

Summary: Intervention & Options

Department /Agency: DEFRA	Title: Impact Assessment of the transfer of private sewers and lateral drains to statutory water and sewerage companies	
Stage: Implementation	Version: draft for peer review	Date: March 2010
Related Publications: (i) February 2007 RIA – decision to transfer (ii) July 2007 IA – consultation on implementation options (iii) November 2008 IA - Final proposal stage		

Available to view or download at:

<http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm>

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

Intervention was announced by the Government in December 2008, to transfer existing private sewers and lateral drains connected to the public sewerage network, into the ownership of the statutory Water and Sewerage Companies (WaSCs). This is to address a range of problems associated with the current ownership arrangements which cause difficulties for owners (householders in the main) and a lack of integrated management of the wider sewerage system. Current market failures prevent a comprehensive solution to the problems occurring solely through individual action and market forces.

What are the policy objectives and the intended effects?

The objective was to find a strategic and comprehensive solution to the problems posed by private sewers that provides the right balance between clarity of responsibility, least administrative burden and costs and benefits. The intended effects are to remove householder burden and integrate management of the wider sewerage network to achieve better economic and environmental stewardship of the sewerage system to adapt to climate change.

What policy options have been considered? Please justify any preferred option.

The Government's December 2008 announcement was based on a chosen option of transfer happening automatically 'overnight' from a set date. Other implementation options that might mitigate costs had been consulted on and rejected, e.g. phasing the transfer or owners applying for it. Over and above these discarded options, the implementation option will deliver: a more comprehensive solution to the current problems, clarity on roles and responsibilities for the maintenance of the sewerage network, better integrated management of the network and the least added administrative burden. As requested by the Chief Economist we have evaluated three sub-options; our preferred option is sub-option (iii) within option 1 with capex calculated over 10 years on the basis of pumping stations transferring over 5 years.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

Costs and benefits need to be reviewed in the longer term, after 10 years or two Ofwat price reviews. Customer experience will be reviewed after three years to evaluate expected removal of householder burdens.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Summary: Analysis & Evidence

Policy Option: 1	Description: Automatic overnight transfer from a set date
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COSTS	ANNUAL COSTS	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. 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.	
	One-off (Transition) Yrs		
	£ 957m		
	Average Annual Cost (excluding one-off)		
	£ 172m	Total Cost (PV)	£4,191m
Other key non-monetised costs by 'main affected groups' (Potential loss of business for micro drainage repair firms. Landlords who have granted easements for private sewers will lose right to have those sewers moved at no expense to themselves.)			

BENEFITS	ANNUAL BENEFITS	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.	
	One-off Yrs		
	£ n/a		
	Average Annual Benefit (excluding one-off)		
	£ 221m	Total Benefit (PV)	£ 4,341m
Other key non-monetised benefits by 'main affected groups' Social benefits to all from WaSCs' greater efficiency 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 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. Peak capital expenditure may occur later than assumed.

Price Base Year 2009	Time Period Years 40	Net Benefit Range (NPV) £ -96m to 579m	NET BENEFIT (NPV Best estimate) £ 150m
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What is the geographic coverage of the policy/option?	England & Wales			
On what date will the policy be implemented?	1 st October 2011			
Which organisation(s) will enforce the policy?	Defra			
What is the total annual cost of enforcement for these organisations?	£ nil			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	No			
What is the value of the proposed offsetting measure per year?	£ not known			
What is the value of changes in greenhouse gas emissions?	£ n/a			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro not known	Small not known	Medium n/a	Large n/a
Are any of these organisations exempt?	No	No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)	
Increase of	£	Decrease of	£
		Net Impact	£ Nil

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Scope of Impact Assessment

1. This 'Implementation Stage' Impact Assessment (IA) updates earlier IAs (see paragraph two) 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 announced on 8 December 2008 that it would transfer ownership from 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.
2. Previous IAs assessed the decision to transfer (March 2007 <http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm>) and implementation options (July 2007 <http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm>).

