
**NRA RESPONSE TO
 USING WATER WISELY
 A CONSULTATION PAPER
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NRA RESPONSE TO USING WATER WISELY A CONSULTATION PAPER

1. INTRODUCTION

- 1.1** The National Rivers Authority (NRA) strongly welcomes the DoE/Welsh Office initiative in publishing the consultation paper, and believes it to be a significant step in promoting the wise use of water. As guardians of the water environment, the NRA is intent upon ensuring the efficient use of water resources, and supports initiatives which further this objective.
- 1.2** An appropriate balance needs to be struck between the reasonable needs for water to be removed from the water environment to meet the needs of water supply, industry and agriculture as against the demands for water to sustain and improve the ecological, water quality, recreational and navigational characteristics of our water resources. However, the more water taken from our water resources, the more likely it is that the impact upon our rivers and wetlands will be unacceptable.
- 1.3** Striking the right balance is not straightforward. Whilst the NRA strongly supports the need to avoid waste of water, it recognises that the cost of water saving measures must be taken into account in deciding how resources should be used and managed. At present, it is difficult to strike the optimum economic strategy for water saving measures because robust techniques have not yet been developed to value the water environment, and the NRA is actively researching environmental economic techniques through its R&D programme.
- 1.4** In carrying out its duty to conserve, augment and manage water resources, the NRA is committed to ensuring protection of the water environment.
- 1.5** The wise use of water is discussed under specific headings in sections 2 to 6, and the responses to the measures on which views are particularly sought in sections 12.4 and 12.5 of the Consultation Paper, are contained in section 7.

2. DOMESTIC METERING

- 2.1** The NRA has already made known its position regarding domestic metering in that it favours selective domestic metering with an appropriate tariff, especially in areas where water resources are under stress. This will not only help ensure water is seen as a precious resource and must be used wisely but also help to reduce demand.
- 2.2** Where it can be shown that proper attention has not been given to the introduction of selective metering, the NRA will not grant licences for new sources.

- 2.3** The basis for the NRA's position is that metering has been shown to reduce the demand for water, and therefore with an appropriate tariff, metering gives appropriate signals leading to a wiser use of water.
- 2.4** Widespread selective domestic metering is seen by the NRA as having a significant impact upon the need for new water resources development, and in some circumstances could delay the need for a new scheme by many years.
- 2.5** Purely from a management and planning viewpoint, metering makes good sense. At present there is no comprehensive information on how water is used. Generally, there are a range of assumptions made in dividing up the total water put into supply into components of real use and components of leakage. Different companies make different assumptions, and hence it is difficult to audit their reasonable needs for water when determining abstraction licence applications. For example, increasing the assumed per capita consumption will reduce the amount of water assumed to be lost from the system, and vice versa. Clearly, information obtained from metered households on a wide scale would significantly enhance the information available for planning and management.

3. LEAKAGE

- 3.1** Most attention to date has focused on leakage associated with public water supply, and the NRA welcomes the initiative by the Water Companies Association and Water Services Association to develop a consistent framework for the assessment and control of leakage.
- 3.2** It is evident that a significant proportion of water is not usefully delivered to the tap and is lost through leaks or wastage in either the water companies' distribution system or on the customers' premises. The NRA is supportive of initiatives aimed at reminding consumers of their responsibilities to avoid wastage and to repair leaks.
- 3.3** Future leakage levels are a major uncertainty in forecasting future demands for water, and the timing and sizing of future water resources schemes are likewise uncertain. As referred to in section 2 above, widespread domestic metering would significantly increase the quality of information required for planning purposes and in measuring performance against targets.
- 3.4** The NRA supports the setting of mandatory target levels aimed at controlling the amount of water lost from supply systems. (See section 7.3 below). The targets should be realistic, but sufficiently tight to force companies to take a positive approach to leakage control.

