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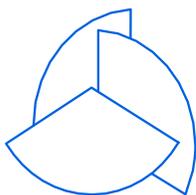
## **Water Affordability under the Water Reform Proposals**

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*The views expressed in this paper are those of the authors and not necessarily those of  
the department.*

**This paper replaces the August paper. For details of changes see Appendix.**



Northern Ireland  
**Statistics &  
Research  
Agency**

## Introduction

In December 2002 it was announced that Northern Ireland's water and sewerage services would become self-financing. In March 2003 the Department for Regional Development published its proposals for the reform of water and sewerage services and initiated a consultation exercise.<sup>1</sup> In October 2003 John Spellar set out the Government's initial response to the consultation.<sup>2</sup> In late summer of 2004, the Government announced its preferred options for Water Reform and in November 2004 published a further consultation paper and the results of a full range of impact assessments on the proposals.<sup>3</sup> The aim of this paper is twofold: to consider the issue of water affordability and to present the findings of two impact assessments based on the Poverty and Social Exclusion Survey (PSENI).<sup>4</sup>

It is proposed that all households whether owned or rented will have to pay an annual charge if they are connected to the mains water supply and sewerage system. The charge will include a standard charge for maintenance of the water and sewerage system and also a variable charge based on the capital value of the property. It is proposed that the standing charge will represent approximately 35 per cent of the total costs of domestic supply.<sup>5</sup> The estimated water charge for properties within twenty-five capital value bands have been published and range from a minimum of £155 to a maximum of £750 per annum depending on the capital value of the house.<sup>6</sup>

The analysis in this paper is based on the actual capital values in 2003 of all owner-occupied properties in the PSENI sample and an *estimated* capital value of all rented property extrapolated from the capital value of all owner-occupied properties using the Net Annual Value, number of rooms and a Noble Index deprivation score.<sup>7</sup> The property values were then used to calculate the amount each household will pay on water charges based on the illustration of charges provided by the Government.

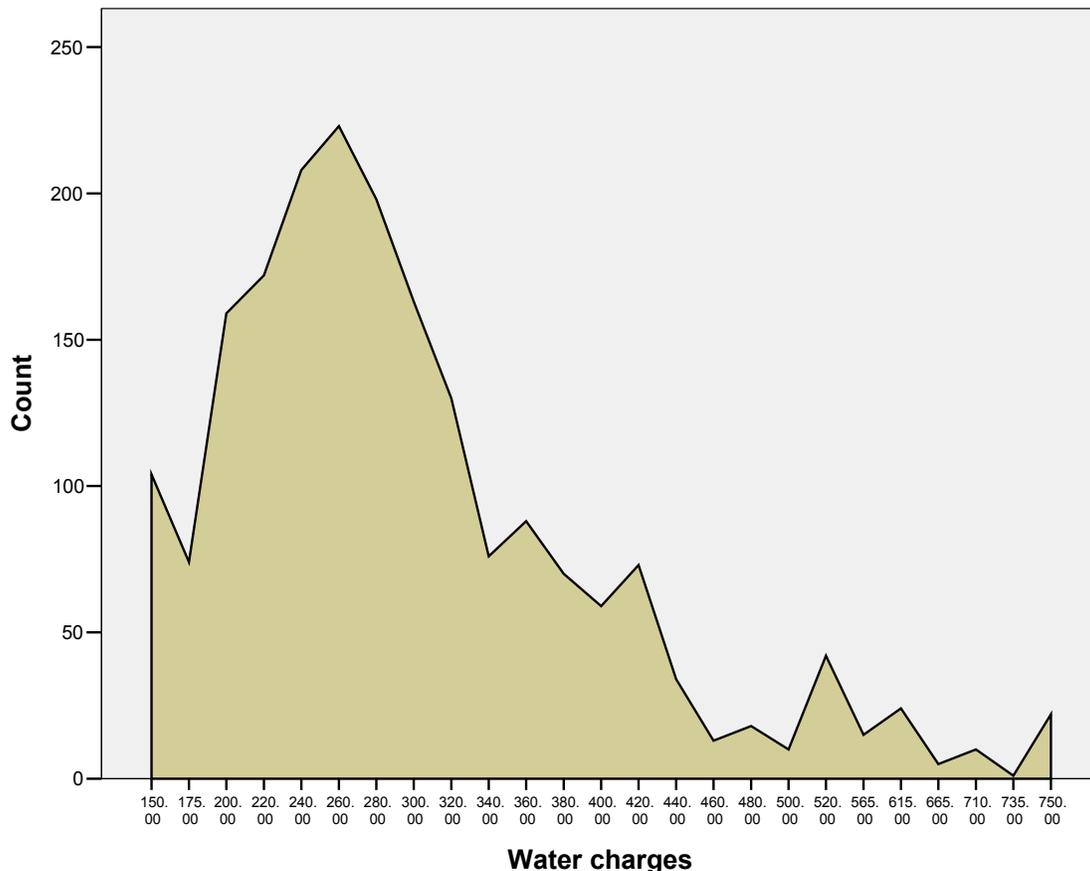
Water is considered to be unaffordable when households spend more than 3 per cent of their total net household income on water charges. The term 'water poverty' is used to describe this situation. In Great Britain water affordability is one of the sustainability indicators used by the Department for the Environment, Food and Rural Affairs. In 2004 some 9 per cent of all households in Great Britain spent in excess of 3 per cent of their household incomes on water charges.<sup>8</sup> Moreover, it is estimated that: "on average, the percentage of households paying more than 3 per cent of disposable income for water is estimated to rise from 8 per in 2004-05 to 12 per cent in 2009-2010. However, for low-income households the figure will rise from 29 per cent to 40 per cent."<sup>9</sup>

