

CORPORATE  
PLAN



1992 / 93

*Guardians of the  
Water Environment*

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Water Environment*

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**NRA**

*National Rivers Authority*

**Guardians of  
the Water Environment**



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## CORPORATE PLAN

1992 / 93

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## FORWARD LOOK TO 1995/96

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ENVIRONMENT AGENCY



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# Foreword

We are confident that by implementing this, our third *Corporate Plan*, we can build on our past achievements and reinforce our claim to be the 'Guardian of the Water Environment' and Europe's strongest Environmental Protection Agency.

The National Rivers Authority will spend the next few years consolidating its position as an effective '*Guardian of the Water Environment*'. It will do so without significantly increasing its expenditure above previously planned levels.

Whilst our Mission Statement continues to provide the strategic direction of the organisation, the Authority will continue to mould its management structure and operational activities to cope with the rapid changes brought about by EC and UK legislation, the economic climate, industry and public demand. Other issues which are becoming of increasing importance are the number of new EC Environmental Directives, the setting of Statutory Water Quality Objectives and the protection of groundwater.

One of the most serious problems is the drought which is particularly affecting the south and east of England. As well as developing a long-term strategy for the sustainable development of water resources and undertaking to alleviate low flows in specific rivers, we are taking shorter-term actions wherever we can to help mitigate the problem.

We aim to ensure that our expenditure is concentrated on our core functions, that our total administrative costs remain low and that our management and control are of the highest quality. We are determined, in the years ahead, that our core functions will remain the priority for funds and that a high proportion of any additional funding will be concentrated in this area rather than our support functions.

We will introduce and develop new charging schemes to increase our income and reduce our dependence on government grants. Eventually we would hope to replace our cost-recovery schemes with incentive charging schemes, but this will require legislative change.

The Authority has made contributions to the government's thinking on the proposed new Environment Agency. Our preferred option has received a large measure of support from numerous environmental organisations. The NRA will continue to press for an integrated approach to water and environmental management in discussions with government about the NRA and the proposed Environment Agency.

The NRA's substantial achievements over the last three years are a credit to those within the Authority who have continually striven to accomplish high standards. By adopting the principles of the *Citizen's Charter* we will continue to improve and develop our public services and customer care.

We are confident that by implementing this, our third *Corporate Plan*, we can build on our past achievements and reinforce our claim to be the '*Guardian of the Water Environment*' and Europe's strongest Environmental Protection Agency.

We commend this Plan to you.



Lord Crickhowell

Chairman

Mr E P Gallagher

Chief Executive

June 1992



# Executive Summary

## INTRODUCTION

This is our third *Corporate Plan*. Its contents are based on our draft core function and research and development strategies, and our annual business plans for our Head Office and ten regions. We have produced this Plan to help structure and control our activities, and to ensure that we use our resources in a cost-effective and efficient manner. The Plan assumes future levels of government grant as announced in November 1991 and 5% inflation per annum. The Plan covers the period 1992/93 to 1995/96 and sets out our:

- Performance against our second *Corporate Plan*;
- Future strategy and key priorities;
- Core function programmes and plans;
- Proposed use of resources.

Information presented in this Plan will also be used by government in the 1992 Public Expenditure Survey (PES) as the basis for reviewing the NRA's priorities and determining levels of grant support for the years 1993/94-1995/96.

We recognise that our plans for 1993/94 and future years will need reviewing and adjusting in the normal way following the November 1992 PES announcement in our next Corporate Planning round, and in light of developments regarding the creation of an Environment Agency.

## PERFORMANCE 1991/92

We have achieved the majority of the key priorities we set ourselves in our 1991/92 *Corporate Plan*. Further details are given later in the Plan and will be reported in more detail in our 1991/92 *Annual Report and Accounts*. By way of example we successfully:

- Monitored almost 14,000 consented discharges and analysed over four million water samples;
- Introduced annual charges for consented discharges to controlled waters, raising £22m;
- Published the results of the 1990 EC Bathing Water Quality Survey and 1990 River Water Quality Report which indicated a net downgrading in river water quality across England and Wales over a five year period;
- Published major reports about pollution incidents and on agriculture and water quality;
- Issued a public consultation document on Statutory Water Quality Objectives (SWQOs);

- Inspected over 12,000 abstraction licences and alleviated low flows at seven sites;
- Published a report on the future demand for water resources up to the year 2011;
- Issued public consultation documents on a new water resources charging scheme, and water resources development strategy;
- Improved over 200km of flood defences;
- Published the findings of the national Sea Defence Survey and contributed to the National Audit Office (NAO) study on coastal defences;
- Undertook almost 2,000 fishery surveys and reared and stocked over 12 million fish;
- Introduced a new national angling rod licence and charging scheme;
- Undertook over 200 recreation and conservation improvement projects;
- Contributed to the DoE review of navigation;
- Published our 1991 R&D Review and developed a more strategic research and development (R&D) programme;
- Maintained a high public profile on water and environmental management.

## KEY PRIORITIES

We aim to ensure that implementing our Mission and Aims, promoting the sustainable use of water and developing integrated catchment management are at the forefront of everything we do. We have priorities for action in all our core functions, namely water quality, water resources, flood defence, fisheries, recreation, conservation and navigation. The key priorities for each of these functions are listed below. The priorities for our support services are given later in the Plan.

### Water Quality

- Review and monitor discharge consent conditions and compliance to reduce water pollution.
- Advise the Secretary of State on the introduction and setting of the first tranche of Statutory Water Quality Objectives by April 1993, and proposals for new EC Directives relating to water quality.
- Review and implement a revised charging for discharges scheme by April 1994, and provide advice to government on possible incentive charging schemes to help reduce water pollution.

- Complete a national survey of contaminated land and abandoned mines likely to cause water pollution problems and identify possible solutions and costs by September 1994.
- Implement long-term solutions to the Wheal Jane mine pollution by March 1994.

#### *Water Resources*

- Address with vigour short-term measures needed in the south and east of the country to tackle drought and review our legal powers and responsibilities in relation to the promotion of longer-term solutions.
- Investigate and implement solutions to low-flow problems in at least eight catchments per year by 1995/96.
- Complete public consultation on, and develop a long-term strategy for, the sustainable development of water resources by December 1992.
- Develop and implement a new charging for abstractions scheme by April 1993.
- Finalise and progressively implement our groundwater protection policy from December 1992.

#### *Flood Defence*

- Implement standards of service methodology to develop a consistent approach to flood defence activities by September 1992.
- Introduce post-project appraisal of flood defence works by April 1993.
- Introduce performance measures to demonstrate value for money on both capital and revenue expenditure and improve value for money of in-house workforce by increased market testing and further competitive tendering.

#### *Fisheries*

- Develop, undertake public consultation on, and commence the implementation of, a Section 142 fisheries charging scheme by a target date of April 1993.
- Respond to MAFF and implement an East Coast Fishery management plan by January 1993.
- Review commercial licence arrangements and charges by January 1994.

#### *Recreation*

- Review recreation facilities and activities by March 1993 and implement findings by March 1994.

#### *Conservation*

- Implement a strategic conservation classification scheme by January 1996.

#### *Navigation*

- Review and implement new navigation charges for NRA navigations by April 1993.

#### **OPERATIONAL PERFORMANCE**

This Plan will ensure the delivery of significant outputs, both in policy and operational terms. Key operational outputs are tabulated opposite.

Water quality outputs for each year of the Plan period include the monitoring of 16,000 consented discharges and the analysis of 5 million water quality samples. By 1995/96, SWQOs will be introduced and charging for discharges income increased to over £50m. As a result, a reduction in Class 4 rivers and increased compliance of EC designated bathing waters is anticipated.

For water resources a new abstraction charging scheme will be introduced in 1993. In addition, each year at least eight sites will have low flows alleviated and over 17,000 licensed abstractions will be inspected.

Over 40,000km of flood defences will be maintained and some 150km of new defences improved by spending in excess of £250m each year. An estimated one million angling licences will be issued, 2,500 fishery surveys completed and over eight million fish stocked each year. In addition, a new fisheries charging scheme will be introduced in accordance with Section 142 of the 1991 Water Resources Act. Finally, over 250 recreation and conservation schemes will be undertaken in collaboration with other bodies, and 30 navigation improvement projects undertaken each year.

## Operational Outputs

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
<b>WATER QUALITY</b>							
No. of discharges monitored	11,500	13,000	13,700	15,900	16,100	16,500	17,000
No. of water quality analyses (millions)	3.5	3.8	4.3	4.8	4.8	5.0	5.0
% of water quality samples analysed within target time	N/A	85	88	95	100	100	100
Length (km) of Class 4 (Bad Quality) River <sup>1</sup>	617	639	601	508	469	440	410
Length (km) of Class D (Bad Quality) Estuary <sup>1</sup>	83	84	77	77	67	60	50
EC Bathing Waters (% compliance) <sup>1,2</sup>	76	75	80	92	98	100	100
<b>WATER RESOURCES</b>							
No. of licence inspections made	4,593	5,125	12,700	17,400	20,200	22,600	25,500
No. of sites with low flows ameliorated	-	-	7	8	8	8	8
% licences determined within statutory period	41	36	38	64	73	78	79
% achievement of licence enforcement programme	N/A	34	63	79	92	100	100
<b>FLOOD DEFENCE</b>							
Length (km) flood defences maintained	24,700	38,250	40,340	43,120	43,570	44,000	44,440
Length (km) flood defences improved	132	300	222	118	146	N/A	N/A
No. of planning applications screened	85,978	130,098	148,718	151,900	155,000	156,000	157,000
% planning consultations processed within target time	N/A	78	84	87	88	95	100
<b>FISHERIES</b>							
No. of fishery surveys	1,810	1,863	1,910	2,490	2,695	2,895	3,110
No. of fish reared (millions)	5.0	6.4	7.0	7.6	8.5	9.1	9.7
No. of fish stocked (millions)	5.3	5.7	8.1	8.3	9.7	9.9	10.1
No. of habitat improvement structures built	39	56	51	44	48	52	55
<b>RECREATION</b>							
No. of improvement projects	87	92	87	97	95	95	95
External collaboration (%)	51	53	69	67	65	63	63
<b>CONSERVATION</b>							
Length (km) aquatic habitats surveyed	2,280	3,880	5,320	5,950	5,450	5,600	5,700
No. of improvement projects	29	51	138	168	175	180	200
External collaboration (%)	65	65	54	67	65	70	70
<b>NAVIGATION</b>							
Boat licence compliance (%)	94	95	99	99	99	99	99
No. of improvement projects	18	38	52	34	38	40	45

### Notes

1 Figures for river and estuarial quality and bathing water compliance are on a calendar year basis. Figures for future years are expected, not planned.

2 Bathing water compliance for 1991/92 is the 1991 actual.

3 N/A = not available.

## RESOURCES

We are planning to spend almost £2bn over the next four years, rising from £457m in 1992/93 to £531m in 1995/96. Permanent staff are planned to total less than 8,000. Whilst expenditure on all our core functions will rise, the largest real increase in expenditure, over and above an assumed rate of 5% inflation has been allocated to water quality. This increase, equivalent to 3% in real terms, will help reduce water pollution.

The proportion of income raised from our charging schemes will increase to about 75%. Government

grants will fall to 25% of our total operating costs.

Although setting-up costs decline, we have a long-term need for £12-£13m GIA for unfunded pensions.

DoE GIA support will decrease according to the 1991 PES statement as our income increases from water quality and fisheries charging schemes. However, our Plan assumes capital grants from MAFF (Ministry of Agriculture, Fisheries and Food) and the Welsh Office will increase over the Plan period, to help fund our increasing flood defence capital programme.

### Note

Actual 89/90 total government grants include £21m of environmental service charge.

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
Total Operating Costs (£m)	334	350	417	457	479	507	531
Total Operational Income (£m)	262	256	285	326	344	365	386
Operational Income as % Operating Costs	78	73	68	71	72	72	73
Total Government Grants (£m)	112	128	127	121	120	131	135
Government Grants as % Total Operating Costs	34	37	30	26	25	26	25
DoE GIA (£m)	74	104	94	82	76	82	84
MAFF/Welsh Office Capital grants (£m)	17	24	33	39	44	49	51

## EFFICIENCY AND PRODUCTIVITY

Year	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
Efficiency Savings (£m)	6.8	7.2	7.6	7.9

In each year of this Plan we have built in efficiency savings equivalent to 1.5% of total operating costs.

Our internal audit section anticipates identifying additional savings of £0.6m p.a. The incorporation of the benefits of R&D outputs into operational activities will also produce efficiency savings over the Plan period, as will the implementation of key applications from the IS (Information Systems) strategy. By inter-regional comparisons and changes in management practice such as increased market testing, we intend to generate further

operational savings. Particular attention will be paid to control of travel and subsistence costs. We have decided to continue with our output and performance measures pilot study and to develop more sophisticated performance measures made possible by new IT (Information Technology) systems. We intend to extend and develop the use of performance appraisal and performance related pay to increase the productivity of staff. This is in line with the government's *Citizen's Charter* and *Competing for Quality* initiatives.



# USE OF RESOURCES AND SOURCES OF FUNDING

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>EXPENDITURE<sup>1</sup> (£m)</b>							
<b>Core Functions</b>							
Water Quality	47.6	62.4	73.3	78.9	85.9	93.8	97.5
Water Resources	65.8	51.6	67.7	79.6	83.7	87.8	92.5
Flood Defence	167.5	181.0	220.3	242.9	257.7	270.6	284.2
Fisheries	15.1	17.3	23.1	24.0	25.4	26.9	28.4
Recreation	1.2	1.4	1.9	2.1	2.2	2.3	2.4
Conservation	1.3	1.5	3.1	3.6	3.8	4.0	4.2
Navigation	6.0	7.5	7.6	7.6	8.0	8.4	8.8
<b>Sub-Total</b>	<b>304.5</b>	<b>322.7</b>	<b>397.0</b>	<b>438.7</b>	<b>466.7</b>	<b>493.8</b>	<b>518.0</b>
<b>Setting Up Costs</b>							
Capital Restructuring <sup>2</sup>	24.1	13.9	5.4	1.6	-	-	-
Personnel Buyouts <sup>3</sup>	-	2.7	3.4	5.0	-	-	-
Unfunded Pensions <sup>4</sup>	5.6	10.3	11.2	11.6	12.2	12.8	13.4
<b>Sub-Total</b>	<b>29.7</b>	<b>26.9</b>	<b>20.0</b>	<b>18.2</b>	<b>12.2</b>	<b>12.8</b>	<b>13.4</b>
<b>TOTAL PAYMENTS</b>	<b>334.2</b>	<b>349.6</b>	<b>417.0</b>	<b>456.9</b>	<b>478.9</b>	<b>506.6</b>	<b>531.4</b>
<b>INCOME (£m)</b>							
<b>Core Functions</b>							
Water Quality	-	5.0	24.8	40.1	47.9	50.3	52.8
Water Resources	82.7	63.2	64.1	75.7	80.7	87.8	92.5
Flood Defence	171.3	178.8	186.2	197.4	201.8	211.0	223.0
Fisheries	7.4	7.3	8.4	11.0	12.4	14.4	16.2
Recreation	0.1	0.3	0.3	0.3	0.4	0.4	0.4
Conservation	0.1	0.1	0.3	0.2	-	-	-
Navigation	0.6	1.1	1.0	1.0	1.1	1.1	1.1
<b>Sub-Total</b>	<b>262.2</b>	<b>255.8</b>	<b>285.1</b>	<b>325.7</b>	<b>344.3</b>	<b>365.0</b>	<b>386.0</b>
<b>Government Grants</b>							
DoE Grant-in-Aid	74.3	103.9	93.9	81.8	75.7	82.0	84.2
MAFF/Welsh Office Capital Grants	16.8	23.6	32.5	38.6	44.2	49.3	50.5
Other <sup>5</sup>	21.0	-	0.3	-	-	-	-
<b>Sub-Total</b>	<b>112.1</b>	<b>127.5</b>	<b>126.7</b>	<b>120.4</b>	<b>119.9</b>	<b>131.3</b>	<b>134.7</b>
<b>TOTAL RECEIPTS</b>	<b>374.3</b>	<b>383.3</b>	<b>411.8</b>	<b>446.1</b>	<b>464.2</b>	<b>496.3</b>	<b>520.7</b>
<b>SURPLUS (DEFICIT) (£m)</b>							
DoE Grant-In-Aid	2.6	0.7	-	-	-	-	-
Water Resources	16.9	11.6	(3.6)	(3.9)	(3.0)	-	-
Flood Defence	20.6	21.4	(1.6)	(6.9)	(11.7)	(10.3)	(10.7)
<b>TOTAL<sup>6</sup></b>	<b>40.1</b>	<b>33.7</b>	<b>(5.2)</b>	<b>(10.8)</b>	<b>(14.7)</b>	<b>(10.3)</b>	<b>(10.7)</b>
<b>STAFF<sup>7</sup> (FTE)</b>							
<b>STAFF<sup>7</sup> (FTE)</b>	<b>6,484</b>	<b>7,111</b>	<b>7,735</b>	<b>7,953</b>	<b>7,956</b>	<b>7,956</b>	<b>7,956</b>

## Notes

1 Expenditure is on a cash basis assuming a September 1991 price base with inflation at 5% per annum.

2 The declining capital restructuring figures are the remainder of the £45m programme of works agreed with DoE to set up the NRA.

3 The personnel buyouts figures represent the remainder of the £11m agreed with DoE to buy out terms and conditions the NRA inherited from the Regional Water Authorities.

4 The figures for unfunded pensions represent DoE GIA to the NRA in their capacity as pension fund administrator on behalf of DoE for former Regional Water Authority personnel.

5 "Other" represents the last year of the Environmental Services Charge levied by the Regional Water Authorities up to July 1990.

6 This total represents cash surpluses or deficits created in the relevant year on the water resources or flood defence accounts or that allowable within the 2% carry forward of government grants.

7 Staff numbers represent the NRA's permanent full-time equivalent (FTE) staff complement.

#### ALTERNATIVE RESOURCE SCENARIOS

The equivalent of plus and minus 5% changes in operating costs and their impact on outputs are given in each core function chapter. In general terms, additional resource would increase output; constrained resource would decrease output. We would endeavour to mitigate the effect on core functions, however, by reducing support service expenditure.

With additional GIA between 1993/94 and 1995/96, the NRA would:

- implement longer-term remedial works to further reduce pollution from Wheal Jane mine and ensure EC water quality standards are met in the River Carnon (£0.6m);
- survey and investigate other abandoned mines and produce a prioritised longer-term rehabilitation programme aimed at improving 450km of classified river and canal length and carry-out capital works at priority sites (£7.5m);
- survey and investigate contaminated land causing water pollution problems to produce a prioritised longer-term rehabilitation programme (£1.5m) and carry out capital works at priority sites (£2.5m).

These measures are all subject to more detailed costings and to policy and funding decisions by the Secretary of State for the Environment.

The Authority may need additional resources (£2m) during 1993/94 with similar amounts in later Plan years to introduce SWQOs. However, this will be dependent on the nature of the scheme and means of implementation decided upon by the Secretary of State for the Environment during 1992/93.

This chapter is concerned with the achievement of key priorities in our last *Corporate Plan*. It also outlines significant changes in the external environment and our internal management that have influenced the setting of priorities in this Plan.

## PERFORMANCE 1991/92

### KEY PRIORITIES FROM 1991/92 CORPORATE PLAN

<p><i>Water Quality</i></p> <ul style="list-style-type: none"> <li>• Publish the results of the 1990 Water Quality Survey.</li> <li>• Advise the Secretary of State on the setting of SWQOs.</li> <li>• Implement the charging for discharges scheme to transfer costs from GIA to those who discharge.</li> </ul>	<p><i>Progress</i></p> <ul style="list-style-type: none"> <li>• Report published showing a net downgrading in river water quality.</li> <li>• Report published for public consultation.</li> <li>• Scheme implemented and £22m income raised.</li> </ul>
<p><i>Water Resources</i></p> <ul style="list-style-type: none"> <li>• Investigate and report on strategic options for the sustainable development of water resources.</li> <li>• Develop a new water resources charging scheme for implementation in 1993.</li> <li>• Continue to develop and implement solutions to low-flow problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Water Resource Development strategy published for public consultation.</li> <li>• Draft scheme published for public consultation.</li> <li>• Low flows ameliorated at 7 sites.</li> </ul>
<p><i>Flood Defence</i></p> <ul style="list-style-type: none"> <li>• Publish and take action in relation to the findings of the Sea Defence Survey.</li> <li>• Contribute and respond to the findings of the NAO study on flood defence.</li> </ul>	<ul style="list-style-type: none"> <li>• Report on Phases I, II and III published and capital programmes re-aligned.</li> <li>• Contribution made to NAO report.</li> </ul>
<p><i>Fisheries</i></p> <ul style="list-style-type: none"> <li>• Complete public consultation on the proposals to restructure angling licences and implement new arrangements from 1992/93 to increase fisheries income.</li> <li>• Complete a public consultation exercise and develop a charging scheme for Section 142 (S142 - previously Section 28) by April 1992.</li> </ul>	<ul style="list-style-type: none"> <li>• Single national licence scheme and charging policy introduced in January 1992.</li> <li>• Draft consultation produced by March 1992. Implementation target adjusted to April 1993.</li> </ul>
<p><i>Recreation and Conservation</i></p> <ul style="list-style-type: none"> <li>• Continue to promote recreation and conservation, particularly in collaboration with other bodies.</li> </ul>	<ul style="list-style-type: none"> <li>• More collaborative schemes promoted.</li> </ul>
<p><i>Navigation</i></p> <ul style="list-style-type: none"> <li>• Review the Authority's role in inland navigation.</li> <li>• Develop a navigation policy.</li> </ul>	<ul style="list-style-type: none"> <li>• Input made to DoE NRA/BWB navigation review.</li> <li>• Initial work on charging policy undertaken.</li> </ul>

## KEY PRIORITIES FROM 1991/92 CORPORATE PLAN

<i>General Operations</i>	<i>Progress</i>
<ul style="list-style-type: none"> <li>• Improve emergency planning and responses.</li> <li>• Increase regulatory and enforcement activities.</li> </ul>	<ul style="list-style-type: none"> <li>• National Emergencies Co-ordinator appointed and national arrangements reviewed.</li> <li>• New farm waste regulations implemented.</li> </ul>
<i>Corporate Planning</i>	
<ul style="list-style-type: none"> <li>• Develop corporate strategy.</li> <li>• Improve and develop Corporate Planning process.</li> <li>• Adopt a standard approach to the production of catchment management plans.</li> <li>• Introduce performance management and review systems</li> </ul>	<ul style="list-style-type: none"> <li>• Draft strategies for core functions and R&amp;D developed.</li> <li>• Process reviewed and streamlined.</li> <li>• National guidelines developed and adopted. Ten plans prepared.</li> <li>• Pilot Output and Performance Measures (OPMs) introduced with quarterly and annual reviews of performance.</li> </ul>
<i>Financial Management</i>	
<ul style="list-style-type: none"> <li>• Implement the findings of a feasibility study on a national accounting service.</li> <li>• Develop an integrated accounting system.</li> </ul>	<ul style="list-style-type: none"> <li>• Feasibility assessed and facilities management option rejected.</li> <li>• Chart of Accounts developed.</li> </ul>
<i>Personnel Management</i>	
<ul style="list-style-type: none"> <li>• Undertake a standard job evaluation scheme.</li> <li>• Develop staff inspection and management audit.</li> <li>• Improve manpower planning and control procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• Job Evaluation process implemented.</li> <li>• Staff and organisational structures reviewed and externally audited in Head Office and two regions.</li> <li>• Manpower control totals set during planning process.</li> </ul>
<i>Efficiency and Productivity</i>	
<ul style="list-style-type: none"> <li>• Introduce more effective purchasing arrangements.</li> <li>• Review the operation of laboratory services.</li> </ul>	<ul style="list-style-type: none"> <li>• New tendering and purchasing procedures adopted.</li> <li>• Initial review completed. Consideration being given to market testing.</li> </ul>
<i>Information Systems</i>	
<ul style="list-style-type: none"> <li>• Develop and commence the phased introduction of priority applications resulting from the IS strategy.</li> </ul>	<ul style="list-style-type: none"> <li>• National communications project completed. Integrated Personnel and Accounting System (IPAS) and Water Archive and Monitoring System (WAMS) projects progressed.</li> </ul>

## EXTERNAL ENVIRONMENT

Lack of rainfall in the south and east of the country has caused serious water resource problems. Groundwater levels are low, soil moisture deficits are high, water use restrictions are in force and some over-abstracted rivers are drying up. We are addressing these problems and consulting thoroughly on long-term solutions. Attention is also being given to shorter-term measures to alleviate the problem. A review of our legal powers and responsibilities in relation to water resources

is an integral part of this.

The Authority anticipates that the United Nations Conference on Environmental Development to be held in Brazil in June 1992 is likely to provide added impetus to our future work. The European Community is becoming an increasingly important influence on our work. The number of EC Environmental Directives and decisions are growing rapidly. The NRA made a significant contribution to the forthcoming Ecological Directive



which will have a major effect on our future work. We are planning to develop further this more pro-active role in EC Environmental Directive formulation.

We welcome the consolidation of water legislation that was brought about by the 1991 Water Resources Act. The introduction of new UK legislation will continue to have a major influence on the Authority's activities. This includes the introduction of Integrated Pollution Control (IPC) through the 1990 Environmental Protection Act. In relation to IPC, Her Majesty's Inspectorate of Pollution (HMIP) industrial process notes are of growing importance to our pollution control work. Other new legislation affecting our work includes the 1991 Planning and Compensation Act, as well as local site-specific Acts of Parliament.

New DoE local authority planning policy guidance notes on coastal planning, waste management, sport and recreation, and pollution control will also have an important bearing on our work. A number of recent Select Committee Reports on Coastal Planning and European legislation will likewise influence our operations.

In drawing up this Plan, we have taken account of the government's *Citizen's Charter* and *Competing for Quality* initiatives and action is in hand to pursue them. The new British Standard 7750 on Environmental Management Systems will also be of importance.

Environmental economic considerations are at the heart of policy formulation, decision-making, and the discovery of cost-effective solutions to environmental management problems. We have commissioned research in this field and have recently made a practical start at estimating the economic costs and benefits of specific environmental improvement schemes. We believe that environmental economics and environmental cost-benefit analyses will become increasingly important in our work.

#### ENVIRONMENT AGENCY

Possibly of far greater long-term significance to the Authority's future Plans, is the Prime Minister's announcement last year of his intention to create an Environment Agency to protect and enhance the Environment. These proposals involve the possible re-organisation of the NRA.

We have expressed our broad support for such an Agency and integrated environmental and water management, in particular. Our views on the Environment Agency are well known, and have been submitted to

government and the Environment Select Committee. They have also been widely publicised in the media.

In summary, we believe that the proposed Agency should have duties to both protect and enhance the environment, and not just concentrate on regulatory activities. We also believe that the agency should include all of the NRA's regulatory and operational functions, and not just water quality.

The separation of all or part of the Authority's water quality function would put at risk the practice of integrated river basin management (covering water quality, water resources, flood defence, fisheries, recreation, conservation and navigation) for which the UK is internationally renowned.

The government has previously consistently supported this principle in other legislation. Indeed, government itself and other commentators consider that the NRA has been extremely successful and effective over the past three years. Moreover, re-organisation of the NRA's functions would cause unnecessary disruption to our work and be costly.

We are however committed to continuing to provide advice to, and work closely with, government in the development of its proposals for the Environment Agency and the NRA's future role and status in relation to it.

Environment Agency proposals are still under discussion. We have therefore largely ignored the implications of the NRA's possible re-organisation in drawing up this Plan. Once firm proposals for the Environment Agency are arrived at during 1992/93, we will respond to them as a matter of urgency.

#### INTERNAL CHANGE AND DEVELOPMENT

1991/92 has seen major internal change in the NRA and in some of our regions. These changes have been stimulated by the findings of an external management audit of the Authority's Head Office and its Thames and Welsh Regions, and by our own internal audit and subsequent NAO study into the fitting-out of our new Head Office in Bristol.

In order to streamline the Chief Executive's reporting chain, in April 1991 we created the post of Director of Operations. This meant that all ten Regional General Managers were no longer directly responsible to the Chief Executive.

In July 1991, our first Chief Executive, Dr. John Bowman, left the Authority by mutual agreement and

was replaced by Mr. John Wheatley, a Board member. It also saw the relocation of the majority of the NRA's Head Office staff from London to our new Head Office in Bristol, and the retirement of three Board members, Lord Mason, Sir Hugh Fish, and David Kinnersley, who played significant roles in setting up the NRA, as members of the NRA Advisory Committee.

A number of additional internal changes have taken place since Mr. Wheatley's appointment as Chief Executive in July 1991. Clear themes throughout these changes were the need to differentiate operational and policy responsibilities within Head Office Directorates, the development of project management, and a new management culture with clear personal responsibilities for managers.

The Chief Scientist and Technical Director are now responsible for policy formulation in their respective Directorates, whilst the Director of Operations is responsible for both the implementation of new or existing policies and monitoring regional performance against targets.

The Directorate of Corporate Affairs was also substantially altered, with the majority of its component parts now reporting directly to the Chief Executive on policy matters. In addition, the Director of Corporate Affairs' responsibilities as Secretary to the Authority were transferred to the Head of Legal Services. Both the latter and the Head of Corporate Planning now report directly to the Chief Executive on all policy matters.