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

3. Difficulties for private sewer and lateral owners and a lack of integrated management of the sewerage system as a whole that will continue without intervention. An explanation of the problems being addressed and why the Government is intervening was provided in paragraphs 4 – 22 of the previous IA (dated November 2008 – <http://www.defra.gov.uk/environment/quality/water/industry/sewers/existing/index.htm>.) Private sewers and laterals were explained in annex A of the IA).
4. 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 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.
5. There is no framework to help deal with the main problems that ownership of private sewers and laterals may bring, but, conversely ownership responsibilities can be enforced on owners. WaSCs currently do not have to assume responsibility for private sewers or laterals and have no incentive to do so. Current market failures prevent a comprehensive solution solely through individual action and market forces.

What policy options had been considered?

6. Four implementation options were considered in a previous IA 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
7. 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

8. Automatic overnight transfer of existing sewers and laterals will be supplemented by separate policy work to have new sewers (that will connect to the public system) built to a mandatory design and construction standard and automatically adopted by WaSCs, as there is little point curing the problems of existing private sewers if a new stock is allowed to grow over time to replace it. This complementary work is underway and will be assessed in a separate IA which will be completed and published later this summer to accompany a consultation on a draft mandatory build standard.
9. 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 can expect a level playing field in respect of their liabilities.
 - 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.
10. 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, as the location of some pumping stations is uncertain and they may need a comprehensive assessment, e.g. for health and safety purposes. This date will be 1 October 2016.
11. 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.
12. Transfer of private sewers and laterals will be automatic to ensure that all assets are transferred at one time 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).

13. 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 automatic, overnight transfer takes place in October 2016.
14. The costs and benefits analysis (see paragraphs 18 – 26 below) 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. Recent 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% (see Technical Annex). 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 previous 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.
15. 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.
16. 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

17. 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.

Assessment of Baseline: No transfer, mandatory build standard and adoption by WaSCs of new sewers

Baseline Costs

18. This IA assumes that proposals for a scheme of mandatory adoption of new sewers by WaSCs will be implemented in the future, which will ensure no ongoing costs of the kind of those identified in this assessment. A separate IA looking at the specific costs of mandatory adoption will be conducted in due course. However, currently private sewer owners and local authorities are estimated to spend roughly £149m per year resolving blockages and disputes, some of which is claimed via insurance. Private owners also spend considerable time dealing with blockages. They also spend an estimated £37m per year maintaining pumping stations and £7m per year on replacing pumping stations. The current state of the private assets presents health and safety risks, and an unquantified number of pollution incidents (e.g. when a pump failure results in raw sewage entering a water course, or when a drain or sewer backs up into a home). Blockages may also impact the public sewer network, disrupting non-private sewers owners. (To the extent that these costs are avoided when liabilities are clearly transferred to WaSCs, they are considered further under *Benefits of Transfer Option*, below.).
19. The baseline position in this IA, without a transfer, includes a qualitative assessment of the costs of a new mandatory design and construction standard for all new laterals and sewers connecting to the public network, and automatic WaSC adoption of them. If a standard is not introduced prior to transfer, this will create a perverse incentive during construction of new developments to encourage the laying of sub-standard sewers to realise cost savings.
20. This would be expected to result in overall increased costs, as WaSCs will have to replace those sewers and pumping stations on transfer whose functionality fails to proper levels of expected service. The effect of this should be limited given that transfer of sewers and laterals will take place from October 2011. The risk of a regime not being in place after transfer is assessed in paragraph 89.
21. Assessment of the costs of a new mandatory design and construction standard for all new laterals and sewers connecting to the public network, and WaSC adoption of them are qualitative until we know what the construction standard will comprise. Our current view is set out below:
 - The current industry document 'Sewers for Adoption' has provided the basis of the design standard (NB this is a different document to the voluntary protocol in paragraph 28). This document is already in use by those who want WaSCs to adopt their sewers. The cost of constructing to a consistent standard may marginally increase (<5% on estimates from the Home Builders Federation) but only in a few cases with significant scope for cost savings otherwise.
 - Work has already been done to establish compliant sewer layouts which are broadly cost-neutral, compared to current practice, in terms of material content and labour costs.
 - Effective policing of design and construction of all new sewerage systems will increase the management costs for the WaSCs.
 - Development and implementation (including training and accreditation) will incur staff costs in the short term, but it is expected that these can be offset within 5 years through streamlining of processes and uniformity in design and construction
22. The July 2007 consultation responses indicated the common expectation that there would be a marginal increase in overall cost due to implementation of a new, uniform standard, but

that this would be offset by lower maintenance costs over time, due to improved long-term asset serviceability and maintenance.

