Dispute referred under section 30A of the Water Industry Act 1991 on inclusion of costs associated with 'the Wing Main' in requisition charges for water supply infrastructure from Anglian Water Services Limited – draft determination

Utility Law Solutions (on behalf of others) versus Anglian Water Services Limited

13 February 2014

About this document

This is a consultation on our draft determination on the inclusion of costs associated with the 'Wing Main' as part of requisition charges for water supply infrastructure.

This determination request was submitted to the Water Services Regulation Authority (**Ofwat**) under section 30A of the Water Industry Act 1991 (**the Act**).

This is the first instance in which we have applied our interpretation of the legal framework in the Act in order to determine the extent to which developers should contribute towards strategic infrastructure.

Therefore, we would like to invite interested stakeholders to provide their views on how we have applied both our legal and cost assessment framework in this draft determination.

It is important to note that we have arrived at the conclusions in this draft determination based on the particular facts of this dispute. However, more generally, with reference to developer contributions made in relation to other 'strategic schemes', the approach to the inclusion of costs in requisition charges would depend on the details and circumstances of particular schemes. This document describes our investigation and explains how we have reached our conclusion in this case.

In summary, our view is that Anglian Water has an appropriate legal basis upon which to include the costs of the Wing Main in requisition charges requested in relation to the sites submitted within this dispute. However, we do not consider that the level of developer contributions collected by Anglian Water is appropriate.

Instead, we have determined that the aggregate level of developer contributions should be equal to the incremental cost of the additional capacity required for new developments.

In making our decisions, we want to be as transparent as possible with all stakeholders about how we have reached our conclusions. We recognise that a number of stakeholders have an interest in the level of contributions required from developers by water and sewerage companies in relation to strategic infrastructure.

We issued a draft determination to both parties with reference to the above dispute on 23 December 2013. We now welcome views of interested stakeholders on this draft determination.

We will consider carefully the responses we receive to this consultation before issuing our final determination.

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Executive summary

We are committed to carrying out our duties under legislation: in particular, to the need to ensure the interest of consumers, efficiency of investment and use of resources. This means that, where the Water Industry Act 1991 (**the Act**) permits, we will support a fair and proportionate approach to cost recovery from developers (as part of the requisition charge) in relation to the costs of providing infrastructure and the financial conditions for requistions.

On 20 October 2009, Utility Law Solutions (**ULS**), on behalf of two separate developers[1], submitted a determination request to **Ofwat** under section 30A of the Act. ULS questions the legal basis for the contribution that Anglian Water Services Limited (**Anglian Water**) has required from developers in relation to costs associated with the Wing Strategic Main (**the Wing Main**).

ULS has subsequently extended its determination request to cover nine developers[2] which have requisitioned water supply infrastructure at 75 separate sites, all connected to the Wing Main. These sites are listed in appendix 1 – it is these sites that are the subject of this determination. In summary, our view is that Anglian Water has an appropriate legal basis upon which to include the costs of the Wing Main in requisition charges requested in relation to 73[3] (of the 75) sites submitted within this dispute. As such, the developers that are associated with those requisitions should pay a contribution towards the Wing Main.

However, we do not consider that the level of developer contributions collected by Anglian Water is appropriate. Instead, with reference to the Wing Main, we have determined that the aggregate level of developer contributions should be equal to the incremental cost of the additional capacity required for new developments.

[1] George Wimpey South Midlands and Persimmon Homes.
[2] Taylor Wimpey, Persimmon Homes, Bellway, David Wilson Homes, Morris Homes, Barratt Homes, Bloor Homes, Redrow Homes and Linden Homes.
[3] This is due to the fact that one site (phases 2, 3 and 4 Newark Road, North Hykeham is not included, as it is outside the relevant water resource zone and has not made contributions to the Wing Main. We also note that another site (site 15B, Pratts Quarry, Leighton Buzzard) has been mentioned twice; please see site numbers 18, 39 and 53 in appendix 1 for further details.

Our base estimate of the incremental cost is £2.50 million. This is an input into the calculation of individual developer contributions for the purposes of this determination and limited to the Wing Main. Anglian Water is required to produce revised calculations of developer contributions for the relevant sites in relation to the Wing Main and calculate the expected refunds. If we are satisfied with these calculations, we will then issue a final determination requiring Anglian Water to reimburse the appropriate developers accordingly.

This draft determination supports our objectives, having considered and arrived at the fairest and most reasonable approach to be applied with reference to the recovery of developer contributions in relation to the Wing Main.

We have arrived at the conclusions in this draft determination based on the particular facts of this dispute. With reference to developer contributions made in relation to other 'strategic schemes', the approach to the inclusion of costs in requisition charges would depend on the details and circumstances of particular schemes.

Consultation questions

As well as responses to the following questions, we welcome views from interested stakeholders more generally on the issues set out in this draft determination.

Q1 In the draft determination, we conclude that the Wing Main can be considered necessary in consequence of the relevant developments[4]. Our view is that this means that Anglian Water may seek to recover a contribution from the relevant developers towards the costs of the Wing Main. If you do not agree with our view that Anglian Water may seek to recover a contribution from the relevant developers, please provide clear evidence to support your response to this question.

Q2 We also set out that developer contributions should reflect the additional costs required to serve the new customers using the Wing Main, over and above existing customer requirements. However, the cost of works that would have taken place without any new developments should be allocated to existing customers. This is what we are calling the incremental cost approach to identifying the costs relevant for developer contributions. Do you have any comments on this approach?

[4] The 73 developments that relate to this determination.

Responding to this consultation

We welcome your responses to this consultation by **13 March 2014**.

You can email your responses to mala.shetty@ofwat.gsi.gov.uk or post them to:

Mala Shetty
Consultation on Anglian Water/Utility Law Solution section 30A draft determination
Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA.

We will publish responses to this consultation on our website at www.ofwat.gov.uk, unless you indicate that you would like your response to remain unpublished. Information provided in response to this consultation, including personal information, may be published or disclosed in accordance with access to information legislation – primarily the Freedom of Information Act 2000 (FoIA), the Data Protection Act 1998 and the Environmental Information Regulations 2004.

If you would like the information that you provide to be treated as confidential, please be aware that, under the FoIA, there is a statutory 'Code of Practice' which deals, among other things, with obligations of confidence. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that we can maintain confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on Ofwat.

Next steps

The consultation closes on **13 March 2014**. Once we have considered the responses we receive, we will publish our final determination on this dispute.

1. Introduction

(A) The purpose of this document

1.1 ULS is disputing whether Anglian Water is entitled to take account of costs associated with the Wing Main in calculating the charges to be levied on developers.

1.2 Each dispute raised by the developers in this determination relates to the Wing Main and raises the same questions. The purpose of this draft determination is to set out our conclusions and is intended to provide the parties to the dispute with an opportunity to make representations in relation to these.

(B) Overview of the legal framework relevant to this determination

1.3 An owner or occupier of premises may request a water company to provide a water main capable of supplying water to the premises. A request of this type is known as a '**requisition**'. Upon being served a notice to this effect, the water company will be under a contingent duty to provide a water main to be used for providing supplies of water as are sufficient for domestic purposes[5].

1.4 The duty is contingent in that the water company is entitled to require financial undertakings or a security, requiring the requisitioning party to contribute to the costs of providing the water main. The Act sets out categories of costs in respect of which the water company may require the developer to provide a contribution[6].

[5] Section 41 of the Act.
[6] Sections 42 and 43 of the Act.

1.5 Where parties are in dispute regarding the costs of a requisitioned main, and in this case whether a contribution can be sought in relation to them, we are able to make a determination to resolve the dispute. If we determine that costs have been incorrectly included within requisition charges, we will require the water company to remove them. If we determine that costs have been properly included but incorrectly calculated, we will require the company to re-calculate the developer contribution as directed by us.

2. The dispute

(A) The Parties

Anglian Water Services Limited

2.1 Anglian Water is appointed under the Act to provide water and sewerage services to customers in central east England, including those customers in the Ruthamford Water Resource Zone[7] (**Ruthamford WRZ**) in which the Wing Main is located.

2.2 The Ruthamford WRZ covers a wide area in the East of England, including the conurbations and areas of:

a. Bedford;
b. Milton Keynes;
c. Northampton;
d. Peterborough;
e. Corby;
f. Daventry;
g. Huntingdon;
h. Kettering; and
i. Wellingborough.

Utility Law Solutions Limited

2.3 ULS is an organisation that provides services and advice on a wide range of matters, including issues relevant to the water sector in England and Wales. In this determination, it is representing nine developers.

(B) The Wing Main

2.4 The determination requests were made in respect of contributions claimed by Anglian Water for the Wing Main, which forms part of a wider strategic programme of assets: the Wing Water Supply Programme.

[7] Anglian Water is divided into eleven separate water resource zones in the Anglian Water region plus a water resource zone in Hartlepool. Ruthamford is the largest water resource zone and comprises an integrated water resource and supply system.

The Wing Water Supply Programme

2.5 The Wing Water Supply Programme was developed to expand the existing network within the Ruthamford WRZ. It is a programme designed to increase abstraction from Rutland Water and subsequently extend the Wing Water Treatment Works to treat the increased supply coming from Rutland Water.

2.6 The programme can be split into the following component parts.

a. Construction of a 90 Ml/d water treatment works and three pumping stations:

i. New Morcott Water Treatment Works (adjacent to the Wing Water Treatment Works); and
ii. Rutland Water Raw Water, Wing and Beanfield Pumping Stations.

b. Construction of Rutland to Hannington Pipeline:

i. Rutland (Ephingham) to Wing – 8 km of raw water pipeline;
ii. Wing to Beanfield – 15 km of treated water pipeline (s**ection 1 of the Wing Main**);
iii. Beanfield to Hannington – 19 km of treated water pipeline (s**ection 2 of the Wing Main**);
iv. Together, **the Wing Main** (that is, comprising sections 1 and 2 of the Wing Main mentioned above to include 34 km of treated water pipeline from the Wing Water Treatment Works to Hannington).

c. Construction of four major lagoons.

2.7 A planning application was submitted in April 1999 for an extension to the Wing Water Treatment Works, and planning approval was received in April 2007. It should be noted that by the time planning approval was received the planned works had been extended to include the Wing Main.

The Wing Main

2.8 The Wing Main, as set out above, comprises the Wing to Beanfield and Beanfield to Hannington pipelines. Its purpose is to transport the increased water supply generated by the Wing Water Supply Programme to serve future developments in the Ruthamford WRZ. Table 1 below sets out the key milestones relating to the Wing Main.

