EA NW LEAPS

catchment management plan

ALT CROSSENS

action plan

October 1996

ENVIRONMENT AGENCY

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Errata

p8 Fourth para. and p22 Issue 11 should read Merseyside Waste Disposal Authority (MWDA).

p19 Issue 1 timescale extended to year 2000.

p21 Issue 8 timescale extended to year 1997.

p32 RE1 pH score limits are 6.0- 9.0 .

Additional Note:

Requests for information from the public register can be obtained from the Customer Service Centre located at the Preston Area Office.

This Action Plan has been produced following the consultation exercise carried out between February and April 1996. This Catchment Management Plan was initiated by a predecessor authority, the National Rivers Authority. This plan therefore deals with the management and protection of the water environment. The plan provides an overview of the catchment, but concentrates on the issues, highlighting timescales and costs where known. For detailed catchment information and supporting text relating to these issues, the reader should refer back to the Alt/Crossens Consultation Report (February 1996).

Front Cover: River Alt
at Croxteth Park

FOREWORD

The Alt/Crossens Catchment Management Plan is a major stride forward in achieving the Agency's vision for the future improvement and integrated management of the catchment. It has been produced following widespread consultation with users of the catchment. For us the Action Plan is only the beginning. Through collaboration and commitment we will turn these words into reality on the ground and ensure that we are all able to use and enjoy our rivers.

P GREIFENBERG
Area Manager
Central

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ALT/CROSSENS
CATCHMENT MANAGEMENT PLAN

ACTION PLAN

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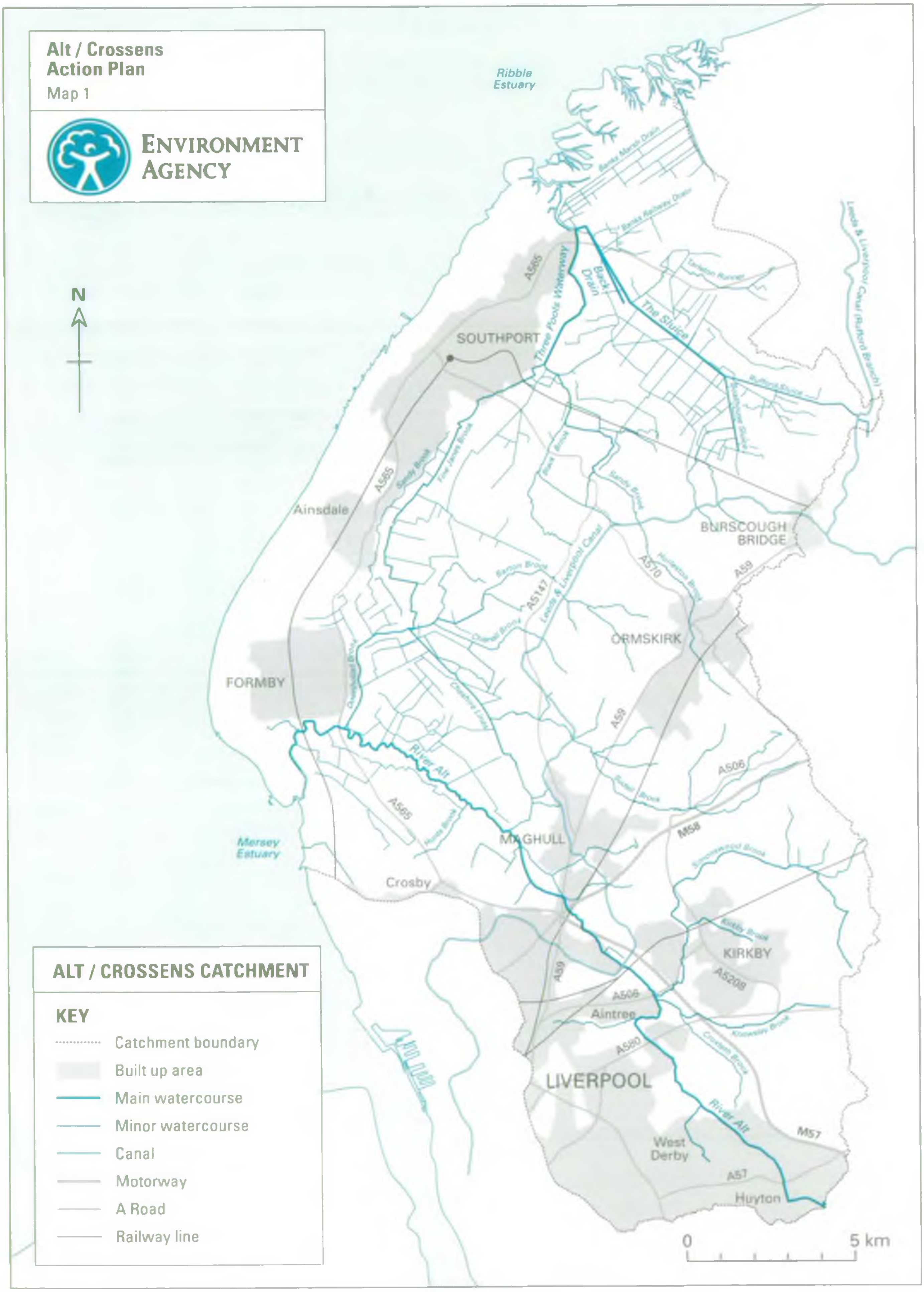

Alt / Crossens
Action Plan
Map 1
ENVIRONMENT AGENCY
N
Ribble Estuary
Mersey Estuary
SOUTHPORT
Ainsdale
FORMBY
Crosby
MAGHULL
ORMSKIRK
BURSCOUGH BRIDGE
KIRKBY
Aintree
LIVERPOOL
West Derby
Huyton
Three Pools Waterway
Back Drain
The Sluice
River Alt
Leeds & Liverpool Canal
Leeds & Liverpool Canal (Rufford Branch)
A565
A570
A5147
A59
A506
A5208
A580
A57
M58
M57
ALT / CROSSENS CATCHMENT
KEY
Catchment boundary
Built up area
Main watercourse
Minor watercourse
Canal
Motorway
A Road
Railway line
0
5 km

1.0 VISION FOR THE CATCHMENT

To realise the environmental potential of the Alt/Crossens Catchment, the Environment Agency will work in partnership with catchment users to create and maintain a balanced water system, to meet both their needs and demands and those of the environment. In pursuit of this the Environment Agency is closely involved with the Mersey Basin Campaign and the Alt 2000 initiatives.

The Environment Agency vision for the catchment in twenty-five years is as follows:

- There will be a standard of water quality throughout the catchment which enhances the amenity of the surroundings, allowing coarse fisheries to be established throughout the catchment and promoting other legitimate water based uses.

- The type and location of development within the river corridor and flood plain will have been minimised through liaison with local planning authorities, increasing green corridors, thereby reducing flood risk, enhancing conservation interests and avoiding unnecessary overloading of sewerage systems.

- River water levels within the catchment will satisfy the interests of flood defence, irrigation/abstraction, conservation, fisheries and recreation.

- Resources will be managed and protected, enabling sustainable use which ensures no unacceptable detriment to water users, watercourses or other groundwater dependant features.

- There will be an increased biodiversity of the natural habitat along the river corridor and improvements to the ecological value and protection of the archaeological value of wetland areas, based on existing National Rivers Authority initiatives and in partnership with other organisations.

2.0 THE PLANNING PROCESS

2.1 THE ENVIRONMENT AGENCY

The Environment Agency began its work of managing the environment in England and Wales on 1 April 1996. The Agency has responsibilities which work towards environmental management of water, land and air. This Catchment Management Plan was initiated by a predecessor authority, the National Rivers Authority. This Plan therefore deals with the management and protection of the water environment.

2.2 CATCHMENT PLANNING PROCESS

The four key stages of the process:

There are four key stages of the process:

(i) *The Consultation Report*

The report proposed a vision for each catchment. It identified uses and activities, issues and potential solutions. Supporting information was also enclosed to enable the document to provide long term reference which may now be read in conjunction with this action plan.

(ii) *Consultation Period*

The consultation report was widely circulated to all interested organisations and parties and comments were welcomed from any member of the public. The consultation period extended over three months following the publication of the report and the responses provide an indication to the Agency that the major issues had been correctly identified within the catchment.

One of the objectives of Catchment Management Planning was to involve all interested parties in the planning for the future well-being of the catchment. The Environment Agency is therefore committed to the concept of public consultation on all future Management Plans.

(iii) *Translation of the Document into Action Plan*

In order to produce the Action Plan, the issues had to be confirmed and timescales agreed with the responsible body. In some cases solutions were not always possible within the 5 year plan. In these circumstances the issues have been defined but are identified as "Future" in the Activity Plan. (Section 4).

(iv) *Future Review and Monitoring*

The Environment Agency will be jointly responsible, with other identified organisations and individuals, for implementing this Action Plan. Progress will be monitored and normally reported annually, by means of a review document which will be publicly available. The review document will comprise the following information:

- A detailed comparison of actual progress against planned progress.

