

Summary: Analysis & Evidence

Policy Option 1

Description: More stringent obligations on households
FULL ECONOMIC ASSESSMENT

| Price Base Year 2013 | PV Base Year 2013 | Time Period Years 40 | Net Benefit (Present Value (PV)) (£m) | | |
|-------------------------|----------------------|-------------------------|---------------------------------------|-------|----------------------|
| | | | Low: | High: | Best Estimate:-117.1 |

| COSTS (£m) | Total Transition (Constant Price) Years | | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---------------|--|--|---|-------------------------------|
| Low | | | | |
| High | | | | |
| Best Estimate | | | 36.8 | 732 |

Description and scale of key monetised costs by 'main affected groups'

Households take full responsibility for their supply pipes under this option, which will result in additional costs from repairs and replacements (£716.1m Present Value, PV) for the proportion which would have been undertaken voluntarily by Water and Sewerage Companies under the baseline, at lower cost due to economies of scale. Nevertheless, WaSCs are still expected under Option 1 to have to spend some additional time supporting customers (admin cost of £16.1m PV)

Other key non-monetised costs by 'main affected groups'

Affordability issues for households in having to fund potentially large repairs (up to £3,000 in the more extreme cases) are worsened under this option as current voluntary WaSC assistance is removed.

| BENEFITS (£m) | Total Transition (Constant Price) Years | | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---------------|--|--|---|----------------------------------|
| Low | | | | |
| High | | | | |
| Best Estimate | | | 30.8 | 615 |

Description and scale of key monetised benefits by 'main affected groups'

WaSCs will see cost savings from withdrawing current supporting mechanisms for dealing with supply pipes, including conducting voluntary repairs and replacements (£615m PV over 40 years). This saving is less than the cost to households of taking on these works (as above), due to relative economy with which WaSCs can conduct work.

Other key non-monetised benefits by 'main affected groups'

This option could help provide clarity over ownership.

| | | |
|--|--------------------------|---------|
| Key assumptions/sensitivities/risks | Discount rate (%) | 3.5/3.0 |
|--|--------------------------|---------|

All figures are discounted over 40 years using an initial rate of 3.5% dropping to 3% after 30 years (HM Treasury's recommended discount rate). The deterioration of pipe stock and the projected number of repairs and replacements is uncertain, but the same rate has been used consistently across options.

BUSINESS ASSESSMENT (Option 1)

| | | | | |
|--|----------------|------------|--------------------------|-----------------------------|
| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
| Costs: 0.6 | Benefits: 22.9 | Net: -22.3 | NO | N/A |

Summary: Analysis & Evidence

Policy Option 2

Description: Voluntary code of practice

FULL ECONOMIC ASSESSMENT

| Price Base Year2013 | PV Base Year2013 | Time Period Years40 | Net Benefit (Present Value (PV)) (£m) | | |
|------------------------|---------------------|------------------------|---------------------------------------|-------|---------------------|
| | | | Low: | High: | Best Estimate: 59.6 |

| COSTS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---------------|--|---|-------------------------------|
| Low | | | |
| High | | | |
| Best Estimate | | 26.6 | 532 |

Description and scale of key monetised costs by 'main affected groups'

WaSCs would be encouraged to take a consistent approach on the repair and maintenance of supply pipes and therefore costs of supply pipes. For the purposes of analysis this is assumed to involve them increasing the rate of voluntary repair and replacement to 90% of required work, with households remaining responsible for 10% of repairs and replacements. WaSCs incur additional works (£504m Present Value, PV) and admin (£27m PV) costs.

Other key non-monetised costs by 'main affected groups'

This option is unlikely to provide long term resilience, given that WaSCs would still not have the responsibility for the whole pipe network. There may be inconsistencies of approach between regions/WaSCs leading to inequalities across England and Wales. The option relies on voluntary co-operation of the industry which is uncertain.

| BENEFITS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---------------|--|---|----------------------------------|
| Low | | | |
| High | | | |
| Best Estimate | 0 | 29.5 | 591 |

Description and scale of key monetised benefits by 'main affected groups'

Where WaSCs have taken on responsibility, households will no longer have to pay the direct costs of maintenance /repair of supply pipes, except for the 10% which remain outside of WaSC voluntary codes. Over the appraisal period, this saves households £591m PV. This saving is greater than the cost to WaSCs of taking on the work, due to the relative economy of WaSCs conducting repairs and replacements.

Other key non-monetised benefits by 'main affected groups'

This option could help provide clarity over the ownership as well as helping with the affordability constraints faced by households under the baseline.

| | | |
|--|--------------------------|---------|
| Key assumptions/sensitivities/risks | Discount rate (%) | 3.5/3.0 |
|--|--------------------------|---------|

All figures are discounted over 40 years using an initial rate of 3.5% dropping to 3% after 30 years (HM Treasury's recommended discount rate). The deterioration of pipe stock and the projected number of repairs and replacements is uncertain, but the same rate has been used consistently across options.

BUSINESS ASSESSMENT (Option 2)

| | | | | |
|--|-------------|-----------|--------------------------|-----------------------------|
| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
| Costs: 19.8 | Benefits: 0 | Net: 19.8 | No | N/A |

Summary: Analysis & Evidence

Policy Option 3

Description: Create a power to regulate existing and future laid household supply pipes

FULL ECONOMIC ASSESSMENT

| Price Base Year2013 | PV Base Year2013 | Time Period Years40 | Net Benefit (Present Value (PV)) (£m) | | |
|------------------------|---------------------|------------------------|---------------------------------------|-------|---------------------|
| | | | Low: | High: | Best Estimate: 56.3 |

| COSTS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---------------|--|---|-------------------------------|
| Low | | | |
| High | | | |
| Best Estimate | | 32.8 | 657 |

Description and scale of key monetised costs by 'main affected groups'

WaSCs would take over ownership and responsibility for all repairs and replacements of household supply pipes only. The additional works cost to WaSCs is estimated to be £630.4m (Present Value). There will also be additional administration costs in dealing with the extra repairs and replacements than under the baseline (£26.5m PV).

Other key non-monetised costs by 'main affected groups'

There may be additional costs to the water regulator, Ofwat, from the specifics of adoption.

| BENEFITS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---------------|--|---|----------------------------------|
| Low | | | |
| High | | | |
| Best Estimate | | 35.6 | 713 |

Description and scale of key monetised benefits by 'main affected groups'

Households will see costs savings when compared to the baseline of £693m (PV) in no longer having to pay for repairs and replacements, along with administrative costs savings in not having to spend time dealing with problems of £20.4m (PV). These savings are greater than the costs to WaSCs of taking on supply pipe work due to the relative economy of this activity to WaSCs.

Other key non-monetised benefits by 'main affected groups'

Social benefits to all households from WaSCs' more efficient and long term strategic operation of supply pipes. Removal of liability, distress and sense of unfairness for householders. This option provides households with clarity over ownership and helps with the affordability constraints faced by households under the baseline.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5/3.0

All figures are discounted over 40 years using an initial rate of 3.5% dropping to 3% after 30 years (HM Treasury's recommended discount rate). The deterioration of pipe stock and the projected number of repairs and replacements is uncertain, but the same rate has been used consistently across options.

BUSINESS ASSESSMENT (Option 3)

| | | | | |
|---|----------------|----------|-------------------|----------------------|
| Direct impact on business (Equivalent Annual) £m: | | | In scope of OIOO? | Measure qualifies as |
| Costs: 24.5 | Benefits: 22.8 | Net: 1.7 | Yes | IN |

Summary: Analysis & Evidence

Policy Option 4

Description: Create a power to regulate household and non-household supply pipes and future laid household pipes

FULL ECONOMIC ASSESSMENT

| Price Base Year2013 | PV Base Year2013 | Time Period Years40 | Net Benefit (Present Value (PV)) (£m) | | |
|------------------------|---------------------|------------------------|---------------------------------------|-------|---------------------|
| | | | Low: | High: | Best Estimate: 50.7 |

| COSTS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---------------|--|---|-------------------------------|
| Low | | | |
| High | | | |
| Best Estimate | | 35.8 | 721 |

Description and scale of key monetised costs by 'main affected groups'

WaSCs would take over ownership and responsibility for repairs and replacements of existing household and non-household supply pipes and future laid household supply pipes. The cost for dealing with households' pipes is estimated to be £630.4m (PV) and £54.9m (PV) for non-households. There will also be additional administration costs in dealing with the extra repairs and replacements than under the baseline (£35.4m PV).

Other key non-monetised costs by 'main affected groups'

There may be additional costs to the water regulator, Ofwat, from the specifics of adoption.

| BENEFITS (£m) | Total Transition (Constant Price) Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---------------|--|---|----------------------------------|
| Low | | | |
| High | | | |
| Best Estimate | | 38.3 | 771 |

Description and scale of key monetised benefits by 'main affected groups'

Households will see costs savings when compared to the baseline of £693m (PV) in no longer having to pay for repairs and replacements, along with administrative costs savings in not having to spend time dealing with problems of £20.4m (PV). Non-households will also see cost savings of £56.4m (PV) from the repairs and replacements, and £1.7m (PV) in administrative cost savings. Collectively these savings exceed the cost to WaSCs of taking on supply pipe work as shown above.