Any comparisons on water affordability between Northern Ireland and the rest of Great Britain, however, need to be treated with caution. To begin with, water and sewerage companies in England and Wales have been privatised for a number of years and costs have been driven down. Secondly, overall comparisons are misleading because of the large variations in water charges between different regions. A regional comparison with an area which has similar population density and length of network as Northern Ireland would be more informative.

## The distribution of water charges

Every household in Northern Ireland will be required to pay a water charge based by the capital value of their house. The charges will be phased in at discounted rates over a period. We first calculated how much each household will be required to pay at the discounted rates. It is estimated that the average charge in 2006/2007 will be £100. It will

**Figure 1: Estimated water and sewerage charges in 2009/2010.**

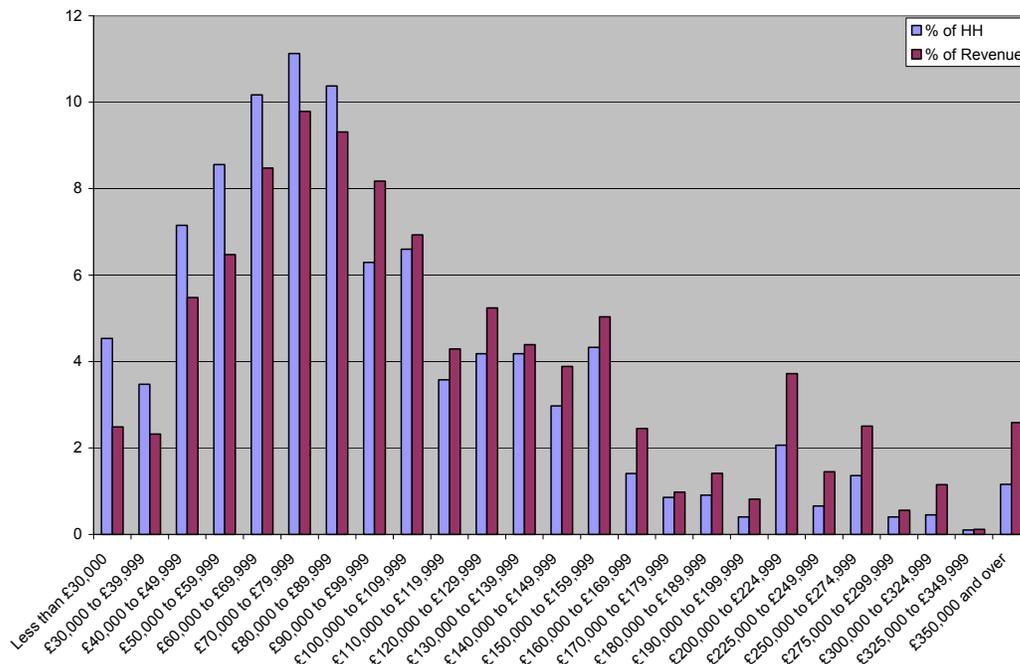


vary between different tenures with owner-occupiers with mortgages paying the highest charge (£106) while those living in Housing Executive dwellings paying the lowest charge (£81). At the end of the three year period in which the charges are to be phased in it is estimated that the average charge will rise to £300 and the proposed scheme will raise over £200 million in 2009/2010.

Figure 1 charts the distribution of the full charge. It shows that it is skewed towards the lower end with the majority of households paying water charges of around £270. The distribution has a long tail with only a few households paying charges of more than £450 per year. This distribution reflects the fact that over two-thirds of households live in housed valued at less than £100,000.