With these changed functions and a new staff role to the Chief Executive, the Director of Corporate Affairs was re-titled Director, Chief Executive's Office. The new role entails line responsibility for Public Relations and External Affairs but only administrative responsibility for the Heads of Legal Services and Corporate Planning. The Chief Executive's personal staff continue to report directly to him.

In addition, the Chief Executive moved the Head of Internal Audit from Finance to his personal office. Internal Audit now examines the Authority's procedures on behalf of the Chief Executive, across all functions and with the appropriate degree of independence. The role of Internal Audit was further strengthened in 1991/92 with the creation of an Audit Committee under the chairmanship of Lord Gregson, a new NRA Board member. Dr. Kerry Turner, an environmental economist,

was also appointed to the Board in August 1991.

The changes have been designed to strengthen the management structure and clarify lines of responsibility in order to ensure that our ten regions are provided with appropriate guidance but without impinging on their operational duties. A number of regions made structural changes to their senior management teams during the year including Anglian, Thames, Welsh and Southern Regions.

In early 1992 the Authority, represented by Mr. Wheatley, appeared before the Public Accounts Committee to account for the NRA's financial management and control, particularly in respect of its new Head Office in Bristol. On the 5th March 1992 a new Chief Executive, Mr. Ed Gallagher, was appointed and Mr. Wheatley reassumed his previous Board member responsibilities on 6th April 1992.

#### PRODUCTION OF THIS PLAN

This Plan has been produced from a Corporate Planning process which started in early 1991. The Board, Executive Team, Operations Team, Regional Committees, senior managers, and over 500 other staff were involved in this process and in producing underlying components of this Plan.

Following consideration of the lessons learnt from the previous year's planning process and an external management audit by Coopers and Lybrand, the first stage in this year's process was the production by the Executive Team of a strategic Forward Planning Brief containing the key priorities and detailed assumptions for the years 1992-1994. The Forward Planning Brief was based on our draft core function and R&D strategies.

Following Board approval of the Brief, detailed Head Office and regional Plans were prepared between August and October 1991. These Plans were evaluated and resources allocated by the Board following the November 1991 PES statement. This *Corporate Plan* was formulated using contributions from all Head Office Directorates, and approved by the Board in May 1992.

Following an annual review of our planning process, which we use to improve its effectiveness, the production of our next Plan is now underway. A flexible approach is being adopted so we can, if required, adjust our forward planning processes to plan our future in relation to the proposed Environment Agency.

# Future Strategy

Our future strategy involves continuing to implement the Mission Statement and Aims we agreed in 1989.

In our MISSION STATEMENT we affirm that:

'We will protect and improve the water environment by the effective management of water resources and by substantial reductions in pollution. We will aim to provide effective defence for people and property against flooding from rivers and the sea. In discharging our duties we will operate openly and balance the interests of all who benefit from and use rivers, groundwaters, estuaries, and coastal waters. We will be businesslike, efficient and caring towards our employees.'

Our Mission is supported by our AIMS to:

- Achieve a continuing improvement in the quality of rivers, estuaries, and coastal waters, through the control of water pollution.
- Assess, manage, plan, and conserve water resources and to maintain and improve the quality of water for all those who use it.
- Provide effective defence for people and property against flooding from rivers and the sea.
- Provide adequate arrangements for flood forecasting and warning.
- Maintain, improve and develop fisheries.
- Develop the amenity and recreational potential of waters and lands under NRA control.
- Conserve and enhance wildlife, landscape, and archaeological features associated with waters under NRA control.
- Improve and maintain inland waters and their facilities for use by the public where the NRA is the navigation authority.
- Ensure that dischargers pay the costs of the consequences of their discharges, and, as far as possible, to recover the costs of water environment improvements from those who benefit.
- Improve public understanding of the water environment and the NRA's work.
- Improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.

We intend to pursue both our MISSION and AIMS with continuing vigour over the Plan period.

## BUSINESS DIRECTION

After assessing our progress against our last *Corporate Plan*, considering the findings of the external management audit of Head Office and two regions, and reviewing our experience of managing growth since vesting, we have decided that we need a period of stability to consolidate our position after three years of significant and rapid growth. We particularly want to use this period to ensure that we achieve in a timely and cost effective manner, all the major initiatives that are now in progress across the full range of our activities. Thus, during this Plan period, we intend to:

- Consolidate our position after three years of rapid growth.
- Continue to fulfill our statutory duties and, where appropriate, use our statutory powers to achieve our mission and aims.
- Continue to undertake and improve the efficiency of our continuing operational activities.
- Commence fewer new developmental initiatives than in previous years.
- Develop a more strategic approach to the management of the authority's affairs and begin to implement our core function strategies.
- Direct more resources towards our core functions rather than our support functions.
- Underpin our work by programmes of research and development.
- Continue to improve and develop our overall management and information systems.





The focus of our core function continuing activities will therefore be as follows:

#### *Water Quality*

- Responding to pollution incidents, monitoring and enforcing discharge consent compliance and EC water quality directives, water quality planning, and advising on pollution prevention.

#### *Water Resources*

- Developing sustainable water resources and helping to ameliorate the effects of drought in the south and east of England, maintaining the hydrometric network, monitoring the status of water resources, determining and enforcing abstraction and impoundment licences, carrying-out operational water resources management, planning resource use, protecting groundwaters and alleviating low flows.

#### *Flood Defence*

- Inspecting the status of defences, operating flood warning services, maintaining and improving existing defences, constructing new defences, and advising local authorities about development control in flood plains.

#### *Fisheries*

- Surveying and monitoring the status of fisheries, licensing and enforcement, stock protection, and fish rearing and re-stocking.

#### *Recreation*

- Giving advice, promoting recreation and pursuing outside partnerships on specific collaborative schemes.

#### *Conservation*

- Surveying river corridors, promoting conservation as part of other NRA activities and pursuing outside partnerships on specific collaborative schemes.

#### *Navigation*

- Licensing craft, and operating and maintaining the navigations under our control.

### **CORE FUNCTION PRIORITIES**

#### *Water Quality*

- Review and monitor discharge consent conditions and compliance to reduce water pollution.
- Advise the Secretary of State on the introduction and setting of the first tranche of Statutory Water Quality Objectives by April 1993, and proposals for new EC Directives relating to water quality.
- Review and implement a revised charging for discharges scheme by April 1994, and provide advice to government on possible incentive charging schemes to help reduce water pollution.
- Complete a national survey of contaminated land and abandoned mines likely to cause water pollution problems and identify possible solutions and costs by September 1994.
- Implement long-term solutions to the Wheal Jane mine pollution by March 1994.

#### *Water Resources*

- Address with vigour short-term measures needed in the south and east of the country to tackle drought and review our legal powers and responsibilities in relation to the promotion of longer-term solutions.
- Investigate and implement solutions to low-flow problems in at least eight catchments per year by 1995/96.
- Complete public consultation on, and develop a long-term strategy for, the sustainable development of water resources by December 1992.
- Develop and implement a new charging for abstractions scheme by April 1993.
- Finalise and progressively implement our groundwater protection policy from December 1992.

#### *Flood Defence*

- Implement standards of service methodology to develop a consistent approach to flood defence activities by September 1992.
- Introduce post-project appraisal of flood defence works by April 1993.
- Introduce performance measures to demonstrate value for money on both capital and revenue expenditure and improve value for money of in-house workforce by increased market testing and further competitive tendering.

#### *Fisheries*

- Develop, undertake public consultation on, and commence the implementation of, a Section 142



fisheries charging scheme by a target date of April 1993.

- Respond to MAFF and implement an East Coast Fishery management plan by January 1993.
- Review commercial licence arrangements and charges by January 1994.

#### *Recreation*

- Review recreation facilities and activities by March 1993 and implement findings by March 1994.

#### *Conservation*

- Implement a strategic conservation classification scheme by January 1996.

#### *Navigation*

- Review and implement new navigation charges for NRA navigations by April 1993.

### **SUPPORT SERVICE PRIORITIES**

In order to improve the delivery of services and use of resources in our core functions, the key priorities for our support services are:

#### *Forward Planning*

- Sharpen decision making and improve project management by December 1992.
- Develop strategic planning, standards of service and resource allocation and enhance performance measurement and appraisal systems by April 1993.

#### *Personnel*

- Undertake and complete five key senior management training and development initiatives by December 1993.
- Complete the National Joint Staff Council (NJSC) job evaluation process and implement a new grading and pay structure by June 1993, completing programmes of staff buyouts by March 1994.
- Improve the quality of our customer care in line with the *Citizen's Charter* and seek improved value for money by increased market testing by March 1994.

#### *Finance*

- Take the necessary actions in relation to the recommendations of the NAO and PAC reports on the financial management and control of the Authority by April 1993.
- Ensure the equitable allocation of costs to income streams, continue to increase self-generated operational income from our own charging schemes and reduce dependence on government grants.

#### *Information Systems*

- Implement the Integrated Personnel and Accounting System (IPAS) progressively from April 1993 with completion in March 1996.
- Implement the Water Archive and Monitoring System (WAMS) throughout the Authority by May 1995.

#### *Research and Development*

- Further develop R&D programmes to underpin our operational activities.

#### *Legal*

- Strengthen our input to the drafting of EC Directives and review water resources responsibilities and powers.

#### *External Affairs*

- Play a pro-active role in discussions on EC Directives and the creation of an Environment Agency.

#### *Public Relations*

- Raise public awareness of the NRA and produce education packs for schools.

### **SPECIAL PROGRAMMES**

#### *Strategic Planning*

In our last *Corporate Plan* we reported on the preparation of corporate strategy and draft core function and R&D strategies for the NRA. Work on developing corporate strategy in early 1991 was re-directed because of the need for discussion with government concerning the Prime Minister's announcement to create a new Environment Agency involving the possible re-organisation of the NRA.

The Board held a further strategy workshop in April 1992 at which it considered the Environment Agency, the NRA's mission and aims, and the role of Board members following the PAC inquiry into the financial management and control of the NRA. This workshop provided a further step in helping us develop our strategic planning. It will be followed up by further workshops and specific actions, which will influence our next *Corporate Plan*, and our work generally.

During 1991/92, work has progressed on developing our core function and R&D strategies. Our Regional Committees were consulted over early drafts, and meetings were held with other organisations and interested parties over their contents. These strategies were then re-drafted into high-level strategic summaries, and more detailed underlying business plans are to be developed.

The draft strategies have been drawn upon in the preparation of this Plan, and will have increasing importance in our Corporate Planning. We intend to progressively implement these strategies in our future Corporate Plans. The strategies will be periodically reviewed by the Board and re-directed as necessary.

Turning to our support services, we are now implementing our IS strategy. During 1991/92 a communications network was developed to link all our major offices. We are now concentrating on developing the IPAS and WAMS information systems. Specialised software is also being developed for our new charging schemes. Other support service strategies, for example on personnel issues and human resources, legal services, public relations, and external affairs are also in preparation.

We intend to continue to develop and improve our

strategic planning process. This will include improving its effectiveness, identifying critical success factors, and improving our output and performance measures to assess the achievement of strategic objectives.

### Major Programmes



### *Catchment Management Plans*

We consider the integrated management of river catchments to be at the very heart of our work; catchment management plans provide a vehicle for setting priorities and allocating resources, both by the NRA to carry out its functions, and by others, to solve environmental problems and improve the water environment. They also bring us in closer contact with local communities who view the health of their river to be vitally important. Ten plans were prepared in 1991/92.

During 1992/93 and subsequent years we will develop, undertake public consultation on, and begin to implement at least one catchment management plan in each of our regions. A draft five-year rolling programme has been developed to start to produce catchment management plans for all the river catchments in England and Wales. At a rate of about 18 plans per year this will take over 10 years.

Our programme starts with priority catchments we consider most require a multi-functional approach to solve their environmental management problems. We will then move on to other catchments where action is considered to be less urgently required. We would point out however, that work to tackle local problems in these catchments will not stop because they do not have formal catchment management plans.

Our guidelines on catchment management planning and the draft programme will be reviewed in light of experience during 1992/93. Most of the priority catchments for catchment management plans are also priority catchments for setting of SWQOs. However, the introduction of SWQOs may affect the selection of some catchments in some regions in later years of the programme.

### *Citizen's Charter*

As part of our 1991 PES settlement, the Secretary of State for the Environment requested that we include a section in our *Corporate Plan* outlining our approach to implementing the *Citizen's Charter* and market testing.

In August 1991 we responded to the Cabinet Office questionnaire setting out what we were already doing in relation to the Charter. Subsequently, our services have been reviewed and an NRA Citizen's Charter Action Plan prepared for consideration by the Board and DoE. Our review determined that we already have a high degree of compliance with the *Citizen's Charter*, particularly in respect of consultation, openness, choice,

information, non-discrimination, accessibility, performance-related pay, and market testing. However, in certain areas we have a slightly lower compliance with the Charter.

We have therefore developed the Citizen's Charter Action Plan to maintain and improve what we already do, and to address areas requiring improvement. Particular effort will be put into improvement of standards of service, and user-friendly complaints and redress procedures.

The Action Plan covers the period 1992/93 - 1994/95 and contains detailed programmes of work. The cost of many of the proposed actions will be absorbed within existing budgets. However, additional new costs to achieve full compliance falling in 1993/94 and 1994/95 will be considered in our next Corporate Planning and budgeting rounds. A separate section on market testing is presented later in the Plan.

### *New Working Practices*

As a national organisation, the NRA benefits from having a wide range of facilities and expertise distributed throughout its Head Office and ten regions across England and Wales. Since vesting, we have developed new policies and procedures using teams of Head Office and regional staff organised into various committees, working parties and task forces to utilise the best of past practice and our combined facilities and experience. Over the next few years we intend to continue with this process by encouraging even more inter-regional co-operation and developing centres of expertise.

Inter-regional co-operation is an excellent means of minimising costs and maximising the use of available resources. We have already made considerable progress in this area. Examples include the Instrumentation Working Group, and our laboratories which (under the control of the Laboratory Managers Group and the National Co-ordinator) have a large number of co-operative schemes involving national procurement, method development and analytical quality control. The two smallest regions in the NRA in terms of geographical area, South West and Wessex, share a combined chemistry and virology laboratory facility based in Exeter. The virology laboratory is already a national centre of expertise.

There are jointly developed monitoring programmes of the Thames, Severn and Humber Estuaries carried out by the regions in which the estuaries lie. Geographical considerations also mean that inter-regional co-operation



**Note**

1 Bristol Avon (1) is u/s of Bradford on Avon. Bristol Avon (2) is d/s of Bradford on Avon.

*Catchment Management Plan Programme 1992/93 - 1995/96*

REGION	1992/93	1993/94	1994/95	1995/96
Northumbria	Ouse Burn	Skerne	Blyth	North Tyne
Yorkshire	Aire	Calder	Rother	Don
North West	Douglas	Irwell	Mersey	Ribble
Welsh	Menai Straights	Conwy	Dee (Lower)	Dee (Upper)
	Wye (Upper)	Wye (Lower)	Taff	Ely
	Cledau	Taifi	Rheidol	Tawe
Severn Trent	Kidderminster Stour	Trent d/s Dove to Trent Falls	Avon	Soar
		Cole/Blyth	Severn u/s Perry	Tame
Anglian	Gipping/Stour	Bedford Ouse	North Norfolk Rivers	Upper Welland
	Little/Ely Ouse	Grimsby	Lower Witham	Waveney
	Lower Nene	Colne/Blackwater	Crouch/Chelmer	Old Bedford
	Yare/Wensum	Upper Nene	Upper Ouse	Alde/Blyth/Deben
Thames	Kennet	Lee (d/s Hertford)	Colne	Thames (Bell Weir to Teddington)
Southern	Medway	Stour	Arun	Meon
	Test	East Rother	Ouse	Isle of Wight
	Itchen			
	Darent/Cray			
Wessex	Bristol Avon (1) <sup>1</sup>	Bruce/Shipley/Hardlake	Dorset Frome & Piddle	Bristol Avon (2) <sup>1</sup>
South West	Taw	Tamar	Axe	Fal
	Torridge			
<b>Total Catchments</b>	<b>19</b>	<b>17</b>	<b>18</b>	<b>17</b>

over development control where local planning authority boundaries span NRA regional boundaries is necessary. A national Planning Liaison Group has been established to facilitate this.

In flood defence, the 'Operation Neptune' tidal flood warning scheme for the North Wales coast is managed jointly by North West and Welsh Regions. A scheme of this nature also covers the North Sea coast flood warning arrangements in Northumbria, Yorkshire, Anglian and Thames Regions. In addition, Welsh Region have consulted with Wessex and South West over the construction of a weather radar station.

Examples of fisheries co-operation include a review of the North East salmon fishery, led by Northumbria Region and including Anglian and Yorkshire Regions in the development of a co-ordinated programme. Training is another area where inter-regional co-operation has proved successful. For instance Wessex, Southern and South West participate in joint training programmes. A recent forum included a joint training course for Health and Safety representatives from these three regions. We plan to continue to develop such practices throughout the NRA.

We also propose to investigate the establishment of national centres of expertise. This will allow us to utilise scarce or valuable resource to maximum advantage, moving forward in the most efficient and effective way. These centres would fall into one of several categories.

- Specific sites could be responsible for providing a technical or developmental service on a national basis, such as that offered by Welsh Region with their MENSAR laboratory management system. The water quality instrumentation evaluation facilities in Thames and Severn-Trent also fall into this category.
- Other sites could act as specialist contractors for the organisation as a whole. A good example of this is the potential of the Kielder salmon hatchery in Northumbria Region which has supplied other regions with salmon. Another example for a possible centre of expertise is the establishment of a national fish disease laboratory at Brampton in Anglian Region.



### Catchment Management Plan Programme 1992/93



1. Ouse Burn, Northumbria
2. River Aire, Yorkshire
3. River Douglas, North West
4. Menai Straits, Welsh
5. River Wye (Upper), Welsh
6. River Chuddeu, Welsh
7. Kildermister Slour, Severn Trent
8. River Gipping/Slour, Anglian
9. River Little/Ely Ouse, Anglian
10. Little River Nene, Anglian
11. River Yare/Wensum, Anglian
12. River Kennet, Thames
13. River Madway, Southern
14. River Test, Southern
15. River Itchen, Southern
16. River Darent/Cray, Southern
17. Bristol Avon (1), Wessex
18. River Taw, South West
19. River Torridge, South West

### Catchment Management Plan Programme 1993/94



1. River Skerne, Northumbria
2. River Calder, Yorkshire
3. River Irwell, North West
4. Conwy, Welsh
5. River Wye (Lower), Welsh
6. River Taff, Welsh
7. Trent d/s Dove to Trent Falls, Severn Trent
8. River Cole/Blyth, Severn Trent
9. Bedford Ouse, Anglian
10. River Grimsby, Anglian
11. River Colne/Blackwater, Anglian
12. Upper Nene, Anglian
13. River Lea (d/s Hertford), Thames
14. River Stour, Southern
15. East Rother, Southern
16. River Brue/Shappay/Hartlake
17. River Tamar, South West

### Catchment Management Plan Programme 1994/95



1. River Blyth, Northumbria
2. River Rother, Yorkshire
3. River Marsey, North West
4. River Dee (lower), Welsh
5. River Taff, Welsh
6. River Rhaidal, Welsh
7. River Avon, Severn Trent
8. River Severn u/s Perry, Severn Trent
9. North Norfolk Rivers, Anglian
10. Lower Witham, Anglian
11. River Crouch/Chalmer, Anglian
12. Upper Ouse, Anglian
13. Upper Witham, Anglian
14. River Colne, Anglian
15. River Arun, Southern
16. River Ouse, Southern
17. Dorset Frome & Piddle, Wessex
18. River Axe, South West

### Catchment Management Plan Programme 1995/96



1. North Tyne, Northumbria
2. River Don, Yorkshire
3. River Ribbles, North West
4. River Dee (Upper), Welsh
5. River Ely, Welsh
6. River Tawe, Welsh
7. River Soar, Severn Trent
8. River Yare, Severn Trent
9. Upper Walland, Anglian
10. River Waveney, Anglian
11. Old Bedford, Anglian
12. River Alda/Blyth/Doben, Anglian
13. River Thames (Bell Weir - Toddington), Thames
14. Isle of White, Southern
15. Moon Southern
16. Bristol, Avon (2)
17. River Fal, South West

The major benefit of these centres is that they allow a concentration of specialist advice and knowledge to be used to the advantage of the NRA as a whole. The alternative of having small amounts of expertise scattered throughout the NRA is almost certainly less cost-effective. There will be exceptions to this however, where local expertise is needed. During the Plan period, further centres of expertise will be developed when most appropriate to meet the needs of the NRA.

#### *Environmental Policy*

During 1991/92 we developed an environmental policy. We are now conducting an audit of our existing performance in this area. Pending the results of this audit and the establishment of an environmental management system, it is proposed that the following targets be adopted for 1992/93.

- A 5% reduction in the NRA's total directly consumed energy over that used in 1991/92, to be followed by a further 5% in each of the two subsequent years.
- A 10% reduction in the NRA's use of water over that used in 1991/92. All sites using mains water to be metered.
- A 10% reduction in the NRA's use of stationery compared with 1991/92.
- A 5% reduction in the use of paper compared with 1991/92. This is to be a specific target within stationery.
- To have in place systems that are recycling at least 40% of paper purchased by December 1992 and at least 60% by December 1993.
- That, by December 1992, at least 50% of our paper and printed material purchased is recycled paper.
- To eliminate the use of peat by the NRA and its contractors by December 1992.

Subsequent targets in later Plan years will be set in our next *Corporate Plan* and reported upon in each year's *Annual Report*.

#### *Infra-Structure*

In the main, the Authority's offices, laboratories, depots and other facilities are now in place. The majority of our Head Office staff have been relocated to our new Head Office buildings in Bristol.

A continuing need to maintain a small Head Office in London has been identified. We have therefore deferred a decision over its future, pending discussions with government concerning the proposed Environment Agency.

# Core Function Programmes and Plans

## WATER QUALITY

### AIMS

- To achieve a continuing improvement in the quality of rivers, estuaries and coastal waters through the control of pollution.
- To ensure that dischargers pay the costs of the consequences of their discharges and, as far as possible, to recover the costs of water environment improvements from those who benefit.
- To utilise the pollution prevention powers set out in the Water Resources Act 1991 to the fullest extent, to ensure SWQOs are maintained.
- To extend the pollution prevention activities carried out by others, by influencing bodies such as planning authorities to take account of pollution prevention needs.
- To further the study of cost/benefit and cost effectiveness in relation to pollution control practices, and apply such methods as they become available.
- To improve pollution alleviation activities and emergency procedures.
- To improve methods for financing, and accounting for, pollution control activities.
- To improve the provision of information to the public and official bodies, in order to further the management of the water environment.

### STRATEGIC OBJECTIVES

- To advise the Secretary of State on the setting of Statutory Water Quality Objectives (SWQOs) and standards.
- To ensure that monitoring of controlled waters is adequate to demonstrate that SWQOs, once set, will be met.
- To introduce measures to ensure that the regulation of point-source discharges will lead to the achievement of SWQOs.

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

<i>Targets</i>	<i>Progress</i>
<i>Water Quality Objectives</i>	
• Produce a public consultation document on the introduction of WQOs from 1992 onwards by October 1991.	• Consultation document produced and consultation exercise completed.
• Complete the River Quality Survey and publish the results to compare with the 1985 survey by October 1991.	• 1990 River Water Quality Survey published, indicating overall decline in river water quality compared with 1985.
• Set out the pollution control function strategy by December 1991.	• Draft Pollution Control strategy produced.
<i>Consenting and Compliance</i>	
• Produce guidance for NRA/HMIP liaison with respect to Environmental Protection Act (EPA) responsibilities by June 1991.	• Guidance on NRA/HMIP liaison produced.
• Produce the first part of a consent and compliance guidance manual for regional use by August 1991.	• Consent and Compliance policy implementation guidance notes produced.
• Finalise and implement nationally-consistent controlled water monitoring programmes by August 1991.	• Under development for 1992/93. Draft document produced.
• Develop a nationally-consistent Water Act register system in advance of the IS strategy by December 1991.	• Some harmonisation achieved; further work in progress. Policy guidance note produced.



<i>Targets</i>	<i>Progress</i>
<p><i>Monitoring</i></p> <ul style="list-style-type: none"> <li>• Complete a national network of NRA laboratories and increase the use of automated instruments by September 1991.</li> <li>• Maintain an EC Directive monitoring programme, and work required for other international agreements, reporting to DoE and public (as required).</li> </ul> <p><i>Pollution Reduction</i></p> <ul style="list-style-type: none"> <li>• Consider the case for further measures to control diffuse pollution via statutory regulations and use of powers under the Water Act and, as required, to press for their introduction.</li> <li>• Further the development of long-term catchment planning and capacity, within a framework of economic accountability, by December 1991.</li> </ul>	<ul style="list-style-type: none"> <li>• Laboratory network completed and use of automated instrumentation increased. Hand-held monitor development completed.</li> <li>• EC Directive data returns produced for DoE within required timescales.</li> <li>• Advice given to government on the subject of the impact of waste from the farming industry, and on other sources of diffuse pollution.</li> <li>• Policy development progressed, including work on economic aspects of water quality.</li> </ul>

## **FUTURE STRATEGY**

### *Statutory Water Quality Objectives*

The introduction of SWQOs and their achievement is fundamental to the task of improving and maintaining water quality. Objectives will be set, eventually, for all controlled waters, possibly as short-term (three to five year) achievable targets but with longer-term aims where necessary. Initially, SWQOs are likely to be applied to rivers because the scheme will build upon the existing classification scheme and database of informal objectives already in use, but they will then be applied progressively to other controlled waters. Appropriate Environmental Quality Standards (EQSs) have also to be developed where necessary. The results of the 1990 River Quality Survey, which showed that 89% of rivers, 90% of canals and 90% of estuaries were of either good or fair quality, and 2%, 1% and 3% respectively were of bad quality, will be used as the basis for the SWQO review.

Achievement is expected to be assisted by the use of catchment planning as a tool. Monitoring activities will also be rationalised to enable the achievement of SWQOs to be properly assessed. The achievement of SWQOs is dependent upon the use of the NRA's powers to prevent and control pollution from point source discharges, diffuse sources, pollution incidents and from the results of building development.

### *Consenting Policy*

Potential pollution from point sources is controlled by the use of the NRA's consenting powers, and pollution will be reduced by the consistent application of the new consenting policies set out in the 1990 Kinnersley

"Blueprint" report, by a thorough review of consents, and by the consistent application of a firm enforcement policy. Substances which are discharged from processes which will in future be controlled through the procedures of the Environmental Protection Act 1990, and authorised by Her Majesty's Inspectorate of Pollution, will be controlled by ensuring that the NRA's requirements for meeting SWQOs are incorporated within the EPA authorisations. New procedures for dealing with intermittent (storm) discharges will need to be introduced. A manual setting out the action needed to implement the many individual policies will be prepared.

### *Water Protection Zones and Groundwater*

#### *Protection Policy*

Pollution from diffuse sources is a more difficult subject to tackle. The NRA's draft groundwater protection policy will be completed and implementation begun in 1992/93. This will encompass the development of policies for the introduction of water protection zones, together with appropriate enforcement policies. Solutions will also require the introduction of further regulations under the Water Resources Act. Procedures to assess pollution from contaminated land run-off, or leachate, need to be developed, and these may have to include the use of biological assessment and land-use studies.

Once techniques are established and the pollution problems identified, the application of protection zones for surface waters, the full implementation of the groundwater protection policy, and the introduction of further regulations to limit the use and storage of polluting



materials will be pursued. Following the issue of the first of these regulations - for the control of slurry, silage and oil on farms - work is in hand to produce similar regulations to control oil storage generally. The problems of pollution from contaminated land, abandoned mines and landfill sites are yet other areas which will need to be tackled in this period and policies will be developed. A register of dangerous substances is to be set up by the NRA in connection with the EC Groundwater Directive.

#### *Influence and Education*

Increased attention will be paid to the aesthetic quality of rivers - specifically in relation to litter. Much of the action will have to be undertaken by others: either the regulators of the activity or the potential polluters themselves. The NRA will have to use its influence through, for example, the local authority planning process, to its utmost. A reduction in numbers of accidental pollution incidents will have to be achieved through the use of publicity and education of the public, as well as by the promotion of further legislation to control activities which have the potential to cause pollution.

#### *Enforcement*

For both point source and diffuse pollution, and pollution incidents, it will be necessary to continue with a firm enforcement policy, and prosecute where necessary. The NRA will also continue to operate a formal cost recovery scheme for activities associated with discharges and will also press for cost recovery for attendance at pollution incidents.

#### *Monitoring*

The need to be able to demonstrate clearly the success or otherwise of these new activities relies upon the availability and use of adequate assessment techniques. The NRA is reviewing its current sampling programme to ensure that it is sampling at the right places, at the correct frequency, and is making the right measurements. New programmes will be implemented during 1992/93. The potential for the greater use of field instrumentation will also be examined, and instruments already under development for the NRA brought into wider use. Aerial surveillance for covering the vast area of coastal waters under NRA control may also be brought into use. The laboratories will continue to work towards NAMAS accreditation and take part in quality control work to ensure that results are nationally consistent and internationally acceptable.

## DATA ANALYSIS AND MODELLING TECHNIQUES

Improvements in the use of information gained from sampling and monitoring programmes will be made possible by the introduction of techniques such as GIS, and by the development of a national water monitoring and archive system. Such systems will allow the NRA to make greater use of modelling techniques and, through improvements to the public register, make information more readily available to the public. A further rationalisation of models and their databases is required to plan more effectively the accountability of pollution control on a catchment-wide basis. Further economic modelling is also required to identify environmental benefits and delineate the most cost-effective solutions.