Other key non-monetised benefits by 'main affected groups'

Social benefits to all households from WaSCs' more efficient and long term strategic operation of supply pipes. Removal of liability, distress and sense of unfairness to household and business customers. This option provides households with clarity over ownership and helps with the affordability constraints faced by households and businesses under the baseline.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5/3.0

All figures are discounted over 40 years using an initial rate of 3.5% dropping to 3% after 30 years (HM Treasury's recommended discount rate). The deterioration of pipe stock and the projected number of repairs and replacements is uncertain, but the same rate has been used consistently across options.

BUSINESS ASSESSMENT (Option 4)

| | | |
|---|-------------------|----------------------|
| Direct impact on business (Equivalent Annual) £m: | In scope of OIOO? | Measure qualifies as |
| Costs: 26.8 | Yes | Zero net cost |
| Benefits: 27.2 | | |
| Net: -0.35 | | |

Evidence Base

The problem under consideration

Summary of problem

Water supply pipes are defined in the Water Supply (Water Fittings) Regulations 1999 (as amended) as the portion of pipe between the property boundary through to its emergence above ground either within a private property or on an external wall box (see diagram below). Although supply pipes are legally owned by property owners, there is a lack of awareness of this and about responsibility for repair and maintenance (an “information failure”). This is particularly relevant in terms of reporting and repair of supply pipe leaks, which can have wider implications for water supply. In economic terms there is an “externality” whereby the lack of action on the part of a (typically unmetered) private owner to repair a supply pipe leak can impose costs on others (the water company, other customers and the water environment). Even where owners are clear about ownership, there may still be poor incentives to repair supply pipes because of this externality (where customers are not metered). Furthermore, even where individual property owners are clear about their responsibilities and take action, they may not be well equipped to tackle the repair and maintenance of their supply pipes in the most proactive and efficient way. Affordability constraints may apply, or they may have to rely on contracting third parties in a reactive way and may not be able to reap economies of scale, e.g. through co-ordinating repairs with neighbours or others in their local area. To this extent there is a “co-ordination failure” in that repairs cannot be effected in the most efficient way.

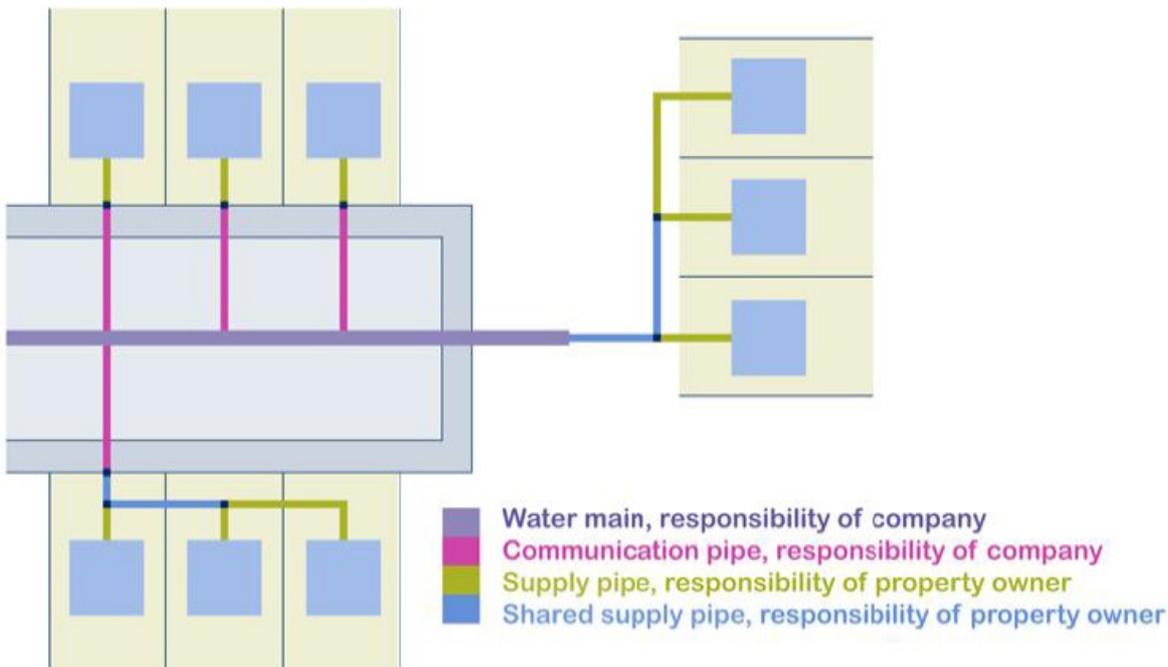


Figure 1: Schematic of typical water supply infrastructure to properties.

Source: <http://www.ofwat.gov.uk/consumerissues/rightsresponsibilities/supplypipes>

At the property boundary, the private supply pipe joins the communication pipe which in turn connects to the mains pipes. Some supply pipes serve a single property (as in the case with the top row of houses in the above diagram) and other supply pipes are considered “shared” where a single supply pipe serves more than one property (as in the case of the bottom row of houses in the same diagram).

Some Water and Sewerage Companies (WaSCs) have discretionary supply pipe policies which give household (but not non-household in the majority of cases) customers some level of assistance in undertaking supply pipe repairs and replacements, as part of their Codes of Practice on dealing with leakage. However, these policies usually only cover the external section of the pipe up to the property wall and usually only offer to “make good” as opposed to full reinstatement of associated building and ground works. Furthermore, there is little consistency in WaSC policies relating to private water supply pipes across the network. Private maintenance by customers is generally unplanned and reactive, and where problems occur customers can be faced with large unexpected bills (often at high “emergency” labour rates) if they have not taken out the correct insurance policy or if WaSC assistance is not available or partial. Intervention is necessary because investment and repair is not currently being undertaken optimally nor cost-effectively due to information and co-ordination failures and affordability constraints facing individual private owners. Intervention is also necessary to help solve externality problems associated with leakage on the privately-owned part of the supply network.

Arrangements for the repair and maintenance of non-household water supply pipes would depend on the size and complexity of the operation, and whether water was fundamental to its business operation. The likely scenarios would be:

- In-house maintenance staff who would repair and maintain the supply network
- A contract with a local plumbing service or WaSC for repair and maintenance. It is likely the WaSC would sub-contract this to a plumbing service
- One-off service of a plumber or WaSC to repair a leak or carry out maintenance

Clarity of responsibilities

The Consumer Council for Water’s Annual Tracking Survey 2012 found that a third of customers were not aware of their responsibility to maintain water supply pipes with 15% mistakenly thinking the WaSCs were responsible and 6% thinking it was the local council’s responsibility.

This lack of clarity around ownership liability can result in distress and affordability issues when problems occur with privately owned supply pipes and customers do not hold relevant insurance policies or are not eligible for assistance from their local WaSCs. Estimates of pipe repairs range from around £300 for more straightforward work to over £3,000 for complex groundworks. Some customers, aware of their ownership responsibilities, procure supply pipe insurance policies through either buildings insurance or as a standalone policy. It has been estimated that there are at least 11.5 million combined policies (i.e. where supply pipe is one element of cover within buildings insurance). HomeServe (the only company to offer a dedicated supply pipe policy) has approximately 1 million customers with supply pipe cover, either as a standalone policy or within a combined policy. However, they have estimated that there are some 1.8 million homeowners that do not have any supply pipe protection in England and Wales.

Leakage

It has been estimated that currently 25% (or about 782 Megalitres/day) of total leakage comes from private supply pipes. WaSCs are responsible for operating at a sustainable level of leakage, which identifies the level of leakage that gives consumers the best value for money. They include supply pipe leakage values in their leakage calculations. The economic regulator Ofwat has set annual leakage reduction targets for each company through to 2015.

The WaSCs are therefore essentially judged on the performance of assets they do not own or maintain. Unmetered private consumers do not take into account the wider costs of leakage from their pipes in terms of the public supply system and, ultimately, the water environment.

Lead

Aside from the perceived confusion around ownership, co-ordination failures preventing the most cost-effective repair, and issues of leakage, there is a further factor for consideration which is compliance with the drinking water standards at the customer tap. Some WaSCs have higher percentage of lead supply pipes in their service areas than others and therefore the level of risk and treatment for lead supply pipes varies between companies.

WaSCs are currently required to ensure compliance with the legal drinking water standard of 25 microgrammes per litre ($\mu\text{g/l}$) lead at the customer tap to ensure safe lead levels in customer's supplies. This standard is set to become more stringent in December 2013 at 10 $\mu\text{g/l}$. Currently, water companies undertake widespread chemical dosing of supplies with orthophosphate to mitigate the lead released into drinking supplies in order to meet the standards required. However, orthophosphate dosing has contributed to environmental water quality issues relating to phosphorus and its contribution to eutrophication. Furthermore, phosphate is a finite resource. Consideration needs to be given to finding a long term sustainable approach to managing levels of lead in drinking water, which from a strategic point of view is hindered by disparate private ownership of parts of the supply network – i.e there is again a “co-ordination failure” in economic terms.

Rationale for intervention

Intervention is necessary because investment and repair of private water supply pipes is not currently being undertaken optimally nor cost-effectively due to information failures, affordability constraints and co-ordination failures facing individual private owners. Intervention is also necessary to help solve externality problems associated with leakage on the privately-owned part of the supply network and to facilitate co-ordination of a more optimal approach to meeting drinking water standards in terms of lead.

Policy Objective

The policy objectives are to provide clarity over ownership for existing and future supply pipes, to achieve the most efficient cost for society and an equitable spread of the burden of repair costs across customers.

This in turn will provide the basis for a long term resilient strategy for managing water supply pipes which will allow for improved opportunities for innovation and provide for the engineering and management of the whole service pipe to be addressed.

