Final determination of a dispute referred under sections 30A, 42(6) and 51C(11) 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

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

17 June 2015

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Executive summary

On 20 October 2009, Utility Law Solutions (**ULS**), on behalf of two separate developers[1], submitted a determination request to the Water Services Regulation Authority (**Ofwat)** under sections 42(6) and 30A of the Water Industry Act 1991 (**the Act**). ULS questioned 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 subsequently extended its determination request to cover nine developers[2] which have requisitioned water supply infrastructure at the 75 sites listed in Appendix 1. As set out in Chapter 2(C), of these 75 sites only 65 sites are relevant for the purposes of this determination. Of the 65 relevant sites, 1 developer did not requisition a main, but constructed it or used a self-lay operator to construct it before applying to Anglian Water for adoption of the main once completed. The self-lay determination is made under sections 51C (11) and section 30A of the Act.

On 23 December 2013, we issued a draft determination (**our draft determination**) to Anglian Water and ULS (**the Parties**) for comment. We also published our draft determination on our website on 13 February 2014 and invited comments from interested stakeholders.

Our draft determination concluded that it was appropriate for Anglian Water to include a proportion of the costs of the Wing Main in requisition and self-lay charges that Anglian Water collected in relation to the relevant 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 did not consider that the current levels of developer contributions collected by Anglian Water for the developments within this dispute were appropriate. Instead, we determined that these contributions should be equal to the incremental cost of the additional capacity of the Wing Main required for the new developments, to ensure that costs recovered reflect the costs reasonably associated with the provision of the relevant services.

[1] Taylor Wimpey (formerly 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

Our base estimate of the incremental cost was £2.50 million (2002/03 prices)[3], which was to be used as an input into the recalculation of individual developer contributions for the purposes of this determination. Other things remaining equal, we set out that this would result in developers receiving a refund, plus associated interest, on their contributions to date. We also determined that, to reflect the change in cost apportionment, an additional £2.19 million, adjusted to reflect inflation, would need to be added to Anglian Water's regulatory capital value (**RCV**) – to be recovered over future price controls. This was in relation to the over-recovery of contributions from developers of 73 sites[4] during 2005-15 as set out in our draft determination.

In the light of the responses we received to our draft determination from the Parties and other stakeholders we have now reached a final decision. Following careful and full consideration of these responses, our final determination confirms the conclusion reached in our draft determination – though we have adjusted the size of the adjustment to Anglian Water's RCV to reflect the change in the number of relevant sites from 73 to 65. This decision is based on the conclusion that we have not seen any sufficiently robust or compelling evidence, or argument, to cause us to conclude that the relevant sections in the Act should be read in a different way to our interpretation, or change our analytical approach. Our full considerations of the comments submitted by the parties and other stakeholders are set out in Chapter 5.

We therefore require that the developers that are the subject of this dispute, be refunded by Anglian Water the sums set out in Appendix 1 within three months of the date of this final determination being issued to Parties. In addition, in accordance with section 42(4) and 51C(4) of the Act, interest is payable on any security deposit received by Anglian Water in relation to any of the relevant sites listed in Appendix 1. Interest should therefore be paid for every three months in the period for which each security instalment (including any refund due from the security deposit after the relevant requisition or self-lay has been completed) was held by Anglian Water. In calculating any interest due, Anglian Water should apply interest rate(s) in accordance with Ofwat's Information Notice on interest rates. Any dispute about the amount of any interest payable is for the Courts to determine, if Anglian Water and the relevant developers are unable to agree this amount.

[3] This is the maximum we expect to be recovered from new developments in relation to the Wing Main

[4] Our draft determination concluded that 73 out of the 75 sites submitted were relevant for determination.

In addition, £1.95 million (2002/03 prices)[5] adjusted to reflect inflation was added to Anglian Water's RCV as part of the 2014 price review to reflect the change in cost apportionment from this determination.

We consider that this determination should bring a number of benefits. Developers benefit as their contributions to the Wing Main have been rebalanced so that they reflect the costs reasonably associated with the provision of the relevant services. Further, these reflective costs will ensure that Anglian Water is remunerated appropriately through the price control mechanism for key strategic investment in its network and will have the correct signals to invest efficiently. This will encourage efficient long term investment that identifies and responds to future growth in a timely manner, to the benefit of both current and future consumers.

[5] A full explanation of this calculation is provided in paragraph 5.38.

1. Introduction

1.1 On 20 October 2009, ULS, on behalf of two separate developers, submitted a determination request to Ofwat under sections 42(6) and 30A of the Act in relation to three development sites. ULS questioned the legal basis for the contribution that Anglian Water had collected from developers in relation to costs associated with the Wing Main. ULS subsequently extended its determination request to cover nine developers which have requisitioned water supply infrastructure at 75 sites. As set out in Chapter 2(C), of these 75 sites only 65 sites are relevant for the purposes of this final determination.

1.2 Our draft determination concluded that it was appropriate for Anglian Water to include a proportion of the costs of the Wing Main in requisition charges which Anglian Water collected in relation to the relevant sites submitted within this dispute, but that the level of contributions was not appropriate. Instead, we determined that the contributions should be based on the incremental cost of additional capacity required for the new developments, which would require developer contributions to be recalculated and, other things remaining equal, refunds to be paid. We also determined that an adjustment would need to be made to Anglian Water's RCV in relation to the over-recovery of contributions from developers as set out in our draft determination.

1.3 On 23 December 2013, we issued our draft determination to the Parties for comment. Both Parties responded to our draft determination in February 2014 and the responses are summarised in Appendix 2, with our responses to the key comments raised set out in Chapter 5.

1.4 On 13 February 2014, we published our draft determination on our website and invited comments from interested stakeholders. Our consultation ended on 13 March 2014 and we received eight responses. A summary of the responses we received is available in Appendix 3, with our responses to the key comments raised set out in Chapter 5.

1.5 In the light of the responses we received to our draft determination from the Parties and other stakeholders, and following careful and full consideration of these, we have now reached a final decision. Our final determination confirms the conclusion reached in our draft determination. We have reached this decision because we have not seen any sufficiently robust or compelling

evidence, or argument, to cause us to conclude that the relevant sections in the Act should be read in a different way or to change our analytical approach.

1.6 This document adopts the following structure:

- **Background** (see Chapter 2);
- **Legal and analytical framework** (see Chapter 3);
- **Our draft determination** (see Chapter 4); and
- **Our final determination** (see Chapter 5).

1.7 This document also includes five appendices:

- Appendix 1 sets outs the details of all 75 sites that were part of the determination request. For each site we either present the refund, excluding interest, due from Anglian Water, or provide an explanation why no refund is due;
- Appendix 2 sets out a summary of the responses we received from the Parties to our draft determination;
- Appendix 3 sets out a summary of the responses we received from interested stakeholders to our draft determination;
- Appendix 4 sets out our modelling analysis we used to estimate the incremental cost of additional capacity required for the new developments; and
- Appendix 5 sets out the methodology for determining the level of contributions for each development.

2. Background

2.1 In this chapter we set out the:

- **parties involved in this dispute** (see subsection A);
- **key details of the Wing Water Supply Programme and the Wing Main** (see subsection B);
- **relevant requisitions and the self-lay case** (see subsection C); and
- **timeline of our investigation** (see subsection D).

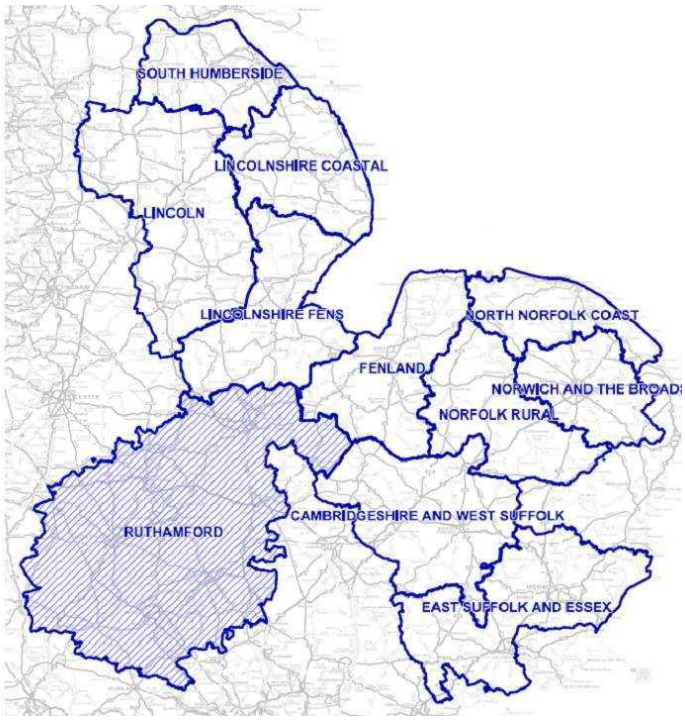
A The Parties

(i) Anglian Water

2.2 Anglian Water is appointed under the Act to provide water and sewerage services to customers in central east England. As shown in below, at the 2004 price review, when the Wing Main was approved, Anglian Water was divided into eleven separate water resource zones (**WRZ**)[6] plus a WRZ in Hartlepool.

[6] For the purposes of water resource management, a WRZ is the largest possible zone in which all water resources, excluding external transfers, can be shared.

Figure 1 Anglian Water's WRZ at the 2004 price review



2.3 The Wing Main was in the Ruthamford WRZ (the shaded area in **Figure 1** above) which covered a wide area in the East of England, including the conurbations and areas of Bedford, Milton Keynes, Northampton, Peterborough, Corby, Daventry, Huntingdon, Kettering and Wellingborough.[7]

(ii) ULS

2.4 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: Taylor Wimpey, Persimmon Homes, Bellway, David Wilson Homes, Morris Homes, Barratt Homes, Bloor Homes, Redrow Homes and Linden Homes.

[7] The WRZs have changed significantly since the 2004 price review, and Anglian Water is currently divided into 18 separate WRZs, with the Ruthamford WRZ split into the Ruthamford South and Ruthamford North WRZs.

