



WHOLESALE BUSINESS PLAN 2015-2020

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1 EXECUTIVE SUMMARY

This is the Wholesale Plan for supplying the water to the retail businesses. Portsmouth Water has been supplying water as a private Company for 150 years. It is regarded as one of the most efficient companies in the industry and has an excellent record on affordability and service to the public and the environment.

- As a proportion of household income our customers pay less now than 10 years ago - our bills are the lowest in the industry by some margin
- We have the lowest level of written complaints in the industry
- We have one of the lowest level of supply interruptions in the industry
- We have not imposed restrictions on supply since 1976 - our supplies are resilient
- Our assets are well maintained as a result of a continuing long-term investment strategy
- We have pro-actively responded to environmental legislation, varying our licences to protect habitats ahead of the deadline set out in the legal framework. As a result, our area is no longer classified as an area of 'serious water stress'.

In preparing this Plan we have engaged with our customers, stakeholders and employees to ensure we reflect their priorities. We have worked closely with our CCG and are grateful for its time and effort in challenging and scrutinising our proposals and we believe our Plan is better as a result. These priorities have shaped our commitments (outcomes) which are shown below and align with the priorities set by the Retail Business.

1. A safe, secure and reliable supply of drinking water
2. Less water lost through leakage
3. A high quality service and value for money
4. An improved environment supporting biodiversity, public amenities and recreation
5. Supporting the community we serve by taking opportunities to support the local economy
6. Proving attractive to investors by providing a long-term financially sustainable business
7. Recognised by stakeholders as having a culture of health and safety through all our activities

Between 2015-20 we have to invest to meet our obligations and challenges.

- The installation of Ultra Violet technology at two treatment works to reduce the heightened risk of cryptosporidium for £5.1m. The scheme is supported by the DWI.
- The need to be compliant with our discharge obligations into Langstone Harbour - £3.5m.

- Over the last 10 years the Company has installed five membrane plant to reduce the risk of cryptosporidium. A key element of these plants, the membranes, have a short life and they need to be replaced for the first time to maintain process integrity at a cost of £2.2m.
- Included expenditure to enhance and review our ability to provide operational resilience against the impact of floods, droughts, catchment pollution and other significant events. Total expenditure £1m.
- Meeting all our obligations under the NEP.
- We have significantly increased our catchment management activity to arrest a trend in rising nitrates at several sources. We have included a study to assess our operation resilience to the pollution and extreme weather events. Total expenditure £1.2m.

The Board has challenged the Company to manage the tensions between affordability, meeting customer expectations and statutory obligations whilst balancing the needs of current and future customers. This has been achieved by:

- Shareholders have agreed to give up over £2m of returns from previous outperformance, this effectively reduces bills by 5% in 2015/16.
- An efficiency challenge of 0.3% each year up to 2020 with additional savings of 1.5% to 2017
- If we earn a return above 6% on capital, we will share this with customers
- We have reduced the cost of equity from 7.1% at the last Determination to 6.25% in the Business Plan.

We have balanced the risks associated with the varying levels of capital maintenance expenditure and challenged costs and efficiencies, we have undertaken Totex econometric modelling which indicates we were in the upper quartile for the industry.

Our Wholesale Plan makes the following promises to our customers:

- At the most, bills will rise in line with inflation
- We will meet all our statutory obligations
- Our service to customers will improve and this will be funded by efficiency
- We will do more to protect and enhance the environment
- This Plan is for future customers as well, it is sustainable in the long term
- We will share outperformance with customers
- We have proposed a framework of incentives which protects customers and align with the value they place on performance

We tested our appointed Plan of which this is a significant part with customers, 99% of household customers and 94% of business customers found our Plan acceptable. This acceptance was across all social groups.

This Plan will provide customer with the most affordable water supply in the country. It is a package of measures which is financeable and meets our obligations and our customer priorities and is totally endorsed by the Board.

2 INTRODUCTION

We at Portsmouth Water are planning for the period 2015-2020. We have produced an overall Plan setting out the key commitments and activities that customers and other stakeholders have told us are most important. We have also ensured that we will meet our regulatory and statutory obligations.

The overall plan presented has been judged as acceptable or wholly acceptable by 99% of a representative sample of surveyed household customers and 94% of business customers.

Portsmouth Water provides water to 307,000 homes and businesses in South East Hampshire and West Sussex. It is an integrated business responsible for all aspects of the supply of water from source to tap. However as part of our planning process we have developed three separate plans with details of our proposals for our retail function to households, the retail function to non households and a wholesale plan in which delivers the requirements of the retail plan.

This document is the Wholesale Plan. The wholesale business is responsible for abstraction, treatment and delivery of water to customers.

The wholesale arm of Portsmouth Water is committed to help deliver the overall Company mission:-

“To supply drinking water of the highest quality combining high levels of service with excellent value for money”

We have challenged ourselves and accepted challenge from other stakeholders in delivering a Plan that delivers the outcomes desired by customers, investors and other stakeholders and is fully supported by the Board of Portsmouth Water.

The wholesale business operates in a regulated environment and we have a duty to meet our obligations which includes drinking water standards, environmental commitments. We have to manage the tensions of the cost of meeting customers expectations, our statutory obligations and affordability to our customers.

In preparing this Plan we have conducted research which has shown that, whilst customers value water quality, security and reliability of supplies, they are satisfied with the service we provide and are not in general, willing to accept price increases for improved services. In the current economic climate this is understandable. However the Service Incentive Mechanism which is an industry-wide means of assessing customer satisfaction is driving improvements in and expectations of service. As a result, through continued efficiencies and innovation we are committed to further improving the experience of customers in their dealings with us, without this impacting bills.

As part of our customer engagement on the development of our Plan we have worked very closely with the Portsmouth Water Customer Challenge Group (CCG) and also spoken direct to a range of customers including other business groups.

The CCG is an independent panel made up of representatives from the regulators of the water industry along with local councils, large business customers and representatives from the local community and environmental bodies. We would like to thank them for their input and the challenges which they have put to us.

From our stakeholder engagement we have developed a series of Commitments, which we believe meets the expectations of customers over the long term and will be achieved with bills remaining flat in real terms over the period 2015-2020.

3 WHOLESALE PLAN BOARD ASSURANCE

The Board's approach to assuring itself that it has produced a Business Plan delivering good outcomes for customers, is explained in the Board Assurance Technical Report.

The Board has ensured that the Wholesale Plan has been produced to meet the strategic objectives it set for the overall Appointed Business Plan which were:

- The Plan should be evidenced based and reflect the wishes of customers and other stakeholders.
- Prior to the development of any detailed business case, the Board put forward a clear aspiration that as a minimum it wanted to see if it could deliver a sustainable and financeable Business Plan without any real increase in bills over the 5 years to 2020.
- The Plan should meet the duties set out in the Statement of Obligations published by Defra and the National Environment Programme published by the Environment Agency.
- Delivers a Plan that ensures long-term stability to the assets of the business.
- The Plan should ensure that services are maintained at the appropriate level to customers over the long term. Our investment programme should balance the need for low bills now with the future serviceability of its assets. Investment should be part of a sustainable long term strategy which avoids increasing the costs and risks to future customers.
- The Plan must be sustainable and financeable over the long term, with clear demonstration of this until at least 2025. This was considered particularly important given the impact of legacy items at this review, which will increase revenue in the Plan period, but will fall away after 2020.
- The Company's assets should be resilient to possible threat of pollution, droughts and other extreme events.
- The Water Resources Management Plan
- The catchment management plan
- Environmental obligations and duties
- The Board as a whole, challenged each key input into the Plan, reviewing reports produced by third parties and receiving reports from W S Atkins. In addition, each Non-Executive Director took responsibility for certain elements of the Plan to understand in greater detail, the processes used in producing the Plan and the challenges presented. The responsibilities were:
- The Board as a whole challenged the Plan to ensure it is affordable to customers and provides provisions for customers who are struggling to pay their bill.

The Chairman, Terry Lazenby

- The risk based approach to Capital Expenditure
- Capital Schemes for the Water Quality Obligations

- Challenging the costs used in Capital Expenditure schemes

Senior Independent Non-Executive Director - Mike Kirk

Financial Aspects of the Plan

- Weighted average Cost of Capital
- Approaches to reducing the Cost of Debt
- The financial model

Non-Executive Director - Heather Benjamin

- Review of Outcomes
- Operating Costs and Efficiencies
- People Strategy

The challenges and decisions taken by the Non-Executives and the whole Board for each of the main elements of the Wholesale Plan are described in this section.

3.1 Commitment (Outcomes)

The Board reviewed the customer research and the input from the CCG to establish whether they were the right commitments for customers.

The Non-Executive Directors insisted on a commitment for Health and Safety as this was a priority for the Company, and that employees needed to see this reflected as a key commitment by the Board. The final agreed outcomes were formally agreed by the whole Board.

3.2 Key Measures of Success and Incentives

These were discussed at length at the Board meetings. The Non-Executives recognised the current difficulties faced by many of our customers and were keen to see that there was an element of sharing future gains with customers. In addition they were keen to see the commitment to local suppliers.

In addition the Non-Executives reviewed the potential financial impact of the proposed rewards and penalties.

3.3 The Weighted Average Cost of Capital

The Board reviewed a report on the subject commissioned from Oxera, with the Senior Independent Director reviewing the whole document. He was also directly involved in a discussion with the Company's bankers to ascertain whether the index linked loan could be refinanced to take advantage of the prevailing internal rates. The Board approved an approach to its bankers to seek a hedging solution to lower the cost of debt, although this will not be concluded prior to the submission of this Plan.

The Board were satisfied that the proposed weighted average cost of capital is based on sound methodology and the Company's own embedded cost of debt.

3.4 Base Operating Cost

The Board, as a whole, reviewed all the additions and deletions from the level of operating cost incurred in 2012/13. The Non-Executives were particularly keen to ensure that the costs expressed in reducing leakage back to the target were not carried forward into customer bills as the Board had repeatedly said that this cost was for Shareholders to carry. The Non-Executive Director responsible for this item reviewed each item in detail to assure her colleagues.

3.5 Capital Maintenance Costs - Above Ground Maintenance

We have adopted a risk based approach to Capital Maintenance planning and categorised each scheme on the basis of 1 to 6, 1 being high risk of failure if investment is not carried out. The Board determined where the cut off for inclusion in the Plan should be and the Non-Executives challenged the Executives and senior management to further review those schemes on either side of the cut off point.

The Chairman reviewed the detail of the analysis to assure his colleagues of the process.

W S Atkins reported on the proposals for capital maintenance from which the Board gained assurance.

3.6 Mains Renewals

The Board considered a range of options proposed by consultants WRC, which highlighted the costs, impact on bursts and leakage of different lengths of mains renewals. Although the Executives had proposed a programme of replacing 23km of mains each year, the Non-Executives having reviewed the recent history of burst rates, asked for this to be reduced to 22km to lessen the input on bills for customers.

W S Atkins also provided a review of the proposed mains renewal activity which assured the Board that the process had been robust.

3.7 Capital Expenditure Schemes - New Obligations

The Board, having reviewed the Statement of Obligations published by Defra, particularly in relation to Drinking Water Quality and the National Environment Programme, have assured themselves that these obligations have been addressed. They have reviewed the options for addressing issues raised and are responsible for key decisions, including:

- Dealing with the enhanced risk of Cryptosporidium at two sites - this scheme was supported by the DWI, and the Board reviewed a series of options for dealing with the problem, being satisfied that the one being put forward in the Plan was the most effective.
- National Environment Programme - Impact of abstraction as part of the Water Framework Directive. The Board decided to conduct an option assessment at the Company's own expense to allow a solution to be put forward in the Business Plan. It also decided to implement the proposed solution ahead of the required date.
- Eels Directive. The Board decided to propose a study to understand the scale of the problem at one site, rather than go straight to an expensive solution which might not be required, thereby potentially reducing the cost for customers

3.8 Efficient Cost of Capital Expenditure Schemes

The Chairman and a Non-Executive Director have reviewed the process adopted by the Company for ensuring that Capital Expenditure schemes included in the Business Plan are based on efficient costs.

In addition the Board have reviewed an independent report from W S Atkins to provide assurance that appropriate benchmarking of costs has been carried out.

3.9 Operating Cost - Future Efficiencies

The Board have reviewed a report from First Economics, and have satisfied themselves that it is a sound basis for arriving at an appropriate efficiency rate. The Non-Executives asked that a small addition to the rate indicated in the report be added and approved a further element of efficiency which may be gained for the implementation of new IT systems also be included in 2016/17.

3.10 Financeability and Risks

The Board asked for a range of scenarios to be run to ensure the Plan is financeable in the long term and to establish whether real price reductions were appropriate. It was satisfied that real price reductions were not financeable and would store up problems for the future.

Through the scenarios it has identified and assessed the key business risks.

4 SUMMARY OF CUSTOMER RESEARCH

4.1 Introduction

In preparing this Wholesale Business Plan we have engaged with our customers and stakeholders and listened to their views. We are determined to put customers at the heart of our plans and we have used the feedback gained from our engagement to form our views and base our plan on the priorities of our customers.

Our primary research used in formulating the Plan was an independent quantitative survey including questions about “willingness to pay” which was conducted in Spring 2013. This type of research is designed to cover a sufficient number of representative customer types to determine whether customers overall are willing to see bills rise to allow certain improvements in either our service levels or the environment. Customers did express a willingness to pay for certain improvements in our service. However, whilst we are using these customer priorities to determine improvements, we are not proposing to increase bills beyond the value of inflation. Instead we will fund improvements in service levels out of efficiencies. This will be a challenge as we are already recognised as being one of the most efficient water companies in the industry.

We have also conducted Acceptability Testing on our Draft Business plan which was published at the end of September 2013. 99% of domestic customers and 94% of business customers regarded our Plan as either “completely acceptable” or “acceptable”. During this element of testing we also ascertained the value customers place on different aspects of service.

Other research which has informed the Plan includes:

- Previous focus group research, conducted in 2011, by an independent research company.
- Focus group (qualitative) research conducted by an independent research company immediately prior to the quantitative research referred to above.
- Our own monthly customer survey, which also asks a sample of our customers a number of simple questions.
- Responses to the consultation on our “Looking Ahead” (Outline Business Plan) document via our website.
- Questionnaires completed by customers at three shopping centres within our area of supply (again centred around our “Looking Ahead” outline Business Plan proposals).
- Respondents to our website and in shopping centres were given the chance to win £1000. Approximately 500 people responded.
- We have also consulted with and gained feedback from our major stakeholders on our “Looking Ahead” (Outline Business Plan) document as well as getting their views via our Customer Challenge Group (CCG).
- We carried out some Deliberative research in two specific areas: Leakage and Resilience. The deliberative research consisted of focus groups where these two topics were discussed in detail. Because only two subjects are discussed, the level of detail is much greater and customer views and priorities for these areas can be ascertained in much more depth.

- Once our Outcomes (Commitments) had been defined, we carried out engagement with our customers to ascertain their views on the value that they place on each of our different Outcomes and the penalties and rewards which they believe should be applied as a response to the under or over delivery of these Outcomes.
- We asked for responses to our Draft Business Plan published in September 2013, with respondents again having the chance to enter a prize draw and win £1,000.

The number of our respondents to our engagement activities are detailed below. Overall, including the formal research we had feedback from 1,444 customers during the process.

Number of respondents*:

Previous research carried out in 2011	27
Qualitative Research (focus groups) – domestic customers	38
Qualitative Research (focus groups) – Business customers	10
Quantitative Research – domestic customers	500
Quantitative Research – business customers	100
Outline Business Plan (Looking Ahead) feedback – online	226
Outline Business Plan (Looking Ahead) feedback – paper	232
Deliberative Research Focus groups	36
Outcomes Willingness to Pay & Acceptability Testing – domestic	200
Outcomes Willingness to Pay & Acceptability Testing – business	75
Total number of customers involved in formal research / engagement	1,444

*Note that this list only includes customers and does not include the engagement activities with stakeholders.

4.2 What Customers Told Us

The principal messages coming through from our customers included the following:

4.2.1 **General Messages:**

- 99% of domestic customers and 94% of business customers (unweighted) consider our business plan, as presented to them, to be either acceptable or completely acceptable.
- Whilst customers did express a modest willingness to pay (WTP) for improvements in certain areas of the service they receive, the overall message was that they did not want to see their bills increasing.
- The main areas where customers were willing to see small increases in their bills for specific improvements in service were as follows:
 - *Protecting wildlife habitat in local rivers and streams (WTP: £1.57)*
 - *Hard water (WTP: £1.20)*
 - *Carbon footprint (WTP: £1.14)*
 - *Leakage (WTP: 1.09)*

- *Public amenities / community support (WTP: £0.98)*
- Water efficiency (WTP: £0.90)

4.2.2 Principal Messages by Outcome

As part of our customer engagement on the development of our Plan we have worked very closely with the Portsmouth Water Customer Challenge Group (CCG) and also spoken directly to a range of customers including other business groups.

The CCG is an independent panel made up of representatives from the regulators of the water industry along with local councils, large business customers and representatives from the local community and environmental bodies. We would like to thank them for their input and the challenges which they have put to us.

From this stakeholder engagement we have developed a series of Outcomes or Commitments, which we believe meets the expectations of customers over the long term and will be achieved with bills remaining flat in real terms rising by no more than inflation over the period 2015-2020.

These Outcomes are as follows:

- Safe, Secure, Sustainable and Reliable Supply of Drinking Water
- Less Water Lost Through Leakage
- A High Quality Service and Value for Money
- An improved Environment, supporting Biodiversity, Public Amenities and Recreation.
- Supporting the Community we serve by Taking Opportunities to Support the Local Economy
- Proving Attractive to Investors long term sustainable Business
- Recognised by stakeholders as having a Culture of Health and Safety through all our activities

The main messages from our Customer engagement are grouped under each Outcome below. Customers were also asked how much they valued each Outcome and these results are also shown below.

1) A safe, secure and reliable supply of water (The vast majority of domestic customers (97%) and business customers (92%) were satisfied or very satisfied with the proposed outcome regarding a safe, secure and reliable supply).

- Customers appreciate a reliable water supply.
- They believe hosepipe bans are acceptable if they occur on average once every 20 years.
- A high proportion of customers would like softer water even if it means a small increase in bills.
- They would like more information on water quality issues.

- We should review the resilience of our supplies.

2) Less water lost through leakage (The majority of domestic customers (75%) and business customers (68%) were satisfied or very satisfied with the proposed leakage outcome of 17% of all treated water).

- Customers are concerned about leakage.
- Are willing to see modest bill increases to reduce it.
- At times of drought we must do more to reduce leakage.

3) A high quality service and value for money (The vast majority of domestic customers (97%) and business customers (93%) were satisfied or very satisfied with the proposed outcome regarding value for money.)

- Over 90% of domestic customers are satisfied with the level of service we provide and 88% of domestic customers believe our services are good value for money.
- Appreciate calls being handled locally and in person
- Are not willing to pay more for service improvements
- Business customers would like consolidated billing and help with their leakage.
- Customers are generally not aware that we have by far the lowest charges for clean water in England & Wales.

4) An improved environment supporting biodiversity, public amenities and recreation (The majority of domestic customers (87%) and business customers (91%) were satisfied or very satisfied with the proposed outcome for the environment, wildlife, public amenities and recreation.)

- Protecting the environment is important to them.
- Are willing to see a small increase on bills to
- Reduce the impact of abstraction at important environmental areas
 - Reduce our carbon footprint
 - We should only promote metering for those customers who will save money. There was no mandate for compulsory metering.
- Would like more information on water efficiency.
- Customers and key stakeholders told us that we should contribute to public amenities and recreation.

5) Supporting the community we service by taking opportunities to support the local economy (The majority of domestic customers (87%) and business customers (89%) were satisfied or very satisfied with the proposed outcome for supporting the community and local economy.)

- Property developers want to see improvements in our service when they lay on services to new houses.
- Our local activities are valued by the community.

- A previously planned reservoir at Havant Thicket is seen as a key piece of infrastructure in the local area to provide environmental and recreational benefits.

The engagement we have undertaken with our customers and stakeholders has been an invaluable part of the process of defining our proposals in our Business Plan. We have listened to what our customers and stakeholders have told us and we believe we have fully reflected their views and priorities in our proposals. Our customer engagement process has undergone significant challenge and review from our Customer Challenge Group who formed a sub group specifically to review the approach, methodology and results from each stage of our customer engagement process. The process has also been scrutinised fully by the Board who have reviewed the progress of each stage and even taking part in certain stages of the process through individual executive and non executive directors attending focus group sessions or personally interviewing customers as part of our shopping centre road shows. We are pleased to see that, when tested with customers, our proposals met with approval from 99% of domestic customers and 94% of business customers. These proposals are fully reflected in the wholesale plan which follows.

Commitments (Outcomes)

We have developed a wholesale plan that meets the requirements of the retail business. The table below sets out the outcomes the wholesale business will deliver, the performance commitments and the incentives we face to deliver.

Commitment	Total Cost	Proportion of Average Wholesale Household bill
Safe, Secure, Sustainable and Reliable Supply of Drinking Water	£90.05m	53%
Less Water Lost Through Leakage	£3.71m	2%
A High Quality Service and Value for Money	£25.41m	21%
An Improved Environment, Supporting Biodiversity, Public Amenities and Recreation	£17.00m	8%
Supporting the Community we Serve by Taking Opportunities to Support the Local Economy	£0.19m	0.1%
Proving Attractive to Investors Long Term Sustainable Business	£-	15.7%
Recognised by Stakeholders as Having a Culture of Health and Safety Through all Our Activities	£0.67m	0.3%

The commitment has been established in the retail business which they have placed on this Wholesale business where the whole or part of the outcome will be delivered.

A schedule of outcomes together with measures of success and our incentive proposals is shown on page 22.

In Sections 5 to 11 we consider each of the outcomes and how they will be delivered.