The policy options

The policy options set out for consideration within this IA are as follows:

Option 0 (baseline): Do nothing. Ownership would continue to sit with the property owner and water companies continue to offer a range of discretionary support to household customers as they deem appropriate.

Option1: More stringent obligations on customers. This option involves more rigorous enforcement of the current ownership arrangements by WaSCs, where customers are held accountable and responsible for supply pipe maintenance and WaSCs no longer provide subsidised or free repairs for household supply pipe leaks. At the same time, an information campaign is targeted at customers along with signposting insurance and other financial products to help with affordability. This option was added to reflect comments received from the Regulatory Policy Committee

Option 2: Voluntary code of practice. Water companies are encouraged to offer a common level of support to household customers in terms of subsidised or free repairs for supply pipe leaks with no legal transfer of ownership required.

Option 3: Adoption by WaSCs of household water supply pipes that are currently privately owned as well as household supply pipes laid in the future. For this policy option, it has been assumed that ownership of the above pipes is transferred from property owners to WaSCs.

Option 4: Adoption by the WaSCs of household and non-household water supply pipes that are currently privately owned as well as household supply pipes laid in the future. For this policy option, it has been assumed that ownership of the above pipes is transferred from property owners to WaSCs.

Evidence Gathering

Consultation

A six week public consultation was held from 23rd May 2013 to 4th July on the policy options for the future management of private water supply pipes.

Over 60 responses were received from a range of interested parties including water companies, water sector representative organisations, plumbing businesses, insurance companies and members of the public. Approximately half of the responses supported a transfer of currently privately owned supply pipes as well as those laid in the future, to WaSCs (although some of these were subject to further clarification and modification). Some 15% of respondents supported the other options put forward in the consultation: namely, do nothing and the development of a consistent Voluntary Code of Practice by WaSCs for supply pipe maintenance and repairs. The remaining respondents did not express a preference for either of the options put forward in the consultation. In some cases this was because they felt that more evidence was required or that other options should be considered.

Additional evidence

In addition, further research was commissioned by Atkins Consultancy (to be published alongside this Impact Assessment) in order to help assess the costs and benefits of the options. Data was sought from various sources, including previously published literature (notably a UK Water Industry Research (UKWIR) study from 2009 on the impacts of potential supply pipe adoption by WaSCs), consultation IA responses and the IA for the transfer of private sewer ownership¹. Interviews were conducted and information sought from insurance companies; water companies; customers; developers; plumbing industry; owners; regulators; Ofwat; Office of National Statistics; insurance companies; plumbing services and other relevant bodies.

Monetised Costs and Benefits

Appraisal period

We have assumed a 40 year period time horizon for this analysis, which reflects the long lifespan of supply pipes and is consistent with the transfer of private sewers IA.

Discount Rate

In accordance with the Treasury's Green Book guidance, a discount rate of 3.5% has been applied to calculate present values from years 0-30 of the analysis, and a lower rate of 3% from year 31 onwards.

New builds

A forecast of new residential property builds and the corresponding supply pipes associated with them over the next 40 years has come from the water resource management plans on WaSC websites or directly from WaSCs. This is used for the baseline and for the three reform options (see Figure 2). Overall it is forecast that there will be around 30 million residential dwellings in 2052.

Figure 2: Current housing and projected housing stock in England and Wales from 2013-2052.

¹ <http://www.ialibrary.bis.gov.uk/uploaded/Defra1333%20FINAL%20IA%20ZNC%20Transfer%20of%20Private%20Sewers.pdf> . See footnote 2 for UKWIR reference.

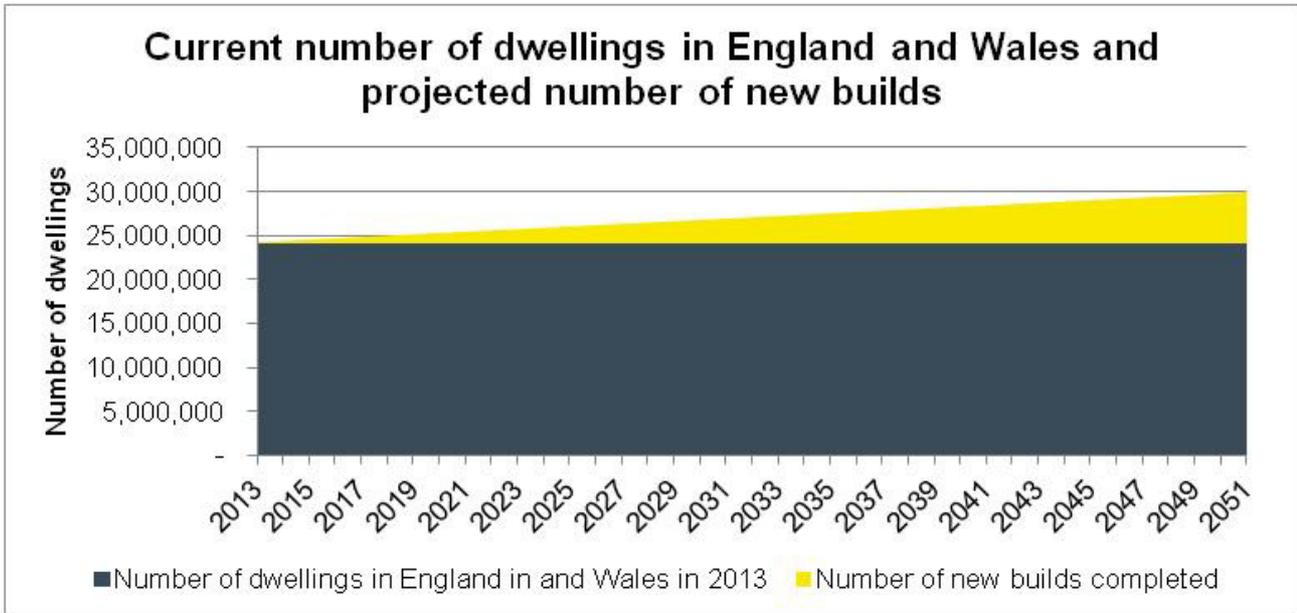


Figure 2: Current housing and projected housing stock in England and Wales from 2013-2052

Deterioration of Pipe stock

According to a UK Water Industry Research (UKWIR) 2009 report², the rate of replacement of supply pipes is forecast to change from 1.89 per 1000 properties in 2009 to 1.57 per 1000 properties in 2090. The rate of repairs was forecast to change from 3.82 per 1000 properties in 2009 to 5.89 per 1000 properties in 2090. These figures have been used to calculate 'deterioration factors' for repairs and replacements over the 40 years used in the analysis. The same rates of change have been used for all policy options.

Atkins then used the projected numbers of metered households from WaSCs' Water Resource Management Plans³ to calculate the percentage increase of metered households in England and Wales. As metering penetration increases, the number of leaks that customers and water companies become aware of will increase, leading to an increase in the number of repairs and replacements required.

This metering factor was combined with the deterioration factor and applied to the number of existing and new properties. **Figure 3** shows the projected number of **household** supply pipe repairs and replacements which are estimated to be required under the baseline in England and Wales from 2013-2052. There are around 49,000 annual repairs currently, forecast to increase to around 160,000 in 40 years' time. Meanwhile there are around 11,000 annual supply pipe replacements currently, forecast to increase to nearly 25,000 in 2052.

² UK Water Industry Research (UKWIR) 2009: "Issue regarding the potential adoption of supply pipes: costs, customer services and regulatory impacts." Report Ref. No, 09/CU/01/4

³ Water companies have a statutory duty to prepare, consult, publish and maintain water resources management plans which show how they intend to maintain the balance between supply and demand over the next 25 years. Companies must produce a new plan every five years.

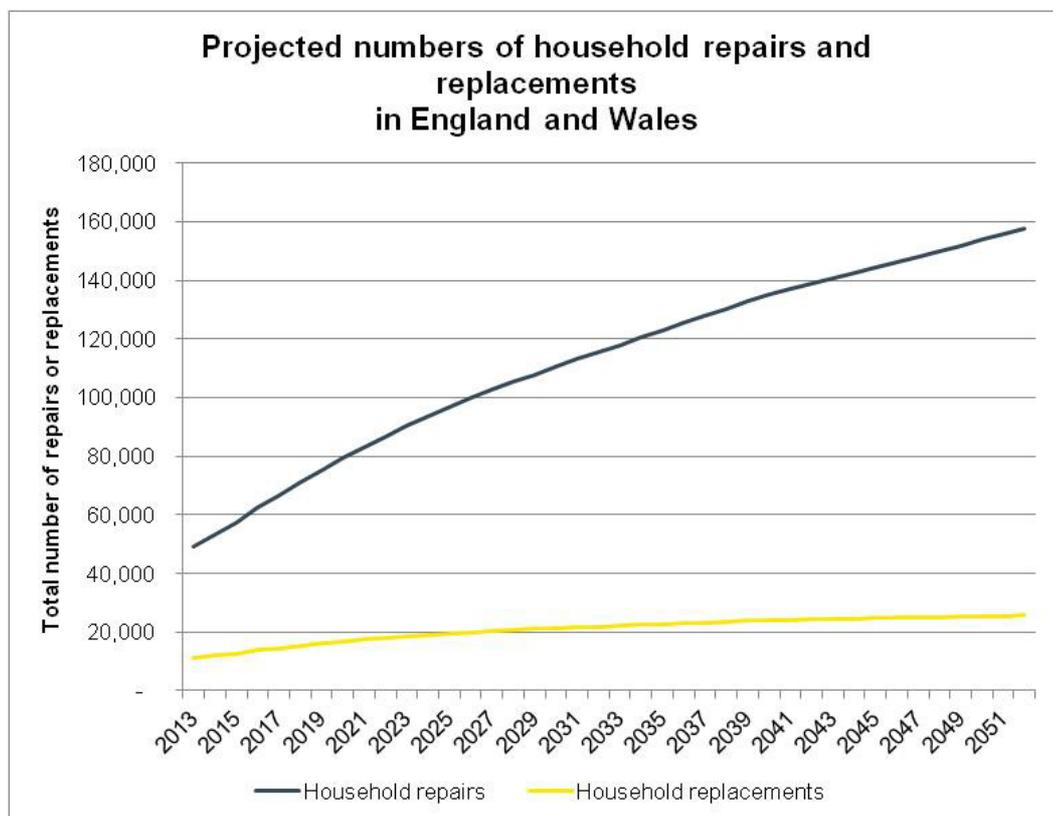


Figure 3: Projected number of household supply pipe repairs and replacement in England and Wales from 2013-2052