B The Wing Main

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

(i) The Wing Water Supply Programme

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

2.7 The programme had three components:

a. Construction of a 90 megalitres a day (**Ml/d**) water treatment works and three pumping stations:

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

b. Construction of Rutland to Hannington Pipeline:

- Rutland (Ephingham) to Wing – 8 km of raw water pipeline;
- Wing to Beanfield – 15 km of treated water pipeline (**section 1 of the Wing Main**); and
- Beanfield to Hannington – 19 km of treated water pipeline (**section 2 of the Wing Main**).

c. Construction of four major lagoons:

- Lagoon A – located at an existing inlet in the North West corner of Rutland Water reservoir;
- Lagoon B – located at an area on the upper west edges of Rutland Water reservoir;
- Lagoon C – located at an area on the lower western edges of Rutland Water reservoir; and

- Lagoon D – Two existing inlets located within the South West corner of Rutland Water reservoir.

2.8 The planning application for an extension to the Wing Water Treatment Works was submitted in April 1999 and planning approval was received in April 2007. By the time planning approval was received the planned works had been extended to include the Wing Main.

(ii) The Wing Main

2.9 The Wing Main, as set out above, comprises the Wing to Beanfield (section 1 of the Wing Main) and Beanfield to Hannington pipelines (section 2 of the Wing Main). In total it compromises 34km of treated water pipeline and 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.

Table 1 Key milestones in relation to the Wing Main

Date	Key milestone
2004	Scheme approved as part of the 2004 price review
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

(iii) Rationale for the Wing Water Supply Programme

2.10 Anglian Water's rationale for the Wing Water Supply Programme, and subsequently the Wing Main, was to meet future growth in demand in the Ruthamford WRZ from existing customers and new developments and ensure security of supply. Anglian Water considered that without this programme it could not meet future customer needs and that there would be a headroom

deficit in the Ruthamford WRZ. This is illustrated by Anglian Water's 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."

2.11 It was also noted in the same response that a key element of the reasoning behind the programme was the headroom deficit in the region:

> "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."
>
> "…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 also provided further evidence on the future growth in demand. 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."

2.13 Anglian Water has stated it was only able to meet this growth in demand by increasing abstraction from Rutland Water from 270 Ml/d up to 360 Ml/d, the maximum abstraction amount allowed under its abstraction licence. The Wing Water Supply Programme also extended the capacity of the Wing Water Treatment Works to 360 Ml/d. The programme was approved as part of the 2004 price review.

(iv) Allocation of costs for the purposes of setting price limits in 2004

2.14 **Figure 2** sets out how the total allowed cost of the Wing Main was allocated in the 2004 price review 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 as meeting existing customer growth, through growing household size and household water demand, 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 [assumed] developer contributions for individual sites, some of which are now under dispute in this determination[8].

[8] It is important to note that these assumptions were used when making the 2004 price review. The 2004 price review was separate from, and does not directly relate to, our conclusions in our determination in this particular case, not least because the 2004 price review and the determination in this case are made under different sections on the Act.

Figure 2 2004 price review allocation of Wing Water Supply Programme total costs (2002/03 prices)

C The requisitions

2.15 The original determination request ULS submitted to us on 20 October 2009 was for 3 sites. A further 37 sites for inclusion were submitted in July 2010, 9 in March 2011 and 26 in October 2012 (see **Table 2** below), bringing the total number of sites to 75, covering nine different developers. The full list of 75 sites is set out in Appendix 1 and this includes the date of requisition application for each site and the refund due (if applicable), excluding interest.

2.16 In our draft determination we set out our view that 73 (of the 75) sites were relevant for the purposes of this determination as:

- for 1 site no contribution to the Wing Main was sought[9]; and
- 1 site is a duplicate of another site included in the determination.[10]

2.17 Following our draft determination, as part of the calculation of refunds, Anglian Water has carried out a review of contributions by site. This review has shown that for a further 8 sites no refund is due as:

- 1 site is a duplicate of another site included in the determination[11];

[9] Site 18 (Phases 2, 3 and 4 Newark Road, North Hykeham)

[10] Site 53 (15B, Pratts Quarry, Leighton Buzzard)

- for 1 site no payment was received from the developer[12]; and
- for 6 sites no contribution to the Wing Main was sought. [13]

2.18 Therefore of the original 75 sites only **65** are relevant for the purposes of this final determination and have a refund due.

D Our investigation

2.19 **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
October 2009	ULS submits initial complaint (comprising three sites)
July 2010	ULS submits a further 37 sites for inclusion in the determination
March 2011	ULS submits a further nine sites for inclusion in the determination
April 2011	Ofwat issues a formal request for information to Anglian Water
May 2011	Anglian Water responds to the formal information request issued in April 2011
May 2011	Ofwat provides ULS with a non-confidential version of Anglian Water's response to the formal information request
June 2011	ULS provides Ofwat with its response to Anglian Water's May 2011 information request response
October 2012	ULS expanded the list of sites for determination to 75

[11] Site 28 (Newton Leys, Bletchley)

[12] Site 46 (Newton Leys, Phase 2)

[13] Sites 21 (The Grange, Desborough), 22 (Garfield Farm, Church Street), 25 (Loves Farm, Phase H1 and H2), 35 (Wixams Area H, Bedford), 61(Phase 3, Site 12, Freemans Common, Bedford) and 67 (Site 6, Oxley Gate, Milton Keynes).

Date	Action
June 2013	Ofwat issues a further formal request for information to Anglian Water and to ULS
July 2013	Anglian Water and ULS provide responses to the information requests
November 2013	Update meetings with Anglian Water and ULS
December 2013	Draft determination issued
February 2014	Consultation opened
March 2014	Consultation closed
June 2015	Final determination issued

3. Legal and Analytical Framework

3.1 In this chapter we set out the:

- **legal framework** (see subsection A);
- **scope of this determination** (see subsection B); and
- **analytical framework** (see subsection C).

A The legal framework

3.2 This section outlines the key legislative provisions relevant to this case.[14]

(i) Definition of a water main

3.3 Section 219 of the Act provides the following definition of a water main:

> "any pipe, not being a pipe for the time being vested in a person other than the undertaker[15], 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."

3.4 References to a pipe include references to a tunnel or conduit which serves or is to serve as the pipe in question and to any accessories for the pipe.

(ii) Water mains requisitions

3.5 For 64 of the 65 sites in this matter, the relevant developers used section 41(2) of the Act which provides that an owner or occupier of premises may

[14] To be clear, this determination has been considered under the relevant sections in the Act, and not under the Competition Act 1998.

[15] Please note that for the purposes of section 51A to 51D of the Act, the definition of 'water main' in section 219 of the Act shall be treated as if the words 'not being a pipe for the time being vested in a person other than the undertaker' were omitted.

require a water undertaker to provide a water main to provide a supply of water to the premises to be used for domestic purposes (**a requisition**). Subject to the conditions set out in section 41 of the Act being fulfilled, the water undertaker is under a duty to provide the water main.

3.6 Under section 41(1)(c) and section 42(2) of the Act, as part of the duty to comply with a water main requisition, a water undertaker can recover a contribution from the owner or occupier of the premises towards the costs of providing the water main for domestic purposes (**the requisition charge**).

3.7 As set out under sections 42 to 43A of the Act, the requisition charge is calculated by reference to the annual borrowing costs of a loan of the amount that would be required to cover the costs incurred in providing the main and the revenue which would be recovered by the water undertaker by means of the water main (i.e. the bills paid by customers connected to that main, which is in turn derived from the Site's occupancy rates) over each of the 12 years following provision of the water main. Where, in any of those years, the revenue exceeds the borrowing costs, the owner or occupier of the premises will not be required to make any payment. Where the borrowing costs exceed the revenue, the water undertaker is entitled to require the owner or occupier of the premises to pay the difference to the water undertaker.

3.8 Section 42(2)(a) of the Act provides for the owner or occupier of the premises to pay the water undertaker the requisition charge either by way of an annual amount over each of the 12 years following provision of the water main (**the relevant deficit**), or a single lump sum payment made following provision of the water main, which is referred to as the discounted aggregate deficit (**the DAD**)[16]. The relevant deficit is calculated in accordance with section 43 of the Act and the DAD is calculated in accordance with section 43A of the Act. The first of the twelve year payments (under the relevant deficit approach) or the final requisition charge (under the DAD approach) can only be requested once the water main has been provided, albeit in both cases security can be requested in advance by the water undertaker.

(iii) Costs that may be included in calculating the requisition charge

[16] We note that for 64 sites relevant to this determination the requisition charge was paid via the DAD option and for 1 site the contribution was reflected in the self-lay charges

3.9 For the purposes of the relevant deficit approach, section 43(1) of the Act notes that the "relevant deficit" for any year is:

> "the amount (if any) by which the relevant revenue in respect of that main for that year is exceeded by the annual borrowing costs of a loan of the amount required for the provision of that main".

3.10 Section 43(2) of the Act states that:

> "The annual borrowing costs of a loan of the amount required for the provision of a water main is the aggregate amount which would fall to be paid in any year by way of payments of interest and repayments of capital if an amount equal to so much of the **costs reasonably incurred** in providing that main **as were not incurred in the provision of additional capacity** had been borrowed, by the water undertaker providing the main […]" (emphasis added).

3.11 Where the DAD option is taken, section 43A of the Act applies, as follows:

> Section 43A (1) For the purposes of section 42 above the discounted aggregate deficit on a water main is the amount equal to the sum of the estimated relevant deficits for each of the twelve years following provision of the main, in each case discounted in accordance with subsection (6) below.
>
> (2) The estimated relevant deficit for any year is the amount (if any) by which the estimated revenue in respect of the water main for that year would be exceeded by the annual borrowing costs of a loan of the amount required for the provision of that main.
>
> (3) Subsections (2) to (6), (8) and (9) of section 43 above (which relate to annual borrowing costs of a loan of the amount required for the provision of a water main) shall apply for the purposes of this section as they apply for the purposes of that.
>
> (4)…
>
> (5)…(6) The estimated relevant deficit for a year mentioned in subsection (1) above shall be discounted in order to determine its net present value by

> applying such factor, and in accordance with such other provision, as may be determined by the Authority[17].