Outcome	Totex £m	Measure of Success	Performance Commitment	Incentive Type	Maximum Penalty £m	Maximum Reward £m		
A safe, secure and reliable supply of drinking water	85.26	Asset Condition - Infrastructure	Stable Assets	Financial - Penalty Only	4.00	-		
		Asset Condition - Non-Infrastructure	Stables Assets	Financial - Penalty Only	1.76	-		
		Compliance with Water Quality Standards	>=99.8%	Reputational	-	-		
		Reduce the number of contacts the company receives regarding quality of water supplied	Reduce by 1% per year	Reputational	-	-		
		Water Resources - Temporary Bans	Restrictions on use imposed less than once every 20 years	Reputational	-	-		
		Less water lost through leakage Customers recognise that we provide a high quality service and value for money An improved environment supporting biodiversity, public amenities and recreation	3.25	Average Annual level of leakage	<=29.90 Ml/d	Financial - Penalty and Reward	0.17	0.084
				Average unplanned interruptions to supply per property connected	<=6 minutes per property	Reputational	-	-
				Biodiversity improvements	90% of the actions in biodiversity plan are complete	Reputational	-	-
				Compliance with Water Framework Directive	Sites to be compliant by 2017/18	Financial - Penalty and Reward	0.075	0.048
				Carbon	increase by 10% electricity procured from renewable sources	Reputational	-	-
Supporting the community we serve by taking opportunities to support the local economy	0.20	Abstraction Incentive Mechanism	Will report our AIM performance annually	Reputational	-	-		
		Procurement of resources locally	45% of our resources will be procured locally	Reputational	-	-		
			Return above 6% will be shared with customers equally	Financial Penalty and Reward	-	Return above 6% will be shared with customers equally		
Providing attractive to investors by providing a long term financially sustainable business Recognised by stakeholders as having a culture of health and safety through all our activities	25.03	Return on capital	Achieve the gold award each year	Reputational	-	-		
		Award of Rospa gold award						

5 SAFE, SECURE, SUSTAINABLE AND RELIABLE SUPPLY OF DRINKING WATER

5.1 Water Quality

The Board of Directors and staff recognise that the primary function of the Company is to provide a supply of safe drinking water that is acceptable to customers and meet the standards set down in law. In particular they are mindful that adequate financial provision is made in order to be able to demonstrate to the Drinking Water Inspectorate (DWI) that a sustainable level of asset maintenance is being completed to maintain public confidence in drinking water quality.

The Company has a long term history of strategic investment and a unique ownership structure that ensures water quality standards are not put at risk whilst maintaining the lowest water bills in the country. Risk management is fully embedded across the business with particular focus on water quality managed by the company's Drinking Water Safety Plan. The plan is audited by the Company and the Drinking Water Inspectorate (DWI). The Company and Board of Directors have a particularly good relationship with the Drinking Water Inspectorate working with them in an open and transparent manner to continually deliver a reliable supply of high quality drinking water, a most critical outcome.

5.1.1 Obligations and Duties

We are required to provide public water supplies that are safe, clean and compliant with all regulatory standards including Defra's recently published Statement of Obligations together with adequate provision to ensure a sustainable level of asset maintenance in order to maintain public confidence in drinking water quality.

The regulatory framework is primarily the 1998 EU Drinking Water Directive implemented in England and Wales by the Directive on Water Supply (Water Quality) Regulations 2000 (The Principal Regulations).

For every water treatment works and associated supply system, from source to tap, the Company must undertake risk assessments and identify to the Drinking Water Inspectorate (DWI) all the hazards in the catchment, treatment and distribution system that could potentially impact on the Company's ability to adequately treat, disinfect and supply wholesome drinking water.

We must demonstrate to the DWI that our investment proposals include sufficient maintenance expenditure to operate and maintain existing assets to ensure compliance with the Principal Regulations is maintained, that the quality of drinking water does not deteriorate and where it is deficient is improved. We are also required to consider more generic risks to resilience such as power outage, flooding, drought, security of supply for treatment chemicals, analytical capacity and systems issues such as telemetry and IT systems.

5.1.2 What Customers have told us

Our customer engagement assessed customers' views on the quality of the water which they receive from us. The area which concerned customers most, measured by their willingness to pay for improvements, related to the hardness of water they receive. Water we supply is naturally moderately hard and a high proportion of customers are willing to accept a small increase in bills (£1.2 on a current average bill of £94.50) to pay for softening. Customers also expressed a desire for more information on water quality issues such as the level of lead in

water. In deliberative focus groups customers supported the company's proposal to review the resilience of our supplies. A full analysis of our customer engagement results is provided in the Technical Report on Customer Service.

5.1.3 Background and Current Performance

We have invested in our assets in a sustainable manner which has enabled us to deliver an excellent service to our customers where compliance with water quality standards is high. Over the past five years 99.7% of our water samples have met the designated water quality standards. This is also reflected in the 2012 Drinking Water Regulations Chief Inspector's Report which showed that we had 1 contact per 2,000 customers with an industry average of 2.

Our long term strategy of investing in our assets is reflected in condition assessments which are defined as stable.

5.1.3.1 *Deteriorating Water Quality*

Since 1993 we have effectively managed the risk of lead in our water supplies by orthophosphoric conditioning of the treated water.

We have also invested to deal with issues of deteriorating water quality. In the last 10 years we have installed membrane filtration at 5 sites to protect against cryptosporidium, and made changes to the River Itchen Works and Highwood Raw Water Reservoir to reduce the risk of THM's.

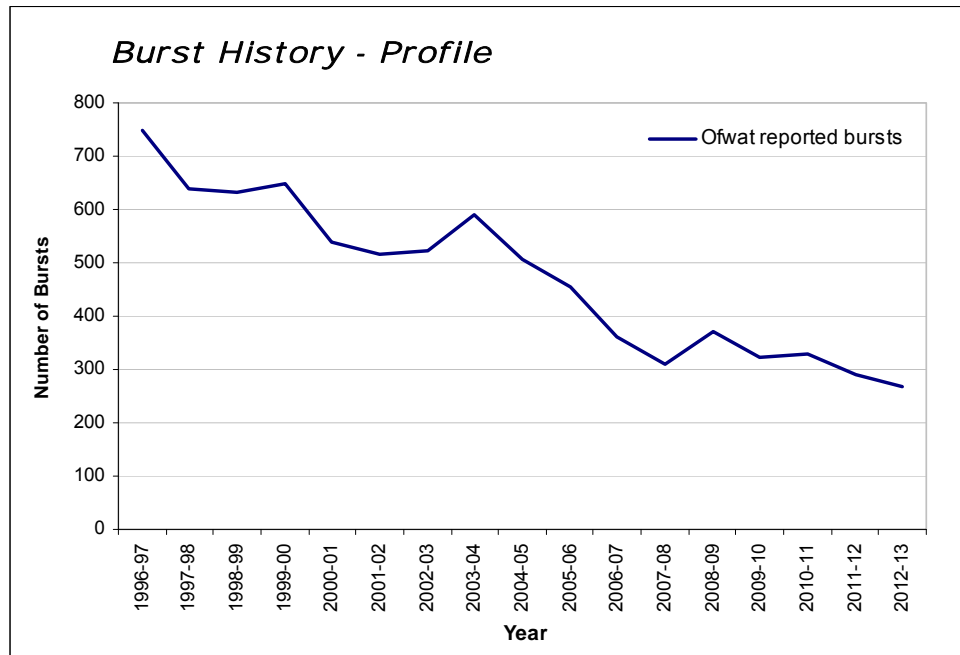
5.1.3.2 *Nitrates*

The sources we use to supply water to our customers have experienced rising nitrate levels throughout the past three decades. In order to ensure we supply our customers with wholesome water we have implemented a number of nitrate blending schemes. Where a source is at risk of failing the nitrate standard, we blend this water with a low nitrate source to ensure the water we supply to our customers does not breach the nitrate standard. This has proven successful with no breaches to date. This approach is much less expensive than nitrate removal at source.

More recently we have been undertaking catchment management where we work with stakeholders in the catchment with the aim of reducing the amount of nitrate that enters the water. This approach seeks to address the issues rather than treating the symptoms. The activity we have taken to date has been worthwhile, however due to the long term nature of nitrates it is not always easy to observe the impact in nitrate levels immediately.

5.1.3.3 *Capital Maintenance - Infrastructure*

As a result of renewing distribution mains the number of bursts has steadily fallen from approximately 750 in 1996/1997 to 267 in 2012/13.



In 2012/13 there was an average of just over 4 minutes of supply interruptions for all connected properties. This included 1 minute 19 seconds for unplanned interruptions and 2 minutes 43 seconds for planned. These results are among the best in the industry.

The water pressure experienced by our customers is affected by the performance of the distribution mains network. In the past 20 years the number of properties at risk of receiving water pressure less than the Ofwat reference level has steadily fallen from 1,688 in 1994 to 66.

5.1.3.4 Capital Maintenance – Non Infrastructure

We own and operate 21 water sources, 19 water treatment works, 32 service reservoirs and 24 booster pumping stations dispersed over a wide area relative to the population served. This is as a consequence in part of not owning a single large raw water storage reservoir relying almost totally upon localised groundwater sources. However, the low number of assets we own and operate ensures that we have a thorough and well understood knowledge of our asset base.

5.1.3.5 Resilience

We have a statutory duty to provide wholesome water at all times to our customers and must have regard to the resilience of our operations in doing so.

Recent events possibly influenced by climate change have raised the importance of resilience. The Company has not had a hosepipe ban since 1976. For many years we have taken a long-term strategic view on maintaining our assets which has ensured our operations are resilient against many events. Customers have not experienced any long term loss of supply resulting from failure of our assets and ability to supply water.

We have experienced a number of oil spills in our catchment area which provide significant operational challenges that impact upon the resilience of our supplies. We have had one 12Ml/d source out of operation for in excess of 18 months.

In the past ten years we have specifically spent £2.7m improving the security of reservoirs, treatment works and pumping stations against the threat of terrorist and malicious attack.

5.1.4 Challenges

We need to maintain our assets in a sustainable manner, this means balancing the impact of rising bills on customers against the risk of under investing in our assets and therefore storing up problems for the future. We must plan for the long term, on average we expect our distribution mains to last for at least 100 years. It may be possible to reduce investment in the short term with no impact immediately felt by customers; however we have to be careful we are not storing up problems for the future, where bills will have to rise to pay for under investment in the past. To find the appropriate level of investment in our assets that will maintain them in stable condition we have undertaken risk modelling.

There are a number of challenges that we face; including:-

- **Lead.** A tightening of the lead standard that will come into force in December 2013. Although very few of the samples taken from customers' taps fail the standard for lead, there is the possibility this may increase.
- **Cryptosporidium.** We have identified that the raw water from two of our sources have a higher risk than had previously been the case of a parasite known as Cryptosporidium, which has the potential to cause severe stomach upsets. Whilst we continually monitor for this there is a significant risk that the parasite could be present in the raw water. Further action on our part will be required.
- **Nitrates.** We have undertaken a risk assessment for each of our catchments to assess the likely date that the nitrate levels will be exceeded if no action is taken. There are 5 sources that have exceeded the nitrates standard in the past, however because of the nitrate blending schemes there has been no failures of the water supplied to customers. There is one source predicted to fail before 2015, 4 sources predicted to fail before 2030 and 2 further sources by 2040. We are confident that through operational management of sources we can continue to meet the nitrate standard during the next price review. However it is clear that in the longer term we will not be able to meet the nitrate standard unless we take some action. Further details can be found in the Technical Report on Nitrates.

Droughts, floods and rising Nitrate levels in groundwater impact upon our operational resilience, which due to longer term climate changes may become more significant with time. It is essential to gain an understanding of these issues and plan appropriate responses.

- **Resilience.** In the last few years we have experienced significant oil leaks in our groundwater catchment area. Oil leaks have the potential to contaminate any of our sources of water with significant resilience and cost implications. Of particular importance are the Havant and Bedhampton Springs a collection of some 24 prolific springs fed by groundwater percolating through the South Downs chalk. We abstract approximately 63 Ml/d on a peak day supplying a population of approximately 237,000 in the City of Portsmouth, Farlington, Havant and Hayling Island. This source represents approximately 25% of our total supply, the springs are therefore strategically important in meeting our supply demands. A number of oil spills have occurred in the area with the necessity to close one of our works for over 18 months. The impact of relatively small oil spills has a significant impact on our ability to provide resilient supplies.

Droughts, floods, and rising Nitrate levels in groundwater impact upon our operational resilience, which due to longer term climate change may become more significant with time. It is essential to gain an understanding of these issues and plan appropriate responses.

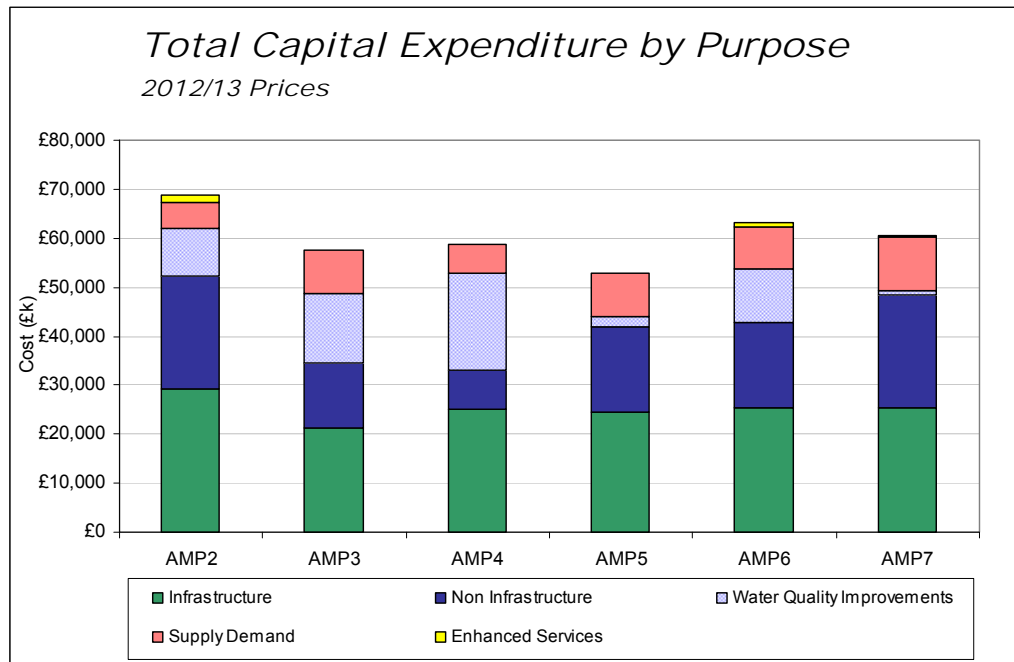
- **Capital Maintenance - Infrastructure.** Replacing 116km of main over the past five years at the price determined by Ofwat has been a significant challenge despite increasing no dig replacement techniques from 3% to 20% to drive installation costs down. Obtaining lower contractor installation unit cost rates in the next 5 years will be a significant challenge.
- **Capital Maintenance – Non Infrastructure.** Since our last Business Plan we have completed a root and branch review on how we identify, collect and store data to decide upon the most appropriate method of assessing the need to maintain these assets with particular emphasis on the relationship of total expenditure and the risk of asset failure impacting customer service through failure of critical assets both in the short and long term. The level of funding of capital maintenance for non-infrastructure assets has varied considerably over the past twenty years. This is as a result of the company having gone through periods of intense renewals in decades past which have created a cyclic pattern to the Company's expenditure which is difficult to smooth out. With a small asset base this is not unexpected as 100% coverage across the business is quickly achieved whenever a new requirement arises.

Most of the Company's water treatment works and pumping assets were constructed or re-modelled in the 1960s and early 1970s. By the 1990s, much of the mechanical, electrical and electronic plant installed at that time had become obsolete, unsophisticated by comparison with its modern counterparts, and the disinfection systems were in need of higher safety standards. Thus in 1991/92, the Company embarked on a major programme of treatment works and pumping station refurbishment which was completed in 2004/05. In AMP5 only a limited number of sites required further refurbishment to improve safety or plant efficiency and hence expenditure for above-ground assets was substantially less than may have been expected.

Over the years significant technical advancements have given rise to greater telemetry coverage with more sophisticated Instrumentation Control and Automation (ICA) installed.

Membrane plants have been installed at five of the main treatment works adding on-going maintenance costs which will be experienced for the first time in AMP6 at a cost of £2.2m. The membrane filter replacement was avoided all together in AMP5 having been deferred by unsuccessfully "sweating" the assets beyond their recommended life resulting in the emergency replacement of membranes as failure rates dramatically increased. Plans to install waste water environmental recovery at Farlington using ultra violet (UV) treatment plant will negate the need for new filters at the Farlington sites and they provide a more cost effective long term solution.

The historic expenditure reflecting the cyclic nature of replacing a relatively small asset base is indicated below. Further details of expenditure and proposed efficiencies within the non-infrastructure categories is provided in Section 12.



5.1.5 Our Proposals

5.1.5.1 Deteriorating Water Quality

As part of the regulatory requirement to submit revised risk assessments to the DWI the Company submitted two schemes for their consideration to address deteriorating water quality. The schemes were:-

- Proposals for managing lead levels in water
- Proposals for cryptosporidium treatment at two water treatment works

The details of the scheme are as follows:-

Lead

Since 1993 the Company has conditioned treated water with orthophosphoric acid to reduce the solubility of lead principally from domestic lead plumbing. As the water conditioning is fully optimised the Company proposes to continue the regime of dosing whilst enhancing the information available to customers and proactively advising customers to remove lead pipework from their domestic plumbing and supply pipes. The proposals received commendation from the DWI. This will not increase costs in the period 2015-2020.

Cryptosporidium

On a number of occasions during 2010-2015 we experienced cryptosporidium in the raw water at two of our sources, Eastergate Water Treatment Works and Westergate Water Treatment Works. As a result we commissioned The British Geological Society to complete a risk assessment which identified that the raw water quality was deteriorating and that there was sufficient evidence of cryptosporidium in the raw water to necessitate the installation of additional treatment processes.

We supply approximately 20 MI/d from the Eastergate and Westergate Water Treatment Works almost 8% of our total supply. These sites are of strategic

importance as they contribute significantly to the 15 MI/d bulk supply provided to Southern Water.

The Company employed the consultant 4D a joint venture between Veolia Water, Costain and MWH to prepare a feasibility study for the cost effective inactivation of cryptosporidium at the Eastergate and Westergate Water Treatment Works.

The feasibility study identified the most effective solution was to provide ultra violet treatment plants at both Eastergate and Westergate Water Treatment Works with facilities to manage turbidity levels at each site. Detailed design will be undertaken to confirm the proposed solution.

The DWI supports the need and proposed technical solutions to deactivate cryptosporidium whilst managing turbidity at the two sites and will require the Company to comply with a legal undertaking to deliver the proposals.

The capital cost in AMP6 is £5.1m.

5.1.5.2 *Nitrates*

There are a number of options for dealing with high nitrate levels.

Nitrate Removal

This “end of pipe” solution involves installing a further stage of treatment to the water which removes the nitrate. This solution can be considered low risk, however it requires a significant capital investment to build the plant and the process is energy intensive resulting in high running costs. Consequently this type of solution is considered a last resort.

Source Abandonment

Where a source of water is failing the nitrates standard, the source could be abandoned and no longer used for public water supply. The Company may need to develop a new source to replace the lost capacity. Portsmouth Water do not believe that this is a viable option as the opportunity to develop new sources are limited.

Nitrate Blending

Portsmouth Water has already implemented a number of blending schemes where water with lower levels of nitrate are blended with water with higher concentrations, resulting in a final water with an acceptable level of nitrates. This approach has the further benefit of increased operational resilience resulting from the new mains that are developed to blend the water. However where nitrates continue to rise in certain sources, this solution will ultimately become ineffective in the future.

Catchment Management

Catchment Management involves the Company working with stakeholders in the catchment to reduce the nitrates entering the catchment. The approach to catchment management depends on the characteristics of the catchment. The outcomes of catchment management are more uncertain than nitrate removal and blending solutions and this needs to be considered particularly for sources that are at risk in the short term. Catchment management has to form the basis of any nitrate strategy as it seeks to remove the problem at source and has the potential to provide wider benefits. It can be partnered with other certain solutions where there is an immediate risk.

Portsmouth Water proposes to increase its catchment management activity to mitigate the long term rising trends of nitrates across the catchment. In the short term we are confident of meeting the nitrates standard from existing blending schemes and operational management of the risk. Without an increase in catchment management activity, which will result in falling nitrate levels, it is highly likely that end of pipe solutions will be required in the future.

The capital costs in AMP6 are £0.3m, with additional Operating Costs of £0.240m per annum.

5.1.5.3 *Capital Maintenance - Infrastructure*

We aim to maintain our piped network in a stable condition and we have assessed our network primarily looking at the number of times an asset fails or a pipe bursts which impacts customers.

The average annual renewal rates for distribution mains including replacement of the communication pipe that are required to maintain stable burst rates and hence average customer interruptions in the network have been calculated based upon deterioration modelling by The Water Research Centre (WRC) that we have used on the previous two Business Plans.

Options Considered

The primary driver for the Company's mains renewal programme is to maintain bursts at a stable level over a 25 year period. Mains renewals at increasing lengths can influence the background level of leakage. The modelling undertaken considered the impact upon leakage but proved not to be cost effective.

A total of eight mains renewals options which included potential forecast trends in leakage caused by mains renewals activities and network deterioration were considered.

The length of mains resulting from the scenarios modelled varied from 23km to 39km in the first five years at a net present value of between £21.0m and £35.0m.

Selected Option

The deterioration models identified potential impacts on leakage however the calculations were considered too uncertain to base strategic decisions upon when considering the cost effectiveness of leakage control. Consequently the recommended option was to renew 24.6km per year targeting those cohorts which have historically burst the most to ensure burst rates remain stable in the five year period 2015-2020. Following a challenge by the Non Executives the annual renewal rate was reduced to 22km per year. The challenge was aimed to enable bills to be kept low while still delivering the outcome through improved efficiency.

5.1.5.4 *Capital Maintenance – Non Infrastructure*

The need to invest in maintaining non infrastructure assets has been informed by the following assessment processes.

- Technical on-site surveys by a panel of experts of all assets owned by the Company to collect data to inform serviceability and asset performance assessments.