For **non-domestic properties** the metering factor is assumed to be 1 (i.e. no change over time) as these normally already have a meter present. A different set of projections for repairs and replacements for non-households was also used consistently for the baseline and the reform options. There are currently around 3,700 repairs and 900 replacements annually in non-domestic properties. Repairs are forecast by Atkins to increase to about 4,200 in 40 years' time, whilst the replacement rate is expected to remain broadly constant.

It has been assumed that the future volume of repairs and replacements required is the same under the baseline and the policy options. Furthermore, in the absence of evidence on the number of required repairs and replacements which are not effected currently, we assume that all required work is ultimately carried out under both the baseline and policy options, and implicitly within a year. As such, the policy options are assumed not to affect the total volume of repairs and replacements being carried out, nor their broad timing. As such, the economic analysis does not capture any benefits of improving information failures by making property owners aware of their responsibilities, to the extent such failures result in work being delayed beyond a year. Rather the analysis focuses on the differential costs of effecting the projected volume of repairs and replacements, to the extent the options affect who conducts and pays for repairs and replacements and the cost of those works, depending on different economies of scale. To this extent, the numerical analysis is restricted to monetising the costs and benefits of overcoming affordability constraints, co-ordination failures and diseconomies of scale under current arrangements, to secure the optimum programme of works.

Estimates of the current distribution of household repairs and replacements, according to who conducts and pays for work and the relative costs, are presented in **Table 1** below. This data is sourced from the Atkins study. It has been estimated that the cost of supply pipe repair or replacement for WaSCs would be less than for households securing the services of a local plumber or a contractor sourced via their insurance company. These cost advantages for WaSCs arise because they will be able to purchase materials in bulk at wholesale price. They will also already own, or have efficient contracts for, the necessary specialist equipment as the type of work is already core day to day business for a WaSC (given that it is already responsible for water mains and sewers). It is estimated that where WaSCs have in-house (or contracted) technicians and are carrying out this work on a regular basis then they are likely to undertake the repair more quickly and efficiently than a private plumber providing a one-off service.

Table 1
Current distribution and costs of supply pipe repairs and replacements, domestic properties
(From Atkins, 2013)

| | Number (2009/10) | Estimated average cost* (2012/13, £) |
|---|------------------|--------------------------------------|
| Repairs – wholly funded by customer | 20,807 | £435.18 |
| Repairs – subsidised by water companies | 3,457 | £380.44 / £216.22 ** |
| Repairs – wholly funded by water company | 25,020 | £380.44 |
| Repairs – total | 49,284 | |
| Replacements – wholly funded by customer | 3,047 | £793.72 |
| Replacements – subsidised by water companies | 5,761 | £738.98 / £588.45** |
| Replacements – wholly funded by water company | 2,330 | £738.98 / £604.87*** |
| Replacements – total | 11,138 | |

Notes: * - Weighted average cost based on estimated incidence of different repair types (same assumptions regarding balance of repair types for each funding route).
** - Average cost to customer
*** - Batch replacement achieves greater economies of scale

Although part of the general rationale for intervention is to address supply pipe leakage through a more effective maintenance regime, in practice we do not have numerical evidence to estimate how supply pipe leakage would change differentially under each option. As such it is simply assumed that leakage is reduced by the same amount under all options (and the baseline) according to the base profile of repairs and replacements shown above. Again therefore, the economic assessment of the options is restricted to an estimation of the cost-effectiveness of delivering a given repair and replacement scenario. In practice we would expect greater leakage reduction under the policy options than the baseline corresponding with improved clarity of ownership and responsibilities.

As an illustration however, Atkins suggested an approach to calculate the cost of supply side leakage by multiplying the volume of leakage (782 Mega litres a day from 2011/2 Annual returns) by the long run marginal cost of water. Based on information received from WaSCs and data from Ofwat a weighted average for England and Wales is between 22p/m³ and 62p/m³. Therefore, for illustrative purposes, if a new supply pipe policy were able to achieve a 10% reduction in leakage then the saving to WaSCs could be in the scale of £6.4m to £17.8m per annum. However, this would be offset by additional costs to property owners or WaSCs as a result of increasing the number of repairs and replacements beyond the predicted baseline levels used in this IA. Based on this assumed reduction in leakage and responsibility for repairs resting with WaSCs, Atkins calculated a saving to customers of between 27p to 75p per year on their bills.

Option 0: Baseline (Do nothing)

The current proportions of repairs and replacements funded by WaSCs and customers (see Table 1) have been assumed to continue under the do nothing scenario. For households this comes from the most publicly available OfWAT June Return Data (2010) which provides the total number of household supply pipes repaired and replaced, and the number repaired and replaced for free or subsidised. For non-households there was no data available on the number of supply pipe repairs and replacements undertaken each year, so Atkins estimated figures using the data available for households.

Costs

The baseline imposes no additional direct costs (it is the reference case for analysis). It is assumed that property owners would continue to be responsible for their supply pipe. There is limited evidence

available on the deterioration rates and asset lives for supply pipes but given the current lack of any structured supply pipe maintenance programme, there could be an increase in the average rate of supply pipe leaks and bursts, and as a result of this an increase in the frequency of repairs and replacements required.

WaSCs can continue to offer discretionary support to customers as they deem appropriate but have no financial liability for the supply pipe. WaSCs are regulated regional monopolies with little consistency applying repair policies for private water supply pipes across the network.

Supply pipe leakage is included in water company leakage targets, yet the water companies do not have formal ownership over the supply pipe in order to carry out the required repairs and replacements. Another consideration is that water companies are, to some extent, currently paying for the water lost through supply pipe leakage twice; once through the costs needed to replace the lost water, and additionally through leakage allowances for eligible metered customers. Leakage allowance is a discretionary policy provided by WaSCs. An allowance may be paid to metered customers for the cost of water lost from a leak that has subsequently been repaired, if their bill was abnormally high. The eligibility criteria for the allowance vary between WaSCs.

Benefits

No benefits are estimated to arise under the baseline (it is the reference case for analysis).

Option 1: More stringent obligations on the customer

For the purpose of this IA this option has been assumed to require enforcement of the current ownership arrangement by WaSCs, where property owners are held accountable and responsible for supply pipe maintenance and WaSCs withdraw current supporting mechanisms. Monetised costs and benefits of this option are shown in **Table 2**, based on work conducted by Atkins. As described earlier, the assessment assumes that all required repairs and replacements (to the forecast profile discussed earlier) are carried out, and focuses on the cost-effectiveness of the given volume of works being conducted exclusively by households rather than the current (baseline) mix of households and WaSCs (with the latter operating their voluntary support policies).

Table 2: Option 1 total costs and benefits (Present values) over 40 years [Note - due to rounding the totals may not sum exactly]

| Costs | England: Present Value (£m) | Wales: Present Value (£m) |
|---|------------------------------------|----------------------------------|
| Households: cost of repairs and replacements | 649.5 | 40.4 |
| Households: administration costs | 24.7 | 1.5 |
| WaSCs: administration costs | 15.2 | 0.9 |
| TOTAL COSTS | 689.5 | 42.9 |
| Benefits (Cost savings) | | |
| WaSCs: withdrawal of repair/replacement schemes from households | 579.2 | 36.1 |
| TOTAL BENEFITS | 579.2 | 36.1 |
| NPV | -110.3 | -6.9 |

Costs

Households: cost of repairs and replacements

It is assumed that this policy option would require households to take full responsibility for their supply pipes and WaSCs would no longer be required to offer any assistance to customers in this respect (with the exception of a continuation of any lead-driven supply pipe replacements the water companies may be undertaking).

Households would be required to pay for 100% of total repairs and replacements. At the start of the period, households in England and Wales would become responsible for fully-funding an additional 28,500 repairs and 8,000 replacements which would have otherwise been conducted or subsidised by WaSCs (see Table 1). Based on the projected deterioration of pipe stock and the numbers of replacements escalating over time, accompanied with the increase in the supply pipe stock as a result of new builds, the costs of this then rise over the 40 year period.

For England, this is estimated to cost households an additional £14.9m (undiscounted, 2013 prices) a year at the start of the period and rise to £44.3m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost households an additional £0.9m (undiscounted, 2013 prices) a year and rise to £2.8m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £689.9m.

