year and we confirmed this through inspection of various telephony reports presented by the Company.

## 5.4 Abandoned calls (Line 15)

Along with an increase in the overall volume of calls handled, the number of abandoned calls has increased. Overall, performance of calls not abandoned was 98.4%, just a short of the PC13 target of 99% for the 13/14 year.

We reported last year that the introduction of the Company's High Call Volume Answering (HCVA) system had an impact on the calls abandoned indicator and we comment on the operation of this system in more detail below. Please see Section 5.7.

## 5.5 Call handling satisfaction (Line 16)

During the audit the Company outlined that they have 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. NI Water added that they do not manually exclude calls from the data provided which may undermine the integrity of the process. They noted that NI Water does not have 'do not phone' indicator on customer accounts.

In our experience elsewhere, Companies 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.

These may warrant further investigation by NI Water.

## 5.6 Telephone Complaints (Line 17)

In the Company's draft submission we noted that the reported number of telephone complaints had increased (which followed large increase in the preceding year). NI Water explained that their own internal assurance procedures had identified an improvement action where calls recognised as complaints at the time of the call are reported as well as all contacts which are logged under a service failure category e.g. a no water complaint. The latter is a change to the methodology so care should be taken when interpreting historic year on year trends.

## 5.7 High Volume Call Answering (HVCA) system

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 customer call is placed in a queue until the next available agent is free. During the Report Year we were advised NI Water had introduced a HVCA system as a solution to answering large volumes of unforeseen calls e.g. due to an unexpected flooding event. Deployed exclusively on the Waterline, the system aims to direct the customer's call to the most appropriate team or message via a series of routing options.

The system's intelligence identifies and recognises customer details (e.g. location) from the details held on the billing system. Depending on the call routing and this intelligence the system asks various questions to help answer the customer query or raise a work order.

It is important to recognise that whilst the HVCA is constantly available, calls are only routed into the system at busy periods using predefined capacity criteria. This limits the volume of calls fed to the systems and under normal circumstances customers would reach an agent.

### ***Abandonment***

Whilst designed to improve customer experience, there is a risk that the deployment of the HVCA system may lead to an increase in the abandonment rate due to initial customer responses to the system.

NI Water has reported an increase in abandonment and attribute this increase to the deployment of HVCA (NI Water also advised that there is evidence which highlights repeat calls from customers who have abandoned and then redialled has led to increased call volumes).

The HVCA has over 200 hang-up locations which customers may reach depending upon the selections they make within the system. NI Water presented a flow chart which illustrated these hang up locations and potential routing options. Analysis of each of these locations is crucial as it will define whether a customer's call has reached the salient point (and therefore considered answered) and we queried whether each hang up location was mapped to either an answered or abandoned category. In response NI Water provided a document which mapped each hang up location to an answered or abandoned category.

We reviewed the HVCA routing plan provided by the Company and inspected this mapping in relation to the calls abandoned indicator. Selecting a small sample of hang up locations from this routing plan we reviewed NI Water's rationale to determine whether the call should be categorised as abandoned or as answered. In each of the cases reviewed we agreed with the logic applied by the Company in all but one of the hang up locations (hang up location 90).

We noted this hang up location along with a small number of others pass calls back to an agent to address and the mapping indicates that calls at this hang up location would be counted as answered (when in fact the call is passed back to an Agent to answer). We therefore queried how such calls would be reported if abandonment occurred after this transfer point. The Company's Level of Service methodology states that such instances would be accounted for. NI Water states that the hang up location 90 is a transfer out of HVCA to the Call Media, therefore calls are included in Call Media volumes



but excluded from HVCA volumes. We are content with their approach but from inspection of the audit trail we were unable to analyse such call types are treated.

### **Reporting**

NI Water described the development of a reporting methodology for HCVA reporting based on the presentation previous given to the UR.

This methodology makes allowance for calls passed from Call Media to HCVA. This ensure that calls passed from Call Media to HCVA are not automatically categorised as answered. We reviewed the logic presented by NI Water (presented as Option 3) and believe it to be appropriately based to report data in the DG9 metric.

The adoption of HVCA has increased abandonment rates and as a consequence 13/14 performance is marginally below the PC13 target. The AIR14 reporting guidance requests additional data relating to the impact of HVCA. The majority of the data has been provided by NI Water but we recommend that any impact on call handling satisfaction measure arising from HVCA should be documented in the future Returns.

## **6. 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 Assistance Register

### 1. Introduction

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 increased by 8.5%. We believe this is a combination of efforts to promote awareness amongst the customer base.
- We audited the reported data and challenged the processes on a sample basis. Except where detailed below, we consider the data reported in the table is robustly prepared using systems and process that are appropriate and in line with the reporting requirements and that are properly implemented with effective quality control and governance arrangements.

### 3. Audit approach

Our audit consisted of an interview with the Service manager, a review of the current methodology for data collation, an audit of the data provided and a comparison with last year's table entries. The focus of the audit has been to review the number of customers registered on the Special Needs Register, not the operation of the scheme.

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

### 4. Audit findings

The Company's Special Needs Register is called the Customer Care Register. At the end of the 13/14 Report Year the Company advised that 2,903 customers were recorded on the Customer Care Register. The number of customers registered on the scheme has therefore increased by 8.5%. We believe this is a combination of efforts to promote awareness amongst the customer base.

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

- The reported figure is extracted from the Rapid system and registration on the scheme is managed by the Company's Service Provider.
- We met with a representative from the Company's Service Provider who explained how new registrations onto the scheme and how existing registrations are managed. We were advised that new registrations are managed by a dedicated team and existing registrations have been verified during the year. From the discussions held we believe the approach adopted is reasonable.
- The Company confirmed and we checked 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.
- The Company also confirmed that customers are registered on a household rather than individual customer basis.
- The Company has assigned a confidence grade of A2 to this line. We believe this grade is appropriate.

**5. Assumptions**

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

**6. Confidence grades**

The Company has assigned a confidence grade of A2 to this line. We believe this grade is appropriate.

**7. Consistency checks**

Not applicable.