Another way to examine the impact of the charges is to compare the proportion of households in selected bands and the proportion which each band will contribute towards the total amount raised. This provides information on the extent to which water charges are redistributed amongst people in different property bands.

**Figure 2: Proportion of households in each capital value band and proportion of total water revenue contributed.**

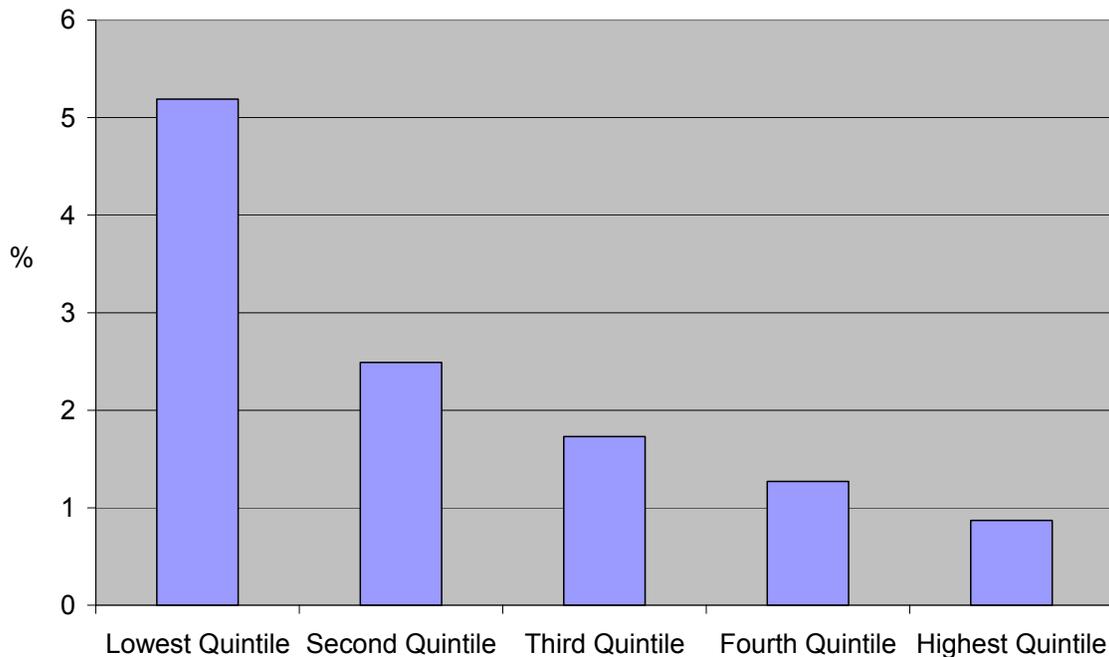


As can be seen some redistribution of the total amount raised from the charge will take place. Households in lower value properties will contribute proportionately less while those living in higher value properties will pay proportionally more in relation to their numbers. For example, some 22 per cent of all households in Northern Ireland live in houses valued at between £60,000 and £79,999. Yet they will contribute only 18 per cent towards the total raised from the water charges. On the other hand, it is estimated that under 2 per cent of households live in houses valued at over £340,000 but this group will contribute 2.7 per cent towards the total charge. Nevertheless, the bulk of the £200 million raised will be paid for by the less well off sections of the community. More specifically, 17 per cent of the £200 million will be paid for by those living in houses valued at under £60,000, 53 per cent by those living in houses worth less than £100,000 and approximately 73 per cent by those in houses worth less than £140,000.