3.12 Section 43(4) of the Act states that the "costs reasonably incurred" in providing a water main ("the new main") shall include:

a) "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" (emphasis added); and

b) "such proportion (if any) as is reasonable of the costs reasonably incurred in providing or procuring the provision of any such additional capacity in an **earlier main** as falls to be used in consequence of the provision of the new main" (emphasis added).

3.13 In setting out how the requisition charge should be calculated, section 43(2) of the Act therefore specifically provides that costs incurred in the provision of additional capacity beyond that required by the requisition are not to be included in the "costs reasonably incurred" when calculating the requisition charge.

3.14 This is expanded on by section 43(6) of the Act, which states:

> "Any reference in this section to the provision of additional capacity in a water main provided in pursuance of a requirement under any enactment is a reference to such works carried out or other things done in connection with the provision of that main as are carried out or done for the purpose of enabling that main to be used for purposes in addition to those for which it is necessary to provide the main in order to comply with the requirement".

3.15 The Act distinguishes in this way between "costs reasonably incurred" to provide the main required under section 41 of the Act and those incurred to provide additional capacity beyond this. There are no specific provisions in section 43 of the Act setting out specifically how the total costs of providing a main that allows for a capacity requisitioned under section 41 of the Act and additional capacity which is provided in addition, should be allocated other

[17] The Authority referred to is Ofwat.

than referring to "so much of the costs reasonably incurred" when calculating the requisition charge calculation.

(iv) Disputes

3.16 Section 42(6) of the Act provides that any dispute between a water undertaker and any other person regarding the undertakings, or security required by the water undertaker for the purposes of section 42 of the Act, or the amount required to be paid in pursuance of any such undertakings, can be referred by either party to Ofwat for determination under section 30A of the Act. Similarly, section 51C (11) of the Act provides that any dispute as to payments to be made or security required to be provided by virtue of that section may be referred to Ofwat for determination under section 30A of the Act by either party.

(v) 'Other' and 'Earlier' mains

3.17 As can be seen above, section 43(4) of the Act also describes two further types of main which are deemed to be part of the new main, which are an **'other main'**[18] and an '**earlier main'**.[19] Once a new main has been requisitioned, costs incurred in providing an associated other main or earlier main may be relevant.

Other main

3.18 For a main to be an 'other main' and therefore potentially chargeable as part of the recovery of the costs of a requisition (via a requisition charge):

a. The costs of providing the other main must have been reasonably incurred; and

b. The other main must be necessary to provide in consequence of the provision of the requisitioned new main.

[18] Section 43(4)(a) of the Act

[19] Section 43(4)(b) of the Act

Earlier main

3.19 For a main to be an 'earlier main' and therefore some or all of its costs to be potentially chargeable as part of the recovery of the costs of later requisitions (via requisition charges):

a. It has to be a water main[20] that has been provided in pursuance of an earlier requisition for domestic purposes in the 12 years immediately before the provision of the later requisitioned new main, or has been vested (by virtue of a declaration under section 51A of the Act) in the water undertaker in the 12 years immediately before the provision of the later new main;

b. A proportion of additional capacity in the earlier main falls to be used in consequence of the new main; and

c. The above proportion must be such proportion (if any) as is reasonable of the costs reasonably incurred in providing, or procuring the provision of, any such additional capacity.

3.20 Without an associated requisition (or in the case of self-lay, vesting) of a new main, infrastructure cannot be characterised as an 'other main' or 'earlier main'.

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

3.21 As set out above, once a new main has been requisitioned, costs reasonably incurred in providing an associated 'other main', or costs in having provided an associated 'earlier main', will be included in the costs reasonably incurred in providing the new main. When considering whether an associated 'other main' can be considered "necessary to provide in consequence of the provision of the new main", or whether the relevant additional capacity in an earlier main falls to be used in consequence of the provision of the new main, there are some key issues to consider:

[20] This could include both a new main and 'other' main under section 43(4)(a) of the Act.

a. In respect of the 'other main', whether the demand that is the subject of the requisition in hand would result in the overall demand being greater than the network capacity currently available; and

b. In respect of the 'earlier main', whether the new main necessitates use of the spare capacity that has been provided by the 'earlier main' within the 12 years immediately before the provision of the new main, via requisition or self-lay.

(vii) When can a main be considered as 'provided'?

3.22 A main is 'provided' once it has been constructed, and laid in the ground and is capable of supplying the premises concerned through a connection. 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 undertaker and the actual provision of the associated water main or mains.

(viii) Significance of the timing of the requisition request

3.23 As mentioned above, section 41 of the Act 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 new, or make use of existing, infrastructure in order to make the requisitioned supply. The costs relating to the provision of new infrastructure (i.e. 'other mains') are covered by section 43(4)(a) of the Act, and the costs of making use of existing infrastructure (i.e. 'earlier mains'), which has already been provided, are covered by section 43(4)(b) of the Act.[21]

3.24 The timing of a requisition request therefore needs to be considered before an 'other main' or 'earlier main' can be considered necessary in consequence of the provision of a new main. We consider there are two scenarios to consider:

[21] Paragraph 3.22 discusses the issue of when a main can be considered as 'provided'.

a. A requisition request prior to the provision of the relevant infrastructure (which may result in there being an 'other main' to be taken into account); and

b. A requisition after provision of the relevant infrastructure (which may result in there being an 'earlier main' to be taken into account)'.

3.25 **Figure 3** below illustrates the requisitions relevant for this determination and how they relate to the provision of the Wing Main.

Figure 3 Timeline of requisitions in relation to the Wing Main

A requisition prior to the provision of an 'other' main

3.26 Sometimes a potential 'other main' has been planned (but not provided) before a developer requisitions a new main which necessitates the building of an 'other main' at a sufficient capacity to accommodate at least the new supply.

3.27 The fact that the 'other main' was already planned, and may have been under construction (but was not yet provided) before such a requisition, does not change the fact that it falls under the definition of an 'other main' (under section 43(4) (a) of the Act), where it is recognised that some of the capacity of the 'other main' – possibly planned for development in general – will now become necessary in consequence of the relevant new main requested in the particular requisition.

3.28 Therefore, under section 43(4)(a) of the Act (and, by reference, for self-lay section 51C(3) of the Act), a main can be considered to be an 'other main', for

the purposes of calculating the requisition charge, in relation to the extra capacity needed to enable the supply to the new site through the new main. The water undertaker's duty under section 41 of the Act to provide a water main (including any relevant 'other main') to fulfil the original requisition will be discharged where:

a) A developer requisitions a new main to supply a development with water for domestic purposes;

b) Such supply will necessitate the provision of infrastructure in addition to the new main (i.e. an 'other main'), in order for the undertaker to make the necessary supply; and

c) The undertaker already has in contemplation/planning and/or construction (but has not provided) a main that could be used to provide the relevant extra capacity needed.

3.29 However, this is distinct from the position where an undertaker anticipates future demand by providing a water main and subsequently seeks to recoup costs from a future requisitioner where no requisition preceded the provision of the water main. Without a requisition before a water main is provided, the cost of that water main cannot be charged to any subsequent requisition under section 43(4)(a) of the Act (i.e. as an 'other main') even where that requisition necessitates the use of some of the capacity of the main in question.

A requisition after the provision of an earlier main

3.30 If a requisition is received and the related new main is 'provided' during the 12 years after an 'earlier main' was 'provided', a reasonable proportion of the (reasonable) costs associated with the 'earlier main' which reflects the additional capacity in the 'earlier main' that falls to be used in consequence of the new main, can be included in the calculation of the requisition charge. The 'earlier main' in question must have been a previous new main or previous 'other main', which means that in either case it was 'provided' in relation to an earlier requisition or vested self-laid works.

(ix) Self-lay

Self-lay adoption agreements

3.31 1 of the 65 developments that are subject to this determination did not make a requisition under section 41 of the Act but instead, the associated developer, constructed the water main themselves or used a self-lay operator, then applied to Anglian Water to adopt the main when completed. Section 51A of the Act provides that a water undertaker may agree with any person constructing or proposing to construct a water main or a service pipe for domestic purposes that, if they are constructed in accordance with the terms of their agreement, the undertaker will, upon competition of the work, adopt them (otherwise termed as "vested in" the undertaker).

Financial conditions for self-laid mains

3.32 Section 51C of the Act essentially sets out the financial conditions which relate to the adoption of the self-laid main entered into under section 51A of the Act ("the adopted main"). The section provides for two financial transactions:

(i) Sections 51C(2) and (3) of the Act give the water undertaker the right to recover the costs it reasonably incurs in connection with the adopted main from the person constructing or proposing to construct that adopted main, equivalent to the costs referred to in section 43(4)(a) and (b) of the Act for requisitions.

(ii) Section 51C(5) of the Act requires the water undertaker to pay the person constructing or proposing to construct the adopted main the "discounted offset amount" at the point of the main being adopted. This payment is often called the "asset value payment". Sections 51C (6) – 51(C) (9) of the Act set out, with reference to sections 43 and 43A (3) to (5) of the Act, the approach to be used to calculate the discounted offset amount.

(x) Consideration of network capacity

General duty to maintain water supply system

3.33 Section 37 of the Act states that it shall be the duty of every water undertaker to develop and maintain an efficient and economical system of water supply within its area and to ensure that all such arrangements have been made –

> (a) for providing supplies of water to premises in that area and for making such supplies available to persons who demand them; and
>
> (b) for maintaining, improving and extending the water undertaker's water mains and other pipes,
>
> as are necessary for securing that the undertaker is and continues to be able to meet its obligations under this Part (of the Act).

3.34 In practice, this means that water companies must ensure that they maintain a margin of headroom capacity in their networks to respond to future requests from various stakeholders and ensure resilience for future supply for existing customers. An "other main" may be necessary to provide in consequence (under s.43(4) of the Act) 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 the network can support. Where a water undertaker is subsequently 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 (above).

3.35 We, therefore, consider that, when taking into account whether a water main is necessary in consequence of the provision of a new main, it is important to consider not only the question of whether water can physically be supplied to the site but also what margin ("headroom") the supplier judges appropriate under the circumstances, having regard, for example, to the statutory need to satisfy future demand and ensure security of supply.