Baseline Benefits

23. No benefits are expected to arise from continuing private management of existing private sewers and laterals, in the absence of a transfer. Under the baseline, benefits will arise from the mandatory standard and adoption of new sewers and laterals.
24. Rather than the multiplicity of guidance, a single national standard for new sewers and drains, and simplified adoption procedures, will bring about time and cost savings for:
 - Developers, in submitting plans to WaSCs
 - All who are involved in streamlined adoption procedures
 - Local Authorities, by removing current work on assessing design and inspection of sewers and laterals which are not adopted
 - Sewer construction and maintenance, as specification of compliant materials will ensure durability, longer asset lives, and lower whole-life costs for maintenance (e.g. jetting resistance)
 - Building drainage construction and maintenance, due to standardisation and repeatability of layouts, with examples provided in the guidance
 - New products, developed in response to uniformity of design specification and produced at high volumes, achieving economies of scale.
25. An appropriate inspection regime will enable any necessary remedial works to be completed while the contractor is still on site and at the contractor's cost, not subsequently the WaSC's customer base.
26. Purchasers of new homes will not be at risk of owning private sewers.

Assessment of Proposed Option (option 1): Automatic overnight transfer, mandatory build standard and adoption by WaSCs of new sewers

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

27. 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, as approximately 50 per cent of the private sewerage and drainage that connects to the public system transfers to WaSCs. 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;
 - Competition for contract work from WaSCs could increase, which could improve take-up of accredited training and work schemes and which could in turn drive up standards
 - Some smaller businesses may be less able 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, though as noted earlier, over time, in total, we estimate that there will be upwards of 500,000 fewer blockages and call outs as the network quality improves.

28. 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 to exist. We acknowledge that when new arrangements are better known more householders may call their WaSC in the first instance.

Summary of main analysis

29. As part of the policy cycle costs and benefits have been updated in line with changes in evidence and areas where additional monetisation of benefits has been possible have been identified.
30. 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 of maintaining private sewers and pumping stations once transfer takes place. This analysis facilitates the estimation of the increase in bills to all households 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.
31. 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.
32. With the inclusion of previously non-monetised benefits the previous 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

33. Given the uncertainty regarding the costs Defra's Chief Economist suggested further analysis prior to implementation, focusing on phasing the capital expenditure programme over a longer period, which has been carried out as part of this implementation stage IA. 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

34. Analysis suggests that the difference in Net Benefits of the options are relatively small over a 40 year analysis, Net Benefits are: Option 1(i) £87m, Option 1(ii) £145m and Option 1 (iii) £150m. Option 1 (iii) is preferred (see paragraph 14).
35. 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.

Background to costs

36. Best available cost estimates and data relating to WaSCs have been provided by the independent economic regulator, Ofwat, in March 2010¹. The figures build on previous private sewers' cost work undertaken by Atkins and WRc/UKWIR (see Technical Annexes to IAs mentioned in paragraph 3).
37. Since previous IAs on private sewers, WRc and UKWIR work has resulted in significant changes to the lengths of private sewer and lateral drain for different types of property and, consequently, to the overall lengths of transferable pipework in each company area.
38. Uncertainty over the extent and, particularly, the 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, and the figure has recently been revised to around £1bn. It is not proposed to undertake this mapping, hence Ofwat's current estimates of the financial costs to WaSCs are based on indicative assumptions (see Technical annex). 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.
39. 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, suggesting a higher level of blockages will arise in the absence of transfer, with all the associated repair, time, pollution, health and safety costs.
40. The capex takes place in the first ten years with the residual upgrade costs over the next five years.