## Water affordability under the Water Reform Proposals

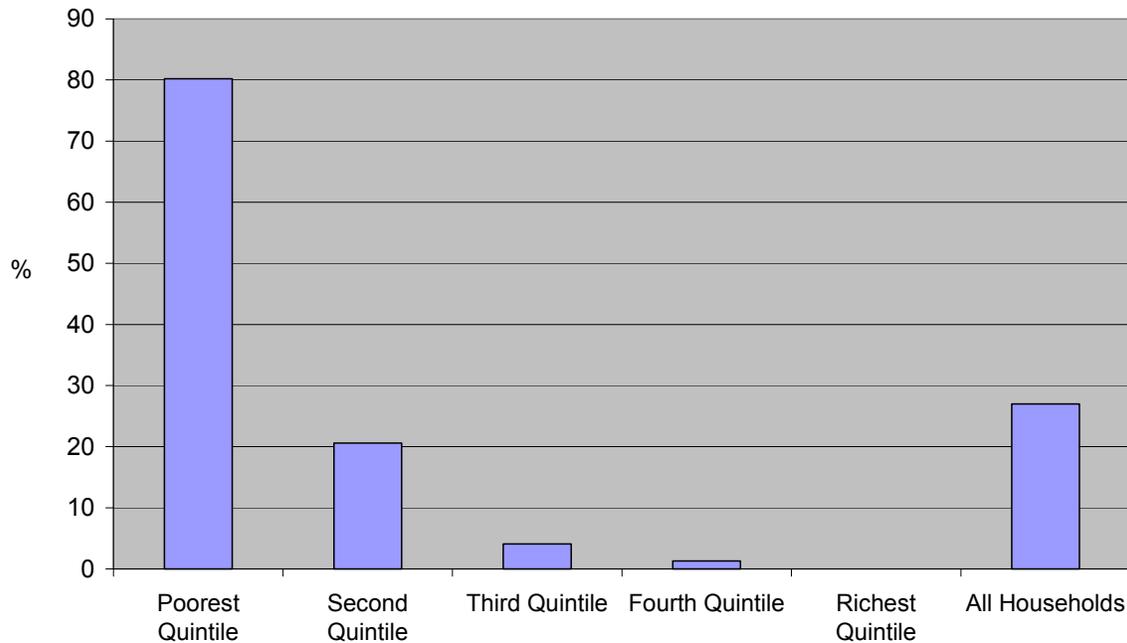
Water affordability will be out of reach of many households in Northern Ireland. As can be seen from Figure 3, some households in the bottom quintile of the income distribution will pay over 5 per cent of their household income on water and sewerage charges compared with the top quintile who will pay less than 1 per cent .

**Figure 3 Estimated percentage of household income which will be spent on new charges before rebate shown by income quintile groups.**



Another way of examining water poverty is to estimate the percentage of households in each quintile who will pay more than 3 per cent of their household income on the new charges. This is achieved by calculating how many people are in water poverty by estimating the percentage that the water charge represents of their total household income. If it comes to more than 3 per cent, the household is deemed to be in water poverty. Then all households in this situation are added together and shown as a percentage of all households in the quintile. Figure 4 shows that in the poorest quintile 80 per cent of households will pay more than 3 per cent and thus experience water poverty. In the second poorest quintile over 20 per cent will be in the same situation.