- Identification of additional actions to maintain progress in the light of changes in the Catchment.

2.3 REVIEW OF THE CONSULTATION PROCESS

The Regional Flood Defence Committee and the Regional Rivers and Regional Fisheries Advisory Committees were consulted prior to the document being released publicly. On February 2nd 1996 the public launch of the report took place at the Aintree Racecourse, Liverpool and marked the start of the external consultation process. Over 150 key consultees were invited to attend. This coincided with press releases and local radio interviews.

In addition over 400 copies of the report and at least 1,000 summary leaflets were circulated to local authorities, industrial, environmental, sports and charitable organisations as well as individuals within the catchment. Further, the Environment Agency liaised with local public libraries within the catchment to ensure that copies of the document were available from these establishments upon request.

The consultation process resulted in an increased awareness of catchment planning. A total of 27 responses were received providing constructive comments and general support for the Plan. The comments raised were fully considered in preparation of the Action Plan and incorporated where appropriate.

3.0 OVERVIEW OF THE ALT/CROSSENS CATCHMENT

3.1 GENERAL

The area considered covers the River Alt and tributaries, the catchment to Crossens Pumping Station and the Sefton and West Lancs Coast.

Alt Catchment

The River Alt rises in Huyton and flows 28km to its tidal limit at Hightown. The catchment area includes North Liverpool, Knowsley, Aughton and Ainsdale.

The Alt catchment can be divided into two main sections.

Upstream of Maghull the river drains mainly urban and industrial areas. The watercourses through these urban areas have been heavily canalised for flood defence purposes to deal with increased surface water run-off from earlier urbanisation. Water quality problems in this stretch of the River Alt are generally associated with inadequately treated sewage discharges from wastewater treatment works and discharges from combined sewer overflows. Water quality problems in the tributaries are generally associated with wrong connections of foul drainage to the surface water system. As a result of the above impacts and the physical characteristics of the watercourses, the Alt catchment is unable to support a sustainable coarse fishery and other flora and fauna are severely limited in their distribution.

Downstream of Maghull, the catchment consists of a predominantly pumped drainage system which flows through a low lying rural area. Through this rich intensively farmed mossland, the river is contained by artificially constructed embankments. There are some gravity fed tributaries in this area, comprising a mixture of artificial channels and heavily modified watercourses. The sewage inputs to the upstream area of the Alt catchment also affect the water quality in this downstream area. In addition to the sewage discharges, polluted and enriched agricultural run-off is a significant cause of water quality problems in the downstream catchment.

The River Alt falls within the scope of the Mersey Basin Campaign and the Alt 2000 initiative.

Crossens Catchment

The Crossens catchment comprises three main watercourses: The Sluice rising to the east of Rufford; Middle (also known as Back) Drain which drains the central area of mosslands; and Three Pools which rises in the south east corner in Ormskirk and flows north westwards, skirting Southport.

All three support a coarse fishery within the pumped drainage network. Water quality problems are generally associated with discharges from combined sewer overflows and diffuse inputs from agricultural and horticultural activities.

More than a third of the area is below the high water mark of ordinary spring tides. The northern part of the catchment is protected from the sea by an embankment and the southern part protected by sand dunes. The pumping station at Crossens serves a dual role, primarily for land drainage but during dry weather it maintains higher water levels to alleviate lowland peat shrinkage. An additional facility as a result of maintaining water levels in the system is the ability to supply water for spray irrigation during the summer season.

Before drainage commenced in the 1790's, the low lying areas were wet and marshy with a large lake occupying the same position as the present day Martin Mere Wildlife Reserve. Today, the watercourses provide a refuge for wetland species from this earlier age, with areas of the mossland providing an internationally recognised haven for migratory birds.

Sefton and West Lancs Coast

Approximately 13,083 hectares of coastal zone have been designated as Sites of Special Scientific Interest (SSSI) due to the international importance of the sand dunes along the Sefton Coast.
The dunes are also proposed as a Special Area for Conservation (SAC) and as a Special Protection Area (SPA). These wetlands support rare species such as Natterjack toads and rare plants and provide habitats for over-wintering waders and wildfowl.

The Ribble and Alt estuaries that fall within the catchment are classified SPA's and RAMSAR sites. In respect of wildlife and conservation the NNR is known as the Ribble estuary NNR.

There are European Union (EC) designated bathing beaches at Formby, Ainsdale and Southport. Southport is a significant tourist resort on the West Lancashire coast. The coast frontage is very much part of its appeal. The beach is very flat with little slope, so the sea is very often a long way from the coast road. However, during high tide and storm conditions the coast road and adjacent area is one of the first places to flood in the North West Region.

The coastal zone falls within the scope of the Sefton Coastal Management Plan, and the Ribble Estuary Strategy.

Shoreline Management Plans are currently being developed by the Liverpool and North Western Coastal Groups, of which the Environment Agency is a member. The plans, for the coastal zones from Orme's Head to Formby Point and from Formby Point to the River Wyre, will deal specifically with coastal and sea defences but will take into account environmental considerations.

The Alt/Crossens catchment supports a wide variety of recreational pursuits e.g. walking, sailing, cycling, microlighting, fishing and bathing. Navigation takes place along the Leeds Liverpool Canal which crosses the area. There is significant potential to improve access to many additional stretches of river corridor and further enhance existing catchment uses.

3.2 USES AND ACTIVITIES

3.2.1 Effluent Disposal

The major consented discharger to the Alt/Crossens catchment is North West Water Ltd (NWW) who have 12 wastewater treatment works (WwTWs) in the catchment. These WwTWs range in size with the smallest WwTW treating a population equivalent of about 250 and the largest a population equivalent of almost 250,000.

The largest WwTWs in the catchment are Fazakerley, Southport, Hillhouse and Burscough.

There are also a number of private sewage treatment works and septic tanks operating within the catchment.

As a result of former policies of encouraging discharge of trade effluent to sewer, there are only a small number of direct industrial discharges within the Alt/Crossens catchment. These consented discharges do not tend to have a significant impact on receiving water quality.

There are several NWW Water Treatment Plants within the catchment and these are also subject to consent conditions.

Sewer overflows and pumping station overflows are located on combined sewerage systems within the catchment and are subject to consents which aim to limit the frequency of the discharge to occasions when intense rainfall occurs and adequate dilution is available within the receiving watercourse. There are in the region of 117 combined sewer overflows in the catchment. Of these 64 are currently considered to be in an unsatisfactory condition. Over the next three years 38 of these overflows will be improved or abandoned by NWW.

Areas of the catchment with separate sewers for disposing of foul drainage and surface water run-off are still liable to pollution if wrong connection of foul drainage are made to the surface water sewerage system. A number of these wrong connections have been identified particularly in the urban parts of the Alt catchment around Liverpool. Wrong connections of foul drainage to surface water sewers on Industrial Estates can also cause pollution problems.

Intensive agricultural activity predominates over much of the lower Alt catchment and most of the Crossens catchment. The major activity in these areas is arable farming although there are also a number of livestock farms. Discharges of silage, slurry and other farm waste can cause serious pollution problems. Diffuse pollution due to run-off from fertilisers, pesticides and herbicides can cause pollution over longer periods due to the time taken for pollutants to reach the watercourse. The pumping regimes operating in the Crossens and lower Alt catchments can further exacerbate these pollution problems.

There are currently no operational landfill sites which accept leachate-forming wastes in the Alt and Crossens catchments. However, a number of sites have been operational in the past and have now been restored and landscaped. Restored sites can still cause pollution problems. One example of this is the second extension at the restored Sefton Meadows site were leachate outbreaks are reaching nearby watercourses. A project to rectify this situation is shortly to be undertaken by the Merseyside Disposal Authority.

In addition to the above there are a number of areas within the catchment that have been identified as contaminated, for example sites on Knowsley North and South Industrial Estates. The Environment Agency will continue to negotiate terms of clean-up with the relevant local authorities and companies involved.

Intermittent Discharges

Combined Sewerage Systems

This type of sewerage system carries both foul drainage and uncontaminated surface water run-off e.g. rainfall. Combined sewer and sewage pumping station overflows are located on most sewerage systems in the catchment and are subject to consents which aim to limit the frequency of the discharge to occasions when intense rainfall occurs.

However, on many sewerage systems, particularly older systems, sewers may be overloaded and overflows may occur at a greater than acceptable frequency. There has been a reduction in the scale of problems from the sewerage systems within parts of the catchment as a result of work started in the 1970s. NWW are working with the Environment Agency to systematically survey sewerage systems and identify and improve or eliminate unsatisfactory overflows.

There are in the region of 117 combined sewer overflows in the Alt/Crossens catchment. Sixty-four of these overflows have been identified as unsatisfactory. Sewerage systems needing improvement include those serving the areas of Southport and Ainsdale.

Within the 5 year period to 2000, 38 of these unsatisfactory overflows in the Southport and Ainsdale area are due to be improved by NWW.

