

# Annual Review of the Water Resources Management Plan 2016



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**Exclusions on the Grounds of National Security**

Northumbrian Water has not excluded any information from this plan on the grounds that the information would be contrary to the interests of national security.

Under Section 37B(10)(b) of the Water Industry Act 1991, as amended by the Water Act 2003 ("the Act"), the Secretary of State can direct the company to exclude any information from the published Plan on the grounds that it appears to him that its publication would be contrary to the interests of national security.

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## **SUMMARY OF ANNUAL UPDATE**

Northumbrian Water published its final Water Resources Management Plan (fWRMP) 2014 in August 2014. The fWRMP confirmed that the Company does not forecast a supply demand shortfall over the 25 year planning horizon.

This is Northumbrian Water's second annual review of its Final Water Resources Management Plan 2014.

This review provides an overview of the supply/demand situation in the year 2015/16, and it reports on progress with implementation of the fWRMP.

This review confirms that 2015/16 was overall within our definition of a wet year. The Company had no concerns over the supply demand position.

The Company remains confident that the supply demand balance for the Kielder WRZ will remain in surplus throughout the 25 year planning period. Whilst the Berwick WRZ is also forecast to remain in surplus over the period, studies are underway to determine the sustainability of the Berwick WRZ sources to current and forecast abstraction volumes. During 2017, following the conclusion of the studies, a further assessment on the supply/demand forecasts for this WRZ may have to be determined.

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## 1. INTRODUCTION

### 1.1 Purpose of Report

Northumbrian Water Limited (NWL) published its final Water Resources Management Plan (WRMP) 2014 on its website ([www.nwl.co.uk](http://www.nwl.co.uk)) for its Northumbrian Water operating area on the 20<sup>th</sup> August 2014 following permission from the Secretary of State to publish.

Water companies are required to review their WRMP's annually, taking account of relevant material changes in circumstances, and annually thereafter.

This document is the Company's Northumbrian Water WRMP 2016 Annual Update. Outturn data is based on the period from 1 April 2015 to 31 March 2016. This is consistent with the Environment Agency guidance<sup>1</sup>.

This review is a statutory requirement of the Water Act 2003 which states that:

'Before each anniversary of the date when its plan was last published, the water undertaker shall-

- (a) review its plan; and
- (b) send a statement of the conclusions of its review to the Secretary of State

The purpose of the annual review is to identify any material changes to the fWRMP, and to report on progress made with updating and implementing the plan. The review has been undertaken using guidelines provided by the Environment Agency.

The guidance provided by DEFRA/Environment Agency identifies that water companies should report on the following:

- An overall summary of the supply/demand balance situation
- Items identified by DEFRA and the EA following Statement of Response publication
- Progress with implementation of the fWRMP
- Changes to the components of the fWRMP

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<sup>1</sup> Annual Review of Water Resources Management Plans Guidance. Environment Agency April 2016

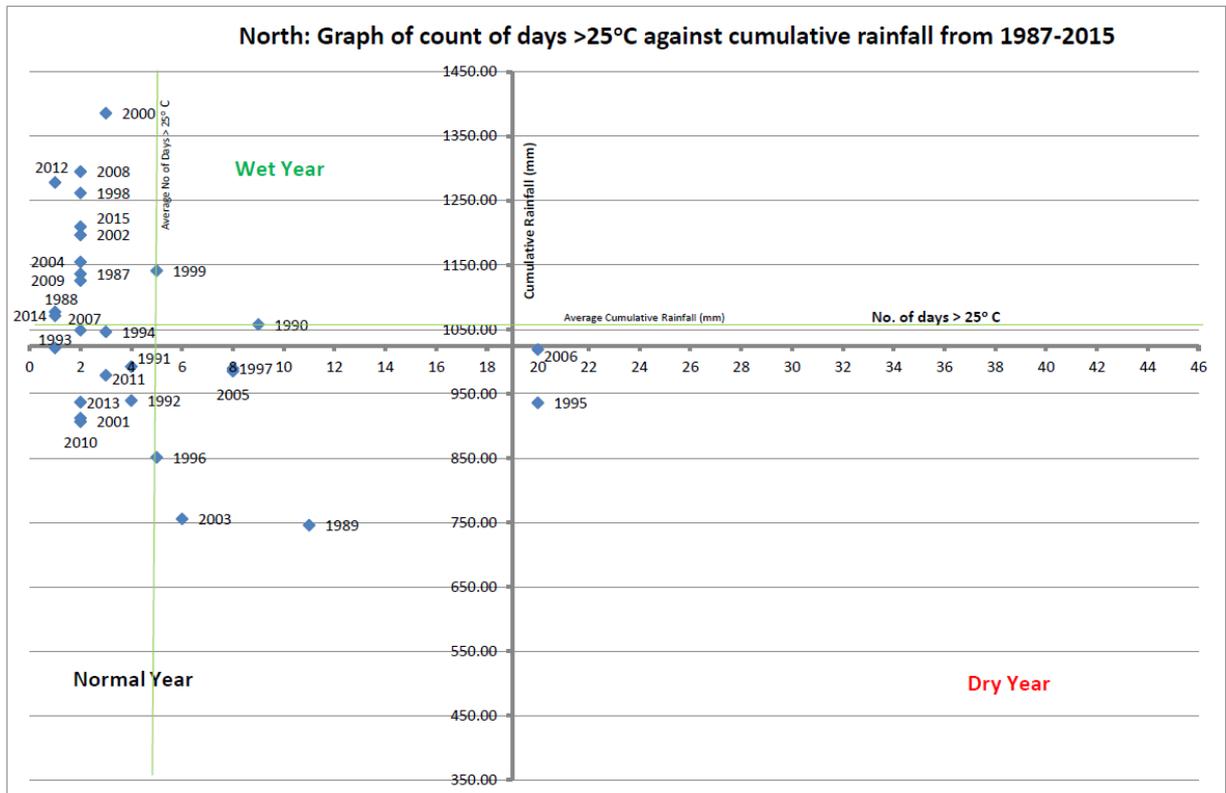
## 2. Summary of the Supply Demand Situation in 2015/16

### 2.1 Overview of April 2015 to March 2016

2015/16 has been classed as a wet year and there were no restrictions on the use of water.

