

Water for life and livelihoods

River Basin Management Plan
Humber River Basin District

Annex C: Actions to deliver
objectives

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C.1 Introduction

This annex sets out tables of the actions (the programmes of measures) that are proposed for each sector. Actions are the on the ground activities that will be implemented to manage the pressures on the water environment and achieve the objectives of this plan.

Further information relating to these actions and how they have been developed is given in:

- Annex B Objectives for waters in the Humber River Basin District
This gives information on the current status and environmental objectives that have been set and when it is planned to achieve these
- Annex D Protected area objectives (including programmes for Natura 2000)
This gives details of the location of protected areas, the monitoring networks for these, the environmental objectives and additional information on programmes of work for Natura 2000 sites.
- Annex E Actions appraisal
This gives information about how we have set the water body objectives for this plan and how we have selected the actions
- Annex F Mechanisms for action
This sets out the mechanisms - that is, the policy, legal, financial and voluntary arrangements - that allow actions to be put in place

The actions are set out in tables for each sector. For the purposes of this plan this is the sector that may be causing the pressure or is being affected by an action. 'Being

affected' may mean that the sector is the one taking action or that the sector's activities are affected by an action implemented by others. Some actions will be noted against more than one sector, as one sector may be implementing action that requires another to take action in response.

The sectors are set out in table C1a below.

The tables set out the list of actions established at the outset of this plan period. It is expected that further measures will be identified during the implementation period for this plan. The plan includes many investigations that will help identify future actions, where it has not yet been possible to define these (see annex E). In some cases investigations are needed to confirm the pressure that is causing a problem, even before it will be possible to define an action. We also encourage sectors to put forward other measures so that these can be considered during the period of this plan.

Table C1b sets out an explanation of the headings in the actions tables. The subsequent tables set out specific actions relevant to each sector. For some measures we have included an example of the type of project that the action might generate. This does not mean the application of the measures is limited to the example only, it could apply in many locations across the RBD.

Table C1a: **Sectors**

Standard list of sectors			
Sector	Activity included	Sector	Activity included
Agriculture and rural land management	Dairy / beef, sheep, pig and poultry (including outdoor pigs) Mixed Arable Horticulture Forestry Land drainage (including Inland Drainage Boards) Other rural land development	Local Government	Local and regional government including planning authorities and national parks (including local authority urban drainage not covered by Water Industry)
Angling and conservation	Fisheries (angling) management Other habitat management (including conservation)	Mining and quarrying	Active mines and quarries Abandoned coal mines Abandoned other mines
Central Government	Defra Natural England Other central government organisations and agencies	Navigation	Ports / marinas Maritime shipping / boating Inland navigation
Environment Agency		Urban and transport	Private potable water management Private sewage management (inc. caravan parks etc) Road, air and rail transport Contaminated land Flood risk management Other development activities
Industry, manufacturing and other business	Power generation Chemical industry Oil industry SMEs / Industrial estates Construction Aquaculture Commercial fisheries (fresh, transitional and coastal waters – not angling) Waste management Retail industry Food and drink industry Recreation and tourism (not covered by boating or angling e.g. parkland / amenity)	Water industry	Sewage - treatment Sewage - collection (including intermittent discharges from combined sewage overflows) Sewage - other drainage (inc flooding and leaking sewers) Sewage - trade effluent management Sludge recycling to land Potable supply – treatment Potable supply – storage and transfer (inc. leakage) Potable supply - planning

Table C1b: **Example table of headings and descriptions**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
<i>The pressure being managed</i>	<i>The action that will be taken</i>	<i>The location or geographical extent of the action</i>	<i>The date by which the action will be put in place. ("Implemented" means that the actions is already in place and able to have a beneficial effect)</i>	<i>The organisation responsible for delivering the action and other organisations that may be involved</i>
Investigations				
<i>Sets out investigation that will be put in place</i>				
Natura 2000 protected sites and SSSIs				
<i>Sets out measures that will be put in place for Natura 2000 protected areas and Sites of Special Scientific Interest</i>				

Strategic environmental assessment and actions

The purpose of the River Basin Management Plan is to improve the ecological status and potential of water bodies and so the environmental effects of the plan are predominantly positive. A Strategic Environmental Assessment was carried out that also considered the wider environment and identified potential adverse effects associated with some of the actions, as well as enhancements to add value to the measures included in the plan. Whilst many of the proposals to mitigate negative impacts are specific to the proposed action, others are applicable across a range of actions and will be considered at a project level. These generic mitigation measures are described in the table below. Further information is included in the statement of particulars – see <http://www.environment-agency.gov.uk/research/default.aspx> and go to Water Framework Directive.

Table 1c: **Generic mitigation to be applied when implementing actions**

Impact	Mitigation
Population and human health	Avoid adversely affecting existing routes of public access to the countryside and water bodies.
	Identify opportunities to improve public access to the countryside, water bodies or water based recreation
Biodiversity	Target any actions designed to improve biodiversity to those locations where the gains can be maximised.
	Identify opportunities to link with existing ecological networks, sites or features or proposed improvements.
	Identify opportunities where biodiversity improvements can also benefit local populations.
Cultural heritage	Before undertaking an action, determine whether there are any historical features that are likely to be adversely affected and undertake an appropriate level of project level assessment and mitigation.
Sustainability	Adopt a sustainable procurement policy
	Reuse materials or use recycled materials or those from renewable sources where possible
	Implement a waste management plan to minimise waste directed to landfill.
	Take steps to minimise the 'carbon footprint' of the action by reducing energy demand and the 'embedded energy' of any materials used.
Agriculture and biodiversity	Align agri-environment schemes to achieve biodiversity benefits and complement other biodiversity initiatives.

Habitats Regulations Assessment

A Habitats Regulations Assessment of this Plan was carried out by the Environment Agency in 2009. Natural England was consulted on the assessment and we have had regard to their advice.

Many of the measures in the Plan, most specifically those in Annex D, are designed to improve the water environment and help to maintain or restore Natura 2000 habitats and species at favourable conservation status. The overall purpose of the plan is to ensure no deterioration of the water environment and deliver the objectives

of individual water bodies (normally 'good ecological status'). However, the Habitats Regulations Assessment has identified certain types of measure in the plan with potential to negatively effect Natura 2000 sites. Whether a negative effect is likely depends on the exact location, spatial scale, nature and timing of the measure. The details necessary to make reasonable predictions about the effects on Natura 2000 sites will not be developed until the measures are progressed towards implementation.

We have concluded that the plan itself is unlikely to have any significant negative effects on any Natura 2000 sites. The Plan itself does not require further assessment under the Habitats Regulations. This conclusion is reliant on the fact that before any measures in the plan are implemented they must be subject to the requirements of the Habitats Regulations. Any plans, project or permissions required to implement the measures must undergo an appropriate assessment if they are likely to have a significant effect.

Responsibility for Habitats Regulations Assessment of plans, projects or permissions required to implement the measures in this Plan remains with the relevant competent authority, for example if the measure requires planning permission the Local Authority will be the relevant competent authority. In most circumstances, a competent authority can only agree to a plan, project or permission when it has ascertained that it will not adversely effect the integrity of a Natura 2000 site. Changes to the measures in this plan may be required to avoid adverse effects on the integrity of any Natura 2000 sites.

C. 2 Actions we can all take

There are actions that we can all take to help protect and improve the water environment.

Table C2: **Actions we can all take**

Pressure	What will happen
Abstraction and other artificial flow pressures	Ask your water company to fit a meter. On average, this could reduce your household water bill.
Abstraction and other artificial flow pressures	Choose plants that tolerate dry conditions for your house, balcony or garden. To help lawns through dry periods, don't cut them too short.
Abstraction and other artificial flow pressures	Fix dripping taps, and lag pipes to avoid them bursting in freezing weather.
Abstraction and other artificial flow pressures	Consider installing a grey-water recycling system in your home, block or workplace. This can save one third of domestic mains water usage.
Abstraction and other artificial flow pressures	Install a 'hippo' or 'save-a-flush' in your toilet cistern.
Abstraction and other artificial flow pressures	Install a low-flush toilet, put flow regulators on your taps and showers, and install waterless urinals at work.
Abstraction and other artificial flow pressures	Run your dishwasher or washing machine with a full load on economy setting, and boil the minimum you need in kettles or saucepans.
Abstraction and other artificial flow pressures	To save water in your garden, collect rain in a water-butt, water at the beginning or end of the day, mulch plants, and avoid sprinklers or hosepipes without trigger nozzles.
Abstraction and other artificial flow pressures	Turn off the tap when brushing your teeth, and take short showers rather than baths.
Abstraction and other artificial flow pressures	Wash fruit and vegetables in a bowl rather than under the running tap - and use the remainder on your plants.
Direct biological pressures	Adopt-a-beach to help keep beaches clean and stop litter at source.
Direct biological pressures	Eat fish from sustainable sources, caught using fishing methods that don't cause damage to marine wildlife and habitats.
Direct biological pressures	Eliminate invasive non-native species, such as Himalayan balsam and the aquatic plant: parrot's feather, from your garden. They can have a negative effect on native species and the water environment. Please dispose of them responsibly.
Direct biological pressures	Put cotton buds and other litter in the bin, not down the toilet. It may end up in the sea where it can harm wildlife.
Nutrients, organic pollution, sediments, Priority Hazardous Substances, Priority Substances and Specific Pollutants	Check that your household appliances connect to the foul sewer, not the surface water drain.

Pressure	What will happen
Nutrients, organic pollution, sediments, Priority Hazardous Substances, Priority Substances and Specific Pollutants	Ensure your septic tank or private sewage treatment plant is well maintained and working effectively.
Nutrients, organic pollution, sediments, Priority Hazardous Substances, Priority Substances and Specific Pollutants	Use kitchen, bathroom and car cleaning products that don't harm the environment, such as phosphate-free laundry detergents, and use as little as possible. This helps prevent pollution at source.
Nutrients, organic pollution, sediments, Priority Hazardous Substances, Priority Substances and Specific Pollutants	When you see pollution or fly-tipping, phone us on 0800 807060.
Nutrients, organic pollution, sediments, Priority Hazardous Substances, Priority Substances and Specific Pollutants, Direct biological pressures	Adopt-a-river to spot pollution, invasive non-native species, and take part in practical tasks.
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Ensure your household oil storage is in good condition, with an up-to-date inspection record.
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Take waste oil and chemicals such as white spirit to your municipal recycling facility: don't pour them down the sink or outside drains.
Save water: in your house or office	Ensure extensions or conservatories have their roof water draining into a soakaway or sustainable drainage system and are not connected to the combined sewer.
Save water: in your house or office	Ensure that any off-road parking or patio around the house use permeable materials so rain can soak into the soil.

C.3 All sectors

Many actions will apply to all sectors.

