



**annual
report
1989-90**

**Norfolk and Suffolk
Local Flood Defence
Committee**



National Rivers Authority – Anglian Region



NORFOLK AND SUFFOLK LOCAL FLOOD DEFENCE COMMITTEE

ANNUAL REPORT 1989/90

In accordance with Section 139 of the Water Act 1989, the report on land drainage works carried out during the year 1989/90 in the Norfolk and Suffolk Local Flood Defence Committee's area is presented herewith, together with a summary of the accounts for that year.

Clive Mason

Regional Manager
(Flood Defence & Operations)

National	Authority
Information	Centre
Head	
Class
Accession No

ENVIRONMENT AGENCY



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NORFOLK AND SUFFOLK LOCAL FLOOD DEFENCE COMMITTEE

ANNUAL REPORT 1989/90

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MEMBERSHIP OF NORFOLK AND SUFFOLK LOCAL FLOOD DEFENCE COMMITTEE
(as at 31st March, 1990)

CHAIRMAN

H. A. Duffield,
Little Hautbois Hall,
Coltishall,
Norfolk, NR12 7JR.
(Tel. Buxton 333)

APPOINTED BY THE REGIONAL FLOOD DEFENCE COMMITTEE:

D. C. Adams,
Deben Lodge,
Falkenham,
Ipswich,
Suffolk, IP10 OAR.
(Tel. Kirton 235)

P. D. Blaxell,
Eastfield Farm,
Hickling,
Norfolk, NR12 OBH.
(Tel. Hickling 231)

D. M. Cargill,
Heckingham Hall,
Heckingham,
Norfolk, NR14 6QU.
(Tel. Raveningham 327)

J. B. Gardiner,
White House,
Catfield,
Great Yarmouth,
Norfolk, NR29 5DG.
(Tel. Stalham 80362)

Sir Edward Greenwell, Bt.,
Estate Office,
Gedgrave Hall,
Gedgrave,
Woodbridge,
Suffolk, IP12 2BX.
(Tel. Orford 450247)

M. Holmes,
Holly Tree Farm,
Bramfield,
Halesworth,
Suffolk.
(Tel. Bramfield 224)

APPOINTED BY THE CONSTITUENT COUNCILS:

(a) Norfolk County Council:

Squadron Leader R. Carman, M.B.E.,
15, Low Road,
Hingham,
Norfolk, NR9 4NG.
(Tel. Attleborough 850798)

N. G. Chapman,
Lime Tree Farm,
Forncett St. Peter,
Norfolk, NR16 1HT.
(Tel. Bunwell 219)

R. D. Phelan,
16, Penryn Close,
Norwich,
Norfolk, NR4 7LY.
(Tel. Norwich 55408)

S. J. Revell, B.Sc.,
Hall Farm,
Earsham,
Bungay,
Suffolk, NR35 1PD.
(Tel. Bungay 3459)

D. A. W. Turnbull,
Old Rectory,
Itteringham,
Norfolk, NR11 7AX.
(Tel. Saxthorpe 259)

(b) Suffolk County Council:

P. G. Batho,
Park Farm,
South Entrance,
Saxmundham,
Suffolk, IP17 1DQ.
(Tel. Saxmundham 602132)

R. F. Durrant,
110, Hollingsworth Road,
Lowestoft,
Suffolk, NR32 4BW.
(Tel. Lowestoft 585919)

J. Haylock,
Laurel Farm,
12, Holywell Row,
Bury St. Edmunds,
Suffolk, IP28 8LS.
(Tel. Mildenhall 713377)

OBSERVER

Representing the Eastern Area Fisheries Advisory Committee:

S. E. Alden,
19, Mariners Lane,
Norwich,
Norfolk, NR1 3AF.
(Tel. Norwich 610861)

OFFICERS SERVICING THE COMMITTEE

Clive Mason	-	Regional Manager (Flood Defence and Operations)
Roger Hyde	-	Regional Manager (Finance and Common Services)
Ian Hart	-	Operations Manager
Steve Hayman	-	Operations Engineer



PRINCIPAL STATISTICS

Total Length of Main River	1322 km
Total Length of Tidal Main River Defences	217 km
Total Length of Estuary Defences	107 km
Total Length of First Line Sea Defences (NRA responsibility)	102 km
Total Length of Fluvial Main River (to MAFF demarcation point)	1097 km
Area of Local Flood Defence District	5329 km ²
Number of Internal Drainage Boards	36
Total Area of Internal Drainage Districts	584 km ²
Number in Workforce	67

REGIONAL MANAGER'S REPORT

This report summarises the flood defence works undertaken during 1989/90 within the Norfolk and Suffolk Catchment and outlines the associated financial position.