Changes to Capex estimates

41. Ofwat's estimates of one-off capex have changed significantly 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 have 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 have 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

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.

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.

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

42. Latest 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.

Change to Planned and reactive maintenance

43. 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 protecting against sewer flooding to home owners. These values were not incorporated into previous analysis. Efficiency savings provided by Ofwat build up to 10% over a 10 year period, falling from previous estimates of 15% efficiency gains.
44. 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
One off capex upgrades	751	186	20	0	957	94 (As in Summary sheet)	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

45. 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

46. 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.
47. 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.
48. The insurance industry has reported that the transfer will have an insignificant impact on business, so no impact has been monetised.
49. 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.
50. Transfer does not impose any regulatory administrative burdens on the independent drainage sector (see the Small Firms Impact Assessment at annex B).
51. 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.
52. It is for Defra to enforce the statutory duty for WaSCs to adopt the transferring assets. To date, Defra has not had to enforce a breach of a sewerage undertaker's statutory duty, and a nil annual cost is assumed in this IA.
53. Costs of the mandatory standard and adoption of new sewers and drains, as discussed above under the base case, also apply here.

Distribution effects

54. 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-subsidises from private sewer owners to others, which is probably unfair; 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. 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.

Additional Monetised Benefits

55. This Impact Assessment builds on the evidence gathered in the IAs presented at different stages of the policy cycle, monetising additional areas identified in line with the policy incorporating the benefits to the public of transferring pumping stations. This includes the reduced costs of maintaining and replacing pumping stations and benefits from GSS? payments as well as previously identified benefits of the avoided costs of maintaining private sewers. The total undiscounted estimated benefit from transferring pumping station ownership averaged over 40 years is £42m.
56. 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 7). 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 (which 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).
57. 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 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.
58. 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.
59. Currently private pumping stations 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.

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.

60. 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 have 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.
61. 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. 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 undiscounted 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)

62. 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

63. 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.
64. The transfer resolves today's ill-defined property rights and so saves distress and cost. Clarity about ownership, post-transfer, benefits anyone who *may* be a private sewer owner – which is a majority of householders.
65. 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.
66. 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.
67. 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.
68. 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.
69. The transfer offers the eventual benefit of long term integrated planning and strategic management of a combined, complete network of sewage pipes and laterals.
70. A benefit arises for those homeowners 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.
71. Benefits of the mandatory standard and adoption of new sewers and drains, as discussed above under the base case, also apply here.

Distribution effects

72. 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 IA) that clarifying and standardising liabilities through this transfer will produce a fairer outcome.

Present Values of Transfer Option

73. 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

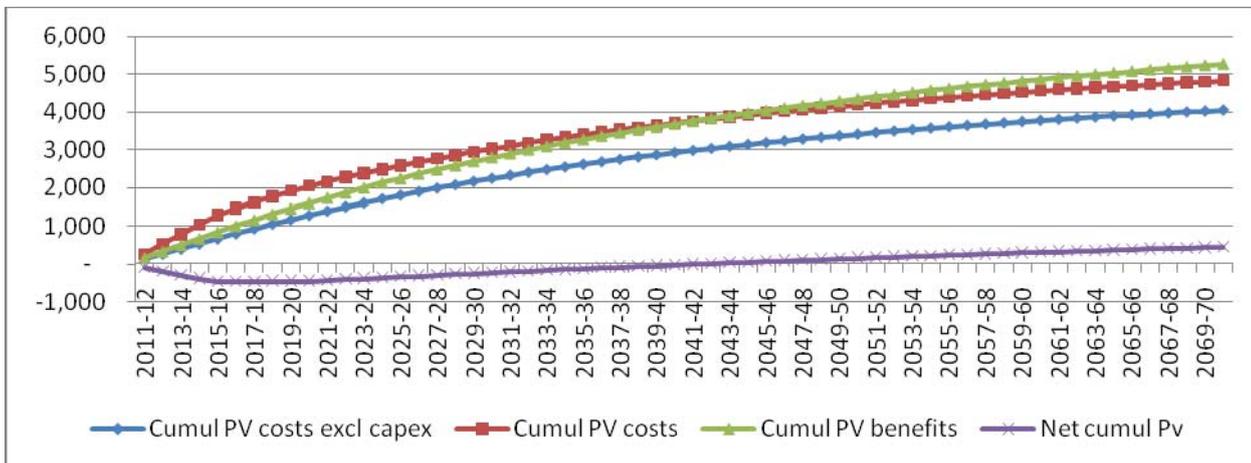
years for small bore pipes, to 200 years for replaced or upgraded civil engineering work at pumping stations. A 40 year time horizon has been chosen for PV calculations. Ofwat-derived cost figures are inflated to today's prices with RPI. All figures are discounted over 40 years, using an initial discount rate of 3.5%, dropping to 3% after 30 years (HM Treasury's recommended discount rates).