Households: administration costs

The UKWIR (2009) study provided the administration costs relating to supply pipe repairs and replacements, for both customers and water companies. This allocated the management time for dealing with such issues. They used a weighted average of the average administration costs to water companies and customers based on subsidised repairs/replacements, those paid for solely by customers and those solely paid for by WaSCs. These costs were updated to 2013 prices using the GDP deflator tables from HM Treasury.

For England, this is estimated to cost households an additional £0.5m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.8m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost households an additional £0.03m (undiscounted, 2013 prices) a year and rise to £0.11m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £26.2m

WaSCs: administration costs

It is assumed that water companies would see administration costs increase over time. This assumption is based on one water company which withdrew their policy of offering repairs or replacements in April 2013, but continues to provide support to customers throughout the process of any work being undertaken and supplies an approved plumber list and guidance on how to arrange a repair and the options available to property owners. Costs for repairing and replacing customer supply pipes have therefore decreased for this water company, but the Company has indicated that administration costs have not changed significantly and would be unlikely to change substantially following adoption.

Although not monetised, it is expected that the Consumer Council for Water may receive more enquiries and there is a potential for them to deal with enquiries more efficiently than water companies, so administration costs for WaSCs could decrease over time.

For England, this is estimated to cost WaSCs an additional £0.4m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.0m undiscounted, 2013 prices a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.02m (undiscounted, 2013 prices) a year and rise to £0.07m undiscounted, 2013 prices a year. The present value over 40 years for England and Wales is £16.1m

Benefits (Cost Savings)

WaSCs

WaSCs withdraw current supporting mechanisms for dealing with supply pipes, so can achieve cost savings when compared to the baseline.

For England, this is estimated to save WaSCs £13.3m (undiscounted, 2013 prices) a year at the start of the period and rise to £39.5m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save WaSCs £0.8m (undiscounted, 2013 prices) a year and rise to £2.5m (undiscounted, 2013 prices) a year.

Net Present Value (NPV)

The overall NPV for this option is £-110.3m for England and £-6.9m for Wales. These negative results arise because the costs to customers of conducting or procuring all repairs and replacements of supply pipes are greater than the savings to WaSCs from withdrawing work under customer support mechanisms. This arises because WaSCs can perform repairs more cheaply as they benefit from economies of scale given they are also engaged in other infrastructure repair activity (see cost rates presented in Table 1).

Non-monetised benefits

Insurance companies

It could be logical to assume that if WaSC supply pipe policies were retracted, and customers were made aware that they would be required to be more responsible for the supply pipe, overall there **could** be a positive impact on the insurance sector in terms of the number of policies sold and the revenue gained. This would largely depend however on the competitiveness of the insurance market, the premiums offered and the service level offered. As stated earlier, we assume that WaSCs still have an advantage over insurance companies when it comes to economies of scale in effecting supply pipe repairs and replacements, given that insurance companies will typically subcontract to plumbing firms which, although possibly larger than private plumbers contracted by homeowners, will still not have water infrastructure repair over a large area as their core business in the way WaSCs do. Note however that the numerical analysis assumes that there is no increase in market share of insurance companies.

This option is unlikely to affect the number of people taking out wider buildings insurance as it is thought that no one would buy buildings insurance specifically for supply pipes, and we have therefore assumed that the “combined” insurance policies would remain stable.

Plumbing industry

The overall impact is likely to be neutral as the repair and replacements levels remain the same as under the baseline. Under this option, the onus would be on customers to repair and replace their leaking supply pipes and in the absence of any WaSC support it is likely that this would mean more business for plumbers, supply pipe contractors and ground works contractors, as they would take on the element of work currently covered by water companies. There will then also be plumbers who originally were sub-contractors to WaSCs who will no longer have those contracts.

It is unlikely that there would be any significant effect on manufacturers and distributors as the materials need to be sourced from somewhere, irrespective of who is undertaking the work.

Non-monetised costs

Insurance companies

There could be an influx of customer calls to insurance companies with queries as to the level of supply pipe cover through their existing policies and this could place an initial administrative burden in that respect. In the longer term, buildings insurance companies may need to enhance or clarify their buildings policies for the supply pipe element, which could increase costs of these policies. However,

these costs would be passed on to customers who in turn would benefit from reduced “real time” costs of dealing with supply pipe issues.

Summary of Option 1

This option could help to improve clarity surrounding ownership but not at a socially efficient cost as this option has a negative Net Present Value for England and Wales, essentially reflecting that it costs households more to fix supply pipes than it does WaSCs, as the former cannot achieve the same economies of scale. Affordability issues faced by households would also deteriorate as they would now need to pay for 100% of repairs and replacements.

This option continues to result in a fragmented approach to the management of the water supply pipe network between households and WaSCs.

Option 2: Voluntary Code of Practice

For the purposes of this assessment this option is considered to represent a “levelling up” of current WaSC supply pipe policies with no legal transfer of ownership. It is thought that a voluntary code would be achieved through discussions between WaSCs and the water regulator, Ofwat. Monetised costs and benefits of this option are shown in **Table 3**.

Table 3: Option 2 total costs and benefits (Present values) over 40 years [Note - due to rounding the totals may not sum exactly]

| Costs | England: Present Value (£m) | Wales: Present Value (£m) |
|--|------------------------------------|----------------------------------|
| WaSCs: repairs and replacements for households | 474.6 | 29.5 |
| WaSCs: administration costs | 25.7 | 1.6 |
| TOTAL COSTS | 500.4 | 31.1 |
| Benefits (cost savings) | | |
| Households: cost savings from reduced repairs and replacements | 541.7 | 33.7 |
| Households: administrative cost savings | 14.8 | 0.9 |
| TOTAL BENEFITS | 556.4 | 34.6 |
| NPV | 56.1 | 3.5 |

Costs

WaSCs: Repairs and Replacements

For the voluntary code of practice option, for the purposes of this IA it has been assumed that WaSCs would fund 90% (or greater if the current proportion for an individual water company already exceeds 90%) of total repairs and replacements for households. It has been assumed that this would only apply to household customers, in line with current supply pipe policies. It has also been assumed that water companies would be required to pay for reinstatement⁴ to ‘best endeavours’. Non-households would therefore still be required to pay for their supply pipes.

For England, compared with the baseline, this is estimated to cost WaSCs an additional £11.1m (undiscounted, 2013 prices) a year at the start of the period and rise to £31.8m (undiscounted, 2013

⁴ Reinstatement is where the damage caused by any excavations necessary to access the water supply pipe is put right (re-instated). Such as tarmac, concrete, block paving and lawns.

prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.7m (undiscounted, 2013 prices) a year and rise to £2.0m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £504.1m.

WaSCs: Administration Costs

Along with the increased costs from the additional repairs and replacements, there will also be a corresponding increase in the administrative costs for WaSCs due to the additional management time involved. Estimates are based on the UKWIR (2009) report.

For England, this is estimated to cost WaSCs an additional £0.6m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.8m undiscounted, 2013 prices a year by the end of the period. For Wales, the equivalent cost is an additional £0.04m (undiscounted, 2013 prices) a year rising to £0.11m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £27.3m.

Benefits (Cost Savings)

Households: reduced repairs and replacements

As a result of WaSCs providing repairs and replacements in most cases, there will be cost savings from households in not having to pay directly for this work. The savings to households will be more than it costs for WaSCs to carry out the work as households are found to pay a premium on any work.

For England, this is estimated to save households £12.7m (undiscounted, 2013 prices) a year at the start of the period and rise to £36.2m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this will save households £0.8m (undiscounted, 2013 prices) a year and rise to £2.3m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £575.4m.

Households: administrative cost savings

Along with the cost savings from WaSCs providing repairs and replacements in most cases, there will also be a savings in the administrative costs for households.

For England, this is estimated to save households £0.3m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.1m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this will save households £0.02m (undiscounted, 2013 prices) a year and rise to £0.07m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £15.7m.

Net Present Value (NPV)

The overall NPV for this option is £56.1m for England and £3.5m for Wales. This comes from the net economies of scale given the transfer of responsibilities from households towards WaSCs.

Non-monetised benefits

Households

Under a voluntary code of practice it is expected that all WaSCs would offer a common level of supply pipe cover for their customers. This would clarify homeowners' responsibilities and serve to raise awareness, which could impact on their choice of insurance product.

Non-monetised costs

WaSCs

This option is unlikely to provide long term resilience, given that WaSCs would still not have the responsibility for the whole pipe network. There may be inconsistencies of approach between regions/WaSCs. WaSCs will not legally own the capital assets, so may not be able to claim the value of any work as being part of their regulated capital.

Insurance companies

Where supply pipe cover is combined with buildings insurance, it is unlikely that there would be a change in terms of overall numbers of policies. There may however be external pressure to reduce premiums as fewer insurance claims for supply pipes could result, if the “levelling up” of the water companies policies is an upwards movement in terms of the level of customer assistance offered. Where homeowners feel they are provided suitable level of protection through the voluntary code of practice alone they may withdraw their supply pipe specific policy and this could impact insurance companies.

Plumbing services

At a national level, a voluntary code of practice is unlikely to result in significant impacts on the private plumbing sector as it would represent similar demand for these services everywhere except in geographical areas where there is currently no water company supply pipe support to customers. In these areas there could be a negative effect for plumbing services unless they manage to become subcontractors to WaSCs – though they could take opportunities to move into new markets with economic benefits overall.