Through 2015/16 we saw wide variations in regional monthly rainfall when plotted against Long Term Averages (LTA) from 44% in September to 248% in December. The summer and autumn period was drier than usual, turning wet over the winter and then drier again in early spring.

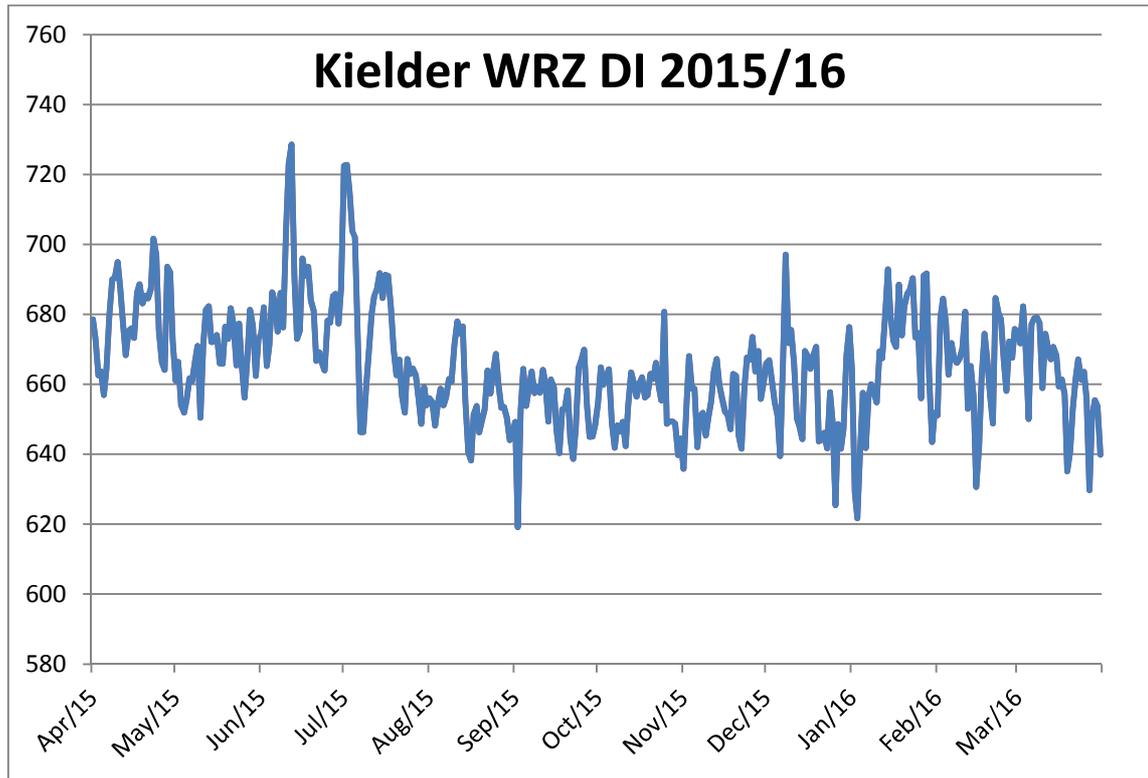
The Met Office describes 2015 as an average year until late autumn where the UK received a succession of Atlantic storms bringing exceptional rainfall to the North and West UK.



## 2.2 Daily demand profile

### Kielder WRZ

Distribution Input (DI) for the Kielder zone averaged 659.12Ml/d against the previous year's 662.84Ml/d.

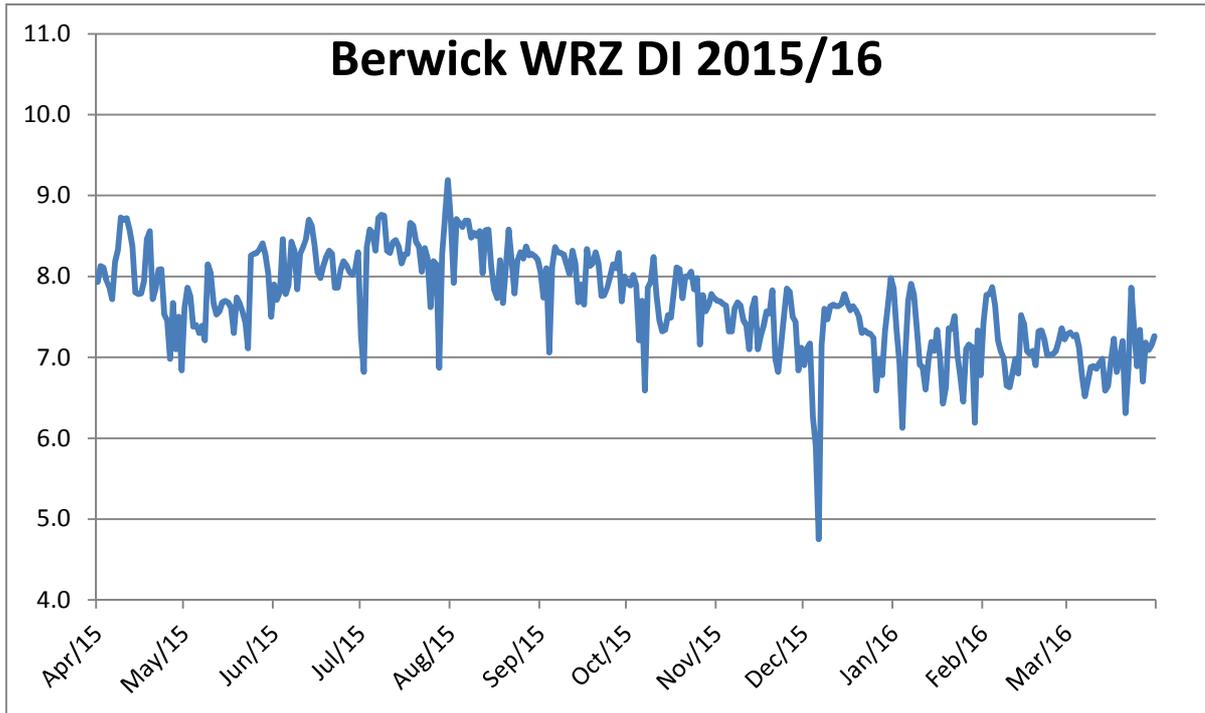


**Berwick WSZ**

The annual average daily Distribution Input was 7.63MI/d, a slight decrease on the previous year’s average of 7.66MI/d.