- Historical Intervention and Impact Data Analysis
- Serviceability and Asset Performance Assessment
- Failure and Consequence Modelling
- Intervention and Impact Cost Modelling over the long term
- Integration Review and Challenge Optimisation Process

An important improvement in evaluating the long term need (40 years) for capital maintenance is the use of a cost benefit tool for selecting strategies for asset renewal to address asset deterioration and prevent service deterioration. The tool monetises the impact of asset failure and completes a cost benefit comparison of the reduction of risk obtained by alternative timing of asset refurbishment or replacement for a wide range of non infrastructure assets.

There are two significant items of non infrastructure capital maintenance expenditure in the Company's Plan totalling £3.8m.

A scheme to improve the chlorination effectiveness at 12 water treatment works which was submitted to the DWI for their consideration and a letter of support duly received. Expenditure on this scheme amounts to £1.6m

The second scheme consists of replacing, for the first time since the plants were constructed in the early 2000's, cryptosporidium membrane filters.

The Company has five sites which have membrane filters, four of which will be replaced at a cost of £2.2m. The fifth, Farlington Water Treatment Works, will have the membranes replaced with the more cost effective ultra violet plants as part of the Farlington Water Treatment Works environmental recovery scheme to reduce the impact of the discharge into Langstone Harbour, described in more detail in Chapter 8.

5.1.5.5 Resilience

The Company set out its proposals to enhance resilience at a total cost of £1.1m in a submission to the DWI who formally commended our approach.

The key element of our proposals are:-

- Completion of a phased approach, directed by Government, to improve asset security against terrorism and malicious attack (SEMD), cost £112k
- Improved resilience against flooding at Westergate and Walderton Water Treatment Works, cost £166k
- Improved resilience of single asset criticality by dualling of a trunk main below a river, cost £537k
- Resilience study to consider operational vulnerability to catastrophic or significant events, such as oil spills and critical asset loss, cost £300k

Our proposals set out the significance of oil spills within our catchments.

As part of our catchment management activities we will increase our activities associated with mitigating oil spills. We currently work very closely with the Environment Agency on a number of publicity campaigns and intend to develop this partnership further.

5.1.6 Board Challenge

5.1.6.1 Introduction

Following the Company's PRO9 Determination a post determination review was undertaken with the specific objective of addressing the strategic and technical criticisms that Ofwat made of the Company's capital maintenance elements of the Plan. The Board instigated a number of actions with the intention of making the next Business Plan significantly more robust. The specific improvements include the following:

Non Infrastructure.

- Commissioning of WRc to review the Company's Non Infrastructure Submission and production of a Road Map to deliver improvements to align with the Common Framework.
- Commissioning of WRc to prepare an asset centric data model to facilitate data collection for asset management.
- Development of an Asset centric life span model.
- Contributor to WRc research portfolio project on event and risk tree modelling to assess asset failure on customer serviceability.
- Introduction of Failure Mode and Effect Analysis (FMEA) into project feasibility studies and cost benefit studies.
- Introduction of risk based modelling undertaken by the experienced consultant, Mouchel's with particular emphasis on the relationship of total expenditure and risk of asset failure impacting customer service.
- Improved site survey work to identify deterioration of all assets by an expert technical panel.
- Improved business as usual processes.
- Procurement review of capital maintenance delivery programme.

Infrastructure Improvements

- Strategic change to pipe network performance data recorded on the Company's GIS for use with deterioration modelling including alignment with Ofwat's burst definition.
- Data cleansing of GIS system.
- Introduction of rigorous Quality Control Systems for data collection.
- Risk based spatial mains renewal targeting methodology and procedures implemented for AMP5 mains renewal programme and reviewed by the experienced consultant Jacobs.
- Enhanced Distribution and Operations Maintenance Strategy (DOM's). Link with risk based spatial mains renewal targeting procedures via Drinking Water Safety Plans (DWSP).

- Issue of 5 years mains renewals programme to contractor in order to facilitate cost reduction from efficient project planning and construction.
- Increase of mains replacement by no dig techniques, raising installation rates from 3% to 20%.
- Detailed bench marking of mains renewals costs.
- Detailed procurement review with introduction of performance related contract.
- Use of network models to optimise renewal activities where appropriate.
- Project governance plans improved, including cost control and variance risk control measures.

5.1.6.2 *Deteriorating Water Quality*

Lead

The Board and Non Executives have encouraged the Company to consider the innovative use of interactive website to enhance the communication process regarding the Company's proposal to improve customers understanding on the health issues associated with lead from their domestic plumbing and supply pipes.

Cryptosporidium

The Board challenged the Company regarding the cost effectiveness and longevity of the ultra violet treatment proposed at the Eastergate and Westergate water treatment works. Whilst expressing concerns regarding initial variability of costs they appreciate finalised costs can not be obtained until bespoke design is complete and the schemes tendered in the competitive construction market.

5.1.6.3 *Nitrates*

The Board reviewed the Technical Report on Nitrates and challenged the Company that the proposals safeguarded water quality and was a sustainable solution in the long term.

5.1.6.4 *Capital Maintenance – Infrastructure*

As the actual burst rate reduction over the past 15 years consistently exceeds the rate predicted by the consultant's deterioration model, the Non-Executives challenged the Company's proposal to renew 24.6km/year as they aimed to enable bills to be kept low while delivering the outcome through improved efficiency.

The final option included within the Plan proposes to renew 22.0km/year with a 5% increase in no dig installation or equivalent rate reduction.

5.1.6.5 *Capital Maintenance – Non Infrastructure*

Over the past five years the Board have been actively engaged with introducing a wide range of improvements to the processes of identifying and justifying capital maintenance expenditure. They have reviewed and challenged the need for schemes included in the Company's current Plan including technical justification and expenditure levels. They have a detailed understanding of the

risks associated with varying levels of expenditure on a wide range of assets covering all aspects of abstraction, treatment distribution and storage.

5.1.6.6 *Resilience*

The Board and staff recognise that the primary function of the Company is to provide a supply of safe drinking water that is acceptable to customers and meet the standards set down in law. In particular they are mindful that adequate financial provision is made in order to be able to demonstrate to the Drinking Water Inspectorate (DWI) that a sustainable level of asset maintenance is being completed to maintain public confidence in drinking water quality.

As a consequence risk management is embedded across the business at all levels. The unique operational risks experienced with the Havant and Bedhampton Springs Reservoir earlier require resilience of our ability to deliver water with significant outages. The Board are particularly mindful of the challenges.

Consequently the Board have reviewed the proposals to enhance resilience and recognise the importance to undertake a full and detailed resilience study to understand the medium and long term implication of climate change and ability to provide operating resilience whilst providing bulk supplies to neighbouring companies. The need to pay particular attention to the vulnerability of the Company's underground water sources to point pollution incidents was expressed following a number of significant oil spills in the Company's catchment area.

5.1.7 **Measures of Success and Incentives**

We will report our progress annually on our commitments to customers, the measures of success for the water quality element of this outcome are detailed below.

5.1.7.1 *Asset Condition Infrastructure*

We are proposing a penalty only incentive linked to the condition of the piped network. The Board will assess the condition of the piped network using a number of measures and expected performance levels. If the Board assess the condition of the assets are not being maintained they will put forward a recovery plan, the cost of which will be met by the shareholders.

The measures and expected levels are set out below.

Measure	Lower	Mid-Point	Upper
Burst Mains (Nr)	207	315	423
DG2 Pressure (Nr)	29	66	103
Iron non-compliance (as 100 - mean zonal compliance (%))	0.00	0.00	.21
Distribution Index TIM	0.00	0.00	0.20

The penalty is proposed to be capped at 15% of the spend allocated to this measure of success.

5.1.7.2 *Asset Condition Non-Infrastructure*

The Company has proposed a penalty only incentive relating to the condition of the above ground assets. The Board will report annually on the conditions of the assets. This assessment will be undertaken against two performing measures. If the Board believes that the condition of assets is deteriorating they will put forward a recovery plan, the costs of which will be met by the shareholders. The Company is proposing to use the following Drinking Water Inspection indicators.

- Disinfection control
- Process control
- Service Reservoir Integrity

The penalty is proposed to be capped at 15% of the spend allocated to this measure of success.

5.1.7.3 *Compliance with Water Quality Standards*

We will report annually on performance of compliance with water quality standards. We have set a target of achieving a minimum of 99.98% of samples passing. This is a reputational incentive.

5.1.7.4 *Number of customer contacts relating to quality of water supplied*

We receive contacts from our customers relating to concerns they have about the acceptability of the water they receive. The level of contacts we receive is already below the industry average. We are aiming to reduce the number of contacts by 1% a year. This is a reputational incentive that we will report against annually.

5.2 Water Resources

Ensure sufficient supplies are available to ensure that restrictions should only occur on average once in every 20 years.

5.2.1 Obligation and Duties

Every 5 years, water companies are required to review their resource situation and determine whether they have sufficient resources to provide reliable supplies to customers for the next 25 years and publish a Water Resources Management Plan.

In preparing this Plan we asked customers the extent to which they are willing to risk the possibility of restrictions to their water supply which can include hosepipe bans. A willingness to accept a greater frequency of restrictions reduces the need to invest in new supplies and thereby can prevent the need for bill increases that would otherwise be necessary. A draft Water Resources Management Plan was published for consultation in May 2013 and the representations were considered and the Company issued its response in November 2013.

We have in preparing our draft Water Resources Management Plan worked with stakeholders through our Water Resources Management Plan Stakeholder Group through the pre-consultation period. This has enabled us to take account of views expressed by stakeholders and to provide early information on potential issues and our proposed approach to resolving these issues.

We are also part of the Water Resources in the South East Group and have worked to develop a range of strategic options to inform the development of our and other companies WRMP.

We have worked with neighbouring companies to investigate and develop potential bulk supplies. The Environment Agency and Government expect us to use the outputs of the WRSE modelling outputs in the development of our Plan.

5.2.2 What our customers have told us

In preparing this plan we asked customers the extent to which they are willing to risk the possibility of restrictions to their water supply which can include hosepipe bans. A willingness to accept a greater frequency of restrictions reduces the need invest in new supplies and thereby can prevent the need for bill increases that would otherwise be necessary.

Whilst our engagement with customers has shown that the reliability of water supply is important, our customers have expressed a willingness to accept restrictions at the level of 1 in 20 years which is a 5% chance of restrictions in any one year. A full analysis of our customer engagement results is provided in the Technical Report on Customer Engagement.

5.2.3 Background and Current Performance

We are proud of our record in providing a reliable supply of water to our customers. Our customers have not been subject to any restrictions on demand since 1976 despite recent droughts experienced in the South East of England. This has been achieved at the same time as the Company has taken action to protect the environment by varying abstraction licences to protect the environment. We plan only to impose restrictions on customers in a drought that occurs once every 20 years on average.

We also plan for more extreme events than 1 in 20 'dry years'. The table below sets out the measures the Company believes it would have to take to maintain supplies in rarer events.

Temporary Bans	1 in 20 years
Ordinary Drought Orders	1 in 80 years
Emergency Drought Orders	1 in 300 years

The amount of water we abstract has fallen over the last few decades as a result of reducing commercial demand and reduced leakage.

All new properties in our area are now billed on a measured tariff. We also offer unmeasured customers the option of having a meter installed free of charge in most cases. On average 5,000 of our customers choose to have a meter installed each year, around 25% of our domestic customers now pay for their water on a measured tariff.

In the past we have been classified as an area of serious water stress, this status gave the option of compulsory metering our customers. However the Environment Agency advised us that we are no longer in an area classified as serious water stress in August 2013. Consequently we are no longer able to compulsory meter our customers.

Water Resources in the South East is a collaboration between companies in the South East of England, Regulators and Stakeholders which undertakes modelling at a regional level to inform companies' Water Resources Management Plans. We are an active member of this group and this has resulted in the development of the current bulk supply that we provide to Southern Water.

5.2.4 Challenges

We need to ensure that we can supply water to our customers in a sustainable manner in the long term. In developing our Water Resources Management Plan we have taken account of a number of challenges.

Our plan reflects the plans of local authorities which forecast housing growth and Government forecasts of population growth. This forecast has been developed collaboratively with other companies on the South East to provide a consistent approach. We need to ensure that we have enough water to supply these new customers in the future.

Climate Change has the potential to impact both the supply of our water and the demand for water. In developing our Plan we have used the latest climate change forecast to assess the potential impacts on both the supply and demand of water.

We have developed a new demand forecast based on best practice in the water industry. This micro-component forecast allows changes in customer behaviour over time to be modelled along with the benefits of greater water efficiency. We have also completed a full reassessment of our supply forecast.

In developing our Water Resources Management Plan we have taken account of the 'Guiding Principles' published by Ofwat, Defra and the Environment Agency.

Neighbouring companies have requested that we provide additional bulk supplies to them, the first in 2017/18 and a further bulk supply in 2040. We need

to balance our contribution to a regional solution with the needs of our customers.

We also need to consider the impact of reductions to our abstraction licences to comply with environmental legislation. There are two sites where we expect to vary our licences as described in Chapter 8. The reductions in supply have been included in our Plan.

5.2.5 Our Proposals

Our Draft Final Water Resources Management Plan shows that we can maintain supplies into the future without the need to invest in new supply or demand reduction schemes.

The Plan includes a level of optional metering that is based on historical numbers and given our low level of meter prevention we believe this is achievable. We will also work with stakeholders to promote meter options to customers who will benefit financially by opting for a meter. This forecast increase in metering results in a falling per capita consumption over the planning period.

We have made provision in our Plan to provide new mains to support development in our local community.

As a result of the Water Resources in the South East modelling we have received requests for bulk supplies from two neighbouring companies. These bulk supplies can be met from our existing surplus in water and therefore do not require any investment in developing new schemes. At present we have not agreed commercial terms for these bulk supplies.

We believe our supplies to customers to be resilient and the table set out in section 5.2.3 shows that we would not expect to require standposts for a very rare drought such as the one that might be expected once every 300 years. However we believe it would be beneficial to undertake further work to understand the resilience of our assets and will undertake a study to achieve this.

Although we did not impose restrictions on customers in the drought of 2012, we understand the potential damage that restrictions could cause to the business of our commercial customers. We will review how we impose restrictions and to minimise the impact on our customers.

5.2.6 Measures of Success and Incentives

5.2.6.1 *Water Resources - Temporary Bans*

We will only introduce restrictions on customers' supplies in a drought. We expect this to be on average, no more than once every 20 years. This is a reputational incentive and we will report annually against this measure.

5.2.6.2 *Bulk Trading Incentive*

We welcome the new bulk supply trading incentive and this will apply to a new bulk supply that is planned for development between 2015 and 2020. However, at this point the commercial terms and conditions have not been agreed so it is not possible to calculate the strength of the incentive.

5.2.7 Cost of Delivering the Outcome

The total cost of delivering this outcome for the wholesale business is £90.05m.

Delivering this outcome, accounts for 53% of the wholesale element of a customer's bill.

6 LESS WATER LOST THROUGH LEAKAGE

6.1 Less Water Lost Through Leakage

6.1.1 Obligations and Duties

We have a duty to manage the water lost through our pipes at an appropriate level. To determine the level we take account of the costs of managing leakage, producing the water that is lost through leaks, the impact on the environment of abstracting the water and the impacts on society and the environment of reducing leakage. The level of leakage we derive from considering these factors is called our sustainable economic level of leakage (SELL).

We also consider if it is appropriate to reduce our leakage further if we believe we may need to develop further supplies of water in future to meet projected demand. However our calculations show that we have enough water and therefore do not need to reduce leakage further.

6.1.2 What customers have told us

Our customer engagement revealed that leakage was an important issue for our customers and that they value a lower level of leakage. Although they are willing to accept a modest increase in bills (£1.09 on an average current bill of £94.50) to pay for this overall they do not want their overall bill to increase. In particular they expressed the view that at times of drought we must do more to reduce leakage. Therefore we need to be more innovative to find more efficient ways of reducing leakage without increasing customers' bills. A full analysis of our customer engagement results is provided in the Technical Report on Customer Engagement.

6.1.3 Current Record

In 2011 Ofwat changed the approach to regulating compliance placing more emphasis on the companies to ensure compliance and removing the requirement of a reporter function. The Board as a result of this requested a review of all compliance procedures. This review identified an error in our calculation of leakage which meant we had been under reporting leakage. We immediately informed Ofwat of this issue and proposed a leakage action plan to reduce leakage to target by 2015. The leakage action plan has been funded by shareholders and not customers.

We believe this issue is serious and we have failed to deliver on an obligation we made to customers. However it should be noted that during the time we misreported leakage customers have not suffered any restrictions to their supply.

The leakage action plan is on track to meet the target of 32 MI/d for the current year and we are confident that we will reduce leakage back to the target of 30 MI/d for 2014/2015 at no cost to our customers.

We manage our operational leakage activities by collecting and analysing data from our distribution network. We have set strategic metered areas specifically designed to collect this information.

Around 80% of the properties we supply are in pressure managed areas where we use sophisticated equipment to match pressure to demand. This practice reduces leakage by reducing the number of bursts that occur and also lowering the amount of water lost through existing leaks. Pressure management is a highly cost effective tool for managing leakage.

6.1.4 Challenges

- Our customers value a lower level of leakage. Although they are willing to accept a modest increase in bills to pay for this overall they do not want their bill to increase.

The Environment Agency challenged us if we should be undertaking further reductions in leakage below those proposed in our Plan, it was noted that customers were willing to pay to see leakage reduce further. However it is clear customers do not wish to see their bills and considering extra expenditure to reduce leakage would place an upwards pressure on bills.

Reducing leakage is expensive and there is uncertainty about the cost of reducing leakage. Therefore we need to challenge our practices and innovation to find better and more efficient ways of reducing leakage as customers value a lower level of leakage. This will effectively reduce our SELL.

6.1.5 Our Proposals

We will continue to set our leakage target below our SELL at 30 MI/d for 2015/2016. The central estimate of the SELL is 31.4 MI/d. The estimated range of possible values, taking account of uncertainties in the central estimate is 28 to 34 MI/d.

We will set a modest reduction in our leakage target between 2015-2020 as a result of metering programmes and reductions in supply pipe leakage.

In order to manage leakage effectively we maintain a network of meters which provide data to target our operational leakage detection efficiently. We will invest to maintain these meters and associated equipment. We expect this to cost in the region of £367k.

Our efficient management of leakage is dependent on managing the pressure of water across our whole network, we achieve this productivity through a series of large vales that control the pressure and expect to spend £60k on these assets between 2015-2020.

We expect expenditure on operational activities to continue at the current level. These activities comprise the day to day business of managing leakage such as detecting and repairing leaks, analysing leakage to target activity and reporting leakage.

We will challenge ourselves to innovate to reduce leakage below the current target without increasing customers' bills. We will achieve this by introducing further optimisation of our pressure management systems, working with the leading manufacturers of leakage detection equipment to harness new innovations. We will challenge ourselves and our supply chain to deliver increased efficiency.

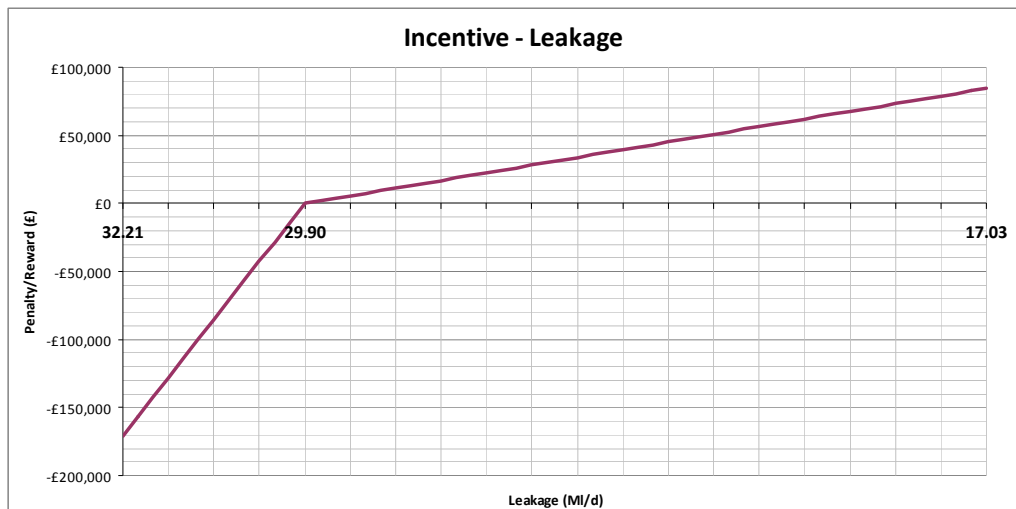
6.1.6 Measures of Success and Incentives

Leakage can be dependent on the weather and an exceptionally cold winter can adversely impact the leakage for that year. We believe it is appropriate to set an average target over the period 2015-2020, with an upper band of 31 MI/d in a single year, to allow for variations in weather.

The average of the annual leakage figures is 29.90 MI/d for the period of 2015-2020. We will report annually on this progress to achieving this figure but the target will apply in 2020.

We believe it is appropriate to set a financial incentive relating to leakage. We believe a penalty and a reward is appropriate for this outcome. The Company will be subject to penalty if the average level of leakage between 2015-2020 is above 29.90 MI/d. The Company proposes a reward if we reduce leakage below the target. Although we believe the reputational incentive is stronger than a financial reward, the reward demonstrates to customers that we will continue to reduce leakage below the target rather than reducing leakage activity if we achieve our target with less expenditure.

The following graph shows the penalties and rewards the Company will be subject to depending on its leakage performance during the period 2015-2020.



6.1.7 Cost of Delivering the Outcome

The total cost of delivering this outcome for the wholesale business is £3.71m.

Delivering this outcome, accounts for 2% of the wholesale element of a customer’s bill.

7 A HIGH QUALITY SERVICE AND VALUE FOR MONEY

7.1 A High Quality Service and Value for Money

7.1.1 Obligations and Duties

We will operate the wholesale business to meet the requirements set by our retail business. The retail business requires us to manage supply interruptions through maintaining our assets and operating them efficiently to provide a reliable service. Keeping customers informed when incidents do occur is also an important requirement.

The following Guaranteed Service Standards (GSS) are set by Government, who require us to pay £25 to household customers in compensation should we fail. We pay above the Government compensation levels, paying £30 for each failure. For non-household customers £50 compensation is payable.