## TARGETS

### *Policy*

- To agree with DoE a scheme for the introduction of SWQOs and the classification of controlled waters by mid 1992.
- To continue to develop and implement new consenting policies and to plan a review of all existing consents, by December 1992 in light of the scheme for SWQOs.
- To review and develop revised sampling programmes for discharges and controlled waters - including the introduction of the monitoring of coastal water by December 1993.
- To advise DoE on likely quality objectives and commence the consultation and implementation process for introducing SWQOs for priority rivers and canals by May 1993 and for estuaries by December 1995 according to an agreed programme.
- To implement a scheme for groundwater protection in the context of SWQOs by December 1994.
- To revise the charging for discharges scheme for implementation in April 1994.

### *Operations*

- To revise the current sampling programmes and introduce during 1992 a programme taking into account all existing and new statutory requirements.
- To improve analytical procedures so that all samples are analysed, and reported upon, within agreed target times appropriate to each determinand, by December 1992.

- To determine all new consent applications within the statutory period and to agree an extended timescale for dealing with existing deemed consents by December 1993.
- To introduce a further 200 hand-held monitors during 1992/93.
- To improve response to pollution incidents by March 1993 so that incidents are attended within an agreed target response time of two hours from receipt of report.
- To complete the laboratory accreditation programme for all laboratories by December 1994.
- To initiate work on the problems of contaminated land and abandoned mines, including surveys, by January 1993 and begin remedial work at priority sites subject to the availability of acceptable solutions and additional resources during 1993/94.

### Work Programme - Water Quality

Strategic Activity	1991/92	1992/93	1993/94	1994/95	1995/96
Introduction of Statutory Water Quality Objectives					
— Rivers					
— Estuaries					
— Coastal Waters					
Implement Catchment Planning					
Implement New Directives					
— Nitrate					
— Urban Waste Treatment					
Continue to Report on Existing Directives					
Issue Manual and Review Consents in accordance with Kinnersley Report					
Integrated Pollution Control					
Diffuse Pollution — Develop Policies					
Groundwater Protection Policy					
Pollution Incidents — Publicity Campaign					
Charging Scheme — Review and Implement					
Monitoring Programmes — Review and Implement					
Develop new Techniques					
— Biological					
— Aerial Surveillance					
— Abandoned Mines/ Contaminated Land					
Water Monitoring and Archive System					
Geographical Information System					
NAMAS Accreditation of Laboratories					

#### Note

1 SWQOs schedule and implementation phasing subject to decision of Secretary of State for the Environment.

Development

Implementation

## INPUTS

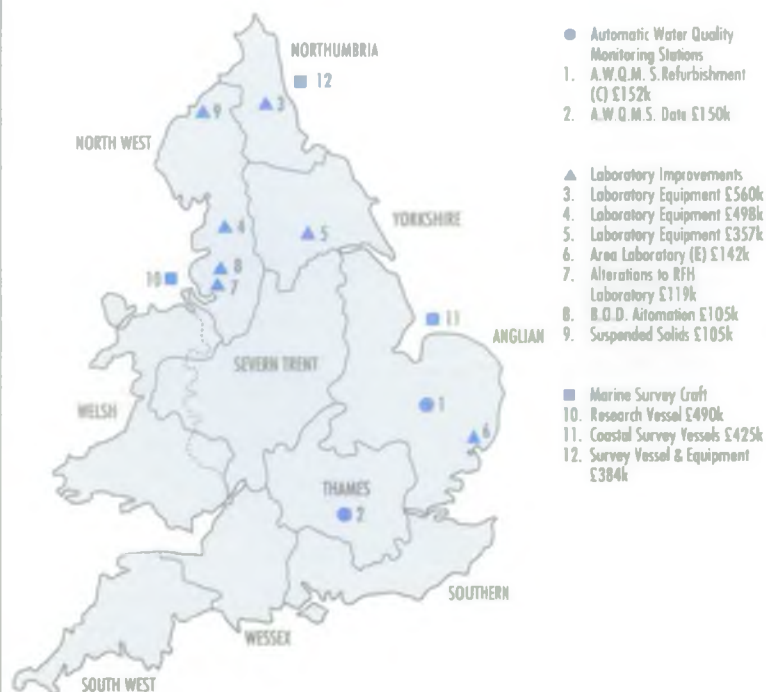
	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Income (£m)</b>							
Charging for Discharges	-	1	22	38	46	48	51
Pollution Incidents/ Other	-	4	3	2	2	2	2
<b>Total</b>	<b>-</b>	<b>5</b>	<b>25</b>	<b>40</b>	<b>48</b>	<b>50</b>	<b>53</b>
<b>Expenditure (£m)</b>							
Incidents/Emergencies	6	9	10	11	12	13	13
Consenting and compliance monitoring	23	29	35	41	46	48	51
EC Directives	6	10	11	10	11	12	12
Pollution prevention	5	8	10	11	12	13	14
Other work	8	6	7	6	5	8	8
<b>Total</b>	<b>48</b>	<b>62</b>	<b>73</b>	<b>79</b>	<b>86</b>	<b>94</b>	<b>98</b>
<b>Comprising:</b>							
Revenue	43	53	65	73	83	89	93
Capital	5	9	8	6	3	3	3
<b>Variance (£m)</b>	<b>GIA</b>	<b>48</b>	<b>57</b>	<b>48</b>	<b>38</b>	<b>44</b>	<b>45</b>
<b>Manpower (FTE)</b>	<b>Total</b>	<b>1,024</b>	<b>1,337</b>	<b>1,549</b>	<b>1,595</b>	<b>1,595</b>	<b>1,595</b>
<b>Included in the above are:</b>							
Laboratory Staff	266	342	494	482	482	482	482
Pollution Control Inspectors	384	473	536	544	547	547	547

### Expenditure

Revenue expenditure rises during the Plan period due to the costs of introducing the SWQO scheme and, particularly, new EC Directives, which will require more complex monitoring procedures, and additional pollution prevention activity. Following the construction of our new laboratories and special marine survey vessels our future capital expenditure reduces. More of the expenditure is directed towards day to day revenue activities to control water pollution.

The capital programme concentrates on the replacement and updating of laboratory equipment - particularly for metals and organics analysis - in our older laboratories, together with the purchase of automatic monitors and hand-held devices for field use. Purchase of equipment for aerial surveillance of coastal waters will be investigated further during 1992/93. A full capital programme will be developed in 1992/93. Elements of the programme are shown opposite and in the table overleaf.

### Water Quality Capital Programme 1992/93



#### Water Quality Capital Expenditure

Please note this map shows major spends > £100k only.  
(the absence of symbols from a Region does not mean there is no capital spend,  
but that expenditure on any one scheme is less than £100k).



	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95
<b>Capital Expenditure (£'000)</b>					
Laboratory Equipment	N/A	N/A	1120	1750	680
Survey Vessels	360	820	267	-	-
Field Monitors	N/A	N/A	200	200	200

### Income

Whilst we seek to recover our costs in dealing with pollution incidents from the polluters involved, this source of income is likely to vary from year to year and cannot be easily predicted or relied upon to fund all our activities. Thus we plan to equate income from our charging for discharges scheme which recovers our costs for issuing and monitoring consented discharges. The existing charging scheme will be reviewed during 1992/93 to ensure that any necessary changes are ready to be implemented from April 1994. To introduce incentive charging will require legislative change. For those industries which come under the control of HMIP through the Environmental Protection Act 1990, but which discharge effluents into controlled waters, thereby requiring monitoring effort by the NRA, we recover our monitoring costs from HMIP.

### Staffing

After rapid early increases in staffing levels only a small future increase in staffing levels is proposed. Laboratory staffing is expected to reduce slightly whilst pollution inspectors marginally increase in numbers. Staff numbers level off after 1992/93. Depending however on the decisions to be taken by the Secretary of State in 1992/93, additional staffing may be required to deal with SWQOs in 1993/94.

## OUTPUT AND PERFORMANCE

### Discharge Consenting

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of Discharge Consents in Force	121,145	111,185	99,100	96,600	100,000	100,000	100,000
Number of Discharges Monitored	11,481	13,041	13,700	15,900	16,100	16,500	17,000
Number of Consents Determined	10,397	6,056	7,000	7,200	7,200	7,200	7,200

### Sampling, Analysis and Pollution Incidents

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of Routine Single Samples: (thousands)	272	316	395	437	436	440	440
Number Analyses (millions)							
Simple	2.33	1.74	1.88	2.01	2.03	2.0	2.0
Complex	1.12	2.08	2.41	2.77	2.83	3.0	3.0
<b>Total</b>	<b>3.45</b>	<b>3.82</b>	<b>4.29</b>	<b>4.78</b>	<b>4.85</b>	<b>5.0</b>	<b>5.0</b>
Number of Incidents <sup>1</sup>	26,725	28,718	31,100	31,600	31,800	32,200	32,600

#### Note

<sup>1</sup> Numbers of incidents in future years are expected, not planned.

## River, Estuarial and Bathing Water Quality

	Actual 89/90	Actual 90/91	Forecast 91/92	Expected 92/93	Expected 93/94	Estimated 94/95	Estimated 95/96
<b>River Water Quality<sup>1</sup> (km by Class)</b>							
1A Good	12,881	12,308	13,148	12,997	13,194	13,300	13,400
B Good	13,556	13,786	14,714	15,026	15,400	15,500	15,500
2 Fair	9,863	9,351	10,500	11,220	11,735	11,800	11,800
3 Poor	3,612	3,796	3,947	3,630	3,466	3,400	3,300
4 Bad	617	639	601	508	469	440	410
<b>Total Length Classified (km)</b>	<b>40,529</b>	<b>39,960</b>	<b>42,909</b>	<b>43,382</b>	<b>44,264</b>	<b>44,400</b>	<b>44,400</b>
<b>Estuarial Water Quality<sup>1</sup> (km by class)</b>							
A Good	1,710	1,805	1,850	1,863	1,878	1,900	1,930
B Fair	655	656	627	626	616	610	600
C Poor	168	177	171	160	145	130	120
D Bad	83	84	77	77	67	60	50
<b>Total Length Classified (km)</b>	<b>2,616</b>	<b>2,722</b>	<b>2,725</b>	<b>2,726</b>	<b>2,706</b>	<b>2,700</b>	<b>2,700</b>
<b>Bathing Water Quality<sup>1,2,3</sup></b>							
Number of Identified EC Bathing Waters	401	407	414	420	426	430	440
Number of Waters Achieving Coliform Standard	304	318	312	331	345	400	430

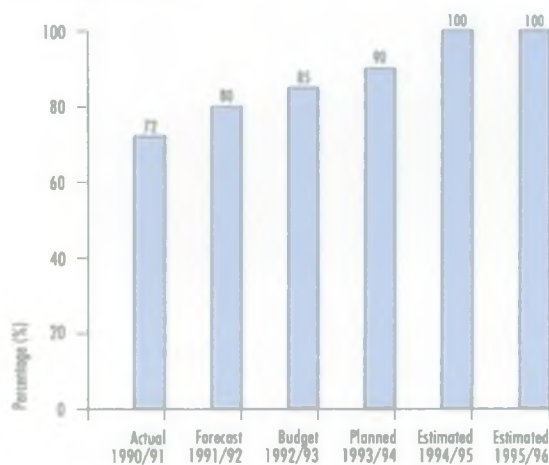
### Notes

1 Figures for river and estuarial quality and bathing water compliance are on a calendar year basis. Figures for future years are expected, not planned.

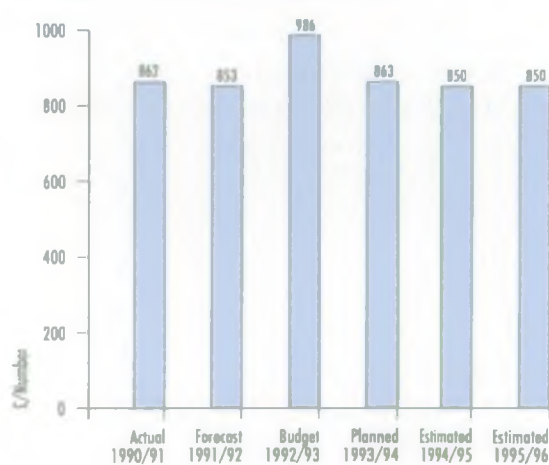
2 Bathing water compliance for 1991/92 is the 1991 actual.

3 Improvements in bathing water quality are projected on the basis of the water utility companies' capital programmes now underway. Completion of these works is expected to produce compliance approaching 100% from 1995/96 onwards.

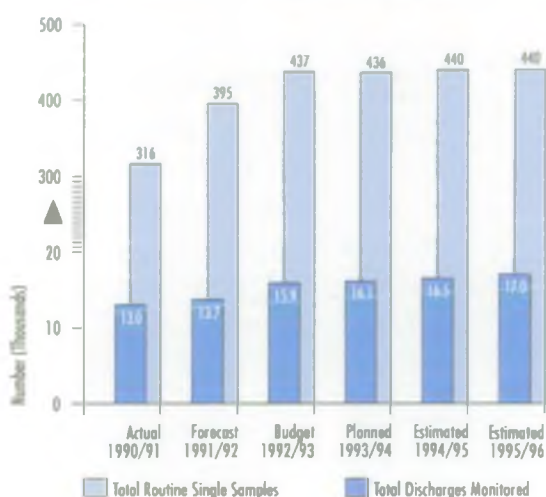
### Percentage of Consents Determined Within Statutory Period



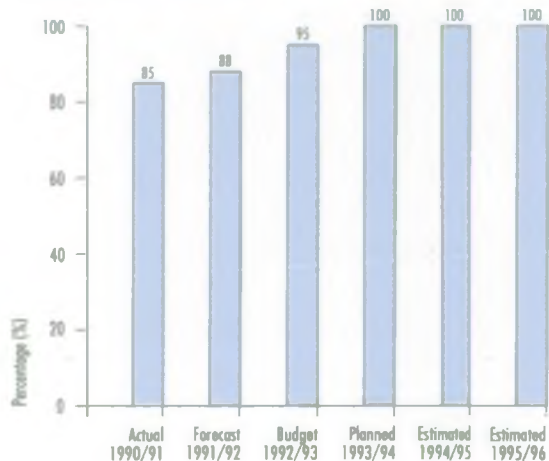
### Average Cost of Determining Consents



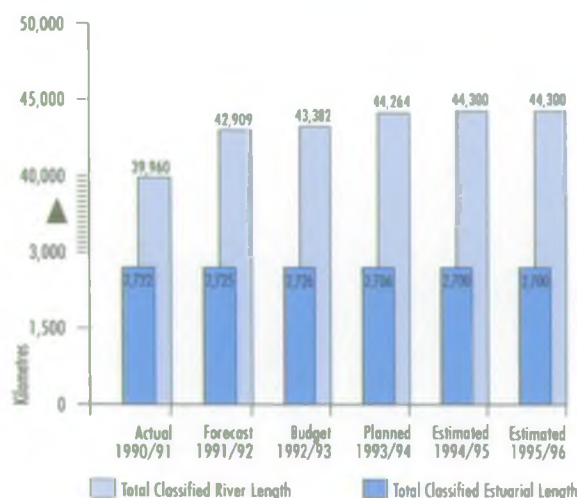
### Discharges Monitored & Single Samples Taken



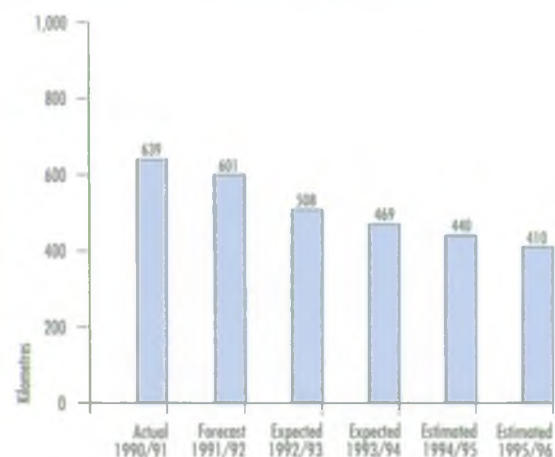
### Percentage of Water Quality Samples Analysed Within Target Times



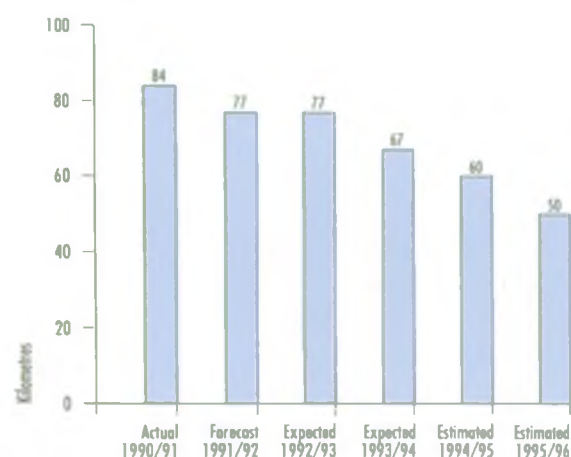
*Classified River & Estuarial Lengths*



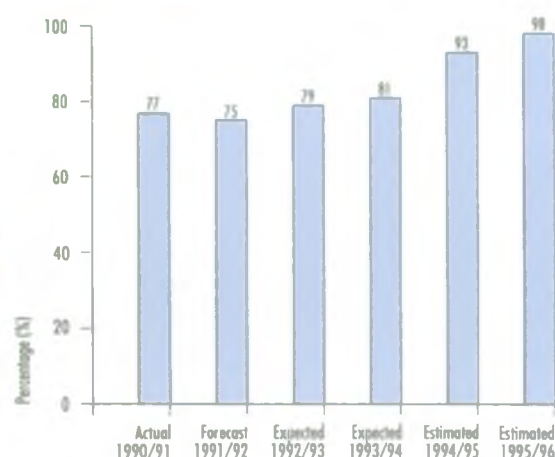
*River Quality Class 4 (Bad) - River Length*



*Estuarial Water Quality Class D (Bad) - Estuarial*



*Percentage of Bathing Waters Achieving Directive*



## RESEARCH AND DEVELOPMENT

R&D is closely aligned with our policies to maintain and improve water quality. Specific projects include work associated with the introduction of SWQOs, the development of EQSs, and methodology to assess quality such as the use of RIVPACS and other biological assessment techniques.

There is particular research emphasis on the control of intermittent discharges such as those from storm sewage overflows; land use, for example forestry; and significant work in the field of contaminated land including methodologies for remediation of pollution, and assessment of the processes which attenuate pollutants in the soil; pesticides; and problems associated with the toxic blue green algae.

Research is also directed at automatic instrumentation, alternative methods of measurement such as replacement tests for BOD and suspended solids, and the use of

ecotoxicity tests. There is a considerable amount of R&D work in the microbiology field, related to micro-organisms of concern in controlled waters, and disinfection.

## EFFICIENCY SAVINGS

Savings from increased efficiency are expected to amount to some £0.7m, the bulk of this relating to the laboratory network. Central procurement of laboratory equipment and maintenance contracts will save £90,000, whilst extending the working life of certain items will save a further £100,000, improved productivity in sampling £238,000, and laboratory work £168,000 - by the greater use of automated equipment. An examination of the feasibility of performing a greater proportion of this in the field is programmed for 1992/93 in order to seek further savings in laboratory workload and enable greater concentration on the more complex measurements to be made.



## ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	£m			
		92/93	93/94	94/95	95/96
Plus 5%	Aerial surveillance introduced	0.8	0.4	0.5	0.6
	Additional automated instruments	0.6	0.7	0.8	0.9
	More pollution prevention work	2.5	3.2	3.3	3.3
	<b>Total</b>	<b>3.9</b>	<b>4.3</b>	<b>4.6</b>	<b>4.8</b>
Minus 5%	Reduced work on contaminated land	0.10	0.20	0.22	0.25
	Reduced pollution prevention work	0.85	0.90	0.98	1.05
	Deferred introduction of hand-held instruments	1.15	1.25	1.34	1.40
	Reduced sampling programmes	0.68	0.73	0.80	0.82
	Deferred replacement of laboratory equipment and vehicles	1.12	1.22	1.26	1.28
	<b>Total</b>	<b>3.9</b>	<b>4.3</b>	<b>4.6</b>	<b>4.8</b>
Additional GIA	Wheal Jane and other abandoned mines - sampling and remedial work to ensure EC standards are met in the River Carnon and improve 450km of classified river.	-	2.85	2.63	2.63
	Contaminated land sampling and remedial work	-	0.5	1.5	2.0
	SWQDs	-	2.0	2.0	2.0
	<b>Total</b>	<b>-</b>	<b>5.35</b>	<b>6.13</b>	<b>6.63</b>

The Wheal Jane mine pollution incident has highlighted the problems of pollution from abandoned mines. Increased resources would allow us to sample and assess the extent of these problems, and investigate possible solutions. Initial indications are that some 450km of classified river and canal length are affected; the length of affected unclassified river is likely to be much more. The carrying out of remedial work will normally fall on the owners but the NRA may need to undertake capital works to mitigate certain pollution problems. The total cost of survey and remedial work required are estimated to be some £8m up to 1995/96.

In our first *Corporate Plan* we advised government that we felt that an initial expenditure of about £10m per annum was required to deal with contaminated land. DoE considered the problem was best dealt with using their Derelict Land Grant Scheme. We have now undertaken further survey work to discover the extent of the problem. In order to extend this to the rest of the country and carry out remedial work at key sites we anticipate this will require additional expenditure of some £4m up to 1995/96.

The large expanse of sea included within the definition of controlled waters necessitates the employment of novel techniques to enable the NRA to meet its monitoring obligations under various international and EC provisions. The use of aerial surveillance is seen as a key means of

examining many hundreds of square kilometres of coastal waters effectively, including the English Channel and North and Irish Seas.

The speedy introduction of automated instruments (hand-held and remote-based) will improve the effectiveness of inland quality monitoring by enabling pollution control staff to target water quality problems by rapid on-site measurements. An increase in pollution prevention work will reverse the current trend of increasing incidents and lead to improvements in water quality.

A reduction in overall expenditure will delay the introduction of hand-held monitors, work on contaminated land, reduce pollution prevention work and sampling and defer the replacement of obsolete laboratory equipment and vehicles.

## WATER RESOURCES

### AIMS

- To assess, manage, plan and conserve water resources and to maintain and improve the quality of water for all who use it.

### STRATEGIC OBJECTIVES

- To plan for the sustainable development of water resources, taking account of the needs of the water environment and those of abstractors.
- To tackle with vigour the short-term and serious problems raised by the drought.
- To collect, validate, store and provide hydrometric data and water quality data to support the duties of the water resources function and to support other functions as necessary.
- To apply a nationally consistent approach to abstraction licensing, including licence determination, charging, policing, enforcement and variation.
- To investigate problems caused by authorised excessive abstraction from water resources and to implement a consistent approach to the alleviation of these problems.
- To apply statutory powers with the objective of protecting the quality of water resources.
- To develop and implement a groundwater protection policy.

### ACHIEVEMENT OF THE 1991/92

#### CORPORATE PLAN

Water resources has remained a high profile activity for the NRA not least due to the continuing exceptional drought especially in the eastern and south eastern areas of England. It has resulted in the NRA operating many schemes for transferring water from areas with supplies to areas of shortage. It has also resulted in steps being taken such as to restrict abstractions for spray irrigation in certain areas, additional monitoring and enforcement activity, dealing with drought orders, dealing with new licence applications, liaison with abstractors and initiating media campaigns.

This activity impacted upon the achievement of targets set for the year 1991/92. We also experienced difficulty in the recruitment of suitably-qualified staff. We therefore reviewed priorities during the year to take account of those requiring most urgent attention.

The progress against each of the targets set for 1991/92 is reviewed opposite.

### STRATEGY

Although the NRA is a relatively new organisation, the primary powers and responsibilities of the water resources function have not changed significantly from those of the predecessor bodies, and therefore the NRA inherited an already well-established approach to the subject. However, the NRA has a key overall role in the planning of water resource developments for England and Wales.

Now that the water resources powers and duties are a prime responsibility of an independent body, there are a number of areas of increasing activity for the NRA, which have been generated as a result of the re-organisation of the water industry. These include the need across England and Wales to:

- develop a consistent approach to water resources management;
- establish integrated and sustainable water resources management plans;
- ensure that adequate protection is given to the aquatic environment, both in terms of water quantity and quality.

The work of the water resources function has been sub-divided into six broad activities, and the broad strategy within each is given below.

#### *Water Resources Planning*

Water resources planning aims at the sustainable development of water resources to meet the reasonable needs of water supply, industry, agriculture and the environment for the whole of England and Wales.

- There has been no national planning of water resources for more than a decade, and the preparation of a national strategy has the highest priority. A discussion document on strategic water resources options was published in March 1992.
- During 1992/93 our aim is to prepare an overall strategy for water resources, although further, more detailed work will be required in later years, whilst tackling the immediate problems raised by the drought.
- We will also re-assess our water resources legal powers and responsibilities.
- In parallel with national planning, it will be necessary to integrate the regional planning of any new water resources, following consultation with interested parties.

## *Targets*

### *Resource Planning*

- Set up water resources planning forums for each region by July 1991.
- Complete and publish draft water resource development strategy by December 1992.
- Define NRA policy on leakage control and demand management by October 1991.
- Complete and publish draft function strategy by December 1991.

### *Low Flows*

- Prepare report on progress on alleviating low flows by November 1991.

### *Operational Management*

- Produce water situation drought reports and respond to drought.
- Prepare a consultation paper on the proposed national abstraction charges scheme for publication during 1991.
- Review the potential for additional operating agreements with water undertakers by October 1991.

### *Licensing and Enforcement*

- Develop a technical framework for abstraction and impounding licence determination by December 1991.
- Increase licence enforcement checks from 6,000 to 15,000 per annum.

### *Resource Protection*

- Identify possible vulnerable zones in relation to possible introduction of EC Nitrate Directive and produce report by November 1991.
- Publish a groundwater protection policy and commence implementation by November 1991.
- Review and publish a report on the need for additional Nitrate Sensitive Areas (NSAs) by March 1992.

### *Hydrometry*

- Develop and implement a hydrometric data charging policy by September 1991.
- Review the management of the hydrometric network and report on needs to improve the network by March 1992.

## *Progress*

- Liaison arrangements set up with relevant national and regional bodies in relation to water resources development plans.
- Discussion document published in March 1992.
- Work deferred pending results of studies by Office of Water Services (OFWAT) and water undertakers.
- Draft completed for publication during 1992.

- Internal report completed. Field investigations and some solutions being progressed. R&D project let on quantifying benefits of low flow alleviation.

- Monthly reports produced and close liaison maintained with abstractors over demand management and contingency measures.
- Consultation document published.

- Work deferred until after consultation over long-term strategic development options.

- Work deferred.

- Target not achieved. Some 14,000 inspections forecast.

- Let contract to map source protection zones and vulnerable zones for EC Nitrate Directive with results anticipated by July 1992.
- Consultation document published in November 1991. Revised policy and implementation proposals to be published in 1992.
- This target was subsumed by the EC Nitrate Directive and work on vulnerable zones above will assist in identifying potential NSAs.

- Work deferred.
- Work deferred.



- Development of sustainable water resources will require detailed appraisal of both supply and demand management, pricing policy, leakage control and environmental consequences.

#### *Water Resources Management*

The NRA is responsible for the way in which some major resources schemes are operated, either through ownership of schemes (such as the Ely-Ouse-Essex transfer scheme) or through management agreements with scheme owners through Section 20 agreements (such as the Kielder Reservoir Scheme). The NRA intends to seek opportunities to extend operating agreements for existing schemes and any new developments.

Many of the NRA's regions have been under the stress of drought since its formation. Apart from the need for resource development to meet under-resourced areas, the NRA will continue with its role in making drought assessments, liaising with abstractors to ensure that appropriate contingency plans are in place and taking every opportunity to operate resources to minimise drought impact. An important element of the NRA's role is to ensure where possible that the appropriate balance is struck between the needs of abstractors and the needs of the environment.

#### *Resource Protection*

Resource protection is aimed at minimising the risk of contamination, not only to sources used at present, but also to potential undeveloped water sources. In many respects, the protection of resources will rely on adoption of good practices, but legislation also enables further protection through the adoption of such measures as NSAs and the designation of vulnerable zones. A major initiative over the coming years is the implementation of the NRA's groundwater protection policy.

#### *Abstraction Licensing and Enforcement*

Almost all abstractions from surface and groundwater resources need to be authorised by the NRA. The determination of an application is normally a complex technical process and is carried out to ensure the proposed abstractions do not derogate the rights of existing abstractors, reduce water quality standards or adversely impact on the water environment.

The NRA administers some 50,000 abstraction licences and receives about 2,000 new applications per year. The way in which licences are determined is a primary influence on where resources are developed in England and Wales, and on the impact of abstractions on

the water environment. It is also one of the main instruments through which the NRA can ensure the proper use of water resources.

#### *Alleviation of Low Flows*

Alleviation of low flows continues as a high priority. Pressure to increase the number of sites receiving attention is being treated cautiously, partly to avoid dissipation of the effort being expended, and partly because the extended drought in the south-east and east of England militates against proper evaluation of potentially new sites. The strategy is to focus on priority locations and to implement appropriate solutions at the earliest opportunity. An objective ranking system is being introduced in 1992/93.

The question of payment for solutions is a potential area of difficulty. Although capital is available from the water resources account, remedies involving many millions of pounds cannot be funded directly from this account, and if financed through the NRA, would require the provision of GIA. Even if some solutions were funded through GIA, significant fluctuations in abstraction charges from year to year would result.