- 8.5** Promotion by either water companies, the NRA or OFWAT without financial incentives to the householder are less likely to be successful in the permanent reduction of demand.
- 8.6** In the longer term, public education and education of children of school age would also have their place in understanding the need for using water wisely. The Department of Education and Science may wish to be advised if this was introduced as part of the national curriculum, and the NRA would be pleased to be involved in helping to form an understanding of the environmental need to use water wisely. The Director General, given suitable duties, would no doubt also be required to advise on how water could be conserved from the customers point of view.
- 8.7** The NRA supports eco-labelling of water using appliances, and sees this as being effective in reducing household demand. The joint promotion by water and electricity companies of water and energy efficient appliances may be possible, but could be made to be effective if water companies had a statutory duty placed upon them to conserve water.
- 8.8** Leaflets from authoritative bodies eg. on garden watering are most likely to be effective during periods of prolonged dry weather. A financial incentive for householders to limit the external use of water would however probably make this unnecessary in all but the most extreme circumstances.
- 9. CONCLUSIONS**
- 9.1** The Consultation Paper "Using Water Wisely" is welcomed by the NRA as a timely and comprehensive report which should help develop an increased awareness throughout all sectors of the community of the need to treat water as a precious resource and to use it wisely.
- 9.2** The prolonged and severe drought of the late 1980's and early 1990's has created an awareness of the need to conserve water resources and to use water wisely, but memories can be short lived once a drought is over. The NRA strongly supports measures which will have a continuing impact on water companies, agriculture and industrial attitudes towards water.
- 9.3** In view of the high potential increase in the real price of water, it is probable that the economic case for demand management will become much stronger. However, a methodology to value the environmental benefit from consequent reduction in water abstraction is required, but the difficulty in achieving a robust methodology should not be underestimated. Pragmatic assessments with wide confidence limits may be the best which can be achieved as further precision would be spurious.
- 9.4** The NRA sees the following as key measures to help ensure existing resources are used effectively before new developments take place:-
- Selective metering with appropriate tariffs where this is shown to be justified -especially in areas where water resources are under stress.
 - Mandatory leakage targets; realistic, but sufficiently ambitious to force companies to take a positive attitude.
- 9.5** In authorising new developments, the NRA will ensure the water environment is protected. Key aspects are seen to be:-
- New developments must fit within the overall framework for strategic options being formulated by the NRA.
 - Sensible location of discharge of suitably treated effluents can help water resources availability.
 - New abstractions will normally only be granted with conditions which require abstractions to cease if control flows are reached.
 - The NRA is actively considering the setting of statutory MAFs.
- 9.6** In addition to ensuring that future developments do not harm the water environment, the NRA is committed to solving the inherited problems of excessive abstraction. Unless timescales for solving the problem can be agreed with the water companies, the NRA will withdraw or amend abstraction licences and require abstractors to use alternative sources.
- 9.7** The Consultation Paper has identified in its 'Next Steps', a number of initiatives which will be considered by the DoE and Welsh Office. The NRA is of course also considering some of these issues within its own operational and R&D activities, and looks forward to consultations with the Government in taking forward these issues of mutual interest.
- 9.8** Water is a scarce and precious resource, but if all involved appreciate its true value and use it wisely, there is sufficient to meet all reasonable needs through sustainable resource developments. It is essential that the initiative of the consultation paper is taken on into positive action, so that objectives can be agreed and action taken to achieve them.

*Directorate of Water Management
October 1992*

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4. ALLEVIATION OF LOW FLOWS

- 4.1** The NRA has given a high priority to the alleviation of low flows which have been caused by the unwise use of water resources due to excessive abstractions. A list of perceived problem locations was drawn up soon after the formation of the NRA, and work is proceeding nationally not only on investigations into the options for solving them, but also the implementation of solutions.
- 4.2** The majority of the problems are caused by authorisations given under legislation enacted during the 1960's. This required licences to be issued, free of any conditions to protect the environment, where the abstractor was able to demonstrate that the abstraction had been taking place for some time prior to the introduction of the licensing system. Most of the problems are associated with abstractions for public water supply from boreholes.
- 4.3** The NRA will take positive action to solve the problems of rivers and wetlands which are suffering due to excessive abstraction. Solutions will include licence variation or revocation unless agreement is reached with water companies on the timetable for solving these problems.
- 4.4** In appropriate situations the NRA intends to withdraw or amend abstraction licences and require abstractors to use alternative sources. Where abstractors can establish legal rights of compensation, the NRA will make use of existing legislative powers to charge compensation to the Water Resources Account to which all abstractors in a region contribute by means of abstraction charges. Where possible, companies will be encouraged to agree alternative schemes of supply that avoid complex compensation arrangements.
- 4.5** Where alternative sources of public supply are not immediately available in a way that would allow the companies to meet their statutory obligations, the NRA will amend licences where this is environmentally acceptable, on the basis that alternative supplies will be promoted to agreed timetables and programmes.
- 4.6** The NRA is satisfied with its existing powers to enable abstraction licences to be amended and withdrawn where their use is in conflict with the statutory requirement for conservation.