Rationale for the Wing Water Supply Programme

2.9 The reason that Anglian Water put forward the construction of the Wing Water Supply Programme, and subsequently the Wing Main, was to meet future growth in demand in the area. Anglian Water considered that without the Wing Water Supply Programme, and subsequently the Wing Main, it could not meet future customer needs and that there would be a headroom deficit in the Ruthamford WRZ. This is best illustrated by what Anglian Water noted in its response to our information request in May 2011:

> "…the need for the [Wing Water Supply Programme] was driven by existing and emerging deficits in the forecast supply/demand balance for planning zones in the Ruthamford Water Resource Zone. In order to maintain security of supply and levels of service to our existing and future customer base we needed to ensure water availability at least met the requirements of forecast total demand plus target headroom.
>
> "During 2002 our AMP4 forecast demonstrated an immediate supply deficit problem in the Ruthamford Water Resource Zone. Least cost planning based on this forecast meant along with investment in demand management schemes (additional leakage control, pressure reduction, metering and water efficiency measures) a need for a significant increase in supply remained.
>
> "The existing water treatment works at Wing only exploited about two thirds of the capacity of Rutland Water Reservoir. By extending the water treatment works to increase output, and duplicating the trunk mains south towards Milton Keynes to increase the distribution capacity, we could resolve the supply/demand problem and achieve a healthy security of supply."

2.10 A key element of Anglian Water's reasoning behind the programme was the deficit in the region and to this end, Anglian Water noted in its response to our information request in May 2011, that:

> "At PR04, it was believed that the Ruthamford zone was already in deficit against target headroom at peak demand and had been since 2002-03. It was also forecast that it would be in deficit against target headroom at average demand in 2006-07."

2.11 Furthermore, Anglian Water also noted in May 2011 that:

> "…in terms of actual deficits, the [Ruthamford] zone was considered to be in deficit against target headroom from 2005-06 to 2008-09 and only went into surplus again in 2009-10 following delivery of the Wing Water Treatment Works extension."

2.12 Anglian Water has stated it was able to meet growth in demand by increasing abstraction from Rutland Water from 270 megalitres a day (Ml/d) up to the abstraction amount allowed under its licence, which is 360 Ml/d. Anglian Water has further stated that Rutland Water has only been able to operate at 75% of its capacity because the treatment works designated to treat its water (Wing Water Treatment Works) has only been able to treat 270 Ml/d. The Wing Water Supply Programme extends the capacity of the Wing Water Treatment Works to ensure that it can treat 360 Ml/d.

2.13 Anglian Water also put forward further reasoning in its response to our information request to justify the increase in growth. In an investment proposal for the Wing Water Treatment Works extensions and trunk mains dated 28 November 2003, Anglian Water stated that:

> "Supply/demand deficits have been identified by the FORWARD model for the Ruthamford Water Resource Zone. These deficits are already occurring at periods of peak demand and will increase in frequency and severity as demand in the Ruthamford zone continues to rise. The zone is one of high growth with 90,000 additional homes currently planned for the Milton Keynes/Northampton/Bedford area.

> "The recent government report from the Office of the Deputy Prime Minister entitled "Creating Sustainable Communities" includes plans for 134,000 new homes in the Milton Keynes/Bedford/Northampton area by 2016, 44,000 above current planning targets. These additional 44,000 homes have not been taken into account by the FORWARD model."

Table 1 Key milestones in relation to the Wing Main

Date	Key milestone
Dec 2006	Design development starts
Sept 2007	Design complete and enabling works starts
Feb 2008	Enabling works complete and main construction starts
Apr 2009	Ephingham to Wing potable pipeline, raw water draw and Ephingham pumping station completed
Sept 2009	Wing to Beanfield potable pipeline completed
Mar 2010	Beanfield to Hannington potable pipeline completed

(C) The requisitions

2.14 The determination request submitted to us by ULS on 20 October 2009, questions the legal basis for the contribution that Anglian Water has required from developers in relation to costs associated with the Wing Main. ULS subsequently extended its initial determination request to cover nine developers which have requisitioned water supply infrastructure at 75 separate sites. Appendix 1 sets out the requisitions that form part of the determination request from ULS.

(D) Chronology of the dispute

ULS' request for determination and our investigation

2.15 Table 2 below provides a chronology of our investigation following receipt of the determination request from ULS in October 2009.

Table 2 Chronology of our investigation

Date	Action	Number of determinations
October 2009	ULS submits initial complaint	3
July 2010	ULS submits a further 37 sites for inclusion in the determination	40
March 2011	ULS submits a further nine sites for inclusion in the determination	49
April 2011	Ofwat issues a formal request for information to Anglian Water	49
May 2011	Anglian Water responds to the formal information request issued in April 2011	49
May 2011	Ofwat provides ULS with a non-confidential version of Anglian Water's response to the formal information request	49
June 2011	ULS provides Ofwat with its response to Anglian Water's May 2011 information request response	49
October 2012	ULS expanded the list of sites for determination to 75	75
17 June 2013	Ofwat issues a further formal request for information to Anglian Water	75
27 June 2013	Ofwat issues a further formal request for information to ULS	75
July 2013	Anglian Water and ULS provide responses to the information requests	73
Nov 2013	Update meetings with Anglian Water and ULS	73

(E) Scope of this determination

2.16 This determination considers whether the costs associated with the Wing Main (as described above in paragraphs 2.6 (b) and 2.8) are eligible for recovery as part of the charges imposed on developers for the requisition of assets, and if so, the amount that should be charged.

2.17 There are two distinct scenarios under which either party to a requisition can refer a dispute to us for a determination. These are any disputes between a water company and any other person as to:

a. the undertakings or security required by the water company; or
b. the amount required to be paid in pursuance of any such undertaking[8].

2.18 The undertakings referred to in this section are made to the water undertaker and bind the person making the requisition to pay the undertaker either the relevant deficit or the discounted aggregate deficits[9] (in either case, the **requisition charge**). If the full amount is not paid at the time of the requisition, the water undertaker may require a security to be paid to secure the payment of the amount of the undertaking.

2.19 It is important to distinguish between the two types of dispute. Disputes under '**a**' can take into consideration the basis upon which the costs of the requisition were included within the requisition charges. The primary dispute in this case falls within this provision as it relates to the basis upon which the costs of the Wing Main were included in requisition charges.

2.20 A dispute under '**b**' relates to the actual costs, or the method by which the costs are calculated or apportioned, incurred by the water company in completing the requisition and therefore included in requisition charges. In this case, the actual costs or the apportionment of those costs is not the immediate cause[10] of the dispute. However, our powers allow us to consider and determine a dispute under 'a' as well as 'b'. Therefore, even though the original dispute was referred to us under 'a', associated with our determining this dispute, we consider that the determination should also include setting a basis of charges which best meets our statutory duties. In this context, we consider that the current basis for the charges relating to the Wing Main can be improved upon to:

[8] See section 42(6) of the Act.
[9] See sections 43 and 43A of the Act.
[10] Correspondence with ULS has clarified that the extent of the dispute relates to the legal basis upon which Anglian Water has sought to recover the costs associated with the Wing Main from the developers represented by ULS.

a. better reflect costs reasonably incurred;
b. further facilitate the efficient use of resources; and
c. be more consistent with our duties and obligations.

Therefore, we set out what we consider to be a more reasonable approach to the apportionment of the costs incurred by Anglian Water in relation to the Wing Main in chapter 4.

3. The legal framework

(A) Overview

Water mains requisition

3.1 An owner or occupier of premises may request that a water company provides a water main to enable a supply of water to those premises. Subject to certain conditions being fulfilled (which can include a requirement to contribute to the cost of providing the water main), the water company is under a duty to provide the water main[11]. A request to provide a new water main in this way is referred to as a 'requisition'.

Contributions for requisitions

3.2 The water company can require a contribution to be made by the person making the requisition towards the costs of providing the new main in question[12]. This contribution is calculated by reference to the expected revenue to be received by the water company from charging new customers who will be served by the new requisitioned main once it is in use. This revenue is 'offset' against the total costs of providing the main by requiring the water company to reduce its requisition charge to take account of payment of a hypothetical loan over 12 years, with the revenue payments in relation to this loan (made to the company) calculated and offset from the amount to be funded by the requisition charge every year. The net amount, being the remainder of total costs having taken into account this offset, is the residual amount that the water company may require the person making a requisition to contribute up front.

Recoverable costs associated with a water mains requisition

3.3 Companies are not entitled to seek a contribution (using the requisition charge mechanism outline above) for all costs associated with a requisition. The types or categories of costs for which such a contribution may be sought are set out in the Act. These costs are:

[11] See section 41 of the Act.
[12] See sections 43(2), 43 and 43A of the Act.

a. the costs reasonably incurred in providing a new main **but excluding costs incurred in providing additional capacity**, not required to serve the premises that are the subject of the requisition (emphasis added);
b. the costs reasonably incurred in providing a new water main may include the costs reasonably incurred in providing such other water mains and such tanks, service reservoirs and pumping stations as it is necessary to provide in consequence of the provision of the new main[13]; and
c. such proportion (if any) as is reasonable of the costs reasonably incurred in providing … any such additional capacity in an earlier main as falls to be used in consequence of the provision of the new main[14].

3.4 If a water company incurs costs in completing the works arising from a requisition that fall outside of these provisions it may not use these provisions as a basis to seek a contribution, through a requisition charge, towards such costs from the person making the requisition.

(B) What is a water main?

3.5 Section 219 of the Act defines a water main as:

> "any pipe… which is used or to be used by a water undertaker … for the purpose of making a general supply of water available to customers or potential customers of the undertaker…, as distinct from for the purpose of providing a supply to particular customers."[15]

3.6 The categories of water main, as referred to in the Act and in this document are set out below.

[13] Section 43 (4) (a) of the Act.
[14] Section 43 (4) (b) of the Act.
[15] This includes tunnels or conduits which serve as a pipe and to any accessories for the pipe.

New main[16]

3.7 'New main' is a term used in the Act to refer to a water main that is the subject of a requisition. It generally means the 'on-site' main required to supply a specific site with multiple customers with water. In this document, such a main is sometimes termed a 'requisitioned water main' (RWM) once it has been the subject of a requisition.

3.8 This is important because it is only once a water main becomes an RWM that costs incurred in providing an associated 'other' or 'earlier' main (as mentioned at section 43(4)(a) and (b) respectively) can be considered as being necessary in consequence of that RWM. A main where costs are incurred on a basis that is necessary in consequence of a RWM may be referred to in this document as an 'other main' or 'earlier main ('consequential water main'). See paragraph 3.9 below.

Consequential water mains

3.9 An 'other main'[17] or 'earlier main'[18] may be considered to be necessary in consequence of the provision of a new main (or a 'consequential water main') if certain key elements are fulfilled.

Other main

3.10 For an 'other main' to be a consequential water main, and therefore potentially chargeable as part of the recovery of the costs of a mains requisition via a requisition charge:

a. it must be necessary in consequence of the provision of a requisitioned water main; and
b. the cost of providing it must have been reasonably incurred.