(xi) Infrastructure charges

3.36 Infrastructure charges are charges that a water undertaker is entitled to raise pursuant to a charges scheme and section 146 of the Act for connection to a water supply or public sewer of premises that have never at a previous time been connected to a water supply or public sewer for domestic purposes by a

water or sewerage undertaker or any other authority or body. The Act's provision for raising an infrastructure charge is separate and independent of the provisions related to providing and charging for a main requisition under section 41- 43 and 51A to 51C of the Act.

B The scope of this determination

3.37 This determination considers whether any of the costs associated with the Wing Main (as described above in **Figure 2**) are, or were, eligible for recovery as part of the charges recovered from the developers by the company for the requisition of new mains or in relation to the adoption of self-lay mains, and if so, the amounts that should be charged.

3.38 Under section 42(6), and section 51C(11), of the Act, disputes may be referred to Ofwat by either party to a requisition for a determination as to:

a. the undertakings or security required by the water undertaker; or

b. the amount required to be paid in pursuance of any such undertaking.[22]

3.39 Such a determination is made under section 30A of the Act.

3.40 In a letter on behalf of, initially two, but eventually nine, developers, ULS requested a determination by Ofwat under section 30A of the Act 'as to the costs associated with the water mains requisitions…under section 41 of the Act Industry Act 1991 and all other related matters.' ULS has since 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.

3.41 As disputes under section 42(6)(a) and (b) of the Act can take into consideration the undertaking or security or the final amount charged in relation to such undertaking, Ofwat has jurisdiction to make this determination as requested by developers associated with 64 sites. Also, as disputes in respect of section 51C(11) of the Act can take into consideration the payment to be made or security required, Ofwat has jurisdiction to make this determination as requested by the 1 self-lay developer. This determination

[22] See section 42(6) and section 51C of the Act

therefore assesses the legal basis for the amount required to be paid by the developers by Anglian Water in respect of 64 requisition requests made under section 41 of the Act, and the self-lay adoption application made under section 51A of the Act, and recalculates those amounts. When making this determination, and thus when calculating the proportion of the Wing Main costs that should be included in the calculation of what is recovered from developers, we have exercised and performed our relevant statutory duties and powers in the manner which we consider is best calculated to meet our section 2 duties in the Act. In this context, we consider that the basis for proportion of the Wing Main costs that should be recovered from developers, when considered for the purposes of section 42 and 51C of the Act, should :

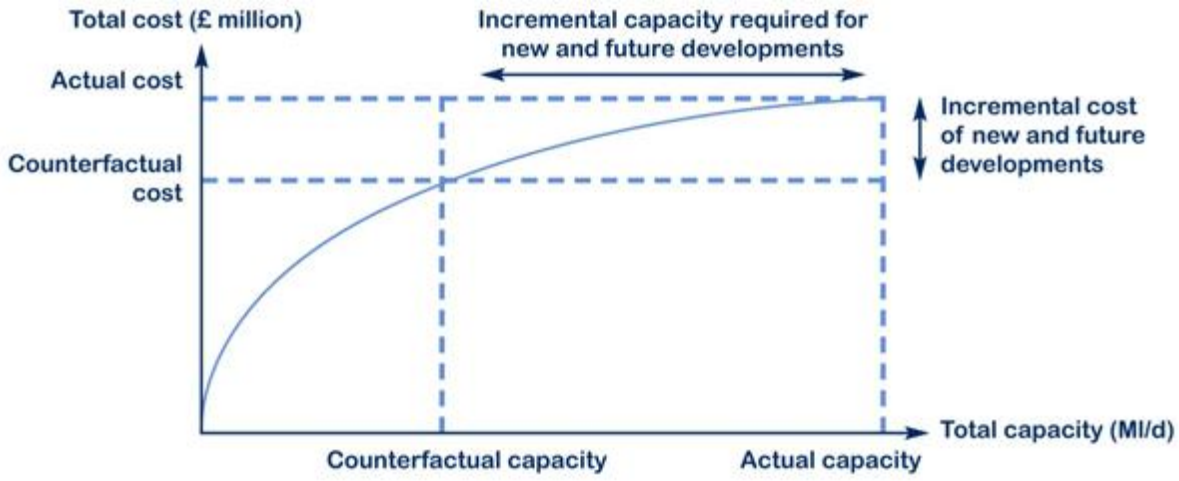
- reflect costs reasonably incurred; and
- facilitate the efficient use of resources.

C Analytical framework

3.42 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, in general terms we consider that developer contributions should reflect the additional costs required to serve the new customers using the Wing Main, over and above existing customer requirements. The cost of works that would have taken place without any new developments (the 'counterfactual' scenario) should be allocated to existing customers.

3.43 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



3.44 The incremental cost approach will ensure that:

- the costs recovered will reflect the costs reasonably associated with the provision of the relevant services;
- as costs are reflective of the impact of additional demand, they will provide the efficient economic signals required for efficient resource use; and
- 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.

3.45 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 required 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. From this result, we calculate the incremental cost. This is then allocated across developers on the basis of each site's peak litre per second (l/s) requirement and whether the site benefits from one, or both sections of the Wing Main, in line with the methodology set out in Appendix 5.

3.46 A full guide to our modelling is included in Appendix 4.

4. Our draft determination

4.1 In our draft determination we set out our view that Anglian Water has an appropriate basis upon which to include a proportion of the costs of the Wing Main in requisition charges collected in relation to 73 (of the 75) sites submitted within this dispute. As set out in Chapter 2(C), of these 73 sites only 65 sites are now relevant for the purposes of this final determination.

4.2 Whilst we considered there was an appropriate basis to include costs, we did not consider the level of developer contributions collected by Anglian Water was appropriate. Instead we set out that the aggregate level of developer contributions should be equal to the incremental cost of the additional capacity required for new developments, which was to be used as an input into the recalculation of individual developer contributions for the purposes of this determination. Other things remaining equal this would require refunds to be paid. We also determined that an adjustment would need to be made to Anglian Water's RCV in relation to the over-recovery of contributions from developers implied by our draft determination. This will mean that existing customers will fund the counterfactual costs over the life of the Wing Main.

4.3 We set out below a brief summary of how we arrived at those positions.

(i) Application of the legal framework

4.4 We set out in the draft determination how the Wing Main meets the requirements of the Act to justify a contribution from developers. In particular sections 43(4)(a) and (b) of the Act, as described above in paragraph 3.9 and 3.17 to 3.19 above, can be summarised as follows:

- Section 43(4)(a) of the Act – There was insufficient capacity to supply new developments without utilising part of the capacity of the Wing Main. The Wing Main meets the requirements of an 'other main' under section 43(4)(a) of the Act where it is necessary to provide it in consequence of requisitions for new mains for developments even where the Wing Main was already in contemplation, planning and construction, i.e. it had not yet been provided (41 of the developments in our draft determination were in this category (37 in our final determination)); and

- Section 43(4)(b) of the Act – Where following provision of the Wing Main in March 2010 there was still available oversized capacity, it could be, and can be, utilised by subsequent requisitions. Contributions charged in these circumstances meet the requirements of section 43(4)(b) of the Act on the basis that the Wing Main is considered an earlier main having been previously the subject of a requisition under section 43(4)(a) of the Act (the remaining 32 developments in our draft determination came into this category (28 in our final determination)).

(ii) Application of the analytical framework

4.5 In our draft determination (and analytical framework above) we set out the details of our cost assessment framework and explained why the incremental cost approach is the most appropriate approach to take in this determination.

4.6 To estimate the incremental cost, our modelling, set out in Appendix 4, considered:

- the percentage of the total allowed cost that is variable in the counterfactual (i.e. the costs that would change if a smaller pipe was built);
- how costs should be apportioned between the Wing to Beanfield and Beanfield to Hannington sections of the main;
- how pipe capacity changes with pipe diameter;
- what capacity would have been built in the counterfactual scenario; and
- how costs change with capacity.

4.7 Our base estimate of the incremental cost was £2.50 million (2002/3 prices), this took account of the results of sensitivity analysis, which showed how the incremental cost varies with variations in some of the key assumptions used in the modelling exercise.

4.8 This estimate was to be used as an input into the recalculation of individual developer contributions for the purposes of this determination. Other things remaining equal, we set out that this would result in developers receiving a refund, plus associated interest, on their contributions. We 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. This was to counterbalance the over-recovery of contributions from developers in the 2005-15 period set out in our draft determination.

5. Our final determination

5.1 This chapter sets out our consideration of key comments made on our draft determination. Following careful and full consideration of these comments our final determination confirms the conclusion reached in our draft determination – though we have adjusted the size of the RCV adjustment to reflect the fall in the number of sites from 73 to 65. This decision is based on the conclusion that we have not seen any sufficiently robust or compelling evidence, or argument, to cause us to conclude that the relevant sections in the Act should be read in a different way or change our analytical approach.

5.2 In this section we have not sought to respond to every point made by stakeholders, nor do we seek in this document to summarise or deal explicitly with each individual point made. Instead this chapter refers only to the facts and information that we have considered are relevant and material to enable us to reach a decision based upon the provisions of the Act and our duties and to demonstrate the rationale for our decision. The key issues discussed are:

- **the primary purpose of the Wing Main** (see subsection A);
- **temporary supply** (see subsection B);
- **the requirement for technical assessments** (see subsection C);
- **the assumptions used by Ofwat in determining developers' contributions** (see subsection D);
- **regulatory certainty and precedent** (see subsection E); and
- **other relevant comments from stakeholders** (see subsection F).