Most of the water resources costs are paid by the water undertakers and, when combined with their environmental obligations, a preferred funding strategy would be for the undertakers to pay for the costs associated with solving the problems caused by their own authorised abstractions. This approach is supported by a number of water undertakers and is being pursued.

#### *Hydrometry*

Hydrometry is the monitoring of water level, water flow and rainfall. Without it, resources could not be managed or planned adequately; there would be no sound basis for determining licence applications nor would assessments of alleged low flow due to excessive abstraction be possible. It is also fundamental to the management of water quality. Future work will be directed towards optimising the density of the NRA's hydrometric network to meet changing needs. The expectation is that quality-controlled information will be made available for any hydrometric station "at the touch of a key" for the benefit of the NRA and its customers where this cost can be justified.

## TARGETS

### Policy

- To review the legislative position and publish NRA policy on the respective roles of the NRA, Water undertakers and other private organisations in the promotion, financing and development of new water resources schemes by December 1992.
- To prepare long-term plans by December 1993 indicating the preferred major water resources schemes which would need to be built to meet increased demand. An interim report on future demands concerning public water supply, industry and agriculture is scheduled for December 1992.
- To develop and implement a framework for identifying capital expenditure requirements, justification of needs and their prioritisation by June 1992.
- To submit proposals for a new scheme of abstraction charges to the Secretary of State by October 1992 for implementation in April 1993.
- To prepare a Standards of Service document expressing appropriate policy standards for activities within the function by March 1993.

### Operations

- To manage and alleviate drought problems wherever feasible.
- To investigate and implement solutions to low-flow problems in at least eight catchments per year between 1992/93 and 1996/97.
- To implement the groundwater protection policy over the years 1992/93 to 1995/96 inclusive, including the identification of protection zones and the publication of vulnerability maps, covering England and Wales at a scale of 1:1,000,000.
- To determine licence applications to the following standards:  
1992/93 - 60% within the statutory 3 month period.  
1993/94 - 70% within the statutory 3 month period.  
1994/95 - 75% within the statutory 3 month period.
- To publish maps showing the degree of utilisation of water sources in England and Wales by March 1994.

## INPUTS

		Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Income (£m)</b>	<b>Total</b>	<b>83</b>	<b>63</b>	<b>64</b>	<b>76</b>	<b>81</b>	<b>88</b>	<b>93</b>
<b>Expenditure (£m)</b>								
Hydrometrics		19	12	15	17	19	20	21
Resource Planning		3	4	6	7	7	8	8
Resource Protection		5	5	7	11	12	12	13
Licensing		3	4	5	6	7	7	7
Enforcement		2	2	3	3	3	3	4
Operational Management		12	13	13	15	15	16	17
Other		27	12	19	21	21	22	23
<b>Total</b>		<b>66</b>	<b>52</b>	<b>68</b>	<b>80</b>	<b>84</b>	<b>88</b>	<b>93</b>
<b>Comprising:</b>								
Revenue		61	44	54	63	68	69	72
Capital		5	8	13	16	16	19	21
<b>Variance (£m)</b>		<b>17</b>	<b>11</b>	<b>-4</b>	<b>-4</b>	<b>-3</b>	<b>-</b>	<b>-</b>
<b>Manpower (FTE)</b>	<b>Total</b>	<b>482</b>	<b>647</b>	<b>784</b>	<b>815</b>	<b>815</b>	<b>815</b>	<b>815</b>
<b>Included in the above are:</b>								
Abstraction Licence Inspectors		19	41	58	59	60	60	60

### Note

1 This table is prepared on a cash basis and figures shown will differ from annual accounts-based figures used to calculate charges. Also, please note the forecast deficit in 1991/92 is an estimate made prior to audited accounts being available.

## Water Resources Capital Programme 1992/93 - 1996/97 Onwards

### Water Resources Capital Expenditure

Please note this map shows major spends > £1m only.  
(the absence of symbols from a Region does not mean there is no capital spend, but that expenditure on any one scheme is less than £1m).

- |  |   |                                     |
|--|---|-------------------------------------|
| ● Alleviation of Low Flows (ALF)           | ■ Water Resources Planning                | ▲ Operational Management            |
| 1. ALF Works £45m                          | 12. Strategic Resources Development £10m  | 20. EDE TS Improvements £4.4m       |
| 2. River Piddle £7.8m                      | 13. Shropshire GW IV £3.2m                | 21. Observation Boreholes £2.7m     |
| 3. Excess Abstractions Corrections £5.8m   | 14. Test Groundwater Scheme £3m           | 22. Ely/Ouse/Chelmer Pipeline £1.7m |
| 4. River Misbourne Flow Improvements £5.4m | 15. Shropshire GW III £3.0m               |                                     |
| 5. River Allen £4.3m                       | 16. River Support Schemes £2.6m           |                                     |
| 6. River Ver Flow Improvements £2.1m       | 17. Lodes-Granta (R. Lodes Support) £1.6m |                                     |
| 7. Future Unidentified ALF £2m             | 18. Vale of York Development £1.4m        |                                     |
| 8. Wensum River Sup. Perm. Works £1.5m     | 19. FIRAS Analysis & Promotions £1.3m     |                                     |
| 9. Capital Schemes £1.3m                   |   |                                     |
| 10. ALF Works £1.1m                        |   |                                     |



### Income

Water resources income is derived from charges levied on abstractors. Charges are set to equal revenue expenditure on a year-on-year basis, and hence the rate of charge increase will reflect the increase in revenue expenditure subject to adjustments required to recover any deficits from a previous year or repayment arising from any surpluses from a previous year.

A method of prioritising the alleviation of low flow problems has been developed and an R&D contract has been set up on the evaluation of benefits from such schemes. However, similar techniques need to be developed across all the water resource activity areas. Notwithstanding the proposed level of expenditure on priority areas of strategic planning, operational management and low-flow problems attract the vast majority of the programme. It is essential that the proposed level of expenditure of £16.4m is retained to ensure the politically sensitive work is progressed.

A new scheme of abstraction charges is planned to be introduced in April 1993. The aim is to introduce a common charging framework across England and Wales. Formal consultation is taking place during 1992/93 and a formal decision has not yet been made on whether the water resources account should be balanced on a regional or national basis. Whichever form of balancing is introduced, it is inevitable that some charges will increase and others decrease.

### Expenditure

Significant increases in expenditure between 1990/91 and 1991/92 have occurred largely due to inflation, the increase in staff costs, more appropriate allocation of costs between functions and additional capital expenditure. Between 1991/92 and 1992/93 there is a projected 11% increase (on an accruals basis) in expenditure which is attributed to inflation (4%), increase in depreciation and

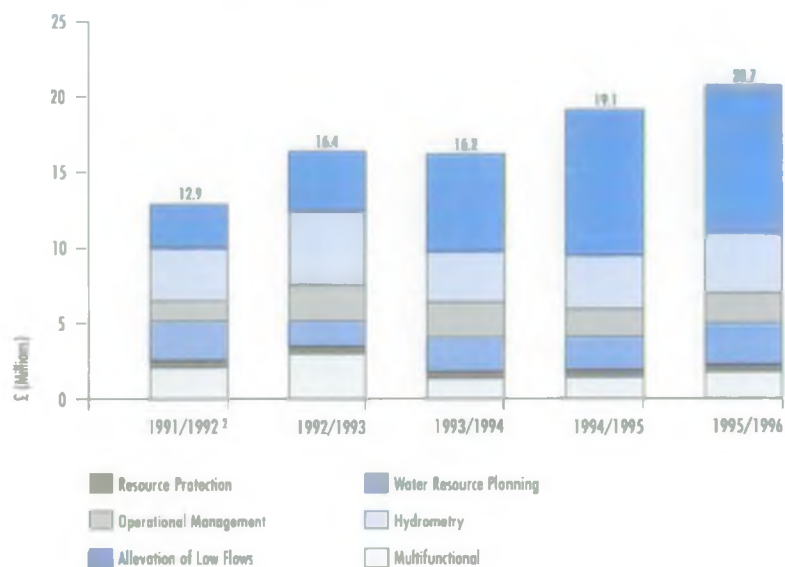
rate of return on assets (3%), increase in Head Office expenditure (2%) and increases in regional expenditure in real terms (2%). In general, we plan to keep future increases in revenue costs in line with inflation over the planning period. Factors where expenditure is anticipated to increase above inflation include licensing, where additional effort will be required to improve performance in relation to the target to increase the number of licences determined within the statutory period, resource protection, where additional costs are planned in connection with the implementation of the groundwater protection policy, and the implementation of the EC Nitrate directive, and resource planning, where increasing activity is required in evaluating future demands and resources.

Water resources capital expenditure amounts to £16.4m for 1992/93. This has been reduced from initial proposals in excess of £20m by a process of prioritisation. This expenditure is to fund work on the alleviation of low flows, enhancing augmentation schemes, repairing hydrometric facilities, planning and protecting water resources and multi-functional schemes including telemetry and IT.

If we need capital expenditure that can be justified in excess of the sum of current cost depreciation and rate of return, then this could be eligible for GIA from the DoE. Present proposals for water resources capital expenditure shown in the figure opposite do not draw upon this funding facility. The NRA is at a relatively early stage of developing a rolling programme of water resources capital expenditure, and modifications are anticipated as the programme is refined and methodology for defining needs and justifying and prioritising work are improved and developed.



### Water Resources Projects - Capital Expenditure 1992/93 - 1995/96<sup>1</sup>



#### Notes

1 This Provisional Capital Programme will be subject to full appraisal and justification.

2 Includes some expenditure prior to 1991/92

## OUTPUT AND PERFORMANCE

### Low Flows

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of low flow studies completed	-	5	19	19	17	20	20
Number of sites with low flow ameliorated <sup>1</sup>	-	-	7	8	8	8	8

#### Note

1 Subject to full justification of capital programme.

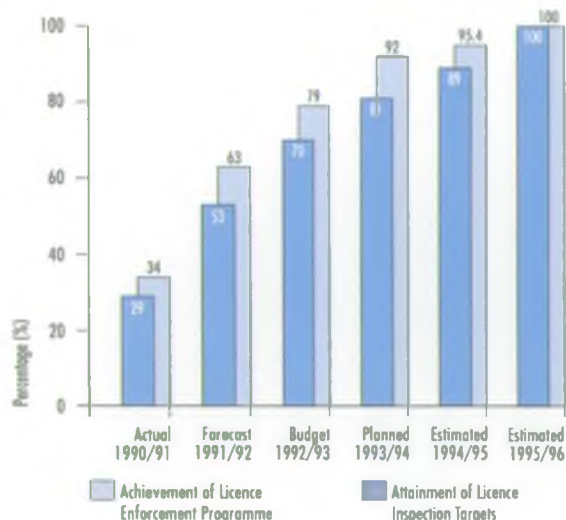
### Licensing

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of licences in force	47,745	47,343	48,500	49,300	49,900	50,000	50,500
Number of new licences determined within statutory period	429	542	819	1,300	1,300	1,300	1,300
Total licences determined	1,041	1,498	2,157	2,025	1,800	1,715	1,715

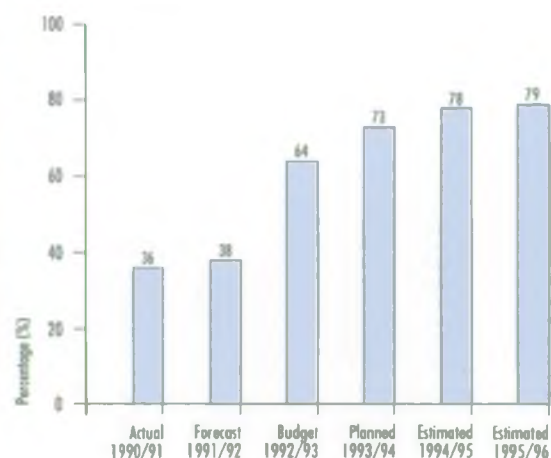
### Enforcement

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
No of highly critical licence inspections required by NRA policy	1,268	2,211	2,162	2,230	2,260	2,280	2,300
No. of inspections made	240	901	1,597	1,860	2,170	2,230	2,300
No of critical licence inspections required by NRA policy	6,725	8,809	12,483	12,715	12,930	13,000	13,100
No. of inspections made	2,463	2,875	7,595	9,990	11,820	12,350	13,100
No of less critical and non-critical licence inspections required by NRA policy	8,240	6,805	9,470	9,670	9,900	10,000	10,100
No. of inspections made	1,890	1,349	3,580	5,500	6,240	8,000	10,100

### Licence Enforcement & Inspection



### Percentage of Licence Applications Determined Within Statutory Period



### RESEARCH AND DEVELOPMENT

The Water Resources R&D Programme for 1992/93 - 1995/96 will support the development of policy and plans for the water resources function and will improve the NRA's technical understanding of priority issues within the function. Other parts of the programme will lead to improved systems in support of decision making and improved methods of operation.

Of particular importance will be research into the evaluation of costs and benefits of low-flow alleviation and the assessment of environmentally acceptable flow regimes. Further research will support the NRA's groundwater protection policy through the development of a manual of aquifer properties and methods to improve the prediction of groundwater nitrate concentrations.

Improved methods to assess the yield of surface water

resources are also planned and research into the demand for irrigation water will be essential to support future water resources strategies. The development of improved methods of flow measurement by ultrasonic gauges and electromagnetic meters are also planned to increase the accuracy in the measurement of water resources.

### EFFICIENCY SAVINGS

Efficiency savings will be achieved by a combination of initiatives. These will include:

- further automation of the collection and processing of hydro-meteorological data;
- improved scheduling of field inspection of licences;
- standardisation and bulk purchasing of equipment;
- auditing of operating agreements.

### ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	£m			
		92/93	93/94	94/95	95/96
Plus 5%	Increase licence inspection visits by approximately 25% or determine extra 1.2% of licence applications.	1.2	1.3	1.4	1.5
	On average, bring forward one low flow solution per region by 3 months.	0.6	0.7	0.8	0.9
	Improvement in resource planning and groundwater protection, including full implementation of groundwater protection policy and EC Nitrate Directive.	0.6	0.6	0.6	0.6
	Improvement in telemetry, gauging stations and data processing including construction of one extra gauging station per year.	0.8	0.8	0.8	0.9
	Improvements in operational management including improved augmentation scheme monitoring.	0.8	0.8	0.8	0.8
	<b>Total</b>	<b>4.0</b>	<b>4.2</b>	<b>4.4</b>	<b>4.7</b>
Minus 5%	Determine approximately 7% fewer licence applications.	0.6	0.6	0.6	0.7
	Defer, on average, one low flow solution per region by one year.	1.5	1.6	1.7	1.8
	Defer resources protection implementation in three regions by one year.	0.3	0.4	0.4	0.4
	Reduced availability of hydrometric data and renovation programmes deferred by one year.	1.0	1.0	1.1	1.2
	Deferred improvements in operational management.	0.5	0.5	0.5	0.5
	<b>Total</b>	<b>4.0</b>	<b>4.2</b>	<b>4.4</b>	<b>4.7</b>

## FLOOD DEFENCE

### AIMS

- To provide effective defence for people and property against flooding from rivers and the sea.
- To provide adequate arrangements for flood forecasting, warning and response to flood events.

### STRATEGIC OBJECTIVES

- To develop and implement our draft flood defence strategy through a systematic approach for assessing capital and maintenance requirements and develop medium and long-term plans for those defences owned and maintained by the NRA.
- To encourage development of information technology and extension of facilities which will further advance the development of strategies and procedures for warning of, and responding to, emergencies.
- To support R&D which will assist in identifying future flood defence needs.
- To review best practices for operating methodology, increasing efficiency and enhancing value for money.
- To heighten general awareness of the need for development controls in flood plains and contribute to the development of catchment management plans.
- To identify opportunities for the enhancement of environmental, recreational and amenity facilities when undertaking flood defence works.

### STRATEGY

Our future strategy has been devised around four activity areas: Flood defence maintenance, flood emergency services, improvement of defences, and development control.

#### *Flood Defence Maintenance*

The NRA intends to improve the demonstration of value for money for flood defence works and works carried out by the in-house work force. This will comprise several elements including market testing for work and the introduction of more meaningful performance measures for assessing the effectiveness of work and the efficiency of its execution.

#### *Flood Emergency Services*

Flood defence intends to enhance the existing forecasting, warning and response to flood events.

#### *Improvement of Defences*

The NRA is continually improving and renewing fluvial and coastal flood defences. The protection and

enhancement of the natural water environment will play a large part in the design and maintenance of new defences. The need for increased levels of protection because of changes in climate are also taken into account.

#### *Development Control*

The achievement of appropriate influence over decision making in land-use planning and coastal management and development control will improve the NRA's ability to provide effective flood defence by preventing the problem arising.

### TARGETS

#### *Policy*

- To establish standards of service by September 1992.
- To develop support systems to demonstrate and measure effectiveness by March 1993.
- To develop NRA policy on target levels of service for flood warning and response by September 1992.
- To review design criteria and ensure best practices are identified and used throughout the NRA by March 1994. An important element of this work is Post Project Appraisal.
- To produce conservation guidelines for coastal works in liaison with MAFF and review fluvial guidelines by March 1993.
- To review Main River Policy, review compatible byelaws and planning liaison procedures by March 1994.

#### *Operations*

- To commence the implementation of various measures to demonstrate value for money of the in-house work force by March 1993 with complete implementation by March 1996.
- To continue the asset survey and complete fluvial assets by January 1994.
- To increase the length of defences maintained by 2% for each of the next two years.
- To introduce target standards of service to monitor the effectiveness of the flood warning system by August 1993.
- To develop ten year needs plans in all regions by March 1993.
- To introduce post project appraisal by April 1993.
- To continue the current achievement of 98% of consents determined within the statutory period.



## ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

### Targets

#### Policy

- To develop policies in response to Phases II and III of the Sea Defence Survey by December 1991.
- Review the effectiveness of the national flood warning colour code scheme by October 1991.
- Review and standardize the basis of cross- function charging between fisheries, conservation, navigation, recreation and flood defence within regions.
- Complete and publish the flood defence strategy by December 1991 and begin its implementation by April 1992.

#### Progress

- Discussions with Local Authorities and private owners on the condition of defences and necessary works underway.
- Initial review suggested that the system was working well. A further review is in progress.
- This issue is being progressed by finance.
- Flood defence strategy substantially complete by December 1991. Some urgent topics within the strategy begun.

#### Operations

- Revise and prepare new annual MTP by January 1992 and develop ten year "needs" plans for all regions by March 1992.
- Ensure all NRA sea defences with residual life of less than five years are included in MTPs or maintenance programmes, wherever economically justified, by March 1992.
- Ensure Phases I-III of Sea Defence survey are completed and reported on by October 1991 and commence Phase IV on tidal banks.
- Monitor predictions of sea-level rise due to climate change and the performance of new surge and wave forecasting models to enhance flood forecasting capabilities by March 1992.
- Develop standards of service with a view to their introduction and identification of associated land use bands in all regions by March 1992.

- MTPs have been finalised as part of the *Corporate Plan*. Ten year "needs" plans were not produced by March 1992, but they are being progressed.
- Sea defences with residual life of less than five years have been identified and put into capital or maintenance programmes.
- Phases I-III of Sea Defence survey completed, together with British Rail data in January 1992. Final report published in February 1992. Tidal banks survey has been completed for some regions.
- Monitoring of sea-level rise continuing on a long-term basis. New models for surge and wave forecasting have been introduced and are being run in parallel with the old model.
- Standards of service methodology has been developed and the concepts are generally approved for maintenance work. Their use for capital works is being progressed. Full implementation requires, inter alia, a resource intensive data collection exercise. Ways of identifying land use more efficiently are being pursued.

## INPUTS

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
<b>Income (£m)</b>							
Levies/Precepts	158	176	182	188	193	202	212
GDC	2	2	3	3	3	3	3
MAFF/Welsh Office Grants	17	24	33	39	44	49	51
Other	11	-	-	6	6	6	7
<b>Total</b>	<b>188</b>	<b>202</b>	<b>219</b>	<b>236</b>	<b>246</b>	<b>260</b>	<b>273</b>
<b>Expenditure (£m)</b>							
Regulation/enforcement	4	7	8	9	10	10	11
Maintenance	67	85	102	105	114	120	126
Improvement and development	82	76	95	111	115	121	127
Flood emergency services	6	3	4	4	5	5	5
Other	9	10	12	13	14	14	15
<b>Total</b>	<b>168</b>	<b>181</b>	<b>221</b>	<b>243</b>	<b>258</b>	<b>270</b>	<b>284</b>
Comprising:							
Revenue	90	94	107	114	119	119	124
Capital	78	87	114	129	138	151	160
<b>Variance (£m)</b>	<b>20</b>	<b>21</b>	<b>-2</b>	<b>-7</b>	<b>-12</b>	<b>-10</b>	<b>-11</b>
<b>Manpower (FTE)</b>							
Non-Manual	1,197	1,233	1,264	1,343	1,352	1,352	1,352
Manual	2,167	2,231	2,278	2,287	2,282	2,282	2,282
<b>Total</b>	<b>3,364</b>	<b>3,464</b>	<b>3,542</b>	<b>3,630</b>	<b>3,633</b>	<b>3,633</b>	<b>3,633</b>
Included in the above are:							
Design Services	201	224	251	265	263	263	263
Plant/Vehicle Services	109	112	115	114	115	115	115
Planning Liaison	127	138	147	151	151	151	151
Emergency planning	20	23	23	24	24	24	24
Comms/Control Rooms	30	37	42	48	53	53	53

## EXPENDITURE

The total planned expenditure on flood defence for 1992/93 is £243m, some £20m greater than the £221m outturn forecast for 1991/92. This reflects the need for gradually increasing the capital programme necessary to ensure that flood defences are to the required standard. This need has been reflected in the increase in some MAFF grant rates, and in the increase in total grant earning ceiling (GEC) allocated to flood defence in the NRA. It is important to ensure that future proposals are both achievable and fundable. All schemes will continue to be assessed on the basis of their cost effectiveness.

For 1992/93 the Flood Defence Committees put forward charge proposals which came within £0.5m of the original submissions to the Committees. However, in a

number of cases there was considerable difficulty in gaining support for the levies, and the potential for funding problems in future years should be recognised.

Section 47 balances increased during 1991/92 to approximately £35 million. Steps will be taken to significantly reduce the level of these balances by positive management to ensure they are in line with justified requirements. The Thames Barrier reserves, amounting to over £40m are to be run-down over the next five years. A programme of works is the subject of discussion with MAFF to achieve this.

### Capital Works Analysis

The capital works programme can be broken down further to reflect expenditure on sea defences, tidal defences, fluvial defences and works carried out on both urban and agricultural reaches.

The table below illustrates the way in which capital funds are spent, differentiating between the type of work done and its location.

The emphasis on protection of urban areas is continued throughout the Plan period with percentage expenditure on urban watercourses forming between 60% and 75% of total expenditure. The capital programme is more firmly set in the early stages where cost effective urban schemes are being more highly promoted. This split would be expected to continue in future years.

The range of capital schemes is wide both in content and cost. The NRA sea defence survey completed in 1991 identified a few areas where the level of protection afforded by the existing defences is inadequate and the

necessary improvements are being incorporated into the capital programme. The environmental impact of defences is closely studied where the NRA wishes to carry out works. In the case of the Colne Barrier, a monitoring programme is in progress between the NRA and English Nature to measure the effect of the barriers on the environment.

One of the major fluvial alleviation schemes, the Maidenhead Flood Alleviation Scheme, provides an example of the difficulties in progressing major projects. Planning for this scheme has been underway for several years and great effort has been put into its promotion with the public and planning authorities. The decision has now been taken to hold a Public Inquiry and the loss of planned expenditure due to this delay cannot be replaced by other schemes in the Thames Region because of the massive scale of the project. Steps to mitigate the effect, such as a reduced levy, are viewed to be undesirable due to the need to maintain consistency in levy year on year.

	91/92	92/93	93/94	94/95	95/96
<b>Expenditure (£m)</b>					
<b>A Sea Defences</b>	22.6	32.1	39.7	36.9	41.1
Tidal Defences	33.0	34.5	33.8	35.4	36.6
Fluvial Defences	35.7	39.5	41.1	56.9	59.6
<b>B Urban</b>	75.0	82.7	87.5	96.2	94.3
Agricultural	12.0	18.2	22.7	29.3	39.7

### Flood Defence

#### Capital Programme 1992/93 - 1996/97 Onwards

##### Flood Defence Capital Expenditure

Please note this map shows major spends > £2m only.  
(the absence of symbols from a Region does not mean there is no capital spend, but that expenditure on any one scheme is less than £2m).

- Fluvial Defences
  1. River Thames; Maidenhead/Windsor/ Eton £74.3m
  2. Broadland Flood Elevation Scheme £62.5m
  3. Lower Colne Improvements £15.6m
  4. River Irwell; Salford £10.2m
  5. River Ravensbourne; Flood Elevation £8.7m
  6. Fen Bankworks - Great Ouse £8m
  7. River Aids £4.2m
  8. Batley Beck; Flood Alleviation Scheme £4.1m
  9. River Birkett Birkenhead £3.6m
  10. Aylesbury Arterial Drainage Works £2.7m
  11. Keadby PS Refurbishment £2.6m
  12. River Crane; Flood Alleviation Phase 2 £2.2m
  13. River Yarm; Flood Defence Scheme £2.2m
  14. Candy Farm PS Refurbishment £2.2m
- ▲ Sea Defences
  15. Mablethorpe/Skegness Works £23.3m
  16. Eastbourne/Coventry Sea Defences £15.1m
  17. Dymchurch Sea Defences Phase 2 £14.1m
  18. Happisburgh Breakwaters Phase 1 £8.8m
  19. Yorkshire Sea Defences £7.7m
  20. Pennington Sea Wall £6m
  21. Gt. Yarmouth Flood Defences £3.6m
  22. Gwent Levels Sea Defence £3.4m
  23. Coldicot Levels Sea Defence £3.2m
  24. Felpham Sea Defence £3.1m
  25. Barbican Plymouth £2.7m
  26. Lancing/Shoreham £2.1m
- Tidal Defences
  27. Colne Barrier; Barrier £12.2m
  28. Tidal Thames Minor Works (Tidal) £5.4m
  29. Bush Crib; Hempstead £4.6m
  30. Tidal Defences; London Prov for Refurb £4.0m
  31. Tidal River Crane; Flood Alleviation £3.4m
  32. Humber Estuary; Goole £2.2m
  33. Purton; Frampton Breakwater £2.2m
  34. Tendring/Holland Tidal Defences Ph 1 £2.1m
  35. Thameside Revetments Ph: Shell £2m





## OUTPUT AND PERFORMANCE

### Consenting

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of consents determined	4,187	5,064	5,895	6,040	6,300	6,350	6,400
% of consents determined within statutory period	N/A	97	98	98	98	100	100

### Maintenance

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Length of defences maintained (km)							
Sea Defences	468	534	550	556	580	585	590
Estuarial/Tidal	1,995	2,311	2,361	2,489	2,510	2,530	2,560
Main River	22,205	35,409	37,429	40,076	40,480	40,885	41,290
Total	24,668	38,255	40,340	43,121	43,570	44,000	44,440
Average cost per km of flood defences maintained (£/km)							
Sea Defences	N/A	11,284	11,438	11,997	12,144	12,508	12,800
Estuarial/Tidal	N/A	4,240	3,982	3,224	3,339	3,439	3,500
Main River	N/A	1,212	1,190	1,019	1,049	1,080	1,100

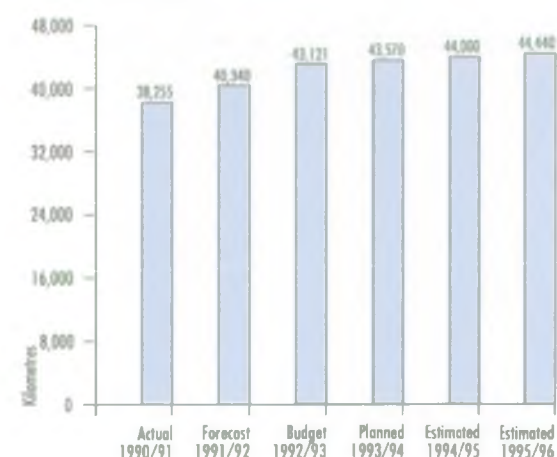
### Improvement

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Length of flood defence improved:							
Sea Defences	14	14	25	16	16	N/A	N/A
Estuarial/Tidal	30	37	58	32	68	N/A	N/A
Fluvial Main River	89	249	139	70	62	N/A	N/A
Total	132	300	222	118	146	N/A	N/A

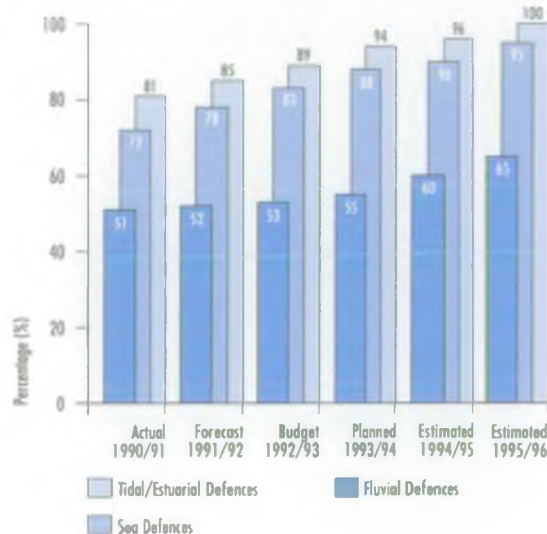
### Planning Liaison

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of planning applications screened (thousands)	86	130	149	152	156	156	157
% planning consultations processed within target time	N/A	78	84	87	88	95	100

### Length of Defences Maintained



### Percentage of Defences Protected to Standard



## RESEARCH AND DEVELOPMENT

R&D within the NRA is intended to be user-oriented. It is not a task separate from the operational duties of staff, but is a resource that can be used to produce urgently needed management and engineering tools. To this aim, research is identified and directed with the results put into practice in operational use in the following main areas:

- fluvial defences and processes;
- flood forecasting;
- catchment appraisal and control;
- operational management;
- coastal and tidal processes & design;
- emergency response.