This WRZ no longer has a critical period of “Average Day Peak Week” following revision of the zones status in the WRMP 2014.

**Berwick / Fowberry WRZ Daily Distribution Input 2015/16**



**2.3 Average Distribution Input**

**Kielder WRZ**

The annual average daily Distribution Input (DI) for the Kielder WRZ was 659.12MI/d compared to the WRMP 2014 forecast DI of 675.01MI/d.

**Berwick WRZ**

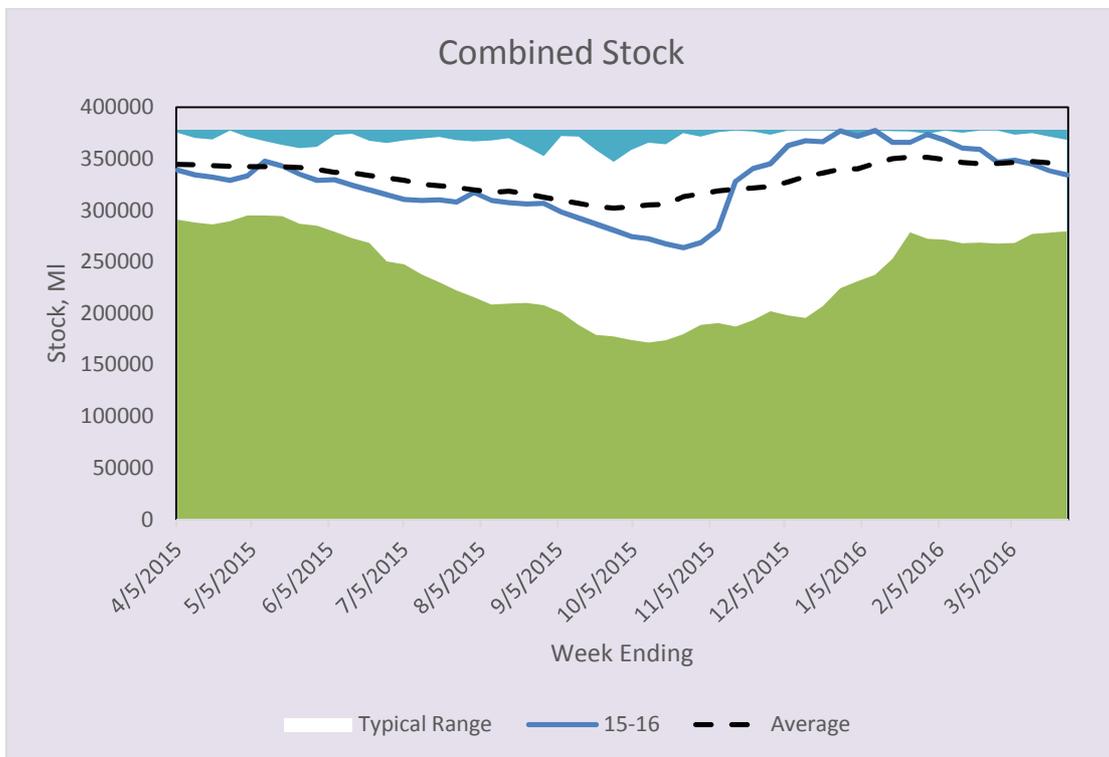
The annual average daily DI for the Berwick WRZ was 7.63MI/d compared to the forecast DI of 7.88MI/d.