Table C3: **Actions for all sectors**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Make use of the Town and Country Planning Act authorisation process to help minimise risk of diffuse pollution from new developments (e.g. implement sustainable drainage systems (SuDS) - and use of Water Resource Act Planning Guidance)	Humber RBD	Implemented	Local Authorities
Organic pollutants; Acidification; Direct biological pressures; Nutrients; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Microbiology	Where appropriate, subject to the Environment Agency carrying out a 12 week public consultation and making an appropriate case to the Secretary of State, designate a limited number of Water Protection Zones (WPZ). These are a regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or are unlikely to work. Initially around 8 candidate locations across England. Potential for designation from 2010 with a possibility of further WPZs by 2012.	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification	Plans, processes and programmes (such as the Environment Agency's Navigation and Recreation strategies) will be aligned to the requirements of hydromorphology to achieve WFD objectives (especially ecological potential). This will be two fold i) mitigation measures required to reach good ecological potential to be delivered through such plans will be identified and ii) the prioritisation of environmental improvements will be influenced by the specific requirements to reach WFD objectives.	Humber RBD	Implemented	Environment Agency
Physical modification	The Environment Agency will develop and share a GIS linked hydromorphological database. This will supply data to help better understand the hydromorphological impacts of modifications to water bodies. It will feed information into the approval/assessment processes to ensure new modifications comply with WFD requirements, especially those related to Article 4 (7).	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants; Radioactivity; Microbiology; Hazardous substances and non-hazardous pollutants; Nitrate	Designation of Safeguard Zones - develop pollution action plan to identify specific measures to address known causes of impact on drinking water abstractions leading to failure/risk of failure of WFD Article 7.3 objective. Appropriate measures may include pollution prevention, England Catchment Sensitive Farming Initiative, or Water Protection Zones	Aire & Don Sherwood Sandstone.; Grimsby Ancholme Louth Chalk Unit; Hull & East Riding Chalk; Idle Torne - PT Sandstone Nottinghamshire&Doncaster; Lower Trent Erewash - PT Sandstone Wollaton; Wharfe & Lower Ouse Sherwood Sandstone	2010	Environment Agency
Investigations				
Abstraction and other artificial flow pressures	Investigations at sites identified under the Restoring Sustainable Abstraction Programme (where funded)	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Review and improve Environmental Flow Indicators	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Improve flow estimates for surface water bodies	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Ammonia; Hazardous substances and non-hazardous pollutants; Nitrate; Phosphate; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of failure of WFD Article 7	Aire & Calder Carb Limestone / Millstone Grit / Coal Measures.; Aire & Don Magnesian Limestone.; Swale, Ure, Nidd, Ouse Sherwood Sandstone; Wharfe & Lower Ouse Millstone Grit and Carb Limestone; Wharfe & Lower Ouse Sherwood Sandstone	2010	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of isoproturon failure of WFD Article 7	Swale, Ure, Nidd, Ouse Sherwood Sandstone	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of mecoprop failure of WFD Article 7	Swale, Ure, Nidd, Ouse Sherwood Sandstone	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of pesticide failure of WFD Article 7	Swale, Ure, Nidd, Ouse Sherwood Sandstone	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of bentazone failure of WFD Article 7	Swale, Ure, Nidd, Ouse Sherwood Sandstone	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of cadmium failure of WFD Article 7	Wharfe & Lower Ouse Millstone Grit and Carb Limestone	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of copper failure of WFD Article 7	Swale, Ure, Nidd, Ouse Sherwood Sandstone; Wharfe & Lower Ouse Millstone Grit and Carb Limestone	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation required to confirm risk of zinc failure of WFD Article 7	Swale, Ure, Nidd, Ouse Sherwood Sandstone; Wharfe & Lower Ouse Millstone Grit and Carb Limestone	2012	Environment Agency
Physical modification	Monitoring and investigation into mitigation measures techniques to establish the effectiveness of these measures and improve understanding of hydro-morph-ecological interactions. Outcomes will have a national application.	Humber RBD	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants; Microbiology; Hazardous substances and non-hazardous pollutants; Nitrate; Radioactivity	Designation of Safeguard Zones - investigation of source-pathway-target linkages to support development of a pollution action plan to identify specific measures	Aire & Don Sherwood Sandstone.; Grimsby Ancholme Louth Chalk Unit; Hull & East Riding Chalk; Idle Torne - PT Sandstone Nottinghamshire&Doncaster; Lower Trent Erewash - PT Sandstone Wollaton; Wharfe & Lower Ouse Sherwood Sandstone	2010	Environment Agency

C.4 Agriculture and rural land management

The Humber River Basin District is one of the most diverse regions in England ranging from the upland areas of the White and Dark Peak in Derbyshire, the Southern Pennines, Yorkshire and North York Moors with their extensive peat bogs to the free draining Yorkshire Wolds and the lowlands to the east.

Agriculture dominates the landscape of the Humber River Basin District, accounting for over 70% of land use. The rural areas range from small settlements with a continuing reliance on hill farming, forestry and quarrying, through to small settlements which are also important as service and employment centres, to the urban fringe areas and communities which mining, extraction and heavy industries once supported. The lowlands in the east and river valleys such as the Trent, Ouse and Humberhead Levels support a wide range of productive arable and livestock farming. South of the District, there is considerable variety in farm types, from dominance of arable in the far south of the district in North Warwickshire and Staffordshire, to vegetable production in the Nottinghamshire sand lands and the traditional production of pork, milk and cheese in the Vale of Belvoir.

Agriculture, forestry and moorland management all have the potential to impact on the water environment. Although overall the number of direct pollution incidents from agriculture and forestry has decreased in recent years, in some areas there is the need to reduce the impact of diffuse pollution on rivers and ground waters from manures, sediment, fertilisers and pesticides. Much can be achieved by improved soil management, optimum resource efficiency (including nutrients and water) and adoption of best practice.

Tourism is an important element of the rural economy, the Humber River Basin includes three National Parks, namely the Peak District, the Yorkshire Dales and the North York Moors. The Peak District National Park is one of the most visited in England with 22 million visitor days a year, the Yorkshire Dales and North York Moors have a further 18.5 million visitor days between them. Large areas of the Humber River Basin District are of national and international environmental importance, including the Humber Estuary itself. Good land management not only cares for the places we value, but it can also reduce the impact on the water environment and provide cost savings for farmers as well as benefits for the wider rural economy.

Table C4: **Actions for the agriculture and rural land management sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Encourage farmers to build winter storage reservoirs where appropriate. The Environment Agency has recently produced a guide to building water storage reservoirs. This will be used to promote the uptake of grants within priority catchments.	Humber RBD	2012	Regional Development Agencies; Environmental NGOs; National Farmers' Union; Environment Agency
Abstraction and other artificial flow pressures	Targeted work with key abstracting groups to promote water efficiency. For example, the Regional Development Agencies are administering a grant scheme for Farm Resource Efficiency measures as part of the Rural Development Programme.	Humber RBD	2012	National Farmers' Union; Natural England; Regional Development Agencies; Environment Agency
Abstraction and other artificial flow pressures	Registration for previously exempt activity: abstraction of water within water meadow systems	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures; Habitat Manipulation (restoration/improvement); Physical modification; Sediments (as a direct pollutant)	Forest Research has undertaken a mapping exercise in Yorkshire to identify suitable areas of flood plain for woodland planting to deliver benefits for flood risk and water quality. Woodland can help to increase surface water infiltration and also reduce erosion and delivery of coarse sediment to rivers. The outcomes of the exercise are being taken forward helping to deliver the Regional Forestry Strategy.	Humber RBD	Implemented	Forestry Commission; Natural England; Environment Agency; Regional Development Agencies
Cadmium and its compounds	Adoption of best practice farming to reduce pollution from fertilisers (cadmium is a contaminant)	Calder from Source to Walsden Water; Little Don from Source to River Don; River Nidd from Burstwith to Crimble Beck	Implemented	Environment Agency
Colour	Develop detailed 5-year Catchment Action Plan for Safeguard Zone.	Warland Reservoir	2010	Environment Agency
Cypermethrin	UK-wide suspension (temporary) on use as sheep-dip	Humber RBD	Implemented	Veterinary Medicines Directorate
Habitat Manipulation (restoration/improvement); Physical modification; Sediments (as a direct	The OnTrent Initiative is a partnership project involving a wide range of public, voluntary and commercial organisations.	Lower Trent & Erewash Catchment; Staffordshire Trent Valley Catchment	Implemented	Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
pollutant); Abstraction and other artificial flow pressures	The project is working to secure a sustainable balance between the natural and historic heritage, agriculture, commercial activity and development along the River Trent between Stoke on Trent and the Humber Estuary.			
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Make use of site specific notices (served under Water Resources Action Section 86 and Section 161, Groundwater Regulations or Silage, Slurry, Agricultural Fuel Oil Regulations) to reduce pollution risk to groundwater.	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Follow the Code of Good Agricultural Practice - comply with published advice for operators on minimising the risk of harm to the environment, for example on control of agri-chemicals and nitrate	Humber RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Implement Groundwater Protection: Policy & Practice - External education on groundwater pollution prevention	Humber RBD	Implemented	Environment Agency; Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Local agricultural partnerships e.g. LEAF, NGOs such as Rivers Trusts, Wildlife Trusts, Landcare, Farming & Wildlife Advisory Group – advice on use of agri-chemicals and nitrate control and promote take up of agri-environment schemes and the England Catchment Sensitive Farming Initiative	Humber RBD	Implemented	Land managers and owners; Environmental NGOs
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Proactive targeted farmer education on control of agri-chemicals and nitrate	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Statutory Codes of Practice for Pesticides and Sheep Dip - comply with published advice for operators on control of chemicals	Humber RBD	Implemented	Land managers and owners
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	General guidance to reduce the environmental impact of pesticide use through the Voluntary Initiative'.	Humber RBD	Implemented	Voluntary Initiative Partnership
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local pollution prevention campaigns & education on pesticide use in areas of vulnerable groundwater	Idle Torne - PT Sandstone Nottinghamshire&Doncaster	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Groundwater protection advice to Veterinary Medicines Directorate products approvals process	Humber RBD	Implemented	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Support to Chemicals Regulation Directorate (formerly the Pesticides Safety Directorate) research into amenity use of pesticides	Humber RBD	Implemented	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Groundwater protection advice to Chemicals Regulation Directorate (formerly the Pesticides Safety Directorate) approvals process	Humber RBD	Implemented	Central Government; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	New EC Sustainable Use of Pesticides Directive to control use of plant protection products	Humber RBD	2012	Central Government
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting - regulate effluent discharges to ground.	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	EU review of approvals for plant protection products	Humber RBD	Implemented	EU