[16] Section 43 (4) of the Act.
[17] Section 43 (4) (a) of the Act.
[18] Section 43(4) (b) of the Act.

Earlier main

3.11 For an 'earlier main' to be a consequential water main and therefore potentially chargeable as part of the recovery of the costs of a mains requisition through a requisition charge:

a. it has to be a water main that has been provided in pursuance of a water main requisition in the 12 years immediately before the provision of the new main[19];
b. a proportion of the additional capacity in the earlier main must fall to be used in consequence of a requisitioned water main; and
c. the cost of that proportion of capacity must have been reasonably incurred.

3.12 Without a valid water mains requisition, infrastructure cannot be characterised as an RWM, or consequential 'other water main' or 'earlier water main'.

(C) When will a water main be necessary to provide in consequence of the provision of a new main?

Demand of premises greater than network capacity

3.13 A water main may be necessary to provide in consequence of the provision of a requisitioned new main where the water supply required to be made to premises at the related development site is greater than the capacity of the network can support. Where a water company is required to use its headroom to supply a site, it may be putting its security of supply at risk and therefore its ability to comply with section 37 of the Act which relates to a company's general duty to maintain the water supply system.

3.14 Therefore, we interpret 'in consequence', as not only being a question of whether water can be supplied to the site (which may be the case if headroom is being used) but also ensuring that the company is able to continue to comply with its statutory obligations.

[19] This could be as a requisitioned new water main or consequential water main under section 43(4)(a).

Timing of the relevant requisition is significant

3.15 The timing of the relevant requisition needs to be considered before an 'other' or 'earlier' water main can be considered necessary in consequence of the provision of a new main. The most obvious category would be where an 'other' main is planned and provided as a direct consequence of a requisition of a new main. However, there are several less obvious categories of a consequential water main that need to be considered in this case as set out in figure 1 below.

Before provision of the Wing Main

3.16 In a case where a potential 'other main' had been planned before any relevant developer actually requisitioned a new main which necessitated its building at a sufficient capacity, it is our view that the fact that the 'other main' was already planned and may have been under construction before such a requisition, does not prevent it becoming an 'other main' (under section 43(4)(a)) following the requisition, at the point where it is confirmed that some of its capacity – possibly planned for development in general – will now become necessary in consequence of this particular requisition; this means that where:

a. a developer requisitions a new main to supply a development with water for domestic purposes;
b. it is recognised by the undertaker that such supply will necessitate the provision of infrastructure in addition to the new main (for example, an 'other main'), in order for the undertaker to discharge its statutory duty to make the necessary supply; and
c. the undertaker already has in contemplation/planning and/or construction a main that could be used to accommodate that supply that main (in this case the Wing Main) can be considered to be an 'other main' for the purposes of including a reasonable charge in relation to the capacity needed to enable the supply to the new site through the new main (section 43(4)(a) of the Act refers) and thereby discharge the aforementioned duty.

3.17 However, this is distinct from the position where an undertaker anticipates future requisitions by providing a water main then seeking to recoup from a future requisitioner where no requisition preceded the provision of the water main. Without a requisition pre-provision, the cost of the water main already provided cannot be charged to any subsequent requisition even where that requisition necessitates the use of some of the capacity of the main in question.

3.18 It is section 41 of the Act that raises a duty on the undertaker to provide a water main to supply premises in a particular locality with water for domestic purposes (contingent upon the person making the requisition making any required financial undertakings or payment of a security in respect of a contribution to the reasonable costs of providing the means to effect the required water supply). That duty may require an undertaker to provide additional infrastructure (which might include an 'other main') in order to make the requisitioned supply, but, unless that duty is engaged by a requisition, no charge under section 43 of the Act can be made in relation to an 'other main' that was already 'provided' before a relevant requisition was made[20].

3.19 In relation to the aforementioned statutory duty, if the discontinuance or delay in the provision of the other main could be the basis for a claim for a breach of that duty, that would be an indication that the main in question is properly considered an 'other main' for the purposes of section 43(4)(a) and thus the inclusion of a contribution towards the costs of that main in the charge to the developer making a relevant requisition.

3.20 Therefore, under section 43(4)(a) of the Act, if the 'provision' of an 'other main' is necessary as a consequence of the provision of a new requisitioned main, the costs reasonably incurred in 'providing' the 'other main' can be included in the costs reasonably incurred in providing the new main. If the other main is necessary in order for the supply to be made, it is considered necessary in consequence.

[20] Paragraphs 3.22 to 3.24 below discuss the issue of when a main can be considered as 'provided'.

After provision of the Wing Main

3.21 Further, if a requisition for a new main is received and the new main is 'provided' during the 12 years after the 'earlier' main is 'provided', the requisitioning developer can be charged a contribution towards the earlier main to the extent that its capacity needs to be used by the new development. The 'earlier main' in question must have been a previous 'new main' or 'other main', in either case 'provided' in relation to an earlier requisition.

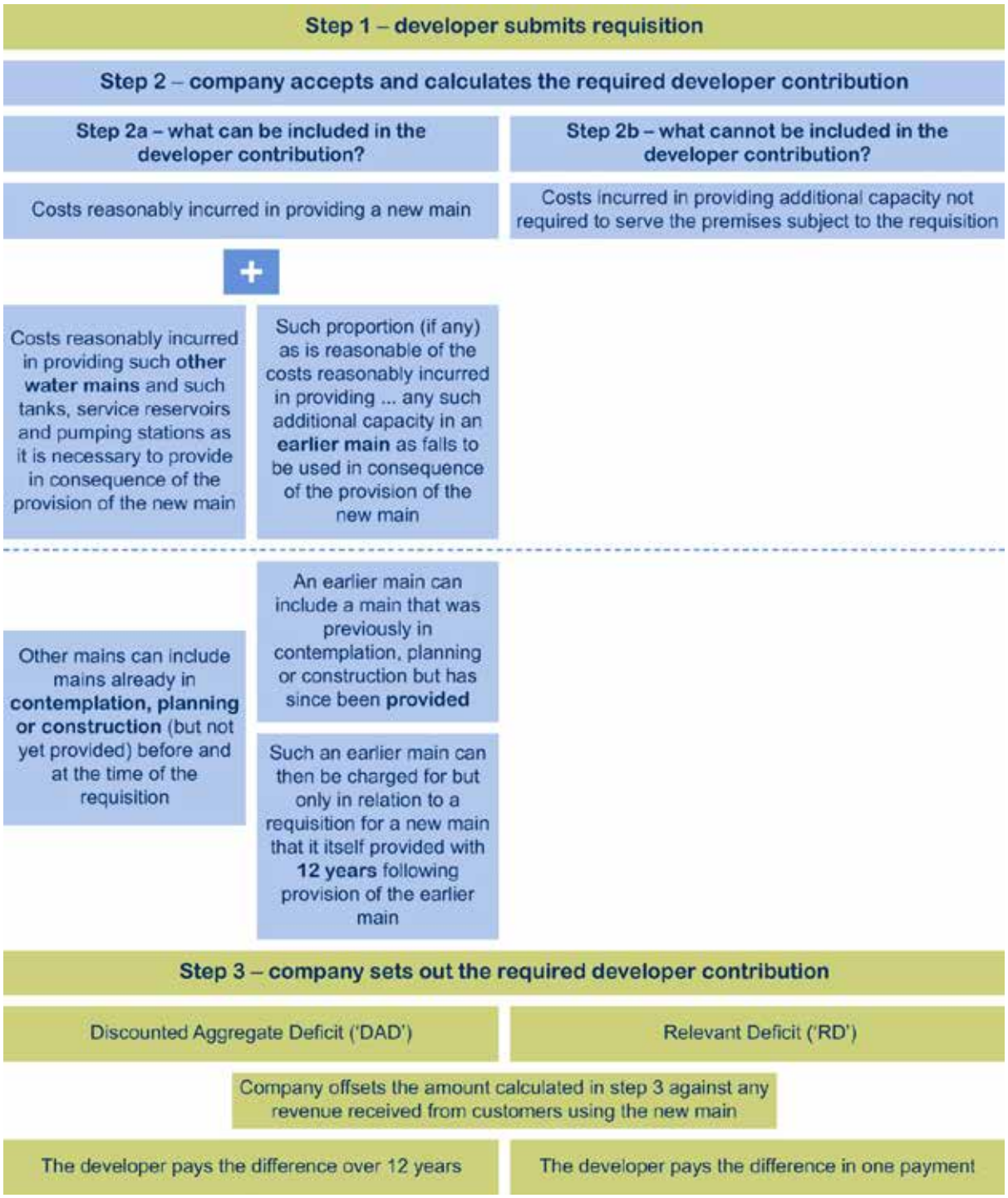
When can a main be considered as 'provided'

3.22 A main is considered to have been 'provided' once it has been constructed, and laid in the ground and is capable of supplying the premises concerned. Provision of a main does not require that the main is in fact connected. It may be necessary for there to be a delay between the notice of requisition to the water company and the actual provision of the associated water main or mains. However, the company will be in breach of its statutory duty if it has not complied with section 44 of the Act, which sets out requirements such as timing and route for a requisitioned main.

3.23 Further, we consider that there can be a staged approach involving a time difference between the provision of a new water main and the provision of other mains in consequence of that water main.

3.24 Different phases of an 'earlier' main may have been provided at different times and relate to different groups of developments. This fact is relevant to individual contribution calculations as well as the timing of the 12-year periods for the purposes of section 43(4)(b).

Figure 1 Overview of legal framework[21]



[21] Please note that figure 1 is not a substitute for the relevant provisions of the Act. It is only intended to illustrate the application of current legislation to the process of calculation of requisition costs.

(D) Applying the legal framework to ULS' position

3.25 In its appeal to us on behalf of the appellants, dated 20 October 2009, ULS makes the following points.

> "It seems clear that the Wing Main was not provided under the terms of a requisition and therefore Anglian Water is prevented from applying claw back to future requisitions as part of the requisition of costs for a new development."

3.26 We agree that without an original requisition the Wing Main could not qualify as an 'other main' (at section 43(4)(a) of the Act). However, it is our opinion that section 43 can be interpreted to include as an 'other' main a main which was in contemplation, planning or construction when the main for the new development was requisitioned. Therefore, once the Wing Main was in contemplation, planning and construction, but before it had been 'provided', it could be classified as an 'other' main in respect of any requisition for a main to supply a new development which necessitated the use of a proportion of the capacity of the Wing Main as necessary to provide water to the new site. On this basis, therefore, we consider that the Wing Main was a requisitioned main in respect of all the relevant requisitions.