5. PROTECTION OF THE WATER ENVIRONMENT

- 5.1** An essential element in the wise use of water relates to decisions on how much water needs to be left in rivers and wetlands when an application is received to remove water from inland waters or from groundwater.
- 5.2** The NRA is the licensing authority for new and existing licensed abstractors, and to date some 50,000 licences exist throughout England and Wales.
- 5.3** Abstraction licensing is the key power of the NRA to ensure that the water resources of England and Wales are managed and planned in a sustainable manner.
- 5.4** One of the difficulties in applying its powers is the lack of objective criteria for use in determining the necessary flow regimes required to meet its environmental obligations. In recognition of these difficulties the NRA has instigated R&D projects aimed at improving the objectivity of this process.

- 5.5** Frequently, licences are granted with a condition that abstraction ceases when a prescribed flow or level is reached. The prescribed flow or level is assessed for each location taking account of the needs of the aquatic environment, water quality objectives and the rights of existing abstractors. In most instances the prescribed flow is not seasonally varying and typically, though not exclusively, it is set at a flow or level which is experienced during dry (but not drought) periods (such as the flow exceeded for 95% of time).
- 5.6** Such prescribed flows are a proxy for what are termed Minimum Acceptable Flows (MAF) in the Water Resources Act 1991. These are statutory flows or levels which must not be reduced by abstraction. In other words if a MAF or proxy control flow has been set, all abstractions would be required to cease when this flow is reached.
- 5.7** The concept of MAF has been contained in the legislation since 1963, but to date none have been set, although many abstractions are linked to prescribed flows. However, the NRA is conscious of the pressure to set MAFs and is undertaking a project to investigate their benefits and disbenefits.
- 5.8** Whilst recognising that further work is required to refine techniques for determining the needs for water for the environment, it is the NRA's view that inherited and current practices have in general served the environment well. Of the 50,000 licences in existence, the vast majority are seen as having been granted on a sustainable basis and only a few are giving cause for concern.
- 5.9** The primary concerns are associated with initiatives to alleviate low flows which are referred to in section 4 above. However, there is another group of potential problems which have arisen as a result of the protracted drought of the late 1980's and early 1990's. The severity of the drought has drawn into question the ability of a limited number of groundwater resources to adequately meet the demands placed upon them without causing environmental degradation, even in more normal years. In these areas the NRA has announced a moratorium on the granting of new licences pending further investigation to assess the sustainability of resources in these areas.
- 5.10** In view of the uncertainties inherent in the licence determination process, the NRA takes a precautionary approach to the granting of new licences, and will only grant them if it is confident that the available resources are able to sustain the proposed abstraction in the long term without harm to the environment.

- 5.11** At present, information on how much water is abstracted from licensed sources cannot be made public without the agreement of the abstractor. The NRA feels that a change in legislation enabling this information generally to be made available to the public would be beneficial.

6. FUTURE WATER RESOURCES DEVELOPMENTS

- 6.1** On average for England and Wales, there is more than enough water available for all users both now and into the foreseeable future. The difficulties that are experienced relate to the distribution of resources across the country in relation to demand and the way in which available resources vary with season and year.
- 6.2** The NRA has already published its discussion document

examining the broad balance between resources and demands together with strategic options for meeting future imbalances. The aim is to develop by the end of 1993, an agreed framework for the development of strategic options.

