Title:	Impact Assessment (IA)
Impact Assessment of the transfer of private sewers and lateral drains to statutory water and sewerage companies	**IA No:** DEFRA 1333
Lead department or agency: Defra	**Date:** 17/01/2011
Other departments or agencies: Ofwat and the Welsh Assembly Government	**Stage:** Final
	Source of intervention: Domestic
	Type of measure: Secondary legislation
	Contact for enquiries: Pauline Crellin 020 7238 3099

Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

The 1936 Public Health Act resulted in sewers serving pre-1937 properties becoming public sewers but made no provision to ensure the same for those built after that date. The result is that owners of post-1937 property unfairly cross-subsidise the maintenance of sewers serving those built before that date. Most home owners are unaware of their liability for private sewer maintenance and when undertaken it tends to be reactive and piecemeal with little thought to planned maintenance. The joint ownership of private sewers can also result in disputes and responsibilities can prove hard to enforce. This disparate ownership also results in a lack of integrated management of the overall sewerage system.Government intervention is needed to redress the failure caused by the 1936 Act.

What are the policy objectives and the intended effects?

The policy objective is to ensure better maintenance and replacement of what are currently privately owned lateral drains and sewers leading to less environmental pollution, fewer public health threats, fewer concerns and complaints by houseowners and businesses at what are perceived as unfair costs of repair, with fewer disputes leading to local authority intervention. Longer term the goal is to lead to a better managed sewerage network of higher standard that has lower maintenance costs and is more resilient and effective.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Options consulted on included do nothing, transfer ownership to local authorities, transfer management only, legislating to enforce standards on private owners, extending insurance policy coverage, and issuing guidance to existing owners and enforcement bodies. Opinion favoured transfer of ownership to WASCs as a cheaper, more effective, and more comprehensive solution. This was welcomed by the Pitt Review and associated powers were taken in the Flood and Water Management Act 2010. Phasing the transfer, and transfer on application was considered but rejected, the last because of the complexities of shared ownership, and phasing was more complex with no additional benefits. A big bang transfer was the chosen option. We have considered three sub-options relating to the timeframe of capex expenditure on upgrading the private sewer pipes and (separately) the associated pumping stations. The best NPV is provided by the chosen option – phasing capex for sewers over 10 years and pumping stations over 5 years.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 10/2014 **What is the basis for this review?** PIR. **If applicable, set sunset clause date:** Month/Year	
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	Yes

SELECT SIGNATORY Sign-off For final proposal stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

Summary: Analysis and Evidence

Policy Option 1

Description:

Automatic, unconditional, overnight transfer of private sewers to WaSCs in England and Wales

Price Base Year 9/10	PV Base Year 9/10	Time Period Years 40	Net Benefit (Present Value (PV)) (£m)		
			Low: - £76m	**High:** £623m	**Best Estimate: £161m**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£1267m	15	£172m	**£4590m**
High	£428m		£172m	**£3891m**
Best Estimate	£957m		£172m	**£4353m**

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

Key costs are upfront capital expenditure (capex) and annual costs to be borne by WaSCs, with capex in particular being highly uncertain. These costs will be passed through to WaSC customers under Ofwat's regulatory mechanisms. Ofwat estimates that indicative costs may equate to an average £5 p.a. increase on all sewerage bills from 2011 rising to £8 by 2019, with a range of £3 - £14 across WaSCs. Liabilities and costs are transferred from private owners.

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

Potential loss of business for micro drainage repair firms. Where applicable, landlords who have granted easements for private sewers will lose right to have those sewers moved at no expense to themselves.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	n/a	n/a	£221m	**£4514m**
High	n/a		£221m	**£4514m**
Best Estimate	n/a		£221m	**£4514m**

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

Estimated £165m p.a. average cost avoided for private maintenance of private sewer owners. Householders will save £10m of time (rising over time) due to a reduction in blockages after transfer. Estimated £42m p.a. saving for private maintenance and replacement of pumping stations. £4m p.a. benefit from receipt of GSS payments (The Guaranteed Standards Scheme (GSS) entitles customers to payment in recognition of the failure of WaSCs to meet specified levels of service).

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

Social benefits to all from WaSCs' more efficient and long term strategic operation of assets, from fewer blockages, less consequent pollution, fewer health hazards, & higher health & safety standards in pumping stations. Removal of liability, distress & sense of unfairness from private sewer & lateral owners.

Key assumptions/sensitivities/risks **Discount rate (%)** *

Wide range around indicative figures to be assumed. Length of sewers & laterals to transfer fairly certain. Ofwat advises no.of pumping stations, condition and remedial expenditure for pipework & pumping stations is very uncertain, as assets have not been surveyed. Cost range captures most sensitive values (cost pump station upgrades, proportion of sewerage network requiring upgrade). Peak capital expenditure may occur later than assumed.

* 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)

Direct impact on business (Equivalent Annual) £m):			In scope of OIOO?	Measure qualifies as
Costs: £196m	**Benefits:** £210m	**Net:** (Zero)	Yes	IN

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			England and Wales		
From what date will the policy be implemented?			01/10/2011		
Which organisation(s) will enforce the policy?			Defra, WAG and Ofwat		
What is the annual change in enforcement cost (£m)?			nil		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			No		
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** n/a	**Non-traded:** n/a	
Does the proposal have an impact on competition?			Yes		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			**Costs:** n/a	**Benefits:** n/a	
Distribution of annual cost (%) by organisation size (excl. Transition) (Constant Price)	**Micro**	**< 20**	**Small**	**Medium**	**Large** 100%
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on…?	**Impact**	**Page ref within IA**
Statutory equality duties[1] Statutory Equality Duties Impact Test guidance	No	33
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	30
Small firms Small Firms Impact Test guidance	Yes	31
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	33
Wider environmental issues Wider Environmental Issues Impact Test guidance	No	33
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	No	34
Human rights Human Rights Impact Test guidance	No	34
Justice system Justice Impact Test guidance	No	34
Rural proofing Rural Proofing Impact Test guidance	No	34
Sustainable development Sustainable Development Impact Test guidance	No	34

[1] Public bodies including Whitehall departments are required to consider the impact of their policies and measures on race, disability and gender. It is intended to extend this consideration requirement under the Equality Act 2010 to cover age, sexual orientation, religion or belief and gender reassignment from April 2011 (to Great Britain only). The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessments of earlier stages (e.g. Consultation, Final, Enactment) and those of the matching IN or OUTs measures.

No.	Legislation or publication
1	IA for Decision to Transfer (March 2007): http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm
2	IA for Consultation on Implementation Options (July 2007): http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm
3	IA for Government Decision to Proceed with Transfer (November 2008): http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm
4	IA for August 2010 Consultation on Draft Regulations: http://www.defra.gov.uk/corporate/consult/private-sewers/100826-private-sewers-condoc-ia.pdf

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	Y_8	Y_9
Transition costs										
Annual recurring cost										
Total annual costs										
Transition benefits										
Annual recurring benefits										
Total annual benefits										

* For non-monetised benefits please see summary pages and main evidence base section

Microsoft Office Excel Worksheet

Evidence Base (for summary sheets)

Updated March 2012 for revised "One In, One Out" treatment

"One In, One Out"

1. The Regulation is within scope of the "One In, One Out" process and represents an "IN". Water and Sewerage Companies (WaSCs) incur capital investment and operating expenditures from the proposal, but on transfer they also acquire new assets. Following discussion in a sub-group of the Cross-Whitehall Group on the Economics of Regulation during February 2012, we have updated the IA to include an estimate of this asset value as a direct benefit to WaSCs. The value has been estimated as a future flow of financial returns, based on an empirical judgement of the likely treatment of assets within the regulatory regime. This results in the capital and operating costs of new sewers being offset, with a return on capital assumed at the regulated level. Taking into account the additional direct benefit to wider businesses from transfer of their private sewers to WaSCs, the policy is estimated to result in an overall net benefit to business of around £14m on an equivalent annual (EANCB) basis. The classification of the measure under "One In, One Out" is therefore "Zero cost IN". Detail of this calculation is at paragraphs 119-130.

Scope of Impact Assessment

2. This is the 'Final Stage' Impact Assessment (IA) on the transfer of existing private sewers and lateral drains (laterals) into the ownership of the statutory, privatised and regulated Water and Sewerage Companies (WaSCs). It has been developed using the policy cycle toolkit from the BIS BRE website. The Government made a statement to Parliament in September 2010 that, subject to approval of the regulations needed to effect it, it would transfer ownership of private sewers from October 2011, based on an 'automatic overnight' approach. The transfer will apply to England and Wales to those sewers and laterals connected to the public sewerage system.

3. The implementation stage IA of March 2010 accompanied the consultation on draft regulations for transfer conducted between 26 August and 18 November 2010. Prior to that the following Impact Assessments had been prepared, signed off and published as follows:
   - February 2007, RIA on decision to transfer;
   - July 2007, implementation options IA published with consultation;
   - December 2008, final proposal IA published with decision on preferred implementation option (overnight transfer on 1 October 2011).

4. The Government consulted in Aug 2010 on draft regulations and proposals for schemes for the transfer of private sewers to WaSCs. The consultation produced no fresh evidence for the IA, consequently this IA does not contain new or revised analysis compared to that published alongside the August 2010 consultation paper, beyond updating the PV base year and satisfying the new requirements for IAs regarding direct impacts on business.

5. The 2010 NAO review of new policies across government assessed the March 2010 version of the IA. It was rated 'green' overall, indicating that the degree of analysis was considered proportionate for that stage.

What problems are being addressed and why has intervention been necessary?

6. Current ownership arrangements result in difficulties for private sewer and lateral drain owners and a lack of integrated management of the sewerage system as a whole.

7. This ownership liability can result in considerable distress, which arises when problems occur on private sewerage systems. The distress expressed by owners includes:
   - Failure of house purchase searches to identify the existence of private sewers and subsequent lack of understanding of extent of responsibility among property owners,
   - Inadequate maintenance arrangements put in place by developers,
   - Pressure from some drainage repair companies to agree to works being undertaken when problems arise on private pipe work,
   - Lack of certainty and consistency around the extent of household insurance cover,
   - The cost and extent of cover provided by specialist insurance,
   - The affordability, for elderly people, of even minor work such as blockage clearance,
   - Difficulty in recovering costs from others,
   - Problems with accessibility.

8. Paragraph 11 explains how private sewer owners in effect cross-subsidise the upkeep of public sewers serving owners of properties whose sewers have been adopted. Paragraphs 89-96 include discussion of the non-monetised benefits, many of which will address the distress caused to owners of private sewers.

9. Sewers by definition are drainage pipes that serve more than one property and drains are pipes that serve a single property. A lateral drain (throughout this document referred to as a lateral) is the section of pipe work serving a single property which extends beyond the property boundary. Private sewers and laterals are sewers and laterals that have not been adopted by WaSCs as part of the public sewerage system for the maintenance of which they are thereafter responsible under the Water Industry Act 1991.

10. Most properties are served by private laterals and many also by private sewers. Although the Public Health Act 1936 declared all private sewers in existence at 1 October 1937 to be vested in the then statutory sewerage undertakers as public sewers, the Act did not make specific provision for the automatic adoption as public sewers of those built after that date. Some sewers built subsequently have been adopted voluntarily by sewerage undertakers as public sewers, but this has been the exception rather than the rule. As a result there is widespread variation in the circumstances of property owners, with some jointly responsible for extensive runs of private sewers and others who are not. Laterals have not, until legislation changed in 2003, been adoptable as public assets at all. The consequence is that property owners often unknowingly have responsibility for private sewers and laterals that are in third party land, sometimes under roads, and over which they have little control or powers to access.

11. Whether served by private sewers and laterals or not, all property owners ultimately connected to the public sewerage system pay the same for the provision of their sewerage service. This inequity means that those served by private sewers and laterals cross-subsidise the upkeep of public sewers serving owners of pre-1936 properties and are also responsible for the maintenance and repair of the private sewers and laterals serving their own property. The overall sewerage system suffers as a result from a lack of integrated management. The privately owned pipe work, forming a part of it, in general receives only a minimum of reactive maintenance to deal with a problem when it arises.