5.3 Finally, in subsection G, we set out our overall conclusion and final determination of this matter.

A The primary purpose of the Wing Main

(i) Respondent's comments

5.4 We received a number of comments from ULS, Martyn Speight, Energetics and the House Builders Federation (**HBF**) on the primary purpose of the Wing Main. The main arguments were:

- ULS argued there were existing water supply deficiency issues (since at least 2002/03) and a significant increase in water supply to a large part of Anglian Water's area was required. The purpose of the Wing Main was therefore to alleviate the existing water supply problems and plan for the future i.e. to generally boost the supplies of water available in a specific geographical area rather than meet the water supply needs of a specific development. Energetics made a similar point;

- ULS argued that the purpose of the Wing Main was to correct a shortfall in water supply to a major part of Anglian Water's area thereby enabling Anglian Water to fulfil its duty under section 37 of the Act to maintain, improve and extend its water supply system. Martyn Speight and the HBF made similar points;

- ULS argued that section 43(4)(a) of the Act is narrow in its effects and limits 'other water mains' to the provision of apparatus that it is necessary to provide in consequence of a 'new water main' (i.e. a requisitioned water main) to ensure adequate supplies of water are provided through the local network to a particular development;

- ULS argued that the requisitioning procedures were not intended to act as a trigger to provide strategic schemes such as the Wing Main and the requisitioning provisions make no allowance for this; and

- ULS argued that section 43(4)(a) of the Act does not envisage the inclusion of costs associated with strategic improvements of whole water supply networks as such costs would not be reasonably incurred or necessary in consequence of a new (requisitioned) main.

(ii) Our response

5.5 With regards to the first 2 bullet points above, as set out in paragraphs 3.33 to 3.35, section 37 of the Act relates to a company's general duty to maintain the water supply system. From a legal perspective, section 37 of the Act is separate from, and not directly relevant to, the question of what is necessary in consequence of a development. That is to say, we do not consider that a water undertaker's requirement to comply with a requisition removes a water undertaker's duty under section 37 of the Act, or vice versa.

5.6 As set out in paragraph 3.35, we consider that when taking into account whether a water main is necessary in consequence of the provision of a new main, it is important to consider not only the question of whether water can physically be supplied to the site but also what margin ("headroom") the supplier judges appropriate under the circumstances, having regard to the need to satisfy future demand and ensure security of supply.

5.7 Furthermore, even though already planned in part for another purpose, a main, such as the Wing Main, can be considered to be an 'other main' in some circumstances in respect of a relevant requisition made while the Wing Main was in contemplation, planning or construction (i.e. pre-provision). Similarly, even though initially planned for another purpose, the main could be considered to be an 'earlier main', after being provided pursuant to an earlier requisition, in certain circumstances. For more details on our reasoning for this, please see Chapter 3 of this determination.

5.8 With regards to the remaining bullet points above, we do not agree that section 43(4)(a) of the Act could be interpreted to exclude a charge being made for a 'strategic main' where the charge represents a reasonably calculated proportion representing the extent that it was needed for the development in question. This is because the Act makes no such exclusion (for example, the Act refers to "mains" rather than "strategic mains" or "local mains" or "local networks"). In addition, the alternative would have involved many individual 'other mains' to be provided in response to requisitions as and when they occurred. We consider this would be inefficient in terms of expense for both Anglian Water and developer customers.

B Temporary supply

(i) Respondent's comments

5.9 ULS argued that the earliest requisitions that are the subject of this determination were requiring water supplies when the Wing Main was barely in contemplation let alone capable of providing a water supply. The fact that the supply was made to a number of developments before the Wing Main was provided shows that the Wing was not necessary for that purpose.

5.10 ULS also argued that, having regard to the general purpose for which the Wing Main was being provided, and given the wording set out in the Act, which contemplates an other water main being a necessary and integral part of the supply of water necessary for any of the pre-2010 requisitions, defining the Wing Main as an other water main is not legally reconcilable. The fact that many developments may have relied on already stressed systems is irrelevant given the over-arching duty under section 37 of the Act which requires Anglian Water to supply water to persons who demand them.

(ii) Our response

5.11 As detailed in Chapter 2, the Wing Main and the associated Wing Water Supply Programme was designed to meet the evolving strategic needs of the region as a least cost approach since 1990s. Given the strategic nature of the infrastructure, planning permission was sought in 1999 and the Wing Main, and the associated Wing Water Supply Programme was included as part of an Anglian Water investment proposal in 2003 and then, subsequently, approved as part of the 2004 price review. Due to the large scope of the scheme it would be expected that the time taken to fully implement it was going be substantial.

5.12 It is our view that it is acceptable for Anglian Water to have used a temporary supply (in this case borrowed from current headroom) in the intervening period between the Wing Main being approved and then being built to supply sites that would require the Wing Main in the long term. We note, however, that the use of the then existing headroom generated an inappropriate level of risk in the short term, which had to be addressed for the medium to long term period.

5.13 Furthermore, as already mentioned at paragraph 3.35, we consider that when taking into account whether a water main is necessary in consequence of the

provision of a new main, it is important to consider not only the question of whether water can physically be supplied to the site but also what margin ("headroom") the supplier judges appropriate under the circumstances, having regard to the need to satisfy future demand and ensure the security of supply.

C The requirement for technical assessments

(i) Respondent's comments

5.14 ULS argued that, without a detailed technical analysis of each requisition before 2010, it is implausible and legally flawed to make a generalised assumption that water in the future, to be provided by the Wing Main, was necessary to supply water to these developments. Similarly, Martyn Speight argued that growth in the Ruthamford WRZ should be assessed on a site by site basis.

(ii) Our response

5.15 Anglian Water's methodology for contributions was to identify which developers made claims on the Wing Main's water. That is to say, what each developer required constituted the incremental demand satisfied by the Wing Main. The contribution is then assessed by reference to the volume of water and length of pipe required in each case. Appendix 3 of the draft determination shows how the relevant costs for each developer are quantified. We consider this sufficient to identify the extent to which the Wing Main was necessary in consequence of each development.

5.16 We also consider it relevant that supply/demand deficits were identified for the Ruthamford Water Resource Zone in 2003 and that, such deficits, at peak demand, would increase in frequency and severity as demand in the Ruthamford zone continued to rise. It is noted in an investment proposal from 2003 that the Ruthamford zone 'is one of high growth with 90,000 additional homes currently planned for the Milton Keynes/Northampton/Bedford area'. The Wing Main, and the associated Wing Water Supply Programme, was therefore approved as part of the 2004 price review.

D The assumptions used by Ofwat in determining developers contributions

(i) Respondent's comments

5.17 Energetics and Martyn Speight questioned our use of peak flow, which is when demand reaches its highest level, in determining developers' contributions. Instead both respondents argued that the lower average consumption per property per day figure is more appropriate and should be used before any cost apportionment is calculated.

(ii) Our response

5.18 We consider it is appropriate to use peak flow as:

- the use of peak flow ensures a necessary level of resilience of supply for existing customers and new developments[23];
- developers, who benefit from the resilience of supply, should contribute to its cost;
- if a developer's contribution was calculated on the basis of average flow, the payment would not fully reflect the benefits of the resilience to the individual site, and this would require others to make a larger contribution than would otherwise be required; and
- the requisition-driven obligation to supply includes an obligation to supply at a given level of reliability. That has been reflected in Anglian Water's funding in price controls and to be consistent in assessing the counterfactual to derive incremental cost, it is not an option, but a requirement that we identify the relevant service obligations to provide reliable supplies via adequate headroom derived from projections of peak demand.

[23] We also note that the Wing Main was designed on the basis of peak flow – this was approved as part of 2004 price review

5.19 Further, as discussed in Chapter 3, the incremental cost approach ensures that the costs recovered will reflect the costs reasonably associated with the provision of the relevant services for each site, which is aligned with the requirement that only costs reasonably incurred in meeting the statutory duty, should be charged under sections 43(4)(a) and (b) of the Act.

E Regulatory certainty and precedent

(i) Respondent's comments

5.20 Anglian Water was concerned that Ofwat considers it appropriate to change a regulatory decision almost a decade after the original decision. It argued that this damages regulatory certainty and undermines company's confidence that, going forward, Ofwat will not choose to retrospectively regulate and significantly modify other previous decisions.

5.21 Anglian Water and another water and sewerage company were also concerned that the treatment of costs in requisitions is being dealt with in a piecemeal fashion through individual determinations which could lead to inconsistencies between the different decisions. For example, it was noted that our approach in this determination is different from other recent final determinations. Clarification was also requested on Ofwat's policy of who pays so that both companies and developers are aware of which approach is applied in which scenario.

(ii) Our response

5.22 In some cases Ofwat may be obliged to approach a detailed issue in a particular case in a way which does not fully reflect the relevant high level assumptions which were used in a previous price review – in this case using specific functions to make a determination under sections 42(6) and 30A of the Act. Where appropriate, Ofwat may make a relevant adjustment at the next price review(s).

5.23 We also recognise that we are currently making a number of determinations regarding new connections and requisition charges and it is important to ensure there is clarity on the different approaches in the sector. To this end, in September 2014 we published an information notice on self-lay and

requisition charges[24]. This information notice provides greater clarity on our general expectations for how monopoly water and sewerage and water only companies in England and Wales should provide and charge for new connections. That said each determination has to be determined by case specific factors and that is why this case is different from other recent final determinations. In particular this case:

- concerns a large scale strategic piece of infrastructure which is highly material (the Wing Main cost £34.32 million (2002/03 prices));
- involves multiple developers, across multiple sites;
- involves a WRZ which was already in deficit and there was a clear requirement for additional capacity to serve existing customers; and
- there is a significant and material difference between an incremental cost (£2.50million (2002/3 prices)) and non-incremental cost (£16.73 million (2002/3 prices)) starting point for the calculation of individual developer contributions for the purposes of this determination.

5.24 These circumstances are unlikely to apply in many cases and the purpose of this final determination is to set out our conclusions based on the particular facts of this dispute. With reference to developer contributions made in relation to other schemes, the approach to the inclusion of costs in requisition charges will always be dependent on the details and circumstances of each specific scheme.

F Other relevant comments from interested stakeholders

5.25 The points that we have addressed above are those that we consider to be the key issues. However, we have also considered a number of other points that we consider should be addressed. This includes:

- Ruthamford WRZ connectivity (see subsection F1 below):
- Dual charging (see subsection F2 below);

[24] IN 14/16 – Improving services for customers on new connections

- Self-Lay Operator (**SLO**) contributions (see subsection F3); and
- Three-month time limit (see subsection F4).