- Appointments. If we need to make an appointment to visit a customer about the water supply. We will offer am or pm appointments, or upon request a 2 hour time slot.
- Pressure. We will maintain a minimum pressure of seven metres head at the external stopcock that serves a property. If the pressure falls below this level, for an hour or more, on two occasions within a 28 day period then compensation will be paid. Compensation is only payable once in any given financial year.
- Notice of planned interruption to supply. Where a supply to a property is planned to be cut off for more than 4 hours, 48 hours written notice will be given. Compensation is payable if the correct notice is not issued.
- Restoration of supply after a planned interruption. Where a supply is not restored in accordance with our notice, compensation is payable.
- Restoration of supply after a planned interruption. Where supply is interrupted due to an emergency (broken main) compensation is payable if the supply is not restored within 12 hours, unless a strategic main, where 48 hours are allowed.

Whilst not a Government Standard, we also pay compensation for any property that suffers 3 supply interruptions of over 12 hours during a financial year.

7.1.2 What Customers have told us

Our research showed that over 90% of domestic customers are satisfied with the level of service we provide and 88% of domestic customers believe our services are good value for money.

Most business customers (85%) are satisfied with the service they receive from Portsmouth Water. Fewer than one in every twenty (4%) of business customers are dissatisfied with their supplied water.

A proportion of our customers do not like the hard water they receive and would be willing to see a small bill increase for the water to be softened.

Overall our customers are generally not aware that we have by far the lowest charges for clean water in England and Wales. A full analysis of our customer engagement results is provided in the Technical Report on Customer Engagement.

7.1.3 Background and Current Performance

- Our charges are the lowest, by far, in the industry with an average bill for fresh water of £94.50 per annum. The next lowest is £130. The average wholesale element of a household bill is £80.41.
- Before inflation, charges for Portsmouth Water customers have fallen for each of the last 3 years and are in fact less than they were in 1997.
- The prices we charge have only increased by 4% since 2010, despite inflation over this period being 13%.
- As a proportion of household income, Portsmouth Water customers pay less than they did 15 years ago.
- We currently provide one of the highest levels of service in the industry. We have consistently been in the top quartile in customer surveys carried out by Ofwat as part of its overall satisfaction measure, SIM (Service Incentive Mechanism).
- We have the lowest level of written complaints in the industry.
- Currently on average an individual household would expect an interruption just once every 50 years (or on average less than 6 minutes per year).
- Only 66 of 307,000 properties we serve are at risk of low pressure.

7.1.4 Challenges

We need to respond to the requirements of the retail business to deliver better customer service and do this without increasing charges.

Some customers would like us to soften the water.

We will find ways to reduce our costs so these savings can be passed on to customers.

7.1.5 Our Proposals

- We will manage supply interruptions created by burst mains, emergency and planned repairs of our pipe network to ensure customers on average receive six minute interruptions per served customer. Where we need to undertake planned maintenance of our network that results in a supply interruption we will provide advance notice in accordance with the guaranteed standards.
- We will maintain and manage our assets to ensure a minimum level of pressure is maintained in accordance with the guaranteed standard.
- We will maintain our network such that the number of properties at risk of receiving low water pressure does not exceed 66.
- We will deliver the lowest wholesale bill in England and Wales.
- We will renew household customers meters over 12 years old. Meters over 12 years old are at a greater risk of failure and are less accurate. We will replace these meters so we can continue to provide customers with reliable and accurate bills.

- We will renew non-household meters over 12 years old where the annual consumption exceeds 500 cubic metres of water.
- We are not proposing to soften the water we supply. Although some customers would like the water to be softened other customers are opposed to this. We will continue to offer information to customers about hard water and methods for softening water.

7.1.6 Measures of Success and Incentives

7.1.6.1 Unplanned Interruptions to Supply

We currently achieve one of the lowest levels of unplanned interruptions to customers' supplies in the industry. We have set ourselves a target to maintain this performance. We will measure our performance as the average number of minutes of unplanned supply interruption each connected property experiences on average. Our target is to maintain this at or below six minutes. We will report annually on this reputational target.

7.1.7 Cost of Delivering the Outcome

The total cost of delivering this outcome for the wholesale business is £25.41m.

Delivering this outcome, accounts for 20% of the wholesale element of a customer's bill.

8 AN IMPROVED ENVIRONMENT, SUPPORTING BIODIVERSITY, PUBLIC AMENITIES AND RECREATION

8.1 Obligations and Duties

We are committed to ensuring compliance with all environmental legislation and obligations, carefully assessing the impact of our activities on the environment, to ensure that the impact of such schemes is minimised. Our overall duties include:

- To assist the Government by complying with European legislation, particularly in relation to the Habitats Directive and the Water Framework Directive where our abstraction may impact key environmental sites.
- To enhance biodiversity on the land which we own.

In preparing our Plan we have reviewed and taken account of the Statement of Obligations published by Defra.

We have also specifically made provision to ensure we can comply with our obligations set out by the Environment Agency in the National Environment Programme.

Our obligations for the Environment were set out in the Statement of Obligations produced by Defra. We have shared our plans with the Environment Agency and held discussions. We have received a letter from them including the following words from the director of the Environment Agency - South East.

"From the information you have provided, we understand that you are planning to meet your statutory environmental requirements set out in Defra's Statement of Obligations. We welcome the commitment you have made to meeting them".

A copy of their full report is shown in Appendix 32.

8.2 What our Customers have told us

Our engagement with customers revealed that protecting the environment is very important to them. When asked in which areas they would be willing to increase their bills for improvements in service, the environment came out as customers' top priority with a "willingness to pay" value of £1.57 (on a current bill of £94.50) This was to improve the condition of three sites which are currently impacted by our abstraction of water.

Customers were also willing to pay a modest amount (£1.14) on top of their current bill for the company to reduce its carbon footprint. The research also revealed that customers would like more information provided to them, especially with respect to water efficiency and they would be willing to pay an additional £0.90 on their bills for the Company to achieve this.

Customers believed that we should promote metering for those customers who can benefit financially but there was no mandate from them for compulsory metering. Our Retail Plan includes measures to further promote meter options.

We also engaged with key stakeholders through our Customer Challenge Group and their view was that they would like to see the Company contribute more to public amenities and recreation.

A full analysis of our customer engagement results is provided in the Technical Report on Customer Engagement.

8.3 Current Record

- We have been undertaking a study to identify the impact of an abstraction on certain important rivers and harbours sites (5 in total). This is partly to allow the UK to comply with the EU Water Framework Directive. The studies have concluded that at two sites no further action is needed, but that further studies are needed at three rivers, the Hamble and Wallington in Hampshire and the Ems in West Sussex. We have undertaken an options appraisal to identify the appropriate solutions.
- We have reduced our abstraction licences by 30 million litres per day over recent years making water available to protect the environment in advance of when we were required to do so. The most recent being at our River Itchen abstraction in 2011.
- We are the only Water Company in the South East whose catchments are not classified as under serious water stress. This means that we are not allowed to compulsory meter customers.
- Carbon generated per litre of water produced is the lowest in the Industry 174 kgCO₂e/MI.
- Our water efficiency campaign has focussed on protecting the environment. Through our activities, our customers have made savings of one million litres of water every day, thereby taking less water out of the environment.
- Each year, the Company Environmental and Biodiversity Specialist reviews a significant number of projects in order to identify any potential environmental and ecological impacts, and advise on how any impacts could be minimised.
- We have taken opportunities to support the community by using the land we own. We provide facilities for disabled anglers at our Head Office site and provide access to our land for a local observatory club. We also make land available for use as allotments and proposed a number of footpaths around our sites to promote greater access to our land where appropriate.
- We have increased the level of resource dedicated to environmental and biodiversity activities.
- We have improved the status of a SSSI and worked with local parties to ensure it is managed in the future in a sustainable manner.

8.4 Challenges

We have identified that three of our abstractions have the potential to impact the environment. The Habitats Directive and the Water Framework Directive (WFD) require us to take action to protect the environment. The Environment Agency has included these actions in its NEP.

The Abstraction Incentive Mechanism (AIM) will apply to three of our sites until we have met the requirements of the WFD. During this period we will report against the AIM methodology.

The Environment Agency in its initial assessment classified our abstraction on the River Itchen as being potentially high risk to eels in the river. The WFD requires us to remove this risk to eels by 2021.

A number of the catchments we abstract water from have been identified as groundwater safeguard zones by the Environment Agency. These catchments

have been included in the NEP and require us to undertake activities in the catchment. These catchments are also the catchments the Company is planning to undertake activities to deliver reductions in nitrates.

To meet the expectations of our customers in relation to the biodiversity of our environment and the expectations set out in the Statement of Obligations.

To reduce the carbon footprint of our activities.

We need to continue promoting the efficient use of water.

Since 1955 our Farlington Water Treatment Works has discharged wastewater into Portsmouth Harbour. In order to comply with environmental legislation we need to make improvements to the quality of the discharge. This was fully explained in Section 8.5.4.

8.5 Our Proposals

8.5.1 National Environment Programme

We will deliver solutions at the three sites where our abstraction is deemed to have an environmental impact and will impair the ability of the UK to comply with the EU Water Framework Directive. This will be agreed with the Environment Agency and achieved earlier than required.

We will do this by installing infrastructure so we can support the River Ems at low flows by pumping water into the River. We would also work with the local catchment partnership to provide further benefits to the water body through measures such as channel restriction. We expect these schemes to require investment of £250k.

In preparing our Business Plan we undertook a study of our abstraction on the River Itchen to assess our potential impacts on eels. This study concluded that our abstraction poses a low risk of entraining eels, and it is possible that there is no adverse impact on eels from the abstraction. Therefore we are proposing to undertake further studies to confirm the most appropriate action rather than installing costly screens that may not be required. If the study does determine that installation of new equipment is required then we will undertake the feasibility study and planning application between 2015-2020, enabling the construction in 2020/2021 to comply with the WFD timetable. We believe this approach provides an appropriate balance between protecting the environment and ensuring customer's money is spent effectively. This work will cost £290k.

8.5.2 Catchment Management

A significant increase in catchment management activity is proposed in the period 2015-2020 to address the issue of rising nitrates detailed in Chapter 5. This activity will also deliver the requirements set out in the NEP for groundwater protection zones. We are proposing a substantial increase in catchment management expenditure of £1.2m. The majority of this activity is primarily driven to identify and reduce nitrate risks for water quality. We have assumed £270k of the catchment management activity contributes to achieving this outcome. Further details can be found in the Nitrates Technical Report.

In developing our approach to catchment management we undertook detailed discussion with our stakeholders. This has enabled us to develop a proposed programme that will allow collaborative working to deliver shared benefits for all stakeholders.

We have received letters of support from the Drinking Water Inspectorate, Environment Agency, South Down National Park, Natural England and The Wildlife Trusts for our proposed approach to catchment management. These letters are contained in Appendix 30.

8.5.3 Biodiversity

We currently undertake activity at our operational sites to maintain biodiversity in line with a Biodiversity Action Plan (Appendix 33). The customer research has shown customers value the environment and would like to see us undertake further activity. We will increase the amount of resource available for biodiversity activity by £50k per annum which will enable us to implement 90% of our biodiversity action plan.

- Look for further opportunities to enhance and optimise wildlife habitats on our sites
- Work with partners in the community to look for further opportunities to promote and enhance biodiversity
- Support the community through the use of our land and facilities where appropriate

8.5.4 Discharges into a harbour

The Company has had a water treatment works located at Portsdown Hill, Farlington since 1909. We treat approximately 63 MI/day at these works supplying a population of approximately 237,000 in the City of Portsmouth, Farlington, Havant and Hayling Island.

Since it was first commissioned in 1909 process water has been discharged into Langstone Harbour some 2km away. As production and treatment has developed at the site to meet changing water quality regulations the volume and constituents of the discharge has varied. We have over a long period of time discussed the discharge with the Environment Agency who have now formally written to the Company regarding the discharge conditions.

The Company has not had a discharge licence for the process waste water and there are no prescribed values appropriate to the constituents within the waste water. The Environment Agency will grant a discharge licence that reflects the quality of the existing process waste water. However once granted the condition of granting requires us to improve the quantity and constituents of the discharge.

In order to now comply with the application of obligations it will be necessary to invest in appropriate plant improvements at the Farlington Water Treatment Works.

We are therefore proposing to invest and improve the operations at our Farlington Water Treatment Works which will reduce the impact of the discharge into Langstone Harbour. This will be achieved by enhancing the treatment process at the works and installing further equipment to recover process waste water.

In 2004 we commissioned the Farlington Water Treatment Works membrane plant in order to remove cryptosporidium from the raw water. The scheme was delivered as an undertaking which requires the routine replacement of membrane filters in order to continue to comply with the Undertaking. These filters are due for replacement in AMP6 at a cost of £1.6m.

Since 2004 the regulations regarding the inactivation of cryptosporidium have changed and our feasibility studies show that it is more cost effective to replace the membrane filters, due for replacement in the period 2010-2015, with Ultra Violet (UV) treatment. This capital maintenance requirement will be incorporated into the scheme for improving the discharge into Langstone Harbour.

This scheme is anticipated to cost approximately £5.0m, which at the same time will include the substitute of membrane filters, replacement cost £1.6m, with the more cost effective Ultra Violet treatment.

8.5.5 Carbon Reduction

In the next 5 years we will increase the percentage of energy obtained from renewable resources and wherever practicable reduce electrical consumption delivering a more sustainable water supply service by undertaking the following activities :-

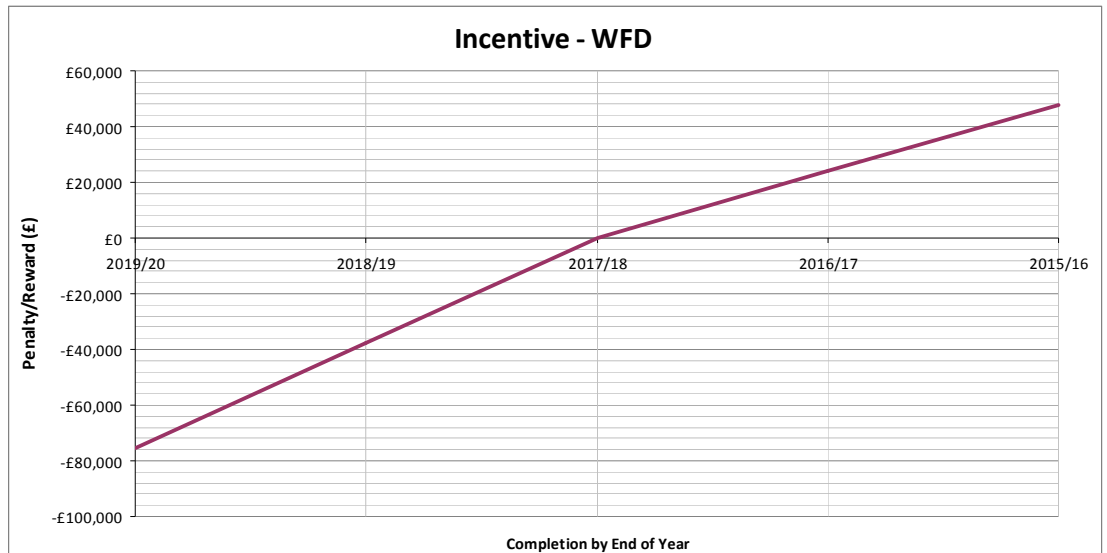
- We will investigate the possibility for developing third party funded wind and solar energy projects on Company land
- We will investigate the potential for entering into power purchase agreements with local renewable energy generators
- We will continue to develop the control and operation of water to focus on the most effective use of the most efficient works and most efficient pumps at those works
- We will continue to actively monitor the efficiency of all large pumps and look to improve the efficiencies of these if they drop below a certain level
- We will investigate the potential for working with the national grid to be included in their frequency response and demand management schemes

8.6 Measure of Success and Incentives

8.6.1 National Environment Programme

We will deliver compliance with environmental legislation at the three sites impacted by our abstraction: in advance of the time that we were obliged to act.

We are proposing a financial incentive for delivering the three schemes to protect the environment against possible impacts of our abstraction. We believe a financial incentive is appropriate because of the value customers place on the environment. The legal requirement is to deliver compliance with the WFD by 2021, but the Company is planning to deliver the schemes by 2017/18. The incentive we propose is a penalty for delivering the scheme after 2017/18 and a reward for delivering the scheme sooner.



8.6.2 Biodiversity

We have concluded that it is not appropriate to propose a financial incentive for biodiversity. The costs associated with biodiversity are relatively modest and the outputs are difficult to quantify accurately. The Company will report annually on its progress against the biodiversity action plan and undertake to return any money to customers that is not spent on biodiversity at the next price review.

8.6.3 Carbon

We will procure more of our electricity from renewable sources between 2015-2020. We aim to increase the amount by 10% by 2020. We will report progress against this reputational incentive annually.

8.6.4 Abstraction Incentive Mechanism

We will report annually our performance against the AIM reputational incentive.

8.7 Cost of Delivering the Outcome

The total cost of delivering this outcome for the wholesale business is £17.00m.

Delivering this outcome, accounts for 8% of the wholesale element of a customer's bill.

9 SUPPORTING THE COMMUNITY WE SERVE BY TAKING OPPORTUNITIES TO SUPPORT THE LOCAL ECONOMY

9.1 What Customers Have Told Us

- Property developers have expressed a desire to see an improvement in the service provided by water companies who have to provide services to new houses
- Our local activities are valued by the community
- A previously planned winter storage reservoir at Havant Thicket is seen as a key piece of infrastructure in the local area to provide environmental and recreational benefits

9.2 Background and Current Performance

Current Record

- We are proud of our close ties with the community we serve, having supplied drinking water for over 150 years
- We play our part in the local economy; most of our employees and 45% of our purchases are from the local area
- We have a partnership with a local Country Park, contributing to an education centre which introduces children to the importance of fresh water, how it is delivered and why we must use it wisely
- We have been actively involved in schools and have attended and sponsored local science fairs for many years
- We participate in a local annual Water Festival, which receives thousands of visitors each year at which we encourage the efficient use of water using fun activities for children and their parents
- A number of Community Talks are given each year by staff members which allows us to show what we do, encourage water efficiency and provide people with information on such topics as optional metering
- We provide water bottles to schools at subsidised rates to encourage pupils to keep hydrated during the day
- The Company participates in PUSH, the Partnership for Urban South Hampshire, which seeks to encourage local development in a sustainable manner

9.3 Challenges

Suppliers to the water industry have long campaigned for smoother investment programmes. Historically investment in the water industry has had peaks and troughs which follow the five year price review cycle. This is disruptive for suppliers and makes them less efficient.

9.4 Our Proposals

- We will support the local community by purchasing goods and employing staff from the area we serve where appropriate. We will maintain the percentage of procurement for local supplies where appropriate.

- We will support the local community, encourage the efficient use of water and contribute to the education of local school children
- We will provide more information to our customers and review how we provide it to make it more effective
- We will aim to ensure our investment cycle is spread more evenly across the Planning period to help our suppliers
- We will improve the levels of service provided by developers, to improve lead times and provide the information they need. In this way we can help sustainable development in the local area. We will measure our success in an annual survey in which we will target 70% satisfaction.
- We will provide assistance to business customers to help them improve their water efficiency
- The construction of Havant Thicket reservoir is seen as a key piece of infrastructure for the area and we believe it should play a part in a solution to water scarcity issues across the whole of the South East, however we do not have a need for it from our own water resource perspective and therefore it is not included in our proposals. However we will continue to promote the social, environmental and re-generational benefits of Havant Thicket.
- Much of our work is completed in the public highway, we will undertake this whilst protecting the safety of the public and our workforce minimising the disruption to road users and businesses
- We will continue to play our part in the local community

9.5 Our Measure of Success and Incentives

The measures of success associated with this were increased following CCG challenge to include the stated commitments to developers, school education, local procurement and support for water efficiency to business customers. The Company has also ensured that a quantitative commitment has been included within this outcome, based on procurement from local suppliers and developer satisfaction.

We will maintain the percentage of procurement for local supplies at 45%. We will report against this reputational incentive annually.

9.6 Cost of Delivering the Outcome

The total cost of delivering this outcome for the wholesale business is £0.19m.

Delivering this outcome, accounts for 0.1% of the wholesale element of a customer's bill.

10 PROVING ATTRACTIVE TO INVESTORS BY PROVIDING A LONG TERM SUSTAINABLE BUSINESS**10.1 Obligations and Duties**

The wholesale business operates in the regulated water industry and therefore, as a regional monopoly, we should ensure that we operate efficiently for the end customer. We should ensure therefore that we provide water at the cheapest possible price to the Retail business. The wholesale business must do this in such a way that is sustainable for the long term and which ensures that is for the benefit of both current and future customers. The wholesale business must also play its part in ensuring that the overall business makes an acceptable return to shareholders, now and in the future as well as taking all reasonable steps to maintain an investment grade credit rating and to meet all of the Company's bank covenants.

10.2 What Customers and Stakeholders have told us

The pertinent messages from our engagement (as well as from our normal fiduciary and stewardship duties) regarding "Proving attractive to investors by providing a long term sustainable business" are detailed below:

Customers and Customer Challenge Group (CCG)

- Customers do not want to see bills rise by more than inflation.
- The CCG wants us to share outperformance with customers.

Shareholders

- Our Plan should deliver an acceptable return to shareholders. They require a 5% dividend yield on opening RCV with 2% annual growth with an appropriate dividend cover. However they are concerned that this may not reflect an appropriate long term investor expectation for return on equity.
- Our Plan should be financially sustainable over the long term.

Other Financial Stakeholders

- To meet our bank covenants with headroom in order to maintain an Investment Credit Rating. This means achieving minimum financial ratios and display a clear identification and mitigation of risks. This would mean a minimum cash interest cover of 1.6x (after capital charges) and a debt to RCV ratio below 80%.
- The business must maintain the confidence of the Rating Agencies and thereby maintain our investment credit rating. If we were to fail in maintaining an investment credit rating then this would make the cost of borrowing for the Company much more expensive and this would be detrimental to both customers (in terms of higher prices) and shareholders (in terms of lower dividends).

