

October 2013

Water today, water tomorrow

Draft determination of Thames Water's IDoK application

About this document

This document sets out our draft determination on Thames Water's application for an interim adjustment to price limits (IDoK) in 2014-15. It sets out our view of the relevant items for consideration and the costs associated with them.

We welcome views of all stakeholders on our draft determination. Because of the very tight timetable we must work to and a particular need for clarity for stakeholders before companies submit their business plans for the period 2015-20 to us in December, we ask that comments and representations to our draft determination are sent to **Steve StPier** (email: stephen.stpier@ofwat.gsi.gov.uk) by close of business on **Wednesday 23 October 2013**.

We will consider consultation responses carefully before making our final determination in November.

In making our decisions, we want to be as transparent as we can with all stakeholders about how we have reached them. This document sets out the vast majority of the information we based our decision on. However, in a small number of instances information directly relevant to our draft determination may be commercially sensitive for Thames Water or for other water companies. In these instances we have excluded the information from the public version of this document.

On 13 September, we said we were also looking at whether Thames Water has also benefited from wider economic circumstances beyond its control, and whether we can share these gains with consumers through an established regulatory process called the 'substantial favourable effect' mechanism, which is a separate provision in the licence framework. We continue to carry out that analysis separately to this IDoK process.

In order to allow Thames Water and other consultees to consider our draft determination and respond, we are publishing separately some aspects of our comparative analysis based on data submitted by other companies in response to our requests on 6 and 13 September. We consider it is right that all consultees should be able to see these data on a similar basis.

Unless otherwise stated, all figures in the summary of this document are based on a projected September 2013 price base that is consistent with the projected price base used in Thames Water's application. As the actual September 2013 price base was not published in time for this draft determination, we will update for the actual September 2013 price base in the final determination. Figures in the remainder of the document are in outturn prices to 2012-13, then September 2013 prices unless otherwise stated.

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1. Summary

1.1 Thames Water Utilities Limited application

On 9 August this year, Thames Water Utilities Limited ('Thames Water') asked us to increase the limits on its prices in the last 12 months of the current period, which run from April 2014. Under the terms of its licence, Thames Water can ask us to increase price limits where it can demonstrate that it has experienced changes in costs to specific items, which in aggregate are material, which we did not take account when price limits were set in 2009 for the period 2010-15.

The specific items that can be included for this purpose are items that were either not allowed for in full, or at all, in price limits (notified items – or NI) or relevant changes in circumstance (RCCs), such as changes in legal obligations, which are defined in the licence.

Generally, we would not make an allowance for such items at the time we set price limits because either the size of the impact or the timing of the impact was too uncertain. For example, this uncertainty could be relevant to the implementation of specific legislation and regulations, which affect how the costs that companies incur may be delayed or brought forward.

Thames Water told us that it wished to increase charges to customers to recover costs related to:

- increases in bad debt costs above what was allowed in 2009 price limits – specifically, additional bad debt due to the economic downturn;
- the impact of the transfer of private sewers after price limits were set;
- land purchase costs for the Thames Tideway scheme that are above the level that was allowed in 2009 price limits; and
- increases in Environment Agency charges above the amounts that were allowed in 2009 price limits.

Thames Water also took into account two offsetting changes that it had identified as reducing its costs in the same period:

- changes to the delivery of its sewer flooding work programme; and
- proceeds from disposals of land.

1.2 Our approach to the claim

We have scrutinised closely the information contained within the application. We have sought greater clarification across each item within Thames Water's claim. We have used information from other water and sewerage companies that was submitted to us for the next price review, and supplementary information we requested, to help us review whether the extent to which the components of the net costs that Thames Water submitted were appropriate and efficiently incurred.

We have already received feedback from some stakeholders. To date, we have had 230 contacts from customers and 17 from MPs and London Assembly members. These express concerns about:

- the impact of bill increases;
- the link to company profits; and
- the extent to which customers should be paying for some of the items in the application.

We will consider these alongside any further responses received when we make our final determination on the application.

We have developed the proposals in this draft determination in accordance with our statutory duties, which, among other things, state that we must consider how best to:

- protect the interests of consumers;
- secure that a company is able to finance the proper carrying out of its functions as a water and sewerage undertaker; and
- promote economy and efficiency.

In accordance with our duties, we must challenge Thames Water's claim where appropriate to ensure that the costs claimed are legitimate and represent efficient costs that we might expect a prudently managed company to incur. Crucially, it is for Thames Water to demonstrate that its claims are legitimate and efficient for us to conclude that costs should be included for consideration in the IDoK.

Part of this process was to consider whether all expenditure associated with the claim for the remainder of the period can be justified. If too much uncertainty remains, it can be better to ask a company to think more carefully about the timing and levels of expenditure required.

In some circumstances – for example, where delays in investment programmes have occurred – or concerns arise with respect to the expected future delivery profile given previous changes, our assessment has led us to propose a re-profiling of some expenditure into the subsequent price control period. Inevitably, such re-profiling of expenditure involves judgements as to the funding of costs by current versus future consumers, which we must make on the basis of the information made available to us by Thames Water and other information we have available to us. But the judgements we have made are intended to help to ensure that, from the consumers' perspective, investment is delivered in a measured and efficient way.

In reviewing the application, we have been mindful of the fact that Thames Water's customers currently face a challenging financial environment with many pressures on household income, and have already experienced increases in their water bills. We wished to be sure that customer bills were not further increased unnecessarily, and that any increase was justified.

1.3 Our view of items to be included in the interim determination

Our initial view is that all but one of the items included in Thames Water's application meet the criteria for considering the size of their impacts, to decide on their inclusion in an interim determination.

The exception is that we do not consider the circumstance that Thames Water claimed triggered the reduction in costs for delivery of its sewer flooding work programme was correct. This view, which we now confirm having considered additional evidence, led us instead to include an item for sewer flooding in a counter-notice, based on what we considered to be the appropriate change of circumstance.

On 13 September, we notified Thames Water of this and two other areas in a counter-notice, where we considered the company had not delivered the outputs for which customers had paid. The counter-claims included in our notice were made on the basis of our understanding of Thames Water's licence. These three areas related to:

- the underspend on sewer flooding discussed above;
- a significant slippage in a major scheme which forms part of Thames Water's investment programme for sewage treatment; and
- the company not adequately maintaining parts of its wastewater network in previous years.

We have included adjustments in our draft determination for funded expenditure on these items which we consider it is appropriate now to return to customers as part of determining prices within the existing control period.

1.4 The allowable costs

Having closely scrutinised Thames Water's application using the information available to us, our view is that the allowable costs are substantially different from those that the company put forward in its application.

Our view is that the costs for **Thames Tideway land acquisition** should be slightly lower than Thames Water proposed at £268 million capital expenditure because some of the costs in the application did not match previously reported costs. We also re-profiled a small amount of expenditure which we did not think customers should pre-fund. But in most respects, the expenditures have already been reviewed as part of the separate arrangements put in place to progress the Tideway scheme.

We have assumed a slightly larger downwards adjustment (at £45 million) to account for **proceeds from land sales**, as we do not consider the company included all the income it should have in its application.

For **costs related to increases in bad debt** we are not convinced that Thames Water's analysis of the impact of increased deprivation on the company's ability to manage bad debt costs at efficient levels was sufficiently robust. We also consider that Thames Water has overestimated the increase in bad debt write off over the period, and we do not think the company is achieving best practice in debt management. As a consequence, we have made a substantially lower estimate for incremental efficient bad debt costs specifically due to additional deprivation than Thames Water included in its application (£13 million compared with £75 million). On 14 October, Thames Water submitted additional draft report on the impact of the deterioration in economic circumstances on Thames Water's bad debt and expects to submit a finalised version for our consideration. We have not reviewed that report for the purposes of this draft determination, but we will do so in making our decisions for the final determination.

Increases in Environment Agency charges should be broadly in line with the costs in Thames Water's application. Our review of the company's application has identified that the allowance for additional costs already incurred should in fact be slightly higher than Thames Water assumed, as a result of an error in the treatment of PR09 efficiency assumptions in its application. Since submitting its application, Thames Water has notified us of a further assumed and expected increase in Environment Agency charges for 2014-15. But as we have seen no documentary evidence to support this further expected cost increase, we have not included this further increase in our draft determination. Based on both points we have proposed to allow for a net increase of £19 million in operating expenditure in this area.

For **costs related to the impact of the transfer of private sewers** we are not convinced that Thames Water has fully demonstrated that the claimed additional costs it expects to have incurred were likely to be attributable to the new obligations or incurred efficiently or prudently. With this in mind, we have reduced the level of costs compared with the amount Thames Water included in its application to £21 million capital expenditure and £28 million operating expenditure from £27 million and £41 million, respectively. Our challenge represents almost 30% of aggregate capital and operating expenditure claimed by Thames Water.

For **costs related to changes in the delivery of the sewer flooding work programme**, our view of the amount to be returned to customers is that it should be around £151 million capital expenditure and £1.5 million operating expenditure. This is higher than the amount Thames Water had included in its application for avoided sewer flooding expenditures. The difference reflects our view of the extent of costs that could be avoided for each scheme, on average, and an adjustment to what we currently consider can reasonably now be delivered in the remainder of the period, taking into account the reduced levels of activity which Thames Water has carried out to date.

Our challenge to forecast activity is based both on the evidence on outputs delivered by Thames Water in recent years, and the number of outputs being delivered by other companies. Although we recognise that this means that there will be more for Thames Water to do in 2015-20, we will soon be reviewing the relevant expenditures in the context of the forthcoming price review for that period. So, as part of our consultation on this draft determination, we seek views on whether we have struck the right balance in proposing a lower removal target for the final year of the price control than assumed in the Thames Water application.

For the scheme at **Deephams sewage treatment works**, we are not convinced that the company has demonstrated that the expenditure for this scheme can now be delivered to the new assumed profile in an efficient and prudent manner. We have assumed that £42 million capital expenditure should be returned to customers in the current control period, given the slippages that have already occurred and the impacts these will have on efficient delivery of the works going forward. But we and Thames Water remain committed to the efficient delivery of this scheme. So, we expect the company will include the re-profiled costs associated with the delayed delivery of this scheme in its business plan for the 2014 price review, in relation to funding by future customers.

For **serviceability**, we have assumed the prior funding of £25 million capital expenditure should be returned to customers in the current control period in light of the performance of Thames Water's sewerage infrastructure assets. On the basis of the information provided in response to our queries, we cannot be certain that Thames Water's expenditure was above, in line with, or below the levels required to ensure delivery of the specific outputs concerned, which was funded in setting price limits in the 2009 price review (PR09). But the company has reported that its performance was below the level we expected and funded it to achieve, so we have decided that, on balance, we should include a reduction in the amount allowed in customers' bills to reflect this performance shortfall.

The table below summarises our determination on the costs to be allowed within the interim determination.

Condition B of Thames Water's licence sets out that individual items must be more than trivial to qualify for consideration in an interim determination (that is, that the present value of costs must not be less than 2% of relevant turnover). Condition B also sets out that to qualify for an adjustment, all non-trivial items must be in aggregate at least 10% of the company's appointed business turnover. The table below sets out the contribution to materiality of each relevant item for our draft determination. We discuss the licence provisions associated with triviality and materiality further in section 2.3.

Thames Water Utilities Limited draft interim determination – summary			
Description	Company's assessment (August 2013)	Our assessment (October 2013)	
Item 1: Thames Tideway Tunnel land acquisition – Thames Water's claim			
1.1 Estimated net change in capital expenditure over the period 2010-15	£273.4m	£268.2m	
1.2 Estimated net change in operating expenditure over the period 2010-15	£0.0m	£0.0m	
1.3 Materiality amount (NPV of total net change in costs)	£273.0m	£269.8m	
1.4 Contribution towards materiality threshold	15.8%	15.3%	
Item 2: Proceeds from land disposals – Thames Water's claim			
2.1 Estimated net change in capital expenditure over the period 2010-15	(£39.7m)	(£45.2m)	
2.2 Estimated net change in operating expenditure over the period 2010-15	£0.0m	£0.0m	
2.3 Materiality amount (NPV of total net change in costs)	(£43.8m)	(£49.7m)	
2.4 Contribution towards materiality threshold	(2.5%)	(2.8%)	
Item 3: Bad debt and debt management costs – Thames Water's claim			
3.1 Estimated net change in capital expenditure over the period 2010-15	£0.0m	£0.0m	
3.2 Estimated net change in operating expenditure over the period 2010-15	£75.1m	£12.8m	
3.3 Materiality amount (NPV of total net change in costs)	£164.6m	£28.8m	
3.4 Contribution towards materiality threshold	9.4%	0.0%	

Item 4: Increases in the Environmental Improvement Unit Charge component of the Environment Agency's abstraction charges – Thames Water's claim

4.1	Estimated net change in capital expenditure over the period 2010-15	£0.0m	£0.0m
4.2	Estimated net change in operating expenditure over the period 2010-15	£18.5m	£18.9m
4.3	Materiality amount (NPV of total net change in costs)	£49.2m	£50.0m
4.4	Contribution towards materiality threshold	2.8%	2.8%

Item 5: Transfer of private sewers, lateral drains and pumping stations – Thames Water's claim

5.1	Estimated net change in capital expenditure over the period 2010-15	£26.6m	£21.1m
5.2	Estimated net change in operating expenditure over the period 2010-15	£40.8m	£28.1m
5.3	Materiality amount (NPV of total net change in costs)	£149.3m	£105.0m
5.4	Contribution towards materiality threshold	8.5%	6.0%

Item 6: Sewer flooding – Thames Water's claim

6.1	Estimated net change in capital expenditure over the period 2010-15	(£101.4m)	
6.2	Estimated net change in operating expenditure over the period 2010-15	£0.0m	
6.3	Materiality amount (NPV of total net change in costs)	(£100.6m)	
6.4	Contribution towards materiality threshold	(5.7%)	

Item 7: Sewer flooding – counter-claim

7.1	Estimated net change in capital expenditure over the period 2010-15		(£150.6m)
7.2	Estimated net change in operating expenditure over the period 2010-15		(£1.5m)
7.3	Materiality amount (NPV of total net change in costs)		(£163.7m)

7.4	Contribution towards materiality threshold		(9.3%)
Item 8: Deephams – counter-claim			
8.1	Estimated net change in capital expenditure over the period 2010-15		(£41.6m)
8.2	Estimated net change in operating expenditure over the period 2010-15		£0.0m
8.3	Materiality amount (NPV of total net change in costs)		(£40.3m)
8.4	Contribution towards materiality threshold		(2.3%)
Item 9: Serviceability – counter-claim			
9.1	Estimated net change in capital expenditure over the period 2010-15		(£25.2m)
9.2	Estimated net change in operating expenditure over the period 2010-15		£0.0m
9.3	Materiality amount (NPV of total net change in costs)		(£26.9m)
9.4	Contribution towards materiality threshold		(1.5%)
Overall assessment			
	Materiality amount (NPV of total net change in costs)	£491.7m	£144.3
	Thames Water turnover for 2012-13 used in materiality test	£1758.9m	£1758.9m
	Materiality test	28.0%	8.2%

Notes:

1. Additional costs are positive; savings and revenue gains are negative.
2. The discount rate used is 6.26%.
3. Materiality test – result must be greater than ±10% to trigger a change in price limits. Item 3 fails triviality test so is represented as 0% in table.
4. All monetary values are stated in September 2013 price base assumed in Thames Water's IDoK application. Totals may not add due to rounding.

1.5 Conclusions of our draft determination, implications for price limits and bills

Having scrutinised Thames Water's application, and having adjusted allowable costs as a result of our challenge, we assess that the company's claims and our counter-notices provide a net materiality position of 8.2%. In particular, costs related to bad debt that we have assumed based on the evidence to date fall below the triviality threshold because our allowance is less than 2% of combined turnover, and so are excluded from the materiality calculation.

Based on our calculations to date we consider the application as a whole does not pass the materiality threshold defined in Condition B of Thames Water's licence, which is that the total value of allowable costs does not exceed 10% of appointed business turnover.

As a consequence, we provisionally conclude there is no case to adjust the bill increase set at the 2009 price determination at this stage (that is, an increase of 1.4% before inflation). This conclusion is made on the basis of the information made available to us in time to make this determination.

All stakeholders, including Thames Water, now have the opportunity to comment on our draft determination. We ask for stakeholders' views on the challenges we have made to Thames Water's application in general and within this in particular to the challenge we have made for Thames Water's sewer flooding programme, as set out in section 10.2.1.

It is possible that further evidence could be presented that may lead us to change some of the assumptions in our draft determination. So, it is possible that, in light of further information in relation to individual items, the net aggregate materiality could pass the 10% materiality threshold and lead to an adjustment in bills in 2014-15 (which would be an increase above the PR09 allowance for that year). Our indicative analysis suggests that the increase in bills that is consistent with reaching the 10% materiality threshold would be around £9.

2. Background

2.1 Structure of this document

This document explains the detailed thinking behind our draft determination on Thames Water's application for an interim determination of price limits. It sets out:

- **the background to the interim determination process** – covering the key issues within the process and the items that we considered in reaching our draft determination;
- **our assessment of the items relevant to the interim determination** – we set out in separate chapters our assessment of each item, describing what the application included, our assessment of it, and the implications of our draft determination. We also describe our approach to the items we identified for inclusion in the process; and
- **our overall conclusions** – we draw together our analysis of all the items and set out the implications of this for the materiality calculation and the subsequent proposed impact on the company's price limit for 2014-15.

2.2 What is a draft determination?

A draft determination of an IDoK represents our view of the claims that a company makes in respect of an IDoK application. Our view is informed by the information available to us at the time. This includes information that is provided to us:

- by the company in its IDoK application;
- by the company in response to queries we have raised;
- by other companies to help inform any comparative assessments; and
- other information we have available from other sources, including the final determination at the last price review.

The draft determination provides all interested parties, including the applicant and other stakeholders, to make representations to us on the information we have used to make our draft decisions and on the draft decisions themselves.

We consider all responses to the draft determination in reaching our conclusions for the final determination.

2.3 What is an interim determination?

Condition B of Thames Water's licence allows it to apply to us for an adjustment to its price limit (an interim determination of 'K' – or 'IDoK') for changes to specific items that have a total net material impact on the company, in present value terms, of at least 10% of the company's appointed business turnover. Only non-trivial changes are taken into account for these purposes. Each individual item must be in present value terms equal to at least 2% of relevant service turnover or, if a change does not relate exclusively either to the water or the wastewater service, 2% of combined water and wastewater turnover.