3.27 ULS also state that:

> "Even if there had been a first requisition (which is not admitted) which had been upsized to take account of future development, the wording of the Act under sections 43(4) and (5) does not permit water companies to claw back costs from a water main that has not yet been constructed. In support of this ULS state that section 43(4) describes the provision of capacity in an 'earlier main' and section 43(5) defines an earlier main as one that has been 'provided' in pursuance of a water main requisition 'in the period of twelve years immediately before the provision of the new main'."

3.28 In our opinion, a water main that is in contemplation, planning or construction before a relevant requisition is submitted, can then become an 'other' main (as at section 43(4)(a)) where a part of the capacity of that other main is necessary in consequence of the RWM. In such circumstances, a proportionate charge can be made by the water company for the reasonable cost of provision of the capacity required. Once the 'other' main (in this case the Wing Main) has been provided, section 43(4)(b) permits the water company to charge a reasonable proportion of the capacity used in this 'earlier' main (in this case, the Wing Main) as is necessary to provide for a new requisition made within 12 years of the provision of the Wing Main.

3.28 Further, ULS also point out that:

> "Any costs must be necessary to provide water to the development that is subject to the Second Requisition – it is hard to see how the Wing Main is needed to supply water to houses that have already been constructed."

3.30 In our view, it is acceptable for the water company to have used a temporary supply (in this case, borrowed from current headroom) while awaiting completion of the 'other main', which is required to supply the site long term. This does not undermine our basic premise set out in the answers to ULS' points above (see paragraphs 3.13 to 3.14).

4. Our draft determination

(A) Overview

4.1 As stated in paragraphs 2.6 (b) and 2.8, the only relevant asset for this determination is the Wing Main, which is the treated water distribution network from the Wing Water Treatment Works to Hannington. This chapter sets out our view of the applicability and interpretation of section 43 of the Act to the facts in this determination. It considers whether the costs of the Wing Main may be recovered by Anglian Water under its power to require contributions for the provision of requisitioned water mains. As discussed in paragraph 2.20, we also set out what we consider to be a more reasonable approach to the apportionment of the costs incurred by Anglian Water in relation to the Wing Main.

Categorisation of the Wing Main

4.2 The overall question is, for each of the 73[22] sites within this determination, can the Wing Main be categorised as:

a. an 'other water main' under section 43(4)(a); or
b. an 'earlier water main' with oversized capacity under section 43(4)(b)?

4.3 For the Wing Main to fall within section 43(4)(a), it is necessary to demonstrate that it is a water main the provision of which is necessary to provide in consequence of the provision of a new main requisitioned under section 41(1). We consider that the circumstances of the Wing Main satisfy these conditions because there was insufficient capacity to supply the new development(s) without utilising part of the capacity of the Wing main (see paragraphs 2.9 to 2.13 above).

4.4 Further, we consider that oversized capacity included within the Wing Main satisfies the requirement under section 43(4)(b) as an earlier water main for sites connected to the Wing Main subsequent to its provision and that make use of its additional capacity.

[22] See footnote 3 (page 5).

(B) Relevant considerations

4.5 The Wing Main was in contemplation, planning or construction, but had not yet been 'provided' at the time that many of the relevant requisitions for new water mains were made. As explained in paragraphs 3.16 to 3.21 above, we consider that before it has actually been 'provided', the Wing Main can be characterised as:

a. an 'other main' that is necessary in consequence of a relevant requisition that is made while it was still in contemplation, planning or construction; and/or
b. having been so characterised, can be considered an 'earlier main', in respect of a requisition made after its provision, for the 12 years following that provision. See appendix 1 for details of the requisitions relevant to this determination.

Discharge of water company's duty

4.6 Therefore, the water company can discharge its statutory duty[23] by embarking on the construction of the planned (Wing) main and then seeking to recover costs reasonably incurred in respect of the proportion of the Wing Main's capacity necessary to satisfy its duty in respect of a requisition made before the Wing Main is provided.

4.7 If no requisition notices had been received, the Wing Main would on completion have been 'provided' outside the provision of section 43 of the Act and no costs in respect of it could be recovered from developers. This would have been the case in these circumstances even where some of the Wing Main's capacity was used in order to fulfil the aforementioned statutory duty. It is necessary to consider whether the Wing Main, in contemplation, planning or construction, when finally 'provided' is 'provided' so as to discharge a statutory duty owed at that point to an eligible requisitioner. That is to say, if the project was delayed or discontinued there could be a claim for breach of statutory duty.

[23] As detailed in paragraphs 3.16 to 3.21.

Necessity of alternative solution if Wing Main not provided

4.8 The Wing Main may not have been originally intended to respond to a specific requisition but its effect is to do so by the time that it is 'provided'. Furthermore, if the Wing Main was not provided, an alternative solution would have been necessary to provide the capacity that the development required and thereby fulfil the corresponding statutory duty. It is further possible that multiple requisition notices may have been received by Anglian Water which the provision of the planned Wing Main may have been capable of accommodating and in doing so discharge the company's statutory duties in respect of each requisition. If the Wing Main had already been 'provided' in pursuance of a requisition, it would then fall within section 43(4) (b) of the Act as an 'earlier water main' in respect of the discharge of the undertaker's statutory duty in respect of requisitions requiring some of its remaining available capacity.

4.9 Section 43(4)(a) of the Act requires only that the 'provision' of the other main be necessary in consequence of a requisition. This does not appear to exclude multiple requisitions that are received prior to the 'provision' of the Wing Main. On 'provision' of the Wing Main, Anglian Water is capable of discharging multiple statutory duties associated with requisition notices and, as such, the main can be considered to have been necessary in consequence of each relevant requisition to the extent that a proportion of its capacity was necessary in order for that duty to be discharged in each case.

(C) Applying section 43 of the Act to the Wing Main

4.10 This section considers the application of section 43 of the Act to the facts of the Wing Main and reasons that the Wing Main is capable of being a 'consequential water main' under section 43(4)(a) for sites completed prior to the provision of the Wing Main and an 'earlier water main' under section 43(4)(b) for sites completed after the provision of the Wing Main.

Provision of the Wing Main following temporary supply

4.11 The Wing Main was completed in March 2010; however, by this point, 41 of the sites relevant to this determination had already been completed and supplied by Anglian Water with water services. As explained above, water companies will, on receipt of a valid notice of requisition, be placed under a duty to provide a suitable water main and the company will be in breach of this duty unless it has taken all reasonable steps and exercised due diligence to comply with the request.

4.12 The water company may be able to identify a supply solution (which could be temporary) before a requisitioned water main can be completed and installed. The temporary solution may be undertaken so as to discharge the requirement to take all reasonable steps and avoid liability for breach of statutory duty under section 41(4) of the Act. To discharge this requirement, we consider that the water company must be entitled to ask whether a solution is apt to discharge the statutory duty – for example, 'borrow' capacity (which could be headroom) from a pre-existing water main, but which it does not reasonably regard as appropriate and sustainable beyond a temporary period.

4.13 On this basis, the Wing Main can be considered to have been necessary in consequence of the requisitions made while it was in contemplation, planning or construction (as explained in paragraph 4.5 above) despite the fact that Anglian Water was capable of supplying the sites by other temporary means.

Consequential water main

4.14 For the Wing Main to fall within section 43(4)(a) of the Act it is necessary to demonstrate that it is a water main the provision of which is necessary to provide in consequence of the provision of a new main requisitioned under section 41 of the Act. It is not disputed that each of the sites submitted to us as part of this determination has made a requisition under section 41 of the Act for a new water main to connect their site. As a result, the key question is whether the provision of the Wing Main is "necessary in consequence" of the provision of, in each case, these new mains.

4.15 There is clear evidence, provided by Anglian Water and as stated in paragraph 2.13 above, of a supply/demand deficit in the region covered by the Wing Main. As a result of this evidence, we consider that further development in the area made the provision of the Wing Main necessary. That Anglian Water was capable of supplying sites on a temporary basis from borrowed headroom does not in our view preclude the necessity of the Wing Main as a consequence of the relevant requisitions. Therefore, Anglian Water may seek to recover a contribution from developers for the costs of Wing Main that are reasonably incurred as necessary in consequence to each requisition.

'Other' and 'earlier' water mains

4.16 As explained in paragraph 3.10 above, section 43(4)(b) of the Act allows for the recovery of the reasonably incurred costs associated with the provision of an 'other main' that it is necessary for the undertaker to provide in consequence of the provision of a requisitioned new main. As explained in paragraph 3.11 above, section 43(4)(b) allows for the recovery of the reasonably incurred costs associated with the provision of a proportion of additional capacity that it is necessary to use in an 'earlier main' which had itself been provided in pursuance of a water main requisition in the preceding 12 years.

4.17 Paragraphs 3.16 to 3.21 above explain our interpretation of section 43(4)(a) and (b) of the Act with respect to requisitions made while a potential 'other main' was in contemplation, planning and construction and later as an 'earlier main' once it has been provided.

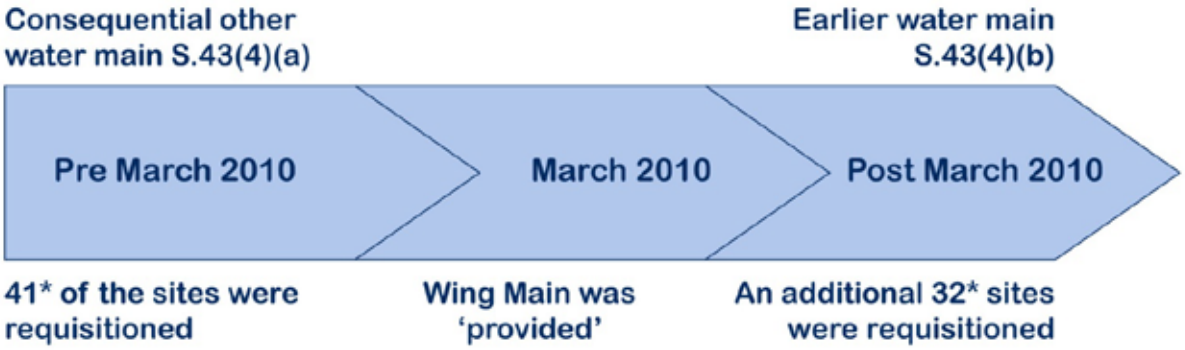
Application

4.18 Figure 2 below details whether the 73[24] sites that have been submitted for determination are required to contribute towards the Wing Main and in what capacity they do so. That is to say, whether in respect of the sites the Wing Main is classified as either a 'consequential water main' or an 'earlier water main'.

[24] See footnote 3 (page 5).