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Isoproturon	Recently introduced UK-wide restrictions will see decreasing trend in emissions and probable compliance by 2015 with no further action	Humber RBD	Implemented	Chemicals Regulation Directorate
MCPA	Address issue as priority action within this VI Pilot Catchment. Water industry catchment investigation to establish source of pollutant	Blithfield Reservoir	2010	Pesticides Voluntary Initiative
Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures.	River Derwent from Troutsdale Beck to River Rye	2010	Metaldehyde Steering Group
Microbiology; Nutrients; Organic pollutants	Targeted campaigns to raise awareness of issues with septic tanks and village drains.	Humber RBD	2012	Local Authorities; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Establish and maintain a nationally funded advice-led partnership under the Catchment Sensitive Farming Programme to reduce diffuse water pollution from agriculture in at risk catchments.	Derbyshire Derwent Catchment; Derwent (Humber) Catchment; Esk and Coast Catchment; Hull and East Riding Catchment; Louth Grimsby and Ancholme Catchment; Swale, Ure, Nidd & Upper Ouse Catchment; Semerwater	2010	Environment Agency; Natural England
Microbiology; Nutrients; Sediments (as a direct pollutant); Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants	Progress the Entry Level Stewardship Scheme offering farmers an incentive to achieve environmental benefits on agricultural land. Entry Level Stewardship is open to all those farming in England and aims to reward good land management and address some of the environmental issues affecting the wider countryside including diffuse pollution, soil erosion and the conservation of farmland birds	Humber RBD	Implemented	Natural England; Defra
Nitrate	Implement Department of Communities and Local Government (CLG) Planning Policy Guidance Statement 23	Humber RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	(PPG23) on controlling pollution of groundwater that may arise from the development of land.			
Nitrate	Address issue as priority action within this England Catchment Sensitive Farming Initiative catchment. Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions.	Marshchapel Drain	2010	Natural England
Nitrate	Advise farmers on nutrient planning and best practice to reduce nitrogen loading to land - England Catchment Sensitive Farming Initiative.	Derwent - Carboniferous Limestone; Dove - PT Sandstone Mayfield; Staffordshire Trent Valley - PT Sandstone Staffordshire	2010	Land managers and owners
Nitrate	Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions in Nitrates Vulnerable Zone	R Blythe from Patrick Bridge to R Tame	2010	Environment Agency
Nitrate	Comply with the Nitrate Vulnerable Zone Action Plan, within the designated zones.	Humber RBD	Implemented	Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	Humber RBD	Implemented	Water companies; Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	NetRegs (environmental guidance to business) - external advice and education on environmental legislation, including groundwater pollution legislation	Humber RBD	Implemented	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement new regulatory approach arising from new Groundwater Directive (2006/116/EC), including Registration in conjunction with Standard Rules.	Humber RBD	2012	Environment Agency; Industry leads; Land managers and owners; Water companies
Nutrients	Establish and enforce Nitrate Vulnerable Zones in catchments at a high risk from nitrate pollution, requiring farmers to follow a programme of measures to reduce nitrate entering the water from farmland. (see map D6 in annex D).	Humber RBD	Implemented	Defra; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Pesticides; Metaldehyde; Colour	Develop detailed five year catchment action plan for Safeguard Zone.	Blithfield Reservoir; White Holme Reservoir	2010	Environment Agency
Pesticides; Metaldehyde; Nutrients	Develop detailed five year Catchment Action Plan for Safeguard Zone. Consider site as a candidate Water Protection Zone	Cropston Reservoir	2010	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Specific, targeted guidance in high risk catchments to reduce the impact of pesticide use through the Voluntary Initiative, for example at Staunton Harold reservoir.	Lower Trent & Erewash Catchment; Swale, Ure, Nidd & Upper Ouse Catchment; Humber RBD	Implemented	Voluntary Initiative Partnership
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Nutrients; Organic pollutants	Partnership working to implement initiatives to target and tackle significant local issues, particularly on pesticide and sheepdip. For example, the Voluntary Initiative to reduce pesticides into Blithfield Reservoir and Ingbirchworth Reservoir.	Humber RBD	2011	Health and Safety Executive; Levy Boards; Natural England; Water companies; Environment Agency
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Comply with new EC Sustainable Use of Pesticides Directive to control use of plant protection products	Humber RBD	2012	Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Environmental Permitting – disposal of sheep dip and pesticides	Humber RBD	Implemented	Environment Agency
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Comply with site specific notices (served under Water Resources Action Section 86 and Section 161, Groundwater Regulations or Silage, Slurry Agricultural Fuel Oil Regulations), where issued by Environment Agency, to reduce agri-chemical and nitrate pollution risk to groundwater.	Humber RBD	Implemented	Land managers and owners
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Enforcement of Groundwater Regulations, Sludge Regulations and, where appropriate, Nitrate Vulnerable Zone action programme through Cross Compliance.	Humber RBD	Implemented	Environment Agency
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Continue to provide development planning advice on minimising the risk of development to the water environment.	Humber RBD	Implemented	Environment Agency
Priority Substances and Specific Pollutants; Nitrate; Hazardous substances and non-hazardous pollutants	Agri-environment schemes/ Environmental Stewardship - payments for best practice to limit nitrate input and control agri-chemicals (England only)	Humber RBD	Implemented	Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants; Nitrate; Hazardous substances and non-hazardous pollutants	Contribute to development of planning structure plans, to influence location of development to protect groundwater.	Humber RBD	Implemented	Water companies; Environment Agency
Sediments (as a direct pollutant); Microbiology; Physical modification; Nutrients	Restoration of plantations on ancient woodland sites and plantations on semi-natural habitat in upland headwaters to improve water quality and habitat. For example, the river restoration project in the Yorkshire River Derwent headwaters.	Humber RBD	2012	Environment Agency; Environmental NGOs; The Woodland Trust
Sediments (as a direct pollutant); Nutrients; Organic pollutants	Work in partnership to deliver habitat improvements through land management solutions. For example the Esk Pearl Mussel and Salmon Recovery Project aims to improve river habitat, restore the pearl mussel population and increase populations of salmon and trout through the promotion of good land management in the catchment and includes a demonstration farm. On the Derbyshire Derwent and its tributaries, key spawning	Humber RBD	2012	Land managers and owners; National Farmers' Union; National Park Authorities; Natural England; Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	headwaters have been fenced off to provide buffer strips and prevent cattle poaching and siltation.			
Sediments (as a direct pollutant); Nutrients; Organic pollutants; Microbiology; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Maintain the Higher Level Stewardship Scheme offering farmers an incentive to achieve environmental benefits over and above those required under the Entry Level Stewardship Scheme. Higher Level Stewardship is targeted by Natural England to maximise environmental and other public benefits in targeted areas within the RBD.	Humber RBD	Implemented	Defra; Natural England
Sediments (as a direct pollutant); Nutrients; Organic pollutants; Microbiology; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Progress delivery of cross-compliance inspection and enforcement	Humber RBD	2010	Defra; Environment Agency; Rural Payments Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Promote good practice initiatives and implementation of codes of good practice for all types of rural land management. For example, developing partnerships to provide co-ordinated advice to farmers on complying with agricultural and environmental regulations similar to the Green Futures in the West Midlands.	Humber RBD	2012	Natural England; National Park Authorities; National Farmers' Union; Land managers and owners; Forestry Commission; Defra; Environment Agency
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Provision of capital grant through Rural Development Programme for England for works that go beyond statutory requirements to benefit the water environment focussing on nutrient management and water resources primarily for the Livestock Sector.	Humber RBD	2012	Regional Development Agencies
Temperature; Physical modification; Organic pollutants; Nutrients; Abstraction and other artificial flow pressures; Microbiology	Large scale restoration of peat moorlands to benefit biodiversity, water resources, water quality and potentially help manage peak flows. For example, Yorkshire Peatscapes and, in the Peak District and South Pennines, Moors for the Future.	Humber RBD	2012	Environmental NGOs; National Park Authorities; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Investigations				
Ammonia	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Rothley Brook Catchment (trib of Soar)	2010	Environment Agency
Ammonia	Further investigation required to confirm risk of failure of WFD Article 7	River Derwent from Bottle Brook to R Trent; R Blythe from Patrick Bridge to R Tame; River Trent from R Dove Conf to River Derwent; Blackbrook ReservoirBlackbrook Reservoir	2010	Environment Agency; Water companies
Ammonia; Colour	Investigate reasons for failure of WFD Article 7 so safeguard zones and development of detailed five year catchment action plan can be considered	Ladybower Reservoir; River Churnet from Meerbrook to Leekbrook; River Derwent from R Wye to R Amber; River Trent from R Dove Conf to River Derwent; Rothley Brook Catchment (trib of Soar)	2010	Environment Agency
Atrazine; Dieldrin; Isoproturon; Mecoprop; Simazine; Asulam	These substances have been banned, or are shortly to be withdrawn, from use in the UK. No further measures should be required although surveillance monitoring will be done to	Humber RBD	2010	Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	confirm this.			
Chemicals - all; Ammonia; Nutrients	Further investigation required to confirm risk of failure of WFD Article 7.	Aire & Don Sherwood Sandstone.	2010	Environment Agency
Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	River Churnet from Meerbrook to Leekbrook; Rothley Brook Catchment (trib of Soar); Ladybower Reservoir; River Derwent from R Wye to R Amber; River Trent from R Dove Conf to River Derwent	2010	Environment Agency
Colour	Further monitoring/investigation to confirm reasons for failure. Water industry scheme to address diffuse pollution in the catchment	Agden Reservoir; Chelker Reservoir; Dale Dike Reservoir; Keighley Moor Reservoir; Midhope Reservoir; Ponden Reservoir; Scar House Reservoir; Thornton Moor Reservoir; Water Sheddles Reservoir; Wharfe Barben Beck/River Dibb to River Washburn	2010	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation into ammonia, zinc, copper and cadmium failures required to confirm risk of failure of WFD Article 7.	Swale, Ure, Nidd, Ouse Millstone Grit and Carboniferous Limestone	2012	Environment Agency; Defra

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation into pesticide failures & local pollution prevention campaign using the 'Pesticides Code of Practice'	Swale, Ure, Nidd, Ouse Millstone Grit and Carboniferous Limestone	2012	Environment Agency
Metaldehyde	Investigate reasons for failure of WFD Article 7 so safeguard zones and development of detailed five year catchment action plan can be considered. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures.	River Derwent from Elvington Beck to River Ouse; River Derwent from Kirkham to Elvington Beck; River Swale/Ouse from Wiske to Naburn	2010	Metaldehyde Steering Group
Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures. Water industry catchment investigation to establish source of pollutant	Staunton Harold Reservoir	2010	Metaldehyde Steering Group