The calculation of the 10% materiality threshold is set out in the licence. The triviality threshold was set out in a public letter to the water sector in England and Wales ([RD 13/10, 'Interim determinations 2010-15'](#)) on 13 October 2010. Costs need to be considered in present value terms. For operating cost and revenue changes, this present value is calculated over a 15-year period. For capital expenditure, this present value is calculated over the five years of the review period.

The specific items that can be included are either items that are not allowed for in full, or at all, in price limits (notified items – or NI) or relevant changes in circumstance (RCCs), which are defined in the licence. In summary, the RCCs for all companies are:

- **RCC(1)** – a new or changed legal requirement (each of these is also defined);
- **RCC(2)** – differences in the proceeds of land disposals from those assumed when price limits were last set; and
- **RCC(3)** – failure to achieve some output, funding for which was provided at the last price review.

2.4 What is in Thames Water's application?

On 9 August this year, Thames Water asked us to increase the limits on its prices in the last 12 months of the current period, which run from April 2014. In its application, the company said that it has experienced changes in costs to notified items or RCCs which we did not take into account when price limits were set in 2009. It said that these related to:

- increases in bad debt costs above what was allowed in 2009 price limits – specifically, additional bad debt due to the economic downturn;
- the impact of the transfer of private sewers;
- Thames Tideway land purchase costs above what was allowed in 2009 price limits; and
- increases in Environment Agency charges related to the Environmental Improvement Charge above what was allowed in 2009 price limits.

Thames Water's application also took into account two offsetting changes that it had identified as reducing its costs:

- changes to the delivery of its sewer flooding work programme; and
- proceeds from disposals of land.

Thames Water indicated that this application would add around a further 8% – about £29 – to the average household bill. Some of the increase could also affect the bills for customers of other companies who bill for wastewater services on behalf of Thames Water.

We set out our process for assessing Thames Water's IDoK application in [information bulletin \(IB\) 20/13](#), which confirmed there would be a short, technical consultation period, followed by a final decision in early November. Any permitted revisions to price limits would apply to customers' bills from April 2014

The short technical consultation period will allow us to gather sufficient evidence for the draft determination but still allow the opportunity for us to make a final determination in line with the timescales envisaged by Thames Water and indicated in its licence. Paragraph 16 of Condition B provides us with three months from the date that the application was submitted to us to reach a view on whether, and to what extent, Thames Water's price limits should be adjusted before the company can seek a reference to the Competition Commission.

2.5 Our approach to assessing Thames Water's application

An important part of the interim determination process is making sure that the proposed increases are only allowed if they are fully justified, consistent with our duties to protect the interests of consumers, and to secure that water and sewerage undertakers are able to finance the proper carrying out of their functions. This means we must satisfy ourselves over the basis of the proposals and whether they provide appropriate reasons for the requested increase in price limits. In doing so, we have

considered a number of key questions, consistent with the process set down in the licence for interim determinations.

Are the items included in Thames Water's application consistent with the terms of its licence?

We will only allow costs to be included within an interim determination if they are allowed under the terms of the licence – that is, the costs are associated with a NI or a RCC.

Are there costs associated with other qualifying items not included by Thames Water that we should consider alongside the application?

As part of the process, Thames Water's licence allows us to recover for customers funding previously allowed for outputs that are no longer being delivered or are not being delivered to the original timetable. We can consider these changes in circumstance at the same time as we assess the company's application. On 13 September, we explained that we had identified three such counter-claims that we wanted to consider in more detail as part of our determination. These related to:

- an underspend on sewer flooding;
- a significant slippage in part of Thames Water's investment programme for sewage treatment; and
- the company not adequately maintaining parts of its wastewater network.

We have since requested and received further information from Thames Water on each of these issues, and from other companies in relation to the first of these issues.

What is the appropriate net additional cost attributable to each item?

An important part of our determination is reaching a view on the costs in Thames Water's application. In particular, we must consider whether costs:

- have increased compared with the costs allowed when we set price limits in 2009; and
- could have been avoided by prudent management action and, linked to this, whether the costs were incurred efficiently.

Where we consider additional costs being included in an application to be inefficient or higher than we would expect, we challenge the costs concerned, as we do in setting price limits more generally.

In reaching a view, we need to consider Thames Water's application in the context of performance in the sector across the whole of England and Wales. This is because other companies are also affected by some of the same factors that Thames Water cites as driving the increases in some costs contained within its own application.

As a consequence, we collected information from other water and sewerage companies to help assess the application in relation to:

- the costs of dealing with bad debt;
- the impact of the transfer of private sewers after price limits were set; and
- sewer flooding performance.

This information helped us assess whether the company's claims were valid, and whether the additional costs claimed have been prudently and efficiently incurred.

Are the costs for each item 'trivial'?

The licence requires that we disregard items where the costs are considered to be trivial and only consider costs for items that are 'non-trivial'. Changes are considered to be trivial if the net present value (NPV) of the change is less than 2% of the relevant service turnover (water or wastewater) to which it, in our view, relates exclusively. Where we consider that a change does not relate exclusively to either the water or the wastewater service, we will assess triviality with reference to 2% of the combined water and wastewater turnover.

When assessing the triviality amount for the purposes of an interim determination we use the same approach as for materiality, discussed below.

Do all 'non-trivial' items, when aggregated, exceed the materiality threshold set out in the licence?

Condition B of the licence sets a materiality threshold above which we must consider the implication of Thames Water's application on price limits. If the present value of the net additional costs and revenue losses (calculated up to the start of the next charging period for capital costs and over 15 years for operating costs and revenue losses) arising from the changes is greater than 10% of the turnover, then a revision of price limits is triggered. Turnover of the appointed business is referenced to the accounting statements for the last financial year before the application (in this case, 2012-13).

This draft determination has been made on the basis of our understanding of the licence – that is, that items raised by Thames Water in its application and Ofwat in its counter-notice are considered together. On 14 October 2013, Thames Water submitted additional detailed arguments to the effect that the items in its application should be treated separately from those in Ofwat's counter-notice for the purpose of assessing whether its application meets the materiality threshold. We are currently considering those arguments.

Our duties

We have developed the proposals on this draft determination in accordance with our statutory duties which, among other things, state that we must consider how best to:

- protect the interests of consumers;
- secure that a company is able to finance the proper carrying out of its functions as a water and sewerage undertaker; and
- promote economy and efficiency.

3. Assumptions within our draft determination

In reaching a draft determination there are a number of other specific assumptions we must include within our calculations. We set these out below and explain our assumptions for each.

3.1 Discount rate

In order to determine the NPV of each item for the triviality and materiality tests and make adjustments to price limits we need to apply a discount rate. Depending on the individual licence of the company, Condition B states that the rate should reflect either the cost of debt or the weighted average cost of capital. For Thames Water, we must use a weighted average cost of capital.

For the draft determination, we have assumed the pre-tax cost of capital (6.26%) that is consistent with the cost of capital we assumed at PR09 and with the discount rate Thames Water assumed in its own application.

On 13 September, we said we were also looking at whether Thames Water has benefitted from other circumstances that are beyond its control since price limits were set. This separate examination relates to changes outside of the scope of this draft determination or the definition of RCCs in the licence (although the consequences of both sets of changes for customers' bills may need to be considered). Any future substantial effect determination under Thames Water's licence might include different assumptions on the cost of capital if relevant to the changes of circumstances being considered for such a determination. But this will not affect our determination of Thames Water's existing application, subject to our consideration of responses to this consultation.

3.2 Appointed business turnover

Calculations for determining the triviality and materiality tests require that we use the last reported turnover for the appointed business. In this case, that means we use the 2012-13 reported turnover for service and overall appointed business turnover of £1,759 million.

3.3 Price base

We use a specific published model, which reflects the process set down in the licence, to calculate the amounts due under interim determinations. Our standard approach is to use September prices for the year before price limits would change as the basis for these calculations. But because Thames Water's application has been submitted and considered before the September 2013 Retail Price Index (RPI) is published, our draft determination has used the estimate provided in Thames Water's application. We will update the calculations for actual RPI when we make our final determination.

3.4 Annual allowable amount and revised price limits

Condition B requires the determination of an annual allowable amount and prescribes the method of calculating the revised price limits. We calculate these items in accordance with Condition B using the discount rate and our judgements on the allowable costs and revenues we used in the materiality calculation.

3.5 Impact on the capital expenditure (capex) incentive scheme (CIS)

At PR09, we put in place the capital expenditure (capex) incentive scheme (CIS). This involved comparing the amount of capital expenditure we considered was needed to deliver a given set of outputs funded in the price limits we set to companies' actual costs of delivering those outputs, in order to determine the rewards and penalties that companies can then earn or pay in light of their performance. In RD 13/10, we said that any adjustments to costs through an interim determination would be reflected in the CIS adjustments we would be making for actual performance at the 2014 price review. We will apply the process we set out in RD 13/10 to the adjustments in costs made through the Thames Water determination on this basis.

4. Tideway land

4.1 The application

In March 2007, the UK Government announced that a full tunnel and treatment solution was its preferred solution to improve the river water quality of the tidal River Thames and bring the UK into compliance with the EC Urban Waste Water Treatment Directive. The Thames Tideway Tunnel is the final part of this strategic solution needed to significantly reduce untreated sewage discharges into the River Thames.

At PR09, we included allowances in price limits for expenditure for Thames Water on the London Tideway Improvements which comprised:

- the Lee tunnel from Abbey Mills pumping station to Beckton sewage treatment works;
- upgrades to five major sewage treatment works in London; and
- the Thames Tideway Tunnel from West London to Abbey Mills pumping station.

The Thames Tideway Tunnel will collect sewage from 34 combined sewage overflows along the River Thames (22 of which will be directly intercepted) and transport the flows to Abbey Mills pumping station, where the sewage will flow into the Lee Tunnel and be transferred to Beckton sewage treatment works for treatment.

In its application, Thames Water explained that it faced significant costs related to the Thames Tideway Tunnel scheme by the end of the current control period. It said that a significant component of these costs related to the acquisition of land for the scheme, where expected expenditures were materially above the amount provided for in price limits for 2010-15. Price limits for 2010-15 included £100 million for the acquisition of land for Thames Tideway Tunnel.

But given the uncertainties of future costs, we also allowed Thames Water a specific notified item in its licence, to enable its price limits to be re-opened if required to compensate it for additional expenditure incurred on the efficient acquisition of relevant land for the Thames Tideway Tunnel. The notified item reflected the fact that the cost of land acquisition in 2010-15 was likely to be substantial, but that the exact timing and cost was uncertain.

Thames Water submitted an application for a Development Consent Order (DCO) in February 2013. The application requests planning permission to build the Thames Tideway Tunnel and where necessary compulsory purchase powers, so that Thames Water can acquire the necessary land interests to deliver the project. The Planning Inspectorate is currently examining the company's DCO application and it expects that the Secretaries of State for Communities and Local Government, and for the Environment, Food and Rural Affairs will jointly issue a determination on its DCO application in September 2014. In the meantime, Thames Water has been acquiring sites by negotiation.

4.2 Our assessment of the claim

The Thames Tideway project is the UK Government's preferred solution to addressing the river quality of the tidal River Thames and is strategic in nature. It is unprecedented in terms of its scale and financing requirement compared with other investment projects that the water sector has delivered since privatisation. Given its significance, we (supported by our advisors) have had continual regulatory oversight of the project. We have reviewed and challenged the scope of work, and actual and forecast project costs, on a quarterly basis and we have confirmed with Thames Water our view of reasonable and efficient expenditure on an annual basis. Also, given the significance of the programme of land acquisition, we have reviewed the company's strategy for purchase of land, its policies and procedures; and we review each land acquisition, taking independent advice on the valuation as necessary.

As part of the agreed approach to financing the Thames Tideway project, customers will benefit from the full proceeds of any land acquired to deliver the scheme when it is disposed of. This means that while customers fund the cost of acquiring the land now, they will benefit from any sales once it is no longer needed, including any appreciation in the value of the land.

Our challenge to the application has focused on assuring that actual reported expenditure is consistent with that previously reported to us and whether the timing and cost of the acquisition of land rights expected between 2013 and 2015 is likely to take place as forecasted in the IDoK application. Mott Macdonald has supported us in our review of the forecast land acquisitions (and third party compensation) included in the application.

Thames Water's IDoK application assumes a different profile of allowed expenditure for land acquisition than was allowed at PR09. In its application, the company incorrectly assumed that the land acquisition costs were funded through price limits as incurred, when we had actually included specific allowances of £50 million a year

in 2010-11 and 2011-12. After inflation, our view of the amount already included in price limits is £0.53 million higher than Thames Water assumed in its application.

We have applied small challenges to the actual expenditure claimed by Thames Water for 2010-11 and 2011-12. In reconciling actual expenditure to that already reported to us, we identified that the acquisition costs (including fees and stamp duty) for Chambers Wharf and Keltbray (Dormay Street) were overstated in the application compared with that previously reported to us¹. So, we have reduced our view of Thames Water's efficient land acquisition costs in 2010-11 and 2011-12 by £0.047 million and £0.003 million respectively, relative to its application. We will discuss this issue with Thames Water.

Following review, we have re-profiled some expenditure contained within the application.



4.3 What we have allowed in our draft determination

Following our review of Thames Water's application, our view of unfunded land costs is £265.9 million for inclusion in the IDoK.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	0.0	0.0	30.1	201.9	40.5	272.5
Our view	34.2	-44.7	40.0	195.1	41.3	265.9
Difference	34.2	-44.7	9.9	-6.8	0.8	-6.6

¹ Email from Chris Boston dated 21 July 2011.

5. Land sales

5.1 The application

All water and sewerage companies are required to share the proceeds of disposals of protected land (as defined in the Water industry Act 1991 – or ‘WIA91’) with customers. RCC(2) allows for any material variation in these proceeds of land disposal (relative to previous price limits assumptions) to be recovered through an interim determination.

Thames Water’s application stated that proceeds during 2010-15 are expected to be higher than assumed when we set price limits. It calculated the consequential amount due to be returned to customers to be £37.4 million (the licence requires that such proceeds from land disposals are shared 50:50 between the company and customers).

The company explained that this amount comprised a mix of proceeds from:

- sales by Thames Water to independent third parties;
- sales to group companies. This included income received in relation to clawback agreements, which allow Thames Water to share the benefit of any subsequent sale of land transferred to a group company to third parties; and
- proceeds from land disposals in 2009-10 that were also not taken onto account in setting price limits for 2010-15.

5.2 Our assessment of the claim

Our review of the application focused on:

- whether sales to group companies were at preferential rates to the market rate; and
- whether Thames Water included all the income it should have.

5.2.1 Are sales to group companies at preferential rates to the market rate?

By sharing the proceeds of land sales equally between companies and customers, companies have incentives to identify opportunities to dispose of protected land and maximise the benefit to customers of these land sales. Without such a profit sharing arrangement, companies would face weak incentives, which might ultimately mean customers lose out.

But some companies transfer land to other companies within their wider group structure. While there can be benefits of this approach, we need to be sure that such transactions happen in a fair and transparent way and not at preferential rates, which would mean customers lose out.

Thames Water's application confirmed that transfers of land to group companies were subject to independent valuation. We reviewed past regulatory returns and associated audit reports, relevant Condition K approvals (sales to group companies valued at greater than £500,000 must be checked by our specialist land sales advisor), and checked relevant group company accounts.

Thames Water confirmed to us the levels at which clawbacks from land transferred to group companies are set. Our external advisor on land sales considered these to be broadly in line with expectations. So, based on our review, we had no reason to suggest that transactions did not take place at arm's length.

5.2.2 Has all relevant income been included?

We reviewed the information that Thames Water submitted and confirmed that the data included in the application is consistent with data submitted in previous regulatory returns. We asked the company to confirm that it had included all income that was relevant to RCC(2). In particular, we wanted to understand whether the company had included rental income. Regulatory Accounting Guideline (RAG) 4.04 states that rental income should be reported in the regulatory accounts as 'other income'. For price review purposes, rental income should also be reported in business plans to allow adjustments to the RCV from disposals.

Thames Water told us that its application did not include rental income. It said it did not consider such income fell within the definition of protected land (as defined in WIA91 and the licence). We are not clear of the basis on which the company considers rental income does not fall within the definition for the disposal of protected land and it did not set out its reasoning. Our view is that it does qualify and should be considered within the interim determination process.

Thames Water also told us that it reports rental income as negative operating expenditure rather than as 'other income'. We consider this to be incorrect and contrary to existing regulatory accounting guidance.

In light of this, we need to think carefully about how we account for such income in the interim determination. Thames Water has argued that its approach means that 2010-15 price limits already include an allowance for rental income. It explained that if we were to include rental income, we should only include the variation between actual rental income received and this 'allowance'.

But we cannot be sure that the company has not benefitted from reporting in this way, which is not in line with our regulatory guidance, without unwinding our original 2009 efficiency assessment. Given this, our initial view is that we should take a cautious approach that ensures customers have not lost out.

For this draft determination, we have included the full amount of rental income that Thames Water told us it had received in period (£10.7 million) and passed half of this to customers rather than offsetting this amount against an implied allowance of the form suggested by the company.

5.3 What we have allowed in our draft determination

Following our review of Thames Water's application, our view of the value of disposals for protected land is £42.6 million.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	-17.9	-3.3	-3.2	-3.3	-9.6	-37.4
Our view	-19.0	-4.2	-4.5	-4.2	-10.6	-42.6
Difference	-1.2	-0.9	-1.3	-0.9	-1.0	-5.3

Note:

Numbers may not add up due to rounding.

6. Bad debt

6.1 The application

When we set price limits in 2009, we assumed that there would be no net increase in bad debt and debt management costs above the level that companies reported in 2008-09. But, given the economic uncertainty at that time, we provided a notified item for potential increases in household debt costs.

When putting this arrangement in place, we specified that, in order to utilise this notified item for an interim price review, a company would need to provide evidence, to our reasonable satisfaction, that any net increase above the 2008-09 reported levels of bad debt and debt management costs were reasonably related to a significant deterioration in economic circumstances affecting the company's operating area relative to 2008-09. A company would also need to demonstrate to our reasonable satisfaction that it has proactively applied best practice within a coherent strategy on debt prevention and management to maximise cost-effective revenue collection.