4.19 Of these 73 sites, requisitions in respect of 41[25] sites were made before provision of the Wing Main in March 2010; therefore, the Wing Main can be considered an 'other main' in respect of these. The 32 sites[26] in respect of which requisitions were made after the provision of the Wing Main (that is, post-March 2010) may be charged on the basis that the Wing Main is then classified as an 'earlier main'. We consider that with reference to eight sites[27] there are ambiguities[28] in relation to contributions made to the Wing Main and it is for Anglian Water to provide clarification to the developers in question[29] and make the necessary adjustments in line with the approach (see paragraphs 4.25 to 4.29 below) set out in this determination.

Figure 2 Timeline of requisitions in relation to the Wing Main



*These are the sites that fall within the scope of this dispute. There are potentially other sites that could also fall into either category.

4.20 Therefore, we conclude that Anglian Water may seek to recover a contribution from developers for the costs of the Wing Main that are reasonably incurred as necessary in consequence for each requisition. Having established that Anglian Water can recover contributions for the cost of the Wing Main from developers, the key issue in resolving this dispute centres on the level of costs that were reasonably incurred by Anglian Water and those that can be reasonably recovered from developers in the provision of the Wing Main.

[25] Of these 41 sites, we understand that with reference to 5 sites, contributions towards the Wing Main were either not sought or received by way of another water main. See site numbers 21, 25, 37, 38 and 67 in appendix 1.
[26] Of these 32 sites, we understand that with reference to 3 sites, contributions were either not sought or received by way of another water main. See site numbers 35, 61 and 64 in appendix 1.
[27] See sites 21, 25, 35, 37, 38, 61, 64 and 67 in appendix 1.
[28] Both parties have been made aware of these and we expect that Anglian Water will liaise with developers in resolving these ambiguities.
[29] Persimmon Homes, David Wilson Homes and Taylor Wimpey in relation to the sites mentioned above.

(D) Cost assessment framework

4.21 Following the conclusion at paragraph 4.18 above, this section sets out our assessment of the appropriate level of developer contributions to the Wing Main. Our assessment is for developers in relation to the Wing Main as a whole rather than at the level of individual sites, as the aggregate level of developer contributions feeds into the calculation of contributions for individual sites.

4.22 Below, we set out our:

a. assessment principles;
b. allocation of costs for the purposes of setting price limits in 2004; and
c. approach to the allocation of costs with respect to this determination.

Assessment principles

4.23 Our assessment principles take into account information provided by the parties and the duties applicable to Ofwat and the Parties, as set out in the Act. In the case of our duties, we have had regard, in particular, to the need to ensure the interest of consumers, efficiency of investment and use of resources. We also recognise that through setting the appropriate level of developer contributions we are in effect setting the price that developers will have to pay in relation to the Wing Main. Therefore, we have aligned our principles with our bulk supply pricing determination principles, as set out in 'Bulk supply pricing – a statement of our policy principles' (February 2011). These in turn, were aligned with our section 2 duties.

4.24 Therefore, we consider that the appropriate level of contributions from developers should be determined so that those contributions:

a. reflect the costs reasonably associated with the provision of the relevant services;
b. facilitate the efficient use of resources and effective competition within the water supply industry, where appropriate; and
c. are consistent with the discharge of the relevant duties and obligations of Anglian Water.

Allocation of costs for the purposes of setting price limits in 2004

4.25 Figure 3 below sets out how the total allowed cost of the Wing Main was allocated by us at the 2004 price review (PR04) between security of supply and growth. The costs associated with maintaining security of supply were allocated to existing customers, while those associated with growth were split between those identified to meeting existing customer growth and those associated with growth arising from new and future developments. The cost allocated to the growth of new and future developments (£16.73 million) was used as an input into the calculation of developer contributions for individual sites, some of which are now under dispute in this determination.

Figure 3 PR04 allocation of Wing water supply programme total costs

4.26 ULS has challenged the legal basis for any requisition charges at all being made to developers for the Wing Main. We have decided that such a legal basis does exist, but that the cost allocation underlying the charges also needed to be reviewed:

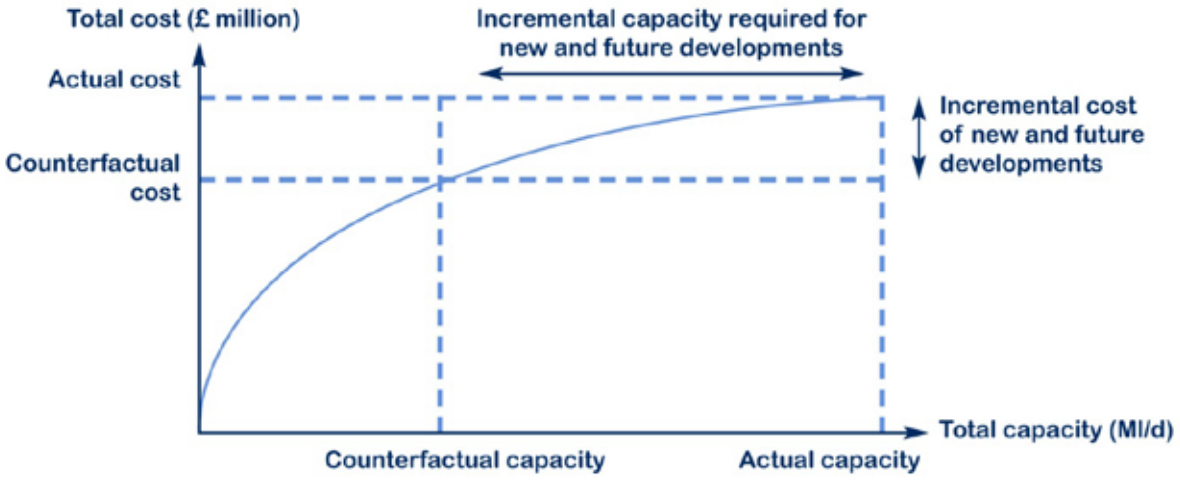
a. after carrying out analysis (discussed below and in appendix 2) on the incremental cost of the additional capacity required for new and future developments in the context of the later information available in respect of these developments, we do not consider that our earlier allocation of costs for the purpose of PR04 now reasonably reflects the costs associated with the provision of the relevant services;

b. as our later analysis suggests that developer contributions do not reasonably reflect costs, the provision of efficient economic signals – which feed into the assessments of potential competition impacts – and, more generally for efficient resource use, would be distorted. For example, existing customers will not value the increase in resilience they have obtained if the cost has instead been borne by developers; and
c. due to the above two factors the level of developer contributions is likely to be out of alignment with the legal framework defined in the Act, and inconsistent with the discharge of the relevant duties and obligations of Anglian Water.

Proposed approach

4.27 When Anglian Water planned and built the Wing Main there was already a requirement for additional capacity to serve existing customers. However, expected new and future developments meant that the size of the Wing Main had to be larger than it would have been just to serve the additional capacity requirements of existing customers. To capture this, we consider that developer contributions should reflect the additional costs required to serve the new customers using the Wing Main, over and above these existing customer requirements. However, the cost of works that would have taken place without any new developments (the 'counterfactual' scenario) should be allocated to existing customers. This is what we are calling the incremental cost approach to identifying the costs relevant for developer contributions. A stylised example of the incremental cost approach is shown in figure 4.

Figure 4 Stylised example of the incremental cost approach



4.28 The **incremental cost** approach will ensure that:

a. the costs recovered will reflect the costs reasonably associated with the provision of the relevant services;
b. as costs are reflective, they will provide the efficient economic signals required for efficient resource use; and
c. developer contributions will be consistent with the discharge of the relevant duties and obligations of Anglian Water and the legal framework set out in the Act.

4.29 The incremental cost is the difference between the actual and counterfactual costs that Anglian Water faced in building the Wing Main, and we assume that this is driven by the change in total capacity that is required as between the two scenarios. To estimate the counterfactual cost we have developed a model ('the incremental cost model') which estimates the costs that Anglian Water would have incurred in the absence of new developments relevant to this determination. From this result, we calculate the incremental cost. A full guide to our modelling is included in appendix 2.

4.30 Using this approach our base estimate of the incremental cost for new and future developments is £2.50 million (2002-03 prices). Our base estimate takes account of the results of sensitivity analysis, which shows how the incremental cost varies with variations in some of the key assumptions used in the modelling exercise. We discuss this analysis in Appendix 2. This amount, rather than the costs allocated for the purposes of PR04 of £16.73 million, should be the starting point for the calculation of individual developer contributions for the purposes of this determination. Other things remaining equal, this will result in developers receiving a refund, plus associated interest, on their existing contributions as a consequence of the charges being recalculated. This approach is more aligned with the requirement that only costs reasonably incurred in meeting the statutory duty should be charged under sections 43(4) (a) and (b).

4.31 Under this approach, as the apportionment of costs changes, we will need to re-balance the recovery of costs for the developments captured under this determination. Under the allocation from PR04, Anglian Water has recovered approximately £2.58 million from the developers in this determination. However, the incremental cost approach suggests that Anglian Water should only have recovered approximately £0.39 million from these developers[30].

4.32 The revenue to be recovered from developers would have been taken into account in deriving Anglian Water's revenue requirement for price reviews. As we propose to change this revenue from developers, there will be an impact on the revenue Anglian Water should have recovered from other customers in PR04. To correct for this divergence, we intend to modify the revenues Anglian Water can now recover at the 2014 price review (PR14). Our base provisional estimate is that, with an incremental cost of £2.50 million used as the basis for calculating the level of developer contributions under this determination, an additional £2.19 million, adjusted to reflect inflation, will need to be added to Anglian Water's regulatory capital value (RCV) – to be recovered from future customers more generally from 2015[31]. Although Anglian Water cannot have anticipated a specific adjustment of this form in finalising its business plan for PR14, we will nevertheless take account of a finalised adjustment, and future recovery of costs associated with it, in setting its price controls in PR14 following our determination of this dispute.

(E) Payment of interest

4.33 Under section 42(4)[32] of the Act, interest must be paid on any sums that have been deposited with a sewerage undertaker as security in relation to the provision of a public water main to be used for water supply to premises in a particular locality in its area for domestic purposes (pursuant to section 41(1) of the Act). Security is money that a person requisitioning the works may be required to pay in advance of work being done.

[30] Note both numbers in this paragraph are provisional and do not reflect the revenue offset feature of the requisition payments as set out in paragraph 3.2. This offset means that the actual payments by developers were significantly less than £2.58 million.
[31] This relates to the period from 2005 up to 2015 (when the new recovery from existing customers via adjusted RCV can begin).
[32] Section 42(4) of the Act provides that the undertaker shall pay interest "on every sum of 50p so deposited for every three months during which it remains in the hands of the undertaker" at rates approved or determined by us.