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Methabenzthiazuron; Propyzamide; 2,4-D; Metazachlor; Mecoprop; MCPA; Linuron; Diflufenican; Conductivity; Colour; Ammonia; Chlortoluron; Fen propimorph; Carbetamide	Further investigation required to confirm risk of failure of WFD Article 7	Blackbrook Reservoir; R Blythe from Patrick Bridge to R Tame; River Bourne from Didgeley Brook to R Tame; River Derwent from Bottle Brook to R Trent; River Derwent from R Wye to R Amber; River Trent from R Dove Conf to River Derwent; Rothley Brook Catchment (trib of Soar); Waithe Beck lower Catchment (to Tetney Lock)	2010	Environment Agency; Water companies
Nitrate; Ammonia; Phosphate	Further investigation required to confirm risk of failure of WFD Article 7.	Derwent Malton Corallian Limestone; Swale, Ure, Nidd, Ouse Sherwood Sandstone; Wharfe & Lower Ouse Millstone Grit and Carb Limestone	2012	Farmers; Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Phosphate; Priority Substances and Specific Pollutants	Investigation of Groundwater Dependent Terrestrial Ecosystems to assess if they have been significantly damaged as a result of groundwater pollution	Humber RBD	Implemented	Environment Agency
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone, Water industry	Blithfield Reservoir	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	catchment investigation to establish source of pollutant			
Pressures on groundwater (GW) balance	Investigation to improve confidence in groundwater quantitative status result	Grimsby Ancholme Frodingham Ironstone Unit	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate use of chemicals, such as Asulox, to control bracken in the Esk catchment and address land management issues to reduce the impact of pesticide use. This will secure drinking water supplies and help protect freshwater pearl mussels.	Derwent (Humber) Catchment; Esk and Coast Catchment	2010	Environment Agency; Water companies; Land managers and owners
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures; Direct biological pressures; Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by implementing agri-environment scheme (See Annex D)	Humber RBD	2012	Natural England
Abstraction and other artificial flow pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending abstraction licences (See Annex D)	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures; Nutrients; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Specific Management Works to address water quality, hydrology and morphology pressures (See Annex D)	Humber RBD	2012	Land managers and owners; Natural England
Abstraction and other artificial flow pressures; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Water Level Management Plans (See Annex D)	Humber RBD	2012	Environment Agency; Farmers; Land managers and owners
Nutrients	Contribute to achieving favourable condition on Chesterfield Canal SSSI, Clumber Park SSSI, River Eye SSSI, Cop Mere SSSI and River Blythe SSSI by revoking or amending discharge consents	Idle & Torne Catchment; Soar Catchment; Staffordshire Trent Valley Catchment; Tame Anker and Mease Catchment	2012	Environment Agency
Nutrients; Direct biological pressures; Abstraction and other artificial flow pressures; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through SSSI Management Agreement (See Annex D)	Humber RBD	2012	Environmental NGOs; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nutrients; Physical modification; Abstraction and other artificial flow pressures; Sediments (as a direct pollutant)	Contribute to achieving favourable condition on the River Hull Headwaters SSSI by implementing river restoration project	Hull and East Riding Catchment	2011	Environment Agency
Nutrients; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending Discharge/PPC Consents (See Annex D)	Humber RBD	2012	Environment Agency
Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Regulatory Investigation into water quality and hydrology pressures (See Annex D)	Humber RBD	2012	Environment Agency; Natural England
Physical modification	Contribute to achieving favourable condition on Mickletown Ings SSSI and Hatfield Chase Ditches SSSI by implementing water level management plans	Aire and Calder Catchment; Idle & Torne Catchment	2012	Environment Agency; Hatfield Chase Corporation Area Internal Drainage Board

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Compulsory Management Scheme to address hydrology pressures (See Annex D)	Humber RBD	2010	Natural England
Sediments (as a direct pollutant); Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by developing a pollution action plan for protected areas (See Annex D)	Humber RBD	2012	Environment Agency; Natural England

C.5 Angling and conservation

The Humber River Basin District contains a rich and diverse range of habitats, both upland and lowland, urban and rural, from acid heaths to alkaline grasslands, urban greenspace to wide expanses of mudflats, which in turn support a wealth of wildlife species. The area retains a significant proportion of the UK's overall resource of important wildlife sites, habitats and species, with a large proportion being designated as nationally and internationally important wildlife sites. At a more local level, areas of wildlife value are designated as local nature reserves, county wildlife sites (second tier sites) or non-statutory nature reserves. However, there have been significant declines in certain habitats and species in past years and much of our wildlife is still under threat. Biodiversity in the Humber Basin District is particularly threatened by land use changes (development, agriculture and water management), climate change (coastal squeeze and rising temperatures), environmental pollution and invasive non native species.

Fish are one of the best indicators of the state of the water environment. After many centuries of industrial and urban pollution, rivers in the river basin district have recovered and are home to some of the best coarse fisheries in the country. Many boast specimen sized chub, bream and barbel as well as strong populations of roach, dace and perch amongst others. Salmon and sea trout numbers have been increasing steadily in the River Esk and additionally salmon are also beginning to return to many other rivers notably the Trent and the Ouse systems. Salmon numbers are now mainly limited through access to spawning grounds due to historical weirs and other obstructions in previously industrialised rivers. Numerous quality still water fisheries are established throughout the river basin district.

As well as being indicators of environmental quality, fisheries play a significant role in the social and economic well being of the river basin district. Anglers expenditure in the basin is approximately £133.5 million per year and supports over 3000 jobs. Social schemes based in the Region have shown great success in helping vulnerable young people avoid becoming involved in drugs, anti-social behaviour and crime. It is crucial that we conserve the stocks on which angling depends through preventing illegal exploitation, controlling disease and preventing the introduction of inappropriate fish species.

Table C5: **Actions for the angling and conservation sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Registration for previously exempt activity: abstraction of water within water meadow systems	Humber RBD	2012	Environment Agency
Alien species	Work in partnership to develop species management plans for prioritised known invasive non-native species to improve identification, control and disposal. For example projects to protect existing populations of native white clawed crayfish by providing geographically isolated “ark” sites e.g. Coppice Ponds in Bradford, Holme Valley Park, Wingerworth in Chesterfield, Roundhay Park in Leeds. A project officer is leading work on Markeaton Brook to tackle Himalyan balsam control using volunteers/angling clubs.	Humber RBD	2012	Natural England; Environment Agency; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Promote existing codes of practice and guidance to the public and / or industry and trade to minimise the spread of invasive non-native species. For example, "All Choked Up" information postcard for garden centres and the Environment Agency information "Guidance for the control of non-native invasive weeds in or near fresh water".	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Local Authorities; Natural England
Alien species	Establish invasive non-native species forum for the RBD to improve communications, prioritise key species and coordinate projects. For example, the Calder Futures Partnership project has established a local forum for invasive weed management.	Humber RBD	2012	British Waterways; Environment Agency; Land managers and owners; Local Authorities; Natural England
Alien species	Rivers Trusts and Wildlife Trusts are taking direct action to control the spread of invasive plant species	Humber RBD	Implemented	Environmental NGOs; Fisheries and Angling Interests
Biota removal (including commercial fish take and weed control)	Introduction of national byelaws to require mandatory catch and release of all rod and line caught eels (subject to public consultation and implementation of byelaw)	Humber RBD	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Review and replace R. Esk tideway byelaw preventing fishing for all fish at night and allowing fishing for sea fish only during the day	Esk Catchment	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Biota removal (including commercial fish take and weed control)	Development of elver stocking programme	Humber RBD	2012	Fisheries and Angling Interests; Environment Agency
Habitat Manipulation (restoration/improvement)	The Headwater Streams Project is part of the Staffordshire Washlands Living Landscape Project. Promoting the spread of species by linking habitats and "biodiversity hotspots" along stream corridors. Establishing climate corridors for species; natural flood management through increased roughness of stream corridors and creation of new wetlands; stream re-habilitation through the input of large woody debris; creation and protection of native crayfish.	Staffordshire Trent Valley Catchment	Implemented	Environment Agency; Farmers; National Park Authorities; Natural England
Habitat Manipulation (restoration/improvement)	The West Yorkshire Strategic Rivers Programme works to deliver river habitat improvements to create a fully functioning ecological network based around river and canal corridors. The area covered by the project includes the districts of Bradford, Calderdale, Kirklees, Leeds and Wakefield and, where beneficial, beyond these boundaries.	Aire and Calder Catchment	Implemented	Environment Agency; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Habitat Manipulation (restoration/improvement)	Large scale restoration of blanket bog in selected sites in the Yorkshire Dales, North York Moors, Nidderdale and part of the South Pennines. Restoration work will stabilise the peat to reduce erosion and downstream sediment transport as well as ameliorate colour and increase biodiversity.	Derwent (Humber) Catchment; Swale, Ure, Nidd & Upper Ouse Catchment	Implemented	Environmental NGOs
Habitat Manipulation (restoration/improvement)	The River Hull After the Floods project (focussing from Driffeld through to Hull) will work toward enhancing the river corridor, reducing the fragmentation of isolated habitat and expanding BAP priority wetland through habitat creation and restoration.	Hull and East Riding Catchment	Implemented	Environment Agency; Environmental NGOs
Habitat Manipulation (restoration/improvement)	Creation of new wetland habitats through partnership working to deliver benefits for biodiversity, water quality, water resources and help manage peak flows. For example the Dearne Valley Green Heart project is creating new wetland at Adwick.	Humber RBD	2011	Environment Agency; Natural England; Royal Society for Protection of Birds
Habitat Manipulation (restoration/improvement)	The Wetting the Wiske Project is creating two areas of wetland habitat and erecting stock fencing to prevent overgrazing and bank collapse.	Swale, Ure, Nidd & Upper Ouse Catchment	Implemented	Environmental NGOs; Environment Agency
Habitat Manipulation (restoration/improvement);	Moors for the Future is a partnership project to restore large parts of the Peak	Derbyshire Derwent Catchment	Implemented	Environment Agency; Local Authorities;

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures; Physical modification; Sediments (as a direct pollutant)	District moors. It aims to raise awareness of why the moors are special and encourage responsible use and care of the landscape, restore and conserve important moorland resources and develop expertise on how to protect and manage the moors sustainably.			National Park Authorities; Water companies
Habitat Manipulation (restoration/improvement); Physical modification; Sediments (as a direct pollutant); Abstraction and other artificial flow pressures	The OnTrent Initiative is a partnership project involving a wide range of public, voluntary and commercial organisations. The project is working to secure a sustainable balance between the natural and historic heritage, agriculture, commercial activity and development along the River Trent between Stoke on Trent and the Humber Estuary.	Lower Trent & Erewash Catchment; Staffordshire Trent Valley Catchment	Implemented	Environmental NGOs
Habitat Manipulation (restoration/improvement); Sediments (as a direct pollutant); Organic pollutants; Nutrients	Trent Rivers Trust is using the Passport Fishing Scheme on the Upper Dove, with plans for expansion. The scheme works with farmers to develop new sites for fishing. Anglers purchase tokens to access sites and farmers exchange tokens for cash payment. This approach promotes access and encourages land owners to value the river as a resource.	Dove Catchment	Implemented	Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants; Physical modification; Nutrients; Sediments (as a direct pollutant); Direct biological pressures	Lincolnshire Chalk Streams project in Lincolnshire Wolds where a project officer works with landowners to re-naturalise streams, reintroducing meanders, riffles buffers etc.	Louth Grimsby and Ancholme Catchment	Implemented	Farmers; Environment Agency; Natural England; Water companies; Environmental NGOs
Physical modification	Develop three year rolling programme of bankside and in-river habitat improvements to allow for sustainable fish stocks working with partner organisations and local communities	Humber RBD	2012	Environment Agency; Environmental NGOs; Fisheries and Angling Interests; Land managers and owners
Physical modification	Trent Vale Landscape Partnership Project, will result in the enhancement of riverbanks and less intensive use of adjacent land (recreation of floodplain grazing marsh)	Lower Trent & Erewash Catchment	2012	Environment Agency; Environmental NGOs; Local Authorities; British Waterways
Physical modification	Identify best options for increasing opportunities for eels to bypass Cromwell Weir on the Trent and source funding to deliver improvements	Lower Trent & Erewash Catchment	2012	Fisheries and Angling Interests; Environment Agency
Physical modification	Improving habitat by connecting borrow pit on to River Tame to improve habitat for freshwater fish and eels	Tame Anker and Mease Catchment	2012	Fisheries and Angling Interests; Environment Agency
Physical modification	Replace Darfield Weir on the River Dearne with series of rock ramps to facilitate passage of fish and eels	Don and Rother Catchment	2010	Environment Agency; Fisheries and Angling Interests
Physical modification	Installation of eel passes at sites identified within the Humber eel management plan	Humber RBD	2012	Environment Agency; Fisheries and Angling Interests