Thames Water states that it has experienced a net increase in bad debt and debt management costs as a result of deterioration in economic circumstances in its operating area. While it acknowledged its prices are among the lowest in the sector and its customers are less deprived than average, it argued that it has suffered a disproportionate increase in economic deprivation between the calendar years 2009 and 2010, which then persisted in line with the sustained economic downturn in the wider UK economy. The company asserted that its debt strategy is in line with industry best practice and our earlier guidelines for dealing with household customers in debt.

In its application, Thames Water compared the additional household debt written off during 2010-13 to the bad debt allowed in its final determination at PR09. It forecast that over the entire AMP5 period (2010-15), it will have to write off an additional £162.3 million compared with what was assumed in 2009. The company also claimed that a proportion of this higher level of debt written off (totalling £68.0 million, as described below), which it says is being managed efficiently, was due to changes in deprivation in its operating area. It used econometric modelling to establish this link.

As a result of its econometric modelling, Thames Water's application sought to recover an additional £72.1 million from its customers (equivalent to an annual bill impact for 2014-15 for Thames Water's household customers of just over £16) associated with the additional costs it claims it has incurred over and above its PR09 allowance as a result of a significant deterioration in economic circumstances within its operating area. It calculated these costs on the basis of:

- increased household debt written off for AMP5 (the £68.0 million discussed), comprising:
 - increased household debt written off for customers billed by Thames Water (£64.7 million); and
 - increased household debt written off for AMP5 for customers billed by water only companies (WoCs) on behalf of Thames Water (£3.3 million); and
- increased financing costs for AMP5 associated with carrying these additional outstanding unpaid revenues (£4.1 million).

6.2 Our assessment of the claim

Our review focused on the following key elements of Thames Water's claim.

- **The data underlying Thames Water's claim.** We reviewed Thames Water's data on the total increased write-offs it claims it has faced during AMP5 (not just the proportion of these write-offs that it estimated are attributable to increased deprivation) and considered the accounting policies that the company adopted in respect of bad debt. We also reviewed the deprivation data Thames Water used in its econometric modelling to identify the increases in bad debt specifically due to deprivation.
- **The additional bad debt costs claimed by Thames Water.** With the help of our economic advisers, PwC, we reviewed the additional bad debt costs that Thames Water claimed as a result of the increase in deprivation. This involved reviewing the econometric model that the company used to link deprivation to the increase in bad debt underlying its claim and the results of the econometric regression analysis that forms the basis of the bulk of the additional bad debt costs claimed (£64.7 million for customers billed by Thames Water). We also reviewed the approach the company used to estimate the additional bad debt costs (£3.3 million) associated with customers billed by water only companies on Thames Water's behalf, as well as Thames Water's estimate of the additional financing costs (£4.1 million) it will incur as a result of this additional outstanding revenue.

- **The efficiency of Thames Water's bad debt management practices.** Finally, with the help of our advisers, PwC, we reviewed the evidence Thames Water submitted to support its claim that it is proactively applying best practice within a coherent strategy on debt prevention and management to maximise cost-effective revenue collection.

We consider each of these elements in more detail below.

6.2.1 The data underlying Thames Water's claim

The data underlying Thames Water's claim form the basis of the inputs for the econometric model used to estimate the additional bad debt costs it is seeking to recover due to increased deprivation. The company based its claim on two key data inputs.

- An estimated increase in total write-offs (£162.3 million) over the period 2010-15 compared with the assumed write-offs implied by the PR09 final determination (the latter was based on Thames Water's projection of the bad debt write-offs relative to our assumed level of bad debt charge).
- An estimated increase in deprivation in the Thames Water operating area (a 4.2% increase in households in deprivation as measured by the Index of Multiple Deprivation – or IMD) relative to 2008-09.

We queried the accounting policies that Thames Water adopted in respect of bad debt. In past interim determinations that have included claims on bad debt, we considered whether a company's accounting treatment provides supporting evidence of the bad debt claim. This has involved assessing a company's bad debt charge since the base operating expenditure that underpins price limits would have included this bad debt charge amount.

Water companies do not operate consistent accounting policies with respect to debt provisioning, which drives the bad debt charge. As a result, top-down accounting data on provisioning for such charges (even if reliable and representative of actual efficient relevant costs over time) are not necessarily the most appropriate basis for comparing and benchmarking the efficient costs of debt management across companies. Instead, it is more relevant to consider actual bad debt write-offs made within period. This is consistent with our approach to IDoKs in the past and, in any case, over time the level of write-offs actually made should be comparable with the bad debt provisioning charges incurred for these write-offs.

As described above, Thames Water claimed that it will have to write off an additional £162.3 million of household revenue compared with what was assumed at PR09. The company submitted that its write-offs policy did not change over the period in which it states it will incur these additional costs.

We reviewed the evidence that Thames Water submitted to support these additional write-off costs (£162.3 million). We also sought clarification from the company on the basis for estimating these additional write-off costs. On the basis of Thames Water's response, we identified issues with its calculations. The company's figures include an atypical write-off of £29.2 million in 2010-11 (around half of the total write-offs in that year); this was confirmed as atypical in KPMG's agreed upon procedures report for the June return 2011 as it related to a "one-off exercise carried out during the year to write off old uncontrollable debt". Thames Water stated in response to our challenge that this write-off related to the recession. Thames Water argued that its atypical write-off is valid to include as a basis for deriving the overall £162.3 million increase in write-offs over the 2010-15 period, for the purposes of considering its application. But it is our view that in the normal course of business, this debt would have been written off prior to 2010-11, and as such would be outside of the period being reviewed in this application.

Excluding this atypical one-off amount, recalculating the final determination allowance and adjusting Thames Water's claim for 2013-15 accordingly (the projected 2013-15 data was based on an average of write-offs for the period 2010-13), results in a reduction to the overall increase in write-offs from £162.3 million to £102.5 million. As a result, this affects the write-off data used as an input for the econometric modelling to identify the proportions of increased bad debt costs due to increased deprivation.

In the time available for the draft determination, we have not quantified the impact of this difference in total write-offs on the estimated amount of bad debt linked to the change in deprivation. As set out above, we consider the use of the company's estimate to be a conservative assumption.

On the increase in deprivation, we have considered two issues related to the deprivation data Thames Water used. These are:

- whether the company selected the most appropriate quantitative measure of 'economic circumstances' in the form of the IMD; and
- whether Thames Water selected the most appropriate method for projecting the IMD for the years beyond 2009-10.

In relation to the use of IMD, this index consists of a weighted average of a number of socio-economic indicators². Although these indicators capture a range of data associated with the economic and social conditions within an area, collectively they will not necessarily all represent changes in economic deprivation that will directly translate into a household's ability or willingness to pay water bills³. Accordingly, the use of an indicator that captures a narrower set of domains may be more meaningful and relevant in the context of economic circumstances that specifically impact on water sector bad debt.

Another issue related to the use of the IMD as an indicator of economic deprivation relevant to bad debt is that it may entail estimation bias when used as an explanatory variable for bad debt. Notably, there are two effects⁴ associated with the use of the IMD that are likely to produce bias and both are due to the fact that the IMD combines different aspects of deprivation into an overall multiple deprivation measure. Depending on the extent to which these effects impact local areas in a different way, this may produce a significant difference when the 'materially differential impact' of deprivation on bad debt is surveyed.

In relation to the approach to projecting IMD, Thames Water used projections of national GDP to estimate the IMD within its operating areas for the years beyond 2009-10. We asked PwC to review the basis of the company's projections and, specifically, whether national projections of economic growth are the most appropriate basis for estimating future deprivation within Thames Water's operating areas. PwC concluded that it may have been more appropriate to use regional growth projections (for example, for the south-east) when estimating the IMD for Thames Water's operating area although, in the absence of suitable data in the time available, it was unable to quantify the impact this would have on the projections of the IMD.

² The domains used in IMD calculation are 'income', 'employment', 'health and disability', 'education', 'barriers to housing and services', 'living environment' and 'crime'.

³ Possibly 'health and disability', 'living environment' and 'barriers to housing and services' are less relevant to the scope of bad debt estimation.

⁴ According to the description of IMD emerging from 'The English Indices of Deprivation 2010', the latter is likely to entail two measurement effects, namely the 'cancellation effect' and the 'double counting effect'. The former refers to the fact that area deprivation in one dimension can be cancelled out by lack of deprivation in another dimension. The 'double counting effect', instead, refers to the fact that the same households are represented in more than one dimension for deprivation and the position taken in the ID2010 is that "if an individual, family or area experiences more than one form of deprivation this is 'worse' than experiencing only one form of deprivation".

Both these effects are likely to be area-specific effects and thereby to entail estimation bias.

For further details on IMD please see The English Indices of Deprivation 2010, Chapter 1.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6320/1870718.pdf

We also note that measuring the impact of changes in deprivation via the IMD will not necessarily capture underlying differences in billing arrangements, such as Local Authority billing arrangements on behalf of a company, which guarantee payment for companies without the need for the company to trace and pursue the payment/debt. But it is difficult to measure accurately what impact such arrangements will have in different areas for different companies and so an appropriate measure of deprivation may be considered a reasonable proxy measure of a household's ability or willingness to pay water bills in the absence of being able to take account of such factors.

In summary, on the basis of our review of the data underlying Thames Water's claim, we conclude the following.

- **Thames Water has over-estimated the total increase in write-offs over the period 2010-15 by approximately £60 million** relative to its bad debt costs assumed at the PR09 final determination. We consider that the net increase in household write-offs that Thames Water has experienced is £102.5 million rather than £162.3 million. We have not included the impact of this over-estimation on the additional bad debt costs the company is seeking to recover from its customers for the draft determination.
- **Thames Water has used a measure of economic deprivation (the IMD) which includes indicators that are less likely to have an impact on a household's ability/willingness to pay its water bills.** The company has also projected the IMD (in years for which data are unavailable) on the basis of national GDP, whereas it may have been more appropriate to use regional projections (for example, for the south-east). But, in the absence of data, it is not possible to quantify the impact such a more refined approach would have on the estimates arising from the econometric modelling.

6.2.2 The additional bad debt costs claimed by Thames Water

Thames Water's estimate of the additional bad debt costs it has claimed have arisen as a result of the change in economic deprivation as derived from an econometric model. The model was used to test the relationship between increases in economic deprivation levels and increases in bad debt levels. The company derived two alternative specifications of a model, but only used one as the basis of its application.

This econometric modelling generated an estimate of the increase in write-offs for Thames Water-billed customers due to increased deprivation of £64.7 million, used as the basis for its application. This figure was derived on the basis of the coefficient arising from the econometric model. This derived coefficient suggests that for every 1 percentage point increase in deprivation (measured by the IMD), Thames Water would write-off an additional £4.43 of bad debt on average per household. The IDoK application estimated that the IMD increased by 4.2 percentage points over the relevant period 2010-15. So, with an average household customer base of 3.43 million, the company's application resulted in an estimated increase in bad debt for Thames Water-billed customers of £64.7 million⁵ as a result of increased deprivation.

We asked PwC to review the economic model submitted with Thames Water's application to understand better the robustness of the relevant coefficient (yielding the £4.43 per household figure discussed above).

Based on further information supplied by Thames Water, PwC noted that data from only a sub-set of 53 local authorities had been used in the regression modelling work, due to issues with the data in a further 45 local authorities, which had therefore been excluded from the estimation process. Thames Water indicated that these issues included ones of geographic mapping. These data issues meant that local authorities in Thames Water's area, for example, had been excluded, while there were no billed properties shown for Islington, and no bad debts reported for a significant number of local authorities. PwC noted that such data issues cast doubt on the reliability of any regressions carried out with them.

PwC also conducted the following econometric tests on the Thames Water model.

- **Ramsey RESET test for omitted variables.** This test considered whether the estimates generated by the model used to test the relationship between deprivation and bad debt could be biased by excluding other relevant explanatory variables. Bias in estimates arises if the model omits a variable that is correlated with the other explanatory variable(s) – in this case, the only explanatory variable is economic deprivation. According to the results of this test, the model appeared to suffer from such omitted variable bias. Accordingly, estimates obtained are not reliable.

⁵ The original estimate (£63.5 million, which is derived by multiplying £4.43 by 4.2 percentage points by 3.43 million, with some rounding) is expressed in 2011-12 prices. When converted to 2013-14 prices, the estimate is equal to £64.7 million.

- **Specification test.** This test is based on the idea that if the model is properly specified, one should not be able to find any additional predictors that are statistically significant except by chance. According to the results of the test, the model is mis-specified. Again, this implied mis-specification of the model implies that the estimated coefficients derived from it are not reliable.
- **Contemporaneous correlation test.** This test is used to verify whether the residuals are correlated across the different units of analysis. The model failed the test in both of the two variant specifications derived by Thames Water. This tells us that the model has a cross-sectional dependence problem which means that the standard errors generated by the model are not reliable. (But whether the coefficients are biased or not will depend on the type of cross-sectional dependence, which it has not been possible to establish.)⁶
- **Test for time-fixed effects and Wald test for heteroskedasticity.** According to the results of the former test, it appears Thames Water adopted a sensible approach in using a fixed effects model. But the model failed the Wald test for heteroskedasticity, meaning that the estimated coefficients are not reliable.

In summary, PwC identified a number of concerns with the specification of the model and areas in which the robustness and reliability of the model could be potentially improved. Given these results, PwC concluded that these anomalies, and the concerns with the input data used for the modelling, make the resulting estimates from the model that Thames Water used unreliable and, as such, alternative model specifications should be considered.

PwC also noted that an important feature of the dataset used in the econometric analysis is the high level of heterogeneity in bad debt levels that exists between the various local authorities in Thames Water's area that were used for the modelling. For example, a local authority like Newham had total debt write-offs per household billed of £109.70 over the period 2006-13 while Windsor and Maidenhead had figures of £14.00 over the same period.

⁶ Given the way the test has been implemented in Stata, there is no way of defining the nature of the cross-sectional dependence we are dealing with.

In such a context, PwC concluded that using an estimation approach such as a quantile regression approach – which academic literature indicates is more robust to the presence of such outliers⁷ – is a sensible alternative modelling approach.

PwC applied this alternative estimation approach to the Thames Water model specification. This resulted in a coefficient of £0.76 compared with Thames Water's modelled coefficient of £4.43. This implies that, based on the PwC quantile regression, for every 1 percentage point increase in deprivation (measured by the IMD), Thames Water would write-off an additional £0.76 of bad debt per household. This results in a much reduced estimated increase in bad debt of £11.1 million (in 2013-14 prices) compared with Thames Water's estimate of £64.7 million as a result of the increased deprivation. This change in coefficient does not result from a change to the model equation used in the model (of the form which PwC identified would ideally be needed to address concerns with its basic specification). Rather, it is generated by using an alternative quantile regression approach, which has been argued to be more robust in the circumstances, given there is heterogeneity between local authorities which leads to the presence of outliers in the dataset and issues of non-normality of the error terms.

The significant change in coefficient arising from the use of a quantile regression demonstrates the significant uncertainty associated with the additional bad debt costs that Thames Water estimates it will incur as a result of the change in economic deprivation in its operating area.

Concurrent with its review and testing of the economic model submitted with Thames Water's application, we also asked PwC to explore the possibility of an alternative model specification which would seek to address the issues associated with the model that Thames Water used. We asked for this further examination in the context of the wider relevance of PwC's findings for our review of price limits in the next control period.

⁷ PwC advised us that under this alternative quantile regression approach, which has been identified to be robust to the presence of outliers, the standard errors are by default asymptotically valid under heteroskedasticity and misspecification.

Such a new model specification would ideally be based on the wider water sector data set that the water companies provided in response to our request for information. Work is continuing on the development of that model specification – although any application of such an alternative to Thames Water would need to reflect testing and development, including with additional data relevant to the company. We have not yet managed to apply these data to an alternative model specification. So, we have based our draft determination on PwC's quantile regression approach, using Thames Water's existing model specification and using Thames Water's existing data.

We will finalise our determination having considered responses to this consultation. For example, Thames Water has provided us with a draft of new work that it has commissioned which indicates that the increase in bad debt costs has been much higher as a result of increased economic deprivation than might be suggested by our alternative quantile regression approach using the data in its application. We will consider additional evidence in this area in reaching our final determination.

The increase in bad debt estimated via Thames Water's econometric model relates only to those customers that the company itself bills. There are also 1.8 million Thames Water wastewater customers that WoCs bill on behalf of Thames Water. The company used a different approach to estimate the increase in bad debt associated with increased deprivation for these customers. This is because it did not have disaggregated data for these customers which would have facilitated the type of econometric analysis described above. Instead, a bad debt figure was estimated for these WoC-billed customers through the following steps.

- Data from Thames Water on the increase in total write-offs over the period 2010-15 (split by households billed by Thames Water and households billed by WoCs on behalf of Thames Water) was compared with the company's bad debt charge at PR09.
- The share of total write-offs for households billed by Thames Water that was estimated to be attributable to deprivation (based on their econometric modelling) was calculated. This percentage figure was applied to the total write-offs for households billed by WoCs on behalf of Thames Water to generate an estimate of the write-offs attributable to deprivation (£3.3 million).

We consider that a more reliable estimate of the additional bad debt costs associated with Thames Water's WoC-billed customers could have been established had the company obtained more detailed data for these customers. But, in the absence of such data, we applied the same approach that Thames Water used to derive a revised estimate based on changes to total write-offs (discussed earlier) and our revised estimate of bad debt attributable to deprivation (£11.1 million) resulting from our updated quantile regression analysis. In summary, this reduces the estimate from £3.3 million to just over £500,000 in line with the reduction of the estimate for Thames Water-billed customers from £64.7 million to £11.1 million.

Finally, Thames Water's claim includes additional financing costs of £4.1 million as a result of carrying additional outstanding revenue. Based on the revised bad debt figures presented above, we have pro-rated the financing costs the company reported to generate a new estimate of the associated additional financing costs of £0.7 million.

In summary, on the basis of our and PwC's review of the additional bad debt costs claimed by Thames Water, we have reached the following conclusions.