Separate Sewage Systems

This system uses sewerage systems for dealing with uncontaminated surface water and foul drainage. The surface water system is, however, liable to contamination from foul sewage, mainly due to wrong connections of foul drainage into the surface water drainage network. NWW have recently completed a three year project aimed at resolving the most significant contaminated surface water discharges. However, further contaminated surface water discharges have now been discovered and will require improvement work in the future.

Industrial Estates

There are a number of industrial estates within the catchment, particularly on the Alt catchment, and separate surface water drainage systems on these estates are liable to contamination. These contaminated discharges can have an impact on the receiving water.

Diffuse Sources

Intensive agricultural activity predominates over much of the lower Alt catchment and most of the Crossens catchment. The major activity in these areas is arable farming although there are a number of livestock farms. In addition a large number of horticultural sites also exist in the Crossens catchment. Discharges of silage, slurry and other farm waste from livestock farms can cause serious pollution incidents. Diffuse inputs of pesticides, herbicides and fertilisers from arable farms and horticultural premises can cause pollution over longer periods due to the time taken for pollutants to reach the watercourse. The pumping regimes operating in the Crossens and lower Alt catchments can further exacerbate these pollution problems. During the summer, artificially high water levels are maintained be reducing the pumping frequency. This in turn limits the capacity of the watercourse to disperse pollutants.

Proactive surveys are ongoing within the catchment to identify sources of farm pollution. Livestock farms identified as a result of these surveys have generally implemented farm waste containment schemes and developed farm waste management plans to ensure disposal to land of farm waste gives maximum benefits to the farmer whilst preventing pollution. Arable farms and.vegetable washing sites identified through the surveys are advised on safe storage of pesticides and best means of disposal for excess pesticides, fertilisers and vegetable washing wastes. In addition, on all farms, checks are made to ensure safe storage of oil.

3.2.2 Groundwater and Surface Water Abstractions

Groundwater may be abstracted from water bearing strata (aquifers) by means of wells or boreholes, or by making use of naturally occurring discharge, i.e. springs.

The underlying Sherwood Sandstone present in the catchment constitutes a "major" aquifer by virtue of its extent and ability to yield large volumes of generally high quality groundwater. It comprises of three units:

Fylde & Preston Aquifer

The small area of the Fylde & Preston aquifer present in the NE of the Crossens catchment contains groundwater which is likely to be saline as a result of its proximity to the Ribble Estuary. This unit is relatively under utilised as at present there is a general embargo on issuing new licences as a result of high demands north of the Ribble.

Rufford Aquifer

This aquifer is heavily used for spray irrigation within and to the east of the Crossens catchment. Much of this unit is under artesian pressure. The groundwater resources of this aquifer are now fully committed to meeting the needs of existing licensed groundwater abstractors as well as supporting surface water and related conservation interests.

Liverpool/Ormskirk Aquifer

The main Liverpool/Ormskirk aquifer has been heavily exploited in the past for public water supply and, in the urban area in the south of the Alt catchment, for industrial purposes. However, this demand has reduced in recent years to such an extent that there is now scope for considering new abstractions from the aquifer.

The Agency will ensure that proposals to further develop resources along the coast do not adversely affect recognised conservation interests which are dependant on groundwater.

Groundwater is a vital resource and under particular threat from the effects of human activity. Once polluted, groundwater is often difficult and very expensive to remediate. Therefore, preventing groundwater contamination is a major objective of the Agency.

The Agency also intends to review by 2004, on a priority basis, all Agency consents affecting SPA and SAC's. This review will include the Sefton Sand Dune system.

Consumptive Uses

Spray irrigation forms the largest consumptive use within the catchment. This represents over 51% of the total quantity of water licensed. Provision of water storage for winter flows and subsequent use in summer is increasingly part of spray irrigation schemes.

Many spray irrigation licences are subject to minimum prescribed flows or levels which require cessation of abstraction in drought conditions.

The Leeds and Liverpool Canal runs through the Alt/Crossens catchment and is a source of water for spray irrigation. The canal is fed with water from outside the catchment.

The table below shows surface water abstractions:-

Water Use	Annual Licensed Quantities	
	%	Megalitres (Ml)
British Waterways Canal Supply	3.11	162
Spray Irrigation	51.31	2670
Agriculture	0.15	8
Conservation/Wildfowl Rearing	45.43	2364

Non-consumptive Uses

Uses where the water is returned immediately (or within a very short distance) may be referred to as non-consumptive uses. Conservation/rearing of wildfowl account for approximately 45% of the annual licensed quantity abstracted from the catchment. Although they are not generally of major water resources significance their localised impact may be quite substantial by virtue of their effect on other uses.

3.2.3 Fisheries

Coarse Fishery

The waterways comprising the Crossens system are populated with coarse fish species suited to slow moving waters, namely bream, roach, tench, perch, eels and pike. All of the watercourses within the Crossens system contain a mixture of these species, at varying levels.

THE SLUICE

The Sluice is noted for its bream fishery. Three Pools Waterway and the Back Drain are mixed fisheries. Three Pools Waterway runs along the eastern boundary of Southport.

Additionally, coarse fishing is available in a variety of still waters including the Leisure Lakes at Tarleton and on the Leeds/Liverpool Canal.

The water quality of the River Alt and its tributaries is not of sufficient quality to sustain a good mixed coarse fishery.

Sticklebacks and occasional roach are present but these are limited both with regards to number and distribution.

Commercial Fisheries

There is no legal commercial salmonid fishery along the Alt/Crossens coastline. However, the section of the Ribble Estuary bounded by this catchment does have a commercial drift net fishery for salmon and sea trout. This fishery operates within a defined area and is strictly regulated.

A legal sea fishery exists within the Alt/Crossens coastal waters, mainly to catch eel, mullet and bass.

3.2.4 Recreation

A variety of leisure activities are pursued along the coast including: walking, fishing, bird watching, golfing and windsurfing. Sailing is practised out of the Alt Estuary and at Southport Lake.

Inland there is a network of paths and bridleways within the catchment, available to ramblers, cyclists and horse riders. Facilities for windsurfing/water based sports are available on the Leeds/Liverpool Canal and the Leisure Lakes at Tarleton.

3.2.5 Flood Defences

TYPICAL URBAN POLLUTION

The Alt can be divided into two main sections:-

Upstream of Maghull the river drains mainly urban and industrial areas, but has a significant inflow from the large agricultural area east of Maghull. Continuing development is putting pressure on the capacity of Deys Brook, Sugar Brook, Fazakerley Brook, Kirkby Brook and the main Alt itself. Furthermore, the river level reacts rapidly to high intensity, predominantly summer, storms.

Downstream of Maghull the Alt meanders through rich agricultural mossland, 52 square kilometres of which is below high tide level, and here the river is contained by embankments. Downholland Brook, the embanked main tributary draining the northern part of the catchment, joins the Alt just upstream of the A565 Formby bypass. Severe rainfall can cause flooding in the lower Alt, both locally and from the main river channel. The pumping station at Altmouth controls the flow of water out to the Irish Sea and large storm pumps operate when high river levels occur to alleviate potential flooding problems.

The Crossens catchment can be divided into three areas, each with a main watercourse:-

The Sluice which rises to the east of Rufford and drains much of the northern part of the catchment, with some help from Banks Marsh Drain which drains the area of the landward side of the sea defence embankment.

Middle or Back Drain which drains the Central Area of mossland and the lowest lying agricultural and horticultural land, as well as Martin Mere.

Three Pools which rises in the south east corner of Ormskirk and flows north westwards, skirting Southport. This watercourse is more susceptible to urban run-off and tends to collect more waterborne debris than the other watercourses.

All three main waterways are coarse fisheries and together they form a pumped drainage network. The lower reaches of The Sluice and Three Pools are embanked in order to convey them as "highland carriers". Crossens Pumping Station pumps flow from the three watercourses to the tidal Crossens Pool, whilst low lying land within the catchment is served by six "satellite" pumping stations.

Due to the efforts of the Agency's predecessors the Alt/Crossens catchment currently has no serious flooding problems, but the Agency is far from complacent. The rapidity of surface run-off to the river system is increasing as a result of ever increasing development, thereby leading to increased flows. Ongoing assessment of our defences is therefore necessary to ensure such problems do not develop. Indeed, to improve the overall efficiency and standard of flood protection, a major capital investment programme has recently been completed on Crossens Pumping Station.

Nevertheless, much of the low lying agricultural mossland is still liable to flooding during extreme events and a few urban areas are still at risk from severe fluvial flood events. While schemes for the protection of property can be devised there is always the possibility of an event more severe than the design standard. Thus planners of future development close to the river corridor need to be mindful of potential flood risks.

Siltation which is a long standing problem in the Alt/Crossens catchment will be addressed through operational response at the two pumping station.

3.2.6 Conservation

RIVER ALT AT BROOKSIDE

This use relates to the conservation and enhancement of natural beauty, wildlife, landscape, archaeology, and physical features associated with the aquatic environment.