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification; Abstraction and other artificial flow pressures; Habitat Manipulation (restoration/improvement)	East Midlands Strategic River Corridors Project. Taking a holistic approach to management and enhancement of river corridors to benefit people, wildlife and management of flood risk.	Lower Trent & Erewash Catchment	2012	Environmental NGOs; Regional Assemblies
Physical modification; Habitat Manipulation (restoration/improvement)	Joint working across the river basin to identify opportunities for ecological enhancement through restoration of a more natural inundation regime in washlands and / or wider river restoration projects resulting in a more natural flow regime and ecological functionality.	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Land managers and owners; Local Authorities; Natural England
Physical modification; Sediments (as a direct pollutant); Habitat Manipulation (restoration/improvement)	Initiatives to promote community involvement in environment will educate and raise profile of ecological status and importance of river basin's rivers. For example, as part of the Living Don project, Sheffield Wildlife Trust will work with local communities in Sheffield and Rotherham.	Humber RBD	2012	Environment Agency; Environmental NGOs; Local Authorities; Natural England
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Nutrients; Organic pollutants	Partnership working to implement initiatives to target and tackle significant local issues, particularly on pesticide and sheepdip. For example, the Voluntary Initiative to reduce pesticides into Blithfield Reservoir and Ingbirchworth Reservoir.	Humber RBD	2011	Health and Safety Executive; Levy Boards; Natural England; Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Sediments (as a direct pollutant); Microbiology; Physical modification; Nutrients	Restoration of plantations on ancient woodland sites and plantations on semi-natural habitat in upland headwaters to improve water quality and habitat. For example, the river restoration project in the Yorkshire River Derwent headwaters.	Humber RBD	2012	Environment Agency; Environmental NGOs; The Woodland Trust
Sediments (as a direct pollutant); Nutrients; Organic pollutants	Work in partnership to deliver habitat improvements through land management solutions. For example the Esk Pearl Mussel and Salmon Recovery Project aims to improve river habitat, restore the pearl mussel population and increase populations of salmon and trout through the promotion of good land management in the catchment and includes a demonstration farm. On the Derbyshire Derwent and its tributaries, key spawning headwaters have been fenced off to provide buffer strips and prevent cattle poaching and siltation.	Humber RBD	2012	Land managers and owners; National Farmers' Union; National Park Authorities; Natural England; Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Promote good practice initiatives and implementation of codes of good practice for all types of rural land management. For example, developing partnerships to provide co-ordinated advice to farmers on complying with agricultural and environmental regulations similar to the Green Futures in the West Midlands.	Humber RBD	2012	Natural England; National Park Authorities; National Farmers' Union; Land managers and owners; Forestry Commission; Defra; Environment Agency
Temperature; Physical modification; Organic pollutants; Nutrients; Abstraction and other artificial flow pressures; Microbiology	Large scale restoration of peat moorlands to benefit biodiversity, water resources, water quality and potentially help manage peak flows. For example, Yorkshire Peatscapes and, in the Peak District and South Pennines, Moors for the Future.	Humber RBD	2012	Environmental NGOs; National Park Authorities; Environment Agency; Water companies
Investigations				
Alien species	Monitor incoming survey data to enable a rapid response to new incidents of invasive non-native species. When new invasive shrimp <i>Hemimysis anomala</i> was discovered at the National Watersports Centre (Nottingham) investigations revealed the species to have spread.	Humber RBD	2012	Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Investigate ability to share data between partners and map non-native species across the RBD. Ecological Records Centres currently hold much of this information.	Humber RBD	2012	Local Authorities; Natural England; Environment Agency; British Waterways; Wildlife Trusts
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures	Contribute to achieving favourable condition on Kedleston Park SSSI, Hatfield Chase Ditches SSSI, Blackbrook Reservoir SSSI, Bradgate Park and Cropston Reservoir SSSI, Buddon Wood and Swithland Reservoir SSSI and Ripon Parks SSSI by undertaking specific management works	Derbyshire Derwent Catchment; Idle & Torne Catchment; Soar Catchment; Swale, Ure, Nidd & Upper Ouse Catchment	2010	National Trust; Severn Trent Water; Yorkshire Wildlife Trust; Environment Agency

C.6 Central government

Defra (Department for Environment, Food and Rural Affairs) is a UK Government Department and is responsible for the Water Framework Directive in England. Defra champions sustainable development, and helps Government as a whole to deliver economic, social and environmental sustainability. Defra is also the focal point for rural policy. Defra has several delivery partners that have important actions in our Draft River Basin Management Plan, including the following:

- Marine and Fisheries Agency
- Centre for the Environment, Fisheries and Aquaculture Science (CEFAS)
- Rural Payments Agency
- Environment Agency (see separate section)
- Forestry Commission
- National Park Authorities

Other Government Departments

- Department of Communities and Local Government (CLG)
- Office of Government Commerce (OGC) - an independent office of HM Treasury
- Health and Safety Executive (part of the Department of Work and Pensions), which includes the Pesticides Safety Directorate
- Highways Agency (part of Ministry for Transport)
- Defence Estates (part of Ministry of Defence)

The Crown Estate is a government organisation with a property portfolio encompassing many of the UK's cityscapes, ancient forests, farms, parkland, coastline and communities. It has an important role as influencer, manager, guardian and facilitator. Working in partnership with others, the Crown Estate enables and nurtures productive commercial opportunities, protects vulnerable environments, and enables social integration.

Table C6: **Actions for Central Government**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures	Undertake education campaigns to targeted audiences to raise awareness of sustainable water use, including conservation and re-use.	Humber RBD	2012	Central Government; Environment Agency; Local Authorities; Water companies; water users
Alien species	Work in partnership to develop species management plans for prioritised known invasive non-native species to improve identification, control and disposal. For example projects to protect existing populations of native white clawed crayfish by providing geographically isolated “ark” sites e.g. Coppice Ponds in Bradford, Holme Valley Park, Wingerworth in Chesterfield, Roundhay Park in Leeds. A project officer is leading work on Markeaton Brook to tackle Himalyan balsam control using volunteers/angling clubs.	Humber RBD	2012	Environment Agency; Environmental NGOs; Natural England
Alien species	Make appropriate use of existing legislative powers eg prohibit the sale of high-risk species; Salmon and Freshwater Fish Act (Section 30); Import of Live Fish Act; Wildlife & Countryside Act 1981; Environment Agency Fisheries byelaws; Convention on biological diversity; NERC Act; Habitats Directive; IMO convention on	Humber RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	ballast water)			
Alien species	Promote existing codes of practice and guidance to the public and / or industry and trade to minimise the spread of invasive non-native species. For example, "All Choked Up" information postcard for garden centres and the Environment Agency information "Guidance for the control of non-native invasive weeds in or near fresh water".	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Local Authorities; Natural England
Alien species	Increase awareness of the importance of the 'preventative approach' in addressing the threats posed by invasive non-native species. This would include 'horizon scanning' for new potentially invasive species.	Humber RBD	2010	Central Government
Alien species	Provide advice and training on identification, control and disposal of invasive non-native species to all relevant groups and encourage monitoring schemes.	Humber RBD	2012	Central Government; Environment Agency
Alien species	Draw up Individual Species Action Plans for species identified as presenting particular risk levels, to minimise the risks associated with them	Humber RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Contribute to the development of any EU level initiatives to improve legislation and controls relating to invasive non-native species.	Humber RBD	2012	Central Government
Alien species	Draw together a database of projects to facilitate better information sharing and increase opportunities for partnership working	Humber RBD	2012	Central Government
Alien species	Work to raise awareness of the of the risks transferring non-native species to the wild amongst the public and target groups	Humber RBD	2010	Central Government
Alien species	Set up and maintain a website that acts as a "one stop shop" for information and advice on invasive non-native species.	Humber RBD	Implemented	Central Government
Alien species	Develop a national early warning system with contingencies for rapid response control measures to eradicate new invasions	Humber RBD	2012	Central Government
Alien species	Establish National Invasive Non-Native Species Forums to plan, prioritise and coordinate action	Humber RBD	Implemented	Central Government
Alien species	Establish a central repository for holding data on invasive non-native species distribution.	Humber RBD	2012	Central Government
Alien species	Develop and implement codes of practice to reduce the spread of invasive non-native species	Humber RBD	2012	Environment Agency; Central Government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Integrate invasive non-native species control measures across all policy areas	Humber RBD	2012	Central Government; Environment Agency
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Work to increase awareness of the implications of WFD and promote sustainable drainage systems in new and existing developments, re-use of grey and storm water and the value of green infrastructure in urban developments.	Humber RBD	2012	Environment Agency; Local Authorities; Regional Assemblies
Nitrate	Address issue as priority action within this CSF catchment. Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions.	Marshchapel Drain	2010	Natural England
Organic pollutants; Nutrients	Education and awareness raising with home owners, SME's and Traders regarding wrong drainage connections (when toilets, washing machines, dishwashers, baths etc) are connected by mistake to the surface water drain instead of the foul sewer). For example, a partnership between Environment Agency, Birmingham City Council, Severn Trent Water and Community Service Volunteers has successfully tackled wrong connections as part of the Washwood Heath Brook project.	Humber RBD	2012	Construction Industry; Local Authorities; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Nutrients; Organic pollutants	Partnership working to implement initiatives to target and tackle significant local issues, particularly on pesticide and sheepdip. For example, the Voluntary Initiative to reduce pesticides into Blithfield Reservoir and Ingbirchworth Reservoir.	Humber RBD	2011	Health and Safety Executive; Levy Boards; Natural England; Water companies; Environment Agency
Sediments (as a direct pollutant); Nutrients; Organic pollutants	Work in partnership to deliver habitat improvements through land management solutions. For example the Esk Pearl Mussel and Salmon Recovery Project aims to improve river habitat, restore the pearl mussel population and increase populations of salmon and trout through the promotion of good land management in the catchment and includes a demonstration farm. On the Derbyshire Derwent and its tributaries, key spawning headwaters have been fenced off to provide buffer strips and prevent cattle poaching and siltation.	Humber RBD	2012	Land managers and owners; National Farmers' Union; National Park Authorities; Natural England; Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Promote good practice initiatives and implementation of codes of good practice for all types of rural land management. For example, developing partnerships to provide co-ordinated advice to farmers on complying with agricultural and environmental regulations similar to the Green Futures in the West Midlands.	Humber RBD	2012	Natural England; National Park Authorities; National Farmers' Union; Land managers and owners; Forestry Commission; Defra; Environment Agency
Temperature; Physical modification; Organic pollutants; Nutrients; Abstraction and other artificial flow pressures; Microbiology	Large scale restoration of peat moorlands to benefit biodiversity, water resources, water quality and potentially help manage peak flows. For example, Yorkshire Peatscapes and, in the Peak District and South Pennines, Moors for the Future.	Humber RBD	2012	Environmental NGOs; National Park Authorities; Environment Agency; Water companies
Investigations				
Alien species	Monitor incoming survey data to enable a rapid response to new incidents of invasive non-native species. When new invasive shrimp <i>Hemimysis anomala</i> was discovered at the National Watersports Centre (Nottingham) investigations revealed the species to have spread.	Humber RBD	2012	Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Investigate ability to share data between partners and map non-native species across the RBD. Ecological Records Centres currently hold much of this information.	Humber RBD	2012	Local Authorities; Natural England; Environment Agency; British Waterways; Wildlife Trusts
Alien species	Undertake risk assessments to identify priority invasive species for mitigation and control action either across the whole of Britain or at individual nation level	Humber RBD	2012	Central Government
Alien species	Seek sustainable and cost-effective methods for managing established invasions, such as biological control	Humber RBD	2012	Central Government; Environment Agency
Asulam	This substance has been banned/shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this.	River Bourne from Didgeley Brook to R Tame	2010	Central Government; Environment Agency
Atrazine; Dieldrin; Isoproturon; Mecoprop; Simazine; Asulam	These substances have been banned, or are shortly to be withdrawn, from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this.	Humber RBD	2010	Central Government; Environment Agency
Carbetamide	Further investigation required to confirm risk of failure of WFD Article 7	River Bourne from Didgeley Brook to R Tame; R Blythe from Patrick Bridge to R Tame	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures; Physical modification	Contribute to achieving favourable condition on Mickletown Ings SSSI, River Hull Headwaters SSSI, Blackbrook Reservoir SSSI, Bradgate Park And Cropston Reservoir SSSI and Buddon Wood And Swithland Reservoir SSSI by investigating hydrology	Aire and Calder Catchment; Hull and East Riding Catchment; Soar Catchment	2012	Natural England
Alien species	Eradication and control at selected SSSIs and Natura 2000 sites	Humber RBD	2012	Natural England
Direct biological pressures	Contribute to achieving favourable condition on Old River Dove, Marston On Dove SSSI, Blackbrook Reservoir SSSI, Bradgate Park And Cropston Reservoir SSSI, Buddon Wood And Swithland Reservoir SSSI, Semerwater SSSI and River Blythe SSSI by implementing invasive species control programme	Dove Catchment; Soar Catchment; Swale, Ure, Nidd & Upper Ouse Catchment; Tame Anker and Mease Catchment	2012	Natural England
Direct biological pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by developing an Invasive species control programme for protected areas (See Annex D)	Humber RBD	2012	Natural England; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through River Restoration Programme for Protected Areas (See Annex D)	Humber RBD	2012	Environment Agency; Natural England
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through River Restoration Scheme (See Annex D)	Humber RBD	2012	Environment Agency; Natural England
Sediments (as a direct pollutant); Nutrients	Contribute to achieving favourable condition on Mickletown Ings SSSI, Sprotbrough Gorge SSSI, Old River Dove, Marston On Dove SSSI, River Hull Headwaters SSSI, Chesterfield Canal SSSI, Rainworth Lakes SSSI, Grantham Canal SSSI, Blackbrook Reservoir SSSI, Bradgate Park and Cropston Reservoir SSSI, River Eye SSSI, Ripon Parks SSSI, Buddon Wood and Swithland Reservoir SSSI, River Blythe SSSI, Groby Pool and Woods SSSI, Gormire SSSI, Thoresby Lake SSSI, Clumber Park SSSI, Cop Mere SSSI, River Blythe SSSI and Kilby - Foxton Canal SSSI by developing pollution action plan	Aire and Calder Catchment; Don and Rother Catchment; Dove Catchment; Hull and East Riding Catchment; Idle & Torne Catchment; Lower Trent & Erewash Catchment; Soar Catchment; Staffordshire Trent Valley Catchment; Swale, Ure, Nidd & Upper Ouse Catchment; Tame Anker and Mease Catchment	2012	Natural England