- **The econometric model on which Thames Water based its estimates of the additional bad debt costs due to increased deprivation generated unreliable estimates.** The model failed a number of relevant statistical tests, which rendered the resulting estimates unreliable.
- **As a result of issues with the econometric model that Thames Water used, we conclude that the additional bad debt costs for Thames Water-billed customers have been overestimated at £64.7million and a reasonable alternative estimate, using the evidence available, would be £11.1 million.** This revised estimate results from a quantile regression approach to control for outliers in the data.
- **Applying these updated estimates to the approach that Thames Water used resulted in an associated fall in the additional bad debt costs associated with WoC-billed customers from £3.3 million to around £0.5 million.**
- **Finally, applying these updated estimates to the approach that Thames Water used resulted in an associated fall in the additional financing costs associated with these outstanding revenues from £4.1 million to £0.7 million.**

Overall, this suggests that a revised estimate of the additional bad debt costs Thames Water has experienced (additional write-offs and additional financing costs) as a result of the increase in deprivation is £12.3 million rather than £72.1 million.

This revised estimate of total additional bad debt costs due to deprivation is below the sum of the relevant triviality thresholds for the affected water and wastewater services.

As referenced above, we are continuing to examine possible refinements to model specifications in the context of our work for the forthcoming price review, drawing on significantly more data that have been made available from a range of water companies. But this further development work will require the use of additional data, which we have not been able to collect (including from Thames Water) in the time available for this draft determination. Using the information that Thames Water has provided to support its application to date, we do not think there is sufficient statistical evidence to support the company's claim of a non-trivial increase in its bad debt due to increases in deprivation levels in its area.

6.2.3 The efficiency of Thames Water's bad debt management practices

Finally, we reviewed the evidence Thames Water presented to us on the efficiency of its debt management practices – specifically, the extent to which it is proactively applying best practice within a coherent strategy on debt prevention and management. We asked PwC to comment on the evidence that Thames Water in this area (including reports it supplied in support of its claim).

PwC identified 21 criteria by which it would generally assess bad debt management best practice for companies. Against these criteria, it assessed Thames Water's bad debt management practices:

- in the current control period relevant to its application;
- against its water sector peers; and
- against cross-industry peers.

The assessment findings are set out in the table below.

PwC highlights three particular areas in which Thames Water has an opportunity to improve relative to its water sector peers, as well as others where it has an opportunity to improve relative to best practice from beyond the water sector.

The first relates to what it calls ‘decisive recovery action’, which relates to the action water companies take to trace and pursue outstanding payments. Some water companies will not write off absconded debtors and will periodically run a trace for these debtors on a ‘no find no fee’ basis. Thames Water’s IDoK states that debts are written off when “collection methods have been exhausted”. There is no evidence presented in the submission or the TDX report that accompanied the submission that suggests Thames Water is carrying out the same level of active tracing as some of its peers. The evidence that PwC reviewed suggests that Thames Water could be doing more to trace and pursue such debtors.

The second relates to the consequences of non-payment for customers, with some water companies sharing data with credit bureaux, which impacts the credit rating of delinquent debtors. On the basis of the evidence provided, Thames Water does not currently follow this practice. TDX does highlight that this is an activity that Thames Water plans to introduce in the future, along with a new debt management system.

The final point is that by writing off debt too soon and not sharing data with credit bureaux, Thames Water is sending out a message to its customers that that “there may be no consequences for non-payment”.

PwC’s assessment indicated areas that are ‘comparable to best peers’ based on the practices adopted by Thames Water (the ‘what’) without being able to make a value judgement of how well these are being implemented (the ‘how’). An assessment of the ‘how’ may identify further gaps to best practice.

Comparable to best water sector peers	Comparable to best cross-industry peers	Insufficient information provided to compare to water sector peers	Insufficient information provided to compare to cross-industry peers	Opportunity to improve compared to water sector peers	Opportunity to improve compared to cross-industry peers
Early segmentation	Tariffs	Accurate data – KYC	Accurate data – KYC	Decisive recovery	Early segmentation
Billing and payment frequency	Realistic repayment schedules	Passive payment methods	Passive payment methods	Persistent/unyielding	Billing and payment frequency
Proactive contact	Direct DWP	Nudge marketing	Nudge marketing	Consequence	Optimised payment
Tariffs	Bursary schemes	Sharing success stories	Sharing success stories		Clarity of purpose and direction
Optimised payment	Optimised timescales	Early identification and intervention	Early identification and intervention		Decisive recovery
Realistic repayment schedules		Clarity of purpose and direction	Relevant debt escalation		Persistent/unyielding
Direct DWP		Relevant debt escalation			Consequence
Bursary schemes					Proactive contact
Optimised timescales					

In summary, on the basis of PwC's review of the evidence Thames Water presented to us on the efficiency of its debt management practices, we conclude that although **Thames Water appears to have made good progress in some areas** of bad debt management – and, indeed, compares well to its peers in some areas, **there are a number of areas where it could have been doing more** to manage the impacts of the recession and changing patterns in its customer base on its bad debts.

6.3 What we have allowed in our draft determination

We conclude that the additional costs Thames Water is seeking to recover from its customers (£72.1 million) for the bad debt it says it will incur over the period 2010-15 due to an increase in economic deprivation are based on unreliable estimates. We identified:

- potential issues with Thames Water's accounting data;
- issues with the econometric model that the company used; and
- areas where it could have been doing more to manage the impacts of the recession and changing patterns in its customer base on its bad debts.

We conclude that, on the basis of the evidence made available to us in the econometric model, the most appropriate estimate of the additional, efficiently-managed bad debt costs Thames Water will incur over the period 2010-15 as a result of the increased deprivation within its operating area is approximately £12.3 million. This assessment has not taken account of the potential issues arising with the accounting write-offs or the issues associated with management of bad debt. We may need to review these issues further once Thames Water has provided us with additional information on bad debt. Nevertheless, our assessment is this is considerably lower than the £72.1 million of costs Thames Water is seeking to reclaim from its customers, and is below the triviality threshold required for considering the increase for an increase in price limits in the context of an IDoK application.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	12.5	19.1	15.0	13.2	12.3	72.1
Our view	2.1	3.4	2.4	2.2	2.2	12.3
Difference	-10.4	-15.7	-12.6	-11.0	-10.1	-59.8

7. Environment Agency charges

7.1 The application

At PR09, uncertainty about future increases meant that we were unable to include relevant allowances for the Environmental Improvement Unit Charge (EIUC) component of abstraction charges in price limits. So, we put in place a notified item for increases in the EIUC component of abstraction charges above RPI.

The Environment Agency charges water companies and other abstraction licence holders to fund its costs of managing water resources, a part of which is the EIUC. This covers the compensation costs of the Environment Agency's Restoring Sustainable Abstraction programme.

Thames Water states that the Environment Agency increased its charges by 10% a year in the first three years of this price control period, and that it intends to continue this trend until 2015. In our final determinations at PR09, we assumed that the charges would rise by RPI.

The company has based its claim on invoiced amounts for the first four years of the period and assumed the charge remains constant in real terms in the final year. So, it has compared its allowance in existing price limits of £4.2 million with its actual and forecast costs of £22.2 million to arrive at a claim for the IDoK of £18 million.

7.2 Our assessment of the claim

We have reviewed the Environment Agency abstraction charges schemes for the relevant years and note that the EIUC element of charges only applies to those of Thames Water abstractions in the Environment Agency's Thames region.

We asked Thames Water to confirm how it had assured itself that amounts included in the IDoK application were correct. The company set out the procedures it had carried out to ensure the IDoK claim matches invoices that the Environment Agency provided, and the further assurance it had carried out specific to the IDoK.

We are content that the approach that Thames Water took was generally robust. But we do have some concerns about the robustness of the company cross-check procedures, which informs our assessment of the claimed 2013-14 and 2014-15 charges.

Subsequent to its application, Thames Water has told us that the Environment Agency has informally notified the company that it had underestimated the EIUC charge for 2013-14 by not including the 2013-14 increase, and that the Environment Agency plans to send Thames Water a further invoice in future. Thames Water indicated to us that this was identified as part of its annual checking of the Environment Agency invoices. Thames Water has told us it followed this up with the Environment Agency, but has not submitted evidence from the Environment Agency to support this.

Taking into account both the lack of formal invoicing notice from the Environment Agency, and that the company had an earlier opportunity to correct this for itself in respect of the application to recover relevant costs, we have proposed not to include any amounts relating to the expected 2013-14 increase in the EIUC charge in this determination.

Nevertheless, offsetting this, we consider that the company should actually be recovering more in the application than it claimed. This is because we consider that we had actually allowed less in existing price limits than Thames Water has assumed, after adjusting for the catch up and continuing efficiency allowances made in setting the existing price limits.

7.3 What we have allowed in our draft determination

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view	1.7	3.1	4.4	4.4	4.4	18.0
Our view	1.8	3.2	4.5	4.4	4.4	18.3
Difference	0.1	0.0	0.1	0.1	0.1	0.3

Note:

Numbers may not add up due to rounding.

8. Private sewers

8.1 The application

At PR09, we asked companies to exclude costs related to the transfer of private sewers from their final business plans. This was because there was uncertainty on the timescale and scope of the transfer at the time we set price limits. In our final determinations, we confirmed that companies would be able to:

- seek recognition of significant financial costs arising from the transfer using the logging up process at the next price review; or
- include a claim using the interim determination mechanism in the licence (under the provision for relevant changes of circumstances related to changes in law).

In the event, the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 came into effect on 1 July 2011. Schemes made under this legislation provided for, with certain minor exceptions, the transfer of the ownership of private sewers and lateral drains that were connected to the public sewerage system on 1 July 2011 to water and sewerage companies. The transfer occurred on 1 October 2011.

For Thames Water this legislation resulted in the transfer of an estimated 40,000 km of sewers and lateral drains into its ownership, enlarging the length of its sewer network by roughly 60%.

In its application, Thames Water claimed that it was impacted by the transfer of private sewers more than most other companies when the ratio of length of private sewers adopted (related to relevant activity costs) was compared with sewerage revenue. It claimed this was because of the relatively larger proportion of customers receiving a sewerage service only (due to the proportion of customers that are served by water only companies in its region) combined with the relatively lower sewerage prices compared with other companies in the sector.

In its application, Thames Water identified its preparatory activities for the transfer, including:

- stakeholder engagement;
- strategy development;
- modelling;
- procurement of a service contractor;
- investment in information systems; and
- customer communications.

It assessed the additional cost of these activities as being £9.5 million in the period 2011-15.

Thames Water also considered its activity costs following transfer for its application. It provided some evidence that the number of additional blockages experienced by the company over the period was consistent with blockage rates that other companies reported. It estimated that its additional operating expenditure, including that associated with such additional blockages, would be £31.9 million over the period 2011-15, with almost half of that being the direct costs of dealing with the blockages concerned. It also assessed additional capital expenditures associated with general repairs arising from the transfer, principally from addressing sewer collapses, as being £21.6 million over the same 2011-15 period.

And Thames Water identified relatively minor additional costs, associated with additional customer service activity, data management and preparations for the upcoming transfer of private pumping stations, amounting to £3.0 million in total over the same period.

In all, the company's claim amounted to £66.2 million over the 2011-15 period, of which £40.1 million was operating expenditure and £26.1 million capital expenditure.

Thames Water claimed that the recovery of these additional expenditures in customers' bills represented good value for customers because it was now repairing private sewer infrastructure more cheaply than customers would have been able to themselves had the transfer not taken place. The company has quoted an average cost of [REDACTED] per blockage clearance associated with the transfer, which it considers to be below commercial rates.

8.2 Our assessment of the claim

We have considered the eligibility of these expenditures for inclusion in the IDoK. Our review has involved both an examination of the evidence that Thames Water presented and comparative information from the sector that we had already collected as part of the August 2013 data submission for the 2014 price review. We have also sought additional evidence through queries and meetings with Thames Water.

Our assessment has considered whether the activities and costs in the application are:

- reasonably attributable to the transfer of private sewers;
- wholly additional to activities on the sewerage network carried out prior to the transfer;
- appropriately substantiated by the evidence presented; and
- economic and efficient.

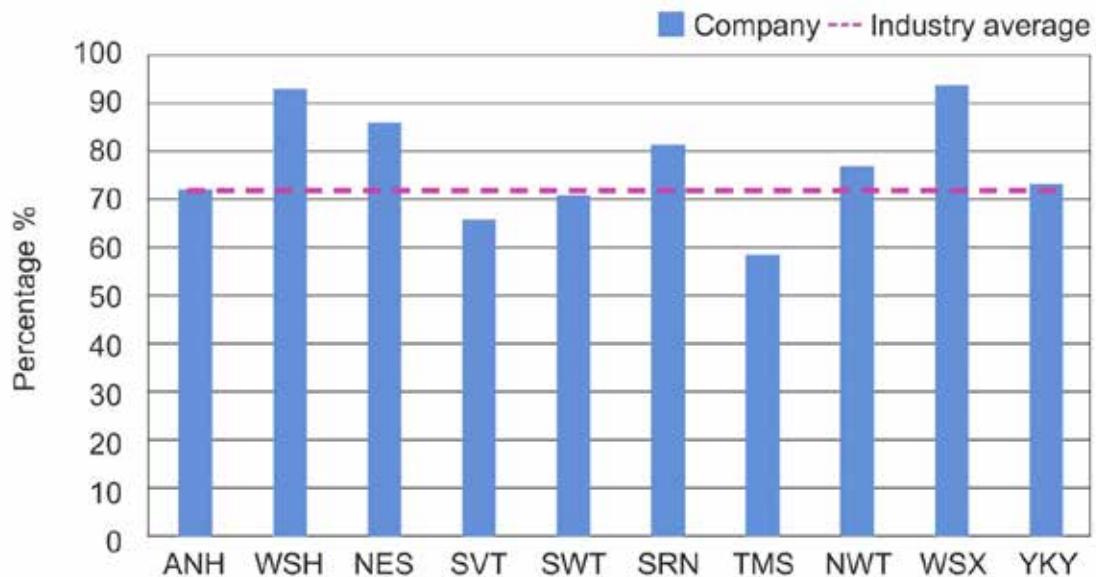
We set out our assessment against each of these questions in the following sections.

8.2.1 Increase in the asset base arising from the transfer of private sewers

We consider that the 60% increase in the asset base by sewer length is less than any other water and sewerage company (see figure 1 below). This is due to the fact that the London Government Act 1963 ensured there would be no private sewers serving properties in inner London built before 1 April 1965. This meant that some of the transfers affecting other companies in 2011 were not replicated in the London area served by Thames Water.

We have carried out comparative analysis of the data that companies reported to us in Table 5 of the August 2013 data submission. These data indicate that the levels of actual customer and asset activity on which the application has been based have been broadly in line with industry norms given the extent of the asset base transferred on 1 October 2011. Thames Water's activity rates implied by the August data are also similar to those previously experienced by the company on its public sewerage network as it existed before the transfer. Figures 1, 2 and 3, derived from Table 5 of the August 2013 data submission, show the blockage, sewer flooding and collapse rates for all ten water and sewerage companies.

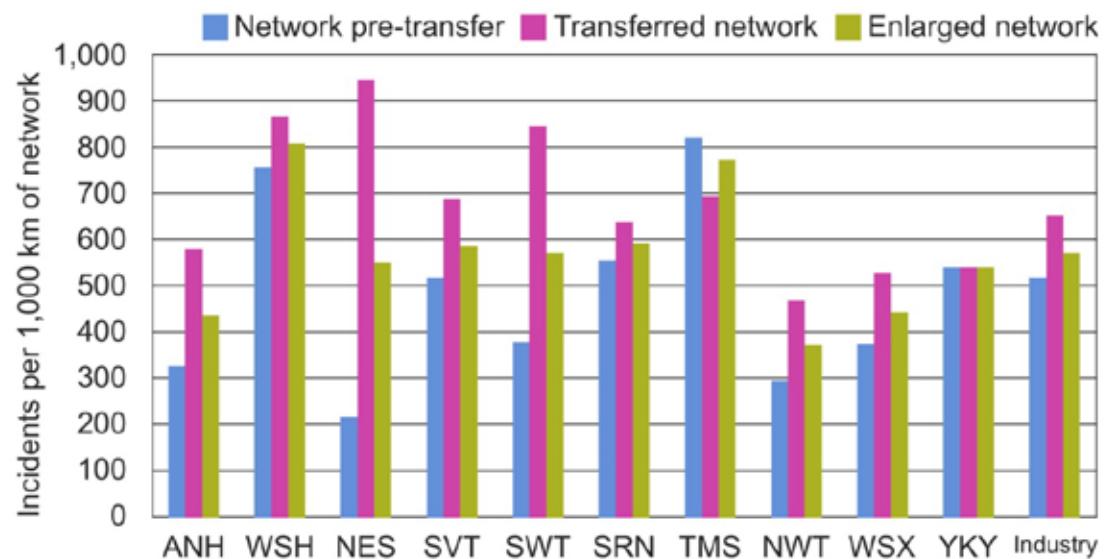
Figure 1 Estimated increase in network length resulting from transfer of private sewers and lateral drains



Source:

Table 5 0 August data submission 2013. Incidents are based upon 2012-13 performance.

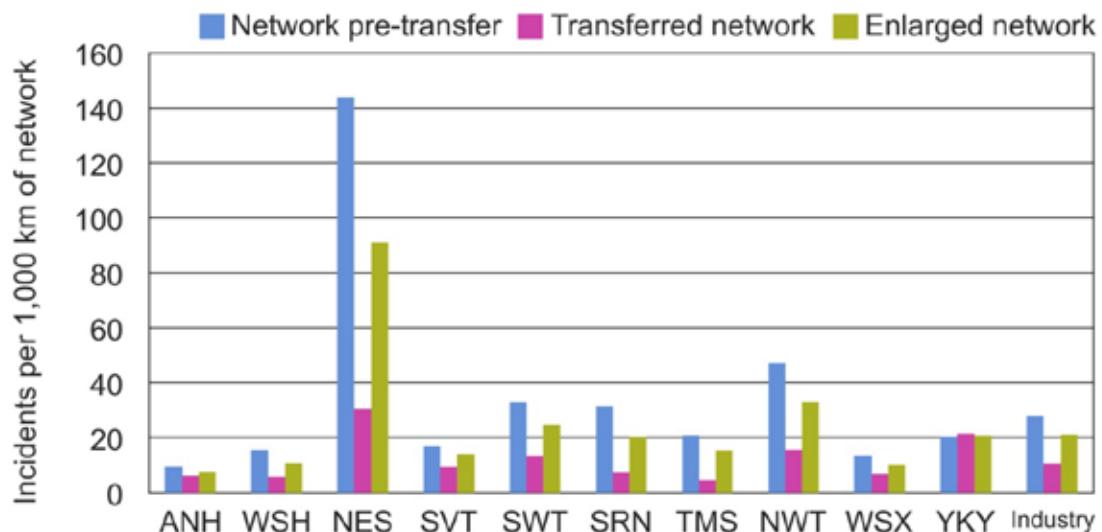
Figure 2 Blockage rates in pre-existing, transferred and combined networks



Source:

Table 5 0 August data submission 2013. Incidents are based upon 2012-13 performance.