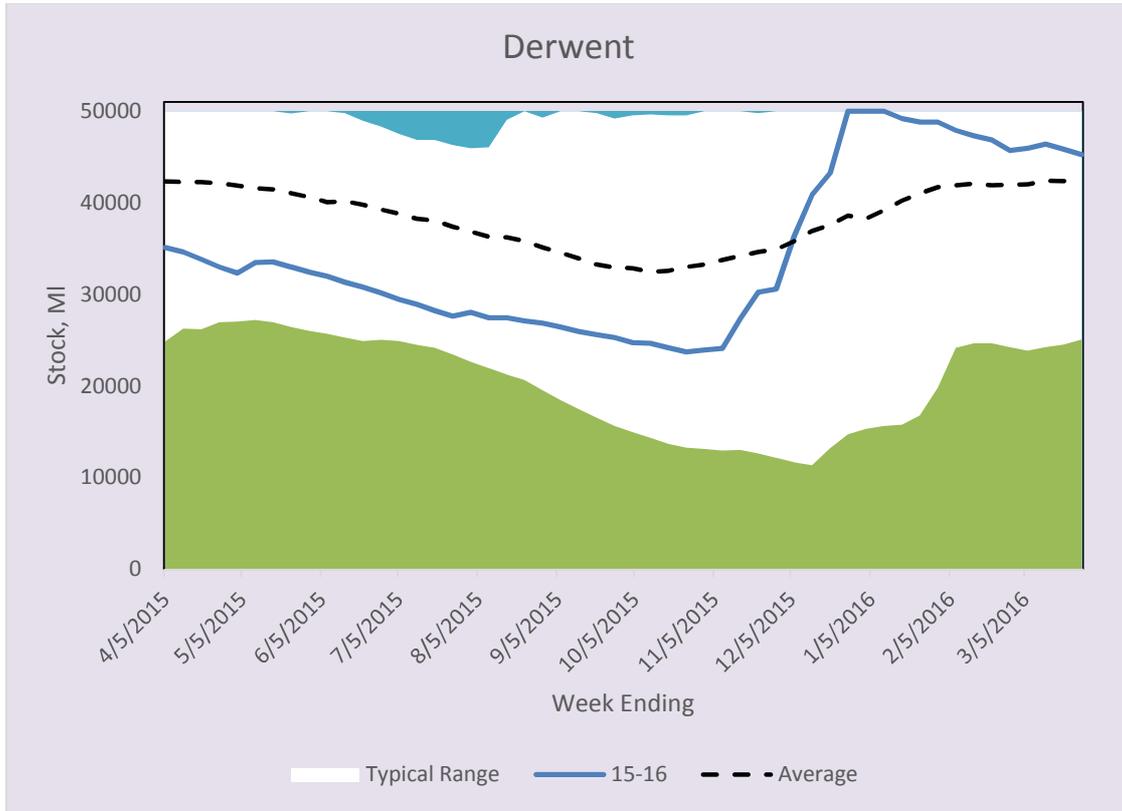
**2.4 Reservoir Levels**

We began April 2015 at just about average overall stock levels which carried on until mid June when levels began to fall and until November the overall storage level was typically 10-12% below average. A wet November and December saw the level rise to 10% above average and briefly in January we

reached 100% capacity with the majority of reservoirs overflowing. By the end of March levels had returned to near normal.

This overall picture masks some local anomalies the main one being Derwent Reservoir which began April 2015 some 15% below average and until the rainfall in November was typically 20% below average. This meant that Mosswood Treatment Works and the river Derwent were supported to some extent by The Kielder Transfer Scheme from mid May until mid November. Similarly on Tyneside the reservoirs feeding Whittle Dene Treatment Works remained low for most of the year at levels some 20% below average before recovering with the November/December rainfall.





## 2.5 Security of Supply Index

A Security of Supply Index of 100 is reported to OFWAT.

### **3. Progress with Implementation of the FWRMP**

#### **3.1 Background**

The fWRMP demonstrates that the Company does not forecast a supply demand shortfall over the 25 year planning horizon.

#### **3.2 Berwick WRZ**

The following describes the work NW is undertaking in the Berwick WRZ.

##### **Water Quality Issues**

NWL has employed an experienced full-time hydrogeologist since the end of May 2015 to take the sustainability of groundwater supply and water quality (nitrate) of the Fell Sandstone aquifer groundwater project forward. Modelling, using an existing low-resolution soil database, has calculated that nitrate levels in groundwater would exceed the statutory limit of 50 mg/litre as NO<sub>3</sub> by 2030. This is based on current increasing trends and projected nitrate leaching rates. There is no current indication of the potential for a sudden breakthrough of nitrate-enriched groundwater. Work commenced in March 2016 on a collaborative project between NW, the EA and Newcastle University to characterise the type and nitrate concentration in soils within the Murton/Thornton Mains/Thornton Bog area at a higher resolution than existing databases. This permits better quantification of the nitrate source term in the model, which will be validated by analysing nitrate concentrations in groundwater within the unsaturated zone. This project will be expanded into a larger scale study to quantify nitrate leaching rates based on current land management practices representative of the area, and to establish what mitigation measures may be implemented to stabilise, or reduce, the current trend of increasing nitrate concentrations in groundwater. NW is currently collating nitrate data on individual boreholes as part of its review into designating the area a Safeguard Zone.

##### **Implications of Potential Sustainability Reductions**

Access agreements with all the relevant landowners have now been secured and drilling of the new observation boreholes is anticipated in the next couple of months. A contract to undertake the work has been agreed with a drilling company. Groundwater level transducers installed in boreholes in the Berwick and Fowberry area are regularly downloaded and the data processed to produce a cumulative and validated groundwater level database of the area. All groundwater level datum points have been reviewed, and a groundwater level transducer has been successfully installed in the Fowberry Treatment BH2. Weekly spot manual groundwater levels continue to be recorded in all the boreholes with a pressure transducer installed in order to validate the level transducer data. Manual groundwater level measurements are also taken before data downloading of groundwater level transducers. Data download

cables have replaced the current system of suspending the groundwater level transducers in the well. This means that the pressure transducers no longer need to be removed from the borehole in order to download the data.

Gauge board river levels continue to be measured weekly from April to October and monthly for the rest of the year, as agreed with the Environment Agency.

An AMP6 NEP Scoping report has been prepared and submitted for approval by the Environment Agency.

### **Wells & Boreholes Sub-programme**

The following is a list of improvement work undertaken on the boreholes during 2015/16:

Thornton Mains:	Replacement of headworks, rising mains and remediation of borehole gravel pack.
Felkington Boreholes:	Upgraded headworks.
Thornton Bog & Thornton Mains:	Improvements to chlorine failsafe system Murton, Thornton Bog 2 and Fowberry Treatment 2 – New Non Return Valve
Thornton Bog & Felkington:	Replaced flow meter.
Bleak Ridge:	Improvements to Run To Waste facility.

### **Demand Reduction Initiatives**

#### **Pressure Management**

10 of the 11 eleven identified pressure reduction schemes have been implemented. The out-turn reduction in demand for this work is 0.22 MI/d out of the predicted 0.24 MI/d. We expect to achieve target savings in the coming months when outstanding work on the schemes is complete and are committed to undertake a pressure management study in 2016/17 to identify the potential benefits across the whole company.

#### **Leakage**

Tile analysis has been carried out in the whole of SZ01. One main issue was identified, an inoperable DMA BW013 has a potential leak of 0.2 MI/d. Investigation using service reservoir step tests revealed no significant issues.

We commissioned a project for Servelec (formerly Tynemarch) to develop an alternative stratification model based on ACORN types. The project is complete and recommendations to increase the sample properties within our monitor are being considered.

The billing system (ICIS) is now producing the measured consumption and property reports for Berwick, which increases the confidence in the figures used for the water balance.

### **Water Efficiency**

Starting in 2014 NWG launched its largest ever water saving campaign 'Every Drop Counts' across its Northern and Southern operating regions. One of NWG's values is to put the customer at the heart of everything we do; our medium term goals are to be a company that our customers can trust, to build strong relationships and to work in partnership to achieve common goals. We developed the concept of a 'whole town approach' to not only deliver our water efficiency programmes and per capita consumption reduction target, but also develop an approach that could be adapted to suit the needs of our local communities to help them save money. Building trust and good relationships through the combination of effective advertising, with local media and community based social marketing not only saves water, but it also helped NWG achieve its values and medium term goals.