**Figure 4: Estimated percentage of households in each quintile spending more than 3 per cent of household income on water and sewerage charges.**



### **Financial Hardship**

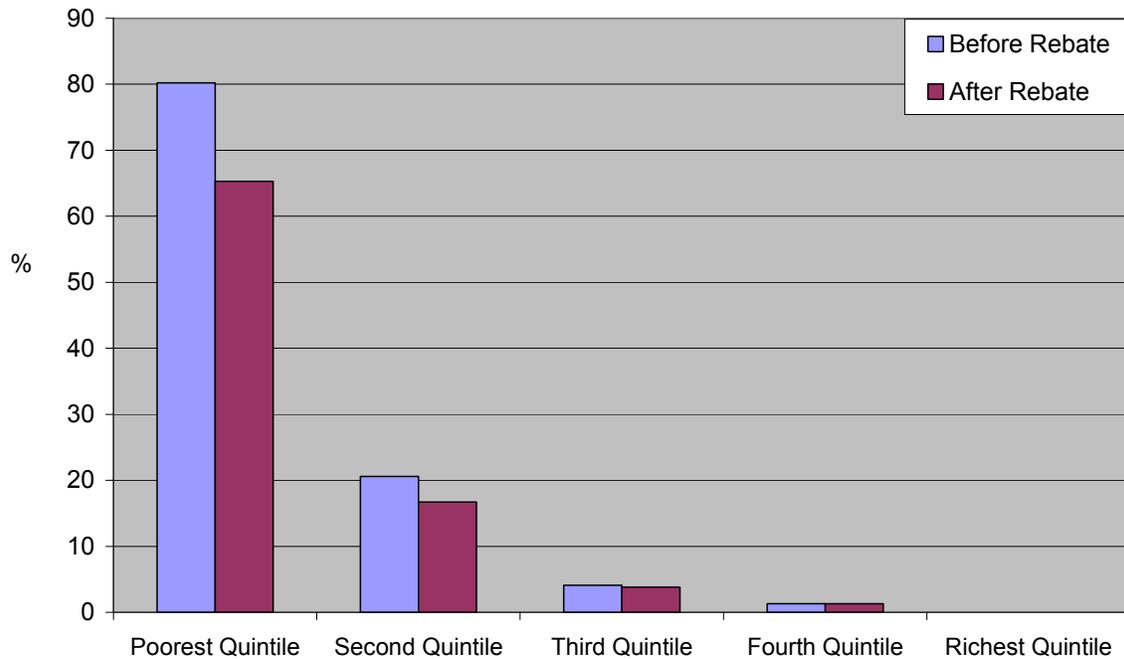
To help households who may be in financial hardship, it is proposed that a 25 per cent discount on water and sewerage charges should be available to all those in receipt of a specified range of passport benefits – Housing Benefit, Rate Rebate or a new Special Rate Relief Scheme (SRRS), which is to be introduced following the introduction of the new discrete capital value rating scheme in April 2007.<sup>10</sup> Currently around 175,000 households in Northern Ireland are in receipt of either Housing Benefit or Rate Rebate (HBRR). Although no specific details have yet been published on the SRRS, it is estimated that around 8,500 households might be eligible.<sup>11</sup>

The PSENI study did not collect robust data on the number of households on HBRR and without further information on the SRRS, the PSENI study cannot identify possible eligible households. Therefore, it is not possible to calculate how many people will be eligible for a discount on these criteria. However, it is possible to make an estimate based on the PSENI consensual poverty measure. On this measure nearly 30 per cent of all households would be eligible for rebate. This contrasts with approximately 26 per cent of all households who are in receipt of HBRR and a further 1 or 2 per cent who may be eligible for SRRS. The use of the consensual poverty measure rather than HBRR and SRRS will thus have the effect of under reporting the proportion of households in water poverty.

When the full charge is introduced in 2009/2010, it is estimated that the discount will reduce the number of people in water poverty by 5 per cent, from 27 per cent to 22 per cent. This still suggests, however, that over one in five of all households will suffer water poverty.

The impact of the rebate on each of the quintiles is shown in Figure 5. The water poverty rate in the lowest quintile will be reduced from 80 per cent to 65 per cent and in the second lowest quintile from 21 per cent to 18 per cent.