The area encompassed by the Alt/Crossens catchment falls into distinct landscape types: the Sefton Coast; the Lancashire Plain or Fen; and the Liver Conurbation, all of which are on low lying relatively flat land.

The artificially dug channels of the rural areas run mainly through a mixture of improved pasture and intensive arable farmland. Due to the nature of the land it is likely that tree cover has always been relatively low, although this coverage has been severely altered by arable farming.

These rural areas are important for birds including wintering wildfowl, Barn Owls, Tree Sparrow, Corn Bunting and Grey Partridge and the wooded areas around Formby provide a refuge for the Red Squirrel.

Within the urban areas the watercourse provide a wildlife link to the countryside. They are, in places, culverted but a significant proportion run through informal amenity areas. Similar to the rural watercourses, these channels have been heavily modified.

Because of these changes many of these watercourses have limited physical features. Such physical limitations, combined with poor water quality, have a significant impact on the variety of flora and fauna associated with the watercourse.

We ensure that conservation interests are taken into account when works are proposed and mitigation when areas are affected by river maintenance, we are already looking to improve the watercourse through our own works in keeping with drainage needs of this agriculturally valuable area. We would then see working closely with outside agencies such as FWAG as the next step.

The Agency is looking to ways to improve the ecological value of the watercourse whilst maintaining the drainage requirements of this high quality agricultural land.

Within the catchment there are two Geological SSSIs: Downholland Moss and Mere Sands Wood.

The catchment also contains Martin Mere SSSI, SPA and RAMSAR which is an important wetland site owned by the Wildfowl and Wetland Trust.

These sites have also been identified by MAFF and EN as part of the water level management plan initiative.

The coastal area is of international importance. There are seven SSSIs within this coastal complex covering approximately 130 hectares. It has been proposed as a SAC and SPA and includes two NNR's.

These areas are important for wading birds and wildfowl and also for natterjack toads, red squirrels, sand-dune flora and geology.

There are also numerous sites within the catchment which are designated as of local importance. These are Sites of Biological Importance (SBI's) and proposed County Biological Heritage Sites (CBHS), Local Nature Reserves and Regionally Important Geographical Sites (RIGS).

The catchment is characterised by many areas designated as heritage landscapes.

The Agency regards mossland habitat to be very important. A rapid survey has been undertaken for Crossens and the intention is to complete similar work for the Alt in 1997. This will provide a baseline study from which work can then be assessed and this can lead to the development of collaborative projects with external bodies.

3.3 LAND USE PLANNING

DEVELOPMENT ALONGSIDE THE RIVER ALT

The Environment Agency is a statutory consultee on various types of planning application and at the draft and deposit stage of development plan preparation. The Agency seeks to influence land use to ensure new development does not adversely affect the water environment. The importance of Management Plans in this process has been highlighted in the publication of Regional Planning Guidance for the North West RPG 13 (April 1996).

Paragraph 4.20 states:

The Environment Agency is currently producing a series of management plans which are intended to bring together the management of all water based interests within individual catchment areas. Management plans are intended to provide an input to development plan policy formulation, on issues such as water and sewage infrastructure, location of new facilities, waste disposal, flood plain and sea defence planning. Planning authorities should have regard to these management plans when formulating development plan policy.

It is hoped that the LPA's will work closely with the Agency so that the above, and the actions arising from this plan can be integrated into development plans. An update of development plan preparation in the catchment is included in Appendix 6.

3.4 WATER QUALITY

The Agency uses two principal schemes for the reporting and management of river water quality: The General Quality Assessment (GQA) Scheme (see Appendix 4) and the River Quality Objectives (RQOs) Scheme (see Appendix 3). These schemes have replaced the water quality classification system previously used by the Agency. See also maps 2 and 3.

3.4.1 River Quality Objectives

The Agency has strategic targets known as River Quality Objectives (RQOs) for all rivers. RQOs provide a basis for water quality management decisions and are based on a classification scheme

known as River Ecosystem. The River Ecosystem scheme comprises five quality classes which reflect the chemical quality requirements of different types of river ecosystems.

Both short to medium term and long term River Quality Objectives were proposed in the consultation plan. These RQOs were translated into River Ecosystem classes from objectives previously set under the National Water Council Classification Scheme following public consultation in 1979.

Details of current water quality are maintained by the Agency on public register and can be obtained on request from the regional office at Warrington.

3.5 ASSET MANAGEMENT PLAN - AMP 2

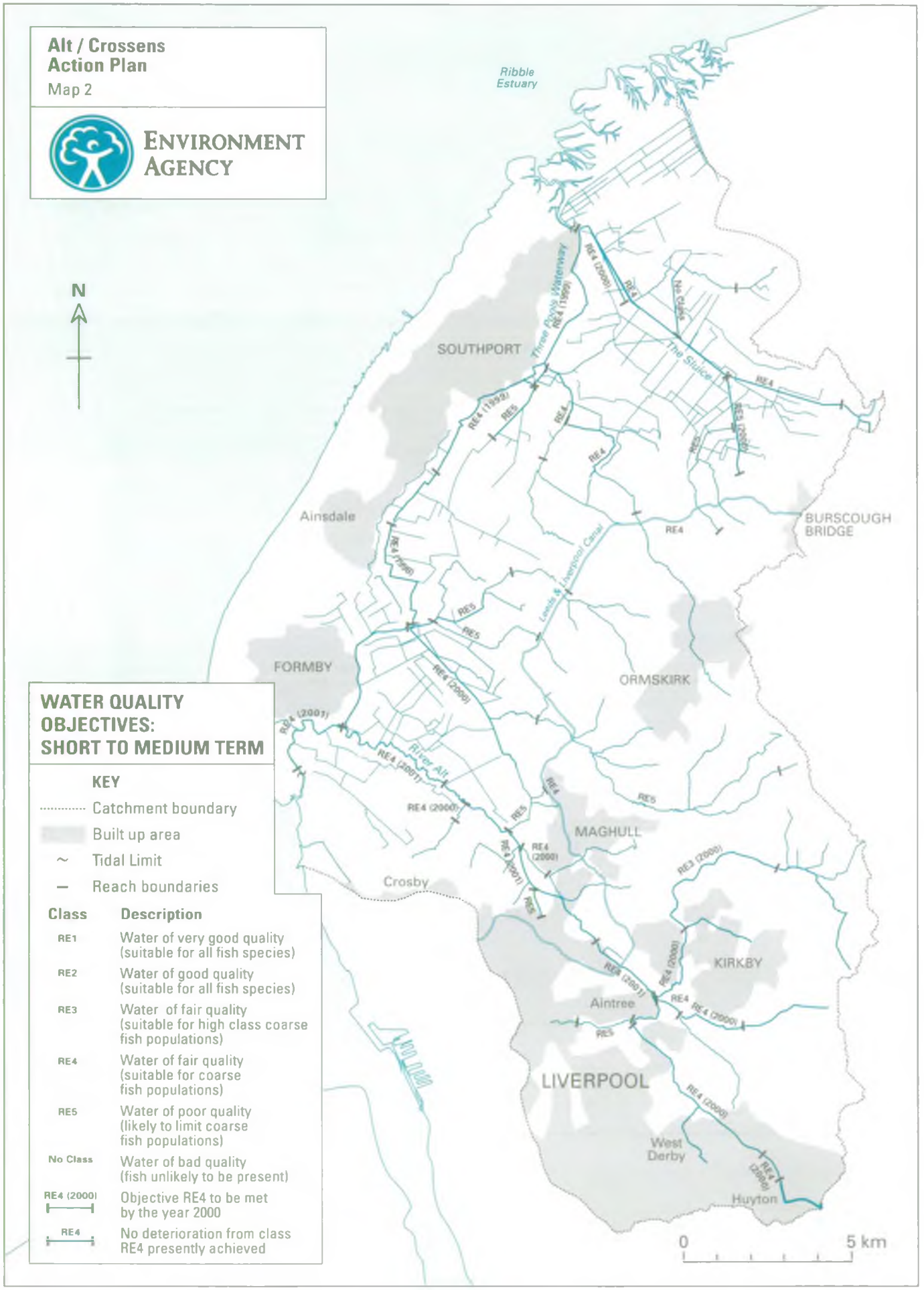
Improvements to North West Water (NWW) discharges over the next ten to fifteen years are subject to available funding approved by OFWAT, the water industry's economic regulator. Strategic business plans for these schemes were developed based on guidelines agreed between the Water Services Companies, Environment Agency, Department of Environment (DoE) and OFWAT and submitted to OFWAT early in 1994.