Expenditure in 1991/92 was £0.9m. This will rise to £1.35m in 1992/93. It is expected to remain at around this level in future Plan years.

## EFFICIENCY SAVINGS

We believe there is significant scope for efficiency savings to obtain improved value-for-money (VFM), both on capital and revenue activities.

The approach being taken to do this involves the introduction of standards of service, performance measures, post-project appraisal and competitive tendering. These will all lead to improved VFM. It may be that some up-front costs will be necessary, but all should produce benefits in time.

The following points summarise our plans:

- seek manual workforce productivity improvements arising out of improved work planning;
- introduce best practices and economy campaigns to reduce power consumption in offices, depots and pumping stations;
- review maintenance practices and use of mobile plant and vehicles;
- introduce revised travel agreements for manual employees in regions, where appropriate;
- improve inspection routines and pre-planned maintenance practices for flood defence assets.

## ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	92/93	93/94	94/95	95/96
Plus 5%	Acceleration in capital programme reducing risk of flooding by improving greater length of flood defence.	7.1	7.5	7.8	8.2
	Improved management through increased use of standards of service, performance measures, asset condition surveys and value for money initiatives.	1.8	1.9	2.0	2.1
	Increased activity in development control, regulation and enforcement. Greater input to local structure plans, screening several thousand more planning applications.	2.3	2.4	2.5	2.6
	Enhanced emergency response using improved flood warning models, better communication systems and increased telemetry systems.	0.2	0.2	0.2	0.2
	<b>Total</b>	<b>11.4</b>	<b>12.0</b>	<b>12.5</b>	<b>13.1</b>
Minus 5%	Reduction in capital programme.	9.4	9.9	10.3	10.8
	Reduction in maintenance work. Less use of standards of service and asset condition surveys due to reduced data gathering.	1.5	1.6	1.7	1.8
	Fewer catchment studies leading to less effective development control measures.	0.5	0.5	0.5	0.5
	<b>Total</b>	<b>11.4</b>	<b>12.0</b>	<b>12.5</b>	<b>13.1</b>

## FISHERIES

### AIMS

- To maintain, improve and develop fisheries.

### STRATEGIC OBJECTIVES

- Protect and conserve salmon, trout, freshwater, eel and, where appropriate, coastal fisheries.
- Regulate fisheries through the enforcement of a consistent series of licences, Orders, byelaws and consents.
- Monitor the fisheries status of rivers and inland estuary and, where appropriate, coastal waters.
- Formulate policies to maintain, improve and develop fisheries and restore and rehabilitate damaged fisheries.
- Provide a fisheries service which is responsive to the needs of the public and which is based on a sound charging system.

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

<i>Targets</i>	<i>Progress</i>
<ul style="list-style-type: none"> <li>• Complete public consultation on re-structuring angling licences and implement revised structure and charging scheme from April 1992.</li> <li>• Complete public consultation and develop S142 charging scheme by April 1992.</li> <li>• Determine whether sea-trout populations in England and Wales are in decline and whether NRA has necessary information and resources to manage sea trout stocks effectively by July 1991.</li> <li>• Review fisheries enforcement to increase effectiveness across England and Wales and seek ways to increase flexibility of deployment to target problem areas by March 1992.</li> <li>• Publish fisheries strategy by December 1991.</li> <li>• Report on implementation of a harmonised stock assessment programme by March 1992.</li> <li>• Review NE Coast commercial salmon and sea-trout fishery by March 1992.</li> <li>• Improve collection and timeliness of publishing fisheries statistics by March 1992.</li> <li>• Ensure fisheries costs incurred by other functions are re-charged fairly by 1991.</li> <li>• Develop consistent policy on S30 consents and fish disease procedures.</li> <li>• Review fish culture practices.</li> </ul>	<ul style="list-style-type: none"> <li>• Single national licence scheme and charging policy introduced in January 1992.</li> <li>• Draft consultation produced by March 1992. Implementation target adjusted to April 1993.</li> <li>• Assessment completed in December 1991. Four technical reports published in March 1992.</li> <li>• Review deferred. Aerial fishery surveillance trials conducted.</li> <li>• Draft high-level summary completed in March 1992 for publication later in 1992.</li> <li>• Draft harmonised stock assessment procedure produced by May 1991. Implementation to be assessed in 1992/93.</li> <li>• Review pre-empted by publication of Fisheries Minister's report on salmon net fisheries. Project group established in January 1992 to consider the report's implementation.</li> <li>• Report published February 1992.</li> <li>• Work deferred. Now being taken forward by Finance Directorate.</li> <li>• Draft policy produced by March 1992.</li> <li>• Draft produced by March 1992.</li> </ul>



## Work Programme - Fisheries



### STRATEGY

Within the NRA's role as "*Guardians of the Water Environment*", we will strive to maintain and develop conditions in which fish populations can thrive. The preservation and improvement and, where appropriate, rehabilitation of this valuable resource will depend on a management strategy which achieves a balance between the sustained development of recreational and commercial fishing and the conservation of fish populations. The pivotal role of fisheries in the assessment of river quality will be communicated in order to enable the public to interpret the effectiveness of the NRA's fulfilment of its duties to protect the aquatic environment.

### TARGETS

#### Policy

- Develop S142 charging scheme and commence implementation from a target date of April 1993.
- Promote new East Coast Net Limitation Orders by August 1992 and implement management plan from January 1993.
- Review policy on commercial licences, including charging, by March 1993 and implement new policy from April 1993.
- Decide upon a five year rolling programme of harmonised stock assessment by March 1993, develop a system of classifying fisheries by March 1995, implement by March 1995 and complete by March 1996.
- Finalise by March 1996 the management procedures

needed to ensure the continuing protection of sea trout populations and begin implementation of sea trout management plan by September 1992.

- Decide by September 1992 the appropriate effective ways of promoting the contents of the fisheries strategy which would be published by December 1992 and review promotion by April 1994.
- Decide by March 1993 an overall policy on the frequency and timing of Regional Fisheries Advisory Committee (RFAC) meetings and determine by this date the timetable for major issues to be put to RFACs for advice in the period April 1993 to March 1996.

#### Operations

- Respond to 90% of consent and licence applications with a decision within ten working days.
- Maintain rod licence compliance at 95% by challenging 15% of anglers.
- Meet 90% of mitigation programme each year.
- Implement 10% of habitat improvement programme per annum.
- Attend 90% of reported fish mortalities within: 2 hours of notification between 0800 hrs - 1800 hrs; 4 hours of notification between 1800 hrs - 0800 hrs and at weekends.
- Acknowledge 95% of requests for fisheries advice within five working days and provide a considered response or site visit to 90% of requests within twenty working days.

## INPUTS

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Income (£m)</b>							
Licences	6.7	6.7	7.7	10.7	11.3	12.5	13.8
Other	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Section 142	-	-	-	-	0.8	1.5	2.0
<b>Total</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>11</b>	<b>12.4</b>	<b>14.4</b>	<b>16.2</b>
<b>Expenditure (£m)</b>							
Regulation	1	2	2	2	2	2	2
Enforcement	5	6	8	8	9	9	9
Monitoring	3	4	5	6	6	6	7
Physico-chemical improvement	1	1	2	2	2	2	2
Roaming and Restocking	2	2	3	3	3	4	4
Other	3	2	3	3	3	4	4
<b>Total</b>	<b>15</b>	<b>17</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>27</b>	<b>28</b>
<b>Comprising:</b>							
Revenue	13	15	21	23	24	26	27
Capital	2	2	2	2	1	1	1
<b>Variance (£m)</b>	<b>GIA</b>	<b>8</b>	<b>10</b>	<b>15</b>	<b>13</b>	<b>12.6</b>	<b>11.8</b>
<b>Manpower (FTE)</b>	<b>Total</b>	<b>410</b>	<b>412</b>	<b>442</b>	<b>454</b>	<b>454</b>	<b>454</b>
Included in the above are:							
Fisheries Inspectors/Bailiffs	263	282	299	304	304	304	304

### Income

The current programme involves expenditure of about £24m, of which £11m is derived mainly from licences, duty income and the balance of £13m from GIA. At present, fisheries owners contribute little to NRA income - though they are variously rated throughout England and Wales by local authorities. The NRA's plans for the introduction of a S142 charging scheme are expected to yield income from 1993/94. The question of the appropriate attribution of costs between the major beneficiaries, riparian owners, anglers and the public will be examined during 1992/93. In conjunction with this, the appropriate recharging of other NRA functions and outside agencies for necessary work incurred will be determined. The overall objective of the charging policy is to provide a fisheries service which is sensitive to the needs of the public and which is based on a sound charging system.

### Expenditure

In 1991/92, £23m was spent on fisheries work with a planned spend of £24m in 1992/93. Expenditure in subsequent years has been forecast to increase with inflation. The main capital projects to be undertaken (subject to necessary justification and approval) consist of the:

- construction of Conwy falls fish pass (Welsh);
- extension of Calverton fish farm (Severn-Trent);
- habitat reinstatement programme, and
- Fobney site development (Thames).

The development of a longer-term capital programme will be progressed in 1992/93.

### Fisheries, Recreation, Conservation & Navigation Capital Programme 1992/93 - 1995/96



#### Fisheries, Recreation, Conservation & Navigation Capital Expenditure

Please note this map shows major spends > £100k only. (the absence of symbols from a Region does not mean there is no capital spend, but that expenditure on any one scheme is less than £100k).

- |   |                              |  |
|---|------------------------------|--|
| ● Fish Passes   | ▲ Fish Farms                 | ■ Navigation Structures                      |
| 1. Physico-Chemical Improvements<br>Conwy Falls PH2 £112k | 2. Calverton Fish Farm £193k | 3. Eldridges Sluices<br>Reconstruction £615k |
|   |                              | 4. Clifton Lock Refurbishment £325k          |
|   |                              | 5. Hambledon Lock<br>& Ancillaries £200k     |
|   |                              | 6. Cookham Lock Tail Layby £114k             |

## OUTPUT AND PERFORMANCE

### Licensing

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>No of licences issued:</b>							
Rod (millions)	1.25	1.285	1.3	1.0	1.1	1.1	1.1
Net	3,100	3,505	4,022	4,040	4,040	4,050	4,050
<b>No of licences checked:</b>							
Rod (millions)	0.19	0.2	0.2	0.18	0.18	0.19	0.19
Net	1,970	2,025	2,832	2,630	2,630	2,754	2,754
<b>Licences checked:</b>							
Rod (% of total)	15	15	15	16	16	17	17
Net (% of total)	64	57	70	65	65	68	68
Licence compliance (%)	94	95	91	90	91	95	98

### Monitoring

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Number of surveys:</b>							
Netting/Electro	1,602	1,525	1,579	2,150	2,310	2,475	2,650
Angler Census	208	338	331	340	385	420	460
<b>Total</b>	<b>1,810</b>	<b>1,863</b>	<b>1,910</b>	<b>2,490</b>	<b>2,695</b>	<b>2895</b>	<b>3,110</b>

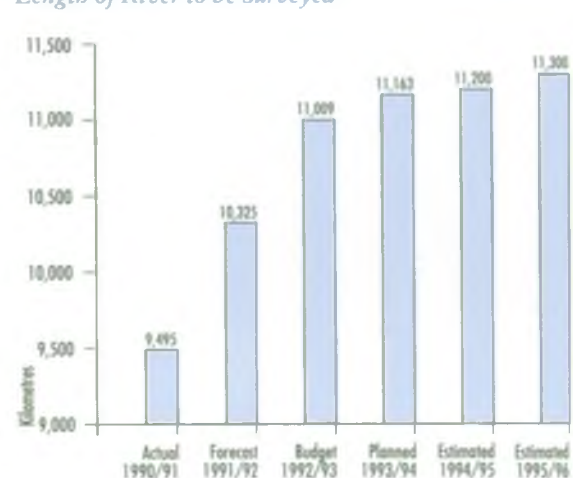
### Habitat Improvements

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
No of improvement structures built	39	56	51	44	48	52	55

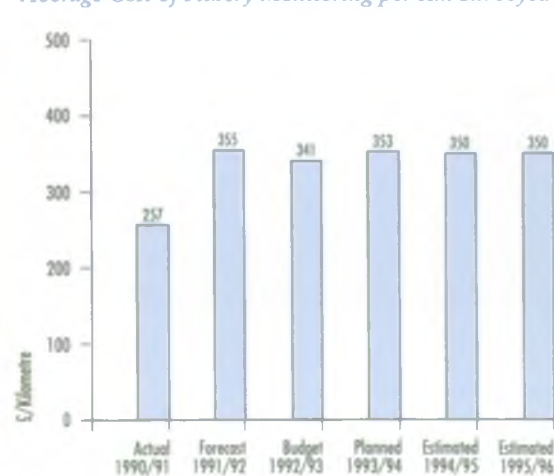
### Fish Rearing and Stocking

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
Salmonid and Non-Salmonid Reared (millions)	5.01	6.38	6.95	7.62	8.53	9.13	9.65
Salmonid and Non-Salmonid Stocked (millions)	5.33	5.74	8.11	8.28	9.66	9.9	10.1

### Length of River to be Surveyed

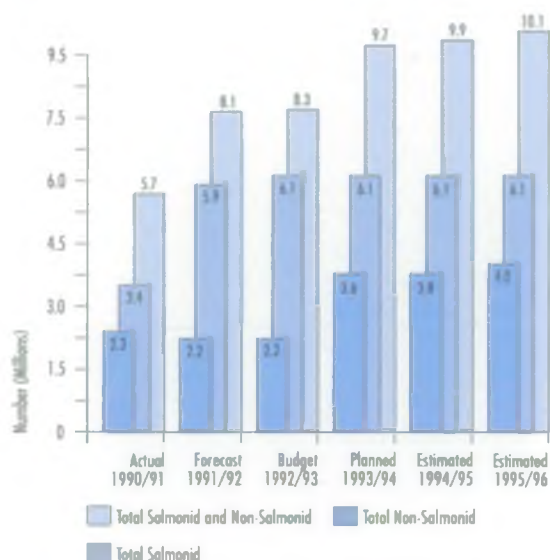


### Average Cost of Fishery Monitoring per Km Surveyed

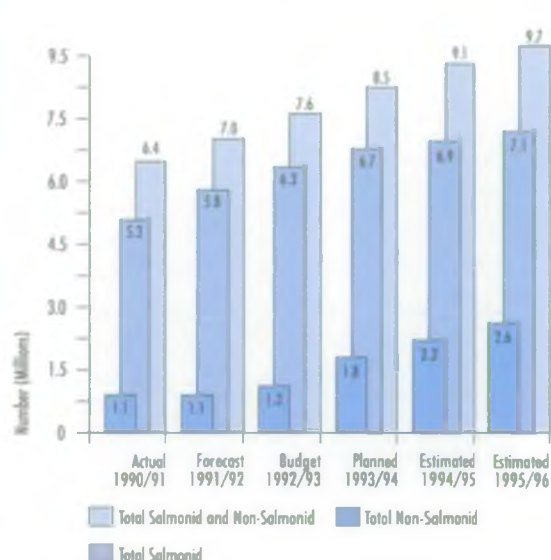




### Fish Stocking - Salmonid and Non-Salmonid



### Fish Rearing - Salmonid and Non-Salmonid



### RESEARCH AND DEVELOPMENT

A programme of strategic R&D projects will be initiated by March 1993. This programme will support the policy and operational needs of the NRA for the period to March 1996 and will include projects to:

- identify the constraints to coarse fish populations in large lowland rivers and propose management solutions to these constraints;
- produce an effective system of collecting, collating, analysing and publishing catch statistics on a regional and national basis;
- determine the information that is needed to be collated to ensure the continuing protection of sea trout populations and the management plan for such protection;
- develop tagging methods and equipment in order that

fisheries R&D and operational investigations are adequately supported;

- allow economic and valuation principles to be applied to fisheries;
- identify and develop novel methods of rehabilitation of fisheries and fish habitat.

### EFFICIENCY SAVINGS

Efficiency savings will be achieved by a suite of measures including:

- increased use of bailiffs to assist on monitoring work; a shift, where cost effective, towards issuing field staff with vans rather than lease cars or essential car user allowance;
- sale of surplus NRA-reared fish at higher prices.

### ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	92/93	93/94	94/95	95/96
Plus 5%	Increase length of river surveyed by approximately 10%.	0.40	0.41	0.43	0.44
	Build 4 improvement structures	0.07	0.08	0.09	0.10
	Improve enforcement, increasing net licence checks by, on average, 20% and rod licence checks by some 10%.	0.20	0.21	0.24	0.25
	Recruit additional staff to progress S142 implementation in four regions.	0.10	0.11	0.12	0.12
	Enhancement of hatchery capability, rearing an additional 0.25 million fish.	0.18	0.19	0.21	0.22
	Fisheries input into collaborative schemes with Recreation and Conservation.	0.25	0.25	0.26	0.27
	<b>Total</b>	<b>1.20</b>	<b>1.25</b>	<b>1.35</b>	<b>1.40</b>
Minus 5%	Decrease length of river surveyed by approximately 5%.	0.19	0.20	0.22	0.23
	Improvement programme reduced by 10 structures and acidification monitoring stopped.	0.40	0.41	0.44	0.45
	Reduce enforcement activity with an average 10% fewer licence checks made.	0.20	0.21	0.23	0.24
	S142 preparation slowed by deferred data collection.	0.11	0.11	0.12	0.12
	Reduce fish reared by, on average, 18%.	0.14	0.15	0.16	0.17
	Defer provision of boat store in one region, undertake fewer collaborative projects and cease production of angling literature in several regions.	0.16	0.17	0.18	0.19
	<b>Total</b>	<b>1.20</b>	<b>1.25</b>	<b>1.35</b>	<b>1.40</b>

## RECREATION

### AIMS

- To develop the amenity and recreational potential of waters and land under NRA control.

### STRATEGIC OBJECTIVES

- Maintain, develop and improve recreational use of NRA sites.
- Establish a sound charging system for NRA sites which is sensitive to the needs of the public.
- Promote the use of water and associated land for recreational purposes.

### STRATEGY

The NRA will meet its recreational duties in an active manner and make resources available to enable positive response to the demands and opportunities presented. The NRA will realise optimum use of its own sites and will play a significant role in promoting recreational use of water and associated land elsewhere.

We intend to determine the extent of our involvement with recreation, the number and types of facilities we control and the existing variety of management and promotional arrangements to assess both whether these are appropriate and consistent across England and Wales. There are also close links between recreation and all the NRA's other functions which have to be considered and managed in sympathy with our recreational objectives.

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

#### *Targets*

- Finalise national conservation, access and recreation guidelines by July 1991.
- Publish recreation function strategy by November 1991.
- Produce report on implications of blue- green algae for water recreation by September 1991.
- Produce report on NRA landholdings and recreational assets by January 1992.
- Derive and agree recreation charges and costs on an equitable basis with other functions by September 1992.

#### *Progress*

- Work on access and recreation guidelines deferred. Canoe Code giving guidance on responsible river use published in February 1992.
- Draft high level strategy produced by March 1992 for publication later in 1992/93.
- Report produced with associated policy guidance note and leaflet.
- Existing databases and holdings appraisal.
- Work deferred.

### TARGETS

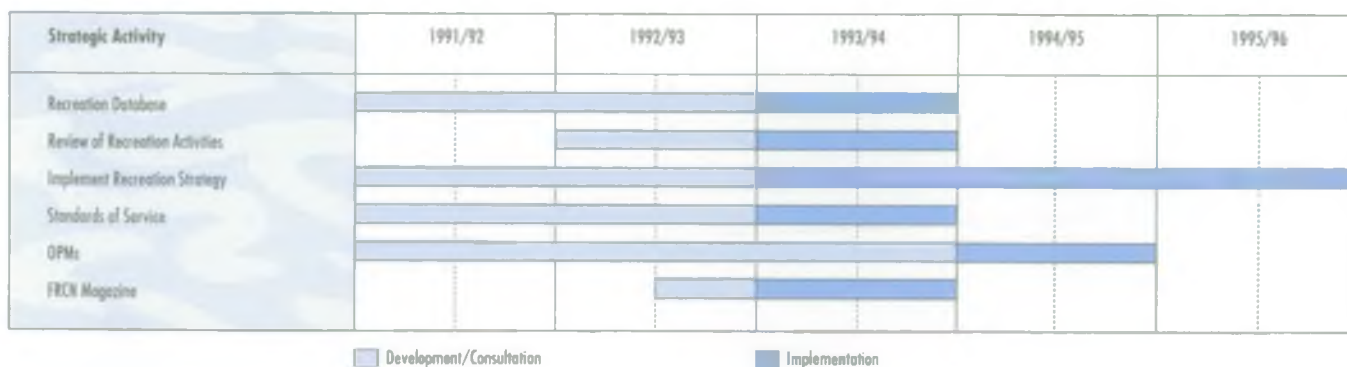
#### *Policy*

- To complete a review of existing and proposed databases for recreation and develop a consistent database jointly for conservation by March 1993, implement the findings from April 1993 and complete this by March 1994.
- To review NRA recreation facilities and activities by March 1993 and implement the findings by March 1994.
- Decide by September 1992 the appropriate effective ways of promoting the contents of the recreation strategy from January 1993 and review promotion by April 1994.

#### *Operations*

- Public access sites - through a programme of management and maintenance provide access/use, without significant interruptions, to 90% of sites.
- Acknowledge 95% of requests for recreation advice within five working days and provide a considered response or site visit to 90% of requests for recreation advice within twenty working days.

## Work Programme - Recreation



## INPUTS

		Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Income (£m)</b>	<b>Total</b>	0.1	0.3	0.3	0.3	0.4	0.4	0.4
<b>Expenditure (£m)</b>								
Facility management		0.5	0.7	0.9	1.0	1.1	1.1	1.2
Liaison/promotion		0.5	0.6	0.8	0.9	0.9	0.9	1.0
Other		0.2	0.1	0.2	0.2	0.2	0.3	0.3
<b>Total</b>		1.2	1.4	1.9	2.1	2.2	2.3	2.4
<b>Comprising:</b>								
Revenue		1.0	1.0	1.7	1.9	2.1	2.2	2.4
Capital		0.2	0.4	0.2	0.2	0.1	0.1	0.1
<b>Variance (£m)</b>	<b>GIA</b>	1.1	1.1	1.6	1.8	1.8	1.9	2.0
<b>Manpower (FTE)</b>	<b>Total</b>	17	28	24	29	29	29	29

### Income

Our recreation charging policy is to recover as far as is practicable, the costs of providing NRA recreational facilities from users. In order for this to be equitable, all recreation income is allocated to the recreation budget. This is necessary because recreation is an operational function in its own right. Funds are also derived from other NRA functions where action taken for the benefit of recreation is necessary to achieve the objectives of those functions.

Income in the form of financial assistance for some recreational schemes also results from collaboration with other private and public sector bodies. However, the total recreational income is unlikely to be sufficient for the NRA to fulfil its recreational duties and so there will remain a requirement for GIA of around £2m per annum.

### Expenditure

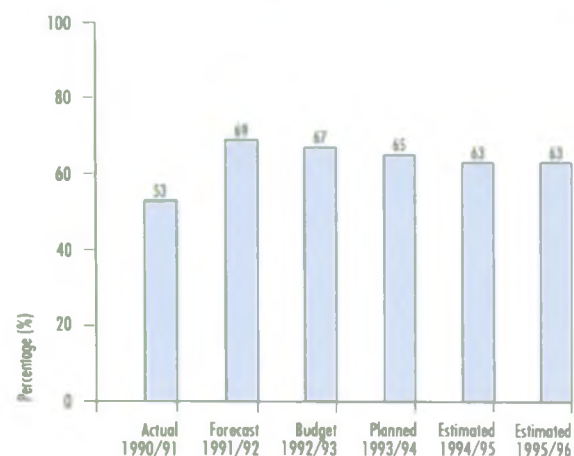
In 1991/92 £1.9m was spent on recreation. Our future programme shows slightly increased expenditure in line with inflation.



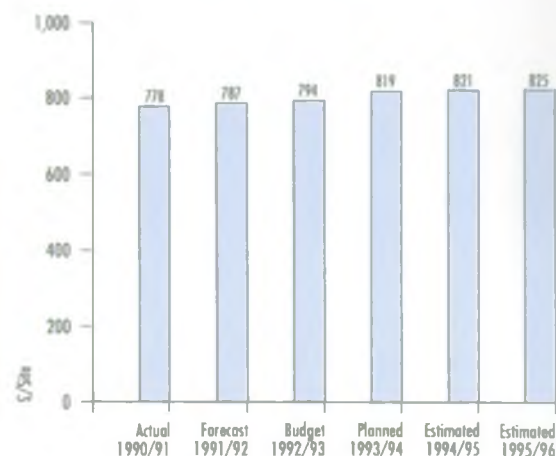
## OUTPUT AND PERFORMANCE

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of NRA sites with recreation facilities	1,011	1,015	1,018	1,023	1,024	1,025	1,025
Number of projects	87	92	87	97	95	95	95
Number of projects involving collaboration with other bodies	40	49	60	65	62	60	60

*Percentage External Collaboration on Projects*



*Average Cost of Operating NRA Recreation Sites*



## RESEARCH AND DEVELOPMENT

A programme of strategic R&D to support the policy and operational needs of the NRA for the period up to March 1996 will be determined by March 1993. The projects associated with the programme will be let by March 1994.

## EFFICIENCY SAVINGS

Efficiency savings will be achieved largely by contracting-out recreation work.

## ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	92/93	93/94	94/95	95/96
Plus 5%	Ten more collaborative projects undertaken.	0.04	0.04	0.04	0.05
	Improve site management and increase capital spend at 10 sites.	0.05	0.06	0.06	0.06
	Increase in planning applications, licences and consents screened.	0.01	0.01	0.01	0.01
	<b>Total</b>	<b>0.10</b>	<b>0.11</b>	<b>0.11</b>	<b>0.12</b>
Minus 5%	Twelve fewer collaborative projects undertaken.	0.05	0.05	0.05	0.06
	A reduction in the quality of facility management and maintenance at 10 sites.	0.05	0.06	0.06	0.06
	<b>Total</b>	<b>0.10</b>	<b>0.11</b>	<b>0.11</b>	<b>0.12</b>

## CONSERVATION

### AIMS

- The NRA will conserve and enhance the wildlife, landscape and archaeological features associated with inland and coastal waters.
- Ensure that the NRA's regulatory, operational and advisory activities take full account of the need to sustain and further conservation.
- Promote conservation to enhance the quality of the aquatic and related environment for the benefit of wildlife and people.

### STRATEGIC OBJECTIVES

- Assess and monitor the conservation status of inland and coastal waters and associated lands.

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

<i>Targets</i>	<i>Progress</i>
<ul style="list-style-type: none"><li>• Evaluate implementation of River Corridors Task Force report throughout the NRA by July 1991.</li></ul>	<ul style="list-style-type: none"><li>• Draft reactive survey methodology and modules produced. Feasibility study on strategic river corridor overview commenced.</li></ul>
<ul style="list-style-type: none"><li>• Publish conservation strategy by December 1991.</li></ul>	<ul style="list-style-type: none"><li>• High level strategy produced by March 1992 for publication later in 1992.</li></ul>
<ul style="list-style-type: none"><li>• Determine sound charging policy that is equitable to other functions which enables NRA to promote conservation effectively by December 1991.</li></ul>	<ul style="list-style-type: none"><li>• Work deferred now being taken forward in liaison with Finance Directorate.</li></ul>
<ul style="list-style-type: none"><li>• Finalise national conservation, access and recreation guidelines by July 1991 and determine degree of implementation by February 1992.</li></ul>	<ul style="list-style-type: none"><li>• Draft guidelines produced by March 1992 - contribution made to National Riverwatch project with RSNC and National Power.</li></ul>

### STRATEGY

Conservation is an integral part of all the NRA's activities. It provides a natural focus for assessing the overall state of health of aquatic and associated environments. Moreover, it provides a readily identifiable performance measure for the NRA's primary objective to achieve a continuing improvement in the water environment of England and Wales. Either directly, through its own operational and regulatory activities, or by influencing the activities of others, the NRA will ensure that the habitats, wildlife, landscapes and cultural heritage of inland and coastal waters and associated lands are protected and enhanced for the benefit of present and future generations. To this end, the NRA will continue to work closely with others to protect sites of the highest conservation value; the NRA will also promote the enhancement, rehabilitation and restoration of aquatic and associated sites which have been impoverished by poor water quality, inadequate levels of water or reduced habitat diversity.

### TARGETS

#### *Policy*

- Determine the final form of a strategic river corridor overview and a summary classification scheme by March 1994.
- Finalise and publish a conservation strategy emphasising the need for improvement and enhancement by December 1992 and implement from March 1993.
- Complete a review of existing and proposed databases for conservation and develop a consistent database jointly with recreation by March 1993, implement and complete this by March 1996.
- Decide by September 1992 the appropriate effective ways of promoting the contents of the conservation strategy which would be published by December 1992 and review promotion by April 1994.