C.7 Environment Agency

The Environment Agency was established by the 1995 Environment Act and became fully operational on 1st April 1996. The Agency is a Non-Departmental Public Body of the Department for Environment, Food and Rural Affairs. The Secretary of State for Environment, Food and Rural Affairs has the lead sponsorship responsibility for the Agency as a whole and the Agency is accountable to the Secretary of State for its day to day operations in England.

The Agency's principal aim is to protect and enhance the environment and in doing so to contribute towards achieving sustainable development. In support of this aim, the Agency was identified as the "competent authority" for the implementation of the Water Framework Directive, a role which complements its broad range of functions which include Integrated Pollution Prevention and Control, Integrated Pollution Control, Waste Management, Water Quality, Land Quality, Water Resources, Conservation, Recreation, Fisheries, Flood Risk Management, Navigation and Radioactive Substances Regulation.

Regions and Areas ensure national priorities are delivered at a local level while taking account of the needs of local communities and stakeholders. Head Office is responsible for corporate management of the Agency, including policy development, strategic and operational objective setting and performance management.

Table C7: **Actions for the Environment Agency**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures	Encourage farmers to build winter storage reservoirs where appropriate. The Environment Agency has recently produced a guide to building water storage reservoirs. This will be used to promote the uptake of grants within priority catchments.	Humber RBD	2012	Regional Development Agencies; Environment Agency; Environmental NGOs; National Farmers' Union