10.3 Challenges

There are a number of challenges facing the wholesale business in delivering the Commitments outlined in this Plan and in balancing the needs of customers and shareholders. These are outlined below:

- Cost of Capital – The majority of our debt financing is in the form of an Artesian loan taken out in 2002. Whilst competitive at the time the interest rate is now higher than could be achieved in the current market. The business is currently reviewing its debt finance with a view to reducing its interest cost, but this may not be achievable..
- Levels of Investment - Following a risk-based assessment of our assets we have identified that we need to increase capital expenditure in this Plan period to ensure that our assets do not deteriorate and that we can continue to meet the required water quality standards the long term for future customers.
- Prices - Our Business Plan commits us to only increasing prices by inflation (as measured by the Retail Prices Index (RPI) over the period 2015-2020. This is a challenge to the Business to achieve while at the same time increasing the necessary investment and capital spend in the Company's assets.
- Balancing the requirements of shareholders and other investors with customers priority for no real price increases.

10.4 Our Proposals

Our proposed Business Plan delivers the following:

- A return acceptable to our shareholders. The Company is unique in the industry as we are majority owned by a Trust on behalf of our employees, most of whom are themselves our customers. Our shareholders believe that they should earn an adequate return in the same way that they would if they invested in any company. We believe our structure enables us to take a long term view and to strike a reasonable balance between returns to shareholders and charges for customers. Our Plan proposes a dividend of 5% of the opening RCV value and 2% growth per annum in dividends. Our shareholders have accepted this although they regard this level as a low return for the equity risk taken and are concerned that it may not reflect an appropriate long term investor's expectation for return on equity.
- Financial results which will ensure investors have confidence in the business to enable us to secure low cost borrowing when needed. Our financial results must be sufficient to ensure that the business remains within the financial covenants set for our Artesian loan which is the main source of funding for the Company. In our Business Plan our cash interest cover is maintained above 1.6x and our gearing is forecast to reduce to 70% by the end of 2019/20 and to 69% by 2024/25. We have looked at these ratios over AMP6 and AMP7 to ensure the long term financeability and sustainability of the business. Whilst the cash interest cover ratios in some years are close to 1.6, the reduction in gearing will provide some headroom.
- We will continue to focus on the core water business and will maintain our position as one of the most efficient companies in the sector. Our bills are the lowest in England and Wales, currently they are 24% below any other water company. Our Business Plan states our intention to maintain this position and keep our bills as low as possible. Our prices will increase by no more than inflation (as measured by the Retail Prices Index (RPI)).

- We will ensure that the financial structure of the business remains efficient in the long term and that we continue to maintain an investment grade credit rating. The business is primarily financed by debt, represented primarily by our Artesian debt taken out in 2002 and which matures in 2032. We believe that debt financing is efficient and has reduced costs to the business which, in turn has reduced prices paid by customers. At the end of 2012/13 the Artesian debt amounted to £91m and our gearing ratio was 77.9%. Our proposals in our Business Plan include an intention to reduce our level of gearing to 70% by 2020. This will still allow us to take advantage of tax efficient debt financing but will also help to improve our assessment by rating agencies when they review our investment grade credit rating. We are currently investigating refinancing alternatives as a way of reducing the effective rate of interest on our borrowings and thereby reduce our cost of capital. This may well be difficult to achieve but if we are successful in doing this then we will share the benefit of this with our customers as part of our outcome delivery incentive.
- If our financial returns turn out better than this plan, we will share this outperformance with our customers. We have describe below how we will share the benefits of some future reduction in our cost of capital onto customers.
- Legacy items. We will absorb the impact of the opex efficiency roller allowed in the “true up” at the end of the current planning period (see the Technical Report on Costs and Efficiencies for an explanation of the Opex Efficiency Rollover) and, despite the resulting upward pressure on prices, we are not proposing to increase prices by more than inflation on 2015–2020.

10.5 Measures of Success and Incentives

The success of the Company in achieving this Commitment will be as detailed below:

- Maintaining an investment grade credit rating
- The business will maintain its financial ratios at a level above that required by the financial covenants around our debt financing i.e.
 - o a cash adjusted interest cover ratio (after capital charges) of at least 1.6x and
 - o a gearing level which does not exceed 80%.

At the end of 2012/13 our cash interest cover was 1.8x and the level of gearing was 77.9%. We anticipate that interest cover will remain comfortably above 1.6x for the duration of AMP6 and AMP7. We are forecasting that gearing will continue to fall throughout the period, dropping to 70.5% in 2020 and 69.0% by 2025.

- If our financial returns turn out better than this plan, we will be able to share some of this outperformance with our customers. Our cost of capital for the appointed business was set at 4.56% (4.21% after adjusting to take account of the retail margin for the wholesale business). There will be a deadband such that if we exceed a return on the appointed business overall of 6% of RCV we will share the benefit with customers. This will be a true up at the end of the period unless the return is clearly sustainable, when the Board may wish to give customers the advantage earlier.

10.6 Cost of Delivering the Outcome

Delivering this outcome, accounts for 15.7% of the wholesale element of a customer's bill.

11 RECOGNISED BY STAKEHOLDERS AS HAVING A CULTURE OF HEALTH AND SAFETY THROUGH ALL OUR ACTIVITIES

This commitment did not come out of customer engagement but was instead insisted upon by our Board of Directors who see health and safety as a key priority of the business and must be a key item within any business plan that we prepare.

11.1 The Key Elements that make up this Commitment

- Proactive management of health and safety
- Actively manage health and safety to ensure members of the public, visitors and employees are kept as safe as possible
- Evidence its efforts and achievements, thereby achieving a Royal Society for Prevention of Accidents (RoSPA) gold medal in Occupational Health and Safety every year.

11.2 The Wholesale Business will

- Actively manage health and safety to ensure members of the public, visitors and employees are kept as safe as possible
- Evidence its efforts and achievements, thereby achieving a Royal Society for Prevention of Accidents (RoSPA) gold metal in Occupational Health and Safety every year

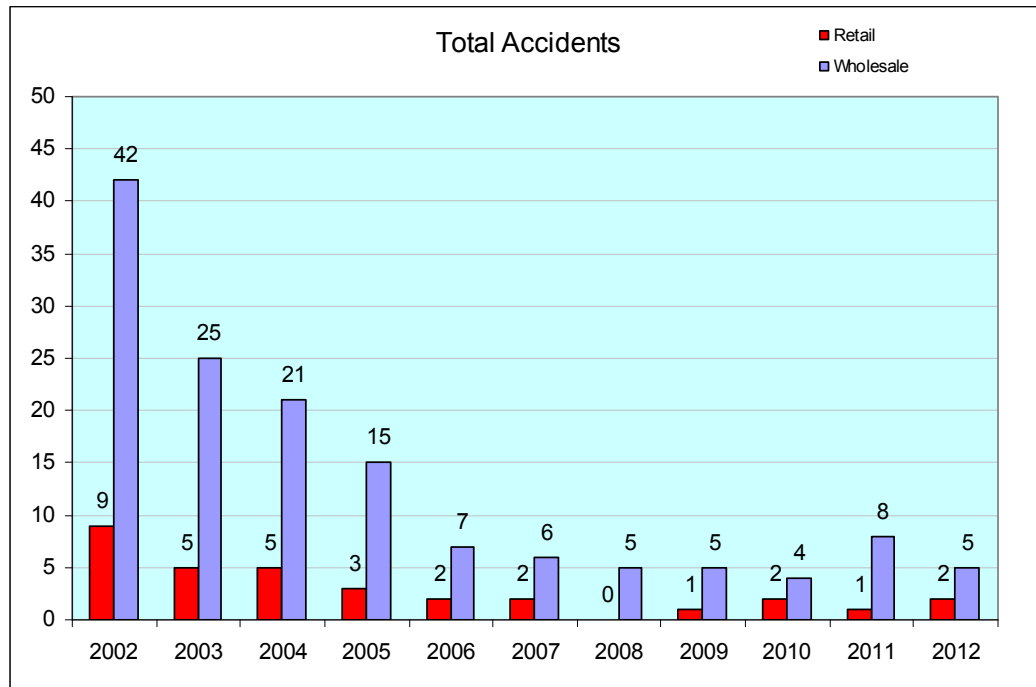
11.3 Our Obligations

- Compliance with health and safety legislation
- To ensure our employees return home safely to their families every day

The wholesale and retail elements of the business have a common goal when it comes to health and safety, in that we must provide a safe environment for members of the public, visitors and employees.

In 2002 and 2003 the Company recorded 51 and 30 accidents respectively with a reportable accident rate of 11 in each year. It was decided that these statistics and the overall Health and Safety performance were not acceptable. Led by the Board, we focussed heavily on improving our performance.

In the last five years we have averaged seven accidents and one reportable accident per annum.



11.4 **Our Proposals**

- Regularly assess hazards, maintaining up to date risk assessments where appropriate
- Keep Health and Safety in the conscious memory of employees with regular quizzes, team briefings and other proactive activities
- Seek to learn from and share lessons learnt from accidents and near misses
- Collect evidence of initiatives to support the Company's annual submission to RoSPA

11.5 **Measures of Success and Incentives**

- No reportable Accidents
- Annual receipt of RoSPA award

11.6 **Cost of Delivering the Outcome**

The total cost of delivering this outcome for the wholesale business is £0.67m.

Delivering this outcome, accounts for 0.3% of the wholesale element of a customer's bill.

12 COST AND EFFICIENCIES

12.1 Obligations and Duties

We have a duty to our customers to be a well run and efficient business and our customers should not pay for costs that are inefficient. We recognise that, as a monopoly provider our customers cannot choose their supplier.

The current economic climate means household budgets are hard pressed and therefore any further pressure on household bills is unwelcome. This is a clear conclusion from our customer research that where customers value an improvement in some areas, such as the environment, they do not necessarily want to see overall bills increase to achieve this.

We are very mindful that affordability for our customers is of significant importance particularly when set against the trend for increasing utility bills. Whilst our bills are the lowest in the country we have continued to challenge the level of capital investment to ensure the impact upon bills is minimised and does not magnify the affordability issues for our customers.

12.2 Introduction

Portsmouth Water has historically been assessed by Ofwat to be one of the most efficient companies in terms of operating cost in the water industry. Ofwat used to publish a report every year which included an assessment of the comparative operating efficiency of all water companies in England and Wales using econometric modelling. Companies were put into bands A to E, according to their performance, A being the top band. Portsmouth Water had been in the top A band for many years and in most of those years has been the leading company. At each previous price determination, Ofwat set efficiency targets according to which efficiency band an individual company was in. Those companies in bands B to E were required to catch up those companies in Band A and therefore have a higher assumed efficiency target. Ofwat determined a frontier efficiency target, which is the rate of efficiency it believed the companies in Band A could achieve. As a leading company, therefore, Portsmouth Water received only a frontier efficiency target at previous price reviews for operating cost.

In the PR09 Final Determination for Portsmouth Water there was an operating cost efficiency target of 0.25% per annum. The Company has, in fact, delivered operational efficiencies much greater than this (approximately 10%). The Company continues to challenge itself and seek out new efficiencies, as it has always done, and therefore we do not see any reason why our position at the frontier of efficiency should change.

For Capital Expenditure, the Company has always appeared to have been efficient under the econometric modelling undertaken by Ofwat. However, at the last price review, under the cost base methodology significant efficiency challenges were imposed on the Company. During the final stages of the PR09 process errors were found that would have resulted in a much lower efficiency target for the Company but it was too late for Ofwat to amend the results. Therefore we do not believe that these efficiency targets were justified.

In early 2013 the Company did take part in a Totex benchmarking project run by Oxera. The aim of the project was to develop total expenditure (Totex) models jointly with a number of Water Only and Water and Sewage Companies. The output from this project is detailed in Appendices 4 and 5 and more detail is given in the Technical Report on "Costs and Efficiencies".

The output from this early model indicated, once again, that Portsmouth Water remains at the efficiency frontier and that we should be comfortably within the

cost corridor generated by Ofwat. Provided with this reassurance, both from our historical record and the Oxera project we decided that it would not provide good value for money for our customers for us to spend money developing our own expensive econometric model for Totex.

Change in Accounting Policy - the capital and operating expenditure allowed at the last determination has been adjusted to reflect the accounting policy change whereby design and supervision costs were switched to capital from operating costs. This amounts to £2.5m over the five years from 2010-2015 (£0.5m per year). This is fully explained in the Technical Report on Costs and Efficiencies and was discussed and agreed with Ofwat at the time of the change. This accounting policy is still in place and has not changed.

12.3 **Board Assurance**

The Board as a whole, challenged each key input into the Plan, reviewing reports produced by third parties and receiving reports from W S Atkins. In addition, each Non-Executive Director took responsibility for certain elements of the Plan to understand in greater detail, the processes used in producing the Plan and the challenges presented. Full details of how each Non Executive Director gave themselves assurance over the figures used for each aspect above is detailed in the Cost and Efficiency Technical Report.. For a full explanation of the Board Assurance please refer to the Technical Report on "Board Assurance".

12.4 **Totex**

12.4.1 **Analysis of Totex Costs**

An analysis of the Company's proposed Totex expenditure is given in Appendix 10. The total expenditure before efficiencies is £161.2m. This can be analysed into the following:

Analysis of Totex	Capex¹	Opex	Total
Wholesale	57.9	80.8	138.7
Retail	0.2	22.3	22.5
Total before Efficiency	58.1	103.1	161.2
Efficiency	-	1.7	1.7
Total after Efficiency	58.1	101.4	159.5
Exclude Retail Assets	0.2	-	0.2
Total	57.9	101.4	159.3

¹Net of grants and contributions

Of the total Capex £0.166m relates to Retail assets which are, in fact, outside Totex; the resulting total Totex being £159.3m. The total efficiency of £1.7m relates to opex as efficiencies on capital expenditure have been applied in the determination of the unit costs. Efficiencies for capex and opex are dealt with in the sections below.

12.5 **Capital Expenditure and Capex Efficiencies**

These sections below deal with the Capital Expenditure and Capex Efficiencies included in the Business Plan.

12.6 Summary of Capital Costs

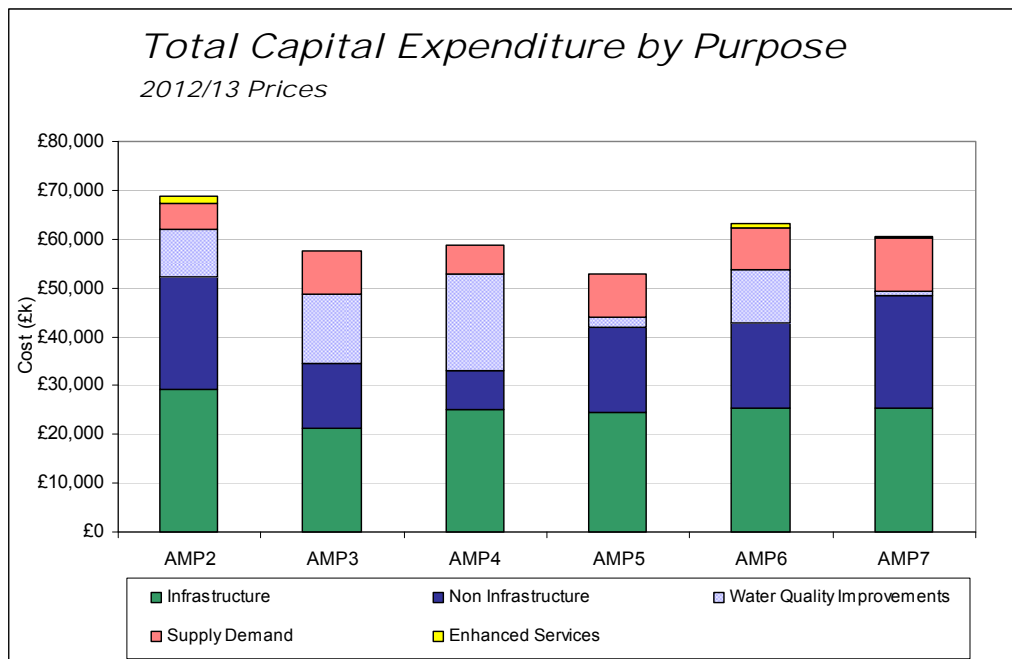
All the capital costs referred to in this section are gross costs with no deduction for contributions from Developers. The justification and proposals for capital expenditure have been set out under the Company’s various Commitments (Outcomes). We believe there is a need to increase the levels of expenditure to maintain assets in order to meet our obligations and ensure we are sustainable in the long term. Total AMP6 expenditure for wholesale is £63.2m compared with a Determination for AMP5 of £47.1m and a forecasted expenditure of £51.9m. It should be noted that £0.165m of capital maintenance expenditure associated with Retail has been transferred to the Retail Plan and £0.418m of capital maintenance expenditure on leakage associated with our leakage recovery action plan has been excluded from the AMP5 expenditure. Capital maintenance expenditure on leakage recovery has been met by the shareholders as previously discussed with Ofwat.

12.7 Introduction to Capital Maintenance Historical and Proposed Expenditure

In order to facilitate comparisons of AMP6 expenditure with previous AMPs, expenditure has been allocated to water service expenditure purpose consistent with previous AMPs throughout this section until Section 12.8.6.

Section 12.8.6 sets out AMP6 and AMP7 expenditure by water service expenditure purposes as per PR14 submission requirements.

The following graph sets out total capital maintenance expenditure between AMP2 and AMP7 which includes expenditure on infrastructure and non infrastructure assets.



The £11.3m increase in AMP6 expenditure from AMP5 has been caused by a number of schemes. The table on page 64 highlights the most significant increases together with some significant reductions in expenditure.

The table on page 66 of AMP5 forecast expenditure comparison with AMP6 expenditure sets out the expenditure by Outcome (Commitments).

After the Determination in 2009 and as a result of preparation for Accounting Separation, the Company made an accounting policy change. Design, supervision and overhead costs previously changed to operating costs, was deemed to be an a capital expenditure. Therefore design and supervision costs were not included in the Determination. The cost of this is approximately 6% (£500k per annum). Actual expenditure in the period includes the cost and therefore it is the restated determination used for comparative purposes. Note the additional cost as reflected in our CIS calculation. The AMP5 Determination including grants and contributions is therefore restated at £47.1m.

	Exc Design and Supervision	Inc Design and Supervision at 6%	Exc Design and Supervision	Inc Design and Supervision at 6%
	£k (2007/08 prices)	£k (2007/08 prices)	£k (2012/13 prices)	£k (2012/13 prices)
Total Capital Expenditure PR09 Determination	43517	46128	44416	47081
Grants and contributions	-5387	-5710	-5498	-5828
OFWAT Baseline Adjustment	38130	40418	38918	41253

As noted earlier actual expenditure is projected to be £51.9m before grants and contributions with the increase due mainly to expenditure in new IT systems a carry over from AMP4 and a higher cost of new mains laid for developers. This is explained in the following section.

SUMMARY OF EXPENDITURE CHANGES BETWEEN AMP5 AND AMP6

	Obligation £m	New Requirements £m	Capital Maintenance £m	Total £m
INFRASTRUCTURE Mains Renewals	0	0	+1.4 +1.4	+1.4
NON-INFRASTRUCTURE Domestic and commercial meter renewals Transfer meters Borehole improvement Chlorine contact time improvements Cryptosporidium membrane replacements Water Treatment Works and Pumping Stations Service Reservoirs Telemetry General Site Works Management and General		+1.6 +2.2	+0.7 +0.8 +0.6 -5.2 +0.7 +0.5 +0.4 -1.8 -3.3	
	0	+3.8		+0.5
QUALITY SEMD Crypto treatment at Eastergate and Westergate Farlington Environmental Recovery Plant NEP AMP4 completion	-1.3 +5.1 +5.0 +0.5 -0.3 +9.0			
		0	0	+9.0
SUPPLY AND DEMAND New Mains Development Optional Metering	-1.6 +1.1 -0.5			
		0	0	-0.5
ENHANCED Resilience		+0.9 +0.9		
	0		0	+0.9
			Total Change	£11.3

Chapters 5-11 summarise the proposals that result in the changes in expenditure whilst the following sections set out an explanation of unit costs, efficiencies and further detailed comparison of expenditure changes between AMP5 and AMP6.

As part of the Board Assurance on Capital Expenditure the Company employed WS Atkins and Aqua a specialist cost consultant to review and challenge the costs that have been used to generate the AMP6 capital programme, these consultants reviewed costs as indicated below:-

W S Atkins

Farlington Environmental Recovery Plant

Cryptosporidium treatment at Eastergate and Westergate Water Treatment Works

Infrastructure renewals

General Capital Maintenance Non-Infrastructure Scheme

Aqua

General Capital Maintenance Non-Infrastructure Schemes

Infrastructure renewals

Domestic meter renewals

Meter Options

Summary details of their audits may be found in the technical documents.