12. Sewerage failures can be unpleasant and polluting; all sewers and drains have a finite design life and numerous problems occur each year across England (and Wales). Current arrangements often lead to problems on the private system including: a lack of awareness among owners about their responsibilities, establishing shared ownership and responsibility for maintenance, unwillingness of owners or occupiers to accept their responsibility and

contribute towards the cost of repairs to shared sewers, the cost of, and organising repairs – sewers and lateral drains can lie under the public highway for example, difficulties in getting private sewers adopted by WaSCs and sewage flooding & pollution.

13. There are approximately 323,000km of public sewers in England and Wales which are the responsibility of WaSCs. Approximately 184,000km of private sewers and 36,000km of private laterals connect to and affect the public system, but are not the responsibility of WaSCs and have no planned operational regime (lengths obtained from Ofwat, 2008). A further total of some 208,00km of private sewers and laterals, comprising a combination of connections to private sewage treatment works, cess pits, septic tanks and surface water drainage direct to a watercourse, do not connect to the public sewerage system at all and are not included in the proposals for transfer. The consultants Atkins estimated that 39 per cent of properties paying sewerage charges are served by private sewers (Atkins undertook the original evidence base for Defra's review). We estimate that around 80% of properties have at least a lateral connection to the public network. Private sewers may, and lateral drains will, run outside the boundaries of the properties they serve. UKWIR and Ofwat have previously estimated that over 13,500km of lateral drains lie under public highways in England and Wales (There are also lengths of private sewer under highways due to failed adoption agreements, for example, although these cannot be quantified), and in extremes, they are recorded to lie under railway lines.

14. Private sewers are thought to be in a worse condition with a higher blockage rate than public sewers. UK Water Industry Research (UKWIR) and Ofwat estimate that there are around 428,000km of private sewers, lateral drains and (non-transferring) drains in England and Wales. Information gathered by Defra and based on data from drain service companies, estimates that there are 2.2 million blockages per year on the entire private network at an estimated annual rate of 5.1 blockages per km. A previous Ofwat estimate indicated a rate of blockages of 2.8 per km on the public sewers referred to as "Section 24" (of the Public Health Act 1936) sewers, which are generally small diameter sewers, comparable to private sewer pipes (Dealing With Sewer Blockages, WRc, Ref: PT 1082/02775-0, December 1995). (Length is not the only, or even main, driver of the number of incidents, but we have no adequate alternative data on quality or state of repair.) Sample CCTV surveys of the internal condition grade of private sewers, focusing on problem locations, revealed twice the incidence of pipes classified as "Collapse likely in foreseeable future", as is typically found in the public sewer network(Review of Existing Private Sewers and Drains in England and Wales Consultation Paper" for Defra and Welsh Assembly Govt, July 2003).

15. This is supported by outputs reported by Mouchel in a 2010 research project that indicate that the blockage rates on private sewers might be as high as 7.85 per kilometre of pipe per year, including rapidly declining level of service from the equivalent of 5.1 identified in the 2008 IA. As water companies report blockage rates on their adopted public sewers, improvements in reducing these can be seen since privatisation in 1989, and currently stand at 0.5 blockages per kilometre of pipe per year, with a range between companies of 0.24 to 0.89.

16. By contrast water companies reported 154,700 blockages on the public sewerage system in 2008. This is a rate of 0.5 blockages per kilometre of pipe per year. The unadopted network therefore seems to be operating at a value 10 times worse than the adopted network. Part of the reason for this is that if the home owner doesn't get satisfactory service from one independent drainage contractor, another is simply appointed on a reactive basis, and so on. There is no effective monitoring or regulatory reporting on private sewers as there is for public sewers. It is therefore reasonable to expect that adopting water companies will apply monitoring and efficiencies to limit the number/frequency of repeat visits before alternate measures are taken to bring about a permanent solution.

17. The mechanisms by which sewer blockages occur is complex, but often results from the home-owner using the system in a manner it was not designed to do. The most obvious of these is flushing nappies down a toilet, which subsequently causes a blockage in the pipework further on. The growth in 'flushable' products, domestic waste macerators for retro-fitting to kitchen sinks and the general push to reduce water consumption all combine to impact the plug flow nature in the upper limbs of a sewerage system more acutely than those sewers serving many properties where more continuous flow aids the sustained movement of solids. Climatic changes, such as periods of low rainfall, also correlate with increased sewer flooding incidents due to blockages in public sewers. When averaged over a 15 year period, reporting on the public sewerage network identified that almost 60% of sewer flooding incidents were attributable to 'other causes' like sewer blockages, rather than a lack of hydraulic capacity to manage flows. Purely on flow characteristics, blockage problems are much more likely to increase where pipes are smaller and a wider set of demands are made on them by the lower number of household they serve.

18. Currently, drainage repair companies responding to private owner call-outs probably undertake more repeated rodding and jetting at sites of recurring blockages than is desirable for effective management, and they tend to focus piecemeal patch repairs to private sewers on the immediate problem location. Repairs and other interventions upon repeat call outs are not always carried out by the same independent drainage contractor, which impedes the accumulation of knowledge about the past repair history and problems on the wider local network. Drainage repair contractors can typically provide less long term problem-solving, involving detailed asset examination and diagnosis, and asset upgrading or replacement, than is expected from WaSCs, post-transfer. WaSCs have appropriate Codes of Practice for maintaining systems, for example, setting maximum jetting pressures proportionate to the pipe material and structural integrity, and equivalent codes and information are probably not applied by all independent drainage contractors.

Why is Government intervention needed?

19. Current market failures prevent a comprehensive solution solely through individual action and market forces.

Market failures

20. **Ill-defined property rights**: most home owners are unaware of their legal liabilities for private sewers and laterals (there is no comprehensive reliable record of where these assets lie or who is served by them, and it is not evident when buying a property). The Home Information Pack (HIP) provides purchasers with better information than they used to get but is not explicit on the issue and does not help existing private sewer owners. (In cases where a private sewer is identified through a HIP, owners may perceive that it will be more difficult to sell their property.) Even a surveying exercise to map the assets, costed at around £1bn, would not resolve the problems of shared assets and externalities.

21. **Under-maintenance of "merit good" by private owners**: private sewers deteriorate and perform worse than equivalent public sewers. Well maintained sewers have public health and environmental externalities and benefits: society would probably choose that sewers be maintained to a higher level than private owners achieve. Private owners are typically short-term utility-maximisers who react - if at all - to immediate failures, and take into account only private benefits and costs. Private sewers and laterals do not benefit from the strategic approach to data collection and investment in their maintenance or repair that applies in the public system. Blockages are more likely to recur and less likely to be completely resolved than when networks are managed by WaSCs. Even if HIPs provide better information, and if general guidance were issued on responsibilities for private sewer owners, there is still no

mechanism or incentive for private sewer owners to manage the network strategically for the long term, to the standard that society would choose.

22. **Externalities among joint owners**: a sewer's run may, for example, serve 6 properties. Owner five may cause a blockage that only affects owners one, two, three and four upstream of the blockage. Owners five and six, downstream of the blockage may be unwilling to contribute to the cost of repair and owner five may be unwilling to allow entry onto his property to effect the necessary repairs. The shared responsibility may be hard to enforce and free-riders may persist, even with better information provision.

Government and other failures

23. **Private sewer owners are cross subsidising others**. Charges for sewerage services must be paid as part of the water and sewerage bill by everyone whose property connects to the public sewerage system (the average annual sewerage bill is about £180). When a problem occurs for customers served entirely by the public network, the relevant WaSC carries out appropriate remedial work. But customers served by a private sewer up to the point it connects with a public sewer pay the same annual charge, effectively cross-subsidising non-private sewer costs, and also bear the responsibility and risk of meeting extra (possibly significant and unexpected) costs to maintain the 'private' section of the overall sewerage facility their property receives.

24. **Private sewer failures can affect public sewers (externality)**: incurring costs and inconvenience for WaSCs and their customers.

Other issues for private sewer owners

25. Public health is at the heart of the sewerage system which itself is a direct and intentional result of public health legislation (Public Health Act 1875, Public Health Act 1936). The IA does not however seek to suggest that the (non-monetised) public health benefits justify the transfer. Under the current system (ie the baseline for the IA) public health is protected - through intervention by Environmental Health Officers at the cost of the Local Authority when the private owner fails to take responsibility. The proposed transfer of public sewers will continue to protect public health and will in the long run do so at at lower cost. This is included in t he best estimate NPV of £161m. Inasmuch as the sewers will be better maintained there will be a slightly reduced risk to public health compared with the baseline. But this is not monetarised, is likely to be small, and is not a primary driver for this proposal.

26. Recent research conducted for UKWIR indicates that there were 3,956 internal and 31,509 external sewage flooding incidents reported as part of regulatory duties in 2008 arising from problems in the adopted public sewerage system. While these incidents are beyond the control of individual householders, the unreported numbers of sewage flooding associated with un-adopted sewers is likely to be significantly more and proportionate to the 14 fold higher incidence of sewers blockages in the un-adopted sewers. Since the first year of regulatory reporting for sewer flooding in 1991/2, investment by water and sewerage companies on the adopted public sewerage network has delivered an 80% reduction in the number of sewer flooding incidents. The inconvenience, distress and expense (including the aftermath in terms of reinstatement and securing and funding insurance cover) should not be underestimated

27. Private sewer owners may simply not be able to afford the costs of repairs or maintenance to private sewers and drains and achieving co-ordination between a number of owners can prove difficult. Emergency blockage clearance (estimated from industry sources) may cost in the region of £100 – £280 (price range is based on standard emergency drain clearance - Industry prices vary according to factors such as date, time and location of callout) and is often urgent and unexpected. Rehabilitation costs can be greater. One residents' association

letter in December 2004 highlighted costs of £10,000 for repairs to a stretch of private sewer, and the associated difficulty in getting contributions from 57 owning properties to recover the costs.

28. Few private sewer owners have the technical capability or experience to effectively deal with the problem or procure cost-effective remedial work. This problem is exacerbated by laterals that lie under public land or highways because work may involve digging up the road.

29. While some private sewer owners may be able to claim for the cost of repairs to their assets on an insurance policy, insurers usually only provide cover for accidental damage: wear and tear and other coverage gaps exist. All WaSCs offer some form of insurance cover for their customers, many of which are 'drainage policies' from one particular provider of insured home repair solutions and emergency services. This 'Drainage Cover' is available for 'drainage pipes' and includes those outside the property boundary – i.e. lateral drains. It also includes drains on private land to which owners have the 'legal right of access'. The policy does not however offer cover for private sewers.

30. Some home insurance policies can offer cover for pipes for which their owner is 'legally responsible', which could include private sewers, but the extent of cover varies from policy to policy. However, policies will generally only offer cover in the event of accidental damage, not wear and tear. Owners of private sewers or laterals with existing problems may find that taking out specific cover for their assets is prohibitively expensive if there is a history of difficulties.

31. Private sewer owners can apply to their WaSC to have their sewer adopted. However, adoption is at the WaSC's discretion and the owner will most likely have to first rectify deficiencies at their own expense. Where private sewers have been constructed from sub-standard materials, or lie on a gradient too shallow for effective drainage, re-laying may be required, and the costs involved in such a process can be prohibitively high.

32. Currently, private sewers are not monitored for flooding because they are not the responsibility of WaSCs (and their location is often unknown) and private sewer owners are not eligible for GSS payments where flooding has occurred on their private sewer or lateral drain. The Government sets guaranteed standards of service that water and sewerage customers are entitled to receive from their WaSC. The guaranteed standards scheme (GSS) sets out the standards and the levels of GSS payment companies can make and is monitored by Ofwat. WaSCs make GSS payments when their level of service drops below certain standards for services ranging from making and keeping appointments to dealing with sewer flooding.

33. Many participants in a customer survey carried out as part of this review who believed they were served by the **public system** also viewed current arrangements as unfair. Without intervention someone currently entirely on the public system may move and find themselves served by a private sewer (see Annex A to November 2008 IA for more detail).