**Figure 5: Estimated percentage of households in each quintile spending more than 3 per cent of household income on water and sewerage charges before and after the rebate.**



### Risk of water poverty for different types of households

The imposition of full water and sewerage charges with rebates in 2009/2010 will have a differential impact on families and households (see Table 1). The highest risk of water poverty will be experienced by pensioner households (47 per cent) followed by households in which no-one is working (45 per cent). Lone parents will also be at high risk of water poverty (34 per cent). The risk will vary greatly by tenure with all renting households and those who own their houses experiencing risk of water poverty of over 30 per cent.

**Table 1: Risk of water poverty by different housing and household characteristics**

		<b>Water Poverty</b>
<b>Housing Tenure***</b>	Owner Occupied	18
	- Outright Owner	32
	- Owner with Mortgage	9
	Privately Rented	36
	Housing Association	31
	Northern Ireland Housing Executive	34
<b>Area Classification</b>	Belfast Metropolitan Area	25
	Derry Urban Area	24
	Large Town	20
	Medium Town	27
	Small Town	21
	Intermediate settlement	18
	Small Settlement	26
	Other	21
<b>Noble Measure of Deprivation *</b>	Highest Level of Deprivation	24
	Second quintile	27
	Third Quintile	24
	Fourth Quintile	19
	Lowest Level of Deprivation	21
<b>Household Type***</b>	Pensioner Household	47
	Household with No Children	21
	Couple Household	18
	Lone Parent Household	34
	Family Household	8
<b>Workers in Household***</b>	No workers	45
	One worker	15
	Two or more workers	7

Significance level \*p<0.05, \*\*p<0.01 and p<0.001.

### **Equality Impact Assessment of the proposed charges.**

Conducting an Equality Impact Assessment (EQIA) in any area of social policy presents considerable challenges.<sup>12</sup> When radical changes are proposed for some existing area of policy, there is limited data available on which to make a robust assessment of the impact of the new policy. Two broad approaches have been adopted to assess the impact of the proposed water charges. The first, which was adopted by the Department of Regional Development, is based on linking Census data with other aggregate datasets at the area level. The other, which has been adopted here, is based on a random survey of the population. Both methodologies have their strengths and weaknesses.

The Department for Regional Development EQIA linked together data from the 2001 census, recent house sales data from the Valuation and Lands Agency (VLA), earnings from the DETI ‘New Earnings Survey’ 2002 and household income information from the

NI Household Panel Survey.<sup>13</sup> The main weakness of this methodology is that it is subject to what is known as the ‘ecological fallacy’. This situation can occur when incorrect inferences are made about individuals based on aggregate or group data. It was pointed out that ideally the analysis should have been carried out by linking householders with their section 75 characteristics, income and water charge.<sup>14</sup> The final EQIA of the preferred charging option, was based on discrete capital values. It concluded that the scheme would have a marginal impact on marital status, dependants, disability and a ‘substantial differential impact’ on the Protestant community. The latter conclusion was based on the assumption that there are more Protestants in electoral wards where house prices, and therefore water charges, are highest.<sup>15</sup>

The other EQIA method involves carrying out a survey of households and obtaining a range of information on income, social, demographic and other characteristics including the capital value of the house – a key element in the new charging structure. This method also suffers from a number of potential weaknesses. The robustness of any conclusions will depend on the size and representativeness of the sample, the accuracy of the information provided and the size of the non-response. The PSENI survey was based on a random sample of 3110 eligible addresses which led to the completion of 1976 successful interviews – a response rate of 64 per cent. In any survey there is the possibility of non-response bias. To assess the possible extent of this, the distribution of a number of characteristics of the sample were compared with the same characteristics in the population based on the 2001 Census of population, the Continuous Household Survey and also the Noble Multiple Deprivation Index. The data from the PSENI study compared favourably with those on all these other datasets, strongly suggesting that the sample was representative of the population.

Two EQIAs based on the PSENI data have been carried out in this paper. The first assesses the impact of the charges without taking into account people’s ability to pay. The second takes account of household income. In both cases the EQIA is based on the PSNI data using the proposed full water charges after rebate, which has been calculated using the consensual poverty measure.