The regional organisation of the National Rivers Authority formally assumed its role and responsibilities on 1st September, 1989 after nearly a year of operating and developing as a shadow unit. This ensured a smooth transition and the creation of an effective and efficient regional component of the national organisation. In this context the work of flood defence was identified as an important and integral element in the regional structure through the creation of a regional and five local flood defence committees.

Regional Headquarters staff are now all located at Kingfisher House, a new office building in Orton Goldhay on the outskirts of Peterborough. My Operations Manager for the Eastern Area is based at the Area Office in Cobham Road, Ipswich which also serves the Essex Local Flood Defence Committee's area and is now the site of the Suffolk District Office. Operations staff covering Norfolk are situated in offices at 79, Thorpe Road, Norwich which is also the base for the Area's Operations Engineer. The Haddiscoe Depot continues to provide important stores and riverside loading facilities as well as steel fabrication and plant maintenance workshops.

The emphasis of the capital works programme has again been concentrated on the improvement of sea and tidal river defences. It came as a considerable relief when the long awaited Aldeburgh Sea Defence scheme got underway in November at a ceremony attended by the Minister of Agriculture, Fisheries and Food and local constituency M.P., John Gummer. The £10 million improvement scheme for Great Yarmouth Flood Defences is nearing completion but the ever-present risk of extensive saltwater flooding in Broadland remains a major concern.

This concern for the ever-present but growing natural pressure of the elements is heightened by anxiety for the availability of the considerable funds which will be necessary for our sea defence problems to be tackled effectively. The introduction of the Community Charge system has apparently placed additional pressure on the County Councils, so that they are obliged to revise all their financial obligations, including their vital contributions to our flood defence service. The Local Flood Defence Committee is particularly concerned by these developments because any reduction in commitment would have far-reaching, critical consequences for its programme of top priority sea defence works, an example of which is the Happisburgh to Winterton Sea Defence Groynes Scheme which has already suffered delay.

There have not been any major flooding incidents during the year, but our new emergency flood warning procedures were well tested during a four-day period of surge tide warnings at the end of February. Ample evidence of the susceptibility of 'soft' sea and estuary defences to storm damage was provided during January when gale force winds from the usually favourable southerly quarter caused extensive and widespread erosion necessitating urgent remedial works which were effected expeditiously by the in-house workforce.

Clive Mason

Regional Manager
(Flood Defence and Operations)

OPERATIONS REPORT - 1989/90

CAPITAL WORKS

A schedule setting out scheme-by-scheme all expenditure incurred during the year on capital works is included in the accounts summary at the end of this report.

The Committee approved a £4 million capital programme when the grant earning ceiling was set at £3.3 million. The basic grant rate is 45 per cent with a supplement of 15 per cent for tidal and sea defence works.

It was possible to accelerate the programme when additional grant income was made available due to a Regional reallocation of the grant ceiling which increased this Committee's share to £3.6 million.

In the event, the final outturn on grant eligible capital works was £4.15 million with a further £200,000 being expended on non grant-aided minor capital works. Year end expenditure on the appraisal, design and supervision of capital schemes by both in-house staff and consulting engineers totalled £735,500.

The following is a brief resume of the more major capital works which have been undertaken during the year under review:-

FRONTAL SEA DEFENCES

Aldeburgh Sea Defences

Expenditure 1989/90 - £962,589

The first phase of the improvement of the sea defences to the south of Aldeburgh was commenced by The Rt. Hon. John Selwyn Gummer, M.P., Minister of Agriculture, Fisheries and Food on the 4th November, 1989. A £1.2 million contract awarded to May, Gurney & Co. Ltd. included new steel toe piling along a 300 metre length of the sea wall fronting the Martello Tower, the provision of new riprap rock aprons and grouting of voids beneath the existing wall. These works were nearing completion at the year end.

Felixstowe Ferry Sea Defences

Expenditure 1989/90 - £196,773

Contract works completed during the first half of the year by May, Gurney & Co. Ltd. are designed to contral erosion along the toe of the clay defence bank near to the Sailing Club at Felixstowe Ferry. The works comprised the construction of a new groyne and the installation of concrete blockwork revetment.

A specialist study is currently being undertaken by consultants to develop a long term strategy for the management of coastal sediments at the mouth of the River Deben for the benefit of the adjoining sea defences.