Will the current situation be resolved over time?

34. Private sewers and drains are finite assets; as they come to the end of their life the need for repair may increase, in turn increasing the risk to public health and the environment as problems of establishing ownership and sharing responsibilities continue to cause delay to the resolution of structural problems. As private sewers deteriorate over time and more problems occur, it is likely that complaints about the current arrangements will increase. In this IA, figures are based on the assumption of a rise in the rate of blockages on private sewers of 0.5% per year, which may be conservative (see discussion in paragraph 80).

35. In particular, problems on private sewers constructed from pitch-fibre pipes – used extensively in the 1960s for small-bore pipes – are likely to increase in the short-term (20 – 30 years) due to their design life of around 50 years. However, in the longer-term, with the replacement of pitch-fibre pipes with superior materials as required, these problems will eventually be eradicated. Atkins' research discovered that up to 50,000 properties per year suffer problems relating to pitch-fibre pipes. A rough, top-end estimate (based on data from the Pitch Fibre Pipe Association) suggests that there are currently 78,000km of pitch-fibre pipes (Figures based on production stats (tons per annum) for 1952-1974. Not all of the pipes manufactured will be used on sewer infrastructure; e.g. pitch-fibre was also used for electricity ducting under highways.).

36. Climate change is likely to increase burdens on the wider sewerage network, a large part of which does not benefit from any planned operational regime (see annex A to November 2008 IA for more information).

37. In summary, sewerage failures can be unpleasant and polluting; all sewers and drains have a finite design life and numerous problems occur each year across England (and Wales). Current arrangements often lead to problems on the private system including: a lack of awareness among owners about their responsibilities, establishing shared ownership and responsibility for maintenance, unwillingness of owners or occupiers to accept their responsibility and to contribute towards the cost of repairs to shared sewers, the cost of, and organising repairs – sewers and lateral drains can lie under the public highway for example, difficulties in getting private sewers adopted by WaSCs and sewage flooding & pollution.

38. The powers available to Ofwat do not help deal with the main problems that individual ownership of private sewers and laterals may bring and no other legislative or non-regulatory change to WaSC or local authority responsibilities which would is proposed. Conversely maintenance responsibilities can be enforced on owners by local authorities. WaSCs currently do not have to assume responsibility for private sewers or laterals and have no incentive to do so.

What policy options had been considered?

39. Four implementation options were considered and consulted upon in July 2007 (http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm)

    1. Automatic overnight transfer from a set date
    2. Automatic transfer but phased in some way
    3. Transfer without conditions, on application by owner(s)
    4. Transfer on application by owner(s) but with conditions

40. Consultation responses strongly supported option 1 (with extremely limited support for any other option – one to two per cent of respondents). This approach, automatic overnight transfer, was selected by the Government (see annex B of the November 2008 IA) and should deliver the following benefits, over and above the other options:

    - A comprehensive and more straightforward solution to the problems;
    - Clarity on roles and responsibilities for the maintenance of the sewerage network; and
    - The least added administrative burden on WaSCs and other businesses.

The chosen implementation method

41. This IA looks only at the costs and benefits deriving from the proposal for automatic overnight transfer of existing sewers and laterals. A separate IA will accompany proposals for a design and construction standard for new sewers that will be automatically adopted by

WaSCs. These proposals are to be the subject of a separate consultation to be published this spring. This complementary work will ensure a coherent package to prevent the problems addressed by the transfer of existing private sewers developing again over time.

42. An approach that tackles existing and future sewers and laterals will have two major outcomes:

    - The current regime for ownership and responsibility for sewerage will be greatly simplified. Property owners will only be responsible for pipework that lies within their land and serves only their own property. All property owners paying a sewerage bill will be on the same footing.

    - The wider sewerage network will benefit from a long term integrated management strategy that prioritises action and investment according to risk, which should provide much greater efficiency of effort, environmental stewardship, and expenditure, at a time when the network faces increasing demands. Following transfer, a WaSC will be able to collect data across locality (using independent contractors as necessary) and will be able to build up an informed picture of what is failing, where and when, and will plan when rehabilitation rather than patch repair is the best economic option.

43. The transfer of all existing private sewers and laterals **connecting to the public network** will take place on 1 October 2011. Some of these will have private pumping stations at some point(s) along their length. The ownership transfer of the pumping stations will occur at a later date but no later than 1 October 2016. This is because the location of some pumping stations is uncertain and they may need a comprehensive assessment, e.g. for health and safety purposes.

44. As set out in Annex B, paragraph 15, of the November 2008 IA, the Government agreed with consultation responses that commercial properties should be included in transfer and the data in this IA includes commercial properties.

45. Transfer of private sewers and laterals will be automatic to ensure that all assets are transferred at one time (1 October 2011) and WaSC ownership and maintenance responsibilities for the transferred assets is established in one step. From this point, all WaSC customers receiving a sewerage bill will now have their sewers and laterals maintained by their WaSC. Private drains (i.e. those serving individual properties) that lie inside the property boundary will remain the responsibility of the property owner as is currently the case for unadopted sewers and provide a continuing market for the independent sector (but see also paragraph 7 of the small firms assessment).

46. WaSCs have highlighted that private pumping stations may have health and safety issues as well as problems with their overflow consents and mechanical and electrical systems. Some may be inaccessible, for instance located in garages and gardens and may take power supplies from existing domestic arrangements. They present operating concerns over and above sewers and laterals and therefore consideration had to be given to how to treat these. WaSCs will have a five year period to locate and assess pumping stations and Ofwat's cost estimates in this IA assume that this is done and some pumping stations pass to WaSCs in steps over 2011/12 – 2015/16, until the deadline for automatic, overnight transfer passes on October 2016.

47. The costs and benefits analysis assessed 3 options for phasing necessary upfront capital expenditure (Capex) required to upgrade the transferring assets. This is to compensate for under-investment in maintenance due to informational problems and diseconomies of scale from private ownership. Work undertaken by some WaSCs suggests that the private sewers they will inherit may be in better condition than originally anticipated and Ofwat have

accepted this in their costs assumptions, reducing the estimated proportion requiring upgrade from 7.5% to 2.5%. This IA assumes that almost all the Capex (95%) can reasonably be projected to arise in the first ten years, rather than five years after transfer (as assumed in the 2008 IA http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm)) as a legacy of problems are resolved. Sub-serviceable standard private sewers will be upgraded once failures are identified, when it will likely be cost effective to upgrade significant proportions of these networks in one go. Ofwat consider 10 years sufficient time to upgrade the sewerage network, in this cost effective manner. Furthermore, the time frame has not been extended beyond this, as WaSCs have a statutory duty under section 94 of the Water Industry Act 1991 to effectually drain their area of appointment. Extending the time horizon of the Capex, and therefore the time taken to upgrade private sewer network, beyond a 10 year period is unlikely to be compatible with a reasonable approach to complying with this duty.

48. This projection is not applied to pumping stations. They are assets with a significantly shorter life span (typically 20 years as opposed to potentially over 100 for sewers) and the consequences of performance failures can be more immediate and pronounced than sewers. Allowing more than five years to elapse between the transfer of sewers and pumping stations would create a perverse incentive – e.g. if a ten year period was selected, private owners may not have to carry out routine maintenance for the entire ten years in expectation of transfer, so that when transfer eventually happens WaSCs inherit pumping stations in worse condition, requiring greater upfront expenditure. This would represent an exaggerated re-distributed cost. This may lead to additional external costs from environmental damage or damage to neighbouring locations, which will not be factored in by owners of pumping stations when considering whether to maintain this infrastructure.

49. As this is an automatic transfer, the existing appeal mechanisms under the 1991 Water Industry Act will apply to allow owners of sewers, laterals and pumping stations or other affected parties to appeal against transfer to Ofwat.

Sectors and groups affected

50. The groups affected by the proposed option include: Private sewer owners (e.g. households, businesses, local authorities, housing associations, and other property owners such as government, NGOs, and institutions); WaSCs, who are currently responsible for public sewers; WaSCs' customers; insurance companies; drain repair businesses; Regulators e.g. Ofwat, Environment Agency; Consumer bodies e.g. CCWater; and Government.

Human rights

51. We have taken advice on the risk of legal challenge to the proposed scheme, especially on certain issues concerning the compatibility of our policy with Article 1 of Protocol 1 of the European Convention on Human Rights (the protection of property rights). The advice is that a properly made and administered adoption scheme is unlikely to contravene human rights. In particular, sufficient mechanisms exist in the Water Industry Act 1991 to accommodate a landowner's current right to have a sewer removed or moved where he has granted an easement, such that a divesting of the right would not contravene human rights. Those mechanisms include a provision for the award of compensation. In any event, any interference with property rights may be objectively justified in the circumstances.

Assessment of Baseline

Baseline Costs

52. This IA does not address proposals for new build standards or incorporate any costs or benefits that would derive from them. Mandatory adoption of new sewers connecting to the public sewerage system is provided for under the Flood and Water Management Act 2010. This will prevent a repeat of the problems addressed by transfer. Mandatory adoption will require adherence to design and construction standards to be published by the Secretary of State and a separate IA looking at the specific costs of mandatory standards for adoption is being prepared to accompany forthcoming proposals for consultation on this issue.

Assessment of Proposed Option (option 1): Automatic overnight transfer

Summary of Competition Assessment and Small Firms Impact Test
(The assessments are available at annexes 2 and 3)

53. Competition Assessment - a transfer of private sewer ownership is likely to change the market structure in the independent drain repair industry insofar as the customers for drain repair services will cease to be private sewer owners and will become WaSCs. Possible impacts on competition in the drain repair industry include:
    - The amount of work available to drain repair companies direct from householders is likely to decrease. However, approximately 50 per cent of the private sewerage and drainage that connects to the public system will remain in private ownership. But it is highly likely that WaSCs will need to contract out to the drain repair industry some of their extra work on transferred assets, and this will include a backlog of maintenance which in the short term will increase business;
    - Competition for contract work from WaSCs and properly managed procurement procedures could increase, which could improve take-up of accredited training and work schemes and which could in turn drive up standards – offering more certainty to householders of the standard of maintenance work undertaken;
    - Some smaller businesses may be less able (eg fail to meet required standards) to compete for WaSC contracts and may cease trading or merge with other businesses;
    - No reduction in the level of employment within the market is anticipated in the short to medium term, although the need to deal with a backlog of maintenance may have the opposite effect. Over time, in total, we estimate that there will be upwards of 500,000 fewer blockages and call outs as the network quality improves.

54. Small Firms Impact Test – we expect that the amount of work in maintaining and repairing currently private drainage will remain roughly constant in the short to medium term, although it will decline in the longer term, and there may inevitably be a change in the market focus for private drainage contractors, who may wish to enter into arrangements with WaSCs or their sub-contractors. Drainage within property boundaries will remain the responsibility of householders, and repair and maintenance work associated with that will continue. We acknowledge that when new arrangements are better known more householders may call their WaSC in the first instance. WaSCs and independent drainage contractors will need to reach agreement on arrangements which cater effectively for ‘first response’ calls and payment.

Summary of main analysis

55. As stated at paragraph 4, this IA does not contain new or revised analysis compared to that published alongside the August 2010 consultation paper, beyond updating the PV base year and satisfying the new requirements for IAs regarding direct impacts on business.

56. The transfer of private sewers and pumping stations results generally in a transfer of costs from private owners to WaSCs. Costs in this IA are defined as the costs to water companies of upgrading and maintaining private sewers and pumping stations. Benefits are defined as the avoided costs to households and commercial properties of maintaining private sewers and pumping stations once transfer takes place. This analysis facilitates the estimation of the increase in bills to all households and commercial properties due to the policy. This results in a net decrease in annual costs of maintaining private sewers and pumping stations due to improved management but also an increase in initial capital expenditure (capex) to upgrade previously unmaintained assets, to circumvent private property issues, e.g. moving pumping station control panels located in houses and garages, and to rationalise the network, e.g. replacing extraneous groupings of pumping stations with more appropriate sewer runs.