74. 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 £4.2bn in 2009/10 prices, of which £1.0bn 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.
75. 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 £4.3bn 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.
76. It has not been possible to monetise all the benefits, so no complete NPV figure is available. The estimate available that includes repair and time benefits only is £150m.

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

	5 year totals				PV first 10 years	PV first 20 years	PV 40 years
	2011-12 – 2015-16	2016-17 – 2020-21	2021-22 – 2025-26	2026-27 – 2030-31			
One off capex upgrades	634	132	12	0	766	778	778
Recurring annual cost (IRE, MNI, M&E plus opex)	667	619	520	442	1,286	2,247	3,413
All costs	1,300	751	531	442	1,300	3,025	4,191
All benefits	838	762	642	552	838	2,793	4,341
NPV					-463	-232	150 (As in Summary sheet)

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



77. 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) – update of original analysis, 5 year period for all

78. 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.

79. 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.

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

80. 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.

81. Benefits to the public are also reduced as the hand over of maintenance and replacement expenditure is slower. PVB falls to £4,259m. The central estimate of net benefits falls to £145m over 40 years.

Conclusions

82. 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.

83. 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.
84. Upper Bound: 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 £4,437m over 40 years. The monetised benefits would be assumed to remain the same at £4,341m over 40 years. This results in a net benefit of -£96m 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.
85. Lower Bound: 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. Result in decrease in capex from £957m to £428m. This results in a decrease in Present Value Costs to £3,762m. Monetised Present Value Benefits remain the same. This results in a net benefit of £579m 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

86. 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 error². 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.

Risks

87. 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 assumptions and should be considered indicative only.
88. 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

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.

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.

89. If a regime for the mandatory adoption of new sewers (see paragraph eight) 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 prior to transfer and provisions are being taken in the Flood and Water Management Bill, currently before Parliament, 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 WIA 1991).

Possible unintended consequences

90. 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.
91. 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.
92. 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 1991 Water Industry Act 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.

Implementation, Monitoring and Enforcement

93. 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 is currently consulting on proposals for these regulations and intends that the regulations will come into force in April 2011.
94. 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.
95. 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.

96. 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 paragraph 102). All indications to date from Ofwat have been that any administrative burdens, if any, will be minimal.
97. 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

98. 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.
99. 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.
100. 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).
101. 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.
102. 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.
103. 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.
104. 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.
105. 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

106. 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.³ 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 regulations, which will be enforceable by the Secretary of State or the Welsh Ministers under section 18 of the Water Industry Act (1991).

107. 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.
108. 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.

Sanctions

109. 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

110. 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.

Post Implementation Review

111. Customer experience will be reviewed after three years to evaluate whether the policy objective of removing unfair householder burdens has been achieved, whether there have been other unforeseen consequences and whether Government intervention has been sufficient. It will also consider any further scope for simplification or modification of the policy.
112. It does need to be put on a statutory basis and Defra envisages using the type of customer research and stakeholder steering group participation that has been part of the policy cycle to date
113. Establishing the actual costs and benefits, where they are quantifiable, should take place in the longer term. Establishing actual costs and a monitoring regime will be a matter for the independent, economic regulator, Ofwat. We anticipate that such a review might take place after 10 years or two Ofwat Price Reviews, given the separate transfer dates for sewers and pumping stations but will discuss with Ofwat how this time period might be shortened by using their 'June returns' (see paragraph 102)

³ The Water Act 2003 amended the Water Industry Act 1991 to include this enabling power under section 105A(1).