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures	Roll out delivery from the Reservoir Compensation release project to create more naturalised flows and improve ecology. Use this as best practice to apply to a wider geographic area where appropriate.	Humber RBD	2012	Environment Agency; Environmental NGOs; Fisheries and Angling Interests; Natural England; Riparian owners; Water companies
Abstraction and other artificial flow pressures	Undertake education campaigns to targeted audiences to raise awareness of sustainable water use, including conservation and re-use.	Humber RBD	2012	Central Government; Environment Agency; Local Authorities; Water companies; water users
Abstraction and other artificial flow pressures; Habitat Manipulation (restoration/improvement); Physical modification; Sediments (as a direct pollutant)	Forest Research has undertaken a mapping exercise in Yorkshire to identify suitable areas of flood plain for woodland planting to deliver benefits for flood risk and water quality. Woodland can help to increase surface water infiltration and also reduce erosion and delivery of coarse sediment to rivers. The outcomes of the exercise are being taken forward helping to deliver the Regional Forestry Strategy.	Humber RBD	Implemented	Forestry Commission; Natural England; Environment Agency; Regional Development Agencies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Work in partnership to develop species management plans for prioritised known invasive non-native species to improve identification, control and disposal. For example projects to protect existing populations of native white clawed crayfish by providing geographically isolated “ark” sites e.g. Coppice Ponds in Bradford, Holme Valley Park, Wingerworth in Chesterfield, Roundhay Park in Leeds. A project officer is leading work on Markeaton Brook to tackle Himalyan balsam control using volunteers/angling clubs.	Humber RBD	2012	Environment Agency; Environmental NGOs; Natural England
Alien species	Make appropriate use of existing legislative powers eg prohibit the sale of high-risk species; Salmon and Freshwater Fish Act (Section 30); Import of Live Fish Act; Wildlife & Countryside Act 1981; Environment Agency Fisheries byelaws; Convention on biological diversity; NERC Act; Habitats Directive; IMO convention on ballast water)	Humber RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Promote existing codes of practice and guidance to the public and / or industry and trade to minimise the spread of invasive non-native species. For example, "All Choked Up" information postcard for garden centres and the Environment Agency information "Guidance for the control of non-native invasive weeds in or near fresh water".	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Local Authorities; Natural England
Alien species	Establish invasive non-native species forum for the RBD to improve communications, prioritise key species and coordinate projects. For example, the Calder Futures Partnership project has established a local forum for invasive weed management.	Humber RBD	2012	British Waterways; Environment Agency; Land managers and owners; Local Authorities; Natural England
Alien species	Provide advice and training on identification, control and disposal of invasive non-native species to all relevant groups and encourage monitoring schemes.	Humber RBD	2012	Central Government; Environment Agency
Alien species	Draw up Individual Species Action Plans for species identified as presenting particular risk levels, to minimise the risks associated with them	Humber RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Work to raise awareness of the of the risks transferring non-native species to the wild amongst the public and target groups	Humber RBD	2010	Central Government
Alien species	Reduction of extent of invasive non-native species as required during routine maintenance of assets	Humber RBD	2012	Environment Agency
Alien species	Develop and implement codes of practice to reduce the spread of invasive non-native species	Humber RBD	2012	Environment Agency; Central Government
Alien species	Integrate invasive non-native species control measures across all policy areas	Humber RBD	2012	Central Government; Environment Agency
Colour	Develop detailed 5-year Catchment Action Plan for Safeguard Zone.	Warland Reservoir; White Holme Reservoir	2010	Environment Agency
Habitat Manipulation (restoration/improvement)	Review the operation of barrages where appropriate to improve ecology and amenity value. For example consider operation of Barmby Barrage as part of the Yorkshire River Derwent Restoration Project	Derwent (Humber) Catchment	2012	British Waterways; Environment Agency; Water companies
Microbiology; Nutrients; Organic pollutants	Targeted campaigns to raise awareness of issues with septic tanks and village drains.	Humber RBD	2012	Local Authorities; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Work to increase awareness of the implications of WFD and promote sustainable drainage systems in new and existing developments, re-use of grey and storm water and the value of green infrastructure in urban developments.	Humber RBD	2012	Environment Agency; Local Authorities; Regional Assemblies
Nitrate	Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions in Nitrates Vulnerable Zone	R Blythe from Patrick Bridge to R Tame	2010	Environment Agency
Nutrients; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Address land management and diffuse pollution issues through a series of farm visits and awareness campaigns and education targetted at land owners located within prioritised waterbodies rated as having the greatest environmental impact.	Humber RBD	2012	Environment Agency
Organic pollutants	Development of a strategic approach to catchment management and the impact of climate change in partnership with the water company.	Humber RBD	2012	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants	Development of a strategic approach to addressing the impact of diffuse pollution through education and awareness campaigns	Humber RBD	2012	Environment Agency
Organic pollutants	Reduce the impact from diffuse organic pollution through a better understanding of source apportionment.	Humber RBD	2012	Environment Agency; Water companies
Organic pollutants; Nutrients	Education and awareness raising with home owners, SME's and Traders regarding wrong drainage connections (when toilets, washing machines, dishwashers, baths etc) are connected by mistake to the surface water drain instead of the foul sewer). For example, a partnership between Environment Agency, Birmingham City Council, Severn Trent Water and Community Service Volunteers has successfully tackled wrong connections as part of the Washwood Heath Brook project.	Humber RBD	2012	Construction Industry; Local Authorities; Water companies
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	Cropston Reservoir	2010	Environment Agency
Physical modification	Environment Agency to produce a WFD mitigation measures manual	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	for flood and coastal erosion risk management and land drainage activities. This manual will set out best practice options for measures to mitigate against the impacts of such activities upon ecology. This will be used to ensure that new and existing schemes and management activities will take into consideration WFD requirements and will results in minimal ecological damage.			
Physical modification	Flood/Coastal Erosion Risk Management Measure - Sediment management strategies (develop and revise) which could include a) substrate reinstatement, b) sediment traps, c) allow natural recovery minimising maintenance, d) riffle construction, e) reduce all bar necessary management in flood risk areas	Yorkshire South / Lincolnshire	2011	Environment Agency
Physical modification	Catchment Flood Management Plans Shoreline Management Plans and System Asset Management Plans will show where flood risk management and coastal erosion management should continue, be increased or	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	decreased. This could include or lead to habitat creation or river restoration.			
Physical modification	All new hydropower schemes allow free movement of fish and eels without damage to the fish and are fish friendly to all species. Identify opportunities where schemes could be beneficial in providing solutions to current fish barrier problems	Humber RBD	2012	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate channel maintenance strategies and techniques e.g. remove woody debris only upstream of, or within, areas of urban flood risk	River Derwent from Bottle Brook to R Trent; River Trent from Anker/Mease Conf to River Dove	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works.	Adlingfleet Drain Upper Catchment (trib of Trent); River Derwent from Bottle Brook to R Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate channel maintenance	River Derwent from Bottle Brook to R Trent	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	strategies and techniques e.g. minimise disturbance to channel bed and margins			
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate techniques to align and attenuate flow to limit detrimental effects of these features (drainage)	River Derwent from Bottle Brook to R Trent	2011	Environment Agency
Physical modification	Ensure that new and existing power station discharges do not damage fish stocks due to thermal barriers and that water intake screens do not entrain fish.	Humber RBD	2012	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone	HUMBER LOWER; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Indirect / offsite mitigation works to be completed within the water body (offsetting measures).	R Trent from Carlton-on-Trent to Laughton Drain; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate water level management strategies, including	HUMBER LOWER	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	timing and volume of water moved			
Physical modification	Flood/Coastal Erosion Risk Management Measure - Operational and structural changes to locks, sluices, weirs, beach control, etc	Aire from River Calder to River Ouse; River Derwent from Bottle Brook to R Trent; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Operational and structural changes to locks, sluices, weirs, beach control, etc	Wharfe from R Washburn to the Fleet/the Foss	2027	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Retain marginal aquatic and riparian habitats (channel alteration)	HUMBER LOWER; River Derwent from Bottle Brook to R Trent; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Undertake bank rehabilitation / reprofiling work.	Adlingfleet Drain Upper Catchment (trib of Trent); River Trent from Anker/Mease Conf to River Dove	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate techniques to control invasive non-native species'.	River Derwent from Bottle Brook to R Trent	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification	Flood/Coastal Erosion Risk Management Measure - Appropriate techniques and timing of vegetation control.	River Derwent from Bottle Brook to R Trent; River Trent from Anker/Mease Conf to River Dove	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Create flood bunds (earth banks) in place of floodwalls.	River Derwent from Bottle Brook to R Trent; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Set-back embankments (a type of managed retreat)	River Derwent from Bottle Brook to R Trent; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Increase in-channel morphological diversity	River Derwent from Bottle Brook to R Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Selective vegetation control regime	River Derwent from Bottle Brook to R Trent; River Trent from Anker/Mease Conf to River Dove	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Improve floodplain connectivity	Aire from River Calder to River Ouse; River Trent from River Soar to Carlton-on-Trent	2011	Environment Agency
Physical modification	Flood/Coastal Erosion Risk Management Measure - Remove obsolete structure	Yorkshire South / Lincolnshire	2011	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification; Habitat Manipulation (restoration/improvement)	Joint working across the river basin to identify opportunities for ecological enhancement through restoration of a more natural inundation regime in washlands and / or wider river restoration projects resulting in a more natural flow regime and ecological functionality.	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Land managers and owners; Local Authorities; Natural England
Physical modification; Sediments (as a direct pollutant); Habitat Manipulation (restoration/improvement)	Initiatives to promote community involvement in environment will educate and raise profile of ecological status and importance of river basin's rivers. For example, as part of the Living Don project, Sheffield Wildlife Trust will work with local communities in Sheffield and Rotherham.	Humber RBD	2012	Environment Agency; Environmental NGOs; Local Authorities; Natural England
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Improved or more targeted street and drain cleaning and maintenance of storm water systems. For example, the Environment Agency and Highways Agency review of de-icing chemicals/ materials to identify products with minimal environmental impact, on the Birmingham motorway network.	Humber RBD	2012	Highways Agency; Local Authorities; Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Provide advice to small and medium sized businesses on obligations in relation to priority substances, priority hazardous substances and specific pollutants through NetRegs website	Humber RBD	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Enforce REACH Annex 17 restrictions	Humber RBD	Implemented	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Nutrients; Organic pollutants	Partnership working to implement initiatives to target and tackle significant local issues, particularly on pesticide and sheepdip. For example, the Voluntary Initiative to reduce pesticides into Blithfield Reservoir and Ingbrichworth Reservoir.	Humber RBD	2011	Health and Safety Executive; Levy Boards; Natural England; Water companies; Environment Agency
Sediments (as a direct pollutant); Microbiology; Physical modification; Nutrients	Restoration of plantations on ancient woodland sites and plantations on semi-natural habitat in upland headwaters to improve water quality and habitat. For example, the river restoration project in the Yorkshire River Derwent headwaters.	Humber RBD	2012	The Woodland Trust; Environment Agency; Environmental NGOs

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Sediments (as a direct pollutant); Nutrients; Organic pollutants	Work in partnership to deliver habitat improvements through land management solutions. For example the Esk Pearl Mussel and Salmon Recovery Project aims to improve river habitat, restore the pearl mussel population and increase populations of salmon and trout through the promotion of good land management in the catchment and includes a demonstration farm. On the Derbyshire Derwent and it's tributaries, key spawning headwaters have been fenced off to provide buffer strips and prevent cattle poaching and siltation.	Humber RBD	2012	Land managers and owners; National Farmers' Union; National Park Authorities; Natural England; Water companies; Environment Agency
Sediments (as a direct pollutant); Organic pollutants; Nutrients	Promote good practice initiatives and implementation of codes of good practice for all types of rural land management. For example, developing partnerships to provide co-ordinated advice to farmers on complying with agricultural and environmental regulations similar to the Green Futures in the West Midlands.	Humber RBD	2012	Natural England; National Park Authorities; National Farmers' Union; Land managers and owners; Forestry Commission; Defra; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Temperature; Physical modification; Organic pollutants; Nutrients; Abstraction and other artificial flow pressures; Microbiology	Large scale restoration of peat moorlands to benefit biodiversity, water resources, water quality and potentially help manage peak flows. For example, Yorkshire Peatscapes and, in the Peak District and South Pennines, Moors for the Future.	Humber RBD	2012	Environmental NGOs; National Park Authorities; Environment Agency; Water companies
Investigations				
Abstraction	Carry out groundwater monitoring and update Sherwood Sandstone Model with new abstraction data	Aire and Calder Catchment	2011	Environment Agency
Abstraction	Investigation to improve confidence in groundwater quantitative status result	Wharfe & Lower Ouse Sherwood Sandstone	2012	Environment Agency
Abstraction and other artificial flow pressures	Investigations at sites identified under the Restoring Sustainable Abstraction Programme	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures	Review and improve Environmental Flow Indicators	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Acidification; Microbiology; Nutrients; Organic pollutants; Physical modification; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Undertake investigations to better understand problems in waterbodies where extended deadlines have been put in place and identify actions to resolve them where possible	Humber RBD	Implemented	Environment Agency
Alien species	Monitor incoming survey data to enable a rapid response to new incidents of invasive non-native species. When new invasive shrimp <i>Hemimysis anomala</i> was discovered at the National Watersports Centre (Nottingham) investigations revealed the species to have spread.	Humber RBD	2012	Environment Agency; Natural England
Alien species	Investigate ability to share data between partners and map non-native species across the RBD. Ecological Records Centres currently hold much of this information.	Humber RBD	2012	Local Authorities; Natural England; Environment Agency; British Waterways; Wildlife Trusts
Alien species	Seek sustainable and cost-effective methods for managing established invasions, such as biological control	Humber RBD	2012	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Ammonia	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Rothley Brook Catchment (trib of Soar)	2010	Environment Agency
Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	River Churnet from Meerbrook to Leekbrook; Rothley Brook Catchment (trib of Soar); River Trent from R Dove Conf to River Derwent; Ladybower Reservoir; River Derwent from R Wye to R Amber	2010	Environment Agency
Conductivity	Further investigation required to confirm risk of failure of WFD Article 7	Waithe Beck lower Catchment (to Tetney Lock)	2010	Environment Agency; Water companies
Direct biological pressures	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by developing an Invasive species control programme for protected areas (See Annex D)	Humber RBD	2012	Natural England; Environment Agency
Habitat Manipulation (restoration/improvement)	Investigate new flap gate technology to increase fish passage opportunities and seek removal of flap gates and penstocks on the tidal Trent where possible.	Lower Trent & Erewash Catchment	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Habitat Manipulation (restoration/improvement); Physical modification	The Environment Agency has identified priority obstructions on the Rivers Wharfe, Aire, Trent, Calder, Don, Derwent, Ure, Esk, Idle, Torne, Dove and Soar. The Environment Agency will seek funding and opportunity to improve passage either through provision of fish passes or removal of obstructions (starting with Boston Spa (River Wharfe) and Darfield (River Don) by 2010). The Environment Agency will take an opportunistic approach to removing other obstructions to fish migration as funds and opportunities permit. Other organisations may also take action on obstructions.	Humber RBD	2012	British Waterways; Environment Agency; Water companies
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures	Contribute to achieving favourable condition on Kedleston Park SSSI, Hatfield Chase Ditches SSSI, Blackbrook Reservoir SSSI, Bradgate Park and Cropston Reservoir SSSI, Buddon Wood and Swithland Reservoir SSSI and Ripon Parks SSSI by undertaking	Derbyshire Derwent Catchment; Idle & Torne Catchment; Soar Catchment; Swale, Ure, Nidd & Upper Ouse Catchment	2010	National Trust; Severn Trent Water; Yorkshire Wildlife Trust; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	specific management works			
Abstraction and other artificial flow pressures	Contribute to achieving favourable condition on Bradgate Park and Cropston Reservoir SSSI, Buddon Wood and Swithland Reservoir SSSI and River Blythe SSSI by revoking or amending abstraction licences	Soar Catchment; Tame Anker and Mease Catchment	2010	Environment Agency
Abstraction and other artificial flow pressures; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Water Level Management Plans (See Annex D)	Humber RBD	2012	Environment Agency; Farmers; Land managers and owners
Abstraction and other artificial flow pressures; Physical modification	Contribute to achieving favourable condition on Mickletown Ings SSSI, River Hull Headwaters SSSI, Blackbrook Reservoir SSSI, Bradgate Park And Cropston Reservoir SSSI and Buddon Wood And Swithland Reservoir SSSI by investigating hydrology	Aire and Calder Catchment; Hull and East Riding Catchment; Soar Catchment	2012	Natural England
Nutrients	Contribute to achieving favourable condition on Attenborough Gravel Pits SSSI by implementing flood management programme	Lower Trent & Erewash Catchment	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nutrients; Physical modification; Abstraction and other artificial flow pressures; Sediments (as a direct pollutant)	Contribute to achieving favourable condition on the River Hull Headwaters SSSI by implementing river restoration project	Hull and East Riding Catchment	2011	Environment Agency
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone, Water industry catchment investigation to establish source of pollutant	Blithfield Reservoir	2010	Environment Agency
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of flood and coastal erosion risk management activities, improving the understanding of the cost/benefit and technical feasibility of such measures and developing understanding of the underlying processes, ecological responses and applicability. Will use case studies, but outcomes will have a national application.	Humber RBD	2010	Environment Agency
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through River Restoration Programme for Protected Areas (See Annex D)	Humber RBD	2012	Environment Agency; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Flood Management Programme (See Annex D)	Humber RBD	2012	Environment Agency; Local Authorities
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through fisheries enhancement project (See Annex D)	Humber RBD	2010	Environment Agency
Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through River Restoration Scheme (See Annex D)	Humber RBD	2012	Environment Agency; Natural England
Physical modification	Contribute to achieving favourable condition on Mickletown Ings SSSI and Hatfield Chase Ditches SSSI by implementing water level management plans	Aire and Calder Catchment; Idle & Torne Catchment	2012	Environment Agency; Hatfield Chase Corporation Area Internal Drainage Board
Pressures on groundwater dependent ecosystems	Investigation to verify risk of deterioration in groundwater quantitative status	Swale, Ure, Nidd, Ouse Magnesian Limestone	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Sediment monitoring, modelling and bioaccumulation studies on heavy metals which may be related to sediment movements.	Humber RBD	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate discharges and cost effective solutions for permethrin and 2-4-D	Aire and Calder Catchment	2012	Environment Agency; Industry leads
Sediments (as a direct pollutant); Nutrients	Contribute to achieving favourable condition on Mickletown Ings SSSI, Sprotbrough Gorge SSSI, Old River Dove, Marston On Dove SSSI, River Hull Headwaters SSSI, Chesterfield Canal SSSI, Rainworth Lakes SSSI, Grantham Canal SSSI, Blackbrook Reservoir SSSI, Bradgate Park and Cropston Reservoir SSSI, River Eye SSSI, Ripon Parks SSSI, Buddon Wood and Swithland Reservoir SSSI, River Blythe SSSI, Groby Pool and Woods SSSI, Gormire SSSI, Thoresby Lake SSSI, Clumber Park SSSI, Cop Mere SSSI, River Blythe SSSI and Kilby - Foxton Canal SSSI by developing pollution action plan	Aire and Calder Catchment; Don and Rother Catchment; Dove Catchment; Hull and East Riding Catchment; Idle & Torne Catchment; Lower Trent & Erewash Catchment; Soar Catchment; Staffordshire Trent Valley Catchment; Swale, Ure, Nidd & Upper Ouse Catchment; Tame Anker and Mease Catchment	2012	Natural England