## 4. A Review of the Components of the fWRMP

The Environment Agency Guidance for the Annual Review of Company Water Resources Management Plans identifies a range of items that should be reported against. The Company has reported on all items identified by the guidance as a 'requirement'. Items identified as 'requirement triggered by change' have only been reported on where there has been any change to the fWRMP.

The full list of items identified within the guidance is included within the following tables. Where changes have been made or where there is a requirement to report outturn information, then additional commentary is provided.

### 4.1 General Issues

#### Items Identified for Review in the DEFRA/EA Guidelines

General	Item	Review Criteria	Summary of Company Review
Water resources zones	Any changes to boundaries	Requirement triggered by change	No change
Level of service	Actual level of service for the year	Requirement	4.1.2
	Any changes to the proposed target level of service	Requirement triggered by change	None

#### 4.1.1 Water Resources Zones

The company operates two Water Resource Zones (WRZ), Kielder and Berwick. Nothing during the year has occurred that indicates these 2 WRZs do not remain appropriate.

#### 4.1.2 Actual Levels of Service

The company, due to the investment made by its customers in building Kielder reservoir, has a Level of Service of never imposing restrictions on the use of water. The outturn year had no restrictions imposed and significant actual headroom.

#### 4.1.3 Target Levels of Service

The target Level of Service still remains appropriate.

## 4.2 Supply

### Items Identified for Review in the DEFRA/EA Guidelines

General	Item	Review Criteria	Summary of Company Review
Deployable Output	Any changes to deployable output	Requirement triggered by change	No changes
Outage	Explain reasons for any outage incidents and any work being done to reduce outage	Requirement	See 4.2.2

### Items Identified for Review in the DEFRA/EA Guidelines

General	Item	Review Criteria	Summary of Company Review
Bulk supply	Explain any changes to bulk supply agreements	Explain any changes to bulk supply agreements	No changes
Sustainability reductions	Detail any alterations to the sustainability changes required. (changes to existing definite sustainability changes or new definite sustainability changes)	Requirement triggered by change	None required
	Progress with implementation of sustainability changes.	Requirement	None required

#### 4.2.1 Deployable Output

There were no changes to Deployable Output at any works in either Resource Zone.

#### 4.2.2 Outage

##### Estimation of Actual Outage

The outage identification, quantification, and categorisation elements of the recommended methodology for determining outage allowance detailed in the UKWIR report *Outage Allowances for Water Resource Planning* (1995) was

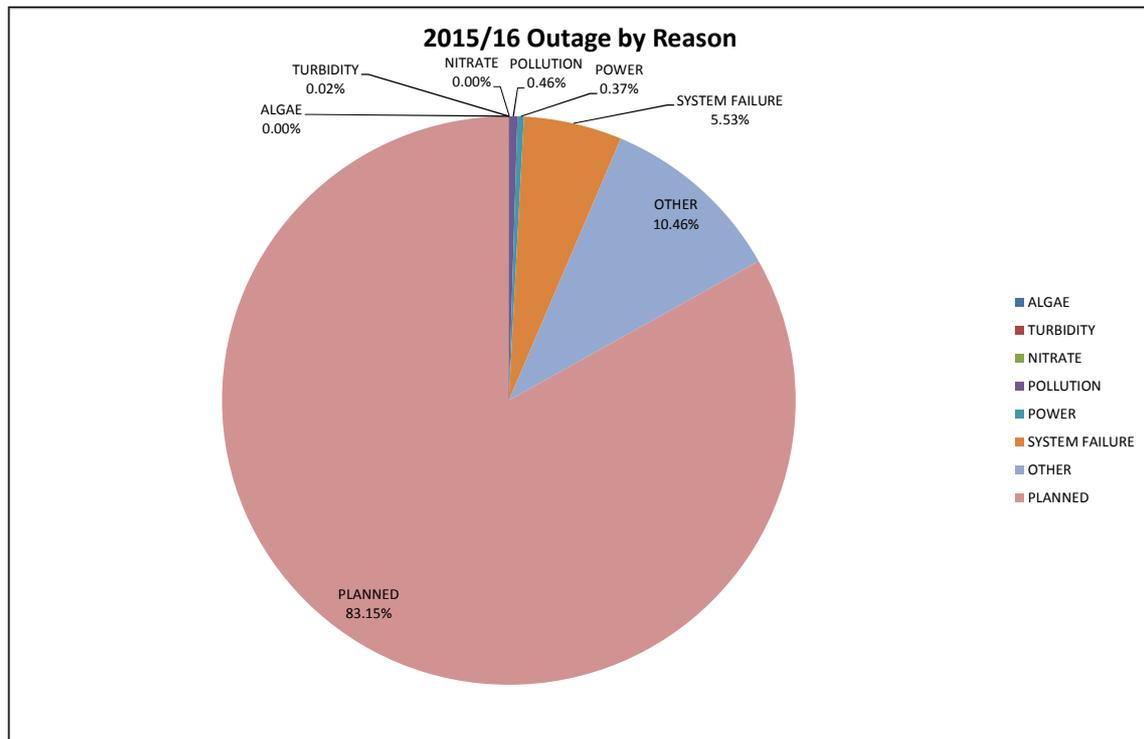
used as the basis for calculating actual outage for the period April 2015 to March 2016.