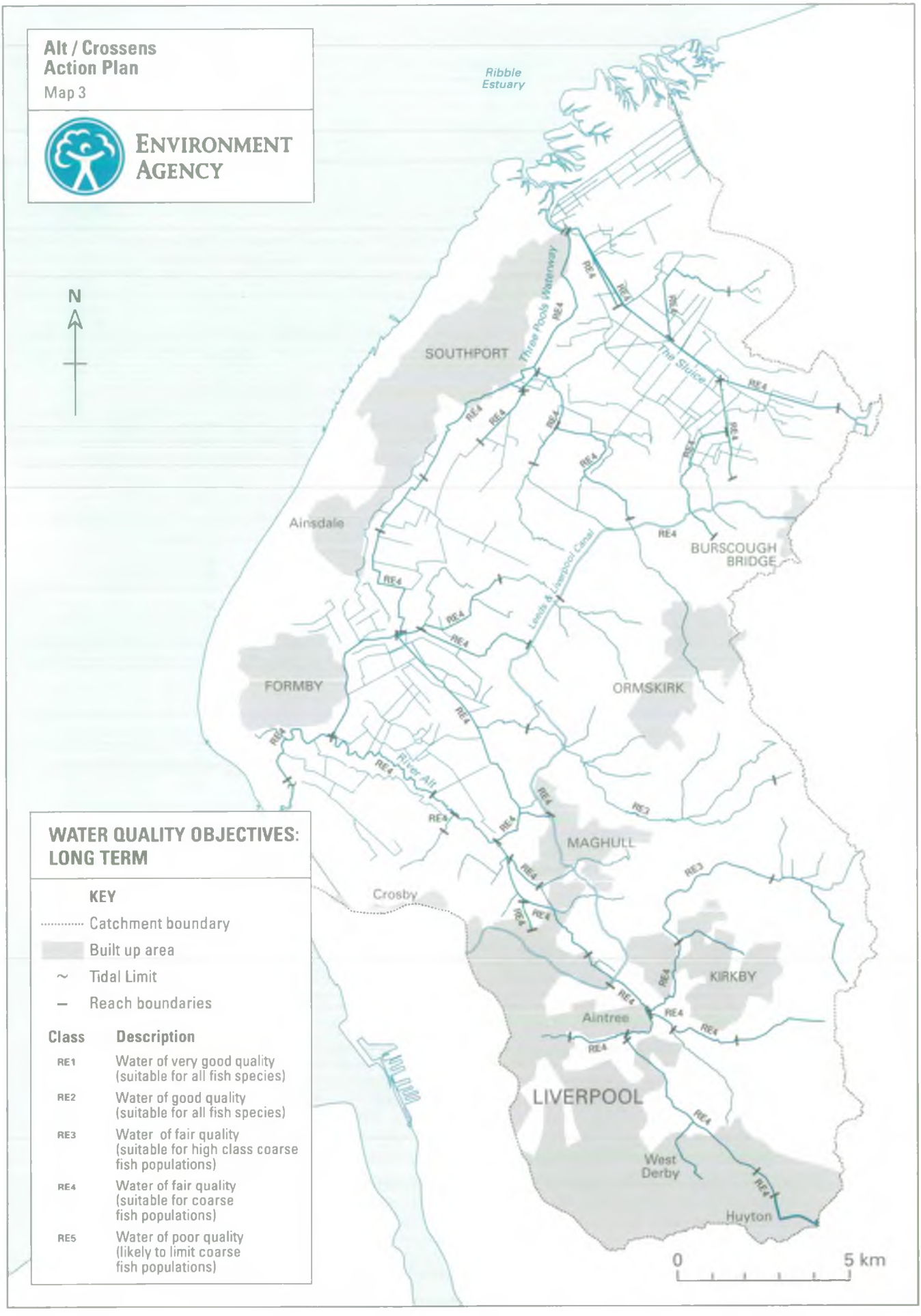
In order of priority, schemes included are:

(i) schemes required to meet and maintain current EC and domestic statutory obligations.

(ii) schemes required to meet and maintain new EC and domestic statutory obligations.

(iii) schemes, which have been separately justified, required to maintain river quality relative to the 1990 survey or to achieve river or marine improvements.


Alt / Crossens
Action Plan
Map 2
ENVIRONMENT AGENCY
N
Ribble Estuary
SOUTHPORT
Three Pools Waterway
The Sluice
No Gates
Ainsdale
BURSCOUGH BRIDGE
Leeds & Liverpool Canal
FORMBY
ORMSKIRK
River Alt
MAGHULL
Crosby
KIRKBY
Aintree
LIVERPOOL
West Derby
Huyton
0
5 km
WATER QUALITY OBJECTIVES: SHORT TO MEDIUM TERM
KEY
Catchment boundary
Built up area
Tidal Limit
Reach boundaries
Class
Description
RE1 Water of very good quality (suitable for all fish species)
RE2 Water of good quality (suitable for all fish species)
RE3 Water of fair quality (suitable for high class coarse fish populations)
RE4 Water of fair quality (suitable for coarse fish populations)
RE5 Water of poor quality (likely to limit coarse fish populations)
No Class Water of bad quality (fish unlikely to be present)
RE4 (2000) Objective RE4 to be met by the year 2000
RE4 No deterioration from class RE4 presently achieved


Alt / Crossens
Action Plan
Map 3
ENVIRONMENT AGENCY
N
Ribble Estuary
SOUTHPORT
Three Pools Waterway
The Sluice
Ainsdale
BURSCOUGH BRIDGE
Leeds & Liverpool Canal
FORMBY
ORMSKIRK
River Alt
MAGHULL
Crosby
KIRKBY
Aintree
LIVERPOOL
West Derby
Huyton
0
5 km
WATER QUALITY OBJECTIVES: LONG TERM
KEY
Catchment boundary
Built up area
Tidal Limit
Reach boundaries
Class
Description
RE1 Water of very good quality (suitable for all fish species)
RE2 Water of good quality (suitable for all fish species)
RE3 Water of fair quality (suitable for high class coarse fish populations)
RE4 Water of fair quality (suitable for coarse fish populations)
RE5 Water of poor quality (likely to limit coarse fish populations)

ACTIVITY PLANS

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
8	Impact of contaminated surface water discharges from separate sewerage systems.	Outstanding CSW problems from the original CSW three year project to be resolved. e.g.'s - Stocksbridge Village, discharge to River Alt. - Green Lane discharge to Tue Brook. - Moorhey Brook, near Maghull. - Dovers Brook, near Maghull. - Salerno Drive discharge to River Alt.	NWW	Agents/ EH/ Industry/ House-holders	Not made available.	—					
		Ensure newly identified CSW problems are resolved. e.g. Weaver Avenue (Simonswood Brook). Chisletts Close, Burscough (Boathouse Sluice). Sugar Brook, Fazakerley. Deyes Brook, West Derby.		Agents/ EH/ Industry/ House-holders	Unknown (depending on problems found).	—					
9	Impact of industry/ industrial estates and associated failures to meet objectives.	Assess impact of discharge	EA	NWW/ Owners/ occupiers	Staff Costs.	—	—	—	—	—	
		Survey industrial premises using the 'Site Right' campaign procedures.	EA	NWW/ Owners/ occupiers	Staff Costs.	—	—	—	—	—	
		Carry out necessary remedial work e.g.'s Simonswood Industrial Estate. Burscough Industrial Estate.	Owners/ occupiers		Unknown (depending on problems found).	—	—	—	—	—	
10	Impact of farming.	Improve understanding of pollution problems by providing advice/information to the agricultural community.	EA	MAFF MFU ADAS	Staff Costs.	—	—	—	—	—	
		Provision of "on farm" pollution prevention facilities where watercourse is affected by farming inputs e.g. Chisnall Brook.	EA FWAG Farmers		Unknown (depending on problems found).	—	—	—	—	—	
		Promote set-aside buffer strips alongside watercourse.	MAFF	EA	Unknown	—	—	—	—	—	

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
11	Impact of leachate from waste disposal sites.	Undertake chemical study of the surface water sewer, St Helens Gutter, Dovers Brook and River Alt downstream.	EA	MWDA	Staff Costs.	—					
		Identify landowner for Sefton Meadows and Sefton Meadows extension 1.	EA		Staff Costs.	—	—				
		Undertake investigative study of Sefton Extension 2 and draw up solutions for containment of leachate.	MWAD		Not made available	—					
		Remedy known leachate problem at Sefton Meadows Extension 2 by improving containment.	MWAD		Not made available	—	—	—			
12	Impact of leachate from contaminated land.	Undertake detailed investigation to determine extent of groundwater and surface water contamination.	LA/ Developer/ Site owner		Unknown (depends on nature of site).	.....	.....	.....	.....	.....	
		Determine 'land use' criteria and set quality standards accordingly.	LA/ Developer/ Site owner		Unknown (dependent on future land use).	.....	.....	.....	.....	.....	
		Remedy situation by removing pollutants.	LA/ Developer/ Site owner		Unknown (solution dependent)	.....	.....	.....	.....	.....	
13	Impact of highway drainage and urban run-off.	Identify existing discharges requiring remedial work in liaison with the appropriate Highways Authority.	EA	Highways Authority	Staff Costs.	—	—	—	—	—	
		New discharges to be dealt with under latest pollution prevention guidelines at planning stage.	EA	Highways Authority	Unknown (solution dependent)	.....	.....	.....	.....	.....	
		Improve drainage arrangements on existing discharges (reed bed maintenance, oil interception, silt traps) to limit pollution.	Highways Authority		Unknown (solution dependent)	.....	.....	.....	.....	.....	