#### *Operations*

- In liaison with flood defence, appraise 100% of river/estuary/coast length subject to NRA capital works, and carry out surveys on 100% of schemes subject to SI1217 (i.e. Environmental Assessment requirement).

## Work Programme - Conservation



- Appraise 100% of river/estuary/coast length subject to flood defence heavy maintenance works.
- Screen 100% of flood defence revenue works for conservation implications.
- Complete post-project audit surveys on 15% of river lengths subject to reactive surveys carried out in the previous year.
- Ensure conservation/landscape input to 100% of capital schemes.
- Ensure 5% of capital scheme budget spent, where appropriate, on environmental enhancement works.
- Acknowledge 95% of requests for conservation advice within five working days and provide a considered response or site visit to 90% of requests for conservation advice within twenty working days.

## INPUTS

		Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Income (£m)</b>	<b>Total</b>	<b>0.1</b>	<b>0.1</b>	<b>0.3</b>	<b>0.2</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Expenditure (£m)</b>								
Appraisal/surveys		0.4	0.5	1.2	1.4	1.7	1.7	1.8
Management plans/ improvements		0.2	0.2	0.5	1.0	1.0	1.0	1.1
External liaison/ promotion		0.2	0.3	0.5	0.5	0.5	0.6	0.6
Other		0.5	0.5	0.9	0.5	0.6	0.6	0.7
<b>Total</b>		<b>1.3</b>	<b>1.5</b>	<b>3.1</b>	<b>3.6</b>	<b>3.8</b>	<b>3.9</b>	<b>4.2</b>
<b>Comprising:</b>								
Revenue		1.1	1.3	2.8	3.1	3.7	3.8	4.1
Capital		0.2	0.2	0.3	0.5	0.1	0.1	0.1
<b>Variance (£m)</b>	<b>GIA</b>	<b>1.2</b>	<b>1.4</b>	<b>2.8</b>	<b>3.4</b>	<b>3.8</b>	<b>3.9</b>	<b>4.2</b>
<b>Manpower (FTE)</b>	<b>Total</b>	<b>26</b>	<b>50</b>	<b>63</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>

### Income

Currently there is little by way of conservation income and so the planned programme of direct conservation spend of £3.5m depends upon GIA. Future charging policy for conservation work is intimately connected with recharging other core functions for advice and consultation in the determination of abstraction licences, discharge consents and planning applications, specific environmental engineering schemes and for the

promotion of conservation.

### Expenditure

All NRA activities have to take account of the need to further conservation. Thus the costs of functions other than conservation will contain a conservation element. This will be identified in future *Corporate Plans*. Expenditure that is more directly attributable to the conservation function is identified here and is planned to keep pace with inflation.



## OUTPUT AND PERFORMANCE

### Appraisals and Surveys

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of reports on capital schemes/EIAs	127	129	262	268	267	270	275
Length of river corridor surveyed <sup>1</sup>	2,280	3,880	5,316	5,950	5,450	5,600	5,700

#### Note

<sup>1</sup> Does not include all aerial surveillance undertaken.

### Consents and Projects

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
No of applications screened for conservation advice							
Abstractions	660	1,170	1,246	1,247	1,247	1,250	1,250
Discharge	592	1,207	2,066	2,167	2,167	2,170	2,170
Land drainage	1,329	1,597	2,174	2,104	2,110	2,120	2,120
Fisheries	806	775	1,269	2,065	2,065	2,100	2,100
Planning	1,120	6,243	8,220	9,350	10,350	10,800	11,100
<b>Total No of improvement projects</b>	<b>29</b>	<b>51</b>	<b>138</b>	<b>168</b>	<b>175</b>	<b>185</b>	<b>200</b>

## RESEARCH AND DEVELOPMENT

A programme of strategic R&D projects will be initiated that supports the policy and operational needs of the NRA for the period to March 1996. This will include projects that will:

- develop effective survey, monitoring and classification methods for assessing conservation status and enhancement potential;
- evaluate impacts and identify acceptable criteria for maintaining and enhancing conservation status;
- develop effective management strategies and procedures and techniques to protect and enhance conservation status of coastal areas;
- develop effective management strategies and

techniques for the protection, rehabilitation and recreation of wetlands;

- identify effective management strategies for rare or dispersed species and minimise the impact of nuisance species;
- develop effective management strategies and techniques for rehabilitating degraded aquatic habitats.

### EFFICIENCY SAVINGS

Efficiency savings will be achieved by a variety of measures, including:

- greater contracting out of river corridor surveys;
- bulk purchase of trees;
- increased use of remote-sensed strategic data.

## ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	92/93	93/94	94/95	95/96
Plus 5%	574km more of river corridor surveyed.	0.05	0.05	0.05	0.06
	10 new improvement projects undertaken plus 4 more reports produced.	0.11	0.12	0.12	0.12
	Increase in promotional activity.	0.02	0.02	0.02	0.03
	<b>Total</b>	<b>0.18</b>	<b>0.19</b>	<b>0.19</b>	<b>0.21</b>
Minus 5%	553km less of river corridor surveyed.	0.05	0.05	0.05	0.06
	Eleven less reports produced, 4 less improvement projects.	0.11	0.12	0.12	0.13
	Reduced landscape assessment.	0.02	0.02	0.02	0.02
	<b>Total</b>	<b>0.18</b>	<b>0.19</b>	<b>0.19</b>	<b>0.21</b>

## NAVIGATION

### AIMS

- To improve and maintain inland waterways and their facilities for use by the public where the NRA is the navigation authority.
- Regulate NRA navigations through the enforcement of a consistent series of licences, orders, byelaws and statutes.
- Maintain and improve NRA navigation fairway, facilities and standards.
- Recover from users the costs of providing specific navigation facilities and a reasonable proportion of the costs of maintaining the navigation.

### STRATEGIC OBJECTIVES

- Contribute to the development of an overall navigation strategy for England and Wales.

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

<i>Targets</i>	<i>Progress</i>
<ul style="list-style-type: none"><li>• Determine and assess the implication for all NRA functions of the operation of navigation by others including BWB by June 1991.</li><li>• Complete proposals for charging policy for NRA navigations by July 1991.</li><li>• Publish navigation strategy by December 1991.</li><li>• Establish with BWB the appropriate interface for collaboration and sharing of experience by December 1991.</li><li>• Review and consider future management of navigation in River Dee estuary, lengths of River Wye, upstream of River Tees carriage and Rye Harbour.</li></ul>	<ul style="list-style-type: none"><li>• Subsumed into NRA response to DoE review into NRA and BWB navigation responsibilities.</li><li>• Work deferred until 1992/93.</li><li>• Draft high level strategy produced by March 1992.</li><li>• Liaison and collaboration arrangements established.</li><li>• Dee estuary navigation responsibility in process of being transferred to main user, draft byelaws for River Wye prepared, agreement reached with Teeside Development Corporation over NRA's navigation role, draft Rye Harbour Management Plan prepared.</li></ul>

### STRATEGY

Our future strategy is to take a lead in working with other navigation authorities to bring about a more consistent approach to the administration of navigation in inland waters than currently exists in England and Wales, and to facilitate and regulate the use of those inland navigations for which the NRA is navigation authority or has powers, and to manage the inter-relationship of navigation with other core functions of the NRA.

### TARGETS

#### *Policy*

- Undertake a review of NRA navigation activities in April 1992 and complete this by March 1993 with draft policy guidelines on harmonised charges, launch standards, signage and byelaws and byelaw procedures.

- Decide by September 1992 the appropriate effective ways of promoting the contents of the navigation strategy and review this promotion by April 1994.

#### *Operations*

- Check 50% of boat users for licence/registration compliance.
- Provide an unobstructed navigation fairway for at least 90% of the year.
- Allocate 10% of capital budget to the provision of new facilities.
- Acknowledge 95% of requests for navigation advice within five working days and provide a considered response or site visit to 90% of requests within twenty working days.

## Work Programme - Navigation



## INPUTS

		Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Income (£m)</b>	<b>Total</b>	0.6	1.1	1.0	1.0	1.0	1.1	1.1
<b>Expenditure (£m)</b>								
Regulation/enforcement		1.1	1.2	1.3	0.8	0.8	0.9	0.9
NRA navigations operation and maintenance		1.7	2.1	2.3	4.0	4.2	4.4	4.6
Improvements/new works		0.7	1.2	1.2	2.1	2.2	2.3	2.4
Liaison/promotion		-	0.1	0.1	0.5	0.6	0.6	0.6
Other		2.5	2.9	2.7	0.2	0.2	0.2	0.2
<b>Total</b>		6.0	7.5	7.6	7.6	8.0	8.4	8.7
<b>Comprising:</b>								
Revenue		4.2	4.8	4.8	4.8	5.0	5.3	5.5
Capital		1.8	2.7	2.8	2.8	3.0	3.1	3.2
<b>Variance (£m)</b>	<b>GIA</b>	5.4	6.4	6.6	6.6	7.0	7.3	7.6
<b>Manpower (FTE)</b>	<b>Total</b>	136	128	102	109	109	109	109
Included in the above are:								
Navigation Inspectors		16	20	21	21	21	21	21

### Income

Our expenditure programme is funded by licence and registration fees, and GIA. The navigation charging policy seeks to recover from users, as far as practicable, the specific identifiable costs of providing navigation facilities. However, an impediment to the creation of effective navigation charges is the anomaly whereby the bulk of NRA navigation income is not treated as income to the NRA but as taxation, and cannot be used directly by the NRA, but is returned to the Treasury. Whilst this sum is made good by GIA, the current system is unnecessarily complicated. We hope DoE can resolve this issue with the Treasury during 1992/93.

### Expenditure

Planned expenditure in 1992/93 is £7.6m with minor increases planned in future years. The capital programme is largely essential lock repairs and refurbishments in Thames and Southern Regions to maintain the integrity of these structures but not enlarge them.



## OUTPUT AND PERFORMANCE

### *Enforcement and Regulation*

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Total No of licensed craft (thousands)	42.9	43.0	43.65	43.75	43.8	43.8	43.9
Number of licence checks (thousands)	349.3	848.6	816.5	816.8	817.1	817.2	817.5
Number of licences complying (thousands)	328.8	845.9	813.2	813.6	813.9	814	815
Compliance (%)	94	95	99.6	99.6	99.6	99.6	99.6

### *New Works*

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
Number of improvement projects	18	38	52	34	38	40	45

## RESEARCH AND DEVELOPMENT

Appropriate research projects for the navigation function will be initiated by March 1993. These will support the policy and operational needs of the NRA for the period to March 1996.

## EFFICIENCY SAVINGS

Scope for efficiency savings in this area is limited but savings will be achieved through tight financial control.

## ALTERNATIVE RESOURCE SCENARIOS

Scenario	Benefit/Penalty	92/93	93/94	94/95	95/96
Plus 5%	Maintenance improvements to ensure integrity and safety of structures and moorings.	0.27	0.29	0.31	0.33
	Standards of Service met in one region.	0.07	0.07	0.07	0.07
	Increased promotional activity to generate more income.	0.04	0.04	0.04	0.04
	<b>Total</b>	<b>0.38</b>	<b>0.40</b>	<b>0.42</b>	<b>0.44</b>
Minus 5%	Essential maintenance and safety works deferred.	0.38	0.40	0.42	0.44
	<b>Total</b>	<b>0.38</b>	<b>0.40</b>	<b>0.42</b>	<b>0.44</b>

## RESEARCH AND DEVELOPMENT

### AIMS

- To improve efficiency in the exercise of the NRA's functions and to provide new knowledge and techniques which increase the ability of the NRA to discharge its duties.

### ACTIVITIES

The main activity of the R&D Support Service is the management of the NRA's programme of R&D projects. These are carried out on a national basis in support of the NRA's business activities. Other activities - which are minor in comparison with the R&D programme - cover Technical Services and the NRA Fellowship Scheme. R&D "customers" - principally core function managers - are responsible for confirming research requirements. R&D programme developments planned for 1992/93 are given in each of the core function sections of the Plan. Detailed information on R&D outputs produced in 1991/92 and the planned programme for 1992/93 is given in the NRA's *Annual R&D Review - 1992* (published December 1992).

### ACHIEVEMENT OF 1991/92

#### CORPORATE PLAN

The 1991/92 *Corporate Plan* provided for considerable expansion in the NRA's R&D programme in order both to achieve the individual Commission programmes set by each core function and to accommodate the tail end of the programme inherited by the NRA on vesting (£5.8m in 1990/91 to £9.5m in 1991/92).

Achievements in relation to the principal targets for 1991/92 are summarised below.

- Developed and commenced 108 new projects.
- Completed 75 out of originally planned 95 projects - the remainder slipping by up to 6 months into 1992/93.
- Developed an NRA Fellowship Scheme and appointed four NRA Research Fellows.
- Produced the R&D Strategy, including consultations with major external research-commissioning organisations and establishment of strategic objectives for R&D.
- Published the *Annual R&D Review - 1991*.
- Increased external funding levels for the proposed 1992/93 programme to approximately 8% of total research cost.

- Completed and implemented an improved PC-based R&D management Information System.
- Started the consolidation of existing R&D management guidance notes into a single R&D Management Guidance Note for use by R&D and core function staff.

Reasonable progress has been made in implementing the programme and particularly in completing the inherited projects with useful outputs for the NRA. It was necessary to reduce the planned 1991/92 programme size during the year to £8.25m, not simply due to budget constraints but because both core function and R&D support service staff have not been able to manage this size of programme effectively.

### STRATEGY

#### *Research Programme*

The programme in Commission A - which is the largest - now covers all aspects of water quality management except the actual process of legal enforcement. Work is being done on classification of water quality and determination of environmental standards, on monitoring techniques for consenting and for prevention of pollution, and on some methods for remedying the effects of pollution. Where necessary, work is being undertaken on the underlying processes which govern water quality.

In Commissions B, C and D, the programme has been further developed through Topic area reviews together with a mix of short-term "tactical" projects and longer-term studies of more strategic importance. Significant research is now underway on river flow regimes, groundwater protection, management of fluvial and coastal flood defences, flood forecasting, and fisheries resources and management.

In Commission F, important procedures and techniques are being developed for conservation management and resource appraisal. Cross-functional issues being addressed in Commission G include catchment modelling, impact of climate change, and use of airborne remote sensing.

## MANAGEMENT ISSUES

As the first R&D projects commissioned by the NRA (as distinct from those inherited) have now reached completion, both core function and R&D staff have found that considerable resources are needed to ensure their effective dissemination and uptake by the end-user. This has restricted the number of existing projects which have been fully completed to date, but has now brought about improved procedures for building the approach to dissemination and uptake into each project plan, and the introduction of a user-orientated specification for R&D outputs.

The provision of core function management resources for the R&D programme has become an increasing problem as (a) staff have continued to be under pressure in their principal responsibilities and (b) the number of Core Function staff having the necessary technical and operational experience, and being in a position to contribute R&D management, is limited.

Other issues which have restricted progress on starting and completing projects in 1991/92 have included (a) general difficulties in achieving full core function and regional support for R&D, (b) delays in obtaining financial approvals, and (c) lack of a co-ordinated NRA library and publication policy.

### 1992/93 PLAN

In 1992/93, the R&D support service will continue to undertake its established activities, which are planned as follows.

#### *R&D Programme*

The proposed 1992/93 programme provides for developing and commencing 83 new projects, and for completing 84 projects. R&D programme costs are summarised in the Inputs table opposite by Commission; key areas of research are summarised under each core function section. A significant number of cross-functional issues, such as the effectiveness of external planning liaison, are addressed in Commission G. In terms of source of R&D funding, the planned 1992/93 budget of £8.7m is charged to GIA (£6.4m), water resources (£1.0m) and flood defence (£1.35m). The targeting and structure of the programme has been improved by:

- improving the "ownership" by core functions of new

projects (e.g. better involvement of function working groups);

- developing major strategic themes (e.g. support for development of SWQOs) within the programmes;
- structuring the projects to ensure that R&D outputs are delivered to the end-user in a practical form.

Each R&D Commission's programme will begin to address areas identified in the R&D Strategy - i.e. key gaps in knowledge which might otherwise restrict the implementation of their Function Strategies. This strategic element to the programme will be developed progressively over future years.

## INPUTS

### *Technical Services*

These fall into three categories:

- Advisory services providing an interface in designated areas between research and operational practice, undertaken by Water Research Centre (WRC), Institute of Hydrology, or Freshwater Biological Association - as national centres of expertise. Planned expenditure in 1992/93 has been reduced by 10% in real terms from 1991/92.
- Membership service agreements with Hydraulics Research (HR), Foundation of Water Research (FWR) and Construction Industry Research & Information Association (CIRIA). These NRA contributions (£25,000) support other national programmes of research and dissemination of information in which it benefits the NRA to take part.
- A budget (£40,000) is provided for NRA dissemination activities which are not funded through individual projects, such as the production of the *Annual R&D Review*, and for general seminars.

### *Research Fellowships*

The NRA Fellowship scheme supports applied research which is both of high scientific merit and of particular relevance to the NRA. The call for proposals in 1991/92 produced over 150 responses. NRA and peer reviewers considered that proposals should be taken up in six of the areas - the award of two being held over until 1992/93. It is not intended to invite any further proposals for Fellowships before the benefits accruing from this first tranche of fellowships are assessed.



## INPUTS

Item	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94
<b>EXPENDITURE (£/m)</b>				
<b>R&amp;D Programme</b>				
Commission/Function				
A Water Quality	3.9	4.8	3.9	4.1
B Water Resources	0.6	0.9	0.8	0.9
C Flood Defence	0.5	0.9	1.2	1.2
D Fisheries	0.4	0.6	0.8	0.9
E Recreation & Navigation	<0.1	<0.1	0.1	0.1
F Conservation	0.1	0.2	0.4	0.4
G Cross-functional	<0.1	0.3	0.7	0.7
<b>Total, R&amp;D Programme</b>	<b>5.5</b>	<b>7.7</b>	<b>7.9</b>	<b>8.4</b>
Technical Services	0.2	0.2	0.3	0.3
Research Fellowships	-	0.1	0.1	0.1
R&D Management	0.2	0.3	0.4	0.4
<b>Total, R&amp;D Support Service</b>	<b>5.9</b>	<b>8.3</b>	<b>8.7</b>	<b>9.2</b>
<b>MANPOWER (FTE)</b>				
R&D Staff	12	16	16	16
Core Function inputs <sup>1</sup>	18	18	14	13
Contract Staff	-	-	4	4
<b>Total</b>	<b>29</b>	<b>32</b>	<b>32</b>	<b>31</b>

### Notes

<sup>1</sup> Inputs of core function staff as R&D Project Leaders, Topic Leaders and Commissioners.

<sup>2</sup> From 1992/93, budgets for R&D projects will provide for dissemination and, where necessary, initial training/seminars to facilitate uptake of the results.

### R&D Management

Continuing activities undertaken by the R&D support service cover:

- R&D programme management (including R&D assessment and dissemination);
- annual appraisal and review of R&D programme;
- management of Technical Services and Fellowship Scheme;
- liaison with external R&D organisations;
- production of *Annual R&D Review*;
- support for R&D management systems.

Programme management will continue to be undertaken through the ten regional R&D Co-ordinators (8 FTE) - financed through the R&D budget - and the six R&D staff in Head Office (covered by the Head Office budget). Resources for Commission ("customer") management through Project Leaders, Topic Leaders and Commissioners (total about 15 FTE) are provided through core function budgets.

In addition, for 1992/93, the R&D budget provides for a further four FTE part-time management support to be contracted in to assist core function or R&D staff in sectors of the programme where it is either inappropriate

or not possible to spread the workload. Individual core function staff presently allocating more than 10% of their time to R&D activities qualify for this support.

No developmental initiatives are proposed in R&D management in 1992/93 other than implementing those aspects of the R&D Strategy needed to support core function developmental initiatives (e.g. the significant R&D programme to be developed in conservation).

### EFFICIENCY SAVINGS

The R&D budget for 1992/93 has been reduced by 18% from the £10.7m planned budget in the 1991/92 *Corporate Plan*. This is, in part, a reflection of clearer targeting of projects as well as the anticipated collaborative funding of some projects with other relevant research-sponsoring organizations. 15 projects in the 1992/93 programme are collaboratively funded. External funding levels for the proposed 1992/93 programme are expected to be about 10% of the total cost of the research.

The policy of tendering for R&D contracts will be actively pursued. Standard charging rates will again be negotiated with the major external centres of expertise (notably WRc).

#### Notes

1 At peak during year, about 35% more projects are underway than at year end.

2 A phase is a discrete contract with defined outputs forming a distinct step in achieving the overall project objectives.

3 Total NRA annual expenditure, including both capital and revenue expenditure.

## OUTPUT AND PERFORMANCE

OUTPUT	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94
Projects underway at year end <sup>1</sup>	120	131	129	125
<b>New Starts</b>				
New projects	101	103	83	1}
Further phases <sup>2</sup>	-	10	25	195
Projects or phases <sup>2</sup> completed	35	108	110	99
<b>PERFORMANCE INDICATORS</b>				
Average project size (£k/annum)	42	51	51	55
Relative size NRA R&D budget (% total NRA planned expenditure) <sup>3</sup>	1.6	1.9	1.9	1.9
Extent of external co-funding	8	10	10	10

## INFORMATION SYSTEMS

### AIMS

- To provide improved management information through the use of Information Technology, to help manage the business in meeting its objectives.

### STRATEGIC OBJECTIVES

- Set up an IT infrastructure to allow efficient communications, both voice and data, throughout the Authority.
- Develop and implement the systems and procedures necessary for the business to carry out its duties and objectives, in the most cost efficient and effective way.
- Provide the technical computing architecture to operate and support these systems.
- Ensure the necessary user support is available throughout the Authority to optimise the use of information systems by staff.
- Provide the management of IS by the business through the "Controlling Framework" and the use of effective project management methods, tools and techniques to best utilise the NRA's resources.

### STRATEGY

A comprehensive Information Systems Strategy has been created to:

- Ensure IS developments meet the organisation's needs.
- Provide a consistent approach to information systems across the NRA.

- Enable independence from the Water Plcs' bureau systems.

The strategy encompasses a period of 5-7 years and addresses:

- business management of IS;
- technical architecture;
- application systems plans;
- methods and procedures.

Priority projects have been identified and are in the course of implementation.

### ACHIEVEMENT OF THE 1991/92

#### CORPORATE PLAN

The priority tasks have been:

#### *IS Controlling Framework*

A new IS Controlling Framework has been implemented reporting to the NRA Board, comprising an IS Steering Group, Business Area Group and Project Boards, all operating within the PRINCE project management methodology.

#### *Communications*

Data and voice networks linking regional and national offices have been implemented, using external services to provide and improve the communication facilities available to the organisation.

## MAJOR PROJECTS

Two major projects are under development.

### *Water Archive and Monitoring System (WAMS)*

The project has completed the project definition and feasibility stages and is now determining the user requirements prior to entering a competitive tender for the software.

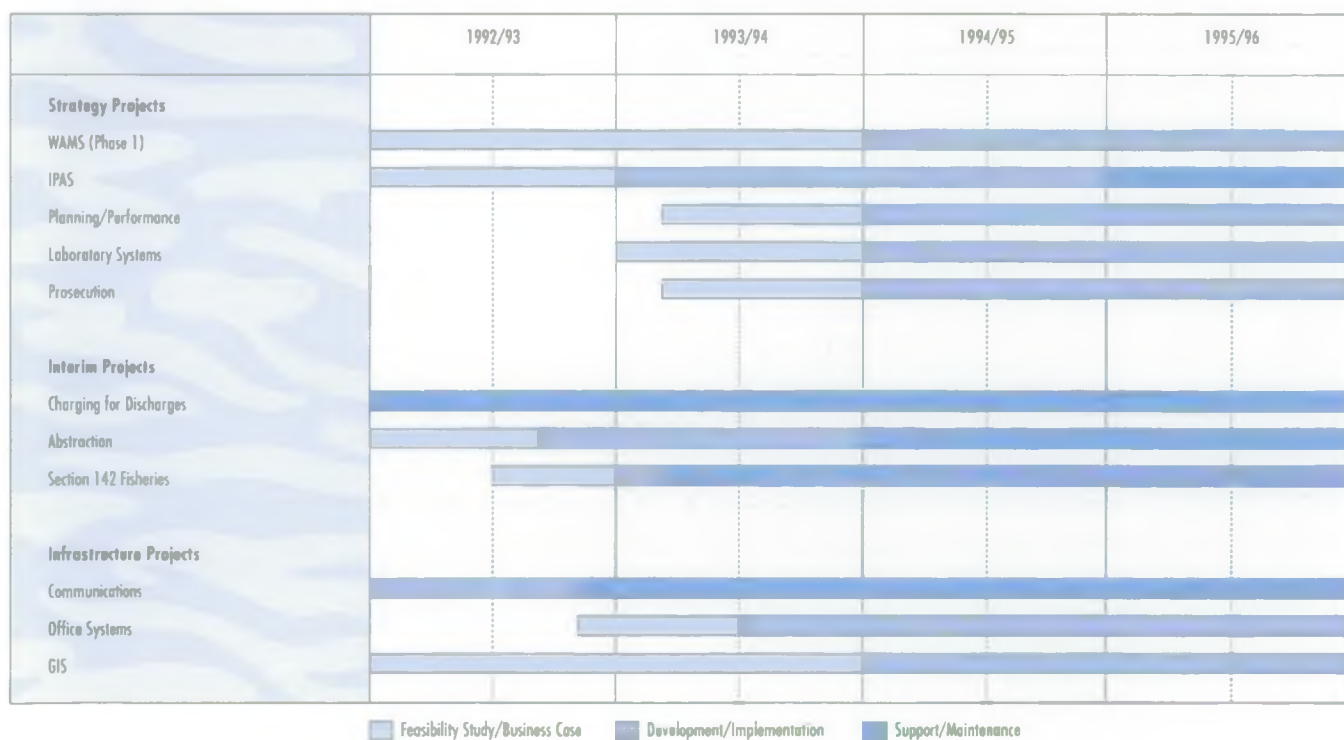
### *Integrated Personnel and Accounting System (IPAS)*

The project has completed the user requirement and software selection stages. A new Chart of Accounts has been agreed for implementation on a pilot basis from April 1992. A business case has been prepared for subsequent approval. Implementation is planned in pilot regions during 1993.

Interim systems are also being developed:

- **Charging for Discharges** was implemented for all regions from July 1991. The development and subsequent support has been out-sourced following competitive tendering.
- **Abstraction Charges** has completed the feasibility stage the aim being to minimise development costs and ensure completion in time for billing from April 1993.
- The Section 142 fisheries charging scheme is at the project definition stage.
- **IS Initiatives** - New and existing systems have been developed to improve productivity and effectiveness of NRA resources in the area of automation of clerical/manual tasks, improvement in services, management information and debt recovery. Particular emphasis has been placed on monitoring IS costs and ensuring value for money. New methods for IT systems development are being implemented with close involvement of the user departments.
- User support has been an increasing priority for IS nationally and regionally.

### *Targets - IS Strategy Plan*





## INPUTS

	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
Income (£m)	-	-	0.25	0.25	0.25	0.25
Expenditure (£m)						
Revenue	12.3	17.4	19.9	22.4	28.1	29.1
Capital	3.9	6.1	8.6	9.6	8.7	6.2
Sub-Total	16.2	23.5	28.5	32.0	36.8	35.3
IS Strategy	1.3	-	-	-	-	-
IPAS	-	1.4	1.2	1.4	1.5	0.5
WAMS	-	0.7	0.6	0.7	2.0	1.0
Other Projects	-	1.9	2.2	1.9	2.7	3.4
Sub-Total	1.3	4.0	4.0	4.0	6.2	4.9
TOTAL	17.5	27.5	32.5	36.0	43.0	40.2
Manpower (FTE)	Total	140	193	204	204	204

### Expenditure

The expenditure is to maintain and consolidate present systems, and to develop new systems to assist the move away from the water utility plc's and to provide modern information systems throughout the NRA. Introduction of new systems will be primarily through national systems and regionally developed systems.

Each new project will be subject to strict scrutiny and control using value for money criteria. A full business case will be prepared, giving all costs and benefits associated with that project, both national development costs and regional implementation costs.

A rigorous review of budgets has reduced IS strategy costs from £9m (budget 1991/92) to £4m (forecast 1991/92). Extra funds will be required in 1992/93 and 1993/94 to support the development of the priority national systems.

### Staffing

Creation of regional computing services from the situation inherited by the NRA from the water utilities required the recruitment of additional computer staff in all regions. This planned growth has created a sounder regional base to provide local services and to implement new regional and national systems.

Head Office IS staff were kept below plan in 1991/92 until such time as the IS strategic plan had been soundly constructed. The recent approval of a controlling framework for information systems now enables recruitment of staff to be strictly controlled and limited expansion of the national systems team is planned for 1992/93.

Replacement of water utility plc systems with national systems will require some increase in staff but tight control on IS recruitment will be maintained. Use of external processing services will continue via market testing which will limit the increase in staff previously projected. Major national system development contracts are likely to be out-sourced.

## EFFICIENCY AND PRODUCTIVITY

A variety of measures are being taken to improve efficiency and productivity.

- Reduction in costs of water plc bureau services will be achieved via systems development nationally and regionally including national Charging for Discharges and abstraction charging systems using NRA computers and reduced dependence on the bureaux by contract re-negotiations and elimination of older systems originally provided by the bureaux.
- Introduction of revised methods for systems development and implementation using government approved guidelines (such as PRINCE project management methodology) will allow renewed focus by user management and IS management on costs and benefits, and a structured approach to the use of computer systems.
- Implementation of new national voice and data networks will reduce operational costs and enable all NRA staff to communicate more effectively. It will also allow processing to be carried out in a number of locations but accessible increasingly on a national basis. Productivity of all NRA staff can be increased using networks and by national office systems.
- Provision of personal computers, terminals and workstations is strictly controlled and increasingly subject to regular monitoring for value for money. There is a high ratio of terminal devices to NRA staff.
- National procurement for computer hardware and software will increasingly play a part in:
  - implementing common standards of use of terminals for staff;
  - simplifying procurement and maintenance issues;
  - securing purchase price economies.