Customers

This option would indirectly result in bill increases to customers. WaSCs are also not legally obliged to pay for the majority of repairs and replacements, and there may be great uncertainty if a WaSC suddenly decides to withdraw this voluntary service.

Depending on the specifics of the voluntary code of practice, there may still be the need for insurance policies that cover elements of supply pipe repairs and replacements that water companies would not – such as 24 hour emergency cover, and cover of supply pipes running under buildings and inside properties (such as the rising main and stop tap). Furthermore, the voluntary code of practice may not cover full reinstatement. This may mean that customers still require some degree of separate insurance cover.

Consumer bodies

The Consumer Council for Water may receive additional queries due to increased customer awareness of supply pipes, which may impose additional administrative costs on the organisation, offset by corresponding benefits to consumers. Any net costs (or benefits) have not been monetised.

Summary of Option 2

This option could improve clarity surrounding ownership. There will be an improvement in affordability levels across households as WaSCs voluntary take on the majority of repairs and replacements, but households would still be responsible for around 10% of repairs and replacements and could still be faced with large and sudden bills.

WaSCs would also not have ownership of the pipes, so this option could continue to result in a fragmented approach to the long term management of the water supply pipe network between households and WaSCs. Furthermore, ultimately the approach under Option 2 is a voluntary one (albeit “encouraged” by government and OfWAT), and as such it is difficult to be certain that the indicated net benefits will be fully delivered in practice, at least over time if not initially.

Option 3: Regulate to allow WaSC adoption of household supply pipes

It is assumed that WaSCs would adopt the entire extent of existing supply pipes and also future supply pipes as they are laid, for households only, and would be required to pay for full reinstatement rather than reinstatement to ‘best endeavours’ as required under the “do nothing” scenario. Monetised costs and benefits of this option are shown in Table 4.

Table 4: Option 3 total costs and benefits (Present values) over 40 years [Note - due to rounding the totals may not sum exactly]

| Costs | England: Present Value (£m) | Wales: Present Value (£m) |
|---|------------------------------------|----------------------------------|
| WaSCs: repairs and replacements for households | 593.5 | 36.9 |
| WaSCs: administration costs | 24.9 | 1.6 |
| TOTAL COSTS | 618.4 | 38.5 |
| Benefits (Cost savings) | | |
| Households: cost saving from reduced repairs and replacements | 652.2 | 40.6 |
| Households: administration cost savings | 19.2 | 1.2 |
| TOTAL BENEFITS | 671.4 | 41.8 |
| NPV | 53.0 | 3.3 |

Costs

WaSCs: Repairs and Replacements

Under this option, WaSCs would be responsible for carrying out all repairs and replacements on household supply pipes, which in the first year involves taking over from customers 20,800 repairs and 3,000 replacements (plus fully-funding 3,500 repairs and 5,800 replacements which were previously partially-subsidised – see Table 1). For England, this is estimated to cost WaSCs an additional £14.0m (undiscounted, 2013 prices) a year at the start of the period and rise to £39.6m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.9m (undiscounted, 2013 prices) a year and rise to £2.5m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £630.4m.

WaSCs: Administration Costs

Along with the increased costs from the additional repairs and replacements, there will also be an increase in the administrative costs for WaSCs. For England, this is estimated to cost WaSCs an additional £0.6m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.7m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.03m (undiscounted, 2013 prices) a year and rise to £0.11m undiscounted, 2013 prices a year. The present value over 40 years for England and Wales is £26.5m.

Benefits (Cost Savings)

Households: repairs and replacements

As a result of WaSCs providing all repairs and replacements, there will be cost savings from households in not having to pay directly for this work. For England, this is estimated to save households £15.3 (undiscounted, 2013 prices) a year at the start of the period and rise to £43.7 (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save households £0.9m (undiscounted, 2013 prices) a year and rise to £2.8m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £692.8m.

Households: administrative savings

Along with the cost savings from WaSCs providing repairs and replacements, there will also be savings in the administrative costs for households. For England, this is estimated to save households £0.4m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.4m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save households £0.03m (undiscounted, 2013 prices) a year and rise to £0.09m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £20.4m.

Non-monetised costs

Insurance companies

Approximately 11.56 million households procure supply pipe cover through buildings insurance and range between £40 to £51 a policy. This would bring the total revenue arising from supply pipe accounts in buildings insurance to approximately £589m per annum. Estimates of pipe repairs start from around £310 for a repair and over £3,000 for complex groundworks. There is no data available on the number of supply repairs other than one insurance company reported that 72% of repair and replacement claims are for the external section of the pipe. Under adoption, according to the assumptions set out here, insurance companies may see reduced profits on supply pipe cover. Ultimately however, if adoption is economically efficient, the overall market impact should be positive as insurance company resources will be released to pursue other market opportunities.

Regulators

The transfer may require Ofwat involvement in handling appeals against transfer. In addition, Ofwat may incur costs from the required modification to Levels of Service, Service Incentive Mechanism and reporting requirements following adoption (UKWIR, 2009), as well as handling disputes. These costs have not been monetised.

Non-monetised benefits

Social benefits of adoption

The removal of liability for private supply pipes would avoid the distress and sense of unfairness that could be generated by large bills for supply pipe repairs and replacements, and damage to property from leaks resulting from under management of pipes. Social benefits would also be generated from WaSCs' more efficient and long- term strategic management of supply pipes assets.

WaSCs

The transfer of privately owned supply pipes to WaSCs could provide improved opportunities for innovation and allow the engineering and management of the whole of the service pipe to be addressed.

a) Existing supply pipes

For the adoption of existing supply pipes, WaSCs incur costs but they also acquire new assets which have a financial value. This approach was accepted for the transfer of existing sewers to WaSCs and a value has been calculated for use in the one-in-two-out calculations only. It is not included in the overall NPV since in economic terms it is a transfer from householders.

b) Future laid supply pipes

For new builds it is assumed there will be a transfer payment from WaSCs to developers for the supply pipes, based on current practice for WaSCs acquiring developer-laid mains and communication pipes, where "asset payments" are made. This is considered to be cost neutral for business overall (i.e. considering WaSCs and developers together). No new standards will need to be created for supply pipes laid in the future since compliance with the standards laid down for supply pipes in the Water Fittings Regulations is already required by WaSCs as part of the conditions for connection to their water network. This implies the quality of supply pipes should remain as under the baseline, with no change to the magnitude of any future repair costs.

Summary of Option 3

This option would provide clarity over ownership and all customers would be treated equally in terms of their WaSC's policy on repairs and replacements. There is a positive Net Present Value due to WaSCs being able to reap economies of scale. The transfer of household private supply pipes may improve the water sector's ability to deliver the resilient, sustainable and customer-focused services by delivering real

benefits for customers through improved stewardship of the water supply infrastructure, exploiting economies of scale and helping spread the costs of this to improve affordability.

Adoption could potentially provide for better management and repair of these pipes in the most economic way, help facilitate an integrated and sustainable approach to network management, and possibly lead in the longer term to a reduction in the level of leakage.

Option 4: Regulate to allow WaSC adoption of household and non-household supply pipes

Under this option it is assumed that WaSCs would adopt the entire extent of existing supply pipes for current and future households (as Option 3), and additionally the supply pipes of **existing non-domestic properties**. WaSCs would be required to pay for full reinstatement rather than reinstatement to 'best endeavours' as required under the "do nothing" scenario. Monetised costs and benefits of this option are shown in **Table 5**.

Table 5: Option 4 total costs and benefits (Present values) over 40 years [Note - due to rounding the totals may not sum exactly]

| Costs | England: Present Value (£m) | Wales: Present Value (£m) |
|---|------------------------------------|----------------------------------|
| WaSCs: repairs and replacements for households | 593.5 | 36.9 |
| WaSCs: repairs and replacements for non-households | 50.8 | 4.1 |
| WaSCs: administration costs for households | 24.9 | 1.6 |
| WaSCs: administration costs for non-households | 8.2 | 0.7 |
| TOTAL COSTS | 677.3 | 43.2 |
| Benefits (Cost savings) | | |
| Households: cost saving from reduced repairs and replacements | 652.2 | 40.6 |
| Households: administration cost savings | 19.2 | 1.2 |
| Non-households: cost saving from reduced repairs and replacements | 52.2 | 4.2 |
| Non-households: administration cost savings | 1.6 | 0.1 |
| TOTAL BENEFITS | 725.1 | 46.1 |
| NPV | 47.8 | 2.9 |

Costs

WaSCs: Repairs and Replacements

Under this option, WaSCs would be responsible for carrying out all repairs and replacements on the supply pipes for both households and non-households (i.e. non-domestic properties). Compared with Option 3, this involves WaSCs taking on an additional 3,700 repairs and 900 replacements for existing non-domestic properties, in the first year. Non-domestic repair volumes grow thereafter (to about 4,200 in 2052) but replacements are forecast to remain broadly constant.

a) For Households

For England, this is estimated to cost WaSCs an additional £14.0m (undiscounted, 2013 prices) a year at the start of the period and rise to £39.6m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.9m (undiscounted, 2013 prices) a year and

rise to £2.5m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £630.4m.

b) For non-households

For England, this is estimated to cost WaSCs an additional £2.2m (undiscounted, 2013 prices) a year at the start of the period and rise to £2.5m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.17m (undiscounted, 2013 prices) a year and rise to £0.20m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £54.9m.