TIDAL RIVER DEFENCES

Great Yarmouth Flood Defences

Work has continued on the comprehensive improvement of the flood defences in Great Yarmouth with an overall expenditure during the current year of £1.5 million.

The urban area has been divided into nine discrete compartments to limit the risk of flooding. The work falls generally into three categories: the replacement of old quay walls with new steel sheet piling surmounted with improved flood defences, the construction of new concrete floodwalls and the heightening of existing flood defences where these are in good condition. The improvement in the level of defences has resulted in the walls being raised by up to 500 millimetres.

Construction during the year has taken place in the following areas:-

Compartment A - Gorleston

Expenditure 1989/90 - £76,968

The improvement of 220 metres of floodwall was completed by Tilbury Construction at Brush Bend. This work involved the construction of a retired line floodwall and improvements along Gorleston sea front to contain extreme wave action at the Harbour Mouth.

Compartment C - Southtown/Cobholm

Expenditure 1989/90 - £443,598

Work in this compartment has been directed to the improvement of the flood defences between the Haven Bridge and the A47 Great Yarmouth bypass. The work involved the construction of 412 metres of new floodwall and the raising of 103 metres of existing floodwall with the contract being carried out by Tilbury Construction.

Compartment E - Bure Loop

Expenditure 1989/90 - £300,807

The works commenced by W.A.Dawson in 1988/89 to raise 1,028 metres of flood defence on the right bank of the River Bure were completed during 1989. A further contract was awarded to John Martin Construction for the renewal of 218 metres of flood defence to the north of Runham Road.

These improved defences could still be outflanked in the event of major breaching of the upstream river walls.

Compartment F - Caister

Expenditure 1989/90 - £302,196

John Martin Construction have completed the rebuilding of 600 metres of new flood defence in the Yacht Marina area.

The frontline flood defences have now been improved from the A47 to the Bure Park over the last three years as part of the comprehensive scheme. However, there remains a risk of flooding of low-lying properties at Caister because of the poor standard of the river walls around the 'Bure Loop'.

Compartment G - Town Hall Area
Expenditure 1989/90 - £368,136

W.A.Dawson have completed the repiling of 266 metres of quay adjacent to the Haven Bridge.

Compartment H - South Yarmouth
Expenditure 1989/90 - £27,787

The continued improvement of the quayline defences has involved the in-house labour force raising existing defences at 2 working quays.

River Bure, Right Bank - Erosion Control Works

Phase 1. Scare Gap to Runham - Expenditure 1989/90 - £84,900
Phase 2. Stracey Arms to Scare Gap - Expenditure 1989/90 - £75,150

Works have continued using in-house labour on this scheme which is for the construction of anchored steel sheet piling to prevent undermining of the riverside flood embankments by erosion from boat wash. 340 lin. metres of bank have been protected around "Bure Loop" and work has commenced on driving a further 180 lin. metres of piling upstream of Scare Gap.

River Yare, Left Bank, Halvergate Marsh Erosion Protection Scheme
Expenditure 1989/90 - £199,180

Piling works to secure the integrity of the flood defences protecting the 'Halvergate Triangle' have been substantially completed during the year in front of Seven Mile House (148 metres), downstream of Seven Mile Bend (130 metres) and at Ashtree Farm (84 metres). The construction, which has been carried out by the in-house workforce, has necessitated the use of waterborne plant.

River Deben - Woodbridge and Melton Walls
Expenditure 1989/90 - £115,689

Approval in principle has been received from the Ministry of Agriculture, Fisheries and Food to the comprehensive improvement of the tidal flood defences protecting the towns of Woodbridge and Melton. The first contract worth £836,650 has been awarded to May Gurney & Co. Ltd. for the raising of the existing defences over a distance of 850 metres between the Deben Yacht Club and the Tide Mill Yacht Harbour.

INLAND WATER

River Gipping - Stowmarket Flood Protection Scheme
Expenditure 1989/90 - £716,685

Work is now virtually complete on the urban flood protection scheme in Stowmarket and Needham Market. The work has involved the provision of two flood storage reservoirs on the Rivers Rat and Gipping and associated channel improvement works.

MAINTENANCE WORKS

The maintenance works programme again comprised a combination of specifically identified "rolling programme" projects and routine operation and general maintenance activities. A summary of the works undertaken by the two operational districts and the expenditure incurred on the revenue account is given below:-

Expenditure

£'000

Frontal Sea Defences

Works have been carried out to strengthen and heighten the River Burn outfall clay bank in North Norfolk and the shingle bank at Slaughden to the south of Aldeburgh. Following storm surges, urgent repairs have been undertaken on damaged "soft" defences at Old Hunstanton, Holme, Brancaster, Wells, Dunwich and Easton Broad.