57. The benefits of improved management are realised in the longer term whereas the one-off increased capex costs occur mostly within 10 years. The appropriate time horizon in the green book encourages the use of the longest living capital asset in this analysis but this may be in excess of 100 years as significant parts of sewerage network are Victorian. Ofwat appraisal of infrastructure investment for Price Review is generally undertaken over a 100yr time horizon. We have assumed a 40 year period time horizon for this analysis, net benefits become positive after year 32.

58. With the inclusion of previously non-monetised benefits the 2008 IA estimated benefits of >£49m after 60 years. Our current analysis suggests that the preferred option would generate benefits of £435m over a 60 year period. However, a more appropriate comparison may be that the current analysis suggests that the preferred option has positive net benefits after 32 years, and net benefits of £150m after 40 years.

Summary of options analysis

59. In the 2010 consultation stage IA further options analysis was presented. Given the uncertainty regarding the costs this focused on phasing the capital expenditure programme over a longer period. Three options for delivery of option 1 were examined:

i. An update of the November 2008 IA analysis, i.e. capex for sewers over 5 years and the transfer of pumping stations after 5 years
ii. Phasing capex for sewers over 10 years and the transfer of pumping stations after 10 years
iii. Phasing capex for sewers over 10 years and the transfer pumping stations after 5 years

60. The analysis suggested that the difference in Net Benefits of the options is relatively small over a 40 year analysis. Net Benefits as published in the 2010 IA are (2008/09 PV base year): Option 1(i) £87m, Option 1(ii) £145m and Option 1 (iii) £150m. Option 1 (iii) is preferred.

61. Upper and Lower Bound analysis of option 1 (iii) was undertaken and Ofwat provided an appropriate uncertainty range on the most uncertain variables, i.e. the costs of pumping station upgrading and the proportion of network requiring upgrading. These values provide a useful upper and lower bound of costs to be estimated. See also paragraphs 108-110.

Background to costs

62. The IA looks at the best available evidence on all parameters, and relies on reasonable and prudent assumptions. Best available cost estimates and data relating to WaSCs have been provided by the independent economic regulator, Ofwat, in March 2010[1]. The figures build on previous private sewers' cost work undertaken by Atkins and WRc/UKWIR (see Technical Annexes to IAs referenced in the Summary Sheets).

63. Uncertainty over the extent and condition of private sewers means that WaSCs cannot provide Ofwat with full and accurate data from which to calculate levels of funding in future price determinations. To obtain greater accuracy, an extensive survey and mapping exercise would be required. UKWIR initially estimated that this might cost £450m. The figure has since been revised to around £1bn. It is not proposed to undertake this mapping, and spending even a fraction of the estimated costs on a more limited survey is unlikely to represent value for money in terms of information. Ofwat's current estimates of the financial costs to WaSCs are therefore based on the best available, albeit indicative, assumptions. The actual expenditure associated with the ownership and maintenance of private sewers will be revealed over time as companies respond to faults, and build up pictures of the transferred assets.

64. There is uncertainty around the figures presented. If costs prove to be higher or lower than indicated here, it is likely that benefits (costs avoided) will be higher or lower too: higher costs imply a worse condition, or more extensive network, of the assets transferring. This suggests that in the absence of transfer a higher level of blockages would arise. Benefits would thus also be higher since the avoided costs of the associated repair, time, pollution, and health and safety issues would be greater.

65. The capex takes place in the first ten years with the residual upgrade costs over the next five years.

Capex estimates

66. Ofwat's estimates of one-off capex were updated for the 2010 IA due to new data provided by WaSCs. The updated Ofwat figures show one- off £957m capex (undiscounted). The two key drivers of these changes are the increasing number of pumping stations estimated and a decreasing proportion of the sewerage network requiring immediate replacement. Pumping station numbers increased significantly from initial estimates of 5,000 to a new central estimate to around 22,000. Also, data provided by WaSCs to Ofwat estimating costs per upgrade increased from £18k to £25k (2009/10 prices). However the estimated proportion of the sewerage network requiring replacement has fallen, based upon data provided from WaSCs to Ofwat, from 7.5% to 2.5%, reducing capex requirements. Finally efficiency estimates have been provided directly by Ofwat for this analysis, these result in minor efficiency gains increasing to 2.3% and 3.2% cost saving for private sewers and pumping stations capex respectively over 10 years, compared to previous estimates of 15% efficiency gains.

[1] In this IA, Ofwat's analysis of Infrastructure Renewal Expenditure, planned and reactive maintenance, GSS payment data, actual expenditure figures, and sewer lengths are drawn from the annual June Returns supplied by the regulated water and sewerage companies for 2006-07 and 2007-08. Estimates of the number of pumping stations provided and the costs of upgrading pumping stations are based upon averages of data provided to Ofwat from Water Companies.

Infrastructure renewals expenditure (IRE),Maintenance non infrastructure (MNI) and Pump Replacement expenditure

67. Estimates suggest annual expenditure of £121m per year (undiscounted), averaged over a 40 year period. This includes IRE of £79m, MNI of £41m and replacement capital expenditure of around £1m averaged over 40 years. Replacement capital expenditure estimates have been provided by Ofwat. It is assumed that the number of pumps will not decrease leading to a conservative cost estimate, as it may be expected where WaSCs, because of better information and economies of scale, could either amalgamate pumps or decommission pumps, where alternative sewerage connections are available. Efficiency savings provided directly from Ofwat build up to 3.2% per year, previously estimated to build to 16% per year.

Planned and reactive maintenance

68. The other component of the £172m WaSC annual average cost (undiscounted) is planned and reactive maintenance (or opex) on the pipe network, which is estimated at an annual average of £50m over 40 years. These incorporate additional costs of GSS payments protecting home owners against sewer flooding (note that since the benefits to home owners of receiving GSS payments are also included, GSS payments are treated as a transfer in the analaysis). Efficiency savings provided by Ofwat build up to 10% over a 10 year period.

69. Ofwat advises that no additional administration and management costs for these new assets need to be considered, as they will be negligible.

Table 1 - Estimated undiscounted expenditure by WASCs, £m 2009/10 price base, after efficiencies. (Similar discounted figures are shown in Table 3, below.)

	5 year totals				First 20 years	Annual average spend		
	2011-12 – 2015-16	**2016-17 – 2020-21**	**2021-22 – 2025-26**	**2026-27 – 2030-31**	**2011-12 – 2030-31**	**Over first 10 years**	**Over first 20 years**	**Over 40 years**
One off capex upgrades	751	186	20	0	**957** (As in Summary sheet)	94	48	N/A
Annual IRE* and MNI**	479	618	628	637	**2363**	110	118	121
Annual operating costs	314	254	241	241	**1,050**	57	52	50
Recurring annual cost = IRE, MNI, plus opex	793	872	869	878	**3,413**	166	171	**172** (As in Summary sheet)

*IRE = Infrastructure Replacement Expenditure (for underground assets)
**MNI = Maintenance Non-Infrastructure (for over-ground assets)
Source: Ofwat and Defra figures

70. The data provided by Ofwat covers a 30 year period from 2010/11. The table shows that the one-off capex arises largely in the first 5 years, as pumping stations and private sewers are upgraded, then decline after pumping station upgrades complete, until all sewers are

upgraded after 15 years then capex on upgrades remains at zero. IRE and MNI costs rise initially as pumping stations are taken on then largely stabilise apart from minor increases due to the need to replace capex. Opex declines as problems such as sewer flooding problems and GSS payments decrease due to improved management. This results in annual costs stabilising. The analysis does not include future efficiency gains after the 10th year from Ofwat efficiency program which would likely result in longer run cost savings. After year 15 all costs are assumed to remain at the same level, except replacement capex which is repeated cyclically over a 15 year period, these assumptions have been maintained when extending the analysis beyond 30 years.

Other non-monetised costs of Transfer Option

71. Local Authorities may face costs for enforcing or solving problems up to the transfer date, once it is announced, as owners leave problems for WaSCs to fix later. This is expected to be minimal and is therefore not monetised.

72. The transfer may require Ofwat involvement in handling appeals against transfer. Ofwat estimates that this may equate to one additional, temporary Full Time Employee. This has not been monetised.

73. The insurance industry has reported that the transfer will have an insignificant impact on business, so no impact has been monetised.

74. As above, members of the drainage repair industry may face a loss of business, as the total number of call outs declines once the asset performance is improved. This may be offset in the short term by the high demand for capex and upgrading work. The most vulnerable are micro firms, as they are least likely to win contracts from WaSCs to work on the transferred assets, though they may sub-contract to contractors. We have been unable to quantify turnover loss, but a comprehensive survey in one WaSC area suggests that up to 60% of small firms' current work arises inside the property curtilage and this market, at least, is unaffected by transfer.

75. Transfer does not impose any regulatory administrative burdens on the independent drainage sector (see the Small Firms Impact Assessment at annex 3).

76. Some land owners may have granted an easement over their land for a private sewer to be laid, and they hold the right to require the owners of the properties served by the private sewer to pay for the sewer to be moved. This right will be lost once the private sewer transfers. WaSCs have discretionary powers to charge a land owner for diverting a sewer. We have been unable to find any examples of land owners exercising their right and cannot quantify the cost.

77. It is for Defra and the Welsh Assembly Government to enforce the statutory duty for WaSCs to adopt the transferring assets. To date, no breach of a sewerage undertaker's statutory duty has needed to be enforced, and a nil annual cost is assumed in this IA.

Distribution effects

78. The transfer shifts a cost burden from those private sewer owners who do face blockages to WaSCs, and so to all sewerage bill payers. However, all those who connect to the public sewerage network currently pay sewerage bills, even those who are also liable for their own private sewer or lateral (but note that few laterals are currently the responsibility of WaSCs). Hence, under the baseline, private sewer owners are cross-subsidizing non-private sewer owners. Distributional effects include: increased annual costs for non-private sewer owners, rectifying current cross-subsidies from private sewer owners to others; increased annual costs for those private sewer owners who have not spent, and will not spend, money on

fixing private sewer failures; and, potentially, decreased annual costs for private sewers owners with problematic private sewers which would require personal, remedial expenditure, in the absence of the transfer. Commercial properties and the minority of households not served by a lateral may pay the increase in their sewerage bill but not receive the benefit of having a lateral transferred.

Monetised Benefits

79. This Impact Assessment restates the evidence presented in the previous IA that accompanied the 2010 consultation.

80. It is anticipated that, after the transfer, upgrades and better quality maintenance will reduce the incidence of blockages on the transferring assets from an estimated 5.1 blockages per km per year, to perhaps 2.8 blockages per km per year (see paragraph 13). This means an improvement of over 500,000 fewer blockages per year compared with today, due to better management and more investment. Moreover, since the failure rate on private sewers would be increasing over time, without the transfer, the benefits of better management will also rise over time, post-transfer. It is assumed that the rate of blockages on private sewers would increase by 0.5% a year without a transfer. This is conservative in light of evidence that the rate of blockages on better-maintained *public* sewers has risen by 0.35% p.a on average, in the past 15 years, since a higher level of repeat blockages would be expected for private sewers.

81. An average of three alternative estimates suggests that private sewer owners and local authorities (LAs) are currently spending £149m a year on ad hoc responses to blockages. This cost will be avoided and so represents a benefit of transferring. (See annex A of the November 2008 IA for more on the underlying estimates). There is uncertainty around the figures and the average is probably a conservative estimate. Without the transfer, this annual expenditure would rise as the private assets deteriorate and block more frequently. The annual average over 40 years is £165m.

82. Time saved by private sewer owners, due to a reduction in the number of blockages post-transfer, is quantified as an hour and a half per blockage avoided, valued at the median wage, worth about £10m p.a. initially, based on a reduction of at 500k incidents per year, rising over time. The total average annual private cost avoided from maintaining private sewers is therefore £175m. This figure can be compared with the recurring annual spending by WaSCs which is estimated at around £172m.