F1 Ruthamford WRZ connectivity

(i) Respondent's comments

5.26 The EA responded to the public consultation explaining how Anglian Water's 2014 Water Resources Management Plan (**WRMP**) splits the Ruthamford WRZ into two separate zones (Ruthamford South and North). The EA noted that Anglian Water carried out this split to better reflect the connectivity in the area highlighting that prior to this split there were connectivity issues most notably in the Northampton area. The EA said that as a result of these connectivity issues it is clear that not all of Anglian Water's planning zones that make up the two Ruthamford zones directly benefit from the extension.

(ii) Our response

5.27 In its July 2013 submission, Anglian Water confirmed that not all the planning zones that made up the Ruthamford WRZ benefit from the Wing Main and it has only charged those developments in planning zones that do benefit from the Wing Main. Anglian Water confirmed in its July 2013 submission that the Peterborough, Oundle and Ravensthorpe planning zones do not benefit from the Wing Main and, as such, it has not charged developments within those areas for a contribution towards the Wing Main.

5.28 Anglian Water also highlighted that the Corby planning zone only benefits from the Wing to Beanfield section of the Wing Main so it has only collected contributions from developers for this section of the Wing Main. Appendix 5 explains in further detail how developer contributions are calculated.

F2 Dual charging

(i) Respondent's comments

5.29 Energetics and Martyn Speight commented that Ofwat has not dealt with the issue of dual charging in respect of infrastructure charges. That is to say, the respondents questioned whether Anglian Water is entitled recover infrastructure charges as well as contributions towards the Wing Main. The

HBF also commented that Anglian Water does not accept that non-domestic water usage on a previously developed site can be used to discount infrastructure charges.

(ii) Our response

5.30 Our view is that we consider Anglian Water is entitled to recover infrastructure charges in addition to contributions towards the Wing Main and we would expect Anglian Water to ensure there is no double recovery. We would also expect Anglian Water to ensure that any infrastructure charge credits that are relevant for a site are applied.

5.31 Infrastructure charges are charges that a water undertaker is entitled to raise pursuant to a charges scheme and section 146 of the Act for connection to a water supply or public sewer of premises that have not at a previous time been connected to a water supply or public sewer for domestic purposes by a water or sewerage undertaker or any other authority or body. The Act's provision for raising an infrastructure charge is separate and independent of the provisions related to providing and charging for a main requisition under section 41-43 of the Act.

F3 Self-Lay Operator (SLO) contributions

(i) Respondent's comments

5.32 Martyn Speight questioned whether developers who have opted for the SLO option had to make a contribution towards the Wing Main.

(ii) Our response

5.33 We have confirmation from Anglian Water that developers who opted for the SLO option were charged in the same way in relation to contributions towards the Wing Main as those developers who did not opt for the SLO option. For example in this determination the developer at site 48 (Fields Road, Wooton) opted for the SLO option and contributed towards the Wing main.

F4 Three month time limit

(i) Respondent's comments

5.34 ULS, HBF and Martyn Speight argued that section 44 of the Act sets a three month time limit on works constructed under section 43(4)(a) and/or (b) of the Act and, as such, as the Wing Main took longer than three months to provide, it should have been considered as having been constructed under section 37 of the Act instead.

(ii) Our response

5.35 Section 44(2) of the Act states that the three month time limit, for the relevant water main to be laid so as to enable the service pipes or the self-laid main to be connected to the relevant main, can be extended by agreement. The three months runs from the date on which the conditions in section 42 of the Act are satisfied with regard to undertakings or securities, or the date on which the location of the relevant connections are to be made are determined, whichever is the later.

5.36 Where there is a dispute as to whether the period should be extended, this may be referred by either party to Ofwat. Ofwat has not been informed of any dispute in lieu of such an agreement. That the Wing Main took up to eight years to complete may be an extreme case, but we do not consider the Act excludes it from consideration as an 'other' main.[25]

[25] In any case, even if the Wing Main was the relevant main for the purposes of section 44(1) of the Act and it took longer to provide than the relevant end date, section 44(1) of the Act effectively notes that Anglian Water would be in breach of its duty to provide the Wing Main under section 41 of the Act. In other words, this implies that the duty under section 41 of the Act would not drop away with the implication that Anglian Water would have to then use a different section of the Act.

F5 Cases under the Water Act 1945

(i) Respondent's comments

5.37 Martyn Speight noted that Ofwat should consider the relevance of two cases, the Cherwell DC vs. Thames Water Board[26] and Royco Homes Limited vs. Southern Water Authority[27] cases.

(ii) Our response

5.38 The above cases are not relevant to this determination, not least because both cases were based on the old Water Act 1945 which set out a different approach to requisitioning than is contained in the Act which replaced the Water Act 1945.

F6 Target headroom

(i) Respondent's comments

5.39 Martyn Speight noted that Anglian Water is placing greater reliance on developing headroom capacity. Martyn Speight also quotes the Environment Agency (**EA**) response to Anglian Water's draft water resources management plan (**WRMP**) in 2008 which stated that it considers Anglian Water's headroom allowance to be too high.

(ii) Our response

5.40 Water companies prepare WRMPs as part of a statutory process. Water companies consider a wide range of factors when putting together their WRMPs including the required level of headroom. Water companies are required to consult on their WRMPs which are also scrutinised by the EA (in England) and Ofwat. For water companies in England the Secretary of State has to approve a company's WRMP before it is published. We note that the Secretary of State approved Anglian Water's WRMP for 2015-40, which includes its headroom, in July 2014.

[26] Cherwell DC vs. Thames Water Board [1975] 1 WLR 448

[27] Royco Homes Limited vs. Southern Water Authority [1979] 1 WLR 1366

5.41 Nevertheless we have considered the available evidence to assess whether Anglian Water's headroom is out of line with the industry. To do this we have used publically available data from the 18 major English water companies' revised draft and final WRMPs[28] to assess available headroom as a proportion of deployable output. This has shown that Anglian Water's level of headroom is the 6th highest of all English companies in 2015-16 and the company is not forecast to have the highest headroom as a proportion of deployable output throughout 2015-40 – suggesting that its level of headroom is not an outlier.

G Conclusion and final determination

5.42 This final determination confirms the conclusion reached in our draft determination. Namely, that Anglian Water has an appropriate basis upon which to include the relevant costs of the Wing Main in requisition charges collected in relation to the relevant sites submitted within this dispute, but that the level of contributions is not appropriate. Instead, the contributions should be based on the incremental cost of additional capacity required for new developments.

5.43 This final decision is based on the conclusion that we have not seen any sufficiently robust or compelling evidence, or argument, to cause us to conclude that the relevant sections in the Act should be read in a different way to our interpretation or to change our analytical approach. Our full considerations of the comments submitted by the parties and other stakeholders have been set out in this Chapter.

5.44 As we are confirming the conclusion of the draft determination, we therefore require that the developers that are the subject of this dispute be refunded by Anglian Water the sums set out in Appendix 1 within three months of the date of this final determination being issued to parties. In addition, in accordance with section 42(4) of the Act, interest is payable on any security deposit received by Anglian Water in relation to any of the relevant sites listed in Appendix 1. Interest should therefore be paid for every three months in the period for which each security instalment (including any refund due from the

[28] At the time we carried our analysis not all companies have published WRMPs

security deposit after the relevant requisition or self-lay has been completed) was held by Anglian Water. In calculating any interest due, Anglian Water should apply interest rate(s) in accordance with Ofwat's Information Notice on interest rates. The amount of any interest payable is for the Courts to determine, if Anglian Water and the relevant developers are unable to agree this amount.

5.45 As noted above we have had to recalculate the size of the RCV adjustment to reflect the fall in the number of relevant sites from 73 to 65. Under the allocation from the 2004 price review Anglian Water has recovered approximately £2.30 million from the developers of the 65 sites in this determination. However, the incremental cost approach suggests that Anglian Water should only have recovered approximately £0.35 million from these developers. Therefore £1.95 million, adjusted to reflect inflation, was added to Anglian Water's RCV as part of the 2014 price review to reflect the change in cost apportionment likely to result from this determination.

5.46 As set out in the Executive Summary, we consider that this determination should bring a number of benefits. Developers benefit as their contributions to the Wing Main have been rebalanced so that they reflect the costs reasonably associated with the provision of the relevant services. Further, these reflective costs will ensure that Anglian Water is remunerated properly through the price control mechanism for key strategic investment in its network and will have the correct signals to invest efficiently. This will encourage efficient long term investment that identifies and responds to future growth in a timely manner, to the long term benefit of both current and future consumers.

Appendix 1: Sites submitted for determination and relevant refunds where appropriate

Anglian Water has calculated the refunds below in accordance with the methodology set out in our draft determination (see Appendix 5), whereby the refunds are based on re-running the DAD calculations for the relevant sites, with revised litres per second values for the Wing Main included, and then subtracting the value of this revised contribution from the original contribution actually paid by the developers. The refunds shown exclude interest.