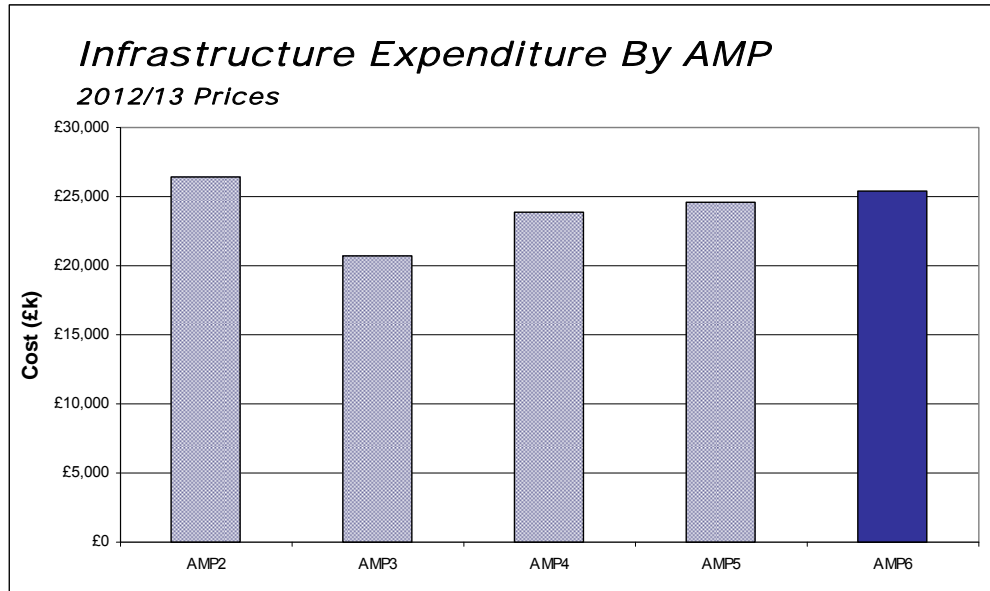
Capital Maintenance AMP5 Expenditure Comparison with AMP6 By Outcome (£k) – TABLE 2

	AMP5	AMP6	Safe & Secure	Leakage	Customer	Environ	Health & Safety
INFRASTRUCTURE ASSETS							
Water Distribution Mains	24,054	25,416	25,416	0	0	0	0
Total Capital Maintenance Infrastructure	24,054	25,416	25,416	0	0	0	0
NON INFRASTRUCTURE ASSETS							
Water Distribution	62	855	374	481	0	0	0
Meter Renewal Domestic and Commercial	339	1,007	0	0	1,007	0	0
Water Treatment Works & Pump Stations	10,711	10,651	10,651	0	0	0	0
Service Reservoirs	570	1,381	1,381	0	0	0	0
Management & General	5,480	3,425	3,176	24	-123 ¹	202	145
Total Non Infrastructure Assets	17,162	17,319	15,582	505	884	202	145
QUALITY							
SEMD	1,373	111	111	0	0	0	0
Raw Water Deterioration	0	5,123	5,123	0	0	0	0
Farlington Environmental Recovery Plant	0	5,004	1,501	0	0	3,503	0
Environmental Studies	207	300	300	0	0	0	0
NEP Schemes	241	528	0	0	0	528	0
Total Water Quality Improvements	1,822	11,067	7,035	0	0	4,031	0
SUPPLY DEMAND							
New Mains	4,466	2,918	2,918	0	0	0	0
Optional Metering	4,412	5,511	5,511	0	0	0	0
Total Supply Demand	8,878	8,429	8,429	0	0	0	0
ENHANCED SERVICES							
Resilience	67	1,003	1,003	0	0	0	0
Total Enhanced Services	67	1,003	1,003	0	0	0	0
TOTAL CAPITAL EXPENDITURE	51,982	63,232	57,464	505	884	4,233	145

Note 1: The negative figure for Management and General 'Customer' is due to the removal of the retail element.

12.8 Infrastructure Proposed Efficiencies

The graph below sets out expenditure on infrastructure maintenance between AMP2 and AMP6.



In 2009 Ofwat used a cost base comparative tool to compare the relative capital efficiency for renewing distribution mains. The Company included additional elements of cost within the specified rates including increased cost due to ambiguities in references to the New Roads and Street Works Act which had the effect of inflating the theoretical capital cost of installation. The Company highlighted this to Ofwat and the error was acknowledged by them at the Determination. However Ofwat in their final Determination explained to the Company that it was now too late in the process to make the adjustment and an efficiency adjustment of -6.51% was therefore applied. The Company believes it was actually between 1-2% more efficient than the industry standard at the time of the Determination.

After the Determination the Company evaluated its procurement strategy benchmarking their approach to procuring a wide range of capital maintenance activities. A contract was tendered and awarded for mains renewals and new mains for developers delivering further efficiencies over the previous contract.

The Determination set an installation rate of £228/m. The Company achieved an outturn rate of £238/m and have proposed a rate of £231/m for AMP6.

The AMP5 outturn rate exceeded the Determination as the proportion of mains installed in verges, footpaths and carriageways was not as assumed in the Business Plan. This increase in installation rate is despite a 17% increase of mains installed by no dig techniques in the AMP5 period.

For the Business Plan 2015-2020 we have used an installation rate of £231/m which was benchmarked and challenged by the Board who set an additional efficiency saving to increase the length of mains installed by no dig techniques by a further 5% or equivalent rate reduction.

The Company has not obtained tenders in advance of the PR14 Business Plan and therefore there is some risk and uncertainty as to the extent that market

rates will/or have already increased due to increased demand in the construction sector and rising energy costs. Therefore the Company proposals are based on assumption that any increase in market rates can be offset by driving efficiencies in the procurement phase to hold unit costs at or below current outturn levels and through undertaking increased use of no dig techniques.

12.9 Non Infrastructure Proposed Efficiencies

12.9.1 General Scheme Costs

The Final Determination in 2009 set an efficiency level for non infrastructure of -10.34%. The procurement review undertaken to deliver infrastructure efficiencies identified solutions applicable to non infrastructure and were adopted by the Company who were able to deliver the schemes at broadly the determined sum. Scheme estimates for AMP6 non infrastructure have therefore been based upon AMP5 outturn rates or tendered sums which have been benchmarked thereby incorporating the efficiencies achieved.

There are two non infrastructure capital maintenance schemes with significant expenditure in the proposed plan totalling £3.8m.

A scheme to improve chlorination effectiveness at 9 water treatment works at an estimated cost of £1.6m. The estimates were based upon outturn and tendered rates experienced between 2010-2015.

The second scheme consists of replacing membrane filters. The Company has a total of five water treatment works with cryptosporidium membrane filtration which have been built over the past 10 years. The membrane filter replacement was avoided all together in AMP5 having been deferred by unsuccessfully "sweating" the assets beyond their recommended life resulting in the emergency replacement of membranes as failure rates dramatically increased. Four of these sites will have membrane filters replaced in AMP6, three of which will be for the first time since the works were commissioned. The cost of replacing the membranes at these four works is £2.2m. The fifth, Farlington Water Treatment Works will have the membranes replaced with a more cost effective ultra violet plant. This will be installed as part of the Farlington Water Treatment Works environmental recovery scheme to reduce the impact of the discharge into Langstone Harbour, described in more detail in Chapter 8. Estimated costs for the replacement filters were obtained from the supplier and benchmarked against prices experienced during 2010-2015.

12.9.2 Domestic Meter Replacement

The Company used a consultant to benchmark installation rates which identified we were experiencing high outturn installation costs for certain types of installations as a consequence of rate loading using packaged work delivered under the period mainlaying contract. Installation rates were therefore calculated from a bottom up approach based on a schedule of rates and benchmarked to check appropriateness and efficiency. The installation rate for "screw in" meter replacement in AMP6 has been calculated at £69 close to outturn AMP5 rates.

12.10 Water Quality Schemes and Environmental Proposed Efficiencies

12.10.1 Eastergate and Westergate Cryptosporidium Treatment Plants

The feasibility proposals and scheme estimates were prepared by 4D a joint venture between Veolia Water, Costain and MWH an experienced design and build contracting partnership. The Company used W S Atkins, an experienced consultant to assist in challenging the capital efficiency of the scheme selected

on a cost beneficial basis who confirmed costings were neither inefficient or are over-inflated.

12.10.2 Farlington Water Treatment Works Environmental Recovery Plant

The feasibility proposals and scheme estimates were also prepared by 4D and subjected to a more detailed efficiency challenge by WS Atkins who confirmed costings were neither inefficient nor overinflated.

12.11 Supply and Demand Proposed Efficiencies

12.11.1 New Mains Growth

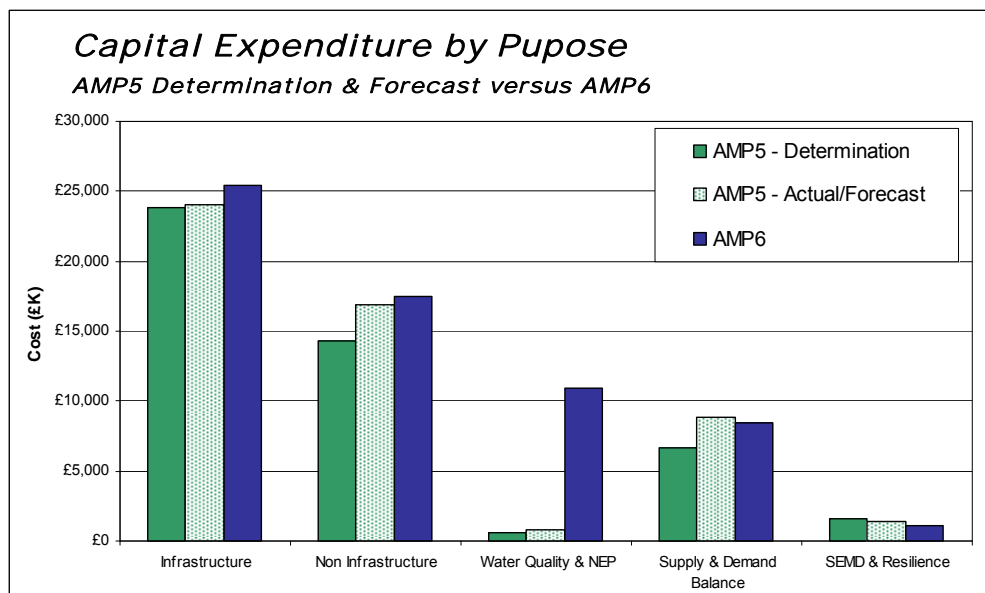
Expenditure upon new water mains required to serve new housing developments requisitioned by Developers is included within the category. Expenditure is based upon a schedule of rates provided as part of the mains renewals contract and subjected to the same efficiencies as described earlier.

12.11.2 Meter Options

The Company used a consultant to benchmark installation rates which identified we were experiencing high outturn installation costs for certain types of installations as a consequence of rate loading using packaged work delivered under the period mainlaying contract. The average outturn rate was £218 per meter significantly more than the unrealistic Determination of £169 per meter. Installation rates were therefore calculated from a bottom up approach based on a schedule of rates and benchmarked to check appropriateness and efficiency. The installation rate for AMP6 was calculated at £220, which reflects an assessment of the type of installation anticipated in AMP6, and is close to the AMP5 outturn rate.

12.12 Capital Expenditure – AMP5 Comparison AMP6

The graph below sets out the capital maintenance AMP5 *Determination*, AMP5 forecasted expenditure and proposed expenditure levels for AMP6. In order to facilitate comparisons of AMP6 expenditure with AMP5, expenditure has been allocated to water service expenditure purpose consistent with previous AMPs. The differences between AMP5 and AMP6 are summarised in the following sections



12.12.1 Infrastructure

AMP5 expenditure is forecasted to be £24.0m against the Determination of £24.1m.

The lengths of mains proposed for renewal in AMP6 are 22.0km/year in comparison to AMP5 of 23.2km/year. During AMP5 the Company believes it has achieved an efficiency saving for the renewal of water mains as explained in Section 12.8. An additional efficiency saving has been set to increase the length of mains installed by no dig by a further 5% or equivalent rate.

For the Business Plan the installation rate of £231/m has been used in comparison with an AMP5 outturn of £238/m experienced in the first three years of AMP5 and Determination of £228/m.

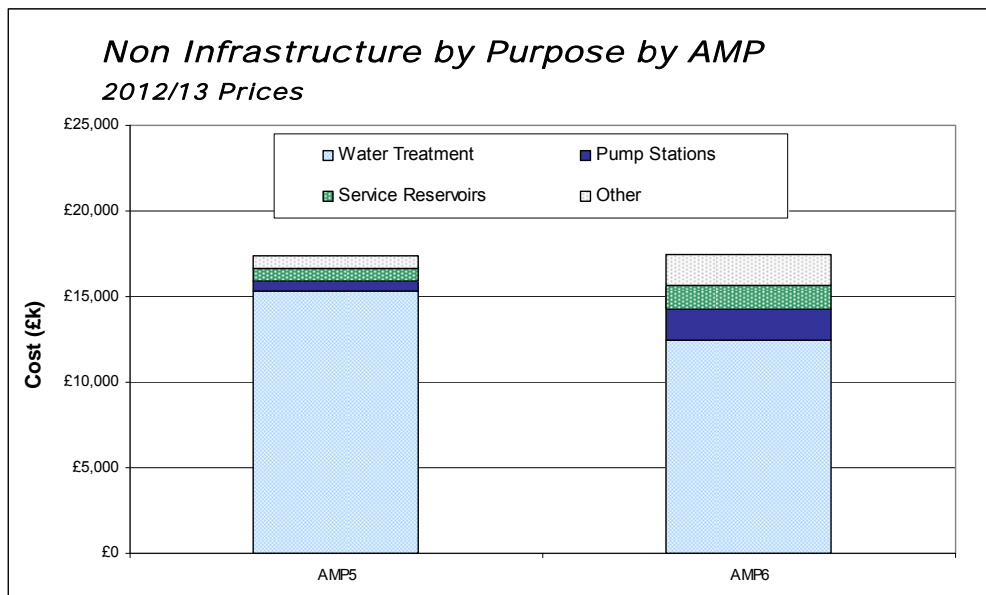
12.12.2 Non-Infrastructure

AMP5 non-infrastructure expenditure is forecasted to be £17.2m against the Determination of £14.4m AMP6 expenditure is £17.3m. The most significant expenditure in AMP5 greater than the Determination is £2.3m for a major IT programme to deliver a scheme to replace the Company’s billing system and introduction of a works and asset management system not allowed for in the Determination. The Board decided the changes were needed to improve the cost services to customers and as a result improve the Company’s SIM score.

Additional expenditure over the Determination has been the roll over of incomplete AMP4 schemes together with the relining of a borehole at our Eastergate Water Treatment Works to restore integrity of the well which was not known about or allowed for at the time of the Determination.

The graph below highlights the key changes of expenditure within non-infrastructure sub categories between AMP5 and AMP6.

The Company has benchmarked its costs of renewing non-infrastructure assets, as explained in Section 12.9, and believes that outturn costs have generally been close to the determined sum delivering an efficiency matching Ofwat’s Determination target of -10.3%. Generally non-infrastructure scheme costs for AMP6 have therefore been based upon AMP5 outturn scheme costs, the following schemes have resulted in an increased level of expenditure in AMP6.



12.12.2.1 Revenue Meter Replacement

AMP5 expenditure is forecasted to be £339k against a Determination of £533k.

Currently the Company is not renewing as many domestic meters as allowed for in the Determination. Whilst the current forecast is £339k a review is in progress to consider an acceleration in the final year of the AMP5 period.

In 1999 the Company had a very low level of domestic meter penetration and significantly increased the number of meters installed from 1999 when meter options became available. The expenditure profile reflects the need to renew domestic meters that are now nearing their life expectancy. AMP6 proposed expenditure has increased from an AMP5 Determination to £1.0m. An allowance to renew the top 161 commercial meters that are older than 12 years has also been included. The total cost of £1.0m for renewing revenue water meters has been based upon rates calculated from a bottom up approach as explained in earlier sections. An analysis of installation type, "full dig" or "screw in" replacements was undertaken to ensure accurate cost apportionment and application of appropriate installation rates of £220 per meter.

12.12.2.2 Water Quality Contact Time Improvement

A scheme to improve the chlorination effectiveness at 9 water treatment works was submitted to the DWI for their consideration and a letter of support duly received. Expenditure on this scheme amounts to £1.6m. Scheme costs have been based upon AMP5 outturn rates which have been demonstrated to be cost efficient.

12.12.2.3 Cryptosporidium Membrane Filter Replacement

Over the past 10 years the Company entered into an Undertakings to construct 5 cryptosporidium plants. Part of the DWI Undertaking requires planned maintenance of the plant to maintain integrity of the treatment processes and necessitates replacement of membrane filters once performance is demonstrated to have reduced. The new plants now face for the first time the need to replace the membrane filters at a cost of £2.2m.

12.12.2.4 Company Head Office

An allowance of £500k to refurbish the Company's Head Office built in the 1960's has been included within this category.

12.12.2.5 THM Scheme Highwood Raw Water Reservoir and River Itchen Clarifiers

In AMP5 the Company had a DWI Supported Scheme to address deteriorating water quality due to the elevated levels of Trihalomethanes in the water at its River Itchen Works. The scheme outturn costs were £5.5m. Normally scheme costs would have been with the Water Quality category. At the Determination Ofwat allocated expenditure to Non-Infrastructure Maintenance. No expenditure will be incurred in AMP6 for this scheme.

12.12.2.6 Network and Treatment Works Meter Replacement

The Company installed a large number of measurement transfer meters approximately 20 years ago and has found an increasing level of failure with a number of these meters. For the first time a sum of £0.7m has been included to renew a proportion of these meters.

12.12.3 Water Quality, NEP and SEMD

AMP5 expenditure on Water Quality, NEP and SEMD is forecasted to be £2.1m against a Determination of £2.0m.

AMP6 expenditure of £11.5m compares with AMP5 expenditure of £2.1m. The increases are due principally to:-

12.12.3.1 *Eastergate and Westergate Cryptosporidium Treatment Plants*

At our Eastergate and Westergate Water Treatment Works it is proposed to construct ultra violet plants to inactivate cryptosporidium in the raw water. The plants will incorporate facilities to manage turbidity levels.

The DWI supports the need and proposed technical solutions with a combined total scheme cost of approximately £5.1m.

Construction costs were prepared by 4D a joint venture between Veolia Water, Costain and MWH an experienced design and build contracting partnership. Company design and supervision costs were subsequently added and the total costs benchmarked by W S Atkins who confirmed costings were neither inefficient or over inflated.

12.12.3.2 *Farlington Water Treatment Works Environmental Recovery Plant*

We are proposing to invest and improve the operations at our Farlington Water Treatment Works which will reduce the environmental impact of the discharge into Langstone Harbour. This will be achieved by enhancing the treatment process at the works and installing further equipment to recover process waste water.

In 2004 we commissioned the Farlington Water Treatment Works Membrane Plant in order to remove cryptosporidium from the raw water. The scheme was delivered as an undertaking which requires the routine replacement of membrane filters in order to continue to comply with the Undertaking.

Since 2004 the regulations regarding the inactivation of cryptosporidium have changed and our feasibility studies show that it is more cost effective to replace the membrane filters, due for replacement in the period 2010-2015, with Ultra Violet (UV) treatment. This capital maintenance requirement will be incorporated into the scheme for improving the discharge into Langstone Harbour. This scheme is anticipated to cost approximately £5.0m. Construction costs were prepared by 4D a joint venture between Veolia Water, Costain and MWH an experienced design and build contracting partnership. Company design and supervision costs were subsequently added and the total costs benchmarked by W S Atkins who confirmed costings were neither inefficient or over inflated.

12.12.3.3 *National Environment Programme (NEP)*

The Company is required to undertake resilience measures for the North Pond in Bishop's Waltham and further river restoration works downstream. This is an outcome of the WFD investigations undertaken in AMP5 and is included in the August 2013 NEP programme. The costs were derived from an appraisal carried out by the local conservation group.

As a result of the WFD investigations undertaken in AMP5 the Company has agreed to consider changes to the location and volume of augmentation on the River Ems. In addition, a river restoration scheme has been agreed to ensure that the benefits of increased augmentation are maximised. These schemes

were included in the August 2013 NEP Programme. The costs were derived from an initial options appraisal carried out by AMEC.

In preparing the Business Plan a study of the River Itchen abstraction was undertaken to assess the potential impacts on eels against the requirement of the Eels Directive. This study concluded that the abstraction poses a low risk of enticing eels, and it is possible that there is no adverse impact on eels from the abstraction. Therefore it is proposed to undertake further studies to confirm the most appropriate action rather than installing costly screens that may not be required.

The Company also intends to install additional flow meters at its Soberton Works as part of the NEP Programme. The total cost of the NEP Programme is £0.528m.

12.12.3.4 SEMD

At the Determination the Company was directed by Ofwat to spread security expenditure over AMP5 and AMP6. The expenditure in AMP6 is £112k and principally the completion of securing operational assets identified in its AMP5 Business Plan. Costs are based upon AMP5 benchmarked outturn costs.

12.12.4 Supply and Demand

AMP5 expenditure is forecasted to be £8.9m against the Determination of £6.7m.

AMP6 expenditure of £8.4m compares with a Determination of £6.7m. The increases in expenditure are due to the following schemes:-

New Mains

AMP5 expenditure is forecasted to be £4.5m against a Determination of £2.6m. The lengths of mains installed to service housing developments has exceeded the level assumed at PR09 due to a number of large sites constructed in the area which were not anticipated when the Business Plan was prepared.

The length of mains assumed for AMP6 is the average of mains laid in AMP4 and AMP5 an approach adopted by Ofwat at the Determination. The installation rates are based upon the mains renewal contract installation rates which the Company believes it has achieved an efficiency saving of at least 6.5% as explained in Section 12.8. The cost of £2.9m for providing the mains in AMP6 therefore includes appropriate efficiencies.

Optional Meters

AMP5 expenditure is forecasted to be £4.4m against a Determination of £4.0m. The Determination assumed that 25,000 meters would be installed in the period; the current forecast is to install this number of meters. The increase in expenditure is due to installation costs exceeding the unrealistic low rate used in AMP5 as explained in earlier sections.

The Company's Water Resources Management Plan assumes 25,000 optants for the AMP6 period.

The Determination sum of £4.0m in AMP5 was unrealistically low and AMP 6 costs have been based upon calculated rates benchmarked against industry outturn figures and therefore believed to be efficient. The revised rates have resulted in an expenditure of £5.5m for AMP6.

12.12.5 Resilience

AMP5 expenditure is forecasted to be £67k against Determination of £180k due to capital efficiencies on schemes completed during AMP5.

AMP6 expenditure of £1.0m compares with a Determination in 2009 of £180k.

The Company must demonstrate to the DWI that investment proposals include sufficient maintenance expenditure to operate and maintain existing assets to ensure compliance with the Principal Regulations is maintained, that the quality of drinking water does not deteriorate and where it is deficient is improved. We are also required to consider more generic risks to resilience such as power outage, flooding, drought, security of supply for treatment chemicals, analytical capacity and systems issues such as telemetry and IT systems.

A proposal to enhance our operational resilience was submitted to the DWI who commended our approach. The strategy is delivered through the key projects summarised below with associated costs.

	£k
Improved flooding resilience at Westergate and Walderton WTW	166.
Improve resilience of single point critical asset by dualling of a trunk main	537
Operational resilience study to consider vulnerability to catastrophic or significant events	<u>300</u>
Total	<u>£1,003</u>

12.12.6 Capital Maintenance Costs AMP7

The following table sets out the AMP6 and AMP7 expenditure by water service expenditure purposes as per PR14 submission tables.