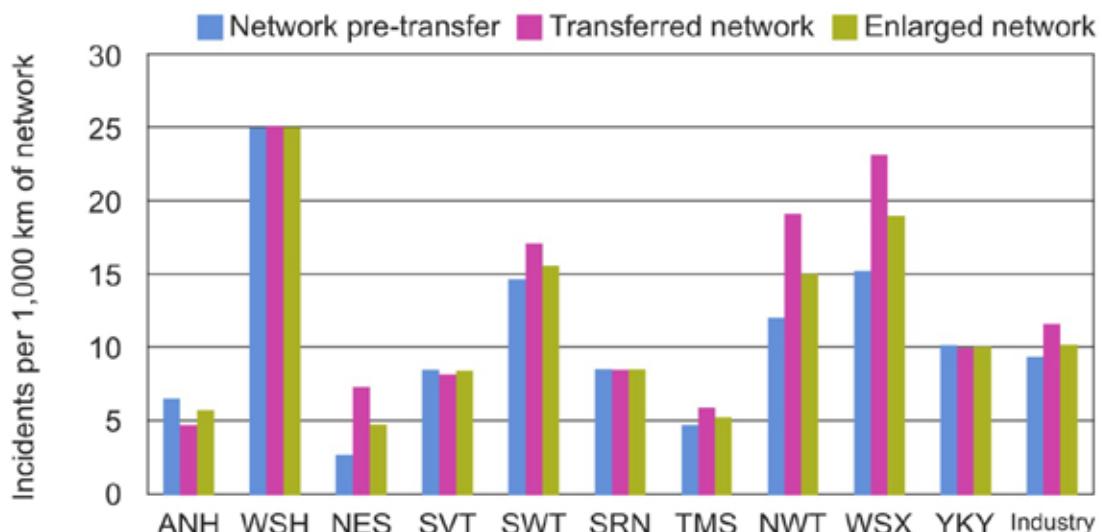
Figure 3 Internal sewer flooding incident rates in pre-existing, transferred and combined networks



Source:

Table 5 0 August data submission 2013. Incidents are based upon 2012-13 performance.

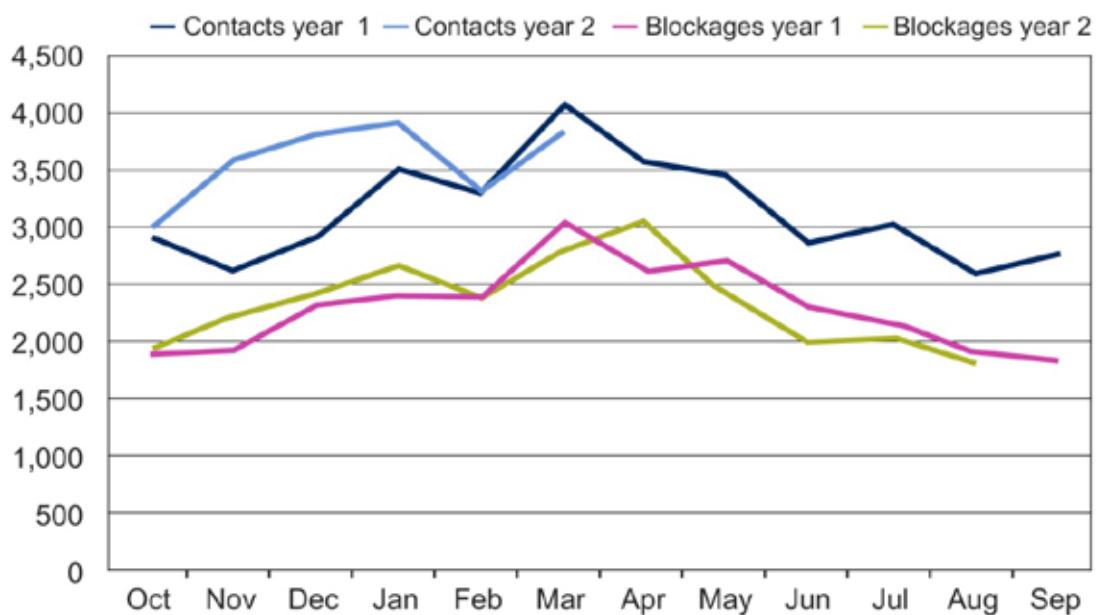
Figure 4 Collapse rates in pre-existing, transferred and combined networks



With regard to forecast activity for 2013-14 and 2014-15, Thames Water has assumed the same levels of activity as it experienced in the first full post-transfer year (2012-13). The company claims this is a conservative assumption, as it considers the levels of activity are in fact likely to rise over time, in line with increasing customer awareness of the adoption of private sewers.

To assess Thames Water's claim that this is a conservative assumption, we have examined customer contact levels related to private sewers transferred, as well as data on blockage numbers, which tend to track the numbers of customer contacts. These are presented in figure 5 for the first year following the adoption of private sewers and the second year following adoption to the extent that data is available. Figure 5 demonstrates a relatively constant flow of customer contacts (and blockages) with no apparent increase (beyond a seasonal pattern that we might expect to be weather related).

Figure 5 Customer contacts and blockages by month



So, we are not persuaded by the proposition that increased customer awareness will lead to increased activity rates and hence costs in the rest of the control period. In our view, any increase in activity over time is likely to be offset by reductions in work once the backlog of maintenance work and operational problems that had built up in the period preceding the transfer is addressed.

But, overall, we consider that Thames Water's assumption regarding the stability of workload for the remainder of AMP5 is reasonable and therefore have based our assessed activity rates for 2013-14 and 2014-15 on the reported 2012-13 figures. However, we have identified a number of issues with the evidence presented to us in Thames Water's application, and detail our challenges below under each of the four headings set out above.

8.2.2 Are costs reasonably attributed to the transfer?

Paragraph 14.2 of Condition B is clear that only those costs which are reasonably attributable to the relevant item (in this instance those arise directly from the transfer of private sewers) are eligible for inclusion in an interim determination. In those areas where the company has provided robust and detailed evidence, we are satisfied that the private sewer costs claimed by Thames Water generally meet this criterion and so qualify for consideration. But there were three minor exceptions, where we considered the application included costs which should not have been included on this basis.

1. We queried some of the operating costs included in the application. Thames Water told us that the costs it had claimed for an information systems upgrade, related to its preparatory and mobilisation activities for the transfer, were in part for the “support and maintenance of the legacy systems for our Waste Network” but noted in its IDoK application that it “carried out only those changes to [its] existing systems that were essential in ensuring [they] could fully accommodate the transfer”. It is not clear that these costs are wholly attributable to the transfer and whether instead some would have been incurred even if the transfer had not taken place. So, we have made a downward adjustment of £0.71 million to the operating costs claimed, based on the ratio by length of the legacy to transferred network.
2. Thames Water’s claim for future additional operating costs in 2014-15 included £0.62 million for costs related to “additional developer service activity”. In response to our query on these costs, Thames Water confirmed this forecast cost was driven by [section 42 of the Flood and Water Management Act 2010](#) rather than the transfer of private sewers. So we consider this cost is not ‘reasonably attributable’ to the relevant item and have excluded it. In any case, as the company has noted, Defra has recently confirmed that the introduction of section 42 of the 2010 Act and mandatory build standards has been delayed, and will now not take place on 1 April 2014 as had been assumed for the purposes of the IDoK application.
3. Thames Water included costs associated with additional resources to enable the accurate reporting of private sewers performance data, and to ensure that additional activities and costs were assigned correctly. While we accept that quality assurance is a necessary function, our view is that a proportion of these costs were for a data correction exercise that would not have been necessary but for pre-existing shortcomings in Thames Water’s management information systems and business processes. As such, these costs cannot all reasonably be attributed to the transfer of private sewers. Accordingly, we

have excluded £0.2 million of operating expenditure in respect of the cost of the data improvement exercise carried out by Thames Water's specialist consultant, and the associated audit costs.

Overall we have excluded £1.53 million of operating costs from the application on 'reasonable attribution' grounds, as it is our view that Thames Water has not been able to provide sufficient evidence that these costs are properly attributable to the relevant item.

Attributability challenge	Capex 5-yr total	Opex 5-yr total
Information systems upgrade		-£0.71m
Additional developer service activity		-£0.62m
Data improvement study		-£0.2m
Our view		-£1.53m

8.2.3 Are costs the net additional costs associated with the transfer?

Paragraph 14.2 of Condition B sets out that, when determining an application for an interim determination, any offsetting savings resulting from the relevant item are eligible for consideration as well as the gross costs incurred. Thus, it is the net additional costs arising from the transfer of private sewers that need to be taken into account.

From our discussions with Thames Water and other companies it is clear that even prior to the transfer of private sewers, companies had incurred costs in dealing with customer contacts about drainage problems in pipework that was not owned by the company.

A proportion of these contacts would be resolved at the point of contact, often by call centre staff, without the need for a maintenance crew to visit the customer's premises to establish the position. But in some instances a site visit or investigation was required to establish whether the company was responsible for addressing the problem.

With its application, Thames Water submitted a study carried out by UKWIR in 2013 on the 'Impact of transfer of private sewers and drains: final report'. Appendix C of this report cites an earlier UKWIR study, from 2002, which reported that:

"Where blockage calls are well screened at first contact, the proportion of attended visits where the blockage subsequently turned out to be in the private system was typically in the order of 13 to 17 %",

but

"Where blockage calls were not well screened, up to 50% of all visits subsequently turn out to involve private systems."

It is clear from its response to a query that although Thames Water has always incurred such costs, the company has not excluded from its application costs incurred in activity associated with blockages that are attended but found to be on the part of the drain within the curtilage and so not within the scope of the transfer. Nor has the company netted off the costs of dealing with the customer contacts that used to trigger abortive activity before 1 October 2011 (because they concerned problems with private sewers or lateral drains) but which are no longer abortive since the transfer of these assets to the water and sewerage companies.

Of the 94,000 first customer contacts on blockages that Thames Water told us it had in 2010-11⁸, we estimate that approximately 10,000 would have resulted in abortive customer visits due to the blockage turning out to be in the private system. We have calculated this on the assumption that:

- the visit/customer contact ratio implied by the data reported by Thames Water in Table 5 of the August data submission has not changed since the transfer, and
- Thames Water is at the efficient end of the UKWIR range for call screening at first contact – that is, only around 13% of site visits turn out to be abortive because the blockage is not on the public network.

Accordingly, we have excluded the costs associated with these visits from our calculations for the draft determination, based on unit cost information that Thames Water provided in its application. In total, we have excluded £1.75 million of direct operating expenditure from the claimed total, on the basis of 10,000 visits per year for 3.5 years at a unit cost of £50 per visit.

We have also assumed the direct operating costs that Thames Water has included for 'Other Repairs and Maintenance' is subject to similar issues as blockages.

⁸ Thames Water presentation to us on 11 March 2011.

Accordingly, we have also reduced claimed costs in this category in the same proportion to retain a consistent approach. This has reduced the additional operating expenditure to be determined by £0.97 million.

Also, we have adjusted a proportion of the associated on-costs (entitled 'Management fee' and 'Internal operational resource') using the same proportion which the relevant reductions in 'Blockages' and 'Other Repairs and Maintenance' costs represented of the total claimed direct operating costs of activities. This reduced operating expenditure claimed by a further £0.89 million.

Overall, we have excluded £3.61 million of operating costs from the application as our view is that these costs were already being incurred prior to the transfer of private sewers, and hence should be netted off the gross additional costs being claimed.

Additionality challenge	Capex 5-yr total	Opex 5-yr total
Customer contacts and blockage visits managed prior to the transfer of private sewers		-£1.75m
Customer contacts and other repairs and maintenance visits managed prior to the transfer of private sewers		-£0.97m
Management fees/internal operational resource for the above		-£0.89m
Our view		-£3.61m

8.2.4 Are costs adequately explained/substantiated by the evidence presented?

We have found Thames Water's explanation of many of the costs that comprise the private sewers element of its application to be satisfactory. But we consider there were areas of the application where the costs presented were not fully substantiated by the evidence presented.

In these instances, we have not been able to conclude that the company has demonstrated a full understanding of the costs it has incurred or the activities that have led to it incurring those costs, in the way we would expect from a company seeking an increase in price limits through the IDoK process. This apparent lack of understanding calls into question whether the costs have been prudently and efficiently incurred.

Two areas exemplify these concerns.

First, we have had difficulty in reconciling the unit cost of dealing with blockages implied by blockage numbers in Thames Water's August data submission with the unit cost that the company claimed in its IDoK [REDACTED]. Depending on whether one assumes the around 28,000 annual blockages reported in the August data submission, or the higher figure of 35,750 blockages and other blockage related activities that Thames Water later referred to in its response to our queries on the IDoK application, the unit cost implied by the £[REDACTED] million Thames Water reported as being the outturn cost in 2012-13 is [REDACTED] per blockage. This is more than double the [REDACTED] claimed by Thames Water for the most straightforward of jobs (this is even before the addition of any on-costs for management fees or internal operational resources, which would increase the total unit costs to [REDACTED]). On the basis of the evidence presented it is difficult to accept Thames Water's claim that it is delivering "good value" for customers and "on average, saving customers' money through framework contracts".

For us to consider such costs for inclusion in our determination, we would expect them to be appropriately substantiated by the company, such that there is robust explanation and reconciliation between costs incurred, activity and claimed unit costs.

Second, although we have raised queries on the matter, very little information has been presented to explain the type and quantity of activities covered by the description 'Other Repairs and Maintenance'. Without further detail it is not possible for us to be confident that the expenditure claimed is properly or wholly attributable to the transfer.

For these reasons, we have applied a downward adjustment of £3.5 million to the direct operating expenditure Thames Water claimed for 'Blockages' and a pro rata reduction of £1.95 million to the direct operating expenditure for 'Other Repairs and Maintenance'.

We have also adjusted the associated on-costs entitled 'Management fee' and 'Internal Operational resource' in the proportion which 'Blockages' and 'Other Repairs and Maintenance' represent of total direct operating costs of activities, thus reducing the total operating expenditure claimed by a further £1.78 million.

Substantiation challenge	Capex 5-yr total	Opex 5-yr total
Blockage expenditure not substantiated		-£3.50m
Other repairs and maintenance expenditure not substantiated		-£1.95m
Management fees/internal operational resource for the above		-£1.78m
Our view		-£7.23m

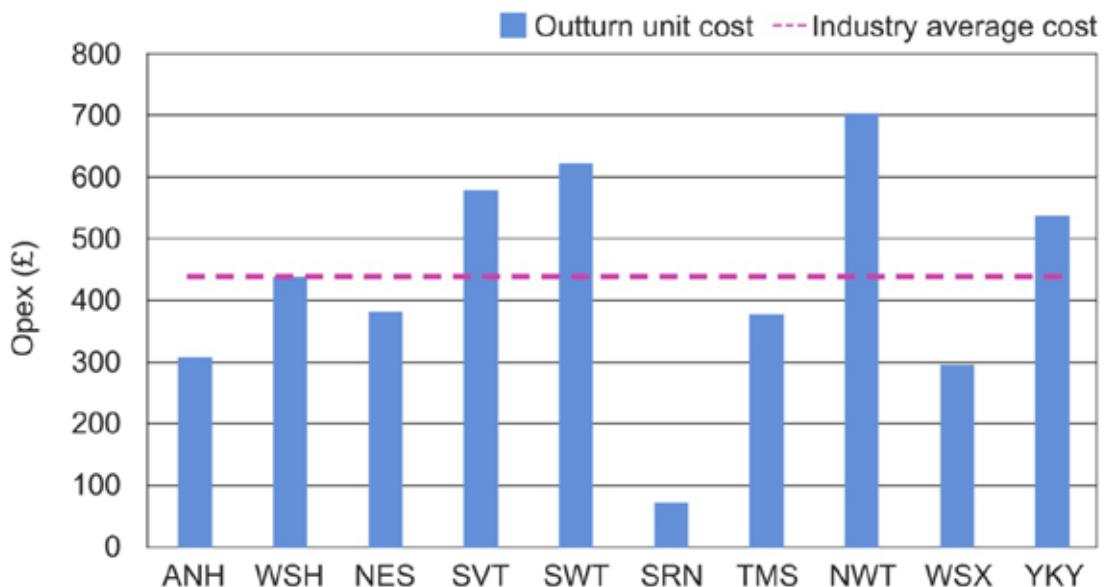
8.2.5 Are costs economic and efficient?

Operating costs

We have also used comparative data from the August data submission to assess Thames Water's relative operating cost efficiency. As shown in figure 6, we consider the company was close to the industry average in terms of operating cost efficiency in 2012-13. After making adjustments for regional price differences, Thames Water's outturn unit costs for blockage clearance is 13% below the weighted industry average.

Accordingly, we consider that Thames Water was operating at a reasonable level of efficiency in 2012-13 and the application of a 'catch-up' efficiency adjustment is unwarranted for operating expenditure relative to its industry peers.