4.0 ACTIVITY PLANS

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
1	Failure to meet objectives below Fazakerley WwTW.	Install additional treatment at Fazakerley WwTW. Trade effluent control	NWW NWW	 EA/ Owners/ Occupiers	Not made available.	___	___	___	___		
2	Failure to meet objectives below Hillhouse WwTW.	Install additional treatment at Hillhouse WwTW.	NWW		Not made available.	___	___	___	___	___	
3	Failure to meet objectives below Ainsdale WwTW.	Install tertiary treatment at Ainsdale WwTW.	NWW		Not made available.	___	___				
4	Failure to meet objectives below Haskayne WwTW.	Additional effluent treatment at Haskayne WwTW required or transfer of flows to Hillhouse WwTW.	NWW		Not made available.						____
5	Failure to meet objectives below Burscough WwTW.	Extension to Burscough WwTW required to provide tertiary treatment for all flows.	NWW		Not made available.						____
6	Failure to meet objectives below Southport WwTW and poor water quality in Crossens Pool.	Provision of secondary treatment facilities for increased flows arriving at the works due to sewage improvements.	NWW		Not made available.	___					

KEY

EA	=	Environment Agency
EH	=	Environmental Health
LA	=	Local Authority
NWW	=	North West Water
MWDA	=	Merseyside Waste Disposal Authority
FWAG	=	Farming and Wildlife Advisory Group
JCAS	=	Joint Countryside Advisory Service
MAFF	=	Ministry of Agriculture, Fisheries and Food
NFU	=	National Farmers Union
ADAS	=	Agricultural Development & Advisory Service
___	=	completion of action
.....	=	ongoing action

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
7	Impact of overflows from combined sewerage systems and associated failures to meet objectives.	Ensure completion and implementation of drainage area plans/schemes.	NWW								
		Ainsdale (Fine Janes Brook).			Not made available.	___	___				
		Southport (Fine Janes Brook/Three Pools Waterway).			Not made available.	___	___	___			
		Fazakerley (Fazakerley Brook)			Not made available.						_____
		Maghull (Moorhey Brook)			Not made available.						_____
		Maghull (Maghull Brook)			Not made available.						_____
		Southport (Designated Coastal Bathing Water)			Not made available.	___					
		Knowsley (Croxteth Brook)			Not made available.	___	___	___	___	___	Scheme completion no later than 2000
		Birkdale * (Birkdale sand dunes)			Not made available.	___	___	___	___	___	Scheme completion no later than 2000
		Liverpool (Deyes Brook)			Not made available.						_____
		Tarleton (Tarleton Runner)			Not made available.						_____
		Apply development control restrictions (e.g. Tarleton area).	EA	LA	Staff cost	.....	.....	.....	.....	.....	

* Scheme not originally highlighted in consultation report

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
14	Impact of litter and aesthetic quality of watercourses.	Liaise with local authority to agree watercourses requiring action.	EA	LA	Staff Costs.	.....	.....	.....	.....	.....	———
		Liaise with local pressure groups/local authorities or NWW (depending on source of litter) to organise teams capable of removing litter.	EA	NWW/ LA/Local campaign groups	Staff Costs.	.....	.....	.....	.....	.....	
		Continuing education campaign documenting the nuisance litter causes and distribute leaflets to local groups, businesses, public, encouraging voluntary groups to remove rubbish e.g. Streamcare - a Mersey Basin Trust initiative.	EA	Alt 2000 campaign /Mersey Basin campaign	Leaflet production. £2,000 (Estimated). Staff Costs.	.....	.....	.....	.....	.....	———
15	Management of water levels. to protect them.	Carry out a study on the water resource availability in the Crossens catchment. Develop a model of the Crossens catchment based on this study.	EA		£25,000	.....	.....				
		Impose embargo on new summer licences from the Crossens catchment pending results of study.	EA		No cost.	—					
		Water level management plans to be drawn up for: Downholland Moss SSSI. Martin Mere SSSI. Mere Sands Wood SSSI. CBHs/SLB1	EA LCC/ JCAS/EA	English Nature/ Land-owner	Staff Time.	—	—	—			Future
		Screening of abstraction licences for impact on water quality, conservation, water resources and flood defence interests.	EA		No Cost (Staff Time).	.....	.....	.....	.....	.....	
		Identify heritage significance of peat lands and produce catchment wide action plans	EA	County Archae-ologist	£7,000				—	—	
		Recreation and rehabilitation possible.	EA LCC EN JCAS		Not known.						———
		Review abstraction licences within and adjacent to coastal SAC/SPA.	EA		Staff time.	.....	.....	.....	.....	.....	.....
16	Embargo on new licences in the Fylde and Preston and Rufford Aquifers.	Water Resource Management Plan to be implemented pending results of the Fylde Aquifer/Wyre Catchment Water Resources Study.	EA		No Cost (depending on staff costs).	—					

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
17	Under utilisation of the Liverpool/ Ormskirk Aquifer.	Prepare Regional Water Resource Strategy.	EA			—	—	—	—	—	———
		Initiate discussions with water abstractors following results of study.	EA		Unknown staff costs.						
18	Lack of low flow data in the Alt catchment.	Install ultra-sonic flow measuring equipment within the Altmouth Pumping Station.	EA		£75,000						———
19	Limitations imposed upon the biodiversity and visual value by the artificial nature of many of the watercourses.	Undertake a baseline study of the conservation value of the pumped system.	EA		£5,000		—				
		Agree modifications to FD maintenance regimes.	EA								
	a) Poor physical habitat.	Post project appraisal on agreements reached.	EA		£1,000			—			
		Collaborative projects to improve habitat/visual value of the area.	EA Alt 2000 Land-owners	Alt 2000 Land-owners							
	b) Water voles.	Undertake a review of water vole abundance in the Crossens area.	EA		£3,000		—				
		Investigate the impact of maintenance techniques on the water vole population and where necessary seek to minimise any adverse effects.	EA		£3,000			—			
	c) Heritage significance of the artificial catchments.	Identify heritage significance and produce a catchment wide management plan to maintain and interpret interest.	EA		Unknown at this time		—	—	—		
20	Sparse level of tree/ hedge cover within the catchment.	EA feasibility study to be undertaken to identify potential sites for tree/hedge planting within the Crossens and rural sections of the River Alt. Priority for EA owned land.	EA	Alt 2000/ Land-owners/ county councils/ Mersey Forest	£500			—			
		Develop a 5 year strategy for improving bankside tree cover on urban sections of the Alt based on the 1994 feasibility study.	EA	Alt 2000/ Ground-work Trust	£200	—					
21	Artificial limitation of fish populations in the Crossens Catchment.	Identify areas where fish stocks are currently low.	EA		£3,000		—	—			
		Agree modifications to flood defence maintenance regimes to maximise suitable fishery habitats.	EA		£5000			—	—		

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'95	'96	'97	'98	'99	FUTURE
22	Lack of sustainable fish populations in the River Alt.	Develop a coarse fishery by means of:	EA			—	—				
		a) Assess present fish population.			£3,000						
		b) See effluent disposal issues.	NWW								
		c) Stock with coarse fish.			£80,000				.....	.....	.....
23	Need for better quality information - standards of Flood Protection.	Undertake survey priority locations (in order of priority) are as follows:	EA								
		1) Sefton and West Lancs Coast.	EA		£22,000	.....	.....				
		2) Main River Alt.	EA		£52,000			.....	.....		
		3) Fazakerley Brook (including non-main Tue Brook).	EA		Unknown at this time (dependent on result of Alt)						.....
		4) Knowsley Brook.	EA		£28,000			.....	.....		
		5) Whinney Brook.	EA		£25,000		.....	.....			
		6) Whams Brook.	EA		Unknown at this time.						.....
		7) Three Pools/Fine Janes Brook.	EA		Unknown at this time.	.....	.....				
		Feasibility Study for hydrodynamic model.	EA								
		Identify improvement location from model. Apply development control restrictions.	EA	LA							
		Collate and maintain flood records on a progressive geographical database.	EA		Unknown at this time.						.....
24	Flood alleviation improvement.	Improve defence to indicative standard.	EA (if main)	LA (if non main)							
		Object/restrict planning proposals that could further increase flood risk.	EA Statutory Consultee	Local planning authority	Ongoing - Costs Agency	.....	.....	.....	.....	.....	