Quantitative data in the form of treatment works daily output volumes, and qualitative information from Production, Networks and Water Quality Department reports and TWs site diaries were used to identify when an outage event had occurred and to determine the cause of the outage allowing categorisation as one of 8 legitimate outage types, which include;

1. Planned
2. Unplanned – Pollution of source
3. Unplanned – Turbidity
4. Unplanned – Nitrate
5. Unplanned – Algae
6. Unplanned – Power Failure
7. Unplanned – System Failure
8. Unplanned – Other

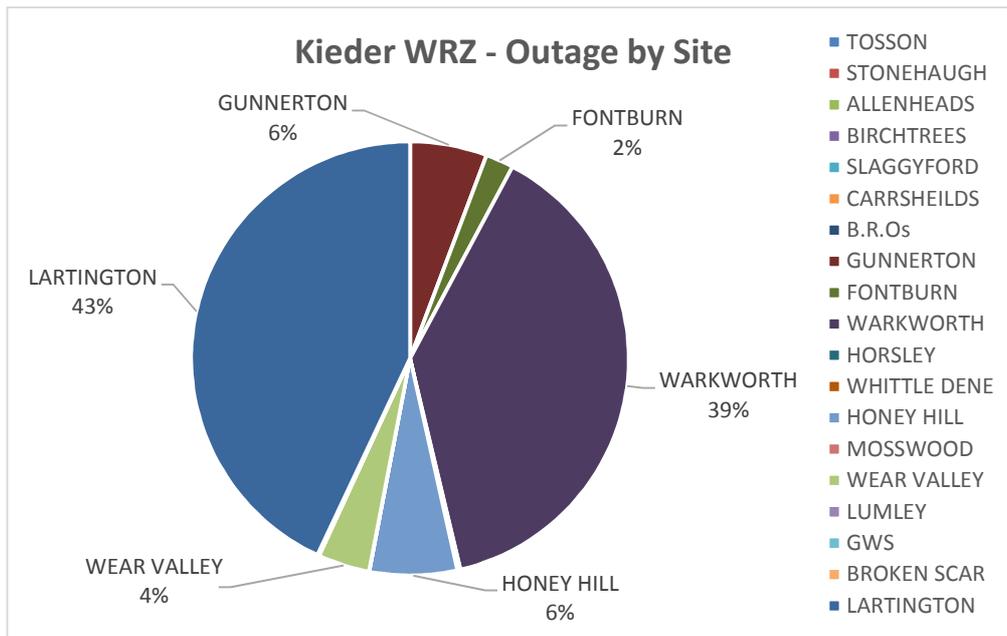
Outage magnitude in MI was determined daily for the duration of the event by calculating the difference between actual output and the minimum threshold production rate.

Daily outage magnitude for all outage events at all treatment works in both resource zones was summed to give the total outage in megalitres for each resource zone for the period April 2015 to March 2016.



**Kielder WRZ**

Recorded outages have increased from 10.54MI/d in 2014/15 to 38.13MI/d for 2015/16. This compares to 38.6MI/d in the WRMP. The main recorded sources of outage relate to planned jobs at Warkworth WTW where a project to refurbish the backwash filter has reduced the treatment capacity whilst the work is carried out, and at Lartington WTW where a run to waste project restricted the flow through the works.



**Berwick WRZ**

Outages have slightly decreased from last years 0.48MI/d to 0.45MI/d in 2015/16. They continue to remain lower than the WRMP forecast of 0.89MI/d. The main issues continue to be the reliability of power at some boreholes as well as the planned cleaning / maintenance programme now underway that has seen boreholes isolated. This had no effect on customer supplies.

**4.2.3 Bulk Supply**

No changes

**4.2.4 Sustainability Reductions**

The company was not required to make any sustainability reductions.

### 4.3 Demand

#### Items Identified for Review in the DEFRA/EA Guidelines

General	Item	Review Criteria	Summary of Company Review
Demand forecasting	Highlight and explain any changes to the demand forecast. Give details of any change to the data-set used	Requirement triggered by change	No change
Per capita consumption (pcc)	Highlight and explain actual pcc over the year.	Requirement	See 4.3.2
	Explain any change to the forecast pcc	Requirement triggered by change	No change
Metering	Provide an update on progress with household metering (please distinguish your baseline metering from any included as an option)	Requirement	See 4.3.3
Leakage	Provide an update on progress with leakage reductions (please distinguish your baseline leakage reductions from any included as an option)	Requirement	See 4.3.4
Water efficiency	Provide an update on progress with water efficiency initiatives (please distinguish your baseline water efficiency initiatives from any included as an option)	Requirement	See 4.3.5

#### 4.3.1 Demand Forecasting

See 2.3

#### **4.3.2 PCC for the Year 2015/16**

##### **Kielder**

The unmeasured pcc was 148.35 l/h/d compared to last year's 143.75 l/h/d. The unmeasured pcc is slightly above the 20014/15 WRMP 2014 forecast of 146.80l/h/d.

The measured pcc was 133.56 l/h/d against last year's 135.45 l/h/d and a WRMP forecast of 136.46 l/h/d.

##### **Berwick**

Berwick WRZ is now calculated separately in the water balance to gain a Berwick specific leakage figure.

The unmeasured pcc was 147.87 l/h/d against last year's 150.56 l/h/d and a WRMP 2014 forecast of 157.62 l/h/d.

The measured was 127.16l/h/d against last year's 131.62 l/h/d and a WRMP forecast of 149.58 l/h/d.

#### **4.3.3 Household Metering in 2015/16**

The number of Optants was 14,219 compared to the WRMP forecast of 15,500. The annual number of optant meter installations does vary from year to year. The AMP5 cumulative outturn number of optants was 76,388 compared to the AMP5 forecast of 70,000.

#### **4.3.4 Leakage in 2014/15**

Leakage at 134.66 MI/d was 4.34 MI/d (3.1%) below the 139 MI/d target. The year started in an unfavourable position, typically some 7 MI/d above the comparable 2014/15 values and this stubbornly remained in place throughout the summer period despite additional activities being put in place. In September an intensive campaign was launched to control the levels through the Autumn period. This was particularly successful and by November, the individual weekly values observed were some of the lowest seen in the last 10 years of records. The winter effect was less harsh than previous years and this resulted in a much reduced general increase over the December to February period. The overall result was a more favourable position at the end of the reporting year than in 2014/15.