6.3 There are a number of broad principles that the NRA seeks to be applied in relation to the wise use of water resources to meet future needs, as follows:

- a) Where possible, points of discharge should be at or above the point of abstraction.
- b) If this is not reasonable, then the point of discharge should be as close as possible to the point of abstraction.
- c) Suitably treated effluents are an important water resource, and discharges to inland waters are favoured in preference to discharges to the sea.
- d) Abstraction should take place as near to the tidal limit as possible.
- e) The NRA is concerned with the licensing of abstractions for public water supply, industry and agriculture alike, and will take into account the future needs of the other interests when a particular development is sought. This could involve seeking agreements to secure adequate supplies for the other parties.
- f) The NRA favours schemes which:-
 - make bulk transfers via river systems rather than through pipes, subject to environmental criteria being satisfied.
 - make use of spare resources rather than development of new sources, including reallocation between companies.
 - have environmental benefits such as the provision for releases to benefit the water environment.
 - avoid piecemeal development.
 - benefit all classes of abstractor.
 - minimise adverse environmental impact.
- g) Unless special circumstances apply, licences will be granted with a condition requiring the abstraction to cease when a specified flow or condition is reached.
- h) The NRA will expect applicants for new abstraction licences to demonstrate that they have given consideration to the opportunities for recycling and reuse of water.

7. MEASURES ON WHICH VIEWS ARE PARTICULARLY SOUGHT BY DOE

7.1 The DoE has especially invited views on particular measures for using water wisely. These measures have been summarised below, together with the NRA's response.

7.2 PROMOTION OF THE EFFICIENT USE OF WATER

Whether the promotion of efficient use of water should be furthered by positive duties on water companies and the Director General.

7.2.1 The NRA has experienced conflicting business objectives between water companies. Some companies

see water as a product like any other, which should be marketed and these companies look to growth in sales to increase revenue and profits. Other companies appear to take a less competitive view in this respect, but provide little evidence that they see water conservation as part of their plans, other than during periods of drought, when appeals for constraint and hosepipe bans are introduced to eke out resources. In addition to the environmental implications of unconstrained demand for water, there are very real difficulties for the NRA in agreeing realistic demand projections with companies which are compatible with its duty, under Section 19 of the Water Resources Act 1991, to secure the proper use and conservation of water resources.

The NRA would therefore see the placing of a positive duty on water companies to promote the efficient use of water, as a major step forward in clarifying their business objectives, constraining demand and resolving the conflict between the NRA's duties under Section 19 with the commercial aspirations of the companies.

7.2.2 The NRA believes that whenever possible, the environmental regulator (the NRA itself) and the economic regulator, the Office of Water Services (OFWAT), should have compatible objectives so that water companies and others receive clear, strong and unconflicting messages from the appropriate regulator on the efficient use of water. The NRA would support initiatives to place a duty on the Director General of OFWAT to promote economy and efficiency in the use of water. This would include such aspects as eco-labelling, the use of Water Byelaws and other regulations, mandatory leakage targets and promotion of methods for reducing waste of water. The result would clarify the roles of the regulators with the NRA concentrating on the water environment, and OFWAT, being close to the customers, concentrating upon the undertakers and their customers. Clearly the regulators would need to ensure compatibility between their activities in this area.

7.3 MANDATORY TARGETS FOR LEAKAGE

Whether water companies should be given mandatory targets for reducing leakage pending the introduction of an incentive charging scheme for abstracting water.

7.3.1 The reduction of leakage from company water mains and consumers' properties is of major importance to the NRA in respect of its duties to secure the proper use and conservation of water resources. The NRA will not normally grant further abstraction licences for additional water to a water undertaker, unless leakage levels are at, or steps have been taken by the water undertaker to achieve, the economic level for the supply area determined by the methods set out in Technical Report No. 26, or any approved updated version of that report.

7.3.2 The annual publication of leakage component figures calculated using the same methodology and attributable to each water company, is seen by the NRA as an essential step in improving the planning and assessment of the need for future development of water resources. In due course environmental costs and benefits will need to be incorporated into the methodology for selecting appropriate leakage levels and in order to gain a

better understanding of environmental economics the NRA has commissioned a range of research projects concerned with the economic valuation of the water environment. The introduction of mandatory targets to be met in the short to medium term in areas of existing and anticipated water shortage is seen by the NRA as a necessary measure to secure the proper use of water resources, and to delay or put off the development of future schemes. The NRA would be willing to discuss appropriate targets with OFWAT in order to give water companies a clear and enforceable target from both the environmental and economic regulators. These targets should be realistic, but sufficiently ambitious to force companies to take a positive approach to leakage control.