No.	ISSUE	ACTIONS	RESPONSIBILITY		ESTIMATED COST	DURATION OF ACTION					
			LEAD	OTHER		'96	'97	'98	'99	'20	FUTURE
25	Access to watercourses.	Publicise and implement change in working practice.	EA	Riparian owner	£3,000		——	——			
		Promote set-aside countryside stewardship "buffer strips" alongside watercourses.	MAFF/ Riparian Owner FWAG	EA	Unknown at this time (solution dependant).	.....	.....	.....	.....	.....	
		Encourage other organisations to make appropriate provision for public Rights of Way.	Alt 2000/ Sustrans/ Riparian owner.	EA	Unknown at this time (solution dependant).						
26	Increased surface water run-off from new development.	Complete hydraulic model of the River Alt.	EA	LA	£130,000	.....					
		Implement development control measures in other areas of the catchment, depending on results of hydraulic survey.	EA	LA	Staff costs	.....	.....	.....	.....	.....	.....
27	Invasive weeds.	Identify extent of invasive weed distribution from existing data.	EA		£4,000	——	——	——	——		
		Draw up and implement an action plan.	EA				——	——			
28	Regeneration of urban watercourses.	Progress River Alt Rehabilitation Scheme at Stocksbridge Lane.	EA		£150,000	——					
		Develop five year strategy for the regeneration of urban watercourses.	EA		Strategy complete.		——	——	——		———
		Implement five year strategy.	EA								
		Improve urban rivers in partnership with others	EA	Alt 2000	As available.	.....	.....	.....	.....		.....

APPENDICES

APPENDIX 1 - Catchment Details

Area 351 square kilometres

Rainfall Long Term Average
- Crossens Pumping Station 857mm
- Holmeswood 860mm
- Formby Hightown 816mm

Geology

Alt/Crossens	Sandstone rocks underlie the majority of the catchment.
	Peat and windblown sand cover the surface of the central zone.
Eastern Margins	Coal measures, overlain by peat, windblown sand and glacial days towards the southern most part of the catchment.
Western Margins	Mercia mudstones with wind blown sand and alluvium on coastal margins.

Administrative Details

Local Authorities:

Lancashire County Council
West Lancs District Council
Sefton Metropolitan Borough Council
Knowsley Metropolitan Borough Council
Liverpool Metropolitan City Council
St Helens Metropolitan Borough Council

Environment Agency: North West Region
- Merseyside - South Area Office - Sale
- Lancashire - Central Area Office - Preston

Water Companies: North West Water Ltd

Groundwater Availability:

Sherwood Sandstone Aquifers	Liverpool/Ormskirk	Public supply and industrial/commercial use.
	Rufford	Heavily utilised for spray irrigation.
	Fylde & Preston	Saline intrusion as a result of Ribble Estuary. Potential for small scale development e.g. spray irrigation.

Catchment Facts and Figures

Length of designated main rivers:	588km
Length of embanked watercourse:	38km
Area at risk of flooding:	92 square km
Land drainage pumping stations:	13
Area drained to land drainage pump	338 square km

Water Quality Classification

1994 General Quality Assessment for Alt and Crossens

ALT CATCHMENT		
GQA Class	km	%
A -Good	-	-
B -Good	9.5	12.4
C - Fair	-	-
D - Fair	9.4	12.3
E - Poor	48.8	64.0
F - Bad	8.6	11.3
TOTAL	76.3	100

CROSSENS CATCHMENT		
GQA Class	km	%
A - Good	-	
B - Good	-	
C - Fair	-	
D - Fair	15.2	34.9
E - Poor	21.4	49.2
F - Bad	6.9	15.9
TOTAL	43.5	100

1994 General Quality Assessment for the Liverpool Canal

LEEDS-LIVERPOOL CANAL		
GQA Class	km	%
A -Good	-	-
B -Good	-	-
C - Fair	-	-
D - Fair	8.5	32.1
E - Poor	18	67.9
F - Bad	-	-
TOTAL	26.5	100

National Water Council (NWC) Alt and Crossens Estuary and Tidal Water Classification (1990)

GQA Class	km	%
A -Good	0.0	0.0
B -Fair	0.0	0.0
C - Poor	3.1	67.4
D - Bad	1.5	32.6
TOTAL	4.6	100.00

APPENDIX 2
Changes to River Water Quality Objectives Set in 1979

i) The following watercourses have been removed from the classification scheme: Croxteth Brook (1.8km), Kirkby Brook (2.6km).

ii) The following watercourses have been added to the classification scheme:

Maghull Brook (2.1km), Moorhey Brook (1.3km). Both have long term objectives of RE4.

iii) The following long term objectives are not direct translations of the NWC class objectives.

Simonswood Brook from Voces Farm to Kirkby Brook: original objective NWC class 1B. The neutral translation of this objective is RE2, however, an objective of RE3 is now thought to be more realistic for this stretch of Simonswood Brook.

Leeds Liverpool Canal from A567 Litherland to Wharehouse, Halsall: original objective NWC Class 1B. The neutral translation of this objective is RE2. In addition this stretch has since been extended to include the Leeds Liverpool Canal from Liverpool Docks to A567 in Litherland: original NWC objective Class 2 and neutral translation RE4.

An objective of RE4 is now thought to be more realistic for the extended stretch of canal from Liverpool Docks to Wharehouse, Halsall.

APPENDIX 3
River Ecosystem Classification: Water Quality Criteria

Class	Dissolved Oxygen % saturation 10 percentile	Bod (ATU) mg/l 90 percentile	Total Ammonia mg N/l 90 percentile	Un-ionised Ammonia mg N/l 95 percentile	pH lower limit as 5 percentile upper limit as 95 percentile	Hardness mg/l $Ca Co_3$	Dissolved Copper ug/l 95 percentile	Total Zinc ug/l 95 percentile
RE1	80	2.5	0.25	0.021	6.9 - 9.0	<10 >10<50 >50 and <100 >100	5 22 40 112	30 200 300 500
RE2	70	4.0	0.6	0.021	6.0 - 9.0	<10 >10<50 >50 and <100 >100	5 22 40 112	30 200 300 500
RE3	60	6.0	1.3	0.021	6.0 - 9.0	<10 >10<50 >50 and <100 >100	5 22 40 112	300 700 1000 2000
RE4	50	8.0	2.5		6.0 - 9.0	<10 >10<50 >50 and <100 >100	5 22 40 112	300 700 1000 2000
RE5	20	15.0	9.0					

APPENDIX 4: General Quality Assessment (GQA)
Chemical Grading for Rivers and Canals

Water Quality	Grade	Dissolved Oxygen (% saturation) 10 percentile	Biochemical Oxygen Demand [1](ATU) mg/l 90 percentile	Ammonia (mg N/l) 90 percentile
Good	A	80	2.5	0.25
	B	70	4	0.6
Fair	C	60	6	1.3
	D	50	8	2.5
Poor	E	20	15	9.0
Bad	[2]F	-	-	-

1 as suppressed by adding allyl thio-urea

2 i.e. quality which does not meet the requirements of grade E in respect of one or more determinands

APPENDIX 5 - National Water Council (NWC) Classification Scheme
Water Quality Classes for Estuaries