4.34 In calculating any interest due to the 73 developers that form part of this determination, Anglian Water should apply interest rate(s) in accordance with IN 11/05, 'Interest rates relating to charging for new connections and relocation of mains and sewers' and its appendix 1. The amount of any interest payable is for the Courts to determine, if Anglian Water and the developers are unable to agree this amount. IN 11/05 anticipates the approach we think a Court is likely to take in determining the amount of interest payable in this case.

5. Conclusion

5.1 Our view is that Anglian Water has an appropriate legal basis upon which to include the costs of the Wing Main in requisition charges requested in relation to 73 (of the 75) sites submitted within this dispute.

5.2 However, we do not consider that the current levels of developer contributions for the developments submitted within this dispute are appropriate. Instead, we have determined that these contributions should be equal to the incremental cost of the additional capacity required for the new developments. This approach ensures that costs recovered will reflect the costs reasonably associated with the provision of the relevant services.

5.3 Our base estimate of the incremental cost is £2.50 million and this is an input into the calculation of individual developer contributions for the purposes of this determination. Other things remaining equal, this will result in developers receiving a refund, plus associated interest, on their contributions as the charges are recalculated. Therefore, we require that Anglian Water produce revised calculations of developer contributions for the relevant sites (based on the methodology set out in appendix 3) and calculate the expected refunds within two months of this draft determination[33]. If we are satisfied with these calculations, we will then issue a final determination endorsing these and requiring Anglian Water to reimburse the appropriate developers accordingly within three months of the date of the final determination.

5.4 We have also determined that, to reflect the change in cost apportionment, an additional £2.19 million, adjusted to reflect inflation, will need to be added to Anglian Water's RCV – to be recovered over future price controls[34]. This is in relation to the over-recovery of contributions from developers in the 2005-15 period implied by this draft determination.

[33] Refunds will be equal to the difference between the incremental cost-based contribution and the previous contribution which followed the allocation set out at PR04, plus interest. The relevant figures to be used are the outputs of the requisition calculation (as set out in paragraph 3.2) as this output captures the actual amount paid by developers.
[34] As noted above, this is a provisional estimate.

Appendix 1: Relevant sites

Site no.	Site name	Developer
1	British Timkin site Phase 1	David Wilson Homes South Midlands
2	British Timkin site Phase 2	David Wilson Homes South Midlands
3	Nampak site, Station Road	Taylor Wimpey South Midlands
4	Oakley Vale, Phase 3	Barratt Homes Northampton
5	Oxley Park Phase 1	David Wilson Homes South Midlands
6	Marston Road, Lidlington	David Wilson Homes South Midlands
7	Oxley Park Phase 5	Persimmon Homes Midlands
8	Tyne Crescent, Brickhill, Bedford	Persimmon Homes Midlands
9	Pratts Quarry Phase 2A	Taylor Wimpey South Midlands
10	Pratts Quarry Phase 2B	Taylor Wimpey South Midlands
11	Pratts Quarry Phase 2C	Taylor Wimpey South Midlands
12	Upton Park Site C	David Wilson Homes South Midlands
13	Stratford Road, Wolverton	David Wilson Homes South Midlands
14	Watling Street, Fenny Stratford	Bellway Northern Home Counties
15	Pavenham Road, Milton Keynes	Barratt Homes Northampton
16	Site 15A, Pratts Quarry, Phase 2D	Taylor Wimpey South Midlands
17	Weetabix site, Corby	Persimmon Homes Midlands
18	Phases 2, 3, and 4 Newark Road, North Hykeham	Bellway Homes East Midlands
19	Milton Malsor, Northants	Persimmon Homes Midlands
20	Middlemore, Daventry	Persimmon Homes Midlands
21	The Grange, Desborough	Persimmon Homes Midlands
22	Garfield farm, Church Street	Bellway Northern Homes Counties
23	Loves Farm Phase A1 and A2	David Wilson Homes South Midlands

Site no.	Site name	Developer
24	Norton Road, Stotfold	Persimmon Homes Midlands / Taylor Wimpey South Midlands
25	Loves Farm Phase H1 and H2	David Wilson Homes South Midlands
26	Pemberton Court, Rushden	Morris Homes
27	Maple Close, Greenfield Road	Bellway Northern Home Counties
28	Newton Leys, Bletchley	Taylor Wimpey South Midlands
29	British Timkin site, Main Road, Duston	Bellway Northern Home Counties
30	Nampak site phase 2	Taylor Wimpey South Midlands
31	Upton Park site E, Ashby Wood Drive	Barratt Homes Northampton
32	Gyosei School, Brickhill Street	Barratt Homes Northampton
33	Stanbridge Road, Leighton Buzzard	Taylor Wimpey South Midlands
34	Oxley Gate, Milton Keynes	Taylor Wimpey South Midlands
35	Wixams Area H, Bedford	Taylor Wimpey South Midlands
36	British Timkin site Phase 2	David Wilson Homes South Midlands
37	British Timkin site Phase 2A	David Wilson Homes South Midlands
38	British Timkin site Phase 2B	David Wilson Homes South Midlands
39	Site 15B, Pratts Quarry, Leighton Buzzard	Taylor Wimpey South Midlands
40	Moreton Road, Buckingham	Bellway Northern Home Counties
41	The Paddocks, Silverstone	David Wilson Homes South Midlands
42	Wixams site F, Bedford	Taylor Wimpey South Midlands
43	Potton Road, Biggleswade	David Wilson Home South Midlands
44	RAF Cardington	Bellway North London
45	Manor Gardens, Old Wolverston Road	Barratt Homes Northampton
46	Newton Leys Phase 2	Taylor Wimpey South Midlands
47	Westfield Road, Phase 2	Taylor Wimpey South Midlands

Site no.	Site name	Developer
48	Fields Road, Wooton	Bellway Northern Home Counties
49	Rear of High Street, Bozeat	Bloor Homes Northampton
50	Phases 1&2, 15D, Pratts Quarry, Leighton Buzzard	Persimmon Homes Midlands
51	Phase 3, 15D, Pratts Quarry, Leighton Buzzard	Persimmon Homes Midlands
52	Former Calvert Brickworks, off Sandstone Close, Calvert	Persimmon Homes Midlands
53	15B, Pratts Quarry, Leighton Buzzard	Persimmon Homes Midlands
54	72-84 Wolverton Road, Newport, Pagnell	Persimmon Homes Midlands
55	Phase 6, Oakley Vale, Lyveden Way, Corby	Persimmon Homes Midlands
56	Phase 2, Linley Drive, Desborough	Persimmon Homes Midlands
57	Stantonbury Park	Persimmon Homes Midlands
58	Bugbrooke Road, Kislingbury	Persimmon Homes Midlands
59	Home Farm, Cranfield	Persimmon Homes Midlands
60	Greensand View, Station Road, Ampthill	Taylor Wimpey South Midlands
61	Phase 3, Site 12, Freemans Common, Bedford	Taylor Wimpey South Midlands
62	Site F2, Wixams, Bedford	Taylor Wimpey South Midlands
63	15D, Pratts Quarry, Bedford	Taylor Wimpey South Midlands
64	Phase 1, Westfield Road, Pitstone	Taylor Wimpey South Midlands
65	Phase 3, Nampak, Station Road, Woburn Sands	Taylor Wimpey South Midlands
66	Phase 1, Newton Leys, off Drayton, Bletchley, Milton Keynes	Taylor Wimpey South Midlands
67	Site 6, Oxley Gate, Milton Keynes	Taylor Wimpey South Midlands

Site no.	Site name	Developer
68	Phase 2, Area A, Bletchley Park, Milton Keynes	Taylor Wimpey South Midlands
69	Phase 2, Charity Wharf, Wing Road, Leighton Buzzard	Redrow Homes South Midlands
70	Harmans Way, Weedon	Redrow Homes South Midlands
71	Belle Baulk, Towcester	Redrow Homes South Midlands
72	Bletchley Campus, Bletchley, Milton Keynes	Redrow Homes South Midlands
73	PH1 Mill Lane, Green Norton, Towcester	Linden Homes Midlands
74	Christie Drive, Hinchingbrooke, Huntingdon	Linden Homes Midlands
75	Site 24 Sissinghurst Drive, Westcroft, Milton Keynes	Linden Homes Midlands

Appendix 2: Our modelling analysis

Introduction

This appendix outlines our modelling methodology. We use our incremental cost model to calculate a value for the cost of the Wing Main that can be attributed to new and future developments. As set out in chapter 4, we consider that this best captures the contribution developers should have made to the Wing Main. Our assessment is for developers as a whole in relation to the Wing Main, as this can then be used as a starting point for calculating contributions for individual sites.

In this appendix, we:

a. set out the incremental cost approach;
b. provide an overview of the model structure;
c. discuss our base assumptions and alternative options;
d. provide an overview of the key calculations in the model; and
e. set out our central result alongside sensitivity results for different assumptions for key inputs.

Incremental cost approach

When Anglian Water planned and built the Wing Main there was already a requirement for additional capacity to serve existing customers. However, expected new and future developments meant that the size of the Wing Main had to be larger than would have been necessary just to serve existing customers. To capture this, we consider that developer contributions should reflect the additional costs required to serve the new customers using the Wing Main. However, the cost of works that would have taken place without any new developments (the 'counterfactual' scenario) should be allocated to existing customers. This is what we are calling the incremental cost approach to identifying the costs relevant for developer contributions.