#### **4.3.5 Water Efficiency**

The water efficiency strategy continues to be designed to create water efficiency programmes that make genuine savings in water as cost effectively as possible. Both operating regions of Northumbrian Water Group (NWG) continue to deliver industry-leading water efficiency projects, several of which

have been recognised as winners at the 2016 Waterwise Awards and the 2015 SWIG Awards.

In 2010, Ofwat introduced water efficiency targets for all water companies based on assumed water savings. NWG exceeded the water efficiency targets on both an annual basis and cumulatively over the AMP period. Defra’s Water for Life (precursor to the Water White Paper) and its Statement of Obligations for PR14 set out the Government’s expectation that water companies will deliver overall demand reductions via demand management measures, including water efficiency. NWG has set water efficiency targets to annually reduce pcc by 0.12 l/head/day for NW and 0.26 l/head/day for ESW by delivering demonstrable water savings (measured) via a range of water efficiency activities.

The introduction of water efficiency targets, based on measured water savings, in April 2015 has seen NWG both continue current water efficiency practice as well as initiate new activities. NWG’s combined water efficiency target is 0.82 MI/d (0.33 MI/d for NW and 0.49 MI/d for ESW). In 2015/16, NWG reported water savings of 0.68 MI/d against the target of 0.82 MI/d. The reported water savings were achieved via a mix of hard measures and behavioural change projects and initiatives, maintaining NWG’s innovative and industry-leading approach. The fact that the reported water savings were slightly below target highlights the challenges associated with the level of activity required to meet such targets. Similarly, and considering NWG leads the Industry in terms of measurement, it emphasises the challenges associated with recording only measured water savings (as opposed to assumed water savings) especially concerning behavioural initiatives.

	2015/16	2016/17	2017/18	2018/19	2019/20
Base level target (MI/d)	0.33	0.33	0.33	0.33	0.33
Performance (MI/d)	0.23				
Cumulative water savings (MI/d)	0.23				
Carried forward (MI/d)	0.00				

**Table showing Northumbrian Water’s progress against internal water efficiency target**

	2015/16	2016/17	2017/18	2018/19	2019/20
Base level target (MI/d)	0.49	0.49	0.49	0.49	0.49
Performance (MI/d)	0.45				
Cumulative water savings (MI/d)	0.45				
Carried forward (MI/d)	0.00				

**Table showing Essex & Suffolk Water’s progress against internal water efficiency target**

	2015/16	2016/17	2017/18	2018/19	2019/20
Base level target (MI/d)	0.82	0.82	0.82	0.82	0.82
Performance (MI/d)	0.68				
Cumulative water savings (MI/d)	0.68				
Carried forward (MI/d)	0.00				

**Table showing Combined (NW and ESW) progress against the Ofwat water efficiency target**

### **The Whole-Town Approach – ‘Every Drop Counts’**

NWL has undertaken a wide range of projects, schemes and initiatives over the past year, the highlights of which are summarised below. In doing so, NWL has adapted its water efficiency strategy with the aim of undertaking the majority of its annual activities in one place at one time; a whole-town approach. ‘Every Drop Counts’ takes a truly innovative and wide-reaching approach by offering customers the chance to participate in a range of initiatives that are usually delivered at different times and places throughout the year. Putting the customer at the heart of everything NWG does, the whole town approach aims to adapt our current water efficiency programme to suit the needs of our local communities to help them save water, energy and money. Delivered simultaneously in towns in each operating region, it uses a combination of targeted advertising and community based marketing to maximise participation in the wide range of water efficiency projects. Starting in 2014, NWL trialled our whole-town approach, selecting two geographically different towns; Billericay in Essex and Wooler in Northumberland. In 2015, the approaches were refined, improved and delivered in the towns of Grays in Essex and Berwick upon Tweed in Northumberland.

To improve headroom in the Berwick and Fowberry Resource Zone, NWL decided to bring the Every Drop Counts campaign to Berwick upon Tweed to provide customers with the tools and advice on how to make changes to the way they use water could help to manage demand. The sections that follow describe the results of that campaign and other initiatives delivered by Northumbrian Water.

#### Domestic Audits

Just over 5,000 customers in Berwick upon Tweed were offered the opportunity to have a technician attend their property carry out a water efficiency audit. Customers were offered a range of water saving products including: an ecoBETA, a device that converts an existing single flush toilet to a dual flush toilet; a variety of tap inserts or tap adjustments to reduce the flow to six litres per day; aerated or regulated shower head; and a range of

products to help save water in the garden. Customers with leaking taps or leaking toilets were also offered repairs.

Nearly 1,300 customers received an audit with over 10,000 water saving products fitted. The number of customers that took part in the project was lower than expected because NWL was unable to retrofit many social housing properties. Despite this, over 65% of customers that took part had at least one ecoBETA fitted.

25% of domestic customers in Berwick upon Tweed received a water efficiency audit during our summer 2015 campaign. Analysis of meter reads shows measured domestic properties saved an average of 32.8 l/prop/d (or 0.04 Ml/d). Overall, the programme was very well received by customers in both operating areas; a satisfaction survey sent to residents across both operating areas shows that over 98% of customers happy with the over all level of service they received and nearly 97% of customers said they were happy with all the products they received.

Also delivered as part of the programme was a small-scale trial of the combismart, a thermostatic control valve that controls the flow of water during the initial firing process of a combination boiler, accelerating the heating of water and reducing the amount of fuel needed in the process. Independent tests suggest 7.63 litres of water is saved every time the hot water tap is turned on from when the boiler is cold, or over 32,000 litres and 727kWh (Enertek International, 2012). Suppliers and manufacturers suggest customers could save around £90 off the water, sewerage and energy utility bill by installing thermostatic control valves on combination boilers. However, there is a lack of data to quantify the water and energy savings and verify the financial savings that customers could achieve if these products were installed. Initial results suggest that the product does not save any water, but NWL plans to repeat the trial in 2016/17 to collect high resolution water, gas and electricity consumption data to allow the water and energy savings from the device to be assessed.