Site no.	Site name	Developer	Requisition date	Refund excluding interest
1	British Timkin site, Phase 1	David Wilson Homes South Midlands	06/03/2006	[redacted]
2	British Timkin site, Phase 2	David Wilson Homes South Midlands	06/03/2006	[redacted]
3	Nampak site, Station Road	Taylor Wimpey South Midlands	13/03/2006	[redacted]
4	Oakley Vale, Phase 3	Barratt Homes Northampton	20/04/2006	[redacted]
5	Oxley Park, Phase 1	David Wilson Homes South Midlands	08/06/2006	[redacted]
6	Marston Road, Lidlington	David Wilson Homes South Midlands	02/08/2006	[redacted]
7	Oxley Park, Phase 5	Persimmon Homes Midlands	23/08/2006	[redacted]
8	Tyne Crescent, Brickhill, Bedford	Persimmon Homes Midlands	05/09/2006	[redacted]
9	Pratts Quarry, Phase 2A	Taylor Wimpey South Midlands	05/09/2006	[redacted]
10	Pratts Quarry, Phase 2B	Taylor Wimpey South Midlands	05/09/2006	[redacted]

Site no.	Site name	Developer	Requisition date	Refund excluding interest
11	Pratts Quarry, Phase 2C	Taylor Wimpey South Midlands	05/09/2006	[redacted]
12	Upton Park, Site C	David Wilson Homes South Midlands	20/09/2006	[redacted]
13	Stratford Road, Wolverton	David Wilson Homes South Midlands	21/09/2006	[redacted]
14	Watling Street, Fenny Stratford	Bellway Northern Home Counties	28/11/2006	[redacted]
15	Pavenham Road, Milton Keynes	Barratt Homes Northampton	13/12/2006	[redacted]
16	Site 15A, Pratts Quarry, Phase 2D	Taylor Wimpey South Midlands	08/01/2007	[redacted]
17	Weetabix site, Corby	Persimmon Homes Midlands	18/02/2007	[redacted]
18	Phases 2, 3 and 4 Newark Road, North Hykeham	Bellway Homes East Midlands	12/03/2007	[redacted]
19	Milton Malsor, Northants	Persimmon Homes Midlands	04/05/2007	[redacted]
20	Middlemore, Daventry	Persimmon Homes Midlands	25/05/2007	[redacted]
21	The Grange, Desborough	Persimmon Homes Midlands	10/06/2007	[redacted]
22	Garfield Farm, Church Street	Bellway Northern Home Counties	08/08/2007	[redacted]

Site no.	Site name	Developer	Requisition date	Refund excluding interest
23	Loves Farm, Phase A1 and A2	David Wilson Homes South Midlands	04/09/2007	[redacted]
24	Norton Road, Stotfold	Persimmon Homes Midlands / Taylor Wimpey South Midlands	04/10/2007	[redacted]
25	Loves Farm, Phase H1 and H2	David Wilson Homes South Midlands	17/10/2007	[redacted]
26	Pemberton Court, Rushden	Morris Homes	02/11/2007	[redacted]
27	Maple Close, Greenfield Road	Bellway Northern Home Counties	21/12/2007	[redacted]
28	Newton Leys, Bletchley	Taylor Wimpey South Midlands	15/01/2008	[redacted]
29	British Timkin site, Main Road, Duston	Bellway Northern Home Counties	23/01/2008	[redacted]
30	Nampak site, Phase 2	Taylor Wimpey South Midlands	11/02/2008	[redacted]
31	Upton Park, Site E, Ashby Wood Drive	Barratt Homes Northampton	11/02/2008	[redacted]
32	Gyosei School, Brickhill Street	Barratt Homes Northampton	11/02/2008	[redacted]
33	Stanbridge Road, Leighton Buzzard	Taylor Wimpey South Midlands	17/07/2008	[redacted]
34	Oxley Gate, Milton Keynes	Taylor Wimpey South Midlands	27/08/2008	[redacted]
35	Wixams Area H, Bedford	Taylor Wimpey South Midlands	10/09/2008	[redacted]

Site no.	Site name	Developer	Requisition date	Refund excluding interest
				[redacted]
36	British Timkin site, Phase 2	David Wilson Homes South Midlands	27/10/2008	[redacted]
37	British Timkin site, Phase 2A	David Wilson Homes South Midlands	13/02/2009	[redacted]
38	British Timkin site, Phase 2B	David Wilson Homes South Midlands	13/02/2009	[redacted]
39	Site 15B, Pratts Quarry, Leighton Buzzard	Taylor Wimpey South Midlands	05/05/2009	[redacted]
40	Moreton Road, Buckingham	Bellway Northern Home Counties	22/07/2009	[redacted]
41	The Paddocks, Silverstone	David Wilson Homes South Midlands	05/10/2009	[redacted]
42	Wixams site F, Bedford	Taylor Wimpey South Midlands	30/10/2009	[redacted]
43	Potton Road, Biggleswade	David Wilson Homes South Midlands	12/11/2009	[redacted]
44	RAF Cardington	Bellway North London	04/01/2010	[redacted]
45	Manor Gardens, Old Wolverston Road	Barratt Homes Northampton	02/02/2010	[redacted]
46	Newton Leys, Phase 2	Taylor Wimpey South Midlands	25/02/2010	[redacted]

Site no.	Site name	Developer	Requisition date	Refund excluding interest
				[redacted]
47	Westfield Road, Phase 2	Taylor Wimpey South Midlands	29/03/2010	[redacted]
48	Fields Road, Wooton	Bellway Northern Homes Counties	11/08/2010	[redacted]
49	Rear of High Street, Bozeat	Bloor Homes Northampton	04/01/2011	[redacted]
50	Phases 1 and 2, 15D, Pratts Quarry, Leighton Buzzard	Persimmon Homes Midlands	07/03/2011	[redacted]
51	Phase 3, 15D, Pratts Quarry, Leighton Buzzard	Persimmon Homes Midlands	07/12/2011	[redacted]
52	Former Calvert Brickworks, off Sandstone Close, Calvert	Persimmon Homes Midlands	14/01/2011	[redacted]
53	15B, Pratts Quarry, Leighton Buzzard	Persimmon Homes Midlands	-	[redacted]
54	72-84 Wolverton Road, Newport, Pagnell	Persimmon Homes Midlands	22/02/2010	[redacted]
55	Phase 6, Oakley Vale, Lyveden Way, Corby	Persimmon Homes Midlands	16/04/2010	[redacted]

Site no.	Site name	Developer	Requisition date	Refund excluding interest
56	Phase 2, Linley Drive, Desborough	Persimmon Homes Midlands	20/01/2010	[redacted]
57	Stantonbury Park	Persimmon Homes Midlands	16/06/2008	[redacted]
58	Bugbrooke Road, Kislingbury	Persimmon Homes Midlands	05/09/2011	[redacted]
59	Home Farm, Cranfield	Persimmon Homes Midlands	05/12/2011	[redacted]
60	Greensand View, Station Road, Ampthill	Taylor Wimpey South Midlands	02/02/2012	[redacted]
61	Phase 3, Site 12, Freemans Common, Bedford	Taylor Wimpey South Midlands	19/06/2009	[redacted]
62	Site F2, Wixams, Bedford	Taylor Wimpey South Midlands	06/05/2011	[redacted]
63	15D, Pratts Quarry, Bedford	Taylor Wimpey South Midlands	03/12/2010	[redacted]
64	Phase 1, Westfield Road, Pitstone	Taylor Wimpey South Midlands	08/05/2009	[redacted]
65	Phase 3, Nampak, Station Road, Woburn Sands	Taylor Wimpey South Midlands	25/02/2011	[redacted]
66	Phase 1, Newton Leys, off Drayton, Bletchley, Milton Keynes	Taylor Wimpey South Midlands	15/01/2008	[redacted]
67	Site 6, Oxley Gate, Milton Keynes	Taylor Wimpey South Midlands	19/09/2006	[redacted]

Site no.	Site name	Developer	Requisition date	Refund excluding interest
				[redacted]
68	Phase 2, Area A, Bletchley Park, Milton Keynes	Taylor Wimpey South Midlands	14/11/2006	[redacted]
69	Phase 2, Charity Wharf, Wing Road, Leighton Buzzard	Redrow Homes South Midlands	05/03/2007	[redacted]
70	Harmans Way, Weedon	Redrow Homes South Midlands	22/09/2011	[redacted]
71	Belle Baulk, Towcester	Redrow Homes South Midlands	04/04/2012	[redacted]
72	Bletchley Campus, Bletchley, Milton Keynes	Redrow Homes South Midlands	16/04/2007	[redacted]
73	PH1 Mill Lane, Green Norton, Towcester	Linden Homes Midlands	05/09/2011	[redacted]
74	Christie Drive, Hinchingbrooke, Huntingdon	Linden Homes Midlands	13/10/2011	[redacted]
75	Site 24, Sissinghurst Drive, Westcroft, Milton Keynes	Linden Homes Midlands	16/08/2012	[redacted]

Appendix 2: Summary of the parties' responses to the Draft Determination

Respondent	Comment
Anglian Water	Anglian Water agreed with the legal analysis set out in the draft determination but set out its concerns that we are changing a regulatory decision almost a decade after the original decision. ANH also sought clarification on: (a) why the approach in this determination is different from other recent final determinations (such as Persimmon v South East Water); and (b) Ofwat's policy of who pays regarding new connections. Our response to these points is set out in section 5(E).
ULS	ULS raised several points regarding our legal analysis, see section: • 5(A) – Primary purpose of the Wing Main • 5(B) – Temporary supply • 5(C) – The requirement for technical assessments • 5(F) – The use of 'costs' rather than 'charge. ULS also noted that should we not be persuaded by its arguments on the legal analysis then the incremental cost approach to identify the costs relevant for developer contributions should be used.

Appendix 3: Summary of responses to our public consultation

Respondent	Comment
A water and Sewerage company	The company was concerned that the areas of uncertainty on costs of requisitions are being dealt with in a piecemeal fashion through individual determinations which could lead to inconsistencies between the different decisions. In particular it noted a recent final determination we sent to the company did not use the incremental cost approach despite the company recommending it. For further details, see section 5(E).
Energetics	As part of Energetics response, it focused its comments on the following areas: (a) Justification for the Wing Main – see section 5(A); (b) Dual charging – see section 5(F2); and (c) The assumptions used by Ofwat in determining developer contributions – see section 5(D).
Environment Agency	The EA supports the broad principles that Ofwat has applied but provided details on connectivity issues in the Ruthamford WRZ. See section 5(F) for more details.
HBF	As part of HBF's response, it focused its comments on the following areas: (a) The difference between requirements of infrastructure under requisitioning and the necessity for Anglian Water to maintain security of supply – see section 5(A); (b) Anglian Water does not accept that non-domestic water usage on a previously developed site can be used to discount the infrastructure charges; (c) Assumptions are being made which are spread across the whole developer base regardless of the demand/supply characteristics of the individual development. As such, not only is the developer not obtaining the benefit of the non-domestic previous usage as a reduction in their infrastructure charges, this previous usage is being totally ignored which results in some developers also being overcharged for the Wing Main on those developments with previous water usage. This is 'double accounting' and is to the benefit of Anglian Water; and (d) The strategic importance of the water the Wing Main will provide

	goes beyond the 12 years that revenue is permitted to be recovered under the Act and this can only fall upon existing and new consumers to fund.
Martyn Speight	As part of Martyn Speight's response, comments were focused on the following areas: (a) We have not tested whether the Wing Main falls within a general duty under section 37 of the Act or whether it fits within the broader charging principles set out across all the requisitioning provisions – see section 5(A); (b) Growth in the Ruthamford WRZ should be assessed on a site by site basis – see section 5(C); (c) The assumptions used by Ofwat in determining developer contributions – see section 5(D); (d) Three month time limit – see section 5(F); (e) SLO contributions – see section 5(F); (f) Capacity has to be installed before proportional cost is passed on to developers who submit subsequent requests for requisitions – see section 3A; (g) Anglian Water is placing greater reliance on developing headroom capacity. Martyn Speight also quotes the EA response to Anglian Water's WRMP which states that it considers Anglian Water's headroom allowance to be too high – see section 5(F); (h) Ofwat should consider the relevance of the Cherwell DC vs. Thames Water case and the Royco Homes vs. Southern Water case – see section 5(F); and (i) It is doubtful that any individual development would trigger the necessity for major system enhancements.
David Heath, Northumbrian Water and Wessex Water	All these parties agreed with the conclusions reached in the draft determination.