Figure 6 Total outturn operating expenditure per blockage



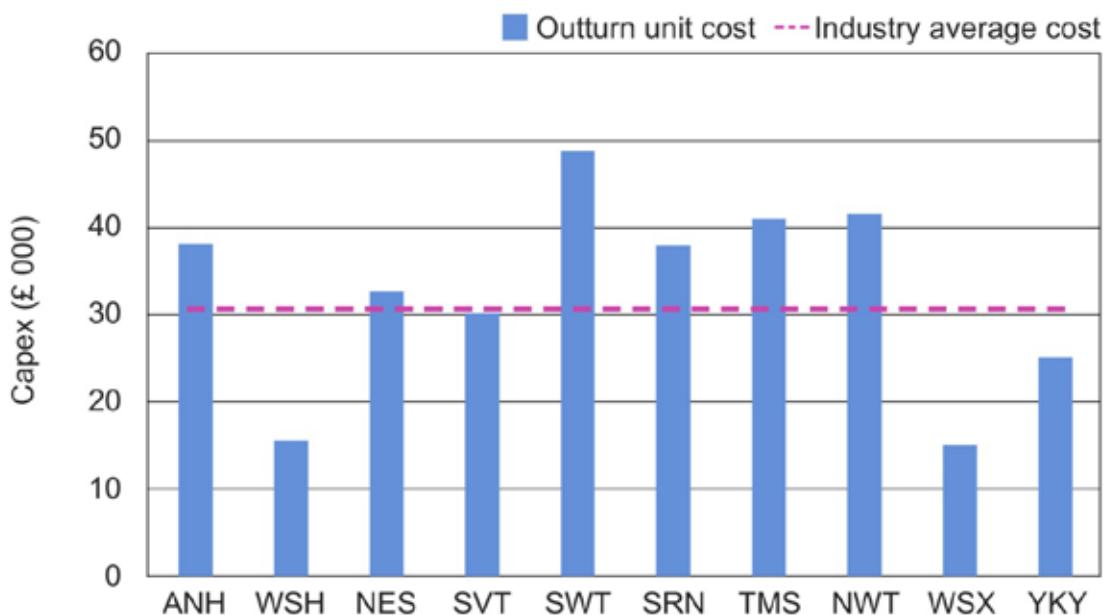
But we also considered whether it is appropriate to assume scope for continuing efficiency, in the way we normally assume industry efficiency improves in future when carrying out price reviews. Our view is that, because the transfer of private sewers is relatively recent, and companies are still at an early stage of ensuring processes for the management of private sewers are efficient, there is scope for future efficiency.

We consider that continuing operating efficiency gains in this new activity area in the remainder of the control period should be achievable at a rate at least as fast as we assumed for the AMP5 control period for existing activities when we last set price limits in 2009.

So, taking a conservative and simple approach, we have applied the same continuing base operating expenditure efficiency adjustments to forecast costs in the two years 2013-14 and 2014-15 as we applied in each of the five years (0.25% per year) in the last price control. Clearly, there may be wider scope for sector efficiencies in future years. We will review this issue when we set price controls for 2015-20.

Capital costs

We have used comparative data from the August data submission to assess the efficiency of Thames Water on capital expenditures relating to collapses. Based on this evidence, we consider that Thames Water is performing significantly less well in terms of capital cost efficiency in this area than most other companies (see figure 7 below). After adjusting for regional price differences (using BCIS data in the same way as we did in setting current price limits) Thames Water's outturn unit costs for collapse repairs exceed the weighted industry average by around one-third. Accordingly, we have applied an adjustment factor of 0.75 (that is, 1/1.33) to Thames Water's costs for 'Collapses', reducing its claimed capital expenditures by £4.12 million.

Figure 7 Total outturn capital expenditure per collapse

We have also adjusted the associated on-costs entitled 'Management fee' in the proportion which the category entitled 'Collapses' represents of the total direct capital expenditure cost of activities, thus reducing the total capital expenditure claimed by a further £0.64 million, or a total of £4.76m for all collapse-related relative efficiencies.

We do not have similar comparative industry information for other areas of capital expenditure, such as manhole repairs, and consider it would be unreasonable to apply the same form of specific industry-based efficiency adjustment in these other areas without such relevant evidence.

Accordingly, for all other private sewer capital expenditure we have assumed a comparable level of relative efficiency to our assessment of Thames Water's overall capital programme when setting the existing price limits. In the last price review, we applied a 5.03% reduction in 2010-11 – this equates to £0.36 million when applied to the relevant expenditure in the application.

As in the case of operating expenditure, we also consider that it is reasonable to assume that, because the transfer of private sewers is relatively recent and that companies are still at an early stage on a learning curve, there is probably at least as much scope for future efficiency gains as we assumed for the AMP5 control period for capital expenditure at the last price review in 2009.

Indeed, an analysis of costs and outputs reported by companies in carrying out the section 19 mains rehabilitation programme in AMP2 and AMP3 confirms that such new activities can, in fact, offer greater scope for efficiency savings. In the early years of this (then new) programme, significant capital cost efficiencies, of around 6% a year, were made at industry level – far outstripping those in other parts of the capital programme – albeit there were significant departures from this industry average figure.

Bearing in mind the potential opportunities for future efficiencies, our judgement is that it is reasonable at this stage to adopt a conservative estimate of further efficiency improvements of 2.0% a year in 2013-14 and 2014-15 for private sewer capital expenditures. Coupled with the catch-up efficiencies for expenditures outside the area of collapses, our adjustments result in an overall £0.67 million reduction in the capital expenditure element of the private sewers claim; including the £4.76 million figure for collapses and associated costs, the efficiency reduction is £5.42 million.

Overall, our efficiency challenge has reduced operating costs by £0.06 million and capital costs by £5.42 million.

Efficiency challenge	Capex 5-yr total	Opex 5-yr total
Operating cost efficiencies		-£0.06m
Collapse costs at industry average baseline	-£4.12m	
Management fees at industry average baseline	-£0.64m	
Other catch-up efficiencies and on-going efficiency	-£0.67m	
Our view	-£5.42m	-£0.06m

8.3 What we have allowed in our draft determination

Overall, we have adjusted Thames Water's claim for capital expenditures to £20.68 million and that for operating expenditures to £27.67 million following our review. We note that, as a result of these adjustments, the allocation of private sewer costs between capital and operating expenditure results in a capital expenditure/operating expenditure ratio that is somewhat closer to the industry average as reported in the August data submission.

(£m)	Capex			Opex		
2012-13 price base	5-yr total	% change	Cumulative % change	5-yr total	% change	Cumulative % change
Thames Water application	26.1			40.1		
Attributability challenge				-1.53	-4%	
				38.57		-4%
Additionality challenge				-3.61	-9%	
				34.96		-13%
Substantiation challenge				-7.23	-18%	
				27.73		-31%
Efficiency challenge	-5.42	-21%		-0.06	0%	
Our view	20.68		-21%	27.67		-31%

The table below sets out the profile of expenditure.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view – opex	0.0	6.2	11.1	11.1	11.7	40.1
Our view – opex	0.0	3.9	7.9	8.0	8.0	27.7
Difference – opex	0.0	-2.3	-3.2	-3.1	-3.8	-12.5
Company view – capex	0.0	5.0	7.7	6.7	6.7	26.1
Our view – capex	0.0	4.4	6.1	5.1	5.0	20.7
Difference - capex	0.0	-0.6	-1.5	-1.6	-1.7	-5.4

Note:

Numbers may not add up due to rounding.

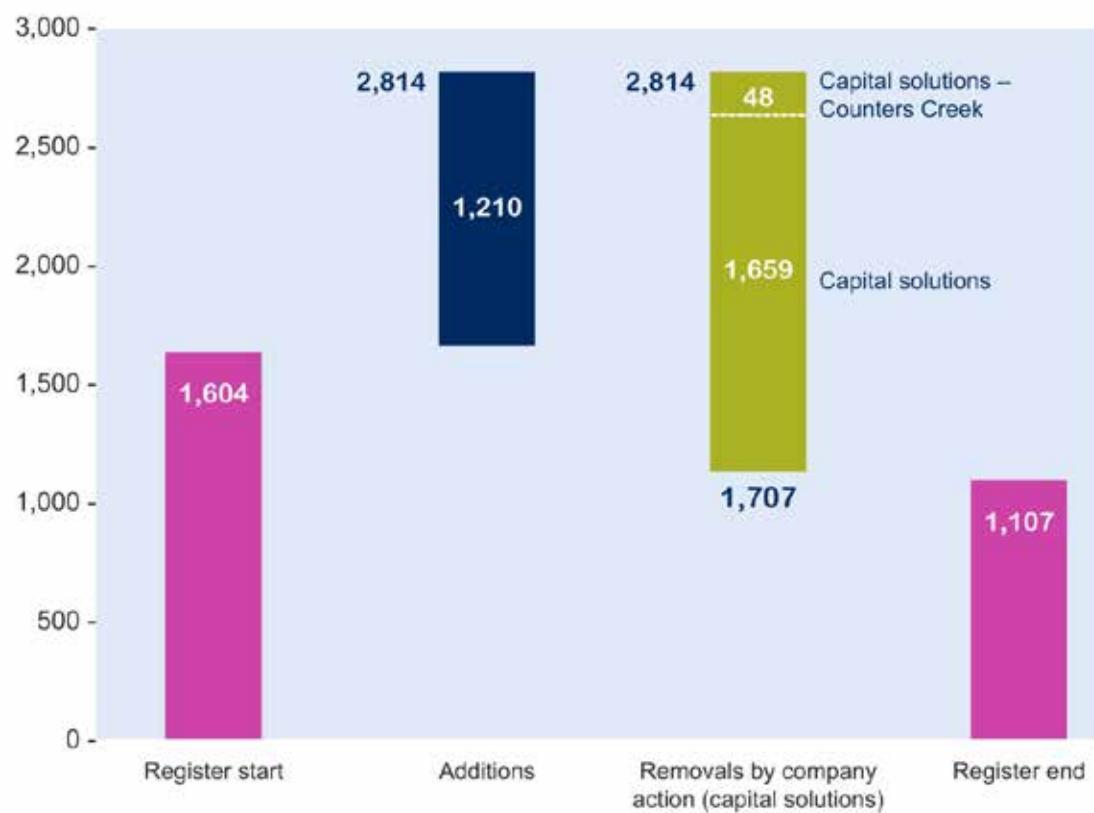
9. Sewer flooding – Thames Water's claim

9.1 The application

RCC(3) allows funding in existing price limits to be recovered where a company fails to achieve an output that was provided for at the last price review.

At PR09, Thames Water was funded to take action to enhance its sewerage system and remove 1,707 properties from its high-risk flooding register, delivering an improved service to customers. An important assumption in this was to take account of any properties that Thames Water identified as needing to be added to its register during the price control period itself. The company had forecast that it would identify 1,848 properties suffering internal sewer flooding with a high risk of the flooding recurring taking it to a total number of 2,814 properties on the register. We challenged this high assumption and reduced it to 1,210 properties when making our final determinations (see figure 8 below).

Figure 8 PR09 final determinations sewer flooding outputs and assumptions



Thames Water's interim determination application stated that the funded expenditure to remove some of these properties would no longer be required, due to a change of Ofwat reporting requirements in March 2010. It estimated that £100.7 million capital costs associated with removing 728 properties from the register could be returned to customers (see figure 9 below).

Figure 9 Thames Water's IDoK – proposed sewer flooding outputs and assumptions



Thames Water's interim determination application detailed how it had delivered 38 of the 48 properties forecast for the Counters Creek scheme using localised property pumping solutions, although it had delivered more than the overall number of such solutions to other customers. In total, it was forecasting to deliver 415 solutions by March 2014 (including 38 from Counters Creek) with the remaining 554 solutions forecast for 2014-15.

9.2 Our assessment of the claim

Water companies are required to maintain registers of properties that have suffered internal sewer flooding or are at significant risk of suffering flooding. Companies have reported progress on these risk registers on a regular basis – as part of the regulatory June return up to June 2011, when we revised the manner in which companies report such information.

In simple terms, companies review and amend the registers either by adding new properties that have suffered sewer flooding or by removing properties due to company action. Typically, the removals made in this latter group are due to investment that the company has carried out, as part of investment programmes that were funded in price limits.

In order to understand how Thames Water's sewer flooding register has changed in the current control period in comparison with other water and sewerage companies, we asked all companies for information related to their sewer flooding registers and changes to the registers between 2011-12 to 2014-15.

Our analysis of this information did not support Thames Water's view that changes to the reporting requirements drove the changes to its sewer flooding registers. The table below summarises each company's expected outputs against the assumptions at the price review. We note that:

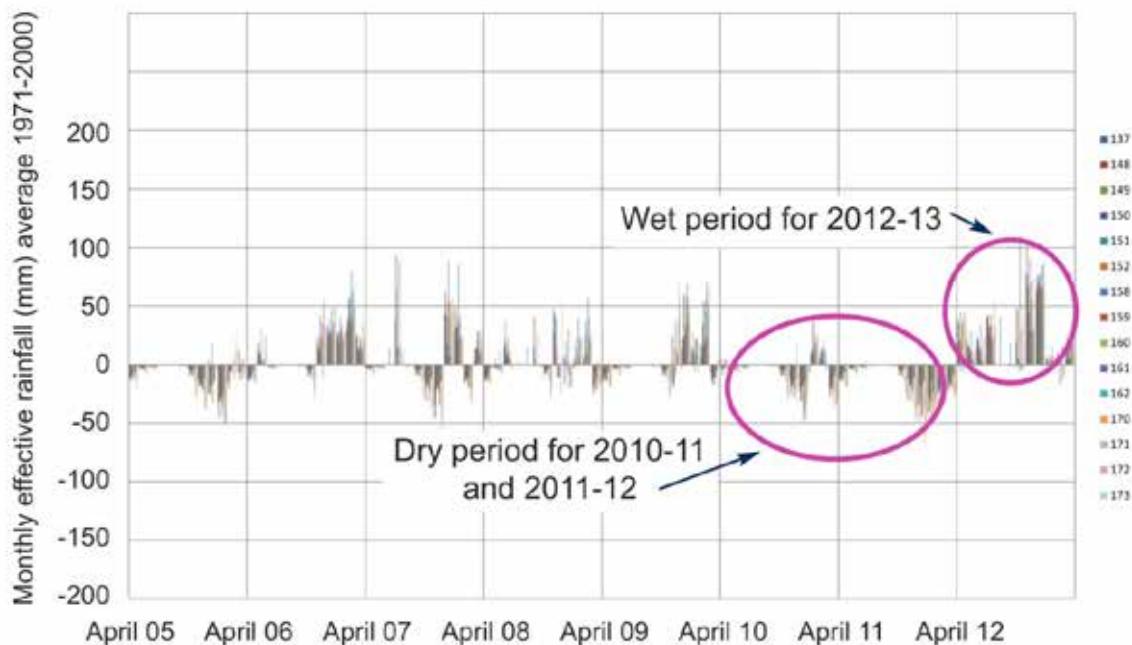
- no other company cites the change in reporting requirements as driving a change in their registers;
- with the exception of one company (Northumbrian Water), variances from PR09 assumptions for other companies were no more than 160. Northumbrian Water has experienced significantly more additional properties than expected;
- for eight companies (excluding Northumbrian Water and Thames Water) the average variance was below 17%; and
- where companies explained changes in their registers they related these to the weather.

	No. of properties added to high-risk flooding registers			
	FD09 assumption	Latest expectation	Difference	
Thames Water Utilities Ltd	1,210	471	-739	-61%
Northumbrian Water Ltd	700	1,292	592	85%
Total of other eight companies	2,002	1,664	-338	-17%
Anglian Water Services	88	98	10	
Dŵr Cymru	180	180	0	
Severn Trent Water Ltd	445	435	-10	
South West Water Ltd	70	45	-25	
Southern Water Services Ltd	105	33	-72	
United Utilities Water Plc	456	456	0	
Wessex Water Services Ltd	200	119	-81	
Yorkshire Water Services Ltd	458	298	-160	

Weather conditions can influence the number of properties added to company sewer flooding registers. For 2010-11 and 2011-12, rainfall was atypically low across England and Wales. In this period, companies identified few properties at a high risk of sewer flooding as the number of properties flooded was low. In contrast, in 2012-13 England experienced the wettest year on record, with the West and the North most affected. Many properties flooded and companies identified some of these to be at high risk of sewer flooding recurring.

We have also considered how weather since 2010 might have influenced the number of properties added to Thames Water's own sewer flooding register. Figure 10 shows the variance to the long-term average rainfall for Thames Water's operating region. 'Effective rainfall' is the remainder of the recorded rainfall after evaporation and soil absorption have been taken into account. Each line on the graph represents the monthly value for one of fifteen 40 km² areas that impinge on Thames Water's area. The figure shows the general variation in effective rainfall across the Thames Water catchment. We have highlighted both the dry period from the summer 2010 to summer 2012 followed by the more intense rainfall that was experienced in 2012-13.

Figure 10 Monthly effective rainfall in Thames Water's region as a proportion of the long-term average



- For some companies, the dry weather in 2010-11 and 2011-12 had a greater influence than the wet weather in 2012-13, leading to fewer than expected flooded properties.
- For other companies, the wet weather in 2012-13 has resulted in more properties suffering from internal sewer flooding being identified as at high risk of flooding recurring.

Companies have generally experienced a dry period in 2010-11 and 2011-12. This has resulted in low levels of new properties on the sewer flooding registers, but this is directly correlated with the observable weather observations. So, the changes in the other company registers are considered to be explained by weather variations.

This weather data supports the variation that all of the other water and sewerage companies have experienced within their registers, yet Thames Water is the only company with a significant reduction in properties suffering sewer flooding.

Thames Water claims that the significant changes in the register are as a result of the changes in reporting requirements. This statement is not supported by changes in the other water and sewerage companies' risk registers. No other company is showing a reduction in the risk registers as a result of the perceived change in the reporting requirements.

Taking account of the proposed 728 reduction in properties on the risk register, Thames Water's revised expectation of additions to the risk register, relative to the size of the company, is in line with the rest of the industry. In contrast, Thames Water's forecasts at PR09 were an industry outlier.

Overall, we consider the reduction in the number of properties on the Thames Water register was driven by changes in the company's business processes and not the regulatory reporting requirements for the sector. These changes in the register bring it into line with Ofwat and industry reporting at PR09. Consequently, given that we disagreed with the relevant changes in circumstances which brought about the large change in the forecast number of properties added to the register, we issued a counter-notice based on our own view of the relevant change, in order to recover this money for customers through the interim determination process. We set out further information in relation to this in chapter 10.

9.3 What we have allowed in our draft determination

We have not made an allowance for this item in our draft determination based upon the relevant change of circumstance proposed by Thames Water. But we assess avoided expenditures associated with the reduction in properties added to the register in chapter 10.

10. Sewer flooding – Ofwat's claim

10.1 The counter-claim

At PR09, Thames Water was funded to take action to enhance its sewerage system and remove 1,707 properties from its high-risk flooding register, delivering an improved service to customers. An important assumption in this was to take account of any properties that Thames Water had identified as needing to be added to the register during the price control period. In its final business plan, Thames Water had forecast that it would identify 1,848 properties suffering internal sewer flooding with a high risk of the flooding recurring. We challenged this high assumption and reduced it to 1,210 properties when making our final determination.

Thames Water's application stated that the funded expenditure to remove some of these properties would no longer be required, due to a change of Ofwat reporting requirements in March 2010. It estimated that £100.7 million capital costs associated with removing 728 properties from the register could be returned to customers (see figure 11 below).