#### Water audits for non-household customers

Approximately 100 non-household customers in Berwick upon Tweed and small community buildings in Newcastle upon Tyne received a water efficiency audit. A range of schools, SMEs and community buildings were audited including cafes, public houses, hotels, doctor's surgeries and retail shop units. Non household customers were offered a range of water saving products including ecoBETAs, urinal controls, aerated shower heads, tap aerators or adjustments to service valves.

#### PR and Media

To help promote the Every Drop Counts campaign, NWL worked in partnership with radio stations and the local press in Berwick upon Tweed to raise awareness. NWL ran short advertisement campaigns with Borders

Radio and the Berwick Advertiser to encourage listeners that live in Berwick upon Tweed to log onto the Northumbrian Water's website to request a free water efficiency audit and communicate key water saving messages. The campaign also had its own homepage on the Northumbrian Water website; customers were able to find out how they can save water and about the range of initiatives that were on offer by using buttons to navigate to different project areas. Customers that did not live in the project area could also order a free water saving kit.

### Events Programme

NWL worked in partnership with the Berwick Community Trust to deliver an events programme throughout the summer of 2015 to encourage the local community to sign up for a free water audit, but also educate visitors to the town about the benefits of water conservation.

NWL is also working with Northern Gas Works, Northern Power Grid and Yorkshire Water to support vulnerable customers and address fuel poverty, safety issues, and energy and water efficiency. Working together the partners hosted an event in Newcastle to engage with the voluntary, community, social housing, social care and health sectors to promote our work programmes and explore opportunities to work together in partnership.

### Little Green Riding Hood

In 2010, NWL joined forces with a production company called Fame Factory Spotlight to educate pupils, aged four to eleven, on the importance of being water-wise, via a play based on Little Red Riding Hood. The play, Little Green Riding Hood, helps to educate pupils in a fun and engaging way. Following the play, pupils are engaged in an enthusiastic session about good and bad habits, which reinforces the messages in the play.

Since the projects inception in 2010, in the NWL region 106,535 primary school pupils from 503 schools have taken part in the initiative. Of these, 11,552 pupils in 55 schools saw the play and participated in the workshops in 2015/16. Based on OFWAT's guidance for calculating the water savings achieved through behaviour change initiatives, the total water saving achieved through the Little Green Riding Hood educational programme is 1.66 Ml/day, 0.122 Ml/d of which resulted from the 2015/16 activity.

NWG is currently in the process of adapting the play and workshop to revolve around the *Super Splash Heroes*, to be launched in 2016. This will be delivered to 200 schools on an annual basis, 100 of which will be in the ESW supply area.

### Water Saving Kits

Water Savings Kits, including a number of water-saving products, have been offered to customers free of charge since 2010. Between 2010 and 2012, customers were offered Water Saving Kits via a wide range of initiatives;

ranging from radio campaigns to shopping centres displays. In the past year, Northumbrian Water has changed its strategy has altered slightly to focus primarily on retrofit projects. Consequently, the number of water saving kits requested by customers reduced to 11,371 IN 2015/16.

Evidence, as identified in the Collaborative Fund's research using data provided by NWG, shows that the average measured savings are 6.5 l/prop/day and 6.2 l/prop/day for standard and bespoke kits respectively. Therefore, in 2015/16, total water savings of 0.07 Ml/d were reported for this activity.

### **Water efficiency – looking to the future**

During AMP6, on an annual basis NWL will continue to deliver all of its activities as part of Every Drop Counts. All of the projects listed above will be undertaken in different towns in the north east each year. In 2016, NWL will focus on the Wingrove Ward in Newcastle. In essence, the projects themselves will not differ greatly compared to their delivery in previous years, bar the usual improvements made based on customer feedback. However, it is believed that by delivering the projects alongside a structured marketing and customer engagement plan will enhance participation in projects and ultimately the water savings achieved.

NWL will continue to take a pro-active approach to contributing to industry-wide projects and will continue to Chair the WaterUK Water Efficiency Network. NWL will also continue to actively undertake a range of different pieces of research, in the belief that such activities further improve the activities undertaken through the water efficiency strategy.

## **4.4 Climate Change**

### **Items Identified for Review in the DEFRA/EA Guidelines**

<b>General</b>	<b>Item</b>	<b>Review Criteria</b>	<b>Summary of Company Review</b>
UKCP09	Any work progressed on assessment of UKCP09 impacts on resources or demands.	Requirement triggered by change	Changes incorporated into 2014 WRMP WRMP14 guidance

## **4.5 UKCIP09**

No change from WRMP 2014.

## **4.6 Headroom and Options**

**Items Identified for Review in the DEFRA/EA Guidelines**

General	Item	Review Criteria	Summary of Company Review
Headroom	Give details of actual headroom	Requirement	See 4.6.1
	Any changes in actual headroom and target headroom	Requirement triggered by change	No change
Options	Progress with the planning and delivery of all options (include all options over and above those included in the baseline. For example additional supply or demand options; SELWE, selective metering, additional leakage control options)	Requirement	See 4.6.2
	Any changes to the options chosen	Requirement triggered by change	No change

**4.6.1 Actual Headroom**

For the Kielder WRZ the Water Available for Use (WAFU) in 2015/16 was 876.19MI/d in the Final WRMP. The actual outage for 2015/16 was 38.13 MI/d compared to the WRMP forecast of 38.64MI/d resulting in actual WAFU for 2015/16 being 886.53MI/d. With actual demand averaging 659.12MI/d this gives actual headroom for the zone of 227.41MI/d.

For the Berwick WRZ the WAFU in 2015/16 was 11.16MI/d in the Final WRMP. The actual outage for 2015/16 was 0.45MI/d compared to the WRMP forecast of 0.89MI/d resulting in actual WAFU of 11.84MI/d. With actual average daily demand being 7.63MI/d this gives actual headroom of 4.21MI/d.

**4.6.2 Options**

None.

## **5. Conclusions**

This review confirms that 2015/16 was a “wet” year with most water demand parameters having out-turned lower than those forecast for a normal year in WRMP 2014.

The Company had no concerns over its supply demand position with the Company reporting a Security of Supply Index of 100.

The Company remains confident that the supply demand balance will continue in surplus throughout the 25 year planning period.