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	Yes
Small Firms Impact Test	Yes	Yes
Legal Aid	No	Yes
Sustainable Development	No	Yes
Carbon Assessment	No	Yes
Other Environment	Yes	Yes
Health Impact Assessment	No	Yes
Race Equality	No	Yes
Disability Equality	No	Yes
Gender Equality	No	Yes
Human Rights	No	Yes
Rural Proofing	No	Yes

Annex A - Competition Assessment

1. A Competition Assessment was published with the November 2008 IA (see summary page for web-link) and our conclusion remains 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:
 - Approximately 50 per cent of the sewerage and drainage network currently in private ownership that connects to the public system will be transferred to WaSCs under an automatic overnight transfer;
 - The amount of work available to drain repair companies directly from the householder is likely to decrease;
 - It is highly likely that WaSCs will need to contract out some of the extra work to the drain repair industry;
 - Competition for contract work from WaSCs could increase, which could improve standards of training and workmanship;
 - Some smaller businesses may be less able 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 as noted earlier, over time, in total, we estimate that there will be upwards of 500,000 fewer blockages and call outs as the network quality improves.
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. Because the Government is currently analysing responses to the consultation and will publish its summary and response in due course, we cannot conclusively characterise the possible effect of that response on the transfer of private sewers. Furthermore, 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.

Annex B - 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, although it will decline in the longer term and there may inevitably be a change in the market focus for some private drainage contractors operating in this sector, 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 with no single 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. One aspect of their concerns must be rebutted however, namely 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 specifically represents the interests of smaller drainage companies.
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 significant lead-in time and 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 C - note on Separate Impact Assessments

1. A competition assessment is included at annex A.
2. A small firms impact test is included at annex B.
3. 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.
4. There are no legal aid implications that we are aware of.
5. The recommendations comply with Sustainable Development Principles.
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. The recommendations have no implications for Race, Gender or Disability Equality that we have been able to find.
8. 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.
9. Human Rights – no change to previous IA (see paragraph 68 in body of that IA)

Annex D – Technical annex: Ofwat's explanation of changes to their data assumptions from the last IA.

1. Changes that are independent of company final business plan commentaries

(These are changes to the quantum and / or timing of costs which we consider would need to have been made in an update of the IA even in the absence of new information provided by companies in their final business plan commentaries.)

a) Transfer start date (for base option)

The transfer start date has been deferred by one year to 1 April 2011, following Defra ministers' announcement on the 15 December 2008 that transfer would take place "from 2011". This means there will be no bill impact due to private sewers in 2010-11.

b) Unit costs

The unit costs for Infrastructure Renewals Expenditure (IRE) and Planned and Planned and Reactive maintenance have been updated to take account of the latest data on outturn costs in the 2009 June Returns. This has resulted in modest increases in the unit costs.

c) Guaranteed Standards of Service (GSS)

The unit costs for GSS payments have been updated to take account of the latest available data (including the 2009 June Return). Individual companies' average GSS payment costs may have gone up or down, but the average unit cost across the industry as a whole has increased.

Following an Ofwat consultation in 2006 and consequent recommendations made to Government, revised GSS regulations (SI 2008 No. 594) came into force in April 2008. These included, for the first time, provisions relating to external sewer flooding thereby increasing companies' liabilities under the scheme. Consequently, in their 2009 June Returns companies have reported, for the first time, on payments for external sewer flooding. This has been taken into account in the update of costs considered in the model, meaning the number of GSS payments has increased, inevitably increasing the bill impact. For any one company the number of external flooding incidents is typically significantly greater than internal incidents, although GSS payments per incident are much less (approximately half).

d) Sewer flooding costs

The previous modelling exercise did not specifically consider sewer flooding costs. This was because, as is made clear on p54 of the 2007 IA, the marginal bill increases arising from a transfer of existing private sewers and laterals to WaSCs were incremental to a baseline that assumed, inter alia, a new service improvement programme of the same value as the sewer flooding programme in 2005 – 10. This time, the WIFL model is not available and the baseline on top of which the new cost estimates for the transfer are being layered is simply the FD09 programme and does not include anything for a sewer flooding beyond 2015. The estimates were based on Thames Water estimates pro-rata'ed by length of transferred pipework.