7.3.3 The NRA does not necessarily see incentive charging for abstracting water as an alternative to clear mandatory targets for water company leakage. Mandatory targets are easily understood by the water companies and by their customers, whilst control through incentive charging has yet to be shown to be practical and effective in reducing levels of leakage. However, it is sensible for incentive charging to be considered as a further method of achieving the same objective.

7.4 WATER BYELAWS AND WATER USING APPLIANCES

Whether the introduction of water efficient appliances and wider use and enforcement of Water Byelaws should be used to reduce demand.

7.4.1 The Department has sought views on a range of issues relating to the use of Water Byelaws and water using appliances, the practicalities of which are largely the province of the water industry. The NRA would normally support all such measures to conserve water and to ensure its proper use, so that supplies are available for legitimate purposes with minimum impact on the environment. As an environmental regulator however, the NRA is primarily concerned with the conservation of water through the effective management of water resources and the protection of resources from pollution.

7.4.2 The NRA would welcome an extension of the Director General's duties and powers as discussed in 7.2.1 above to provide a competent focus for promoting the economy and efficiency in the use of water through the use of Byelaws, eco-labelling, regulation and education. There would then be a clear duty on each regulator for the conservation of water from the point of abstraction through to the point of use.

7.5 WATER METERING

Whether households using large volumes of water should be metered and whether the use of further measures and related powers to promote water metering should be introduced.

7.5.1 The NRA sees water metering as an important measure for managing the demand for water. It supports the principle of domestic metering in areas where water resources are under stress and where the development of additional resources is difficult to achieve without harm to the environment. It also supports metering of all households using large volumes of water externally ie. those with swimming pools, sprinklers and any device using large quantities of water. Indeed, the NRA would normally expect to see a commitment to metering in such areas before approving licences for

additional sources. The introduction of water meters and an appropriate tariff may be a cost effective means for water companies to delay or obviate the development of new water resources schemes. The NRA would like to see the costs and benefits to the environment of delayed development included in the assessment of the case for metering and is co-operating with others in the development of suitable techniques.

7.5.2 The NRA would welcome new powers for the Director General to approve decisions by water companies about charging methods, in order to secure that the charging methods are designed to promote economy and efficiency.

7.5.3 The NRA supports charging customers of water undertakers on a basis which reflects the amount of water used. However, the NRA is not in a position to comment specifically on extensions of the ban on the use of rateable values or on the interim measures proposed.

7.5.4 The development of more reliable techniques for remote meter reading, and more co-operation between utilities in one field of meter reading is not of direct concern to the NRA, but seems sensible in terms of improved effectiveness and efficiency.

7.6 CONTROL OF DISCHARGES

Whether NRA's powers to control where discharges take place should be strengthened.

7.6.1 In many instances, suitably treated sewage and other effluents can make an important contribution to water resources and the NRA would welcome explicit powers to direct the discharge of treated effluents for the purposes of water resources management. The extent to which Schedule 10, paragraph 2(5a) of the Water Resources Act 1991 can be used for water resources purposes is uncertain and explicit powers to control or re-direct effluents would clarify the situation.

8. ONGOING PUBLIC EDUCATION MEASURES

8.1 A number of proposals have been suggested in the consultation paper on measures which could be taken by the public in order to save water. These are all supported by the NRA and would collectively be effective in reducing domestic demand.

8.2 The promotion of these measures will be most effective where the householder sees a return on investment in the form of lower water bills, which means that domestic water meters need to be installed together with an appropriate tariff.

8.3 Incentives to install water meters, by fitting free of charge or at less than cost price, together with an awareness campaign on the potential financial savings would be the most direct means of encouraging householders to take up the water saving measures suggested. Alternatively, compulsory metering in high water using areas or areas where water resources are limited would also be effective.

8.4 The effective promotion of water saving measures would require a duty to be placed on the Director General as suggested in the consultation paper with powers to promote 'Save it' campaigns in all the media similar to the gas and electricity industries.