Routine activities have included works to reduce pedestrian damage to the sand dunes along the Happisburgh to Winterton frontage, groyne repairs, installation of flood boards and operation of gates as necessary.

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Tidal Banks and Embankments

In Norfolk, piling works to combat erosion have been carried out on the River Bure at Upton and at various locations on the Rivers Ant and Chet. Wall raising works have been undertaken at Langley on the River Yare, Runham on the River Bure, North Cove and Somerleyton on the River Waveney and on Carleton Beck. Urgent remedial works were necessary on the North Breydon Wall revetment, along Haddiscoe New Cut and on the River Waveney embankments at Wheatacre.

Along the Suffolk tidal rivers, wall raising and revetment reconstruction works have been widespread. Sites have included Union Farm, Walberswick, Tinkers Marsh and Southwold Town Marsh on the River Blyth, Iken and Sudbourne walls on the River Alde, Waldringfield wall on the River Deben and Hill Farm Marsh on the River Orwell.

In addition, numerous serious leaks have been stopped, a limited wall grass cutting programme has been introduced and good progress has been achieved on the updating of crest level surveys.

503

Tidal River Structures

£'000

Maintenance of major structures has been undertaken as necessary, the most noteworthy case being extensive repairs on the Ipswich Docks floodgates following failure of the hydraulic operating mechanism.

A collapsed outfall culvert at Felixstowe Ferry has been replaced and several serious blockages at tidal sluices had to be cleared.

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Main River Dredging

The planned programme of maintenance dredging was successfully completed. All dredging operations were preceded by a biological river corridor survey.

A total of 60 kms of main river have been dredged during the year.

185

Aquatic Weedcutting

The majority of the weedcutting programme was carried out using weedboats although the very low flows created problems in some areas.

The extent of weedcutting operations was kept under careful control but the warm weather gave rise to copious growth and two cuts proved unavoidable on some rivers in order to maintain a clear channel.

An effort has been made to clear some of the more minor watercourses which have been getting progressively choked due to lack of maintenance in recent years.

The total length of main river cut was 360 kms.

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Fluvial Embankments

Wall maintenance and strengthening work was undertaken on the River Waveney above Beccles and at Postwick on the River Yare.

Breaches have been repaired at Ufford on the River Deben and bank stabilisation works have been carried out on the Rivers Alde and Deben and along the Wissett Watercourse.

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Expenditure

£'000

Inland Structures

Major refurbishment of structures and gate operating equipment have been undertaken at Pipp's Ford on the River Gipping, Earsham Sluice on the River Waveney and Bintree Mill on the River Wensum. Emergency repairs were also necessary to the sluices at Burgh Lock on the River Bure following their collapse.

Routine clearance, inspection and maintenance was carried out on all primary structures.

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Clearance of Obstructions

Removal of fallen trees and accumulated debris from fluvial main rivers has been undertaken as necessary with particular attention to mills and other control structures.

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Pumping Stations

Acle Pump has operated satisfactorily except for one breakdown which resulted in local flooding to marshland. Pumping hours have been significantly lower this year due to the decreased run-off.

The installation of a weed clearing machine has greatly improved the maintenance of Benacre Pumping Station.

The local Internal Drainage Board have continued as agents for the day-to-day maintenance of Hollesley Pumping Station.

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SEA DEFENCE WORKS



Aldeburgh Sea Wall Rock Apron



Felixstowe Ferry Blockwork Revetment

TIDAL RIVER DEFENCE WORKS



River Bure – Scare Gap



River Deben – Woodbridge

NORTH NORFOLK MAINTENANCE WORKS



River Hun Outfall



River Burn Outfall Bank

STORM DAMAGE



River Alde – Estuary Walls



Sea Wall at East Lane, Bawdsey

HYDROLOGICAL REPORT

RAINFALL, RIVER FLOWS AND FLOODING

General

The year 1989/90 was again one of low rainfall, with no significantly high river flows. There were several occasions on which moderately high tides were experienced and a period of 4 days (26th February - 1st March, 1990) when the evening tides were above or close to danger level along most of the coast.

Rainfall

The monthly rainfall totals for the area are shown in Table 1 below.