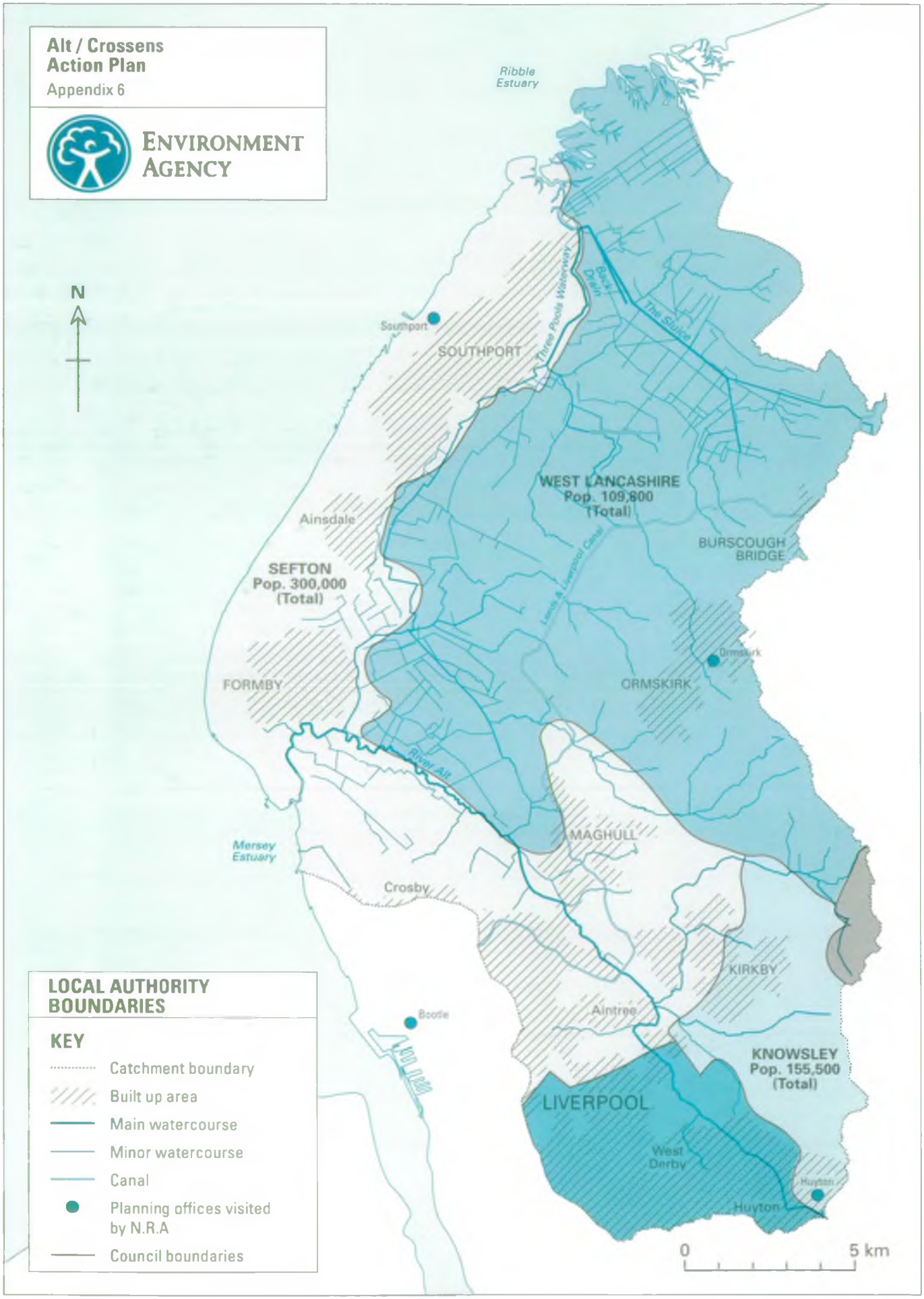
Description	Points awarded if the estuary meets this description
Biological Quality (scores under a, b, c and d to be summed)	
a) Allows the passage to and from freshwater of all relevant species of migratory fish, when this is not prevented by physical barriers.	2
b) Supports a residential fish population which is broadly consistent with the physical and hydrographical conditions.	2
c) Supports a benthic community which is broadly consistent with the physical and hydrographical conditions.	2
d) Absence of substantially elevated levels from whatever source.	4
Maximum number of points	10
a) Estuaries or zones of estuaries that either do not receive a significant polluting input or which receive inputs that do not cause significant aesthetic pollution.	10
b) Estuaries or zones of estuaries which receive inputs which cause a certain amount of pollution but do not seriously interfere with estuary usage.	6
c) Estuaries or zones of estuaries which receive inputs which result in aesthetic pollution sufficiently serious to affect estuary usage.	3
d) Estuaries or zones of estuaries which receive inputs which cause widespread public nuisance.	0
Water Quality (Score according to quality) Dissolved Oxygen exceeds the following saturation values:	
60%	10
40%	6
30%	5
20%	4
10%	3
below 10%	0

The points awarded under each of the headings of biological, aesthetic and water quality are summated. Waters are classified on the following scale.

Class A Good Quality	24 to 30 points	Class C Poor Quality	9 to 15 points
Class B Fair Quality	16 to 23 points	Class D Bad Quality	0 to 8 points

APPENDIX 6 - Former NRA Guidance Statment and LPA Development Plan Policies (at July 1996)
LPA Plan Policies Which Protect the Water Environment (Their Plan Policy Reference Shown)

DEVELOPMENT PLAN	Water Quality and Water Resources	Flood Defence	Fisheries, Recreation and Conservation	Minerals and Waste Disposal
Lancashire CC Deposit Structure Plan 2001. Modified plan following Examination In Public.	6, 10	8, 15	7, 9, 13, 4, 55	63, 66, 67, 68, 69, 70, 76
Sefton MBC Unitary Development Plan (UDP Adopted 1995).	ENV 59 ENV 12 ENV 46	CPZ1	CPZ16	ENV 55 ENV 52
Liverpool MCC Deposit UDP July 1996.	EP11&12 EP7	EP13	OE4 OE5 OE7	EP4, EP5, EP7
Knowsley MBC Deposit UDP. Awaiting Adoption.	EN1B(II) PWM 1 PWN(II)	EN1B(I) GEN7 EN	EN10(IV)	PWM1 PWM4 PWM5 PWM12
West Lancashire DC Deposit. Local Plan.	P3 P2 V3	V.5 P.7	LN18 CZ1	
St Helens MBC Deposit UDP. Awaiting Modifications following	GEN 1 ENV 25	ENV30	ENV3, ENV7 ENV5, ENV7	ENV 26 S1OMIN 1 S1OMIN 2 WD11 WD2


Alt / Crossens
Action Plan
Appendix 6
ENVIRONMENT AGENCY
N
Ribble Estuary
Southport
SOUTHPORT
Three Pools Waterway
Burbo Drain
The Sluice
WEST LANCASHIRE
Pop. 109,800
(Total)
Ainsdale
SEFTON
Pop. 300,000
(Total)
Leeds & Liverpool Canal
BURSCOUGH
BRIDGE
Ormskirk
ORMSKIRK
FORMBY
River Alt
Mersey Estuary
MAGHULL
Crosby
KIRKBY
Aintree
Bootle
KNOWSLEY
Pop. 155,500
(Total)
LIVERPOOL
West Derby
Huyton
Huyton
0
5 km
LOCAL AUTHORITY BOUNDARIES
KEY
Catchment boundary
Built up area
Main watercourse
Minor watercourse
Canal
Planning offices visited by N.R.A
Council boundaries

APPENDIX 7 - Glossary

Abstraction Licence

Licence to abstract water from a surface or underground source. The maximum annual, daily and hourly abstraction rates are set by the licence.

AMP2 - Asset Management Plan

The second set of Asset Management Plans produced by Water Companies. The Plans cover the Water Companies' known investment on existing and other obligations (such as the operation and maintenance of existing water and wastewater systems) for the 10 year period 1995 to 2005. The Environment Agency is involved in setting priorities for work necessary for environmental improvements within allowed expenditure limits. Prices are controlled by an independent regulator, the Director General of Water Services (OFWAT).

AONB

Area of Outstanding Natural Beauty, notified by the Countryside Commission.

BOD

Biochemical Oxygen Demand. A measure of the polluting potential.

Coarse Fish

See FRESHWATER FISH, CYPRINIDS, SALMONIDS.

Consumptive Use

Water which is abstracted but not returned to the catchment, either because it evaporates (as in spray irrigation) or is exported for use in another catchment.

County Structure Plans

Statutory documents produced by County Councils outlining their strategy for development over a 10-15 year timescale.

Cyprinids

Fish of the carp family. (See also COARSE FISH, FRESHWATER FISH, SALMONIDS).

District Local Plans

Statutory documents produced by District or Borough Councils to implement the development strategy set out in County Structure Plans. Specific land use allocations are identified.

Effective Rainfall

Total rainfall minus direct evaporation and the water used by plants for transpiration. This is equivalent to the total resource of a catchment.

EIFAC

The European Inland Fisheries Advisory Commission. An agency of the United Nations Food and Agriculture Organisation (FAO).

Flow Measurement Units

m3/s	Cubic metres per second
l/s	Litres per second
Ml/d	Megalitres per day. A megalitre is equivalent to a ten metre cube (approximates to a 4-bedroom detached house).
mg/d	Millions of gallons per day.

Flow Conversion Table

m3/s	Ml/d	mgd
0.01	1	0.224
0.06	5	1.12
0.12	10	2.24
0.24	20	4.48
0.6	50	11.2
1.2	100	22.4

Freshwater Fish

For the purposes of the Salmon and Freshwater Fisheries Act 1975, fish other than salmon, brown trout, sea trout, rainbow trout and char (see also COARSE FISH, FRESHWATER FISH, SALMONIDS).

Hectare

Unit of area 100m x 100m, equal to 2.471 acres.

Impoundment Reservoir

Surface water storage area formed by construction of a dam and supplied only by natural inflow from the upstream catchment.

Local Nature Reserve

A nature reserve designated by a Local Authority, frequently owned or managed by a voluntary conservation organisation.

National Nature Reserve

A nature reserve of national importance, designated and managed by English Nature.

Potable Water Supply

Water supplied for domestic use, including human consumption.

Pool: Riffle

A stretch of river with sections of shallow, fast-flowing water and deeper slow-moving pools.

Ramsar Site

A wetland site of international significance for conservation, notified under international treaty.

SAC

Special Area of Conservation. A European legislation classification.

Salmonids

Fish classified by the Salmon and Freshwater Fisheries Act 1975 as belonging to the salmon family - salmon, brown trout and char. (Summer-spawning salmonid species such as grayling are classified by the Act as Freshwater Fish.) (See also COARSE FISH, FRESHWATER FISH, CYPRINIDS.)

SPA

Special Protection Area. A European legislation classification.

Spate Flows

Episodic fresh water flood flows.

SSSI

Site of Special Scientific Interest. A site designated by English Nature as being in need of protection to conserve its outstanding ecological or geological features. Land use and management operations within SSSIs are subject to control.

SNCI

Site of Nature Conservation Interest. A site of local importance for wildlife or geology, identified by the County Wildlife Trust or the County Council.

WwTW

Wastewater Treatment Works.