### ***EQIA 1: Impact of charges***

The average amount paid by different groups in the population varies as can be seen in Table 2. For example, in relation to marital status, those who are married and living with their husband or wife, will pay £315 compared with someone who is single who will pay £242. Men will pay on average more than women. In relation to age, the younger age groups will on average pay less than the older age groups. For example, the 16-24 age group will pay on average £241 compared with £285 for those aged 65-74 – a difference of £44. Protestants will on average pay £23 more a year than Catholics.

**Table 2 Average Water Charge after rebate for selected groups**

		<b>Mean Water Charge (£)</b>
<b>Religion</b>	Catholic	267.27
	Protestant	290.39
	Neither	292.00
<b>Provision of Care</b>	Caring for Nobody	276.35
	Caring for Adults in/outside the House	281.74
	Caring for Children	301.33
<b>Gender</b>	Male	296.54
	Female	269.32
<b>Age</b>	16-24	240.97
	25-34	259.19
	35-44	289.26
	45-54	302.05
	55-64	292.34
	65-74	285.15
	75 and over	265.07
<b>Political Opinion</b>	Ulster Unionist Party	305.06
	Democratic Unionist Party	260.91
	Other Unionist Parties	267.21
	Sinn Fein	242.59
	SDLP	283.68
	Alliance Party	378.19
	Women's Coalition	291.95
	Other	271.62
	None/No Political Opinion	261.14
<b>Disability</b>	No Disabled Persons in Household	282.23
	One or More disabled Persons in Household	258.57
<b>Marital Status</b>	Single, that is never married	241.78
	Married and Living with your husband or wife	314.99
	Married and Separated from Husband or Wife	235.43
	Divorced	237.66
	Widowed	260.27

***EQIA Impact of charges taking into consideration households' ability to pay***

This analysis takes account of households' ability to pay the new water charge. It is based on the estimated number of households who will be in water poverty following the introduction of the water and sewerage charges. As can be seen in Table 3 the proposal will have an adverse impact on a number of section 75 categories. It will impact more on the very youngest and the oldest age groups, women compared with men, those who are widowed and divorced. For example, people who are widowed will approximately have twice the likelihood of experiencing water poverty than the average household in Northern Ireland. It will also adversely affect, but to a lesser degree, Protestants rather than Catholics and Unionist voters compared with Catholic or Nationalist voters.

**Table 3: Risk of water poverty for different Section 75 groups.**

		<b>Water Poverty</b>
<b>Religion*</b>	Catholic	19
	Protestant	25
	Neither	23
<b>Provision of Care</b>	Caring for Nobody	27
	Caring for Adults in/outside the House	18
	Caring for Children	10
<b>Gender*</b>	Male	20
	Female	25
<b>Age***</b>	16-24	36
	25-34	14
	35-44	12
	45-54	14
	55-64	30
	65-74	42
	75 and over	43
<b>Political Opinion*</b>	Ulster Unionist Party	26
	Democratic Unionist Party	19
	Other Unionist Parties	32
	Sinn Fein	17
	SDLP	16
	Alliance Party	24
	Women's Coalition	24
	Other	18
	None/No Political Opinion	26
<b>Disability*</b>	No Disabled Persons in Household	23
	One or More disabled Persons in Household	11
<b>Marital Status***</b>	Single, that is never married	28
	Married and Living with your husband or wife	13
	Married and Separated from Husband or wife	27
	Divorced	34
	Widowed	50

Significance level \*p<0.05, \*\*p<0.01 and p<0.001.

## **Conclusions**

The proposed scheme for water and sewerage charges will have an adverse affect on the poorest sections of the communities in Northern Ireland. Although better off sections of the community will pay a higher proportion of the overall charge in relation to their numbers in the community and hence some redistribution will take place, nevertheless the bulk of the total amount raised will be paid for by those less able to afford the charges – those living in the houses valued below the average house price in Northern Ireland.

Many thousands of vulnerable households, such as the elderly, those who are widowed and lone parents will suffer from water poverty. The EQIA analysis based on the PSENI

study suggests that social and demographic factors are more important in terms of the adverse impact of the water charges than religion or political opinion.