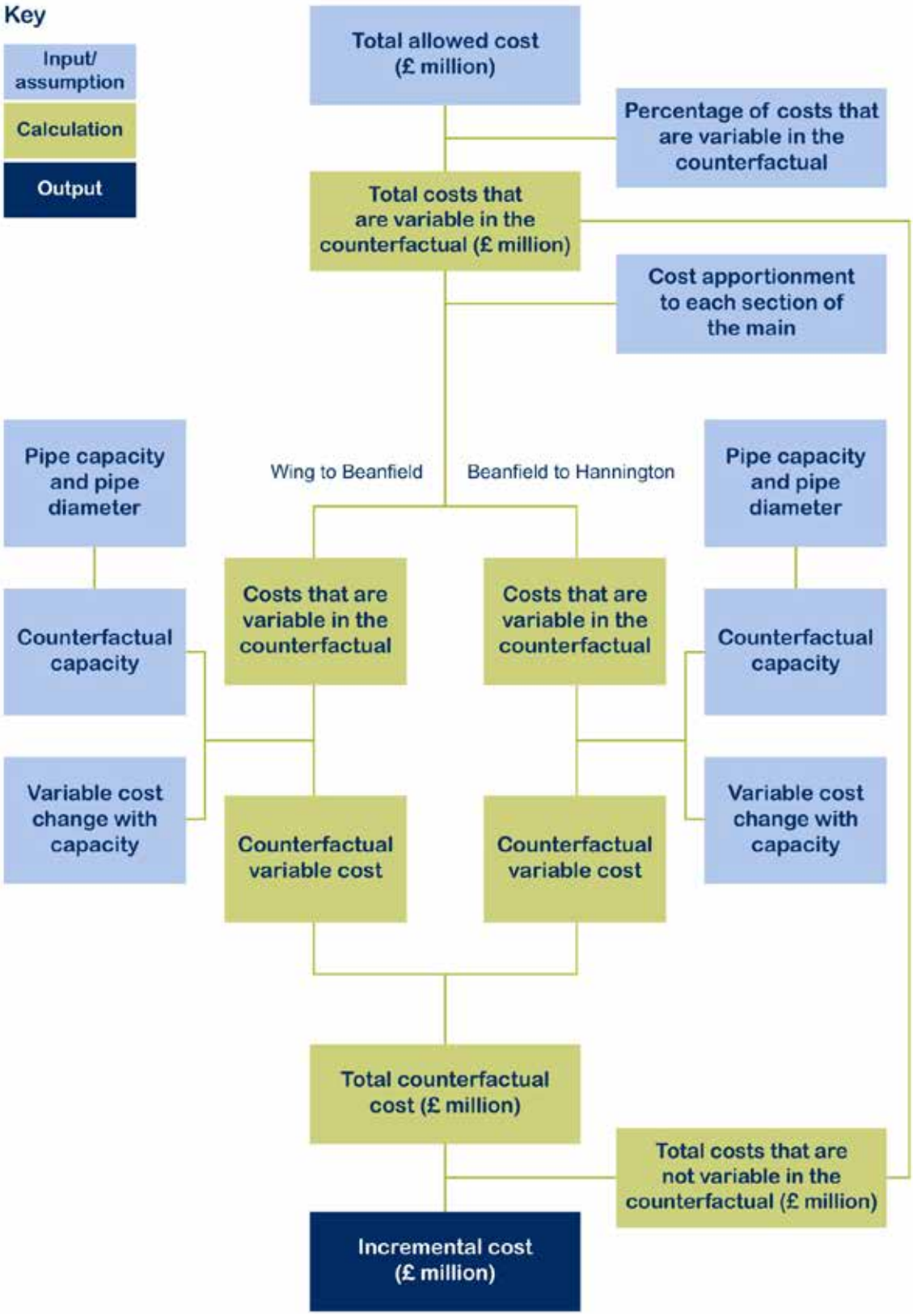
The incremental cost model allows us to estimate the costs that Anglian Water would have incurred in the counterfactual scenario. The incremental cost is then calculated as the difference between the actual and counterfactual costs that Anglian Water faced in building the Wing Main.

Overview of model structure

The objective of the incremental cost model is to calculate the costs that would have been incurred by Anglian Water without any new developments, in order to estimate the incremental cost that can be attributed to these developments. We will explain how the model achieves this with reference to the inputs, assumptions and outputs.

The structure of the model is shown in figure A2.1. The first input is the total allowed cost; the actual cost of the Wing Main determined at PR04. We apply a number of adjustments to this to estimate the costs that are variable, and subject to change in the counterfactual for each section of the Wing Main. We use these estimates to calculate the change in the variable cost by reference to the change in the capacity for each section in the counterfactual. The results of these calculations flow into our estimate of the total counterfactual and incremental cost.

Figure A2.1 The incremental cost model structure



Overview of model assumptions

The figure above shows that the incremental cost is determined by the:

a. percentage of the total allowed cost that is variable in the counterfactual;
b. cost apportionment between the Wing to Beanfield and Beanfield to Hannington sections of the main;
c. changes in pipe capacity with pipe diameter;
d. counterfactual capacity assumptions; and
e. changes in variable cost with capacity.

We discuss each of these factors below; setting out for each one our base assumption, reasoning and alternative options.

We assume that 23% of the total allowed cost of the Wing Main is variable in the counterfactual

In the counterfactual, with no new developments, there would have been lower capacity requirements and smaller diameter pipes, with lower capacity, would have been laid in each section of the Wing Main. Smaller diameter pipes would have been laid as we consider that the net option value of putting in extra capacity over what is required, is expected to be negative. The net option value is the value that is placed on maintaining the additional capacity minus the costs of the additional capacity. We consider that this will be negative as the costs involved in installing and maintaining the pipe and assets further upstream, such as pumping stations, will offset the option value from having a larger capacity.

However, we would not expect the total cost of building the Wing Main to fall in proportion to the reduction in pipe costs, as the cost of the pipe itself is only a relatively small proportion of the total cost. Instead, the majority of the costs in building a main are associated with the physical activity of preparing the land for, and actually laying it. These costs will not be materially different for different diameters of main; this would also apply to any planning costs. Therefore, in the counterfactual, we assume that only the costs that can be linked to pipework will be variable.

Our base assumption of 23% is from Anglian Water's response to our information request for this determination. It is the percentage of the total allowed cost of the Wing Main related to the pipework and associated valves.

To provide an alternative option, we use available internal data on the breakdown of the costs of laying mains at a range of diameters (100 mm, 150 mm, 200 mm and 300 mm), provided by companies in water infrastructure cost breakdown structure tables. This data allows us to estimate the percentage of the total direct costs of a main that can be attributed to pipe and pipe fittings supply. We recognise that, ideally, we would have this data available for pipes of a similar diameter as those in this case. But we still consider this data provides a useful reference for the percentage of pipework costs across the water sector. The required information is only available at the necessary level of disaggregation for nine companies (not including Anglian Water) and across this sample the average percentage of costs that can be attributed to pipe and pipe fittings supply is 36%. We use this estimate for sensitivity analysis.

We assume that costs are apportioned between the Wing to Beanfield and Beanfield to Hannington sections of the Wing Main based on the relative length of each section (45/55%)

The Wing Main is in two separate sections: Wing to Beanfield and Beanfield to Hannington. Each section is of different diameter and capacity, and we only have cost information on the two sections combined. However, the impact of new developments will have different implications for the incremental capacity and in turn cost requirements for the two sections. Therefore, it is necessary to allocate the total cost of the Wing Main to each section to be able to estimate the incremental cost.

Our base assumption is that the costs should be apportioned based on the relative length of each section, as we consider that length is a good proxy for cost. This approach is also consistent with Anglian Water's current approach to apportioning costs between the sections of the Wing Main when estimating developer contributions. In Anglian Water's final business plan for PR04, the total length of the scheme was identified as 33 km, of which 15 km (45%) was the Wing to Beanfield section and 18 km (55%) the Beanfield to Hannington section.

As alternative options, we weight the length by either the diameter of the pipe (48/52% allocation), or the capacity of it (54/46% allocation). We define these alternatives to try and provide a proxy for any potential differences in costs that are not captured by length alone. However, we do not consider that there is strong evidence to support moving away from an apportionment based on length, as both sections are in similar terrain (grassland), and of similar diameter (1,000 mm versus 900 mm). Nevertheless, we present both these options as part of our sensitivity analysis.

We base our estimates on how peak capacity changes with pipe diameter on extrapolations from information provided by Anglian Water

In order to estimate the counterfactual, we need to have estimates for how peak capacity changes with pipe diameter for each section of the main and this feeds into our selection of the counterfactual capacity. We recognise that caution needs to be taken in estimating this relationship, as it can be influenced by a range of factors including the:

a. material and thickness of the main;
b. distance, pressure and gradient the water is required to travel; and
c. pumping arrangements for the system, including in the water main.

We note that the impact of these factors is shown by the differences in the actual capacity of each section, as the 1,000 mm diameter Wing to Beanfield main has a peak capacity of 90 Ml/d, compared with the 900 mm diameter Beanfield to Hannington main which has a peak capacity of 65 Ml/d.

Nevertheless, we use information provided by Anglian Water on how peak capacity changes with pipe diameter combined with the information on the current peak capacity of each section of the Wing Main, to extrapolate an estimate for peak capacity of each section for different pipe diameters. A key driver of these estimates is the actual peak capacity, as we estimate what peak capacity would be required at a diameter of 400 mm, so that for our given estimates of the changes in peak capacity in diameter, the actual peak capacity will be correct. Figure A2.2 provides our base estimates of peak capacity, by section and pipe diameter.

Figure A2.2 Base pipe diameter and peak capacity estimates

Pipe diameter (mm)	Wing to Beanfield peak capacity (Ml/d)	Beanfield to Hannington peak capacity (Ml/d)
400 mm	14	13
500 mm	23	20
600 mm	30	27
700 mm	41	36
800 mm	55	48
900 mm	73	65 (actual)
1,000 mm	90 (actual)	–

As sensitivities we apply a 25% decrease and increase to the variability of these capacity changes. We use 25% as we consider it represents a reasonably large change to provide sufficient value as a sensitivity test. It should be noted that where we decrease the variability of capacity changes our estimates of capacity at each diameter (except the actual) are bigger and vice versa if we increase the variability of capacity changes. We discuss the results of these sensitivities later in this appendix.

We base our counterfactual capacity assumptions on estimates of the peak capacity required for existing customers estimated from information provided by Anglian Water

To estimate counterfactual costs, we make an assumption for the peak capacity that would have been provided absent any new and future developments. Our base assumption is that this should reflect the amount of peak capacity of the Wing Main that is required for existing customers, where existing customers are assumed to be all properties served as of 2004-05.

To estimate this, we use information provided by Anglian Water in response to our information request for this determination. The peak capacity for existing customers has two parts.

1. The capacity identified by Anglian Water to restore target headroom (the minimum buffer for supply/demand balance to ensure that levels of service can be maintained) and peak capacity to existing customers.

2. An estimate of the capacity that is required for growth in demand from existing customers. We apportion the capacity available for growth (we assume that this is any capacity not identified as being required to restore target headroom and peak capacity for existing customers, or as an initial allocation to new and future developments) on a population weighted basis between existing and new and future developments.

Using this approach, our base assumption for the counterfactual capacity required for Wing to Beanfield is 45 Ml/d (requiring a 800 mm pipe), of which 24 Ml/d is the required capacity to restore target headroom and peak capacity, and 21 Ml/d is for future growth in existing customer demand. Similarly, Beanfield to Hannington would require a capacity of 22 Ml/d (requiring a 600 mm pipe), of which 3 Ml/d is the required capacity to restore target headroom and peak capacity, and 19 Ml/d is for future growth in existing customer demand.

We recognise that this estimate is subject to uncertainty as the choice of capacity will depend on a number of factors, such as the risk profile of demand and a company's view on the balance between cost and risk. Therefore, as sensitivities we test a range of different counterfactual capacity assumptions and discuss these results later in this appendix.

We base our estimates on how costs change with pipe diameter on extrapolations from information provided by Anglian Water

As we discuss above in the counterfactual, smaller diameter mains with lower capacities and costs would have been laid. As we consider that only the costs associated with pipework are variable in the counterfactual, to calculate how these costs change we need to understand how costs change with pipe diameter.