83. Recent research further substantiates the estimate of time saved by private sewer owners. It indicates that the private drainage sector commands £454 million in managing 2.2 million sewer blockages. This averages just over £200 per call out to the homeowner. Current published rates by independent drainage contractors indicate rates of £75+VAT for 30 minutes of work – suggesting that a £200 call out would last 1 hour 10 minutes. The time saved by private sewer owners will also include time to assess the problem, research a suitable contractor, arrange the call out, and so forth. Taking these into account as well suggests that the time saved would be at least 1.5 hours, and could easily be more.

84. Currently private pumping station owners incur a cost to maintain pumping stations. Data obtained from a significant market participant estimated average annual maintenance costs of £2.2k per year, and that 25% of pumping stations will not be maintained at any one time. These are based on conservative estimates supplied in February 2010 from a pump installation and maintenance company dealing (mainly) with smaller installations with market share in the region of 13%. This analysis has assumed annual benefits from maintenance savings to the public of the number of pumping stations, estimated by Ofwat at around 22,000, multiplied by the proportion of pumping stations maintained and the cost of maintenance of approximately £37m p.a. Pumps not maintained will likely still incur costs to

call out contractors and shorter life-spans, as these costs are not included this estimate is likely to be conservative.

85. As explained at paragraphs 108-110, the range of costs presented is based on a range for the costs of pumping station upgrades and the proportion of network requiring upgrade. The cost of maintenance of £37m p.a. in paragraph 84 is the central estimate; the low NPV figure is based upon a cost of £56m p.a. and a cost of £15m p.a. is used for the high NPV figure. Paragraphs 110-112 provide additional detail on the cost ranges presented.

86. The average cost of replacing pumping stations has been estimated at £8,500 per pumping station from data provided by a major industry provider of pumping stations. The average of this cost and the estimated cost of £1,500 (Ofwat estimated cost for WaScs to replace pumping stations), has been used to ensure a conservative central private cost estimate for replacing private pumping stations. The average of both estimates is £5,000. The number of pumping stations and lifespan has been assumed in line with Ofwat estimates to ensure comparability of appraisal. As explained above, lower expected rates of maintenance would lead to shorter life-spans and therefore greater numbers of annual purchases, resulting in a current conservative estimate of benefits to the public through avoided replacement pumping station expenditure. Further environmental costs and the costs of flooding neighbouring areas stemming from lack of maintenance, have not been monetised at this stage.

87. GSS Payments are payments made by water companies to customers for a level of service failure and are not compensation for damage etc. Although this is a cost to water companies it is also a concomitant benefit to households who would not have received such a payment without this policy. The value of these payments has therefore been incorporated as a benefit to households in this analysis. They are also included in opex cost estimates for WaSCs (see paragraph 68), consequently they are treated as transfers. GSS payments reduce as efficiency gains are realised by water companies resulting in fewer and less damaging incidents, this is also reflected in declining GSS payments costs, incorporated within opex, paid by water companies over the long term.

Table 2 - Estimated <u>undiscounted</u> benefit of private sewer time and cost avoided, pumping station cost avoided and GSS payments received £m 2009/10 price base. (Similar discounted figures are shown in Table 3, below.)

	5 year totals				**First 20 years**	**Annual average benefit**		
	2011-12 – 2015-16	**2016-17 – 2020-21**	**2021-22 – 2025-26**	**2026-27 – 2030-31**	**2011-12 – 2030-31**	**Over first 10 years**	**Over first 20 years**	**Over 40 years**
Annual sewer repair cost avoided	755	774	793	813	**3135**	153	157	165
Annual time saving	46	47	49	51	**193**	9	10	10
Annual pump station cost avoided	89	221	221	221	**752**	31	38	42
GSS payments received	63	31	11	11	**116**	9	6	4
Annual benefit	952	1073	1075	1096	**4197**	203	210	**221** (As in Summary sheet)

88. The table shows that the benefits rise gradually over time throughout the period, because it is assumed that the private sewer network would continue to deteriorate and suffer a slightly increasing rate of blockages if it remained in private hands. Over 5 years benefits of transferring pumping stations increase until all pumping stations are transferred in line with Ofwat pumping station capex assumptions, then stabilise at the same level. The value to society of achieving permanently funded assets, through adequate annual provision for renewal and replacement, is not directly reflected in these monetary benefits.

Non-monetised benefits of transfer

89. The bulk of the benefits from the transfer may be non-monetised, and will accrue over a long period of time to the advantage of most or all in society. The interest of householders in maintaining their sewers and drains stems from the underlying need to maintain adequate sewerage arrangements for their properties. The uncertainties associated with the maintenance of assets over which they may have little ability to exercise control to prevent physical damage, and to maintain their operability in the event of any misuse or in the event of general deterioration, combined with the associated costs if problems arise, has been consistently voiced to Government. The ultimate concern of householders is that deterioration in the longer term may bring with it implications for personal and wider public health resulting from their inability to either afford or to organise proper maintenance. Although measures exist to deal with problems on private assets, through intervention by local authority Environmental Health Officers, in the longer term this is potentially at far greater cost to both individuals and society than would be the case were the assets to be the responsibility of sewerage undertakers in the first place. These considerable external social benefits are expected to outweigh the non-monetised costs and as such the non-monetised impacts combine to support the policy having a positive net benefit.

90. As discussed in Paragraph 64, it is expected that variation in the transition costs will have an impact on the benefits (avoided repair and maintenance costs for private sewer owners). If transition costs are higher than the best estimate (under the Low scenario on the summary sheets) this implies the private sewer network is larger than was anticipated, or in a worse condition. Consequently the benefits from transfer will also be greater. This impact on benefits has not been monetised but it effectively reduces the net benefit range around the best estimate.

91. The transfer resolves today's ill-defined property rights and so saves distress and cost by removing uncertainty over the extent of sewer ownership for property owners; the necessity for developers or property owners to establish maintenance arrangements for new development; uncertainty about whether drainage arrangements are fully covered by household insurance and any need to consider taking out specialist insurance; the burden of potentially large and unexpected costs for maintenance and repair; the difficulty of recovering costs for repairs from other owners of a shared pipe and any potential of pressure to agree to works; as well as problems of access to undertake repairs. Clarity about ownership, post-transfer, benefits anyone who *may* be a private sewer owner – which is a majority of householders as well as owners of many commercial/industrial properties.

92. The upgrading and ongoing maintenance will improve the quality and ensure the longevity of the assets in question. Well-maintained sewers have positive public health and environmental externalities or benefits, and sewers may be perceived as a "merit good". The obligations placed on WaSCs, and their ability to develop and fund long term strategic plans, will provide this benefit. The rise in standards and reduction in blockages may benefit all who use public sewers (since they can be impacted by private sewer failures), as well as benefiting public health and the environment e.g. fewer pumping station failures causing raw sewage to enter water courses, and fewer health and safety risks at sub-standard pumping stations.

93. Costs to protect from sewer degradation have been incorporated within this analysis. Currently it is unlikely that individuals would be able to manage this problem in a socially optimal way, resulting in greater overall costs than those identified by WaSCs.

94. The gradual move to more planned and less reactive maintenance, and the reduction in blockages, enables less road traffic to and from blockages, and less transport disruption from ad hoc interventions on roads and pavements. This in turn should generate lower emissions than otherwise, although there may be increased emissions in the short term associated with the one off upgrading programme.

95. The transfer offers the eventual benefit of long term integrated planning and strategic management of a combined, complete network of sewage pipes and laterals.

96. A benefit arises for those homeowners and commercial properties whose private sewers run across others' land, and who may be obliged (whether or not they know it) to fund the cost of moving the sewers, should the land owners require it. They will lose this obligation.

Distribution effects

97. The transfer will end the cross subsidisation of non-private sewer owners by private sewer owners. Given the high proportion of home owners who are private sewer and lateral owners (without knowing it), there is a perception (e.g. from customer market research, see previous IAs) that clarifying and standardising liabilities through this transfer will produce a fairer outcome.

Present Values of Transfer Option

98. The transfer and WaSC expenditure is expected to start in 2011-12. New asset lives typically range from 15-30 years for pump Mechanical & Electrical replacement capex (M&E), to 80 years for small bore pipes, to 200 years for replaced or upgraded civil engineering work at pumping stations. A 40 year time horizon has been chosen for PV calculations. Ofwat-derived cost figures are inflated to today's prices with RPI. All figures are discounted over 40 years, using an initial discount rate of 3.5%, dropping to 3% after 30 years (HM Treasury's recommended discount rates).

99. The cost to WaSCs over 40 years is £7.8bn undiscounted, of which £1.0bn is the one off capex that arises mainly in the first 5 years. The discounted PV of costs totals £4.4bn in 2009/10 prices, of which £0.8bn is the PV of the capex. A long time frame is appropriate for the investments being made, it captures all the efficiencies assumed, and allows for the annual costs to influence the figures, despite the front loading of the one off investment.

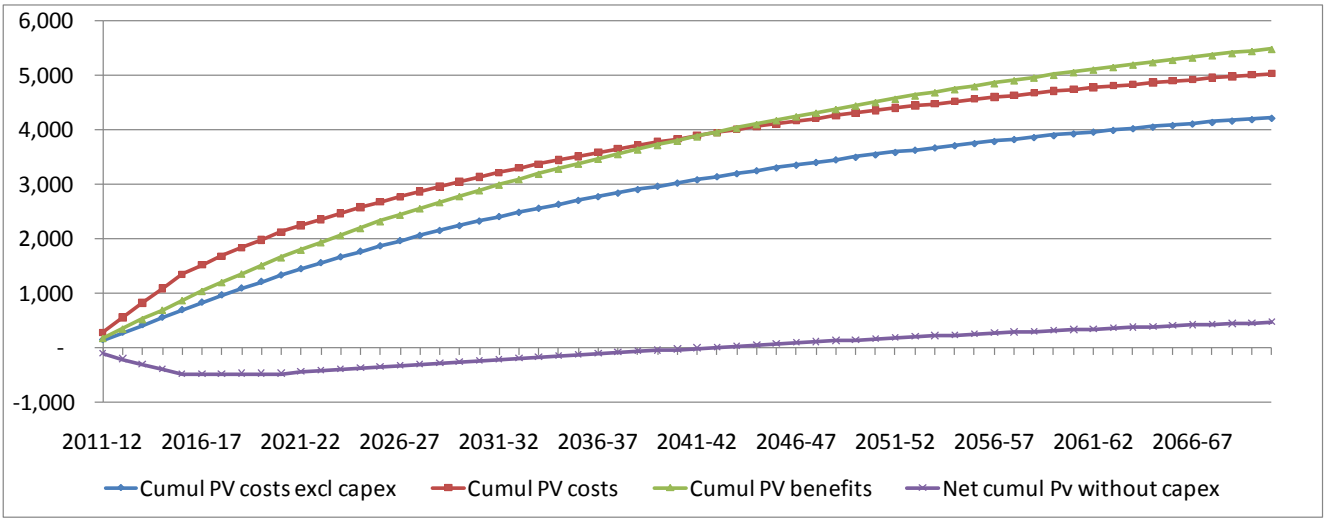
100. The benefit figures that can be monetised total £8.8bn over 40 years when not discounted. This reflects a slowly rising annual cost avoided, reflecting a rising rate of blockages on an untransferred private network. When discounted over 40 years, the PV of the avoided cost and time is £4.5bn in 2009/10 prices. This is certainly an underestimate, as it only represents the portion of the benefits which it has been possible to monetise, and not the considerable external social benefits that will arise.

101. It has not been possible to monetise all the costs and benefits, so no complete NPV figure is available. The estimate available that includes repair and time benefits only is £161m.

*Table 3 - Estimated **PV** costs and monetised benefits, £m 2009/10 price base* (based on Tables 1 and 2 above).