Figure 11 Thames Water IDoK – proposed sewer flooding outputs and assumptions



In chapter 9, we explained that we consider the reduction in the register is driven by changes in Thames Water's business processes, and not the industry regulatory reporting requirements. These changes bring the register into line with Ofwat and industry reporting at PR09. We still consider that costs associated with these differences within the sewer flooding investment programme should be returned to customers, and we issued a counter-notice to allow these costs to be considered through the interim determination process based on our view of the relevant change in circumstances.

10.2 Our assessment of the claim

Having established the basis on which the change in outputs qualified for the interim determination, we considered the size of the claim. In reaching a view on the counter-claim we have drawn on information that Thames Water provided in its application, and answers to additional information requests. We considered information collected from other companies and the effect of weather patterns on the industry flooding registers using data from the Met Office.

Overall, we agree that the output to be delivered in the price control period has changed. But we do not agree with:

- the extent to which Thames Water expects the output to change; and
- the amount of money that should be returned to customers as a result of the expected output being lower than allowed at PR09.

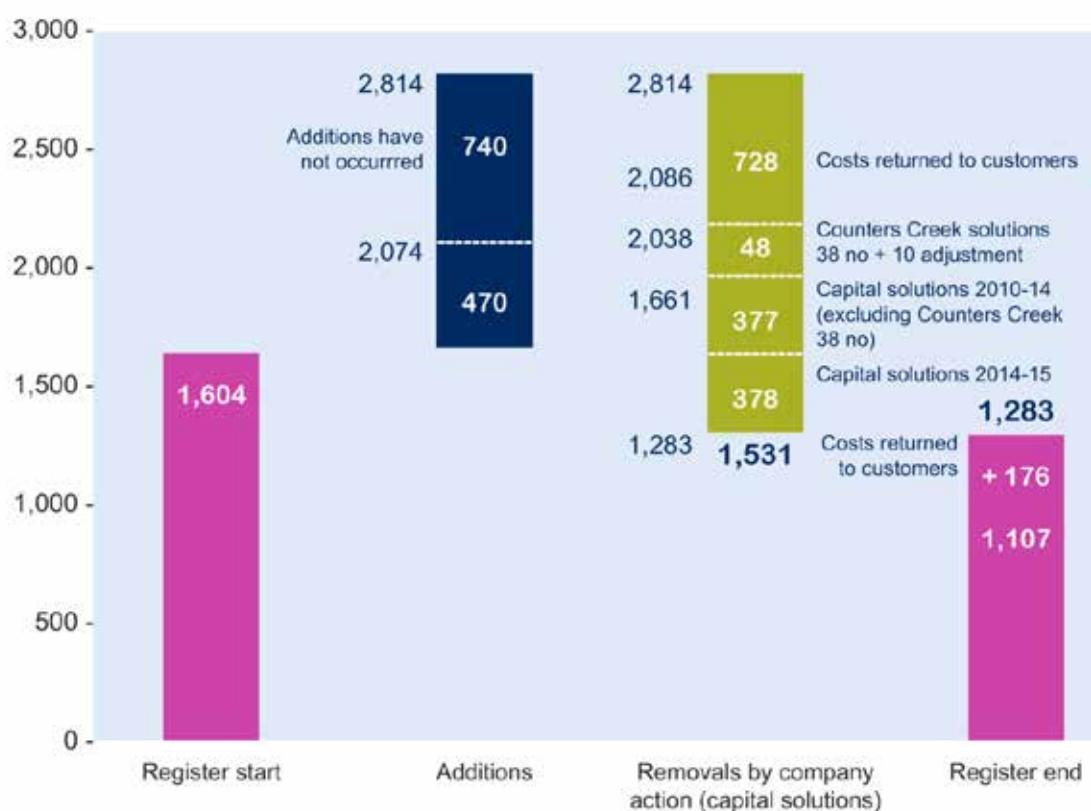
10.2.1 Changes to the expected output

Thames Water stated that it considered that the required output for 2010-15 would be 728 properties lower than we assumed when setting existing price limits in 2009, as there was a reduced level of properties being added to the sewer flooding register. This reflected the company's view of what it has delivered to date and what it intended to deliver for the remainder of the current price control period. We accept this forecast of the number of properties that will be removed from the register, as a result of fewer properties being added to it in comparison to the forecasts made within the price review final determinations.

We have also considered the remainder of Thames Water's sewer flooding programme to review if there are further opportunities or costs that should be returned to customers. We have considered the company forecasts of activity and expenditure for 2013-14 and 2014-15 for this purpose.

We are not convinced that Thames Water's sewer flooding programme for 2014-15 is achievable or efficient, given both the company's delivery performance at the end of the last price review period and also the number of properties removed by company action in its programme to date. As a result, we have included a counter-claim with a further reduction of 176 properties to the company targets for properties removed over the whole period, and consider that the funded expenditures associated with a total of 904 properties (the company forecast of 728 plus an additional 176) should be returned to customers (see figure 12 below).

Figure 12 Ofwat IDoK draft determination – proposed sewer flooding outputs and assumptions



Our usual regulatory process would entail us recovering avoided investment costs associated with under-delivery in the last year of the control period (2014-15) at the following price review (in 2019). But, given the need to consider 2014-15 bills as part of considering Thames Water's application, we have looked at whether the target set at PR09 should be adjusted to reflect changes since the last price control, and allow expenditure to be returned to customers earlier, to the extent that under-delivery of outputs is likely.

Such adjustments need careful consideration. This is because any reduction in delivery will be detrimental for those customers who – we are assuming – would not receive protection from sewer flooding in 2014-15 as a result. This needs to be balanced against any benefit that the generality of Thames Water's customers would receive from downward bill adjustments.

We remain committed to incentivising companies to resolve sewer flooding issues and will consider carefully the incentives and associated funding for sewer flooding more generally in 2015-20 as part of the PR14 price review process. We will be doing this when reviewing companies' proposed outcome commitments, following customer engagement, as part of our risk-based review of their business plans, due to be submitted in December.

As part of this draft determination, we have considered it appropriate to reduce the delivery targets in 2014-15 to those associated with a more achievable estimate of efficient delivery by Thames Water, given the changes that have occurred, returning any excess costs to customers through a reduced bill impact.

As part of our consultation on this draft determination, we seek company, customer and stakeholder views on whether we have struck the right balance in proposing a lower removal target for the final year of the price control than assumed in Thames Water's application.

Our review of the forecast 2014-15 sewer flooding programme

Thames Water forecasts to remove 554 properties from the high risk flooding register as a result of its actions in 2014-15. This forecast exceeds its expected removal output for all four previous years. We consider this forecast for 2014-15 to be too optimistic and we do not have confidence that it will be delivered.

In order to set this forecast in context, we have compared and contrasted it to those for the other water and sewerage companies in England and Wales.

The level of removals that Thames Water forecasts exceeds the combined expected outputs of all the other water and sewerage companies in England and Wales in 2014-15, excluding Northumbrian Water (see table below).

Latest company expectation of the number of properties removed from the high risk flooding register by company action			
	2010-14	2014-15	
Thames Water Utilities Ltd	415	554	133%
Northumbrian Water Ltd	659	430	65%
Our assumption of Thames	415	378	91%
Total of other eight companies	1,818	464	26%
Anglian Water Services	155	45	
Dŵr Cymru	209	28	
Severn Trent Water Ltd	465	133	
South West Water Ltd	35	17	
Southern Water Services Ltd	96	21	
United Utilities Water Plc	485	96	
Wessex Water Services Ltd	118	22	
Yorkshire Water Services Ltd	255	102	

Despite the significant weather issues that Northumbrian Water has faced in its region, it has continued to deliver a smoother investment programme on sewer flooding over the control period to date, giving greater confidence that it is likely to deliver its increased programme in 2014-15, where it expects to incur just under a third of the five-year capital expenditure. In contrast, Thames Water's investment profile implies nearly half (45%) of its five-year capital expenditure would occur in 2014-15.

In reviewing Thames Water's 2014-15 programme, we recognise that this includes a one-off scheme, Maida Vale, which itself delivers a large number of removals from the register. We have separately reviewed this scheme in detail as part of our investigations into Thames Water's sewer flooding registers. Based on this work, we are assured that the scheme delivers value for money for customers and are reasonably confident that the company can deliver the associated benefits by 2014-15 as forecast.

But on balance, given Thames Water's track record in this area, we do not consider it will efficiently deliver its 2014-15 target level of removing properties from the register outside of the Maida Vale scheme. Our judgement of an achievable estimate of properties efficiently removed from the register due to company action would be for the company to deliver its scheme at Maida Vale, plus in addition 50% of the total number of properties removed from the register that it expects to remove in the first four years of its investment programme. This would still be a stretched investment target for Thames Water, as it would still require it to deliver a greater proportion of its programme in 2014-15 than any other water and sewerage company, including Northumbrian Water. This implies 378 properties removed from the register in 2014-15 due to company action, compared with the 554 forecast by the company, so that funded expenditure on a further 176 properties could be avoided and returned to customers via the interim determination.

10.2.2 Calculating the amount to be returned to customers

Having established a proposed reduction in the number of properties to be removed from the register by company action in the period, we considered how much expenditure could be avoided as a result.

In setting existing price limits, we estimated allowed expenditure by multiplying the number of properties projected to be removed by company action by an estimate of the efficient unit cost. For the purpose of the interim determination, we have used this same approach in assessing the avoided expenditures associated with the reduction in properties to be removed from the register by company action.

The unit cost per property of reducing the risk of sewer flooding for properties on the high risk flooding register can vary significantly, as it can be strongly influenced by site-specific circumstances. Generally, properties that have been on the register for longer are likely to cost more to address, because companies tend to resolve simpler low-cost problems first.

At PR09, we made an allowance for sewer flooding programmes based on a calculated unit cost (£m per high risk property) based upon both company-submitted information and a review of industry average costs.

In its application, Thames Water said that we approved both an 'Enhancement Programme' to address known issues affecting properties and a separate 'Register Growth Programme' to address newly-identified issues. The company used the two different unit costs for its two identified programmes to calculate the reduced level of expenditure and therefore the amount to be returned to customers.

This is important because Thames Water expects to spend more via the ‘Enhancement Programme’ and less via the cheaper ‘Register Growth Programme’, which it considered to be more relevant to the reduced number of properties being added to the register.

But when we set the existing price limits, our unit cost assumptions were different to those that Thames Water described in its application. Our assessment of the company’s business plan at PR09 considered each element separately. In general terms, in assessing the efficient expenditures required to deliver regulatory outputs, we did not approve how the company would deliver them, as we wanted to encourage companies to innovate and deliver outputs in new ways and for less. These general incentives were important, because savings will be passed back to customers via the price review process in due course.

Within this context, the single unit cost we used in assessing the relevant expenditures to be funded in existing price limits did not differentiate between costs to address the high risk of sewer flooding at properties that were already on the sewer flooding register at April 2010 and those for properties newly identified within the subsequent control period.

Consistent with this approach at the last price review, we have assessed savings to customers against this same average unit cost rate used at PR09 in developing our proposals for this draft determination.

10.3 What we have allowed in our draft determination

We have calculated unit costs for Thames Water using the unit cost that we assumed for it to deliver its full programme of 1,659 outputs in 2009 (setting aside the 48 properties within the Counters Creek scheme). We have assumed that the same split between capital infrastructure costs (including sewers and tanks), non-infrastructure costs (structures constructed above the ground and pumping equipment) and operating costs (normally electricity for pumping) as in the original company business plan for PR09.

- For the avoided capital expenditure on removing 728 properties from the register that is associated with the inaccurate forecast of additional properties within the period, we calculate this avoided expenditure to be £117.1 million – 16% higher than proposed by Thames Water. We also calculate an associated opex reduction of £1.17 million.

- Revising the 2014-15 target down by 176 properties adds a further £28.3 million compared with that proposed by Thames Water, using the same unit cost. We also calculate an associated opex reduction of £0.29 million.
- So, in total we think that £145.4 million of avoided funded capital expenditure should be returned to customers.

As discussed in section 10.2.1, we seek views in particular on our decision to address the balance between the conflicting customer priorities by proposing to lower the target for removal of properties from the at risk register for the final year of the price control than assumed in the Thames Water's application.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view – opex	0	0	0	0	0	0
Our view – opex	-0.2	-0.2	-0.3	-0.4	-0.4	-1.5
Difference – opex	-0.2	-0.2	-0.3	-0.4	-0.4	-1.5
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Company view – capex ⁹	1.8	3.3	-34.7	-35.1	-36.0	-100.7
Our view – capex	-16.6	-33.1	-38.2	-31.1	-26.4	-145.4
Difference – capex	-18.4	-36.4	-3.5	4.0	9.6	-44.7

⁹ We discussed the company view of the appropriate adjustment in chapter 9. As discussed in chapters 9 and 10, we consider the reduction in the register is driven by changes in Thames Water's business processes, and not the industry regulatory reporting requirements. But we present the company's claimed figures here to allow comparison to be made against our assumptions for the draft determination.

11. Deephams – counter-claim¹⁰

11.1 The application

As we discussed in chapters 9 and 10, in submitting its application, Thames Water identified significant expenditures that were funded in existing price limits that it did not now expect to incur, in relation to sewer flooding. So, in reviewing this application we considered whether there were any other significant funded expenditures where there was evidence that customers should no longer be funding the allowed sums in existing price limits in the current control period.

As part of this review, we identified a potential delay within the large Deephams sewage treatment works scheme, which may result in planned expenditures no longer being incurred in the current control period.

Although the consequences of such slippages would normally be considered in the next price review and reflected in bills paid by future customers (drawing on information in Thames Water's business plan), we were recently advised by the Environment Agency of its understanding that the Deephams timetable slippage was likely to occur. So, we have considered the impact of this as part of the interim determination (consistent with Thames Water's proposed treatment of avoided sewer flooding expenditures), in order to potentially reduce the bill impacts of any interim determination covering the 2014-15 period.

At PR09, we made allowance for £252 million in total for Thames Water to rebuild a large part of the Deephams sewage treatment works. The company planned to build the scheme on greenbelt land over a period that spanned both the current control period and the next one. Of the £252 million, £88.4 million was included in price limits in 2010-15 for the earlier expenditures on the project, on the assumption these were necessary to achieve the planned completion date of 31 March 2017.

At a meeting in May 2012, Thames Water provided us with an update on the progress of the Deephams scheme. It explained to us that it had concerns over the risks of achieving planning permission for construction on the greenfield site as originally proposed. As a result, it had chosen to pursue an alternative solution, of rebuilding the works on the existing site. This change in approach could imply that

¹⁰ Values in this chapter are presented in 2012-13 prices unless otherwise stated.

the profile of scheme capital expenditure as between 2010-15 and 2015-20 could also be affected.

But any potential expenditure impacts of such a slippage were not then covered in Thames Water's subsequent IDoK application. Accordingly, after we received the IDoK application – and given the earlier advice from the company – we asked the Environment Agency to confirm our own understanding of the updated completion timetable for the Deephams scheme. The Environment Agency confirmed to us in writing its understanding that the 2017 delivery date for the Deephams scheme was unlikely to be achievable due to planning delays – and that its latest discussions with the company also suggested a delivery date in 2020 (in line with Thames Water's earlier advice to us).

As a result of our understanding and this more recent view from the Environment Agency, and reflecting changes in expenditure profile that were previously advised to us in May 2012, we concluded that it was in customers' interests to include non-trivial effects of the re-profiling of expenditure of the Deephams scheme in our determination of prices for 2014-15. So, we included this element in the counter-notice we issued to Thames Water on 13 September 2013.

11.2 Our assessment of the claim

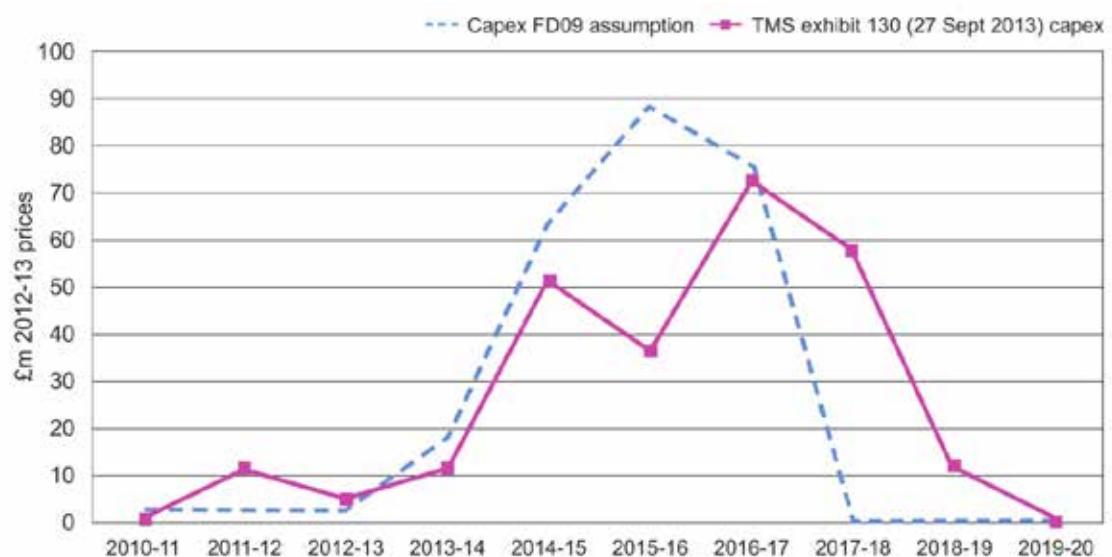
As noted above, our understanding, when making our counter-claim, was that the delays already incurred, and the longer expected project timescale to deliver the revised rebuilding solution, mean that the scheme is unlikely to be delivered until 2020 – three years after the original target date assumed when we set price limits in 2009.

On this basis we, asked Thames Water to confirm the expenditure forecast in 2010-15 and 2015-20, in the light of the delay we understood to have occurred, to understand the expenditure impacts, including for bills in 2014-15.

But, in its response, Thames Water confirmed that it still expected to complete the scheme to the original target date of 31 March 2017, with £78 million expenditure forecast to be incurred in 2010-15 (that is, only £10 million less than assumed in price limits for 2010-15) and £177 million in 2015-20. So the company suggested that reduced expenditure it now projected in 2010-15 was in fact trivial for the purposes of the IDoK and should not be reflected in adjustments to 2014-15 bills.