The proposals will impact directly on any poverty reduction targets which may be set within the New Targeting Social Need strategy and are likely to increase the numbers of households living in poverty in Northern Ireland. The proposed discount scheme, which will be made available to all those in receipt of a specified range of benefits, will make only a slight impact on the numbers of those who will experience water poverty.

## Technical appendix

The capital value of all owner occupied houses in the PSENI sample as estimated by the Valuation and Lands Agency in 2003 were added to the database by matching serial numbers in such a way that anonymity was preserved. These values were then used to estimate the capital value of all privately rented dwellings in the sample. Using regression, mean capital values were imputed using the number of rooms, the net annual value of the property and the Noble Deprivation banded score. Some 63 per cent of the total variance of capital value, the dependent variable, was accounted for by the three variables with the number of rooms determining over 50 per cent of the variance. Table A1 below notes the mean capital value for each tenure.

Table A1: The mean capital value of each tenure, 2003.

		Mean
Housing tenure	Outright owner	105485
	Owner with mortgage	103443.8
	Private tenant/other	78681.04
	HA tenant	75380.93
	NIHE tenant	65406.08

Changes between the August and September versions of the paper.

1. The statistics in the text relating to Figures 3 and 4 were incorrect. The correct figures are now noted.
2. Figure 2 and Table 3, which contained errors, have been replaced.

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<sup>1</sup> The Reform of the Water and Sewerage Services in Northern Ireland: A consultation Document, March 2003.

[http://www.waterreformni.gov.uk/pdf/per cent27s/consult\\_full\\_document.pdf](http://www.waterreformni.gov.uk/pdf/per%20cent27s/consult_full_document.pdf)

<sup>2</sup> Spellar Rules out Water privatization and flat charges.

<http://www.nics.gov.uk/press/rd/031007a-rd.htm>

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<sup>3</sup> Integrated Impact Assessment of the Government's Proposal for the Reform of the Water and Sewerage Services: Summary and Consultation Questions, November, 2004.

[http://www.waterreformni.gov.uk/contman/uploads/Summary\\_Final.pdf](http://www.waterreformni.gov.uk/contman/uploads/Summary_Final.pdf)

<sup>4</sup> The PSENI was designed and directed by Professor Paddy Hillyard, Professor Eithne McLaughlin and Mike Tomlinson, Queen's University Belfast. The project originated and was funded by OFMDFM and HM Treasury. See: Hillyard, P. et al. (2003) Bare Necessities: Poverty and Social Exclusion in Northern Ireland – Key Findings, Belfast: Democratic Dialogue.

<sup>5</sup> Impact assessment of the Government's Proposals for the Reform of Water and Sewerage Services, Part 1: Integrated Impact Assessment – Overview, [http://www.waterreformni.gov.uk/contman/uploads/Part\\_per\\_cent20I\\_per\\_cent20- per cent20IIA per cent20Overview.pdf](http://www.waterreformni.gov.uk/contman/uploads/Part_per_cent20I_per_cent20- per cent20IIA per cent20Overview.pdf), p.20.

<sup>6</sup> For an illustration of charges see: <http://www.waterreformni.gov.uk/charges.asp>

<sup>7</sup> See Appendix 1.

<sup>8</sup> <http://www.sustainable-development.gov.uk/sustainable/quality04/maind/04q03.htm>. For an analysis of water affordability in Great Britain see: Defra (2004) Cross-Government Review of Water Affordability Report, p. 11.

<sup>9</sup> Ibid. p. 13.

<sup>10</sup> Integrated Impact Assessment : Policy Proposals Paper, November 2004, p.55-56.

<sup>11</sup> Personal communication with Department for Regional Development, 20 June 2005.

<sup>12</sup> See Practical Guidance on Equality Impact Assessment – Guidance Document,

<http://www.equalityni.org/uploads/pdf/ACF71A1.pdf>

<sup>13</sup> Impact Assessment of the Government's Proposals for the Reform of Water and Sewerage Services, Part II Equality Impact Assessment, p. 13.

<sup>14</sup> Ibid. p. 13.

<sup>15</sup> The Reform of Water and Sewerage Services in Northern Ireland: Equality Technical Appraisal, np.

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