In addition Ofwat has assumed that (internal and external) flooding incident rates will improve over time as upgrade work on the transferred pipework is carried out. Flooding rates and therefore clean-up costs have been assumed to be at their highest in the first year after transfer, reducing to current levels at the end of the transfer period. This affects two costs:

- GSS: The assumed number of GSS payments for flooding incidents will decrease over time.
- Sewer flooding clean-up: A fall in the number of flooding incidents means fewer clean-ups. The total cost for whole industry is approximately £39m in the first 5 years after transfer but falls to £1.4m per year after the transfer period.

2. Changes to costs prompted by company final business plan commentaries (FBP) and Reporters' audits

e) Sewer upgrade costs

The percentage of the sewer network assumed to need upgrading has been decreased to 2.5% from 7.5%. Companies' FBP commentaries showed that at least four companies had changed the 7.5% assumption used in the WRc model (urgent proactive repair) to a much smaller figure. This will reduce the bill impact for all companies.

f) Pumping station numbers

Previous estimates of costs and bill impacts assumed the number of pumping stations to be transferred (in England and Wales) was 5,000 (the mid-point of the range derived by WRc and set down in the 2003 UKWIR report). Information received from maintenance companies and WaSCs has since indicated that this figure is almost certainly a gross underestimate. This is acknowledged at paragraph 115 of the 2007 RIA. Further research by companies pertaining to the position in their own operating area has added weight to the need to revise the previous estimate. Accordingly, we have increased the total industry figure to around 22,000. Note that this is still a significantly lower number than those companies who have felt sufficiently confident to venture an estimate are forecasting.

g) Pumping station upgrade unit costs

We have increased the assumed average cost of upgrading pumping stations from £15,000 to £25,000. The unit cost covers everything needed to bring a pumping station up to an acceptable standard (See UKWIR 2003 report section 3.8.3) and may in the extreme involve purchase of land and relocation to resolve access issues. This will increase the bill impact.

Note that only four companies provided estimates of the average unit costs of refurbishing / relocating pumping stations and that there was a wide range of costs (£12.1k - £99k).

Note too that the assumed unit annual operating cost for pumping stations has remained unchanged at £2,000 (though the change in price base effectively means that the real cost has in fact reduced).

3. Changes to the translation of costs into bill impacts

h) Asset life apportionments

The previous estimates of bill impacts relied upon apportionments that were used at PR04 for the funded AMP4 programme. On reflection, we do not consider that the range of enhancement work in AMP5 is reflective of the nature of the non-infrastructure (depreciable) assets being transferred ie the pumping stations. There will be no construction of large long-life concrete tanks, though some of the pumping stations that require rebuilds/relocations will undoubtedly involve pouring concrete for the wet wells. Occasionally land will need to be purchased on which the new stations will be built.

Other notes:

- i) We have not used the WIFL model as it is no longer available. Instead we have used the PR09 financial model which covers the period to 2020. The consequence of this is that we are unable to estimate bill impacts beyond 2020.
- ii) There is a possibility of additional costs arising from the Water UK Security Standard for Operational Assets if it is deemed to apply to transferred assets, particularly pumping stations.
- iii) The price base of all costs has been updated from 2002-03 to 2007-08. We have chosen to use the same price base as the Ofwat Final Determinations (2007-08) for ease of comparison with costs and bill impacts associated with the recent final determinations.
- iv) For the 10 year transfer period options, the sewer/drain upgrades have been assumed to take place over a total of 15 years. 95% of the network will be transferred in the first 10 years and 5% in the last 5 years. The 5% will be made up of the remaining part of the network located upstream of the pumping stations that will have been transferred and mapped during the first 10 years.
- v) As in the previous IA, mapping costs have been excluded.