## LEGAL SERVICES

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

<i>Targets</i>	<i>Progress</i>
<ul style="list-style-type: none"> <li>• To complete function strategies, including the development of relevant output and performance measures by November 1991.</li> <li>• To establish a policy on the role of NRA officers in giving advice to outside organisations and individuals by October 1991.</li> <li>• To develop further consistent approaches to enforcement across the NRA by November 1991.</li> <li>• To establish a Head Office-based legal information system and develop a national fisheries prosecution system by November 1991.</li> <li>• To review the relative benefits of in-house and contracted-out legal services with a view to maximising efficiency by November 1991.</li> <li>• To review identified categories of byelaws by January 1992.</li> <li>• To establish a national property assets database by March 1992.</li> <li>• To review existing fixed asset management and establish new policy in line with the Financial Memorandum by March 1992.</li> <li>• To review surveying and valuation services and produce national guidelines by March 1992.</li> </ul>	<ul style="list-style-type: none"> <li>• Draft strategies produced and circulated to regions. Strategies to be finalised by June 1992.</li> <li>• Draft proposals currently being considered in the context of charging for advice generally.</li> <li>• Structured input into policy guidance and regular meetings of the National Lawyers Group.</li> <li>• Prosecution system broadened into an incident related archive system within IS Controlling Framework.</li> <li>• Overtaken by proposals for market testing. Efficiency proposals in hand.</li> <li>• Activity now being led by core functions.</li> <li>• Completed systems in all regions by August 1993.</li> <li>• Embraced within draft Estates Management Function Strategy. Policy being developed and implemented through PIGNs on Estates Services and Building Maintenance Policy.</li> <li>• Policy stated in draft Estates Management Function Strategy.</li> </ul>

### FUTURE PRIORITIES

Subject to possible legislative change to create an Environment Agency and the changes that would bring, our key priorities will be:

- providing consistent advice and effective Legal and Estates Management services throughout the NRA;
- efficiently processing and disposing of prosecutions;
- seeking legislative change to remedy current deficiencies;
- training staff on legislation generally and in particular improving the working knowledge of EC environmental legislation;
- rationalising, where appropriate, existing byelaws and other local provisions;
- ensuring that appropriate interests in land are acquired to meet the NRA's capital and revenue programmes;
- improving the management of NRA estates through the creation of the post of Head of Estates Management;
- surveying assets on an ongoing basis with a view to maximising income and identifying surplus assets for disposal or management.

## PUBLIC RELATIONS

### AIMS

The central aim of the public relations function will continue to be to improve further public understanding of the water environment and the work of the NRA. This will be achieved through the promotion of NRA policies,

actions, activities and identity in fully integrated communications programmes. The success of these programmes will be underpinned by the provision of an effective and high quality media handling service.

### ACHIEVEMENT OF THE 1991/92 CORPORATE PLAN

<i>Targets</i>	<i>Progress</i>
<ul style="list-style-type: none"> <li>• To commission periodic public awareness surveys of NRA actions and activities, beginning summer 1991.</li> </ul>	<ul style="list-style-type: none"> <li>• First survey commissioned.</li> </ul>
<ul style="list-style-type: none"> <li>• To produce corporate media handling guidelines by September 1991.</li> </ul>	<ul style="list-style-type: none"> <li>• Guidelines completed and to be issued.</li> </ul>
<ul style="list-style-type: none"> <li>• To review present PR handling arrangements within the NRA and make recommendations by October 1991 to improve corporate PR effectiveness and efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• Basic PR capability established at Head Office and in regions. Comprehensive review no longer a priority.</li> </ul>
<ul style="list-style-type: none"> <li>• To produce a public relations strategy by December 1991.</li> </ul>	<ul style="list-style-type: none"> <li>• Target reviewed; priority given to core function strategies.</li> </ul>
<ul style="list-style-type: none"> <li>• To review NRA publications, film and audio production and make recommendations by January 1992.</li> </ul>	<ul style="list-style-type: none"> <li>• No progress due to lack of resources.</li> </ul>
<ul style="list-style-type: none"> <li>• To commission a visual audit of the NRA's identity and develop a corporate identity implementation programme by January 1992.</li> </ul>	<ul style="list-style-type: none"> <li>• First audit commissioned. Implementation programme delayed due to uncertainty about future shape and identity of NRA.</li> </ul>
<ul style="list-style-type: none"> <li>• To develop an NRA exhibitions and events policy by January 1992 and, by March 1992, develop a planned programme of national participation in such events for 1992/1993.</li> </ul>	<ul style="list-style-type: none"> <li>• Progress delayed due to lack of resources.</li> </ul>
<ul style="list-style-type: none"> <li>• To review distribution arrangements for <i>The Water Guardians</i> and produce a marketing plan for the newspaper by March 1992.</li> </ul>	<ul style="list-style-type: none"> <li>• Further developments to <i>Water Guardians</i> awaiting arrival of in-house Editor.</li> </ul>
<ul style="list-style-type: none"> <li>• To ensure publication of the <i>Corporate Plan</i> by August 1991, <i>Annual Report and Accounts</i> by October 1991, core function strategies and corporate strategy by December 1991.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Corporate Plan</i> and <i>Annual Report</i> published. Other publications in preparation.</li> </ul>
<ul style="list-style-type: none"> <li>• To develop a comprehensive schools' policy by March 1992.</li> </ul>	<ul style="list-style-type: none"> <li>• Regional approach to schools' information established. Overall policy framework delayed due to lack of central resources.</li> </ul>



## TARGETS

- To review styles and effectiveness of regional staff newsletters and to make recommendations by June 1992.
- To review format, distribution and marketing arrangements for *The Water Guardians* by August 1992.
- To produce a framework for internal communications by March 1993.
- To produce a primary school level teaching pack on the water environment by October 1992.
- To review publishing activity and make recommendations by January 1993.

## EXTERNAL AFFAIRS

External Affairs is responsible for ensuring NRA involvement in the public policy process. The NRA interacts with a wide range of external bodies, including the UK government and Parliament, UK statutory bodies, industrial water users and the water industry, environmental interest and pressure groups, EC institutions and international organisations, whose viewpoints are often quite different from each other and directly affect NRA activities.

A primary task is to ensure that an appropriate management system exists to provide for consistent and credible external relations. The viewpoint of the NRA on significant issues needs to be reflected in the many contacts which take place at all levels of the organisation. In addition, External Affairs undertakes intelligence gathering and analysis, develops new relationships with external bodies, and provides briefing and other materials

for NRA senior staff and Board members. The function also manages NRA responses to external issues with a significant potential impact on NRA operations. In the period 1992 to 1994 the focus will be on developing even more effective and consistent External Relations. In particular the following will be pursued:

- the expansion of the NRA field of view to the European Communities and beyond, with particular emphasis on fostering links with the Commission and other member States;
- the maintenance of effective liaison with Parliament, especially to ensure that the NRA's views are properly taken account of in new legislation, Select Committee enquiries etc;
- the establishment and maintenance of effective links with external organisations in the UK at a time of potentially significant change for the Authority.

## FINANCIAL RESOURCES

This section presents summarised financial planning data for the period up to 1995/96. Further commentary is provided in the individual sections for each core function. Table FPI shows the Authority's total operating costs broken down by subjective budget headings, together with an analysis between revenue and capital costs. Table FP2 shows the Authority's total operating costs analysed by functional budget headings. Both tables are constructed on a cash basis and the inflation rate is assumed to be 5% in all future years.

### INCOME

#### *Operational Income*

The Plan is based on the NRA obtaining a significant increase in operational income from £13.8m in 1990/91 to £61.7m by 1993/94 in the functions supported by DoE Grant-in-Aid (GIA).

The increase is due to three factors:

- The introduction of the charging for discharges scheme in July 1991. This looks likely to yield additional income of £22.0m in 1991/92, £38.2m in 1992/93 (the first full year of operation) and £45.9m in 1993/94 when full recovery of the relevant costs will be achieved.
- The introduction of the national angling licence in 1992. This will yield income of £10.7m in 1992/93, rising to £13.75m by 1995/96.
- The introduction of a S142 charging scheme for fisheries. This will produce income rising from £0.75m in 1993/94 to around £2.0m in 1995/96.

This increased income will reduce the proportion of DoE GIA expenditure on all relevant functions from 88% in 1990/91 to 54% in 1995/96.

Navigation income is shown exclusive of boat licence income which is collected on behalf of DoE. This amounts to £1.9m in 1991/92, £2.2m in 1992/93 and £2.7m in 1993/94. In later years it increases by inflation.

Water resources income rises by £11.6m from 1991/92 to 1992/93, reflecting increased capital and revenue expenditure. A new national charging for abstraction scheme will be introduced in 1993/94.

Flood defence revenue is based upon the plans agreed by regions with Flood Defence Committees for 1992/93. Future years have been extrapolated based on spending plans and the anticipated reduction in balances.

#### *Government Grants*

The Plan is based on GIA from DoE as announced in the 1991 PES settlement. This followed a review by the NRA and DoE in September 1991 which resulted in a lower GIA endowment for 1992/93 and subsequent years than shown in the 1991/92 *Corporate Plan*. The higher forecasts of income, and lower forecasts of expenditure, produced by the review, have been used to re-establish the bases for future years.

### EXPENDITURE

#### *Revenue*

For the purposes of this Plan, expenditure on GIA functions is limited to the level of GIA in the 1991 PES statement supplemented by income from discharge consent charges, angling licences, and other income sources. Most function expenditures will only increase with inflation over the Plan period. The one exception to this is water quality, where additional resources have been allocated to produce real growth of 3.7% in 1993/94 (inter alia) to implement SWQOs.

In 1993/94 this growth is more than offset by the ending of personnel buyouts, and overall efficiency savings of 1.5%.

Staff costs increase by £15.8m between forecast 1991/92 and budget 1992/93, reflecting the full year costs of staff recruited in 1991/92, an increase of 218 staff in 1992/93 and inflation. Later years reflect the full costs of staff recruited in 1992/93 but assume no further significant staff increase. The build-up of staff in 1991/92 and 1992/93 has led to a reduction in the use of consultants in 1992/93 (£2.6m) and 1993/94 (£0.6m).

Expenditure on contractors will increase in 1992/93 (£13.6m) mainly due to the increased level of flood defence activities.

Interest received will decrease each year as balances held for flood defence and water resources are reduced. The rate of interest has been assumed to remain constant at 9% for all Plan years. No provision is made beyond 1992/93 for major expenditure on the buyout of inherited remuneration terms and conditions.

#### *Capital*

Now that such projects as the fitting-out of the Bristol Head Office, regional offices and laboratories, and a number of marine craft have been completed, and final restructuring expenditure has come to an end - the level of setting-up capital expenditure will fall away because the

Total Operating Costs by Subjective (£'000)

Table FP1

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Salaries</b>							
Costs	48,321	67,334	87,737	99,083	105,106	110,360	115,880
Superannuation	4,325	6,926	9,245	10,550	11,237	11,800	12,390
NIC	4,334	5,202	7,256	8,407	8,977	9,420	9,900
Agency, Temps & Other	3,081	4,969	5,539	5,620	5,753	6,040	6,340
<b>Wages</b>							
Costs	22,844	27,213	28,204	29,250	30,841	32,380	34,000
Superannuation	1,582	2,383	2,481	2,803	2,945	3,090	3,250
NIC	2,046	2,279	2,350	2,551	2,680	2,810	2,950
Agency, Temps & Other	4,084	1,958	1,894	2,247	2,348	2,470	2,590
<b>Sub-Total Staff Costs</b>	<b>90,617</b>	<b>118,264</b>	<b>144,706</b>	<b>160,511</b>	<b>169,887</b>	<b>178,370</b>	<b>187,300</b>
Power	3,166	4,232	4,976	5,127	5,389	5,660	5,940
Consultants	7,300	8,111	14,157	11,509	10,958	11,510	12,080
Contractors	72,155	80,172	97,158	110,787	117,422	124,520	128,040
Plc Services	52,365	24,681	24,900	23,403	25,329	26,600	27,930
Other Hired and Contracted Services	29,598	31,407	34,468	44,273	47,075	49,430	51,900
Equipment Tools & Materials	46,093	49,918	51,455	49,846	51,392	53,960	56,660
Rates	1,250	2,340	2,925	3,249	3,904	4,100	4,300
Travel & Subsistence	7,108	9,312	11,104	11,701	12,359	12,980	13,630
Insurance	1,415	1,383	1,764	1,864	1,957	2,050	2,160
Other Costs	23,096	28,602	33,283	35,606	32,116	33,730	35,460
Interest Received	-5,600	-19,050	-15,061	-12,590	-11,270	-10,340	-9,380
<b>Sub-Total Other Costs</b>	<b>237,946</b>	<b>221,108</b>	<b>261,129</b>	<b>284,775</b>	<b>296,631</b>	<b>314,200</b>	<b>328,720</b>
Unfunded Pensions	5,591	10,304	11,200	11,600	12,200	12,800	13,400
<b>TOTAL OPERATING COSTS</b>	<b>334,154</b>	<b>349,676</b>	<b>417,035</b>	<b>456,886</b>	<b>478,718</b>	<b>505,370</b>	<b>529,420</b>

initial investment by the government to set-up the NRA has been achieved.

The water resources capital expenditure programme is planned to rise rapidly, particularly in order to alleviate the problems of low flows in specific rivers. It will increase from £8.6m in 1990/91, to £16.4m in 1992/93, and £20.7m by 1995/96. The 1992/93 figure has been reduced from initial proposals in excess of £20m by a process of prioritisation. Discussions are in-hand with DoE over the future financing of water resource projects.

The flood defence capital expenditure programme represents the summation of the individual programmes of the Regional Flood Defence Committees. It will rise by £11.3m in 1992/93, and is set to continue to rise over the Plan period due to an expanding programme of works to maintain and improve NRA flood defences.

Capital expenditure in the other functions is generally at a far lower level and is described in the relevant

chapters. Five year national capital programmes will be developed for these functions during 1992/93 and will be presented in the NRA's next *Corporate Plan*.



	Actual 89/90			Actual 90/91			Forecast 91/92		
	Income	Expenditure	Surplus/(Deficit)	Income	Expenditure	Surplus/(Deficit)	Income	Expenditure	Surplus/(Deficit)
Water Quality	-	47,601	(47,601)	4,968	62,360	(57,392)	24,778	73,344	(48,566)
Fisheries	7,448	15,056	(7,598)	7,265	17,306	(10,041)	8,459	23,119	(14,660)
Recreation	129	1,229	(1,100)	335	1,440	(1,105)	287	1,913	(1,626)
Conservation	80	1,312	(1,232)	118	1,541	(1,423)	307	3,083	(2,776)
Navigation	619	5,978	(5,359)	1,114	7,505	(6,391)	1,037	7,620	(6,583)
<b>Sub-Total</b>	<b>8,276</b>	<b>71,166</b>	<b>(62,890)</b>	<b>13,800</b>	<b>90,152</b>	<b>(76,352)</b>	<b>34,868</b>	<b>109,079</b>	<b>74,211</b>
Capital Restructuring	-	24,072	(24,072)	-	13,915	(13,915)	285	5,396	(5,111)
Personnel Buyouts	-	-	-	-	2,703	(2,703)	-	3,350	(3,350)
Unfunded Pensions	-	5,591	(5,591)	-	10,304	(10,304)	-	11,200	(11,200)
<b>Sub-Total</b>	<b>-</b>	<b>100,829</b>	<b>(92,553)</b>	<b>-</b>	<b>117,074</b>	<b>(103,274)</b>	<b>35,153</b>	<b>129,025</b>	<b>(93,872)</b>
GIA	74,260	-	74,260	103,863	-	103,863	93,872	-	93,872
ESC	20,980	-	20,980	-	-	-	-	-	-
<b>Sub-Total</b>	<b>103,516</b>	<b>100,829</b>	<b>2,687</b>	<b>117,663</b>	<b>117,074</b>	<b>589</b>	<b>129,025</b>	<b>129,025</b>	<b>-</b>
Water Resources	82,686	65,790	16,896	63,224	51,554	11,670	64,099	67,675	(3,576)
<b>Sub-Total (DoE)</b>	<b>186,202</b>	<b>166,619</b>	<b>19,583</b>	<b>180,887</b>	<b>168,628</b>	<b>12,259</b>	<b>193,124</b>	<b>196,700</b>	<b>(3,576)</b>
Flood Defence Other	171,292	150,735	20,557	178,778	157,369	21,409	186,200	187,806	(1,606)
MAFF/Walsh Office	16,800	16,800	-	23,679	23,679	-	32,529	32,529	-
<b>TOTAL</b>	<b>374,294</b>	<b>334,154</b>	<b>40,140</b>	<b>383,344</b>	<b>349,676</b>	<b>33,668</b>	<b>411,853</b>	<b>417,035</b>	<b>(5,182)</b>

	Budget 92/93			Planned 93/94			Planned 94/95			Planned 95/96		
	Income	Expenditure	Surplus/(Deficit)	Income	Expenditure	Surplus/(Deficit)	Income	Expenditure	Surplus/(Deficit)	Income	Expenditure	Surplus/(Deficit)
Water Quality	40,062	78,908	(38,846)	47,900	85,863	(37,963)	50,300	93,810	(43,510)	52,800	97,560	(44,760)
Fisheries	11,000	23,960	(12,960)	12,400	25,400	(13,000)	14,400	26,900	(12,500)	16,200	28,400	(12,200)
Recreation	350	2,070	(1,720)	370	2,204	(1,834)	390	2,310	(1,920)	410	2,430	(2,020)
Conservation	162	3,599	(3,437)	5	3,780	(3,775)	5	3,970	(3,965)	10	4,170	(4,160)
Navigation	1,002	7,602	(6,600)	1,048	7,976	(6,928)	1,095	8,400	(7,305)	1,140	8,800	(7,660)
<b>Sub-Total</b>	<b>52,576</b>	<b>116,139</b>	<b>(63,563)</b>	<b>61,723</b>	<b>125,223</b>	<b>(63,500)</b>	<b>66,190</b>	<b>133,390</b>	<b>(69,200)</b>	<b>70,560</b>	<b>141,360</b>	<b>(70,800)</b>
Capital Restructuring	-	1,637	(1,637)	-	-	-	-	-	-	-	-	-
Personnel Buyouts	-	5,000	(5,000)	-	-	-	-	-	-	-	-	-
Unfunded Pensions	-	11,600	(11,600)	-	12,200	(12,200)	-	12,800	(12,800)	-	13,400	(13,400)
<b>Sub-Total</b>	<b>52,576</b>	<b>134,376</b>	<b>(81,800)</b>	<b>61,723</b>	<b>137,423</b>	<b>(75,700)</b>	<b>66,190</b>	<b>148,190</b>	<b>(82,000)</b>	<b>70,560</b>	<b>154,760</b>	<b>(84,200)</b>
GIA	81,800	-	81,800	75,700	-	75,700	82,000	-	82,000	84,200	-	84,200
ESC	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total</b>	<b>134,376</b>	<b>134,376</b>	<b>-</b>	<b>137,423</b>	<b>137,423</b>	<b>-</b>	<b>148,190</b>	<b>148,190</b>	<b>-</b>	<b>154,760</b>	<b>154,760</b>	<b>-</b>
Water Resources	75,693	79,614	(3,921)	80,700	83,670	(2,970)	87,850	87,850	-	92,500	92,500	-
<b>Sub-Total (DoE)</b>	<b>210,069</b>	<b>213,990</b>	<b>(3,921)</b>	<b>218,123</b>	<b>221,093</b>	<b>(2,970)</b>	<b>236,040</b>	<b>236,040</b>	<b>-</b>	<b>247,260</b>	<b>247,260</b>	<b>-</b>
Flood Defence Other	197,405	204,236	(6,831)	201,840	213,540	(11,700)	211,030	221,330	(10,300)	222,960	233,660	(10,700)
MAFF/Walsh Office	38,660	38,660	-	44,200	44,200	-	49,300	49,300	-	50,500	50,500	-
<b>TOTAL</b>	<b>446,134</b>	<b>456,886</b>	<b>(10,752)</b>	<b>464,163</b>	<b>478,833</b>	<b>(14,670)</b>	<b>496,370</b>	<b>506,670</b>	<b>(10,300)</b>	<b>520,720</b>	<b>531,420</b>	<b>(10,700)</b>

## Notes

1 Actual figures for 1989/90 follow treatment in previous Corporate Plans and not necessarily that in the published accounts, e.g. pollution incident income and expenditure has been excluded.

2 Figures for 1990/91 onwards include pollution incident income and expenditure.

## SURPLUSES/DEFICITS

The water resources function shows operating deficits in 1992/93 (£3.9m) and 1993/94 (£3.0m) which will eliminate the accumulated balance repayable to abstractors. Thereafter the account income and expenditure is planned to be in balance.

The flood defence function is planned to incur an operating deficit in each of the Plan years (total £39.5m in the four years) as a result of:

- the need to reduce S47 balances towards the level required to provide for emergencies and working capital;
- plans to undertake a programme of essential capital expenditure on the Thames barrier which will in part utilise the current balance of £42.1m over the five years commencing 1 April 1992 as agreed with HM Treasury.

Total expenditure on DoE grant-aided functions is planned to equal the anticipated income and projected levels of GIA up to 1994/95 as given in the NRA's 1991 PES statement.

## GIA FUNCTIONS - ADDITIONAL RESOURCES

This Plan assumes future expenditure and GIA being limited to the levels indicated by the PES settlement announced in November 1991.

The Authority will need further resources if it is to undertake the following:

- long-term remedial work associated with the Wheal Jane tin mine in Cornwall;
- remedial works to deal with similar pollution problems arising from other abandoned mines and contaminated land.

The Authority may also need additional funds to introduce SWQOs. This, however, will be dependent on the type of scheme and scale of implementation which will be decided by the Secretary of State for the Environment. This will need to be considered in our next Corporate Planning round.

Further details are given below and will be subject to discussion with DoE during 1992/93.

### DoE Grant-In-Aid

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
GIA Function Deficits <sup>1</sup>	62.9	76.3	74.2	63.6	63.5	69.2	70.8
Exceptional Items <sup>2</sup>	29.7	26.9	19.7	18.2	12.2	12.8	13.4
<b>Sub-Total</b>	<b>92.6</b>	<b>103.2</b>	<b>93.9</b>	<b>81.8</b>	<b>75.7</b>	<b>82.0</b>	<b>84.2</b>
GIA <sup>3</sup>	74.3	103.9	93.9	81.8	75.7	82.0	84.2
Variance	(18.3) <sup>4</sup>	0.7	-	-	-	-	-

#### Notes

1 GIA Functions are water quality, fisheries, recreation, conservation, navigation.

2 See table below for breakdown.

3 Figures from 91/92 are based on the 1991 PES statements.

4 Funded by Environmental Services Charge.

### GIA Exceptional Items

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
Capital Restructuring	24.1	13.9	5.1	1.6	-	-	-
Personnel Buyouts	-	2.7	3.4	5.0	-	-	-
Unfunded Pensions	5.6	10.3	11.2	11.6	12.2	12.8	13.4
<b>Total</b>	<b>29.7</b>	<b>26.9</b>	<b>19.7</b>	<b>18.2</b>	<b>12.2</b>	<b>12.8</b>	<b>13.4</b>

### Priority Projects Requiring Additional Resources

	Planned 93/94	Estimated 94/95	Estimated 95/96
1 Priority abandoned mines- remedial work including Wheal Jane	2.8	2.6	2.6
2 Contaminated land site investigations and remedial works	0.5	1.5	2.0
3 SWQOs	2.0	2.0	2.0
<b>Total</b>	<b>5.3</b>	<b>6.1</b>	<b>6.6</b>

### HEAD OFFICE COSTS

Head Office expenditure in 1991/92 and 1992/93 (some £12.2m in both years) has been allocated to core functions as follows:

Function	% Allocation	
	90/91	91/92 and subsequent years
Water Quality	26.3	23.0
Water Resources	21.3	26.0
Flood Defence	33.3	25.0
Fisheries, Recreation, Conservation, Navigation	19.1	26.0
<b>Total</b>	<b>100</b>	<b>100</b>

## HUMAN RESOURCES

### NUMBERS

Since vesting, we have deliberately sought to increase and allocate a large proportion of our human resources to water quality, water resources and flood defence. Thus these functions have seen a marked growth in staffing since 1989/90. The additional staff have supported the Authority's objectives to alleviate low flows, increase water quality sampling, analysis and pollution control work and enforcement as well as our growing flood defence capital programmes. Fisheries and support staff numbers have also increased.

We now feel that our staffing is generally approaching the levels we need and that the majority of deficiencies identified at, or since, vesting have been rectified. Thus our future staffing plans indicate permanent staffing levelling off below 8,000. In terms of individual functions and services there are likely to be some minor increases and decreases over the Plan period. Tables S1, S2 and S3 show total staff by function, grade and status.

At present, we cannot accurately predict the human resource implications of certain initiatives such as SWQOs, the nature of which will be determined by the Secretary of State. They may have additional staffing requirements. Likewise, additional staffing may be

### Priority Projects

- 1 This is to implement solutions to the Wheal Jane mine pollution. A number of other high priority abandoned mines in need of remedial works have also been identified. The likely clean-up solution is to re-plumb the mine discharges.
- 2 A number of NRA regions have produced lists of potentially contaminated land sites which do, or could, cause water pollution. Additional resources are required to extend and improve this survey and investigate work in other regions. This would produce a prioritised and costed remedial programme of works and practical solutions to solve pollution problems at the top priority sites
- 3 This is a "marker" figure for inclusion in DoE's PES submission on the NRA's behalf. The £2m GIA generated by increasing our discharge consent charges from 13% to 20% in 1992/93 will help fund SWQOs. There may be additional costs, however, depending on the final scheme decided upon - for example environmental cost-benefit analysis, public consultation and legal costs.

required were the Authority to be given additional statutory duties or EC Directive responsibilities during the Plan period.

### CONTROL SYSTEMS

The Authority inherited a range of manpower planning and staffing systems, policies and procedures. Many were rudimentary or, in some cases, non-existent. In our last *Corporate Plan* we explained some of the actions that we had started to rectify these difficulties. Since then, progress has been made in a number of areas. In particular, personnel IT needs have been accommodated within IPAS.

### PERSONNEL MANAGEMENT

The creation of the NRA brought about a wide range of personnel issues, ranging from the need to resolve disparities in terms and conditions, to different levels of service between the regions. We have also recruited a number of new staff who have brought with them a variety of experiences and cultures. One of the challenges facing the Authority is to integrate these experiences into the NRA culture, thereby making it stronger.



Total Numbers of Staff by Function and Support Service (FTE) as at 31st March

Table S1

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Core Functions</b>							
Flood Defence	3,364	3,464	3,542	3,630	3,633	3,633	3,633
Water Quality	1,024	1,337	1,549	1,595	1,595	1,595	1,595
Water Resources	482	647	784	815	815	815	815
Fisheries	410	412	442	454	454	454	454
Navigation	136	128	102	109	109	109	109
Conservation	26	50	63	67	67	67	67
Recreation	17	28	24	29	29	29	29
<b>Sub-Total</b>	<b>5,459</b>	<b>6,066</b>	<b>6,506</b>	<b>6,699</b>	<b>6,702</b>	<b>6,702</b>	<b>6,702</b>
<b>Support Services</b>							
Administration	318	302	398	405	405	405	405
Finance	300	294	307	310	310	310	310
Information Systems	107	140	193	204	204	204	204
Personnel	102	104	119	120	120	120	120
Legal Services	81	78	87	87	87	87	87
Public Relations	34	37	46	49	49	49	49
Estates	32	30	37	37	37	37	37
Others	42	48	26	26	26	26	26
R&D	9	12	16	16	16	16	16
<b>Sub-Total</b>	<b>1,025</b>	<b>1,045</b>	<b>1,229</b>	<b>1,254</b>	<b>1,254</b>	<b>1,254</b>	<b>1,254</b>
<b>TOTAL</b>	<b>6,484</b>	<b>7,111</b>	<b>7,735</b>	<b>7,953</b>	<b>7,956</b>	<b>7,956</b>	<b>7,956</b>

## FUTURE PLAN

### Aims

- To improve efficiency in the exercise of the NRA's functions and to provide challenge and opportunity for employees and show concern for their welfare.

### Achievement of the 1991/92 Corporate Plan

We set ourselves a number of detailed targets in our last *Corporate Plan*. The majority of these have been successfully completed.

### Personnel

**Management Audits:** Following audits in Welsh, Thames and Head Office, various reorganisations have been instituted to reflect the comments made in these reports. A trend is developing, leading towards area-based multi-functional management structures which, if they prove to be effective, will have both organisational, training and development consequences for the whole of the Authority.

**Policies and Procedures:** Policies have been evolved to meet immediate needs but a recent temporary reorganisation of the Head Office Personnel function has established a dedicated project team to co-ordinate and produce a comprehensive set of policies and procedures. These will form the basis of a staff handbook.

**Manpower Analyses and Controls:** Implementation

has been hampered by the lack of a national personnel database. A system of manpower classification using a PC system has been partially successful as an interim measure pending completion of IPAS. The Board receives regular monthly reports on manpower, based upon the number of people actually working in the Authority at a particular time of the month; both in complemented and uncomplemented posts.