Table 1

Period	Average (mm) 1941-70	1989-90	
		mm	% long term
April 1989	40	65	162
May	44	8	18
June	46	73	159
July	58	34	59
August	65	34	52
September	54	28	52
October	57	35	61
November	68	31	46
December	57	89	156
January 1990	55	49	89
February	44	79	180
March	41	17	41
Total for year	629	542	86

The total annual rainfall was only 86% of average and only four months had totals greater than average. In general, the rainfall was higher in the north coast area than the south.

April 1989 was generally wet but then the period from May to November was relatively dry, with only 62% of the average rainfall for the area being recorded. The beginning of June was generally wet but during the rest of the period the rain was due mainly to occasional heavy bursts of rain, amounting to some 20-30 mm. These tended to be localised and mostly in Norfolk.

In December, there were two notable rainfall events. The first, on the 13th-14th, amounted to over 30 mm in places, and the second, on the 18th-20th, produced totals in excess of 50 mm in the area to the south and west of Norwich. There were two further significant rainfall events in February, on the 3rd and the 28th. Up to 25 mm was recorded for each of these, although the latter only affected Norfolk.

A soil moisture deficit was again maintained throughout the winter, although it fell to near zero in January.

River Flows

River flows were at normal levels during April 1989 but fell rapidly during May and reached their lowest level of the year towards the end of August. Baseflows recovered slightly afterwards but remained low until the rain in December raised them to nearer normal.

Relatively high flows resulted from the rainfall events at the end of December and the beginning and end of February and there was some minor valley flooding in places.

The lack of rain in March resulted in flows falling to well below average at the end of the month, particularly the rivers in Suffolk.

Groundwater Levels

Groundwater levels were well below average in April 1989 and fell during the summer to reach levels below the seasonal minimum over a large part of the area by October.

Some recharge took place after the rain in December and groundwater levels rose during the following three months although they were still well below average in March 1990.

Tidal Flooding

There were several periods of prolonged gale force winds during the winter, some of which resulted in tidal surges and high water levels.

On the first two occasions, in September and October 1989, modest surges coincided with high spring tides and produced levels just below danger level at Wells. This occurred on three tides on each occasion but, as conditions were calm, no problems were experienced. These events were only of significance on the North Norfolk coast.

The third event was in January 1990, when a surge of about 1.0 metres coincided with a moderate tide. Maximum levels at Wells and Great Yarmouth were below danger level and, although winds were strong, they were south-south westerly and so offshore over the most vulnerable parts of the coast. There was some minor flooding, particularly in the Southwold area.

The final event was a prolonged period between 26th February and 1st March 1990 when four successive evening tides exceeded danger levels over most of the coastline. The levels attained are summarised in Tables 2 and 3. This was a period of high spring tides which coincided with surges of 0.8 - 1.0 metre. The maximum surge occurred just before high tide on each occasion, making the high tide slightly early. Although winds were strong, for the first three days they were mainly SW-W, giving fairly calm seas. On the final day they changed to become more NW giving rougher seas on the North Norfolk coast in particular.

Although levels were not high enough to cause any significant flooding, there was considerable damage to "soft" defences and extensive seepage through river banks in Broadland.

The successive high tides resulted in penetration of saline water into the river system. There were particular problems in the River Thurne at Potter Heigham where fish were overwintering. A timber dam was constructed to provide a freshwater refuge.

Table 2

Levels attained by evening high tides at coastal tide recorders

	Danger level	26/2/90		27/2/90		28/2/90		1/3/90	
		Predicted level	Actual level	Predicted level	Actual level	Predicted level	Actual level	Predicted level	Actual level
Wells	3.7	3.0	3.76	3.1	3.97	3.1	3.88	2.9	3.83
Gt.Yarmouth	2.1	1.1	2.09	1.1	1.94	1.1	1.50	1.1	1.84
Felixstowe	2.6	1.9	2.85	2.0	2.87	2.0	2.96	2.0	2.78

All levels are in metres AODN

Table 3

Levels attained at inland tide recorders by corresponding tides

	26/2/90	27/2/90	28/2/90	1/3/90
Acle Bridge	0.88	0.92	0.91	0.99
Cantley	-	1.40	1.38	1.51
Carrow Bridge	0.88	0.90	-	1.00
Beccles	1.08	1.14	1.15	1.23
Ellingham	1.18	1.26	1.22	1.36

All levels are in metres AODN

FINANCIAL REPORT

Notes

1. The results are subject to audit.

2. Notes to the statement:-

A. Operating and Management Expenditure

Total expenditure is 1% underspent against the revised estimate.

B. Income

The increase in miscellaneous income reflects the sale of plant and machinery surplus to requirements.