	5 year totals						
	2011-12 – 2015-16	**2016-17 – 2020-21**	**2021-22 – 2025-26**	**2026-27 – 2030-31**	**PV first 10 years**	**PV first 20 years**	**PV 40 years**
One off capex upgrades	656	137	12	0	793	805	805
Recurring annual cost (IRE, MNI, M&E plus opex)	690	641	538	457	1331	2326	3,548
All costs	1,346	778	550	457	1346	3131	**4,353**
All benefits	867	788	665	571	867	2891	**4,514**
NPV					-479	-240	**161** (As in Summary sheet)

*Chart 1 **Cumulative PV** of costs and monetised benefits over 60 years, discounted to 2009/10 price base, £m*



102. The table and chart above show that the PV of benefits slightly outweighs the PV of *annual* costs from the start, and this net advantage of transfer rises over time as benefits rise gradually. However, this annual advantage of transfer is small, and the capex arises entirely upfront, so it takes a very long time (32 years) for this annual advantage to offset the capex and produce a positive NPV.

Phased capex option 1(i) – 5 year period for all

103. This analysis assumes that capex on private sewer upgrades is undertaken over a shorter time horizon of 5 years, compared to the preferred option, resulting in larger upfront capex costs on private sewer upgrades, resulting in increased overall Present Value Costs (PVC) due to discounting effects. Quicker upgrade of private sewers reduces some opex costs such as GSS payments and sewer flooding costs due to higher quality sewers being in place

sooner. Overall PVC increases to £4,234m. Pumping stations are upgraded over the first 5 years.

104. Present Value Benefits (PVB) are also reduced as GSS payments decline slightly quicker, as private sewers are built sooner, falling to £4,321m. The central estimate of Net Benefits is assumed to fall to £87m over 40 years (note that the 2010 IA used a PV base year of 2008/09).

Phased capex option 1(ii) – 10 year period for all

105. This analysis assumes that transfer of pumping stations occurs after year 10, and therefore capex on pumping station upgrades are undertaken over a longer time horizon of 10 years against the preferred option. This results in lower immediate capex costs on pumping stations, resulting in lower overall PVC due to discounting effects. Private sewers transfer are upgraded over the same period as preferred option. Overall this results in a decrease in PVC to £4,114m.

106. Benefits to the public are also reduced as the handover of maintenance and replacement expenditure is slower. PVB falls to £4,259m. The central estimate of net benefits falls to £145m over 40 years (note that the 2010 IA used a PV base year of 2008/09).

Conclusions

107. The analysis shows that the choice of option does not have a significant bearing on return of investment over a 40 year period. The final choice of preferred option is therefore motivated by other implementation issues that although involving costs and benefits would not be picked up within the current analysis.

108. Upper and Lower Bound cost analysis was provided by Ofwat, selecting the 2 most sensitive values: cost of pumping station upgrading and the proportion of sewerage network requiring upgrading.

109. Upper Bound (low estimate): 50% increase in proportion of sewerage network requiring updating. 20% increase in costs of pumping stations (the highest cost of upgrading pumping station) assumed to be realistic by Ofwat. Results in an increase in capex from £957m to £1,267m. This leads to an increase in Present Value Costs to £4,590m over 40 years. The monetised benefits would be assumed to remain the same at £4,514m over 40 years. This results in a net benefit of -£76m over this time horizon. A more consistent way to compare this result is that this option would become cost beneficial after the 46th year. When compared to previous analysis using a 60 year time horizon this would result in a net benefit of £190m.

110. Lower Bound (high estimate): 60% decrease in proportion of sewerage network requiring updating assuming 1% of network requires replacement in line with some WaSC estimates. 52% decrease in costs of pumping stations based on lowest WaSC estimate of pumping station upgrade cost. Results in decrease in capex from £957m to £428m. This results in a decrease in Present Value Costs to £3,891m. Monetised Present Value Benefits remain the same. This results in a net benefit of £623m over 40 years. A more consistent way to compare this result is that this option would become cost beneficial after the 10th year. When compared to previous analysis using a 60 year time horizon this results in a net benefit of £863m.

Bill impacts of Transfer Option

111. Only the financial costs for WaSCs will be reflected in customer bills. Uncertainty surrounding the extent and condition of existing assets makes it impossible for Ofwat to estimate impacts

on bills with certainty or known margins of error[2]. Calculations indicate an average rise of £5 per bill from 2011 rising to £8 per year on all sewerage bills as all assets are upgraded by 2019-20, or from £3 to £14 per bill p.a. across different WaSCs. As above, the bill effects are highly uncertain, as the quantities, and particularly the conditions and remedial costs for each water company area are unknown. The majority of the cost WaSCs will bear, and the majority of the bill impact, represent a transfer of cost from private sewer owners (including Local Authorities) to all WaSC customers.

112. In common with household customers, businesses are liable for repairs and maintenance of unadopted private sewers, and so in many cases will enjoy the same benefit deriving from transfer. However where there are several businesses on one site owned by a single landlord, these are likely to be considered a single site, and the sewers within the curtilage of that site will not be transferred. The impact on bills for business customers is expected to be proportionate to that of households and the figures above include business customers, although large business users of water from the public water supply will have bill increases considerably greater than the average figures quoted above (sewerage bills are proportional to water usage). It is worth noting that businesses which have need of large quantities of water for industrial purposes often do not use the public water supply or sewerage system and so in this respect will be unaffected. Both Ofwat and the companies themselves have a duty to ensure that there is no undue discrimination in the setting of charges.

Risks

113. Uncertainty over the extent and condition of existing private sewers means that WaSCs cannot provide Ofwat with full and accurate data from which to calculate levels of funding in future price determinations. Recent UKWIR estimates indicate that it would cost around £1bn to map and survey private sewers. It is not proposed that this proactive, mapping and surveying is undertaken, as the cost is considered by all stakeholders to be wholly disproportionate to any conceivable benefits that might accrue. Ofwat's current estimates of transfer's financial costs to WaSCs – costs passed on to the generality of customers via increases to sewerage bills – are based on best available assumptions but remain indicative.

114. We have taken advice on the risk of legal challenge to the proposed scheme, especially on certain issues concerning the compatibility of our policy with Article 1 of Protocol 1 of the European Convention on Human Rights (the protection of property rights). The advice is that a properly made and administered adoption scheme is unlikely to contravene human rights. In particular, sufficient mechanisms exist in the Water Industry Act 1991 to accommodate a landowner's current right to have a sewer removed or moved where he has granted an easement, such that a divesting of the right would not contravene human rights. Those mechanisms include a provision for the award of compensation. In any event, any interference with property rights may be objectively justified in the circumstances.

115. If a regime for the mandatory adoption of new sewers is not in place before transfer takes place, then new private sewers may continue to be built after transfer and a new stock grow to replicate existing problems. The Government intends to have a regime in place when transfer takes place and provisions were taken in the Flood and Water Management Act 2010 to introduce one. If, for any reason, these provisions cannot be commenced prior to transfer, then it will be possible to create subsequent transfer schemes in the future, to pick up any private sewers built after the original transfer (i.e. that takes place in October 2011). The legislation required to do so is already in place (Section 105A of the Water Industry Act 1991).

[2] Bill effects have been calculated using the Aquarius 3 financial model, version 6 (WIFL), with offline calculations for the latest September 2008 information on the km transferring and expected costs. Aquarius 3 includes a cost of capex for WaSCs and for each WaSC it applies the assumptions for asset life apportionments as used in PR04 final determinations.

Possible unintended consequences

116. Once the transfer date is announced, some property developers might be dis-incentivised from constructing new sewers and laterals to (current) adoptable standards, in the knowledge that these assets will be transferred to WaSCs in the future. However, if an agreed mandatory design and construction standard is established as soon as possible, before transfer takes place, this potential problem can be mitigated.

117. Announcing the transfer start date may cause those private sewer owners whose assets are in need of repair to delay or defer repairs. This could cause environmental and amenity problems. However, local authorities do have the power to intervene until such time as transfer takes effect.

118. Land owners, over whose land a relevant easement has been granted for the installation of private sewers, may hold the right to require the owners of the properties served by the private sewer to pay for the sewer to be moved. This right will be lost once the sewer transfers. WaSCs have discretionary powers to charge a land owner for diverting a sewer. We have been unable to find any examples of land owners exercising their right and cannot quantify the cost or "benefit" lost, but such landowners might emerge and seek compensation for their lost right when the transfer is announced. The appeal mechanism under the Water Industry Act 1991 will allow for this and it is possible that some landowners may make spurious claims for compensation which will fall to Ofwat to determine. In the absence of any useful data or assumptions we have not monetised potential costs.

Direct impact on business

119. The direct impact on business, including the equivalent annual net cost to business (EANCB) has been recalculated to enable inclusion of the direct *benefits* to business – benefits that were not included previously. The text detailing the original calculation, from the March 2011 version of this Impact Assessment, is included in Annex 5. The revised approach presented here includes two new elements: i) the value of the assets acquired by the WaSCs at time of transfer, and ii), the direct benefits to wider business from no longer being responsible for former private sewers. The former has been derived following guidance from a sub-group of the Cross-Whitehall Group on the Economics of Regulation, which met during February 2012, along with advice from OfWAT. The latter has been developed with the assistance of WaterUK and the water companies, and has been considered by an independent industry expert, who considers it sound.

WaSC impacts

120. The proposed transfer of ownership means that liabilities and associated costs are transferred from commercial property owners and householders to WaSCs. All monetised costs (totalling £4353m) are borne by business (the nine WaSCs) and are direct, so count towards the OIOO calculation. However, at the point of transfer, the WaSCs automatically 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 sewers 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 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 arise as costs are incurred and are categorised as follows:

i) **Return on capital**. The proportion of Capex likely to be allowable (as efficiently-incurred) is transferred to the collective Regulatory Capital Value (RCV) of the WaSCs. As the cost estimates in this IA already account for efficiencies arising from WaSCs taking on private sewers, this proportion is taken as 100% for the central case, meaning that across all WaSCs, the collective RCV grows by £957m after 20 years, remaining constant at this level thereafter (see paragraph 66 and Table 1). A regulated return on the capital added to the RCV is then estimated. The rate of return is assumed as 5% as a future long-term average, but consistent with the last two price reviews. The absolute annual value of the return grows as capital is added, reaching £48m after 20 years (again, this then remains constant). A sensitivity test of a 95% (rather than 100%) addition to RCV is also applied, where the long-term annual return settles at £45m – demonstrating that the return is not very sensitive to small changes in the RCV addition rate (see paragraph 130 below).

ii) **Infrastructure Renewal Charge**. As is generally the case for sewers, it is assumed that all transferred assets are classed as "infrastructure assets", which for regulatory purposes are not depreciated. Rather, an "infrastructure renewal charge" is allowed to be incurred (and billed to customers) by the WaSCs to maintain the assets at their assumed RCV value. This is taken as the annual IRE, MNI plus renewals costs estimated to arise from the transfer (see paragraph 67 and Table 1) and stabilises at around £124m per annum.

iii) **Opex revenue**: Operational (maintenance) expenditure associated with the transferred assets is taken as allowed to be charged to customers. This stabilises at an estimated £48m after year 10 (see paragraph 68 and Table 1).

d) The asset value to WaSCs (as a group) is then estimated as the Present Value (discounted) total of the above three elements. The discount rate used is the "Green Book" social rate of 3.5% (declining to 3% after 30 years), and the period over which the total is estimated is 40 years, consistent with the other analysis in this IA. In practice, however, even if the assets are no longer maintained or renewed beyond this point, they would still feature in the RCV, albeit at a declining value as they deteriorate. As such, the financial asset value calculated over the 40-year period (£4412m) may be an underestimate. Note however that it exceeds the direct costs (£4353m), which reflects the fact the WaSCS will make a return on capital (i.e. a profit) from owning the assets.

Impacts on other businesses

121. Pre-transfer, private sewer owners incur costs associated with their liability for the sewers they own. Transfer to WaSCs removes this liability and private sewer owners directly benefit from avoided costs of maintenance and repair. Since some private sewer owners are businesses, a portion of this direct benefit can count towards the OIOO calculation.

122. Total direct benefits are estimated to be £4407m. Benefits are composed of four elements (see Table 2): avoided sewer repair costs, time savings (from having to deal with sewer blockages), avoided pump station maintenance costs, and receipt of GSS payments. All of these accrue to owners of private sewers. The first three are considered direct benefits since they are a direct effect of the transfer. GSS payments are paid to customers by WaSCs following service failure and are not considered a direct impact. Based on this, total direct benefits are £4407m (£4514 total benefits - £107m GSS benefits).