We calculate our base assumptions from data provided by Anglian Water in response to our information request for this determination. We were provided with the unit costs of laying a water main in grassland for a variety of diameters, from predictive costing models used at the 2009 price review (PR09). As this data did not cover the full range of diameters we consider (it covered 400 mm, 500 mm, 900 mm and 1,000 mm diameter pipes), we assume that costs are linear to interpolate values for any missing data points.

Figure A2.3 provides our base estimates for the changes in variable cost by pipe diameter for each section of the Wing Main. We calculate these with reference to the actual main diameter. For example, for Wing to Beanfield the cost changes are calculated by reference to the cost of a 1000 mm diameter pipe; similarly, for Beanfield to Hannington the cost changes are calculated by reference to the cost of a 900 mm pipe (this explains the differences in the variable cost changes).

Figure A2.3 Base pipe diameter and cost change estimates

Pipe diameter (mm)	Wing to Beanfield variable cost change	Beanfield to Hannington variable cost change
400 mm	-66%	-61%
500 mm	-57%	-51%
600 mm	-46%	-38%
700 mm	-35%	-26%
800 mm	-24%	-13%
900 mm	-12%	Actual (0%)
1,000 mm	Actual (0%)	–

As sensitivities we also apply a 25% decrease and increase to the variability of these cost changes. We chose 25% as we consider it represents a reasonably large change to provide sufficient value as a sensitivity test. We discuss the results of these sensitivities later in this appendix.

Overview of model calculations

Figure A2.4 presents an overview of the key calculations used by the incremental cost model. These are the calculations shown in figure A2.1, from top to bottom.

Figure A2.4 Incremental cost model calculations

Calculation	Description
Total costs that are variable in the counterfactual (£m)	Total allowed cost (£m) * Percentage of costs that are variable in the counterfactual
Total costs that are not variable in the counterfactual (£m)	Total allowed cost (£m) – Total costs that are variable in the counterfactual (£m)
Costs that are variable in the counterfactual, by section (£m)	Total costs that are variable in the counterfactual (£m) * Cost apportionment by section (%)
Counterfactual variable costs, by section (£m)	Costs that are variable in the counterfactual, by section (£m) * (1 + Percentage change in variable cost, by section)
Total counterfactual cost (£m)	Total costs that are not variable in the counterfactual (£m) + Counterfactual variable costs, by section (£m)
Incremental cost (£m)	Total allowed cost (£m) – Total counterfactual cost (£m)

Figure A2.5 presents a worked example of our base estimate set out above.

Figure A2.5 Incremental cost model worked example of our base estimate

Assumptions/inputs
Total allowed cost = £34.32 m
Percentage of costs that are variable in the counterfactual = 23%
Cost apportionment – Wing to Beanfield = 45%
Cost apportionment – Beanfield to Hannington = 55%
Percentage change in variable cost – Wing to Beanfield = -24%
Percentage change in variable cost – Beanfield to Hannington = -38%
Calculations
Total costs that are variable in the counterfactual = £7.89 m [£34.32 m * 23%]
Total costs that are not variable in the counterfactual = £26.43 m [£34.32 m – £7.89 m]
Costs that are variable in the counterfactual – Wing to Beanfield = £3.55 m [£7.89 m * 45%]
Costs that are variable in the counterfactual – Beanfield to Hannington = £4.34 m [£7.89 m * 55%]
Counterfactual variable costs – Wing to Beanfield = £2.70 m [£3.55 m * (1 + (-24%))]
Counterfactual variable costs – Beanfield to Hannington = £2.69 m [£4.34 m * (1 + (-38%))]
Total counterfactual cost = £31.82 m [£26.43 m + £2.70 m + £2.69 m]
Incremental cost = £2.50 m [£34.32 m – £31.82 m]

Results and key sensitivities

Our base estimate of the incremental cost, using our base assumptions we discuss above, is £2.50 million. To test this, we carry out sensitivity analysis where we change the value of key inputs – for example in the second scenario we change the estimate of the percentage of costs that are variable in the counterfactual to 36% from 23%, leaving all other inputs the same. We present our full results in figure A2.6 where we set out what we change, explain how it impacts the results and provide the estimate for the incremental cost.

Figure A2.6 Range of incremental costs

Scenario	Description	Incremental cost (£m)
Base estimate	Our base estimate described above	£2.50 m
Counterfactual variable cost sensitivity		
Industry average estimate = 36%	With a higher percentage of the costs variable, the impact of the cost changes in the counterfactual will be higher. This will result in a higher value for the incremental cost.	£3.91 m
Cost allocation sensitivities (Wing to Beanfield/Beanfield to Hannington)		
Length weighted by diameter = 48%/52%	With a higher percentage of the cost allocated to the Wing to Beanfield section, where the change in costs is lower, the counterfactual cost will be higher. This will result in a lower value for the incremental cost.	£2.47 m
Length weighted by capacity = 54%/46%	As above.	£2.40 m
Pipe diameter and capacity sensitivities		
Capacity changes reduced by 25%	Our estimates for capacity at each diameter are bigger, and in the counterfactual a smaller diameter main would have been laid in both sections of the Wing Main. This will result in lower counterfactual costs and a higher value for the incremental cost.	£3.45 m
Capacity changes increased by 25%	Although our estimates for capacity at each diameter are smaller, in the counterfactual there is no change in the diameter of the mains required. Therefore the incremental cost is the same as our base estimate.	£2.50 m
Counterfactual capacity sensitivities		
Wing to Beanfield = 41 Ml/d	A smaller diameter main would have been laid, which will result in lower counterfactual costs and a higher value for the incremental cost.	£2.90 m

Wing to Beanfield = 73Ml/d	A larger diameter main would have been laid, which will result in higher counterfactual costs and a lower value for the incremental cost.	£2.10 m
Beanfield to Hannington = 20 Ml/d	A smaller diameter main would have been laid, which will result in lower counterfactual costs and a higher value for the incremental cost.	£3.05 m
Beanfield to Hannington = 36 Ml/d	A larger diameter main would have been laid, which will result in higher counterfactual costs and a lower value for the incremental cost.	£1.95 m
Both sections with lower capacity	A smaller diameter main would have been laid in both sections of the Wing Main, which will result in lower counterfactual costs and a higher value for the incremental cost.	£3.45 m
Both sections with higher capacity	A larger diameter main would have been laid in both sections of the Wing Main, which will result in higher counterfactual costs and a lower value for the incremental cost.	£1.55 m
Pipe diameter and cost changes sensitivities		
Cost changes reduced by 25%	A reduction in the costs changes will result in higher costs in the counterfactual and a lower value for the incremental cost.	£1.87 m
Cost changes increased by 25%	An increase in the costs changes will result in lower costs in the counterfactual and a higher value for the incremental cost.	£3.12 m

Across all the scenarios the incremental cost ranges from £1.55 million to £3.91 million and the average estimate is £2.73 million. As we discuss under each of the assumptions above, we do not have strong evidence to suggest a move away from our base assumptions is appropriate. Further, our results do not suggest that changes in assumptions will result in significantly different results. Therefore, we consider our base estimate represents our most reasonable estimate of the incremental cost.

Appendix 3: Methodology for determining the level of contributions for each development

As part of Anglian Water's response to our information request for this determination, it submitted details of how it calculates the contributions for each development. The methodology ensures that for the forecast increase in households, the costs will be recovered over the relevant 12-year period from 2005-06 to 2016-17. This appendix sets out the methodology, but adjusts the approach to reflect our view on the appropriate level of costs allocated to developers as set out in this determination.

The level of contributions for an individual development is dependent on:

a. the peak litre per second (l/s) requirement; and
b. whether it benefits from one, or both sections of the Wing Main.

Figure A3.1 sets out the how the contribution per l/s is calculated, while figure A3.2 provides an example of the methodology in practice.

Figure A3.1 – Calculation of the contributions per l/s

Step 1 – calculate total l/s required for each section of the Wing Main
Estimates of growth in the number of properties, from Anglian Water's FORWARD (FORecasting WAter Resources and Demand) supply demand models used at PR04, are multiplied by the estimated peak demand per domestic property to calculate the total peak l/s required to serve the increase in properties[35]. The calculation is carried out separately for each section of the Wing Main as the Corby planning zone is included for the Wing to Beanfield section, but not for the Beanfield to Hannington section.
Total l/s required = Total growth in domestic properties * Peak demand per domestic property (l/s)
Wing to Beanfield = 70,711 * 0.01673 l/s = 1,183 l/s required
Beanfield to Hannington = 67,778 * 0.01673 l/s = 1,134l/s required

[35] Demand per property (of 0.01673 l/s) calculated as the average for a detached house and a semi/terraced house. Source: UK Water Industry, Engineering & Operations Committee (Sponsored by WSA and FWR), 'The Service Pipes Manual' (ISBN 0 9521712 01), section 5 (page 5/21).

Step 2 – allocate total contributions to sections of Wing Main by length

The total contribution by developers to the Wing Main, as set out in this determination, is £2.50 million. This is allocated to each section on the basis of the proportion of the estimated total length of the scheme as submitted in Anglian Water's final business plan at PR04 (15 km Wing to Beanfield, 18 km Beanfield to Hannington).

Contribution by section = Total Contribution * Percentage of total length

Wing to Beanfield: £2.50 m * 45% = £1.125 m

Beanfield to Hannington £2.5 0m * 55% = £1.375 m

Step 3 – calculate contributions per l/s

To calculate the contribution per l/s, the contributions for each section from step 2 are divided by the required l/s for each section of the Wing Main from step 1.

Contributions per l/s by section = Contribution by section / Total l/s required

Wing to Beanfield: £1.125 m/1,183 l/s = £951 per l/s

Beanfield to Hannington: £1.375 m/1,134 l/s = £1,213 per l/s

Figure A3.2 The methodology in practice

Calculating contributions for development A

In this example we assume that development A has the following characteristics.

- 750 domestic properties.
- Located in the Ruthamford WRZ.
- Located in a planning zone downstream of Beanfield to Hannington main (benefits from both sections of the Wing Main).

The first step is to calculate the peak demand required by the 750 properties, using the same industry standard assumption set out in figure A3.1 under step 1.

Development A peak demand requirement = 750 * 0.01673 l/s = 12.55 l/s

We then multiply the peak demand requirement by the contribution per l/s for each section as calculated in figure A3.1.

Development A Wing to Beanfield contribution: 12.55 l/s * £951 l/s = £11,935

Development A Beanfield to Hannington contribution: 12.55 l/s * £1,213 l/s = £15,223

Development A total contribution: £11,935 + £15,223 = £27,158

Therefore, the developer of development A would make a contribution of £27,158 towards the Wing Main.