C. Capital Expenditure

The increase in the revenue contributions to capital outlay reflects accelerated spending so as to maximise the take-up of grant for the year.

D. Reserves

The increase in item (iii) reflects additional interest of £87K and the surplus on the transport and plant account of £50K: the surplus was used to purchase new plant which is included in the non grant-aided capital expenditure.

FINAL ACCOUNTS 1989/90 (£000)

NORFOLK AND SUFFOLK FLOOD DEFENCE DISTRICT

A. <u>OPERATING AND MANAGEMENT EXPENDITURE</u>			
Divisional	Revised	Out-turn	
Maintenance Works	1989/90	1989/90	
Main River	622	661	
Sea Defences (including Tidal)	851	806	
Flood Warning	16	3	
Other	25	25	
Land and Properties	-	-	
Other Expenditure	52	41	
Administration and General Charges	1,120	1,122	
TOTAL OPERATING AND MANAGEMENT EXPENDITURE	2,686	2,658	
 Revenue Contribution to Capital Outlay	 2,642	 3,011	
Financing Charges (Dep'n and Interest)	131	146	
TOTAL EXPENDITURE	5,459	5,815	5.7
 <u>Less INCOME</u>			
Precepts	4,848	4,848	4.5
General Drainage Charges	512	514	
Government Grants/Deferred Credits	-	1	
Miscellaneous (incl. Land Sales)	24	81	
TOTAL INCOME	5,384	5,444	5.6
 NET SURPLUS/(DEFICIT) TRANSFERRED TO RESERVE	 (75)	 (371)	
 B. <u>CAPITAL EXPENDITURE</u>			
Grant Aided Works	3,794	4,153	
Non Grant Aided Works	200	196	
Capital Salaries	545	740	
	4,539	5,089	
 Less:-			
M.A.F.F. Grant	1,897	2,078	
Capital Contributions	-	-	
Revenue Contribution to Capital Outlay (in Section A above)	2,642	3,011	
 C. <u>RESERVE</u>			
(i) Balance brought forward at 1/4/89	(97)	(97)	
(ii) Transfer of Operating Surplus/(Deficit)	(75)	(371)	
(iii) Transfers/Interest, etc.	205	342	
(iv) Balance carried forward to 31/3/90	33	(126)	

Land Drainage Capital Schemes

(1) Tidal and Sea Defences

	Cumulative Expenditure 31.3.89 (£)	Direct Expenditure 1989/90 (£)
R. Deben, Tomlin Wall, Kirton	709,280	3,000
Gt. Yarmouth Flood Defences, Comp. F.	992,075	302,196
Gt. Yarmouth Flood Defences, Comp. H.	330,843	27,787
Gt. Yarmouth Flood Defences, Comp. G.	1,077,406	368,136
Gt. Yarmouth Flood Defences, Comp. E.	147,001	300,807
Gt. Yarmouth Flood Defences, Comp. A.	133,809	76,968
Gt. Yarmouth Flood Defences, Comp. C.	537,600	443,598
Felixstowe Ferry Sea Defences	79,743	196,773
Cley Sea Defences	7,000	
River Yare Piling	188,133	199,180
River Deben, Woodbridge	78,465	115,689
River Bure Piling Ph.1.	318,452	84,898
River Bure Piling Ph.2.	-	75,154
Aldeburgh Sea Defences	285,577	962,589
Sea Defence Management Study	-	268,898
Happisburgh Groyne recon. Consultants Study	46,231	33cr.
		<u>3,425,640</u>

(2) Inland Waters

River Waveney, Gillingham	752,068	10,865
River Gipping, Stowmarket	207,124	716,685
		<u>727,550</u>

(3) Other Direct Capital Expenditure

Non Grant-Aided

Knoddishall and Aylsham F.A.S.	45,000	15,000
Various Minor Schemes	-	1,108
Plant Purchases	-	49,994
Yare Basin Floodwall	16,254	29,180
Yare, Right Bank, Piling Works	-	104,778
		<u>200,060</u>

(4) Salaries Charged to Capital (additional to direct costs above)		<u>183,752</u>
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(5) Fees charged to Capital (additional to direct costs above)		551,762
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Summary

(1) Tidal and Sea Defences - grant eligible schemes		3,425,640
(2) Inland Waters - grant eligible schemes		727,550
(3) Other - Non grant-eligible		200,060
(4) Salaries charged to Capital		183,752
(5) Fees charged to Capital		551,762
		<u>5,088,764</u>