123. 5.4% of the £4407m direct benefits are estimated to accrue to business, equal to £238m. Data from all water companies and submitted to Ofwat[3] provides a split of billed customers into households and non-households. In 2010/11, there were a total of 21.73m households and 1.25m non-households receiving sewerage bills. Non-households therefore accounted for 5.4% of billed customers. This percentage is used as a proxy for the share of private sewer owners that are businesses, and is used to calculate the share of direct benefits

[3] Links to WaSCs submissions available at http://www.ofwat.gov.uk/regulating/junereturn/jrlatestdata/

accruing to them. Three assumptions are implicit in this approach, and are addressed in turn below.

124. First, that 'non-household customers' are broadly equivalent to 'business owners of private sewers', implying that it is reasonable to say 5.4% of private sewer owners are businesses.

    a. Public buildings are likely to be classed as non-households, but don't count as businesses for the purpose of OIOO. This implies 5.4% could overstate the number of business owners of private sewers.

    b. There will be cases where occupiers of flats are billed separately but the freeholder of the land will be the private sewer owner. This would suggest that 5.4% could understate the number of business owners of private sewers (more household customers than household sewer owners, and owners of private sewers servicing flats would count as business).

125. The overall balance of these two effects is not known. CLG housing statistics revealed that flats represented 18% of the housing stock in England in 2008. No comparable figures for the proportion of buildings that are in the public sector were available. Labour market statistics from the ONS did reveal that 21% of employment is in the public sector. This could be used as a proxy for the public sector share of non-household customers of WaSCs. Adjusting the split using these two statistics results in an estimate that 5.2% of customers are businesses. While residents of flats have been removed from this, the freeholders that might own any private sewers linked to blocks of flats have not been included. The proximity of this crude attempt to adjust for the public sector and blocks of flats to the original figure of 5.4% suggests that the two effects might approximately balance out. This provides some confidence in the assumption that 'non-household customers' are broadly equivalent to 'business owners of private sewers'. The assumption that the effects in (a) and (b) broadly balance is considered the best assumption given the available evidence. To improve the evidence would require a thorough survey of all WaSC customers and the nature of their sewerage connections, which would be prohibitively expensive. 5.4% is therefore assumed to be the proportion of private sewer owners that are businesses[4].

126. Second, the costs incurred by private sewer owners pre-transfer are equal on average for business and non-business owners. This implies that it is reasonable to assign 5.4% of the benefits accruing to private sewer owners to the 5.4% of owners that are businesses. Discussion with an independent industry expert concluded that this is an appropriate and prudent assumption. It was noted that the effect for small businesses will be very similar as for households and that larger businesses may have a slightly more complicated situation (most likely less sewers/drains being transferred but with greater potential liabilities attached to them). There is uncertainty over the exact impacts but on balance the assumption was accepted as the most appropriate.

127. Finally, the split for post-1937 buildings only (ie those affected by transfer) does not differ significantly from 5.4% (which covers all customers and thus all buildings). CLG data on the housing stock profile revealed that 65% of housing is post-1937[5] and so stands to be affected by private sewer transfer, but no comparable information on business premises was found.

128. Use of the water company data for this purpose was discussed with Water UK and no concerns about the appropriateness of the figures for splitting the benefits were raised. The data supplied by WaSCs is therefore considered the best available information to inform the split of benefits. Whilst there are uncertainties, as discussed above, reducing these by improving the evidence would involve considerable expense. Additionally, the approach and assumptions underlying it have been considered by an independent industry expert and judged to be sound.

[4] It should be noted that even if 5.2% were assumed (or even 5%), the resulting equivalent annual benefit to business would still be £186m.

[5] CLG English Household Condition Survey

Overall Equivalent Annual Net Cost to Business (EANCB) estimate

129. The EANCB calculator published by the Better Regulation Executive has been used to calculate the overall annual net cost to business, as shown below. Overall, the transfer is expected to result in a negative EANCB – i.e. a net benefit to business. However, because this is achieved through regulation, the transfer remains classified as an "IN" for "One In, One Out" purposes – albeit a "Zero Cost In".

Item	Present Value Cost to Business £m (see text)	Equivalent Annual Net Cost to Business £m (from BRE calculator)
Direct costs (WaSCs)	4,353	196.4
Direct benefits: asset value (WaSCs)	- 4,412	- 199.0
Direct benefits: savings (wider business)	- 238	- 10.7
Total	- 297	**- 13.4**

Sensitivity tests

130. An assumption that only 95% of WaSC capex could be credited to RCV was also tested. This led to a PV asset value of £4,368 and an overall total EANCB of -£11.5m. Other key areas subject to uncertainty are the regulated capital return (central estimate 5%), and the time period beyond 40 years for which ex-private sewers could be expected to generate a capital return. A 1% lower regulated return would reduce overall EANCB to -£5.6m. Any extension to the time period for capital returns would reduce the cost to business (i.e. make the EANCB figure even more negative); this has not been estimated.

Implementation, Monitoring and Enforcement

131. Water is a devolved responsibility and though this IA contains data covering England and Wales. Separate decisions on implementation may be taken by the Welsh Assembly Government. The Water Act 2003 contains provisions to make transfer a statutory duty for WaSCs by way of an Affirmative Resolution Statutory Instrument (SI). The Government intends that the regulations will come into force in July 2011, with transfer taking place on 1 October 2011.

132. These regulations will require WaSCs to publish a notification of their intention to adopt (all relevant sewers and laterals in their area) under section 102 of the Water Industry Act 1991. Under the legislation, owners or affected third parties who want to appeal against adoption must do so within two months and Ofwat will determine the appeals.

133. WaSCs will be obliged to make a declaration of adoption in their area under s102 of the Act by October 2011. The proposed light-touch approach in the regulations is that WaSCs should be able to make a blanket declaration for their area.

134. The regulations will impose no administrative burdens on independent drainage contractors in the terms of this IA. None are anticipated for WaSCs either but we will continue to keep this under review with Ofwat, who after transfer may require WaSCs to provide additional information as part of the WaSCs usual annual reporting cycle to Ofwat (known as June

returns, see paragraph122). All indications to date from Ofwat have been that any admin burdens, if any, will be minimal.

135. Given the time needed for the Affirmative Resolution process to be completed and the desire to give small businesses in particular, sufficient lead in time, we propose that the implementation date is 1 October 2011 for sewers and laterals and 1 October 2016 for pumping stations. A communication strategy is being completed, involving key stakeholders such as BIS, Water UK and CCWater (the statutory representative body for WaSC customers).

Monitoring

136. WaSCs operate under appointments, granted by the Secretary of State for Environment, Food and Rural Affairs and by the Welsh Ministers, to provide water and sewerage services in England and Wales.

137. Ofwat is the independent, statutory economic regulator of water and sewerage services (i.e. WaSCs) in England and Wales. Monitoring will be part of Ofwat's independent regulatory duties.

138. The costs associated with the transfer and subsequent management of private sewers and laterals by WaSCs will be recovered via their customers' bills, appearing as increases to the annual sewerage bill and will be subject to scrutiny by Ofwat. Ofwat has sole responsibility for setting price limits (which determine bill levels) as a condition of WaSCs' appointments and Ofwat designs and leads a periodic review of price limits (currently every five years).

139. Ofwat also has a primary duty to further the consumer objective by having regard for and protecting the interests of customers. The periodic review process and the information it provides enable Ofwat to establish with sufficient certainty what the functions of companies will be in the five years under review, what the costs of efficiently carrying out those functions will be, and what will be in the interests of customers.

140. Ofwat also monitors the activities of companies on an ongoing basis. Every year it asks the companies to provide information about the previous year (ending 31 March) in the June Return. These reports provide details on a wide variety of activities including levels of customer service, new additions to the network, and leakage information, and allow the regulator to compare performance levels between companies.

141. Ofwat requires each WaSC (and water only company) in England and Wales to appoint an independent professional, known as the Reporter, to examine, test, and give his opinion on this information. Reporters work closely with their companies during the development of their regulatory information submissions.

142. Any additional assets transferred to WaSCs will be monitored in the same way as the rest of the public network, but data may be collated and reported to Ofwat separately to reconcile funding with output measures and levels of service delivered.

143. Ofwat checks that companies are meeting the outputs assumed in the price limits that have been set. Ongoing monitoring allows it to take early action if needed.

Enforcement

144. The enforcement authorities for legislation governing the water industry are the Secretary of State for Environment, Food and Rural Affairs, the Welsh Ministers and Ofwat. Different parts of legislation are enforced by different authorities, but most enforcement is delegated to Ofwat. The Secretary of State for Environment, Food and Rural Affairs or the Welsh Ministers are empowered to make regulations providing for them to make schemes for the adoption of private sewers.[6] Those regulations may require WaSCs to submit draft schemes to the Secretary of State or the Welsh Ministers for their approval. The details of how WaSCs are required to adopt existing and new private sewers will be included in the

[6] The Water Act 2003 amended the Water Industry Act 1991 to include this enabling power under section 105A(1).

regulations, which will be enforceable by the Secretary of State or the Welsh Ministers under section 18 of the Water Industry Act (1991).

145. If the Secretary of State or the Welsh Ministers are satisfied that a company has contravened, or is likely to contravene, any of its duties under section 105A of the Water Industry Act 1991, they have a duty to make an enforcement order under section 18 of that Act requiring the company to put matters right.

146. Compliance and further enforcement duties will fall within Ofwat's existing role. As the independent economic regulator of the water industry, Ofwat's responsibilities include the enforcement of conditions imposed on the companies by their licence agreements, issuing Enforcement Orders on companies in breach of those terms, and monitoring their activities and performance on an ongoing basis. Ofwat enforce WaSC duties under s94 of the Water Industry Act 1991 to provide and maintain sewerage systems. Post-transfer these regulatory duties will apply to a larger sewerage network, estimated to increase by 70% and Ofwat may choose to monitor transferred assets separately from those already owned by WaSCs at the time of transfer.

147. Compliance with the transfer regulations is expected to be 100%.

Sanctions

148. Transfer will mean that WaSCs' performance in relation to all newly acquired assets will be subject to the regime of sanctions currently at the disposal of the enforcement authorities (the Secretary of State for Environment, Food and Rural Affairs, the Welsh Ministers and Ofwat). Since April 2005 each enforcement authority has been able to impose financial penalties of up to 10 per cent of turnover where a company contravenes its licence or appointment conditions, or fails to meet required standards in performing its duties.

Compensatory Simplification

149. Implementation will simplify a confused regime of responsibility, providing much greater clarity for homeowners, WaSCs and the independent drainage sector. It has not been possible to monetise this benefit.