The AMP7 proposed expenditure is indicative with Infrastructure and Non-Infrastructure consistent with the methodology set out in the technical reports to provide long term stable assets.

Capital Maintenance AMP6 to AMP7 Comparison (£k) – TABLE 1

	AMP6 £k	AMP7 £k
Making Ecological Improvements		
NEP Schemes	498	0
Sub Total	498	0
Maintaining Serviceability Infrastructure		
Water Distribution Mains	25,416	25,416
Sub Total	25,416	25,416
Maintaining Serviceability Non-Infrastructure		
Water Distribution		
PRVs	115	319
Meter renewals	1,374	1,546
Water Treatment Works		
Membrane Filter Replacement	2,174	2,428
Contact Time schemes	1,634	0
Farlington WTWs Environmental Recovery Plant	5,004	0
General WTW maintenance (inc telemetry & ICA)	4,472	5,144
Sources Wells and Boreholes	617	208
Pump Stations		
General Works	1,002	1,313
Booster Stations	750	1,623
Site Meter Replacement	374	392
Service Reservoirs	1,381	1,166
Management & General	3,425	3,619
Sub Total	22,322	17,756
Supply & Demand Deficit		
Optional Metering	5,511	5,511
Worlds End Maximum Deployable Output	0	2,209
Sub Total	5,511	7,720
New Developments		
New Mains	2,918	3,093
Sub Total	2,918	3,093
Investment to Address Raw Water Deterioration		
Raw Water Deterioration	5,123	0
Environmental Studies	300	800
Sub Total	5,423	800
Resilience		
Resilience	1,003	264
Sub Total	1,003	264
SEMD		
Security - SEMD	111	0
Sub Total	111	0
NEP - Flow monitoring WTW		
NEP Flow Monitoring Schemes	30	0
Sub Total	30	0
GRAND TOTAL CAPITAL EXPENDITURE	63,232	60,438

12.13 Base Level of Operating Expenditure (Opex)

Please refer to the analysis schedule in Appendix 12 which relates to this section for a detailed analysis of costs.

The Base Operating Expenditure for Wholesale and Retail is calculated by starting with the actual data from the Regulatory Accounts 2012/13 and then making various adjustments as per Ofwat guidelines. The costs have been reanalysed as per the Business Plan guidelines for:

- A revised allocation of general and support costs.
- Developer Services are now allocated to Retail.
- Water Quality expenditure is allocated to Wholesale.

The resulting split of Base Operating Costs between Wholesale and Retail is as follows:

	Wholesale	Retail	Total
	£'000	£'000	£'000
Wholesale Operating Costs as reported	15,834	3,906	31,109
Developer Services	(38)	38	(5,856)
Plus Water Quality	57	(57)	(5,059)
Less General & Support costs	(340)	340	(454)
Revised Base Operating cost	15,513	4,227	19,940

12.13.1 Wholesale Base Operating Costs

Total Base Operating Costs for Wholesale from 2012/13 to the end of 2019/20 are shown in the table below. The costs increase from £15.5m in 2012/13 to £15.9m in 2019/20. The most significant factor in this increase is an increase of £0.3m in pension costs. This follows a valuation of the scheme in March 2013. The cost of one year's accrual in the defined benefit scheme has increased to 20.6% of earnings and this has been reflected in our Plan. It should be noted that this cost has been reduced as a result of actions taken which included closing the scheme to new members in 2011. A full explanation is given in the Technical Report on Costs and Efficiencies and a summary of the valuation is provided in Appendix 15. The costs of the establishment of competition have been included in the Plan along with DWI fees. Please note that the additional cost of leakage being incurred to recover our position on leakage have been removed. Please refer to the Technical Report on Costs and Efficiencies for more detail on how these costs are derived, the additional spend required in each year and the rationale for the additional spend.

Wholesale Operating Costs in 12/13 prices

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Wholesale Operating Costs	15,513	15,724	15,500	15,548	15,527	15,796	15,939	15,921

12.13.2 Wholesale Operating Cost Efficiency

The operating costs shown above have been reduced by an efficiency factor in each year. The efficiency %'s are detailed in the table below, and are applied on

a cumulative basis. The total efficiency over the 2015 – 2020 period is approximately 3%.

Wholesale Operating Cost Efficiency	2015/16	2016/17	2017/18	2018/19	2019/20
Wholesale Base Operating cost (as per above table)	15,548	15,527	15,796	15,939	15,921
Operating cost efficiency (%)	0.3%	1.85%*	0.3%	0.3%	0.3%
Operating cost efficiency (£'000)	47	333	385	435	481
Base Wholesale Opex after Efficiency	15,501	15,194	15,411	15,504	15,440

*This relates to potential IT savings with the retiring of the Mainframe of 1.5%

For an explanation of how each of the efficiency percentages were derived, please refer to section 12.13.4.

12.13.3 Wholesale Enhanced Operating Costs

The adjusted level of wholesale base operating cost is given in the table above. However there are certain elements of enhanced expenditure, which the Company is proposing in its Business Plan, which will be added to the base level of expenditure as detailed in the table below. Please refer to the Technical Report on Costs and Efficiencies for a full explanation.

Including these costs, and applying the efficiency %'s as shown above, the total Wholesale Operating Cost in each year is as follows:

Revised Wholesale Base Operating Cost	Note	2015/16	2016/17	2017/18	2018/19	2019/20
Adjusted Base Operating cost (as per table above)		15,501	15,194	15,411	15,504	15,440
Biodiversity costs	1	50	50	50	50	50
Catchment management – Nitrates	2	180	180	180	180	180
UV/Disinfection – to reduce risk of cryptosporidium	3	92	92	92	92	92
Lead	4	30	30	30	30	30
Farlington Discharge Costs	5	-	-	122	122	122
Efficiency adjustment		(1)	(8)	(12)	(13)	(15)
Total Wholesale Base Operating Cost		15,852	15,538	15,873	15,965	15,899

Notes:

1. Biodiversity Costs – our customer research showed that customers were willing to pay a modest increase on their bills to see more activity in this area. This was supported by the CCG. See Chapter 8.
2. Catchment Management to address rising Nitrates. See Chapter 8.
3. Cost of operating new UV plants to deal with the risk of cryptosporidium at two works. See Chapter 5.
4. Lead – in our research customers told us they would like more information on lead in water. See Chapter 5.
5. Meeting a new Environmental Discharge Consent. See Chapter 8.

12.13.4 Wholesale Operating Cost Efficiency - 2015 – 2020

With the economy expected to grow and significant increases in energy costs projected we needed to understand the impacts on likely input costs. Also, we needed evidence of the likely productivity growth of the industry.

Portsmouth Water considers itself to be at the efficiency frontier for the Industry in terms of operating expenditure. At the 2009 price review it was classed as A upper in Ofwat's assessment of comparative efficiency. Since that time it has made significant savings in cost and therefore would still expect to be at the frontier.

To examine the underlying rate of input price inflation and productivity expectations, we commissioned First Economics to review the evidence. The resulting report (which can be viewed in Appendix 18 attempts to measure what has sometimes been called 'frontier shift' in previous periodic reviews – i.e. the change that a company sitting on the industry's efficiency frontier (as in Portsmouth Water's case) would expect to see in its costs absent any changes in outputs.

First Economics have concluded that input costs will rise faster than RPI inflation, largely as a result of labour costs as the economy moves out of recession and electricity charges where the assumption was consistent with the Pricewaterhouse Coopers projections shown by Ofwat in their Methodology Document. The findings are shown in the table below

Input price forecasts (nominal, % per annum)

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Labour – general	1.8	2.9	3.8	4.0	4.0	4.25	4.25
Labour –specialist	3.05	4.15	5.05	5.05	5.05	5.5	5.5
Materials – machinery	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Materials – civils	3.5	4.5	4.5	4.5	4.5	4.5	4.5
Power	17.3	13.5	9.4	9.7	3.4	4.9	4.2
Chemicals	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Plant and equipment	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Business rates	2.6	3.3	2.8	3.2	3.6	3.9	3.4
Bad debt	3.1	2.9	3.3	3.7	4.0	3.4	3.4
EA charges	3.1	2.9	3.3	3.7	4.0	3.4	3.4
Business IT	0.75	0.75	0.75	0.75	0.75	0.75	0.75

The profile of future price increases shown here reflects the current macroeconomic outlook of a recovery from recession during 2013 and 2014 followed by trend growth thereafter. The forecast of wage inflation comes directly from the Office of Budgetary Responsibility's (OBR) March 2013 forecasts and the power forecast is from DECC; the other estimates are our own extrapolations from recent data. The results of First Economics' report are shown in the table below. This was weighted on the basis of our actual costs to arrive at an overall weighted cost input inflation for Portsmouth Water.

First Economics have estimated the productivity improvement of 1% based on evidence of historical productivity growth in a selection of comparator industries and this sits broadly in line with the figures that have been used in a number of other price control decisions.

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<u>Wholesale opex</u>							
Input price inflation	4.1	4.3	4.2	4.5	3.8	4.1	3.9
Productivity growth	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Cost escalation	3.1	3.3	3.2	3.5	2.8	3.1	2.9
<u>Wholesale capex</u>							
Input price inflation	2.7	3.5	4.0	4.1	4.1	4.2	4.2
Productivity growth	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)
Cost escalation	2.1	2.9	3.4	3.5	3.5	3.6	3.6

The data should give a clear picture of the underlying drivers of industry costs and should be a useful basis upon which we decide the level of efficiency to include in our Business Plan.

12.13.5 Overall Wholesale efficiency

For real wholesale efficiencies we have compared the projected input costs less productivity improvements of 1% to projected RPI. The results are shown below.

	2015/16	2016/17	2017/18	2018/19	2019/20
<u>Wholesale opex costs</u>					
Cost escalation (per F.E.)	3.2	3.5	2.8	3.1	2.9
RPI (Ofwat forecast)	3.4	3.4	3.5	3.3	3.1
Proposed Efficiency	(0.2)	0.1	(0.7)	(0.2)	(0.2)

We have taken these values and used them as a basis for our efficiency assumptions. The average of the table above suggests an overall average efficiency of 0.24% but following a review by the Board we have increased this to 0.3% per annum. In addition we have added an additional efficiency of 1.55% in 2017. This represents a portion of the saving which the business will make when we implement our new Works and Asset Management System (WAMS) and are able to move our systems off our old mainframe computer. There is still an element of risk in whether this saving can be achieved. Further details on the projected Wholesale Operating Costs are included in the Technical report on Costs and Efficiencies.

13 FINANCEABILITY OF THE WHOLESALE PLAN

This business plan has balanced the contrasting requirements of the key stakeholders including:

- The need to keep bills low for our customers
- The stewardship of our assets to maintain services over the long term
- Providing an acceptable return for our shareholders
- Maintaining an investment grade credit rating to enable us to secure finance into the future

The key items which contribute to the returns earned and the financial ratios we must achieve to be financeable are discussed in this section:

- The Capital Structure
- The Regulatory Capital Value (RCV)
- The RCV Run Off Rate
- The Weighted Average Cost of Capital (WACC)
- The financial covenants included in our loan arrangement and important financial ratios be financeable in the long term
- Pay As You Go Ratio (PAYG)
- Legacy Items
- Risks and Financeability

For more detail on each of these areas please refer to the Technical Report on Financeability.

13.1 The Capital Structure

The Final Business Plan is based on the actual capital structure of the business. As at March 2013 the gearing (net debt to RCV) of Portsmouth Water was 77.9%.

Equity

With the majority of the shares being owned by the Employee Benefit Trust (EBT), our ownership structure is unique within the industry and ensures that we are able to take a long term view on the business. We believe that this structure also helps to align the interests of employees and customers in the long term - with the vast majority of our employees also being customers. The Company has met with the Directors of the EBT Trust during the preparation of the Business Plan and has taken account of their views, as shareholders. The Trust has stated that they expect the Company to deliver a reasonable return on the equity invested in the business; being at least 5% of the value of the opening equity portion of the RCV, and that they expect that dividends should grow in real terms by at least 2% per annum, in the same way that they would expect this from any other company. These views have been taken on board when the Company has reflected them in the determination of its cost of equity.

Debt

The Table below shows the loan facilities currently available to Portsmouth Water. All of these facilities are part of a securitised arrangement which are secured upon the assets of Portsmouth Water Limited. The terms of the loans are as follows:

Debt	Provider	Value at September 2013	Amount Drawn at September 2013	Interest Rate	Termination
30 year £66.5m index linked loan	Artesian	£93.8m	N/A	3.635% on indexed amount	2032
£10m revolving loan facility	RBS	£10m	£6.5m	See below	2015
£4m overdraft facility	RBS	£4m	-		Renewed annually

Current Loan Facilities

The index linked debt of £66.5m (original value) has a fixed interest rate of 3.635%. The transaction costs associated with taking out the loan increase this effective interest rate to 3.7%. This was set in June 2002 and is inflated using the RPI indices. Interest is paid six monthly in March and September. This arrangement has allowed Portsmouth Water to access much cheaper finance than it would otherwise have had access to and our customers have had the benefit of this for over ten years. It is one of the reasons why the small company premium for debt has reduced for successive periodic reviews.

The £10m loan facility arrangement with the Royal Bank of Scotland, has a three year maturity and is used to finance the short-term fluctuations in cashflow and to finance capital enhancement expenditure. The rate of interest varies according to how much of the facility is used, as set out below:

Libor + margin: 125bp per annum on drawn balances under the facility

Plus:

Utilisation Fee:

0%-33.3% utilised: 25bp per annum on all amounts of the facility utilised

33.3%-66.6% utilised: 75bp per annum on all amounts of the facility utilised

Plus:

Non-Utilisation Fee: 50bp per annum (i.e. 40% of the margin) on all amounts of the facility unutilised.

A front end fee was also charged: 90bp flat on the total amount of the facility.

The overdraft facility is very rarely used.

13.2 The Regulatory Capital Value (RCV)

One of the elements considered by Ofwat in assessing revenues required by the Company is a return on the capital investment in the business. The value of the capital base of each Company for the purposes of setting price limits is the Regulatory Capital Value. The RCV is widely used by the investment community as a proxy for the market value of the regulated business. For Portsmouth Water the RCV is a key element of its bond covenants.

The table below shows the movement of the RCV through to 2025 in 12/13 prices:

RCV PR14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	Mar-25
RCV At Start Of Year	115,114	120,770	121,048	123,469	125,697	126,395	125,752	125,135	124,301	126,415	123,847
Capex Excluding IRE	3,185	5,777	7,977	7,897	6,459	5,159	5,327	5,162	8,239	3,658	4,283
Infrastructure Renewals Expenditure	5,236	5,576	5,766	5,967	6,164	6,355	6,552	6,756	6,965	7,181	7,403
Infrastructure Renewals Charge	-5,356	-5,576	-5,766	-5,967	-6,164	-6,355	-6,552	-6,756	-6,965	-7,181	-7,403
Grants & Contributions	-1,302	0	0	0	0	0	0	0	0	0	0
CCD - existing assets	-4,759	-5,374	-5,135	-4,907	-4,688	-4,480	-4,280	-4,090	-3,908	-3,734	-3,568
CCD - new assets		-125	-421	-763	-1,072	-1,323	-1,664	-1,906	-2,217	-2,492	-2,676
5-Year Rolling Efficiency Adjustment	-1,902										
Other RCV Adjustment											
Midnight Adjustment/Logging Down	5,115										
RCV At End Of Year	115,331										
PR 09 CIS RCV adjustment	5,439										
Adjusted RCV At End Of Year	120,770	121,048	123,469	125,697	126,395	125,752	125,135	124,301	126,415	123,847	121,887

Note: "IRE" refers to Infrastructure Renewals Expenditure

Note that the Midnight Adjustment / Logging Down figure in 14/15 is the combination of:

Midnight Adjustment	£5.6m
Logging Down	£(0.49)m
Total	£5.11m

For more detail on how the Midnight Adjustment, Capital Incentive Scheme and Logging down adjustments have been calculated, please refer to the Technical Report on Financeability.

13.3 The RCV Run Off Rate

This rate is the amount of depreciation to be charged against the existing RCV, at the end of 2014/15. It has been calculated using the existing Current Cost Accounting depreciation to calculate the charge in each year of AMP6. This rate excludes any depreciation for new AMP6 assets which is added to the RCV separately. This gives an average run-off rate of 4.45% over AMP6, and this is carried over into AMP7. A reducing balance method is used to apply the run-off rate.

The value of the RCV and its trend, and therefore the trend in the Company's level of gearing, is a key consideration of the Company's financeability.

13.4 The Weighted Average Cost of Capital

As the business has a high level of embedded debt, a large part of the cost of capital to be used in the Business Plan is already determined. We therefore

needed to gather the appropriate evidence for the cost of the small residual debt required and the cost of equity.

13.4.1 Work commissioned from Oxera

To do this we commissioned, along with other Water Only Companies, Oxera to look at the evidence for the appropriate elements to use in calculating the weighted average cost of capital. They produced a report in October 2013 “What is the evidence on required returns for water-only companies at PR14?” The full report can be found in Appendix 22.

13.4.2 The Oxera Report

We have used the Oxera report to estimate what we believe the appropriate cost of new debt and equity should be.

A summary of Oxera’s view of the overall cost of capital is detailed in the table below:

Parameter	WASCs		WOCs	
	Low	High	Low	High
Real risk-free rate (%)	1.25	1.50	1.25	1.50
ERP (%)	5.25	5.50	5.25	5.50
Asset beta	0.30	0.40	0.35	0.45
Equity beta	0.75	1.00	0.78	1.00
Cost of equity (post-tax real, %)	5.2	7.0	5.3	7.0
Gearing (%)	60	60	55	55
Cost of debt (pre-tax real, %)	2.7	2.8	3.0	3.6
Vanilla WACC (real, %)	3.7	4.5	4.0	5.1

Oxera’s report concludes that the vanilla WACC for a water only company should be in the range 4.0% to 5.1%. This is slightly higher than the values given for a Water and Sewage Company (WASC) of 3.7% to 4.5%. This is because “relative to the WASCs, the WOC’s have a much more limited number of sources of debt finance available to them – this limited supply of funds implies that WOCs typically obtain funds at less competitive rates than the WASCs” (refer to page iii of the executive summary in Oxera’s report which is shown in Appendix 22).

For a notional WOC company, the vanilla WACC should be in the range 4.0% to 5.1% according to Oxera (this equates to a fully post tax WACC range of 3.7% to 4.7%). However Oxera have used a gearing percentage of 55%. In Ofwat’s methodology for PR14 they have indicated that notional gearing should be in the range 60% to 70%. If a midpoint of this range was 65% the resulting range of vanilla post tax WACC for WOC’s would be 3.8% to 4.8%. This equates to a fully post tax WACC range of 3.4% to 4.3%). The calculation assumes an embedded debt ratio of 75% for both WASC’S and WOC’s, i.e. on average over the period the Company would refinance or obtain new debt of 25% of the total required.

The WACC for Portsmouth Water

For Portsmouth Water, embedded debt accounts for 94% of total debt. Furthermore, as the first company to enter Artesian the interest rate at 3.7% (including fees) is at the top of the assumed range in the Oxera calculation. This has a significant impact on our cost of debt and therefore on our overall WACC.

It should be remembered that the Artesian debt allowed a reduced small company premium at previous price reviews. It allowed small companies such as ourselves to access debt markets far more cheaply than we could have individually. Customers have benefitted from this over the years.

13.4.3 Portsmouth Water WACC Calculation

13.4.3.1 Cost of debt:

Index Linked loan 94% of total debt:	3.7% (as per loan agreement)
Variable revolving loan facility	2.90% (based on Oxera report)
Weighted average cost of debt	3.65%

The interest rate on the Artesian loan is 3.64%. However when the amortisation of the fees charged are included, this increases the interest rate to 3.7%.

We will have to refinance our currently revolving credit facility in 2015. Oxera estimated the cost of new bank debt to be in the range 2.2% to 2.5%. For a WOC they have recognised the additional costs involved and added a premium in the range of 0.3% to 0.8%. This gives the cost of raising new debt in the current market for a WOC of between 2.5% and 3.3%. We have assumed that we will be able to borrow at a rate at the mid-point of this range i.e. 2.9%.

This gives a combined average cost of debt of 3.65%. It is within the range estimated by Oxera, but at the top end reflecting our high level of embedded debt.

13.4.3.2 Cost of Equity:

We have assumed a cost of equity in our Business Plan of 6.25%. We have used a value slightly above the mid point of the range suggested by Oxera for a WOC (5.3% to 7.0%) because we are one of the smaller companies in the industry and the issues around operational gearing they refer to will have a greater effect. According to Moody's, the rating agency, in their commentary to our shadow credit rating. "PW's corporate family rating also reflects the smaller size of the Company as a WoC in relation to franchise area and number of customers when compared to the 10 water and sewerage companies (WaSCs), which also provide wastewater services. The smaller size exposes WoCs more to cost shocks, cost overruns on individual projects or other negative events that may affect a larger portion of assets, revenues or costs than would be the case for its larger peers. (See the table above and Appendix 22).

The return on Equity has been discussed with the Board of the Employee Benefit Trust, the ultimate controlling shareholder. In their view a dividend yield of 5% of the equity element of the RCV should continue, with real growth and a dividend cover consistent with the return on equity. Our shareholders have accepted this although they regard this level as a low return for the equity risk taken and are concerned that it may not reflect an appropriate long term investor's expectation for return on equity. Their view is based on return which can be obtained in the market for investment with similar risks and as a result of it having to accept all the downside risk whilst sharing the upside with customers.

13.4.4 The overall Weighted Average Cost of Capital (WACC)

A cost of debt of 3.65% and a cost of equity of 6.25% results in a weighted average cost of capital of 4.1% assuming a tax rate of 21% and a notional gearing level of 65% (Ofwat's methodology outlined a range for notional gearing

of between 60 and 70%. In this case we have assumed the mid-point). The equivalent vanilla WACC is 4.56%. The calculation is shown in the table below.