WaSCs: Administration Costs

Along with the increased costs from the additional repairs and replacements, there will also be an increase in the administrative costs for WaSCs:

a) For Households

For England, this is estimated to cost WaSCs an additional £0.6m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.7m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.03m (undiscounted, 2013 prices) a year and rise to £0.11m undiscounted, 2013 prices a year. The present value over 40 years for England and Wales is £26.5m.

b) For non-households

For England, this is estimated to cost WaSCs an additional £0.3m (undiscounted, 2013 prices) a year at the start of the period and rise to £0.4m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to cost WaSCs an additional £0.02m (undiscounted, 2013 prices) a year and rise to £0.03m undiscounted, 2013 prices a year. The present value over 40 years for England and Wales is £8.9m.

Benefits (Cost Savings)

Households: repairs and replacements

As a result of WaSCs providing all repairs and replacements, there will be cost savings from households in not having to directly pay for this work. For England, this is estimated to save households £15.3m (undiscounted, 2013 prices) a year at the start of the period and rise to £43.7m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save households £0.9m (undiscounted, 2013 prices) a year and rise to £2.8m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £692.8m.

Households: administrative savings

Along with the cost savings from WaSCs providing repairs and replacements, there will also be a savings in the administrative costs for households. For England, this is estimated to save households £0.4m (undiscounted, 2013 prices) a year at the start of the period and rise to £1.4m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save households £0.03m (undiscounted, 2013 prices) a year and rise to £0.09m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £20.4m.

Non-households: repairs and replacements

WaSCs will be paying for repairs and replacements, so non-households will also see cost savings from supply pipes being adopted. For England, this is estimated to save non-households £2.2m (undiscounted, 2013 prices) a year at the start of the period and rise to £2.6m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save non-households £0.18m (undiscounted, 2013 prices) a year and rise to £0.20m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £56.4m.

Non-households: administrative savings

Along with the cost savings from WaSCs providing repairs and replacements, there will also be a savings in the administrative costs for non-households. For England, this is estimated to save households £0.06m (undiscounted, 2013 prices) a year at the start of the period and rise to £0.08m (undiscounted, 2013 prices) a year by the end of the period. For Wales, this is estimated to save non-

households £0.005m (undiscounted, 2013 prices) a year and rise to £0.007m (undiscounted, 2013 prices) a year. The present value over 40 years for England and Wales is £1.7m.

Non-monetised costs and benefits

These are expected to be similar to those under Option 3, with the addition of additional support to business customers for non-household supply pipe adoption.

Summary of Option 4

Option 4 is similar to Option 3 except that the existing supply pipes of non-household customers would also be adopted, alongside current and future household supply pipes. There is a positive Net Present Value due to WaSCs being able to reap economies of scale (albeit to a slightly lesser extent than for the household-only Option 3). This option would provide clarity over ownership and all customers would be treated equally in terms of their WaSC's policy on repairs and replacements. The transfer of private supply pipes may improve the water sector's ability to deliver the resilient, sustainable and customer-focused services by delivering real benefits for customers through improved stewardship of the water supply infrastructure, exploiting economies of scale and helping spread the costs of this to improve affordability.

Adoption could potentially provide for better management and repair of these pipes in the most economic way, help facilitate an integrated and sustainable approach to network management, and possibly lead in the longer term to a reduction in the level of leakage.

Preferred option

Option 4 is the preferred Option since, taking the balance of monetised and non-monetised impacts, it has the greatest potential for supply network integration and benefits the largest range of water customers (including business customers). Although the Net Present Value is slightly lower than that for Options 2 and 3, this difference is not significant (and the NPV for Option 2 has a greater degree of uncertainty compared with Options 3 and 4, given it relies on voluntary action by WaSCs).

In the event that Option 4 is not deliverable due to practical difficulties in defining what should constitute a "supply pipe" for non-domestic supply (see Implementation Plan section), Option 3 would be the fallback preferred Option.

One-In-Two-Out Methodology

The direct impact on business, including the equivalent annual net cost to business (EANCB) has been calculated for the preferred Option 4 using the latest IA calculator (<https://www.gov.uk/government/publications/impact-assessment-calculator--3>).

Direct **costs** to business arise from the additional costs to WaSCs from becoming responsible for supply pipes and the administrative costs associated with this (as estimated above). Direct **benefits** (cost-savings) to business come from those "non-households" (i.e. businesses) who no longer have to pay for their supply pipes (again estimated above). In addition, a direct benefit falls to WaSCs upon the transfer of the existing supply pipe assets. We have followed a method similar to that used in the Transfer of Private Sewers Impact Assessment to calculate a value of the assets acquired by the WaSCs at time of a transfer (see below). This methodology was derived following guidance from a sub-group of the Cross-Whitehall Group on the Economics of Regulation, which met during February 2012, and has since been included in the Better Regulation Manual. As noted above, for new build property, costs to WaSCs associated with acquisition of new supply pipes laid by developers are offset by a compensatory asset payment made to developers, with no net impact on "business" as a whole.

The overall EANCB for the preferred option (the power to regulate for adoption including non-households) is £-0.35m, i.e. there is a small net benefit to business overall as the asset transfer to

WaSCs and savings to other businesses are not fully offset by increased costs to WaSCs arising from supply pipe ownership. More detail of this calculation is set out below; all estimates will be refined further at secondary legislation stage before the policy is implemented.

For the purposes of One-In-Two-Out this represents an 'IN' as the preferred option is introducing legislation, but with 'Zero net cost' as the policy is found to overall have a net benefit to business.

WaSC impacts

The proposed transfer of ownership means those liabilities and the associated costs of repairs/replacements and administration costs are transferred from non-householders and householders to WaSCs. The total undiscounted costs of £1,343m in England and £86m in Wales (2013 prices) are therefore direct costs to business and count towards the OITO calculation. The discounted (Present Value) equivalent for England and Wales is £721m (see Option 4 section above and Summary Sheet for Option 4).

However, at the point of transfer, the WaSCs acquire a new set of capital assets, which have some value. Following advice of the Cross-Whitehall Group, this asset value has been estimated as follows:

a) The current "accounting" value of the assets (i.e. that which could, in theory, be estimated by determining the various build dates of supply pipes and calculating a depreciated investment value) is ignored, not least because a survey of this is neither practical nor cost-effective. Implicitly the current "accounting" value is therefore assumed to be zero;

b) The "financial" value of the assets to the WaSCs is instead determined, based on an estimate of the capitalised future returns they will generate. This is based on an empirical view of how the assets are likely to be treated by the independent regulator OfWAT, based on approaches to other capital assets.

c) Returns from the assets would arise as costs are incurred and would potentially be categorised under the current economic regulation regime⁵ into one or both of the following classes:

- (i) **Infrastructure Renewal Charge.** It is assumed that all transferred assets are classed as underground "infrastructure assets", which for regulatory purposes are not depreciated. Rather, an annual "infrastructure renewal charge" is allowed to be incurred (and billed to customers) by the WaSCs to maintain and replace the assets;
- (ii) **Opex revenue:** Operational (maintenance) expenditure associated with the transferred assets is taken as allowed to be charged to customers, again on an ongoing basis.

In practice, both categories allow WaSCs to earn revenue in similar ways (through ongoing customer charges) and we have therefore estimated the financial asset value accruing to WaSCs as the discounted future stream of likely allowable charges. This is broadly equal to the sum of discounted costs incurred by the WaSCs from adopting supply pipe assets as estimated above – except that any value associated with future new build pipes is excluded, as these will have to be "bought" from developers (with a net neutral impact on business overall) rather than being "gifted" at transfer date. New builds equate to about 0.3% of costs arising to WaSCs from supply pipes. The overall asset value to WaSCs is estimated at £672m based on the 40-year appraisal period, consistent with the other analysis in this IA. This means that, for the water industry, there is a small net direct cost from supply pipe adoption of about £49m as a Present Value (this equals £721m of costs minus £672m in acquired asset value).

⁵ The new regime proposed for the 2014 Price Review might lead to some costs being added to Regulatory Capital Value (RCV) in a similar way as capital expenditure is treated currently, rather than being treated as operational expenditure. If anything this might tend to increase asset value since an additional return could be earned on any costs added to RCV. This will be fully examined as cost to business calculations are refined at secondary legislation stage.

Other business impacts

By transferring ownership of all supply pipes to WaSCs there will be businesses (“non-households” above) who no longer have to pay for repairs and replacements. The costs savings that result have therefore been included as an offsetting benefit in the OITO analysis. For England the total undiscounted cost saving over 40 years is £99m and for Wales it is £8m (2013 prices). The Present Value equivalent total for England and Wales is £58m (see Table 5).

It should be noted that there was no primary data available on the number of repairs and replacement related to non-households so the figures were estimated based on the rate of household repairs and replacements per household property. Our consultants Atkins advised that this could potentially underestimate the number undertaken, particularly as many commercial customers are more likely to have water meters, so could be more incentivised to repair or replace a leaking supply pipe.

Overall, across all businesses, we estimate therefore that there is a small net benefit to business of Option 4. The net cost to the water industry (£49m Present Value, as estimated in the previous section) is more than offset by a saving to wider business from no longer being responsible for supply pipes (£58m). The overall business Net Present Value is £9.33m, and the Equivalent Annual Net Cost to Business is estimated using the approved OITO methodology at -£0.35m.

The preferred option will require secondary legislation to commence in due course and the EANCB estimate will be refined at that stage.

Risks and assumptions

The existing data surrounding supply pipes was limited and therefore the work done by Atkins helped to improve this evidence base. This is an area that WaSCs are now considering so many have started monitoring data, so when secondary legislation would be required, the evidence base is likely to have improved as a result.