Sunset Clause

The regulations that implement the transfer of private sewers will affect the transfer by requiring water and sewerage companies to use their existing powers under the Water Industry Act 1991 to declare sewerage assets to be vested in them as "public" sewerage assets. They will be required to make declarations in respect of private sewers, laterals and associated pumping stations which are connected to the public sewerage system on a date specified in the regulations. This exercise is a single operation such that, once over the transitional period specified in the regulations they will have no ongoing effect. No sunset clause is therefore proposed for these regulations.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added where the Specific Impact Tests yield information relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. If the policy is subject to a sunset clause, the review should be carried out sufficiently early that any renewal or amendment to legislation can be enacted before the expiry date. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

Basis of the review: [The basis of the review could be statutory (forming part of the legislation), i.e. a sunset clause or a duty to review , or there could be a political commitment to review (PIR)]; Political Commitment to Review
Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?] Proportionate check, using established performance standards for the operability of the public sewerage system, to determine whether the assets transferred are being maintained to the level of operation that satisfies the statutory duty on WaSCs to provide and maintain an effectual sewerage system, together with improved customer experience of resolving drainage problems.
Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach] Costs will be reviewed by Ofwat at each 5 year price review. Customer experience will be reviewed by Defra and the Welsh Assembly Government after three years and thereafter, alongside Ofwat price reviews, through customer research and steering group participation to evaluate expected removal of householder burdens.
Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured] Customer experience, established through surveys and stakeholder steering group participation, together with analysis of Ofwat performance reporting standards currently applying to the public sewerage system.
Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives] WaSCs operating transferred assets to Ofwat performance standards in respect of the condition and operation of the public sewerage system at a cost within the estimated ranges.
Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection systematic collection of monitoring information for future policy review] Ofwat already monitors the performance of WaSCs against a range of indicators in respect of the maintenance of the public sewerage system. On-going collection of performance data will allow the success of the policy to be measured and steps to be introduced, if necessary, to improve its operation.
Reasons for not planning a review: [If there is no plan to do a PIR please provide reasons here] n/a

Annex 2 – Competition Assessment

1. A Competition Assessment was published with the November 2008 IA (see summary page for web-link). Following the August 2010 consultation our conclusion remains essentially the same:

Conclusion

2. A transfer of private sewer ownership is likely to change the current market structure in the drain repair industry insofar as the customers for drain repair services will cease to be private sewer owners and will become WaSCs. Possible impacts on competition in the drain repair industry include:

- Whilst approximately 50 per cent of the sewerage and drainage network currently in private ownership and which connects to the public system will be transferred to WaSCs under an automatic overnight transfer, drains within the curtilage of premises, totalling some 179,500km, together with pipe work excluded from transfer (including surface water sewers draining direct to watercourses) and those subject to successful appeal will remain in private ownership. In addition, transfer does not apply to entirely self-contained foul drainage systems not connected to the public sewer of which there are some 15,700km;

- The amount of work available to drain repair companies directly from the householder is likely to decrease but be counterbalanced by an increase, directly or indirectly, in contracts from WaSCs;

- WaSCs have already invited drain repair contractors to tender for contracts for the extra work to maintain assets that will be transferred to them;

- Competition for contract work from WaSCs could increase, which could improve standards of training and workmanship and proposals for accreditation and for training courses are under development – procurement policy offering householders more certainty of the standard of work undertaken than the lottery of the Yellow Pages;

- Some smaller businesses may be less able to meet the required standards for tender and therefore unable to compete and could cease trading or merge with other businesses;

- No reduction in the level of employment within the market is anticipated in the short to medium term, though, over time, in total, we estimate that there will be upwards of 500,000 fewer blockages and call outs as the network quality improves.

- The need for WaSCs to tackle a backlog of maintenance/repair will potentially increase business opportunity for drain repair companies in the short term.

3. In April 2009, Professor Martin Cave completed a review of competition and innovation in water markets [The Cave Review, web site: http://www.defra.gov.uk/environment/quality/water/industry/cavereview/index.htm]. The Government accepted Cave's recommendations for England and then undertook a three-month, public consultation process that closed in December 2009. The Cave Review did not focus specifically on the transfer of private sewers. Nevertheless, the Cave Review did

recommend, among other things, extending a reformed framework for competition to include sewerage services that are provided to non-household customers. The Water White Paper to be published in June next year will consider the Cave Review's recommendations and put forward proposals on the best way to increase choice and deliver benefits for customers.

Annex 3 - Small Firms Impact Test

1. A detailed Small Firms Impact Test (SFIT) was published as an annex to the November 2008 IA (see summary page for web-link) and was completed with the assistance of the Enterprise Directorate (now at the Department for Business, Innovation and Skills) who confirmed that they were satisfied the concerns of the small business sector had been taken into account.

2. Our conclusions remain the same: it is expected that the amount of work in maintaining and repairing currently private drainage will remain roughly constant. It will decline in the longer term, and there may inevitably be a change in the market focus in the short term for some private drainage contractors operating in this sector, including the need for WaSCs to address the backlog of repairs and who may wish to enter into arrangements with WaSCs or their sub-contractors. As we previously reported, the small firms most likely to be affected by a transfer of private sewers and laterals are those in the drain repair and maintenance sector. These small businesses tend to be 'small bore specialists' operating cleaning, surveying and repair services primarily within and around the curtilage of a property. The drains within the curtilage will remain the responsibility of the householder when ownership of private sewers and lateral drains is transferred to WaSCs, leaving this section of the market unaffected, albeit we understand the concerns expressed by small firms about this (see paragraphs 5-10 of annex G of the Nov 08 IA).

3. In our detailed November 2008 SFIT we noted that in 2007 the insurance industry Drainage Forum estimated the value of the drainage repair industry to be at least £272 million per annum, with the market being shared between an estimated 1,600-2,000 firms operating throughout England and Wales. We have recently been made aware of research carried out by a commercial organisation which indicated that there be as many as 8,500 small drainage contracting businesses, 7,500 having less than 5 employees.

4. We still consider that the sector is fragmented, with inconsistent working practices and, historically, with no single effective representative trade body and that many small firms see transfer as more of a threat than opportunity and that micro businesses in particular may not have the opportunity or ability to develop and expand or diversify their operation.

5. Since our November 2008 SFIT we have listened to the concerns of a new group of drainage contractors, the National Association of Drainage Contractors which, we believe, was formed around July 2009 and voiced concerns of some independent contractors. We consider that they corroborate our view that some small businesses are concerned about transfer.

6. They have suggested that Government and Water companies have ignored the sector. Since the first consultation in 2003 and the Government's 2004 response paper, considerable effort has been put into seeking and taking into account the views of drainage contractors. As far back as January 2005 Defra led a seminar 'Review of Existing Private Sewers: What Next?' which included an 'Impact on Small Business' workshop, introduced by the Small Business Service. This workshop sought views from delegates from the drain repair industry about how they anticipated a transfer of ownership might affect small businesses, and whether any impacts could be mitigated.

The outcome was that the majority of delegates thought that transfer would be perceived by small businesses as more of a threat than an opportunity, which we noted. A telephone survey was subsequently undertaken with guidance from the Small Business Service to seek the views of small drainage contractors. 145 calls were made to 'drain and sewer repair' and 'pipework' contractors across England and Wales. Only 23 of those contacted agreed to answer questions and share further comments. Establishing robust lines of communication with the small drainage contractor industry has been difficult throughout the review because of the sector's fragmented nature and the fact that no national body existed that specifically represented the interests of smaller drainage companies. The recently established National Association of Drainage Contractors has however designed a protocol for an operating relationship for the allocation of business between WaSCs and independent drainage contractors which is under discussion, which we welcome.

7. We are also aware that several water companies have run seminars in their areas. Water UK has a section on its website too.
http://www.water.org.uk/home/policy/positions/private-sewers

8. We noted in our previous SFIT that some responses highlighted job losses as a consequence whereas others believed that the same amount of work will need to be carried out post-transfer and that the remaining domestic drainage work may be sufficient to support small contractors, i.e. it represents a shift in the way the work is done but the overall quantity will remain very similar and may, indeed, increase in the short to medium term. While this may be true for CCTV work for instance, we must acknowledge that over time, in total, we estimate that there will be upwards of 500,000 fewer blockages and call outs as the network quality improves.

9. However it is interesting to note the situation in Scotland, which we did not report in the November 2008 SFIT. When the Sewerage (Scotland) Act 1968 was introduced, it vested all sewers in the sewerage authority - now Scottish Water.

10. The definition of a drain in Scotland is limited to within the curtilage and the definition of sewer contains "does not include a drain…but includes all sewers, pipes or drains used for the drainage of buildings and yards appurtenant to buildings", this suggests that once a drain leaves the curtilage of a property, it becomes a sewer and is therefore vested in the sewerage authority unless an agreement not to has been authorised.

11. In effect this means that the current situation in Scotland replicates what will happen in England and Wales after transfer. A sample of cities suggests that the market in Scotland is comparable to the current pre-transfer market in England:

DRAINAGE INDUSTRY IN SCOTLAND – COMPARATIVE SEARCH MADE ON YELL.COM (JANUARY 2010)

	Population (2001)	**No. of contractors**
Edinburgh	452,000	21
Glasgow	577,000	43
Aberdeen	197,000	12
Liverpool	469,000	24
Bristol (urban area)	551,000	40
Norwich	195,000	30

Note: Population figures taken from ONS census.

Steps to help small businesses

1. An issue of concern to small businesses operating in this sector should they choose to offer themselves as contractors or sub-contractors is whether they will need training or accreditation in order to meet the requirements of WaSCs in order to operate in partnership with them or their sub-contractors. We understand that in considering pre-qualification for tenders, WaSCs are likely to expect companies to be able to show that their staff have been adequately trained but will not necessarily expect them to have attained specific qualifications.

2. Energy and Utility Skills – under licence to the Dept. for Education and Skills – has worked with the sewerage industry to identify National Occupational Standards in a Sewerage Maintenance Standards project, and currently offers National Vocational Qualifications covering sewer maintenance. WaSCs support the project and small businesses who obtain the qualification are likely to make themselves more attractive as sub-contractors.

3. A drainage operatives registration scheme is under development by Energy and Utility Skills and this provides a means to demonstrate competency through training and experience. This will provide a framework and registration scheme which will give confidence to asset owners and domestic customers alike, that the work will be carried out safely and competently.

4. Transfer will also create new opportunities and open new markets for other small businesses involved in training, health and safety audit, scheduling and account management.

5. Transfer will be brought into force with sufficient lead-in time and implementation will be to a common commencement date.

6. No licences or other stringent new measures or processes for small businesses are being introduced with transfer. There will be no added administrative regulatory burden that small businesses will need to comply with.

7. Transfer will bring clarity on what is and is not a householder's responsibility for drainage. The market will be clearly defined.

Annex 4 - note on Specific Impact Tests

1. The recommendations have no implications for Race, Gender or Disability Equality that we have been able to find.
2. A competition assessment is included at annex 2.
3. A small firms impact test is included at annex 3.
4. We do not anticipate any changes in the overall level of greenhouse gas emissions. Though it is possible they may slightly increase in the short period of capital programme expenditure they are expected to decrease over time as fewer blockages are attended to.
5. We do not anticipate any wider environmental impacts.

6. The recommendations do not have direct health impacts but will contribute to better management of the wider sewerage system in the longer term which is expected to reduce potential instances of pollution.
7. Human Rights are unlikely to be affected.
8. There are no legal aid implications that we are aware of.
9. The recommendations apply wherever there is a connection to the public sewer. Those not connected to the public system do not pay an annual sewerage bill to a WaSC. Therefore the recommendations will not have a different impact in rural areas.
10. The recommendations comply with Sustainable Development Principles.

Annex 5 – Original section on direct impact on business

(as per IA submitted to RPC in March 2011)

The proposed transfer of ownership means that liabilities and associated costs are transferred from commercial property owners and householders to WaSCs. These costs, which will be accompanied by an increase in the businesses' turnover, will be passed on to householders and business customers, automatically and in full, through increases in sewerage bills which OFWAT estimates at an average £5.00 pa from 2011 rising to £8.00 pa by 2019. The OIOO methodology does not treat this pass-through as a direct impact. So whilst the net impact on business is considered neutral, there is a net cost to business when only direct impacts on business are considered: costs to business are direct but benefits are indirect.

To calculate the EANCB a discount rate of 3.5% has been used, with a policy appraisal period of 40 years, and 2009/10 used as the PV and price base year. All monetised costs are borne by business (the nine Water And Sewerage Companies (WaSCs)) as direct costs. The net direct cost to business is therefore £203m:

- Total cost (PV): £4,325m (lower than the £4353m on summary sheets owing to constant discount rate of 3.5% applied here rather than declining schedule after 30 years).
- Total benefit (PV): £0m
- Net cost to business (PV): £4,325m
- Equivalent annual cost: £203m
- Equivalent annual benefit: £0m
- **Equivalent annual net direct cost to business: £203m**

These figures are consistent with the 40 year period over which the policy is appraised, but not with the 30-year period over which a constant discount rate should be applied under HMT guidance. If instead the EANCB is calculated over a policy appraisal period of 30 years (with a discount rate of 3.5%), the total PV cost is £3,932m (2009/10 remains the PV and price base year). The annual net direct cost to business in this case is £214m.