<u>Cost of debt</u>		
Indexed Loan rate	3.700	As per loan agreement
Cost of new debt (WASC)	2.350	Oxera report gives range (2.2% - 2.5%). Taken midpoint
Additional cost for WOC	0.550	Oxera report gives range (0.3% - 0.8%). Taken midpoint
Cost of new debt - WOC	<u>2.900</u>	
Ratio: indexed to total debt	94.0%	
Weighted average cost of debt	3.65%	
<u>Cost of Equity</u>		
Per Oxera report	6.25%	Marginally above mid point of Oxera range
<u>WACC</u>		
Tax rate	21.00%	
Gearing	65.0%	
Fully Post Tax WACC	<u>4.06%</u>	
Vanilla WACC	<u>4.56%</u>	
Adjustment re Retail Margin	0.35%	
Vanilla WACC used in Business Plan model	<u>4.21%</u>	
Fully Post Tax WACC	<u>3.71%</u>	

This result leaves us within the range identified by Oxera, and reflects the level of embedded debt.

In the Retail Business Plan we estimated the retail margin. In reality however the margin of the overall Appointed Business should not increase. Therefore to avoid duplication an adjustment has to be made to the WACC in the wholesale business. Therefore to reflect this impact and to avoid any such duplication we have reduced our overall WACC by 0.35%. This reduces our vanilla WACC down to 4.21% and this is the return we have used in our financial model. We have used this both in our model for the Business Plan Base Case as well as in the notional balance sheet. For full details of the calculation please refer to the Technical report on Financeability.

We have assumed that the notional balance sheet used by Ofwat will have a gearing level of 65% (the middle of its specified range of 60% to 70%) and therefore we have used a vanilla cost of capital of 4.21% in the Notional Balance sheet supplied to Ofwat. Furthermore as we would expect Ofwat to set the WACC on a notional balance sheet, we have used the same WACC for our actual structure and it is for us to make sure we are financeable at our structure. As our average gearing over the period is 70%, and therefore at the top end of the range set by Ofwat, we believe any difference is not material.

The Directors are very conscious of the impact that the cost of capital has on customers in terms of the related impact on customers' bills. They are aware of the opportunities in the current economic climate for companies to take advantage of lower borrowing costs and therefore to reduce the cost of capital. Recognising this, the business has commenced an investigation into the possibility of refinancing the current debt. However, this will be very difficult to achieve. For full details please refer to the Technical report on Financeability.

Furthermore, as the Board is conscious that as a result of our high level of embedded debt this cost of capital may be higher than that anticipated by Ofwat we would ask them to note that the Company has proposed in its Business Plan to give up the benefit of the additional revenue from the Operating cost rollover

of its efficiencies achieved in 2010 - 2015. The Board believe that this is a powerful demonstration of its commitment to keeping prices to Portsmouth Water customers as low as possible. If this element was included in our Business Plan it would have resulted in a 6% price increase to customers in 2015/16. Although this would have only had a declining effect on three years, it is still a significant loss of revenue for shareholders.

13.4.5 The Financial Covenants Included in our Loan Arrangement and Important Financial Ratios

As described above, the Company's main source of debt financing is an Artesian loan, taken out by the Company in 2002. This debt is not due to mature until 2032 and the interest rate on this loan is 3.64%. The initial loan of £66.5m is now valued at £91.3m in the Company's 2013 accounts.

There are certain financial covenants associated with this Artesian loan which the Company has to ensure it complies with. It is essential that the Company remains within these ratios so that it does not breach the covenants on the loan and also to ensure that the Company maintains its investment grade credit rating (the Company has a shadow credit rating). These are detailed in the table below.

	Internal	FD ²	Distribution	Additional indebtedness		Trigger	IDOK ⁶	Acceleration ⁷
	Target ¹		Lock-up ³	With controlling creditor	Events ⁵			
				Consent ⁴				
Gearing	80%	85%	86%	86%	92.50%	90%	92.50%	95%
Cash Interest Cover	1.6	1.5	1.4	1.3	1.2	1.3	1.2	1.1

¹ The Company's internal target

² Final Determination

³ The level at which lenders are able to prevent distribution of equity

⁴ We cannot take on any additional borrowing if it would mean that we would breach these levels. However we can go up to these levels if we have the consent of the controlling creditor.

⁵ The trigger events are defined in the agreement and would come into force if these levels are reached

⁶ At this level the Company is required to go to Ofwat for an interim determination of "K" (IDOK).

⁷ If these levels were reached the loan agreement is terminated and immediate repayment required. The creditors would assume control of the Company.

These ratios are defined as follows:

- Gearing – Debt / Regulatory Capital Value
- Cash Interest Cover – (Turnover – operating cost - capital expenditure (incl. IRE) + increase in borrowing (- decrease in borrowing) + interest received – tax)/Interest paid.

For definitions and more detail, please refer to the Technical report on Financeability.

13.4.6 Other Important ratios

Although we include all of the ratios used by Ofwat in the guidance, the ratios we see as key indicators of Financeability are:

- Adjusted cash interest cover after capital charges. The minimum target is 1.6 times.

- The Return on Regulatory Equity (RORE) - The return due to shareholders/equity component of RCV assumed in notional capital structure. Return due to shareholders calculated as $EBIT - tax - (\text{cost of debt} \times \text{average net debt})$.

It is the Company's intention to reduce its level of gearing over the medium term and, accordingly, the level of gearing in our Business Plan drops to 70.5% by 2020 and further to 69.1% by 2025. In our plans at our actual gearing Interest cover remains above the Company's target for the duration of the Business Plan and on to 2025. The Company recognises that these ratios must be maintained not only over the duration of the Business Plan but further into the future so that the Company remains Financeable for future customers as well as current customers.

For further details of the trends in these ratios and the impact on Financeability, please refer to the Technical Report on Financeability.

13.5 **Pay As You Go Ratio (PAYG)**

With the advent of Totex, all costs, whether previously classed as Opex or Capex are now treated equally as Totex expenditure. Each Company must decide, as part of its Business Plan submission, what PAYG ratio to adopt. The selection of this ratio essentially determines how much of overall Totex expenditure is classed as "fast money" (costs recovered as spent, normally Opex and mains renewals expenditure) and how much is "slow money" (cost recovered over time through being added to the RCV and depreciated normally Capex). This has obvious implications for prices paid by customers since a higher PAYG ratio will essentially move more of the Totex expenditure into "fast money" which increases revenue in the short term. The level of the PAYG ratio is key consideration since it will set how much of Totex cost will be paid by current customers and how much is paid by future customers as well as having a material impact on the overall financeability of the Company.

Historically Portsmouth Water has been weighted towards Opex with approximately 75% of expenditure being Opex or fast money, on average. This is due to Portsmouth having the lowest non infrastructure expenditure per property in the Industry.

Over AMP6 the average PAYG ratio, using the actual split between opex and capex, is 76.3%. However in our Business Plan this PAYG ratio has been adjusted to 75.7%. The ratio has been adjusted for two reasons:

- To maintain no increase in bills in real terms and at the same time achieve the required financial ratios
- To achieve smooth bills in each year. The PAYG ratio has been varied in each year to achieve smooth bills since the capex programme is quite "lumpy" during AMP6 and this has a fluctuating impact on prices unless the PAYG ratio is used to smooth these impacts in each individual year. This approach was checked and agreed with Ofwat.

After the adjustment, the average PAYG % is reduced to 75.7%, which is a reduction of 0.6%. We have used this 75.7% PAYG ratio in the Base Case of our Business Plan. For a full review of the PAYG ratio please refer to the Technical report on Financeability.

13.6 Impact of Legacy Items

The Ofwat methodology allows for a “true up” at the end of each periodic review period. This results in a number of potential adjustments as detailed in the table below:

<u>LEGACY ITEMS</u>		<u>Impact</u>
Revenue Correction Mechanism (RCM)	Revenue	+£5.34m
Tax - to reflect lower payments	Revenue	-£1.22m
Capital Incentive Scheme (CIS)	Revenue	-£2.09m
Capital Incentive Scheme (CIS)	Capex	+£5.44m
Midnight Adjustment	Capex	+£5.6m
Opex Efficiency Rollover*	Revenue	0 But: £1.8m in 2015/16, £0.5m in 2016/17 and £0.4m in 2017/18.
Logging up / down	Revenue	-£0.01m
Logging up / down	Capex	-£0.49m

* We have not taken the benefit of this additional revenue in our Plan.

Midnight Adjustment – an increase in the value of the RCV of £5.6m

13.7 Risks and Financeability

There are certain risks which could affect the delivery of the Wholesale Plan from a financial perspective. These could be in the availability of finance/funding in the market place, the risk of increases in interest rates, increasing power costs, bad debt changes, changes to RPI/COPI or the general UK economic situation affecting the revenues earned by the business. The main scenarios which we have considered to impact the Financeability of the Company are covered in the Overall Appointed Business Plan and the commentary to Table A20 .

13.8 Base Case Output

Taking all of the above information into account the resulting output from our financial model is shown in the table below. This represents our Base Case for our appointed business.

	<u>AMP6</u>						<u>AMP7</u>				
	<u>2014/15</u>	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>	<u>2023/24</u>	<u>2024/25</u>
<u>BASE CASE</u>											
Prices	91.25	91.25	91.25	91.25	91.25	91.25	91.25	91.25	91.25	91.25	91.25
Prices - %		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash Interest Cover (PW version / Bank Covenant)	1.75	1.74	1.67	1.68	1.71	1.65	1.66	1.75	1.75	1.74	1.73
Cash adjusted Interest Cover (Used by Moody's & Ofwat)	1.77	1.61	1.73	1.66	1.68	1.77	1.80	1.85	1.84	1.91	1.97
Gearing	75.8%	71.7%	71.6%	71.5%	71.2%	70.5%	70.1%	69.7%	69.8%	69.6%	69.0%
PAYG %		78.1%	72.2%	72.5%	76.3%	80.1%	79.9%	80.5%	72.1%	85.3%	83.3%

The main points to note from the Base Case scenario are as follows:

- Prices are projected to remain unchanged at their 2014/15 level throughout AMP6 and, for the purposes of this illustration, up to 2025.
- Cash interest cover and cash adjusted interest cover remain above the 1.6x required for the Company to remain within our banking covenants

- Gearing is on a downward trend being 70.5% in 2019/20 and 69.0% in 2024/25.
- The PAYG ratio varies each year, due to using the ratio to smooth prices and keep prices flat despite a “lumpy” capital expenditure programme.
- Due to the above, the Base Case is Financeable.

14 DEVELOPMENT OF STAFF**14.1 Introduction**

People in Portsmouth Water are the frontline for delivery of the Business Plan and are at the core of ensuring customers receive an excellent service. Also embedded in the way we operate as a company is that we aim to protect them whilst at work and thus ensuring they get home every night safely.

Portsmouth Water is unique in the industry with our Employee Benefit Trust ownership structure, which provides an incentive for the Company as a whole to create a positive high performing working environment to deliver the Business Plan.

We recognise people are our most important asset. Therefore, we aim to ensure that staff are in possession of the knowledge, skills and experience necessary to perform their jobs to a standard, which enables us to meet our business mission of supplying drinking water of the highest quality as well as providing high levels of customer service aligned with excellent value for money.

14.2 Staff Development

We deliver a high quality service to our Customers through our staff. We therefore recognise that our staff will require a positive working environment that provides both opportunities and support for them to progress in order to continue to deliver this high quality of service. In the period up to 2020 we will improve services to customers funded through further operating efficiencies. This will be achieved by realigning our processes and behaviours to improve Customers experience of dealing with us rather than our own operational convenience. This will require our staff, at all levels, to be innovative, able to work smarter, more efficiently and have the appropriate expertise, skills and attitude. Staff development is the key to this. We will encourage our Contractors to put Customer Service as a high priority when assessing training requirements.

This will be achieved by continually training staff in new skills and encouraging those who wish to continue to develop by providing opportunities, facilities and support through on-the-job learning, training and external further education. We carry out an annual staff development exercise which focuses on needs for both operational and development training in line with the needs of the business.

We are committed to ensuring our staff continue to be in the possession of the relevant knowledge, skills and experience in order to deliver our business goals and we will continue to invest in the necessary training providing the essential skills required and supporting employee's development. This will include looking at best practice continually reviewing training methods from inside and outside the industry in order to deliver the best and most appropriate training.

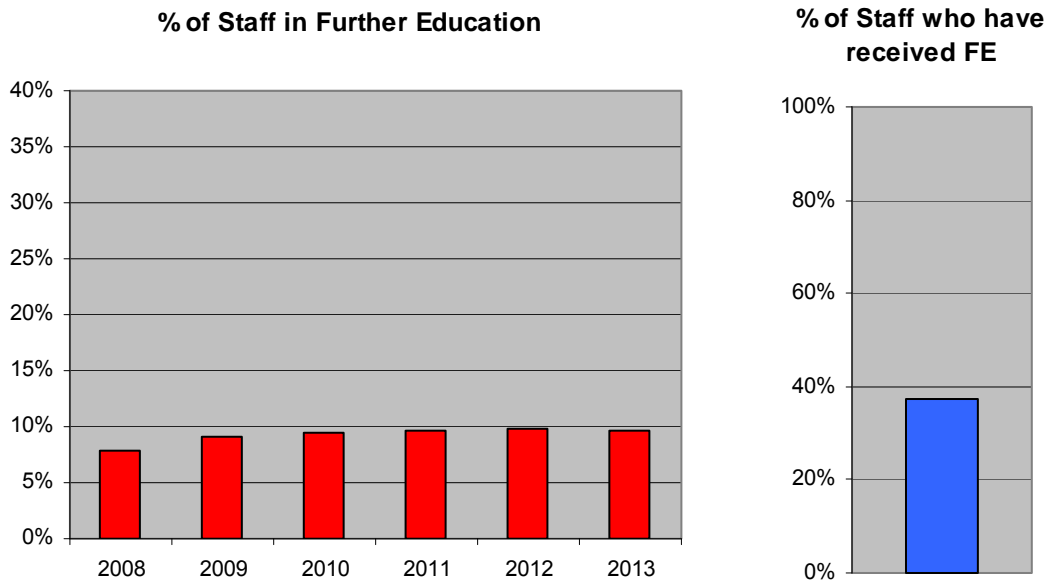
This approach to staff development and learning will help reinforce the knowledge bank of staff in areas including operational, technical; and managerial within the business. This will provide us with an effective succession plan within the workforce enabling us to have the expertise required in order to meet future requirements

14.3 Further Education

We are firmly committed to the development of our staff and that they all have the opportunity to reach their full potential and as a result we fully support those wanting to undertake further educations such as Degrees, HNC's, NVQ's along with associated professional qualifications. A number of employees have

achieved degrees and professional qualifications whilst working for the Company.

Nearly 40% of all staff currently employed has, at some time during their career with us, received supported further education. During 2013 nearly 10% of staff was in some form of formal further education supported by the Company. The level has been maintained for a number of years and we are committed to maintaining this level for future years.



14.4 Apprenticeships

We have for many years offered Modern Apprenticeships in the field of Mechanical and Electrical and Customer Services. Any new recruit within Customer Services who is under the age of 25 is automatically employed under a modern apprenticeship agreement. Pleasingly, many staff who have obtained their apprenticeship with us have progressed further, both academically with a number now holding Degrees, HNC's and Management Diplomas, and in their career.

Apprenticeships follow an agreed training programme of both on and off-the-job training alongside approved further education to an HNC or NVQ standard. The training programme is tailored to the specific requirements of the Apprenticeship offered and conducted by both the Company and the facilitating training organisation.

Currently 8% of our workforce has come through the Apprenticeship route. We will be looking to expand Apprenticeships, in line with Government thinking, into other areas of the business such as IT, Distribution and Leakage Control

14.5 Supervisor Development

Understanding the importance of the role a supervisor can play in helping achieve a motivated workforce, we have for a number of years made it a requirement for all new Supervisors, either appointed externally or internally promoted, to undertake formal further education qualification in the management field. There is now a minimum of a NVQ level 3 qualifications for all supervisor posts. Level 3 is a minimum and many have decided, with our full support, to

take the Level 5 Management Diploma to further enhance their skills. This will continue to be a requirement going forward.

14.6 Health and Safety

We continue to ensure that our staff work in the safest possible environment by providing and maintaining safe and healthy working conditions along with continually reviewing all our operational practices taking into account any changes in legislation and best working practices. This will include continuous investment in equipment ensuring staff will always have the correct tools.

14.7 Commitments

We will carry out in the next 12 to 18 months a thorough skills audit of all activities within the Company highlighting clear required competency levels and ensuring that the best, most appropriate training is identified and delivered. This will have a clear focus in identifying the skills, training and development required to further improve our service to our customers.

We will look to:

- Expand apprenticeships in the business
- Encourage further education and development of staff
- Support Industry initiatives to improve further competency in the workplace
- Continue to invest in H&S resources in order to provide the most appropriate training and equipment to staff
- Improve the customer culture

15 INNOVATION

Portsmouth Water has committed to improving services to customers without putting up bills by greater than inflation until 2020. It will do this through efficiencies and utilising best practice and improved technology. We are the lowest cost provider of water services in England and Wales and have constantly been amongst the most efficient. This has been achieved as a small Company by being agile, flexible and avoiding bureaucracy.

We have a loyal and effective workforce who, through an Employee Benefit Trust, share in the success of the business. They are therefore incentivised to make efficiencies, but at the same time understand that providing a good service to customers is beneficial in the long term and creates value through the SIM. In an employee survey 99% of employees were proud to work for the Company.

We are implementing a new works and asset management system which we believe will deliver improved service and a more efficient operation. We have challenged ourselves by including some of the efficiencies in the Business Plan.

Our sister company, Brockhampton Holdings, has installed solar power cells at several of the Company's sites, allowing cheaper electricity and a smaller carbon footprint.

We are undertaking a trial to significantly increase the recycle waste generated by our activities which, if successful, will avoid the cost of landfill and reduce the cost of new material driving down the cost of our maintenance activities whilst reducing the impact on the environment in a sustainable manner.

We will drive down our consumption of electricity by targeting investment to deliver the following:

- New pump control equipment will be developed to optimise pump running against demand and storage risk based requirements. Trials to date at two sites indicate that further improved controlling equipment will deliver further electrical savings drive costs down further. An allowance for this has been included in non-infrastructure, capital maintenance expenditure.
- Enhanced interactive telemetry control for improved real time monitoring of power consumption
- Enhanced condition monitoring of pumps to optimise replacement and efficient running
- Reduction in electrical base load consumption at our Farlington and River Itchen Treatment Works by targeting capital maintenance
- Actively contribute to industry workshop to investigate and deliver improved demand management techniques
- Revisions to nitrate blending pumping regimes to season pattern or nitrate levels to minimise pumping and related costs
- Investigation into development of solar, wind or other renewable technologies as part of PW core business with a view to de-risking the Company to future energy price rises

We will continue to develop our existing collaborative working with two other water only companies to identify and share good working practices that if jointly undertaken, result in opportunities to reduce costs, such as common procurement activities. The collaborative working will be undertaken strictly in accordance with the requirements of the Competition Act, we are currently working with a specialist independent consultant who ensures cost information and general exchanges are completely compliant. We anticipate that this approach will deliver cost savings for our customers.

We will formulate contracts that seek out and provide us with innovative solutions.

We recognise that customers now wish to communicate directly with our staff undertaking maintenance activities on our apparatus that impacts on customer service. We will develop a social media strategy and consider innovative use of appropriate and available options to improve customer satisfaction and service experience which may be economically enhanced by such facilities. Reporting of suspect leaks, faulty apparatus, traffic disruption resulting from our works on the highway may all be better managed if customers can communicate effectively with our staff responsible for planning and undertaking the maintenance activities.

We will increase by 5% the amount of mains that we replace by no dig techniques in order to reduce traffic disruption and inconvenience to road users, our customers and local businesses who rely upon high foot falls to sustain their business profitably.

We will develop new techniques to minimise interruption of supply to customers whilst undertaking our mains renewals and maintenance activities such as pre-chlorinated pipes minimising down time and duration of the overall works.

We will reduce the number of times our mains are drained down to undertake maintenance activities which will improve customer service by using innovative repair techniques.

We will actively support our staff in educational activities that will develop innovative activities that our customers will benefit from.

We will actively support our staff in developing new plant, equipment and techniques such as our widely marketed "leak finder" that improves customer service and minimises expenditure.

16 WHOLESALE CHARGES FOR SUPPLYING CUSTOMERS**Wholesale Tariffs**

The wholesale business is not currently proposing any changes in tariff structure between 2015-2020. Tariffs, however, are reviewed on an annual basis and therefore new tariffs may be considered within the period. Any new tariffs will be cost reflective and will not unduly discriminate between customers in a given customer class or between customer classes.

Terms of Trade

The wholesale business will invoice on a 30 day basis.

Non-Household Default Tariffs

There are currently three non-household default tariffs, unmeasured non-household, measured non-household and large user measured non-household.

Measured Premises

- Volumetric consumption will be invoiced in accordance with the current tariffs. Currently consumption is charged at either the standard rate or the Large User Rate, the latter being for customers that consume in excess of 50 million litres of water at a single site each year.
- A Large User Site Fee, as per our existing tariff, will be invoiced monthly to our large users. This fee is set at a level that ensures that the large user only benefits from the tariff if consumption is on target to exceed the qualifying threshold.
- The average wholesale non-household measured bill (excluding large users) is in 2012/2013 prices. The standing charge is £14 and the volumetric charge is £0.61 per cubic metre.

Unmeasured Premises

- The wholesale business will invoice in two equal sums, on 1st July and 1st January annually (our billing year runs from 1st July to 30th June). This is in recognition of the legal requirement for the retailer to offer a half yearly payment option to its unmeasured customers.
- The unmeasured amounts billed will be reduced by the average cost to serve a non-household customer, including the retail margin, as calculated by our retail business.

Household Default Tariffs**Measured Premises**

- The wholesaler invoices for the whole of the volumetric consumption, in line with the existing tariff.
- The standing charge is reduced by a sum equivalent to the retail average cost to serve, including the retail margin and the company specific

adjustment required to reflect input cost pressures that are beyond management control.

Unmeasured Premises

- The wholesale business will invoice in two equal sums, on 1st July and 1st January annually (our billing year runs from 1st July to 30th June). This is in recognition of the legal requirement for the retailer to offer a half yearly payment option to its unmeasured customers.
- The wholesale charge is reduced by a sum equivalent to the retail average cost to serve, including the retail margin and the company specific adjustment required to reflect input cost pressures that are beyond management control.