### Employee Relations

**Job Evaluation:** A joint exercise is nearing completion. It is anticipated that a new national payment and reward system will be negotiated during 1992. This will also establish the boundaries between various levels of staff.

### Health and Safety

**Audits:** Health and Safety audits will have been carried out in all regions. A plan exists to ensure that all regions are externally validated by the end of 1996 at the rate of 2 per year. Welsh and North West Regions' audits will have been externally validated by October 1992.

**Occupational Health:** A comprehensive Occupational Health policy was agreed. Screening of high-risk groups will start in April 1992 with a programme to include all employees over the next five years.

Total Numbers of Staff by Grade (FTE) as at 31st March

Table S2

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Non-Manual</b>							
Senior Staff	160	167	180	202	202	202	202
NJSC Grade 7 and above	1,142	1,326	1,433	1,497	1,497	1,497	1,497
NJSC Grade 6 and below	2,830	3,299	3,857	3,967	3,974	3,974	3,974
Other	28	-	-	-	-	-	-
<b>Sub-Total</b>	<b>4,160</b>	<b>4,792</b>	<b>5,470</b>	<b>5,666</b>	<b>5,673</b>	<b>5,673</b>	<b>5,673</b>
<b>Manual</b>							
NJIC Adults	2,116	2,121	2,075	2,096	2,091	2,092	2,092
NJIC Youth	5	7	2	2	2	2	2
NJCC Crafts	199	187	184	185	185	185	185
NJCC Apprentices	4	4	4	4	4	4	4
Other	-	-	-	-	-	-	-
<b>Sub-Total</b>	<b>2,324</b>	<b>2,319</b>	<b>2,265</b>	<b>2,287</b>	<b>2,283</b>	<b>2,283</b>	<b>2,283</b>
<b>TOTAL</b>	<b>6,484</b>	<b>7,111</b>	<b>7,735</b>	<b>7,953</b>	<b>7,956</b>	<b>7,956</b>	<b>7,956</b>

Total Number of Staff by Status (FTE) as at 31st March

Table S3

	Actual 89/90	Actual 90/91	Forecast 91/92	Budget 92/93	Planned 93/94	Planned 94/95	Planned 95/96
<b>Complemented</b>							
Permanent Staff	6,382	6,886	7,635	7,898	7,903	7,903	7,903
Ltd Period Staff	95	214	99	54	52	52	52
Consultants	7	11	1	1	1	1	1
Other	-	-	-	-	-	-	-
<b>Sub-Total</b>	<b>6,484</b>	<b>7,111</b>	<b>7,735</b>	<b>7,953</b>	<b>7,956</b>	<b>7,956</b>	<b>7,956</b>
<b>Uncomplemented</b>							
Ltd Period Staff	47	182	233	334	318	318	318
Casuals	2	23	15	24	24	24	24
Consultants	-	41	53	53	46	46	46
Other	2	5	9	9	8	8	8
<b>Sub-Total</b>	<b>51</b>	<b>251</b>	<b>310</b>	<b>420</b>	<b>396</b>	<b>396</b>	<b>396</b>
<b>TOTAL</b>	<b>6,535</b>	<b>7,362</b>	<b>8,045</b>	<b>8,373</b>	<b>8,352</b>	<b>8,352</b>	<b>8,352</b>

**EC Directives:** Plans are well advanced to respond positively to the Health and Safety Directives due over the next few years. Action plans to implement the 1992 Directives are under review and will be in place by December 1992.

**Accidents:** The high profile approach adopted by the Authority to Health and Safety awareness has seen a reduction in lost time accidents.

**Policies and Procedures:** These have been issued on lone workers, use of sea-going vessels, manual handling and implementation of the Code of Practice for safety in electric fishing operations.

#### *Training and Development*

**Training Needs:** The general trend has been to build upon the regionally-based approaches with an average of

2% of payroll costs being spent on training and related activities. Work is in progress with the regions to review general training needs.

**A National Approach:** A strategy paper was approved by the Board at the end of 1991 and a Steering Group has been established to prioritise management development training. Programmes are being developed covering the following: management skills for the top 90 managers using business school and other specifically tailored materials; project management and financial management, including training on the Financial Memorandum and Scheme of Delegation. A number of these courses may form the components of a nationally recognised Certificate/Diploma in Management.

**Performance Appraisal:** The scheme already implemented for senior managers is being revised. NJSC managers will be trained in appropriate schemes so that the Authority can implement a consistent and equitable performance appraisal nationally.

**Systems Training:** This has been limited by the speed with which new systems and procedures have been established.

#### *The Way Forward*

The main challenges facing the management of the Authority's human resources are the need to:

- build upon the strengths of all the people within the Authority to establish a truly national organisational culture, whilst at the same time not losing the important local/regional responsiveness to the people they serve and the various geographical conditions they operate under;
- continue to establish national personnel systems and procedures that reinforce this national identity, incorporating best practices and developing centres of expertise. This will also improve the Authority's efficiency and effectiveness;
- adjust to a situation where numbers of employees are not increasing but constant. Measures of human resource effectiveness and efficiency need to be developed further and systems devised for monitoring these outputs.

All this will be carried out against a background of diminishing numbers of school/University leavers and slow growth in the number of skilled employees in the UK economy. Therefore, it is of paramount importance that the Authority trains, develops and retains its people, so that those of the right calibre are available, in the right place and at the right time.

#### *Future Strategy*

Over the next four years we will concentrate on the consolidation of human resources; development of the people, systems and procedures; and ensuring that the Authority is using its people in the most efficient and effective ways for the benefit of the environment. The following targets have been set to achieve this.

#### *Personnel Management*

- To produce a comprehensive set of national personnel policies and procedures by January 1993 including a staff handbook, as required by the Financial Memorandum.

- To ensure that every employee has the opportunity to develop irrespective of sex, marital status, age, race or disability.
- To establish a national personnel database during 1993/94.

#### *Management Development and Training*

- To ensure that all senior managers are trained in key management concepts relevant to the NRA by July 1993.
- To ensure that Head Office senior managers are trained in basic project management concepts and skills by March 1993.
- To ensure that senior managers are trained in the application of internal financial control procedures (Financial Memorandum, Scheme of Delegation) and understand DoE/Treasury financial guidelines by December 1992 for Head Office and June 1993 for regions.
- To develop a national individual performance appraisal system for NJSC staff by March 1993 and commence implementation in 1993/94.
- To develop and communicate a strategy for management development by December 1992 and implement succession planning processes by December 1993.
- To agree policy and implementation plan for National Vocational Qualifications by December 1992, leading to implementation of schemes for priority groups by March 1994.

#### *Health and Safety*

- To continue to review the impact of pending EC Directives on Health and Safety and ensure their effective implementation within the Authority.
- To undertake two audits per year and ensure that all regions have had their Health and Safety audit validated externally by March 1996.
- To continue to monitor the implementation of the new Occupational Health Scheme responding to development.

#### *Employee Relations*

- To develop a rank order of NJSC jobs and grades by September 1992 and implement a national grading and job evaluation system by June 1993.



## ADMINISTRATIVE COSTS

During 1991 we reached agreement with DoE over the definition of our administrative costs. This definition comprises staff costs, costs of bought-in services for our support services and our overall accommodation costs. We have subsequently introduced arrangements to monitor and control this expenditure. Actual and projected expenditure is given in the table opposite.

### OFFICE AND ACCOMMODATION COSTS

As a result of the NRA's growth between 1989/90 to 1991/92 we now have a shortage of office and other accommodation in some regions, with, in certain areas, staff operating out of temporary portakabins. We have therefore commissioned an overall review of the status of our accommodation and our future needs in terms of location and space.

This review's findings will be available during our next Corporate Planning round. It will thus produce timely information should we need to re-organise as a result of the establishment of the proposed Environment Agency.

As a result of moving the majority of our Head Office staff out of London to new offices in Bristol, we have vacated two of four floors of our London Head Office. Various options for the London office have been considered and a decision taken to retain its current size pending further discussion over the Environment Agency.

Our office and accommodation costs are planned to decrease as a result of the completion of our initial setting-up period. However, future years' figures exclude our current proposals for new offices to accommodate all existing staff.

In planning ahead, we will seek to make the best use of existing accommodation. The purchase or leasing of some new accommodation will probably be necessary however, especially to replace buildings coming to the end of their useful life and which need significant expenditure to upgrade them.

We will continue to pursue existing policies and procedures and introduce new ones to control and reduce the costs of running our offices. In 1991 we let a national contract for our photocopying facilities. Our recent draft environmental strategy will be the focus to pursue other efficiency and green policy initiatives such as paper recycling and energy saving measures.

Future years' staffing cost increases are mainly due to salary increments. The increase in 1992/93 is also due to the full-year effects of the final stages of recruitment in 1991/92.

Planned expenditure on bought-in services is projected to increase over the Plan period. These figures may well increase as a result of market testing initiatives described later in this chapter.

# SUMMARY OF REGIONAL ADMINISTRATIVE COSTS

	Actual 90/91	Forecast 91/92	Planned 92/93	Planned 93/94
	£m	£m	£m	£m
<b>STAFF COSTS</b>				
Administration	6.8	7.7	8.3	8.8
Legal Services	1.6	1.9	2.2	2.3
Estates	0.7	0.8	0.9	0.9
Public Relations	0.7	0.8	0.9	1.0
Information Systems	3.9	5.5	6.2	6.6
Finance	4.4	5.4	6.1	6.5
Personnel	4.1	3.5	3.6	3.8
<b>Total Staff Costs</b>	<b>22.2</b>	<b>25.6</b>	<b>28.2</b>	<b>29.9</b>
<b>BOUGHT-IN SERVICES</b>				
Administration	1.3	2.2	2.2	2.3
Legal Services	0.5	0.4	0.7	0.6
Estates	0.1	0.1	0.1	0.1
Public Relations	0.7	0.8	0.8	0.8
Information Systems	8.1	11.3	12.9	14.9
Finance	1.1	1.1	1.7	1.4
Personnel	1.6	2.3	2.5	2.6
<b>Total Bought-in Services</b>	<b>13.4</b>	<b>18.2</b>	<b>20.9</b>	<b>22.7</b>
<b>OFFICE &amp; ACCOMMODATION COSTS</b>				
Rent, Rates	3.1	5.2	5.5	6.6
Construction Costs	5.0	3.8	0.5	0.3
Fitting Out Costs	1.0	1.4	1.0	1.0
Cleaning/Security	0.6	0.8	0.8	1.0
Repair & Maintenance	2.1	2.1	1.8	2.0
Removals	-	-	-	0.1
Power	1.6	2.2	2.4	2.5
Telephones, Postage etc.	2.8	3.6	3.9	4.2
Stationery, Consumables	2.2	2.5	2.7	2.8
Office Equipment	4.7	4.6	4.5	4.6
<b>Total Office &amp; Accommodation Costs</b>	<b>23.1</b>	<b>26.2</b>	<b>23.1</b>	<b>25.1</b>
Insurance	1.3	1.7	1.8	1.7
<b>TOTAL REGIONAL ADMINISTRATIVE COSTS</b>	<b>60.0</b>	<b>71.7</b>	<b>74.1</b>	<b>79.4</b>

## MARKET TESTING

As part of the NRA's 1991 PES settlement, the Minister for the Environment and Countryside requested that we should review the scope for more contracting-out, and establish by Spring 1992 a systematic programme of market testing covering all the NRA's functions to implement the approach set out in the *Citizen's Charter*.

In order to do this we have set up a Market Testing Steering Group and have undertaken a detailed review of our current approach to contracting-out and market testing.

This review has determined that:

- more than 40% of our expenditure is on hired and contracted-out services, and contracted-out expenditure is planned to increase over the Plan period (see Figure opposite);
- 62% of core function activities and 75% of support service activities have been market tested in at least one NRA region;
- we already contract-out over 90% of the activities listed in *Competing for Quality*;
- of the instances where market testing has been carried out, the result indicates that 50% of the time activities were in-house, and 50% of the time the activity or service was contracted-out;
- opportunities for further market testing and contracting-out were viewed to be the highest for

laboratory analysis and flood defence maintenance, followed by legal and estates services, finance, personnel and IT;

- all our regions have plans to market test a number of specific activities in 1992/93 and subsequent years;
- much of our work on market testing and contracting-out has not been centrally co-ordinated and is practised in different ways in each region.

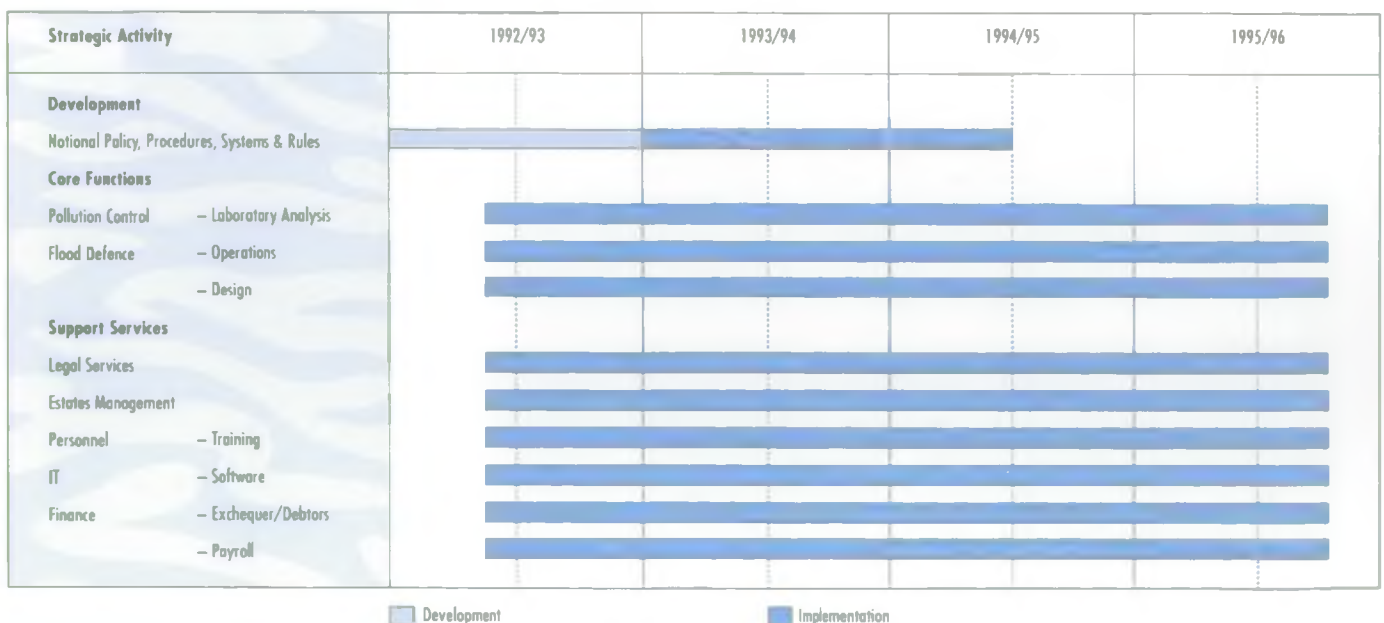
The Market Testing Steering Group's draft programme up to 1995/96 is set out below. Market testing and contracting-out will, where appropriate, be centrally co-ordinated and consistent procedures adopted from 1992/93 onwards.

The programme can be subdivided into three phases:

- development of national policy, systems, procedures whilst existing regional market testing continues;
- implementation of a rolling programme of market testing for specific core functions and support service activities;
- annual review of the draft programme for market testing.

A progress report and future plans will be included in our next *Corporate Plan*.

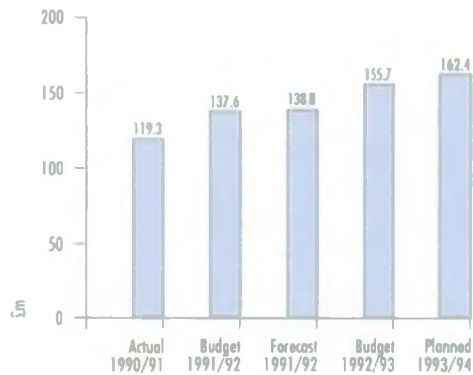
### Draft Programme of Market Testing 1992/93 - 1995/96



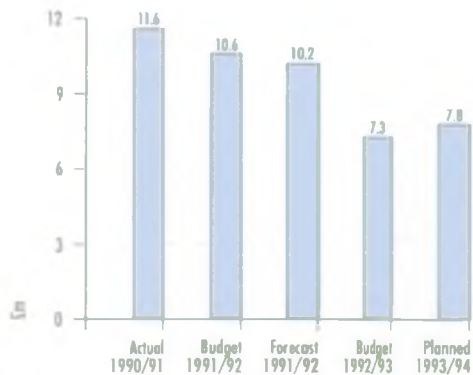


## CORE FUNCTIONS - WORK CONTRACTED OUT

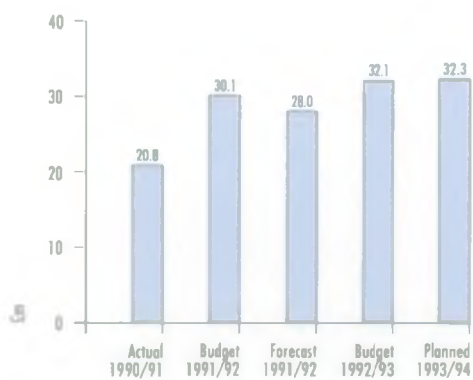
*Total All Functions*



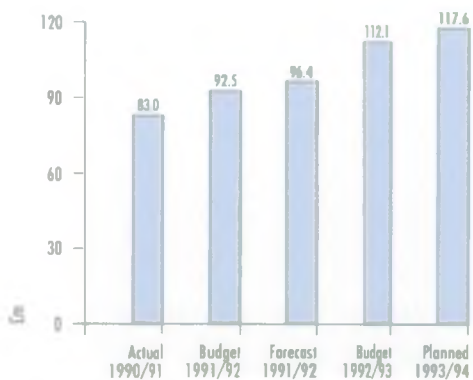
*Water Quality*



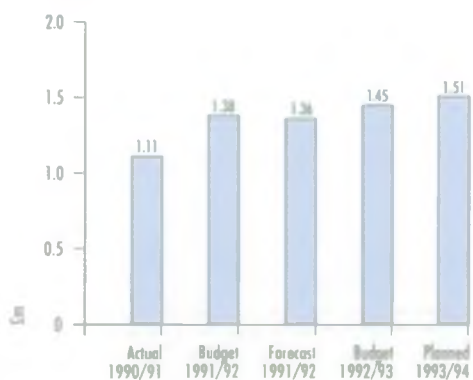
*Water Resources*



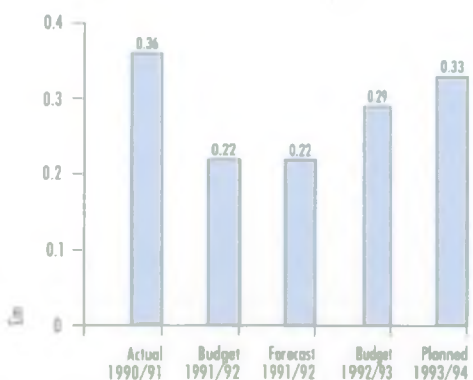
*Flood Defence*



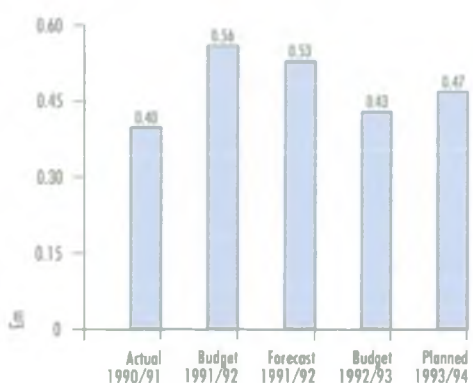
*Fisheries*



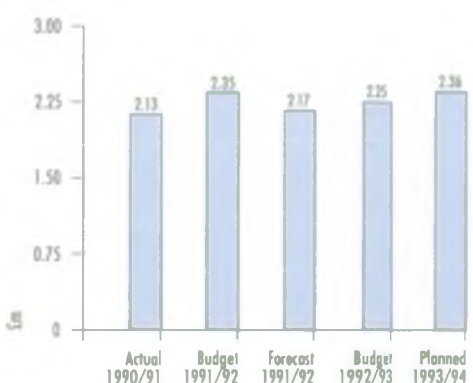
*Recreation*



*Conservation*



*Navigation*



## EFFICIENCY AND PRODUCTIVITY

Our plans include 1.5% efficiency savings in each Plan year. Cost savings of £4.8m identified in our last *Corporate Plan* flow through into future years and have already reduced our operating costs. A further £4.6m of efficiency savings will be implemented in 1992/93 and £3.5m in 1993/94. These savings are additive through all Plan years.

We plan to continue to increase our productivity, efficiency and cost effectiveness over the next few years.

This will be achieved by a combination of methods, including the increased use of:

- automation and IT;
- management development and staff training;
- performance related pay;
- operational reviews and audits;
- investment appraisal;
- project management methodology.

	Savings (£'000) 92/93	Savings (£'000) 93/94
<b>CORE FUNCTIONS</b>		
Water Resources	466	220
Water Quality	714	364
Flood Defence	1,811	1,277
Fisheries	117	99
Recreation	24	21
Conservation	58	29
Navigation	18	-
<b>Sub-Total</b>	<b>3,208</b>	<b>2,010</b>
<b>SUPPORT SERVICES</b>		
Administration	636	349
Legal Services and Estates	52	8
Public Relations	12	2
Information Systems	375	744
Research and Development	-	-
Personnel	324	302
Finance	22	108
<b>Sub-Total</b>	<b>1,421</b>	<b>1,513</b>
<b>Total</b>	<b>4,629</b>	<b>3,523</b>

## INTERNAL AND EXTERNAL AUDIT

In developing our future plans, the Authority attaches great importance to the auditing of our activities. In 1991 we established an Audit Committee chaired by one of our Board members Lord Gregson. This Committee oversees all our audit affairs, including our own internal audit, external financial audit and audits by the NAO.

### INTERNAL AUDIT

Internal Audit in the NRA works like an internal consultancy. The department reviews strategic developments and provides independent advice on the

quality of internal controls. These controls are essential to ensure managers maintain their control over on the Authority's operations.

The benefits of Internal Audit are only realised if recommendations are soundly based and, if agreed, implemented by the Authority. The Head of Internal Audit now reports direct to the Chief Executive and to the Audit Committee. These strengthened reporting relationships were introduced last year. They add significant weight to internal audit recommendations.

Details of the section's use of resources is given below.

	Actual 89/90	Actual 90/91	Budget 91/92	Forecast 91/92	Planned 92/93	Budget 92/93	Planned 93/94	Estimated 94/95	Estimated 95/96
<b>Expenditure (£m)</b>									
Internal Audit	0.7	0.7	0.8	0.8	1.0	1.0	1.1	1.1	1.2
External Audit	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
<b>Savings Identified</b>									
VFM Studies	N/A	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
<b>Staffing (FTE)</b>	<b>16</b>	<b>12</b>	<b>15</b>	<b>17.5</b>	<b>20.5</b>	<b>21.5</b>	<b>21.5</b>	<b>21.5</b>	<b>21.5</b>

Our 1992/93 Internal Audit Plan is based on a thorough analysis of the Authority's activities. A five year strategic plan identifies the broad areas for forthcoming audit reviews over five years. A detailed operational plan identifies specific audits for the first year of the strategic plan. In 1992/93 Internal Audit will review the systems that control our:

- water sampling activities;
- fixed assets;
- computer security and
- Equal Opportunities policy.

Over 100 audit reports will be produced as a result.

Whilst system audits prevent problems, it is the department's value for money studies that can lead to significant savings. In 1991/92 total savings of £0.6m were identified; in 1992/93 the department aims to make recommendations that save in excess of this figure. The major value for money studies scheduled are:

- laboratory operations;
- planning liaison effectiveness;
- use of consultants.

Value for money studies planned for 1993/94 include:

- developer contributions;
- hydrology and hydrometry;

- fish farm management;
- purchasing.

The Internal Audit section plans to make efficiency savings totalling 10% of total manhours over a two year period. The strategic plan also takes account of the impact on Internal Audit resources of the improvements to our systems and procedures that are planned over the next few years.

### EXTERNAL AUDIT

Following competitive tendering, DoE have appointed new external auditors with lower fees than previously, as greater reliance will be placed on our own internal audit. We continue to lay great importance on the results of the external auditing of our annual accounts and implementing the recommendations contained in the resulting Management Letters.

We will also consider in detail the results of the 1992 NAO study into the financial management of the Authority, (based on our own internal review of the fitting-out contract for our Head Office in Bristol) and the PAC's subsequent recommendations on the NAO report. We will make whatever changes are required. We will also do the same in respect of the audit currently being carried out by DoE Internal Audit.



# Glossary

<b>AWQMS</b>	AUTOMATIC WATER QUALITY MONITORING SYSTEM	<b>N/A</b>	NOT AVAILABLE
<b>BOD</b>	BIOLOGICAL OXYGEN DEMAND	<b>NAMAS</b>	NATIONAL MEASUREMENT ACCREDITATION SERVICE
<b>BWB</b>	BRITISH WATERWAYS BOARD	<b>NAO</b>	NATIONAL AUDIT OFFICE
<b>CCD</b>	CURRENT COST DEPRECIATION	<b>NDPB</b>	NON-DEPARTMENTAL PUBLIC BODY
<b>COSHH</b>	CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH	<b>NFU</b>	NATIONAL FARMERS UNION
<b>DOE</b>	DEPARTMENT OF THE ENVIRONMENT	<b>NIC</b>	NATIONAL INSURANCE CONTRIBUTIONS
<b>D/S</b>	DOWNSTREAM	<b>NJSC</b>	NATIONAL JOINT STAFF COUNCIL
<b>DWI</b>	DRINKING WATER INSPECTORATE	<b>NRA</b>	NATIONAL RIVERS AUTHORITY
<b>EC</b>	EUROPEAN COMMISSION	<b>NSA</b>	NITRATE-SENSITIVE AREA
<b>EIA</b>	ENVIRONMENTAL IMPACT ASSESSMENT	<b>OFWAT</b>	OFFICE OF WATER SERVICES
<b>EPA</b>	ENVIRONMENTAL PROTECTION ACT	<b>OPM</b>	OUTPUT AND PERFORMANCE MEASURE
<b>EQS</b>	ENVIRONMENTAL QUALITY STANDARD	<b>PAC</b>	PUBLIC ACCOUNTS COMMITTEE
<b>ESC</b>	ENVIRONMENTAL SERVICES CHARGE	<b>PES</b>	PUBLIC EXPENDITURE SURVEY
<b>FTE</b>	FULL TIME EQUIVALENTS	<b>PIGN</b>	POLICY IMPLEMENTATION GUIDANCE NOTE
<b>GEC</b>	GRANT EARNING CEILING	<b>PRINCE</b>	PROJECTS IN A CONTROLLED ENVIRONMENT
<b>GIA</b>	GRANT-IN-AID	<b>RAB</b>	REGIONAL ADVISORY BOARD
<b>GIS</b>	GEOGRAPHIC INFORMATION SYSTEM	<b>RFAC</b>	REGIONAL FISHERIES ADVISORY COMMITTEE
<b>HMIP</b>	HER MAJESTY'S INSPECTORATE OF POLLUTION	<b>RFDC</b>	REGIONAL FLOOD DEFENCE COMMITTEE
<b>IPAS</b>	INTEGRATED PERSONNEL AND ACCOUNTING SYSTEM	<b>RIVPACS</b>	RIVER INVERTEBRATE PREDICTION AND CLASSIFICATION SYSTEM
<b>IPC</b>	INTEGRATED POLLUTION CONTROL	<b>RFDC</b>	REGIONAL FLOOD DEFENCE COMMITTEE
<b>IPCC</b>	INTER-GOVERNMENTAL PANEL ON CLIMATE CHANGE	<b>ROR</b>	RATE OF RETURN
<b>IS</b>	INFORMATION SYSTEMS	<b>RRAC</b>	REGIONAL RIVERS ADVISORY COMMITTEE
<b>IT</b>	INFORMATION TECHNOLOGY	<b>SJC</b>	SECTION 30
<b>MAFF</b>	MINISTRY OF AGRICULTURE, FISHERIES AND FOOD	<b>S47</b>	SECTION 47
<b>MENSAR</b>	MANAGEMENT OF THE ENVIRONMENT BY SAMPLING, ANALYSIS AND REPORTING	<b>S142</b>	SECTION 142 (PREVIOUSLY SECTION 28)
<b>MTP</b>	MEDIUM-TERM PLAN	<b>STW</b>	SEWAGE TREATMENT WORKS
		<b>SVC</b>	SPRING VIRAEMIA OF CARP
		<b>SWQO</b>	STATUTORY WATER QUALITY OBJECTIVE
		<b>U/S</b>	UPSTREAM
		<b>WAMS</b>	WATER ARCHIVE AND MONITORING SYSTEM
		<b>WQO</b>	WATER QUALITY OBJECTIVE
		<b>WRC</b>	WATER RESEARCH CENTRE
		<b>VFM</b>	VALUE FOR MONEY

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ISBN 1 873160 27 5

810 PNF 1

PRINTED ON SUSTAINABLY-SOURCED PAPER USING  
WATER-BASED VARNISHES.

DESIGNED AND PRODUCED BY  
STEEL DESIGNS LIMITED.

PRINTED IN THE UK BY  
TAYLOR BROS.