We further queried Thames Water on its forecast expenditure profile on this basis. In particular, we wanted to understand the unusual expenditure profile for the scheme that did not follow the traditional 'bell' profile for a scheme of this nature (as shown in figure 13 below). In particular, the company's updated forecast of expenditure expected £50.9 million to be spent in 2014-15, compared with £10.9 million in the previous year in 2013-14 and £36.4 million in 2015-16. Also, very substantial expenditure was now being forecast for the period after 31 March 2017 (£69 million) as a result of the slippage in commencement, which did not appear to align with this unchanged forecast delivery date (31 March 2017).

Figure 13 Deephams expenditure profile (27 September 2013)



2012-13 prices (£m)	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2010-15 total	2015-20 total	Scheme total
Capex – FD09 assumption	2.52	2.52	2.52	17.67	63.12	88.37	75.74	0.00	0.00	0.00	88.37	164.11	252.47
TMS Exhibit 130 - 27/9/2103 - Capex	0.77	10.86	4.64	10.86	50.89	36.37	72.14	57.54	11.47	0.00	78.02	177.51	255.53

In response to our further queries on this new expenditure profile, Thames Water explained that it is not expecting even to achieve planning permission for full access to the site until after the start of the next control period, in September 2015, whilst achieving new consent quality and flow conditions by the end of March 2017 (a period from start of construction to compliance of just 18 months, versus the four to five years on which assessed efficient expenditure was originally funded in price limits for the greenbelt alternative).

The company explained that the new, early, peak in costs associated with the project in 2014-15 was associated with the procurement of new plant items. It said:

"The peak in 2014-15 is due to enabling works required to ensure that two treatment streams are in an enhanced condition prior to removing the third treatment stream. These costs also include the early procurement of new plant items that are required to enable TW to meet the consent date, albeit on an interim basis."

We have assessed both the proposed new expenditure profile and that which was set out in the final determinations at PR09 and considered the commentary the company has provided in response to our queries on the new profile.

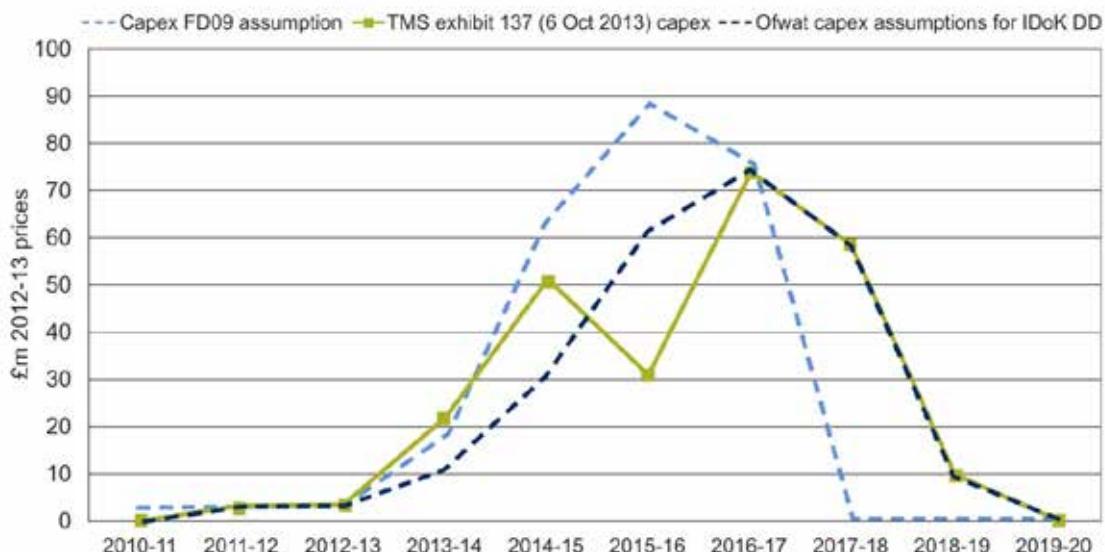
While Thames Water has sought to answer the queries we have raised, we are not convinced that the evidence presented answers clearly the questions we raised earlier on the expenditure profile, to try and understand the impact of the re-profiling on 2014-15 bills. Nor has the evidence presented been sufficiently compelling to persuade us that the latest proposed profile of expenditure should be adopted for the purposes of the IDoK determination.

In particular, we have the following concerns.

- It is still unclear why expenditure in 2011-12 and 2013-14 has varied so substantially between Exhibits 130 and 137 provided by Thames Water in response to our follow-up questions and which is the correct historic figure for 2011-12.
- Thames Water has not provided us with sufficient evidence in support of the latest expenditure forecast for 2010-15 overall, particularly in respect of forecast expenditure in 2013-14 and 2014-15.
- We remain concerned that the justification for the peak in construction costs in 2014-15 that, in part, relates to early procurement is at a time before Thames Water has full access to the site or expects to have achieved planning permission to proceed with the revised proposals. In particular, the company has not made clear why this is an efficient decision, especially in the context of the scheme delays that had originally occurred, because of the crystallisation of planning risks attached to the previous scheme plans (hence affecting the profile of expenditures funded in existing price limits).

Having considered these issues in the round, we have assumed an amended expenditure profile that may be more efficient for the scheme to meet a delayed delivery date. This follows a 'bell' profile that is more typical of an efficiently-delivered scheme of this nature and is more consistent with the advice on expected completion timings we had received from the Environment Agency, as shown in figure 14.

Figure 14 Deephams expenditure profile (6 October 2013)



Our expectation is that Thames Water will deliver the Deephams scheme, although to an amended expenditure profile, in the way illustrated above. We remain committed to supporting the delivery of the scheme through the price limits framework, but the effect of a revised expenditure profile is to allocate more expenditure from 2010-15 to 2015-20 than the company is suggesting in its own latest proposal. Any additional expenditure that is reallocated to 2015-20 will be considered for remuneration in future price limits, via our review of Thames Water's business plan for PR14, following usual processes.

To confirm our expected regulatory treatment of the scheme, and the impact of any re-profiling of expenditures on it, we previously wrote to Thames Water in July 2012, to set out the principles around future funding of the Deephams scheme with particular reference to how increases in costs would be dealt with in the regulatory framework. Also, the methodology used to set existing price limits clearly set out that we would carry forward the expenditure assumptions that overlap with the forthcoming price review, provided there were no material changes to the required outputs. And again, we confirmed in our policy statement for the next price review in July 2013 that we will be respecting the existing 'legacy' framework, where relevant, in setting price limits for future periods.

11.3 What we have allowed in our draft determination

The expenditure profile we have assumed for the purposes of this draft determination is set out below. This reduces the expenditure allowance for the 2010-15 period to £47 million based upon the assumed re-profiling of expenditure discussed above, compared with our allowance at PR09. As shown, our adjustments relate to only three years of the latest version of the Thames Water projections, but would be more consistent with a smoother and more typical pattern of expenditure, given the expected timings and risks of planning permission and final scheme completion.

2012-13 prices (£m)	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2010-15 total	2015-20 total	Scheme total
Capex – FD09 assumption	2.52	2.52	2.52	17.67	63.12	88.37	75.74	0.00	0.00	0.00	88.37	164.11	252.47
TMS Exhibit 130 - 27/9/2103 - Capex	0.77	10.86	4.64	10.86	50.89	36.37	72.14	57.54	11.47	0.00	78.02	177.51	255.53
TMS Exhibit 137 - 6/10/2103 - Capex	0.13	2.22	3.00	21.80	50.89	30.80	73.20	58.45	9.60	0.00	78.02	172.04	250.06
Ofwat Capex assumptions for Idok DD	0.13	2.22	3.00	10.86	30.80	61.82	73.20	58.45	9.60	0.00	47.00	203.07	250.06

While we have assumed a reduction in cost allowances for delivery of the Deephams scheme in 2010-15, we will assume that these costs will be incurred in cost allowances for delivery of the Deephams scheme in 2015-20 and so would expect them to be included in Thames Water's business plan for the 2014 price review.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view						0.0
Our view	-2.4	-0.3	0.5	-6.8	-32.3	-41.4
Difference	-2.4	-0.3	0.5	-6.8	-32.3	-41.4

12. Serviceability – counter-claim

12.1 The application

Serviceability assessments reflect the ability of company assets to deliver an expected level of service to consumers and to the environment now and into the future.

The serviceability assessment process operates within our wider regulatory framework applied to existing price limits, which currently uses defined measures of success, reference levels and control limits across four sub-service categories:

- water infrastructure;
- water non-infrastructure;
- sewerage infrastructure; and
- sewerage non-infrastructure.

These measures were defined for the sector at PR09 and agreed as part of the price setting process at that time.

In our final determinations at PR09, we set out our expectation that all companies should achieve and maintain stable serviceability, as assessed via this framework, during 2010-15. We explained that if companies did not achieve stable serviceability across the sub-service categories, we would apply reductions in allowed prices at the next price review via ‘shortfalling adjustments’ – that is, we would make a downward adjustment to the RCV that was proportionate to the level of any service failure, and return the associated reductions in allowed returns to customers in future periods in lower prices.

Using this agreed framework, Thames Water assessed the performance of its sewerage infrastructure as being marginal in 2011-12 and 2012-13, so that it failed the relevant output targets for these years.

The serviceability assessment for the wider sewerage infrastructure sub-service is measured according to performance measures across six specific areas governed by their own ‘control limits’. For two of these control limits – ‘flooding other causes’ and ‘pollution incidents’ – Thames Water’s performance was worse than the permitted upper control limit in 2011-12 and 2012-13. It was this under-performance against the control limits in these two specific areas that led to the company’s overall

output failure (that is, the marginal assessment for the sewerage infrastructure subservice overall) in 2011-12 and 2012-13.

We considered whether this performance failure should lead to an earlier adjustment affecting 2014-15 customers' bills (as opposed to carrying out this assessment in PR14 and reflecting any consequences in future bills), given the increases in 2014-15 bills that Thames Water proposed in its application. Thames Water invited us to consider how to spread the impacts of different changes over different periods and we included this area in our consideration. As the potential adjustment was non-trivial, we therefore included it in the counter-notice we issued to Thames Water on 13 September 2013.

12.2 Our assessment of the claim

To help us decide whether an adjustment was appropriate, we requested additional information from Thames Water on the expenditure actually incurred for 'Flooding other causes' and 'Pollution incidents' to deliver the outputs agreed and funded in existing price limits.

Thames Water was not able to answer the specific question of where expenditure was carried out to deliver the output targets for 'Flooding other causes' and 'Pollution incidents'. The company explained that the manner in which it categorised expenditures does not provide the clarity required to show expenditure that is specific to 'Flooding other causes'" and "Pollution incidents' in this way.

Thames Water classifies expenditure in a different way, by activity and asset type, of which it considered the following areas to be relevant to the outputs under consideration.

- Sewer rehabilitation.
- Reactive collapse repairs and dig-downs.
- Rising mains rehabilitation.
- Serviceability hotspots.
- Sewer crossings railways.
- Pipe bridges and other structures.
- Drainage area plans and CCTV.
- Manhole covers.
- Overflows and outfalls.
- Diversions.

Commentary provided to us by Thames Water is clear that the company spent less in total in these areas at the start of the control period in 2010-11 than we had assumed in setting the relevant output targets and overall funding levels in when setting existing price limits. The company's information submissions demonstrate it subsequently stepped up the expenditures it considers to be relevant to these outputs in 2011-12 and 2012-13 – with regard to:

- sewer rehabilitation;
- reactive collapse repairs and dig-downs;
- rising mains rehabilitation;
- serviceability hotspots; and
- diversions.

On the basis of the information provided in response to our queries, and the way in which Thames Water captures relevant information, we cannot be certain that its expenditure specifically to deliver the agreed output targets was aligned with the funding assumptions at PR09 in a way aimed at achieving the relevant output commitments.

But Thames Water's performance as measured by the sewerage infrastructure serviceability assessment is below the level we set for the years 2011-12 and 2012-13, and this may well be because insufficient priority was devoted to these areas earlier in the control period. We consider that the relevant detriment should be considered in determining existing customers bills in 2014-15. So, we propose to make a downward adjustment representing this detriment – bringing forward the adjustments we normally make for future customers' bills in price reviews.

Thames Water has now increased investment levels further, and has advised us that it is seeking to return its serviceability performance for sewerage infrastructure to stable in 2013-14 and 2014-15. We will review the success of the company's actions in relation to these years in our assessment for the next price review, in the way we propose to do for all companies.

12.3 What we have allowed in our draft determination

For the purposes of our draft determination, we have assessed a downward price adjustment of £24.4 million (2012-13 prices) for the reported under-performance in 2011-12 and 2012-13.

Our proposed adjustment seeks to be proportionate based upon the total level of expenditure that customers funded for the sewerage sub-service as assumed at PR09 (£215 million in 2012-13 price base).

The maximum scale of any shortfall is 50% of the investment in the sub-service, allocated between each year and in accordance with the sub-service measures. The scale of adjustment in each measure within the sub-service is based upon the extent of under-performance in the area concerned.

Individual assessments have therefore been made for both the specific 'Flooding other causes' and 'Pollution incident' measures in the two years concerned (2011-12 and 2012-13).

We propose to make adjustments of £2.0 million in 2011-12 and £22.4 million in 2012-13 – the higher adjustment for 2012-13 being due to the very high level of pollution incidents in 2012-13 which led to a more serious failure of the target and an adjustment of £14.8 million in this particular area (with a further £7.6 million associated with 'Flooding other causes' in 2012-13).

We have assessed the proposed adjustments for triviality for the purposes of the draft determination. We have used these adjustment figures in the for triviality assessment in the absence of robust cost information on the costs actually incurred and attributable for 'Flooding other causes' and 'Pollution incidents' (to compare against the assumptions of funding made at PR09 from Thames Water). We consider that, in the absence of alternative attributed cost evidence, the scale of the proposed adjustment, which is intended to be proportionate to the detriment and loss of value for customers relative to the total expenditures funded for the sub-service as a whole, can be considered to be broadly equivalent to the avoided costs which would have been incurred.

Outturn to 2012-13 then Sept 2013 prices	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Company view						0.0
Our view	0.0	-2.0	-22.4	0.0	0.0	-24.4
Difference	0.0	-2.0	-22.4	0.0	0.0	-24.4

13. Overall conclusions

In chapter 2, we explained that in reviewing Thames Water's application we would consider:

- whether items included in Thames Water's application were consistent with the terms of its licence;
- whether there were costs associated with other qualifying items that were not included by Thames Water that we should consider alongside the application;
- what the appropriate net additional costs attributable to each qualifying item should be;
- whether, based on this assessment, the resulting costs for each item were 'trivial' for the purposes of the licence, and hence should count towards assessing the overall materiality of the net claim; and
- whether all 'non-trivial' items, aggregated, exceed the materiality threshold set out in the licence.

In chapters 4–12, we set out our view that all items (bar Thames Water's basis for reduced sewer flooding expenditures) qualify under the terms of the licence and our assessment of the net allowable costs for each item. We used the IDoK model to calculate whether the items were trivial or not, on the same basis as adapted by Thames Water in submitting its application, and, for those that were 'non-trivial', whether, in aggregate, they exceeded the materiality threshold of 10% of appointed business turnover required before we can make an interim determination of changes to price limits. The table below summarises this calculation.

- Our revised assumption on bad debt means that in present value terms this element of the total claim is equivalent to 1% of combined service turnover. This is below the required level of 2% for triviality. This means this item has not been taken forward for the calculation of aggregate materiality.
- For those remaining items that pass the triviality test we calculate the overall net materiality to be 8.2% of appointed business turnover.

Based on this calculation, our draft determination is that there should be no adjustment to 2014-15 price limits for Thames Water because the relevant items do not exceed the 10% materiality threshold in aggregate.

Item	Triviality water (NPV £m)	Triviality sewerage (NPV £m)	Triviality water (%)	Triviality sewerage (%)	Pass triviality test Y/N	Materiality (NPV £m)	Materiality contribution (%)
Thames Tideway Tunnel land acquisition		269.811		30.4	Y	269.811	15.3
Proceeds from land disposals		-49.651		-2.8	Y	-49.651	-2.8
Bad debt and debt management costs		28.826		1.6%	N		0.0
Transfer of private sewers,		105.025		11.8	Y	105.025	6.0
Increases in the Environmental Improvement Unit Charge	50.013		5.7		Y	50.013	2.8
Sewer flooding		-163.729		-18.4	Y	-163.729	-9.3
Deephams		-40.289		-4.5	Y	-40.289	-2.3
Serviceability		-26.865		-3.0	Y	-26.865	-1.5
Total for purposes of calculating materiality						148.288	8.2%

On this basis, our draft determination is that the existing price limits for 2014-15 should not be adjusted. This conclusion is made on the basis of the information made available to us in time for making this draft determination. Our draft determination is that existing price limits for 2014-15 do not need to be adjusted. The price limit for 2014-15 would remain as set at the 2009 price review (that is, an increase of 1.4% before inflation).

It is possible that further evidence could be presented that may lead us to change some of the assumptions in our draft determination. So, it is possible that, in light of further information in relation to individual items, the net aggregate materiality could pass the 10% materiality threshold and lead to an adjustment in bills in 2014-15 (which would be an increase above the PR09 allowance for that year).

All stakeholders, including Thames Water, now have the opportunity to comment on our draft determination. We ask for stakeholders' views on the challenges we have made to Thames Water's application in general and within this in particular and to the challenge we have made for Thames Water's sewer flooding programme, as set out in section 10.2.1.

But we should note that, irrespective of our final determination of Thames Water's application, the regulatory framework allows for relevant capital expenditures incurred in the existing price control period to be recovered from future customers via established processes, as part of the forthcoming price review. These arrangements remain available to water companies including Thames Water, to recover qualifying capital expenditures (such as, for example, those relating to the transfer of private sewers, and in the case of Thames Water, the expenditures it has made on land for the Thames Tideway scheme).

Finally, we also note that we are still examining the possibility of providing Thames Water with a notice in relation to our intention to determine an adjustment to 2014-15 bills in relation to the substantial favourable effects arising from separate changes of circumstances in the current control period. We will continue that examination separately, but with regard to the need to confirm any consequences for customers' bills on a timely basis, as set out in IB 20/13. This consideration does not apply to other companies, where no changes to existing price limits for 2014-15 have been sought or are anticipated.



Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA

Phone: 0121 644 7500
Fax: 0121 644 7699
Website: www.ofwat.gov.uk
Email: mailbox@ofwat.gsi.gov.uk
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