The assumptions used have been listed in this IA and are detailed further in Atkins final report.

Small and Micro Business Assessment

We do not plan to exempt any businesses from adoption. There will be non-households that would be considered small and micro business and they will benefit from adoption.

The other potential area where small and micro businesses will be affected is the plumbing sector and this is explained further below.

Plumbing services

We recognise that smaller plumbers may lose work if supply pipes are adopted by WaSCs, there could be a potential reduction in business for plumbing services from private users. The potential impact would depend on the specifics of adoption and how the water companies choose to react to the change in regulations, including for example whether they would choose to subcontract repairs and replacements to existing contractors, rather than undertaking the work themselves. However, demand for plumbing services in general is likely to increase, which could benefit former small plumbers if they become part of the response to increased WaSC demand, even if this is part of larger plumbing groups.

In addition, the anticipated increase in the number of leaks detected due to increased metering penetration, and the deterioration of the pipe stock, is also likely lead to a long-term increase in demand for plumbing services.

Many of the consultation responses commented on the potential for adoption to have a disproportionate negative impact on small independent pipe repair businesses, which may not be able to compete with larger businesses for water company work.

One possible positive impact was identified, which was that the potential increase in business could encourage innovation and lead to increased training and employment opportunities. This could in turn lead to improved standards, which would be of benefit to all.

WaSCs that were directly consulted as part of this data gathering exercise were asked about their current arrangements for supply pipe repairs and replacements, and potential response following adoption. Six water companies provided responses:

- Four companies currently subcontract out work to a large framework contractor, who may subcontract out work themselves if required. One of these four companies also stated that on occasion work may also be contracted out to a smaller specialist supply pipe groundwork contractor.
- One company stated that they are not directly involved with repair work, but have a list of recognised contractors that customers can elect to use.
- One company stated that repairs are carried out by their in-house services division.

Following adoption, WaSCs indicated that they would respond in the following ways:

- Four companies stated that they would continue to subcontract work out to a contractor. One of these companies stated that the exact supply chain would depend on the volume of work generated.
- The company currently not involved in repair work would subcontract this work out, as they currently do with their network repair and maintenance activity.
- The response of the company that currently handles supply pipe repairs in-house would depend on the volume of repairs required and whether they could cope with the increase.

These responses indicate that there could potentially be a loss of business to smaller private supply pipe contractors, depending on whether such companies receive work from larger framework contractors used by water companies.

Wider impacts

Customer bills

The UKWIR (2009) study estimated that costs to water companies from adoption would be around **£4/property/year**, which represents bill increases to the customer. These are estimated to be partially offset by reductions in customer costs of around **£2/property/year**. These costs do not include customer benefits from reduced insurance premiums, which were not quantified within the study.

The results from the research were also used to provide an estimate of likely bill increases for comparison. The additional average annual cost to water companies per customer connection (households and non-households) for supply repairs and replacements, including administration, calculated in this study under the adoption scenario (averaged over the 40 year time horizon) is estimated to be **£1.50/property/year in current prices**. This is set against average annual savings for household and non-household customers on supply pipe repairs and replacements, including administration (averaged over the 40 year time horizon), of **£1.61/property/year in current prices**.

The difference in these values from those calculated within the UKWIR (2009) study is due to the different assumptions used. However, it is notable that the bill impacts and customer savings calculated are of the same order of magnitude. Customer bills may be further offset between 27p to 75p per year based on the Atkins assumption of a 10% reduction in leakage.

An indication of the magnitude of bill impacts of supply pipe adoption could also be provided by the bill impacts of the sewers transfer. Figures are not publicly available at present, but Utility Week reported August 2012 that the cost of adoption has been at or below the lower end of expectations and has largely been absorbed by water companies. Two companies provided estimates as part of this study:

- One water company estimated that the sewers transfer will add £13 to sewerage bills in 2015, and felt that the transfer of private supply pipes could incur even greater costs because a significant number of customers (120,000) are not connected to a sewer.

- At the other end of the scale, another water company provided an estimated annual bill impact of £0.83 per household.

Cross-subsidisation and impacts on low income families

A number of the consultation responses highlighted the potential cross-subsidisation issues associated with the adoption of private supply pipes, whereby the costs of more complex repairs to long or old pipes, or those requiring expensive reinstatement, would be spread over the entire customer base. This was felt to be a particular issue if non-household customers' supply pipes were also adopted.

In addition, under adoption of supply pipes tenants are likely to cross-subsidise landlords, due to the removal of liability from landlords and the impact of adoption on customer bills. This would have a disproportionate effect on low income families, given that approximately 70% of low income families with children are tenants and 30% are homeowners, compared to 70% of all households overall (Meadows and Rogger, 2005).

The current relatively low income threshold for households (60% of average income) after housing costs is £11,440. The Government and Ofwat considers a household spend of more than 3% of income after housing costs on water and sewerage bills as an indicator of water affordability problems). The current annual average water bill is £355, which represents 3.10% of the relative low income threshold after housing costs. A bill increase of £3/property/year increases this proportion to 3.13%.

However, this bill increase would differ between water companies, depending on the current level of support offered to customers through supply pipe policies.

In their consultation response Welsh Water expressed particular concern over potentially disproportionate impacts on their customers due to the high incidence of old common supply pipes in urban areas and long supply pipes in rural areas. The company stated that the sewers transfer will add £13 to sewerage bills in 2015, and felt that the transfer of private supply pipes could incur even greater costs because a significant number of customers (120,000) are not connected to a sewer.

Potential financial impacts of adoption on new developments

Given that the water undertaker will only adopt the mains and communication pipe once it is confirmed that the work has been done in accordance with the undertaker's self-lay arrangements, and that the private pipe work has been checked or self-certified as meeting the Water Supply (Water Fittings) Regulations 1999 (as amended), there is no evidence to suggest that adoption of the private service pipe by an undertaker would impose additional burden. This section of pipe would, as now, be required to meet certain standards.

The majority of consultation respondents who commented on this area of impact felt that current arrangements would not be significantly affected and that overall impacts would be negligible.

Housing associations

No consultation responses from housing associations were received. However, it is likely that housing associations would be subject to the same benefits as other water company customers.

Local authorities

Nine community/borough councils responded to the consultation. All were in favour of adoption except for one, which was in favour of a voluntary code of practice. Increased customer awareness of supply pipe responsibilities, whether they remain in the ownership of property owners or are transferred to water companies, could result in an increase in queries to local authorities relating to this. No other impacts on local authorities have been identified.

Retail services

The draft Water Bill includes provisions to extend retail competition to all non-household customers. A key issue is therefore which party will be responsible for identifying and repairing private supply pipe leaks and undertaking replacements, should non-household pipes be adopted. Both UKWIR (2009) and Defra have already highlighted several questions that require consideration:

- If supply pipes are adopted by providers of retail services, whether new entrants would be able and willing to manage the supply pipe network.
- The feasibility of the adoption of supply pipes by the network operator when retail services are provided downstream of an external meter.
- Whether customers would support the transfer of ownership to new entrants.
- How the transfer of ownership to new entrants would affect the management of supply pipes in terms of leakage and water quality.

It is evident that if the adoption policy is taken forward, further work on this issue will be required. In particular, responses to the consultation on the transfer of non-household supply pipes raised the following concerns:

- The variable nature of the supply pipe length, location, condition and the level of risk on adoption
- Non-household customers may wish to retain control of their on-sit assets or may already have management contracts in place e.g. large commercial parks.
- Concerns of the extent of the non-household pipe to be adopted, large commercial properties often have branches off the supply pipe which go to various internal risers, some of which can be up to six inches in diameter.
- Responsibility for compensation rights for loss of trade when business supply pipes fail, and timeframes within which a repair will be carried out.

Summary and preferred option with description of implementation plan

Option 2 has the highest NPV, but households would still be responsible for around 10% of repairs and replacements which could result in continued affordability issues. Furthermore, it is a voluntary approach which means that net benefits are not certain, and we estimate that it would impose a net cost to business of around £20m per annum (EANCB), as costs to water companies are not offset by asset acquisition nor any business customer benefits. The preferred approach is Option 4: to create a power to regulate via primary legislation, to allow WaSC adoption of supply pipes for both households and non-households. This has a positive Net Present Value and a small saving to business overall. Although the NPV is slightly lower than for Option 3 (adoption of household supply pipes only), the difference is not significant and Option 4 would allow benefits to accrue to a wider set of water customers, including business customers. This option also provides clarity over ownership and all customers would be treated equally in terms of their WaSC's policy on repairs and replacements. The transfer of private supply pipes may improve the water sector's ability to deliver the resilient, sustainable and customer-focused services by delivering real benefits for customers through improved stewardship of the water supply infrastructure, exploiting economies of scale and helping spread the costs of this to improve affordability. We are however aware of practical difficulties around defining exactly what should constitute a 'supply pipe' for non-domestic supply which might mean Option 3 will become our preferred option. Responses received from the consultation also highlighted issues by WaSCs surrounding the adoption of the portion of the supply pipe within the property and different configurations of household and non-household pipe work. These practical issues will need to be investigated further.

The creation of a power to regulate and to make amendments to existing legislation would be set out in primary legislation. Subsequent secondary legislation would provide more detail about the scope and specifics of adoption. A further Impact Assessment will be prepared in which estimates of costs, benefits and EANCB will be updated.

We propose to sunset the transfer power in England only.