Appendix 4: Ofwat's modelling analysis

Introduction

This Appendix outlines our modelling methodology. We use the Ofwat model ("**the incremental cost model**") to calculate a value for the cost of the Wing Main that can be attributed to existing and future developments. We consider that this best captures the contribution developers should have made, or should make in the future, to the Wing Main. Our assessment is for developers as a whole, as this can then be used as a starting point for the calculation of contributions for individual sites.

In this Appendix we:

- set out the incremental cost approach;
- provide an overview of the model structure;
- discuss our base assumptions and alternative options;
- provide an overview of the key calculations in the model; and
- 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.

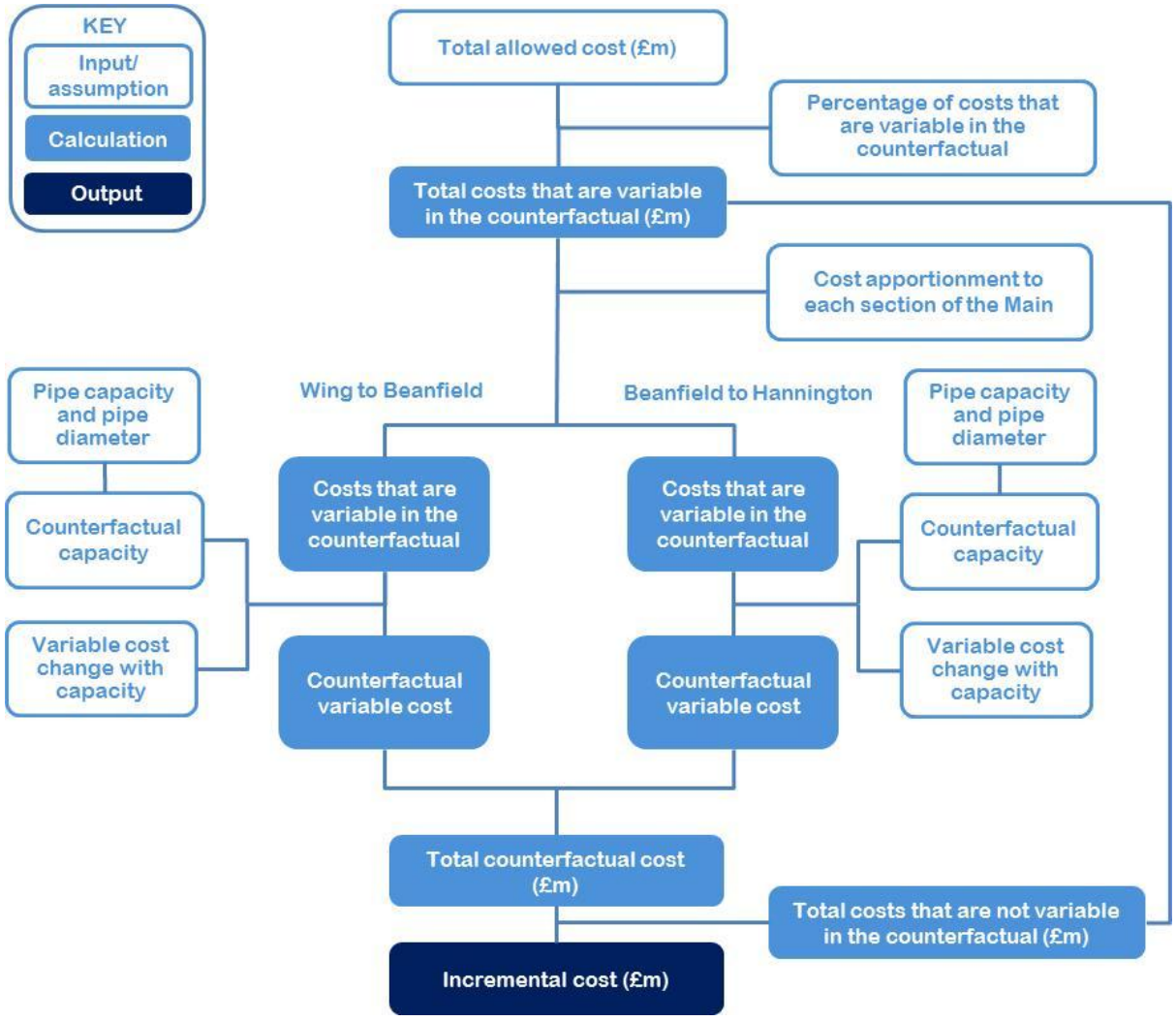
The incremental cost model allows us to estimate the costs that Anglian Water would have incurred in the counterfactual scenario. The incremental cost is then calculated as the difference between the actual and counterfactual costs that Anglian Water faced in building the Wing Main.

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 A4.1. The first input is the total allowed cost; the actual cost of the Wing Main determined in the 2004 price review. 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 A4.1 The incremental cost model structure



Overview of model assumptions

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

- percentage of the total allowed cost that is variable in the counterfactual;
- cost apportionment between the Wing to Beanfield and Beanfield to Hannington sections of the main;
- changes in pipe capacity with pipe diameter;
- counterfactual capacity assumptions; and
- 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 (100mm, 150mm, 200mm and 300mm), 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, however we still consider this data provides a useful reference for the percentage of pipework costs across the industry. 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's PR04 Final Business plan the total length of the scheme was identified as 33km, of which 15km (45%) was the Wing to Beanfield section and 18km (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 aren't 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 (1000mm vs. 900mm). 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 this can be influenced by a range of factors including the:

- material and thickness of the main;
- distance, pressure and gradient the water is required to travel; and
- 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 1000mm diameter Wing to Beanfield main has a peak capacity of 90Ml/d, compared to the 900mm diameter Beanfield to Hannington main that has a peak capacity of 65Ml/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 400mm, so that for our given estimates of the changes in peak capacity in diameter, the actual peak capacity will be correct. Figure A4.2 provides our base estimates of peak capacity, by section and pipe diameter.

Figure A4.2 Base pipe diameter and peak capacity estimates

Pipe diameter (mm)	Wing to Beanfield peak capacity (Ml/d)	Beanfield to Hannington peak capacity (Ml/d)
400mm	14	13
500mm	23	20
600mm	30	27
700mm	41	36
800mm	55	48
900mm	73	65 (Actual)
1000mm	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. Note 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 2004/5.

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; and
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 45Ml/d (requiring a 800mm pipe) of which 24Ml/d is the required capacity to restore target headroom and peak capacity, and 21Ml/d is for future growth in existing customer demand. Similarly Beanfield to Hannington would require a capacity of 22Ml/d (requiring a 600mm pipe), of which 3Ml/d is the required capacity to restore target headroom and peak capacity, and 19Ml/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 in the 2009 price review. As this data did not cover the full range of diameters we consider (it covered 400mm, 500mm, 900mm and 1000mm diameter pipes), we assume that costs are linear to interpolate values for any missing data points.

Figure A4.3 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 1000mm diameter pipe, similarly for Beanfield to Hannington the cost changes are calculated by reference to the cost of a 900mm pipe (this explains the differences in the variable cost changes).

Figure A4.3 Base pipe diameter and cost change estimates

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

Pipe diameter (mm)	Wing to Beanfield variable cost change	Beanfield to Hannington variable cost change
1000mm	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 A4.4 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 A4.4 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 A4.5 presents a worked example of our base estimate set out above.

Figure A4.5 Incremental cost model worked example of our base estimate

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

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 A4.6 where we set out what we change, explain how it impacts the results and provide the estimate for the incremental cost.

Figure A4.6 Range of incremental costs

Scenario	Description	Incremental cost (£m)
Base estimate	Our base estimate described above	£2.50m
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.	£3.91m
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.	£2.47m
Length weighted by capacity = 54%/46%	As above	£2.40m
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.	£3.45m
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.	£2.50m
Counterfactual capacity sensitivities		
Wing to Beanfield = 41Ml/d	A smaller diameter main would have been laid, which will result in lower counterfactual costs and a higher value for the incremental cost.	£2.90m
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.	£2.10m

Scenario	Description	Incremental cost (£m)
Beanfield to Hannington = 20Ml/d	A smaller diameter main would have been laid, which will result in lower counterfactual costs and a higher value for the incremental cost.	£3.05m
Beanfield to Hannington = 36Ml/d	A larger diameter main would have been laid, which will result in higher counterfactual costs and a lower value for the incremental cost.	£1.95m
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.	£3.45m
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.	£1.55m
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.	£1.87m
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.	£3.12m

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 5: 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:

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

Figure A5.1 sets out the how the contribution per l/s is calculated, while Figure A5.2 provides an example of the methodology in practice.

Figure A5.1 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 the 2004 price review, are multiplied by the estimated peak demand per domestic property to calculate the total peak l/s required to serve the increase in properties[29]. 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

Step two – 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 the 2004 price review Final Business Plan (15km Wing to Beanfield, 18km Beanfield to Hannington).

Contribution by section = Total Contribution * Percentage of total length

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

Beanfield to Hannington £2.50m * 55% = £1.375m

Step three – Calculate contributions per l/s

[29] 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)

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: £1.125m / 1,183 l/s = £951 per l/s

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

Figure A5.2 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; and
- 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 = 12.55l/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