C.8 Industry, manufacturing and other business

The key economic sectors in the district are business services, health, wholesale and distribution. Manufacturing (particularly metals) is an important contributor to the economy but has been declining in recent years. Tourism is another important component within the RBD as the North Yorkshire Moors, Yorkshire Dales and the High Peak are all within the Humber RBD. The river basin district also hosts a small but important commercial fishery both for white fish and shellfish such as shrimps, crabs and lobsters. A number of nets are operated from beaches aimed at taking sea trout and salmon along with 2 drift nets taking salmon further out to sea. Over recent years, bass populations have also increased off the coast leading to the development of a commercial fishery for this species which is one of the first in the world to gain Marine Stewardship Council accreditation as a sustainable fishery.

All businesses have some environmental footprint, by emitting pollution, using water, producing waste or simply using power. Regional Economic Strategies are key documents to manage the impact of future economic growth, by aiming to demonstrate that this growth can be secured within environmental limits to bring prosperity to the regions.

Table C8: **Actions for Industry, manufacturing and other business**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Reduction of demand through offering of tax incentives (enhanced Capital Allowances) for the purchase and use of efficient plant and fittings by commercial organisations	Humber RBD	Implemented	Defra; HM Revenue and Customs
Abstraction and other artificial flow pressures	Reduction in water use for specific sectors - including water efficiency plans that incorporate water reuse / recycling, rainwater harvesting and other similar methods, clean and dirty water separation	Humber RBD	2012	Water companies; Environment Agency; Regional Development Agencies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Promote existing codes of practice and guidance to the public and / or industry and trade to minimise the spread of invasive non-native species. For example, "All Choked Up" information postcard for garden centres and the Environment Agency information "Guidance for the control of non-native invasive weeds in or near fresh water".	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Local Authorities; Natural England
Benzo(a)pyrene; Indeno (123-cd) pyrene; Benzo (ghi) perylene	EU Restriction on use of PAH content in oil used in the manufacture of tyres	Humber RBD	Implemented	EU
Biota removal (including commercial fish take and weed control)	Introduction of national byelaws to restrict commercial fishing effort for eels and elvers through amendments to fishing seasons and gear restriction byelaws with appropriate enforcement (subject to public consultation and implementation of byelaws)	Humber RBD	2012	Environment Agency
Biota removal (including commercial fish take and weed control)	Review and replace current Net Limitation Order covering commercial salmon and sea trout netting on and off the coast	Humber RBD	2012	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Make use of site specific notices (served under Water Resources Act Section 86 and Section 161, Groundwater Regulations, contaminated land legislation) to reduce pollution risk to groundwater.	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Nitrate;	Registrations (in conjunction with Standard Rules) - Implement new regulatory approach	Humber RBD	2012	Environment Agency; Industry leads; Land

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants	arising from implementation of new Groundwater Directive (2006/116/EC)			managers and owners; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement DCLG Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land	Humber RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting – implement Process Industries Regulation to minimise pollution risk and harm to the environment	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implementation of 'oil-filled cables' operating agreement with electricity transmission companies	Humber RBD	Implemented	Environment Agency; Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Petrol Retailing Code of Practice (Groundwater Regulations) - comply with published advice for operators	Humber RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local pollution prevention campaigns & education to include emphasis on solvent use	Dove - PT Sandstone Mayfield; Tame Anker Mease - PT Sandstone Birmingham Lichfield	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Environmental Permitting – regulate effluent discharges to ground	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow the Sustainable Drainage Systems (SuDS) Interim Code of Practice - comply with published advice for operators	Humber RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Local Authority use of site specific contaminated land remediation notices to remove pollution risk to groundwater.	Humber RBD	Implemented	Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Total Oil Operating agreement	Humber RBD	Implemented	Environment Agency; Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement Groundwater Protection: Policy & Practice - External education on groundwater pollution prevention	Humber RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority	Environmental Permitting – regulate waste	Humber RBD	Implemented	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Substances and Specific Pollutants	disposal to minimise pollution risk and harm to the environment			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Solvents Code of Practice (Groundwater Regulations) - comply with published advice for operators	Humber RBD	Implemented	Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Proposed oil pipelines Operating Agreement(s)	Humber RBD	2012	Environment Agency; Industry leads
Mercury and its compounds	Recently introduced restrictions across the UK will see decreasing trend in emissions and probable compliance by 2015 with no further action	Humber RBD	Implemented	Environment Agency
Nitrate	Development planning - planning liaison. Site specific groundwater pollution prevention advice and recommendations	Humber RBD	Implemented	Local Authorities
Nitrate	Register and regulate waste exemptions, a low risk approach to waste regulation activities	Humber RBD	Implemented	Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	Humber RBD	Implemented	Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	NetRegs (environmental guidance to business) - external advice and education on environmental legislation, including groundwater pollution legislation	Humber RBD	Implemented	Environment Agency
Organic pollutants; Nutrients	Education and awareness raising with home owners, SME's and Traders regarding wrong drainage connections (when toilets, washing machines, dishwashers, baths etc) are connected by mistake to the surface water drain instead of the foul sewer). For example, a partnership between Environment Agency, Birmingham City Council, Severn Trent Water and Community Service Volunteers has successfully tackled wrong connections as part of the Washwood Heath Brook project.	Humber RBD	2012	Construction Industry; Local Authorities; Water companies
Physical modification	All new hydropower schemes allow free movement of fish and eels without damage to the fish and are fish friendly to all species. Identify opportunities where schemes could be beneficial in providing solutions to current fish barrier problems	Humber RBD	2012	Environment Agency
Physical modification	Ensure that new and existing power station discharges do not damage fish stocks due to thermal barriers and that water intake screens do not entrain fish.	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to reduce the impact of pesticide use through the Amenity Forum	Humber RBD	Implemented	Amenity Forum
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Development planning: land contamination - site specific advice and required action for remediation of contaminated land through planning liaison	Humber RBD	Implemented	Environment Agency; Local Authorities
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Comply with environmental permit conditions	Humber RBD	Implemented	Industry leads
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Comply with site specific notices (served under Water Resources Act Section 86 and Section 161, Groundwater Regulations, contaminated land legislation), where issued by Environment Agency or Local Authority, to reduce pollution risk to groundwater.'	Humber RBD	Implemented	Land managers and owners
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Comply with Local Authority contaminated land remediation notices - make use of site specific notices to remove pollution risk to groundwater	Humber RBD	Implemented	Local Authorities; Land managers and owners

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Continue to provide development planning advice on minimising the risk of development to the water environment.	Humber RBD	Implemented	Environment Agency
Priority Substances and Specific Pollutants; Nitrate; Hazardous substances and non-hazardous pollutants	Contribute to development of planning structure plans, to influence location of development to protect groundwater.	Humber RBD	Implemented	Water companies; Environment Agency
Saline intrusion	Catchment Abstraction Management Strategies – Implement abstraction licencing controls to minimise and manage risks from saline intrusion	Humber RBD	Implemented	Environment Agency; Water companies
Trichloroethylene	EU-wide ban on use	Humber RBD	Implemented	EU
Investigations				
Chloride	Further investigation required to confirm risk of failure of WFD Article 7	Waithe Beck lower Catchment (to Tetney Lock)	2010	Environment Agency; Water companies
Dredging and trawling (commercial fishing and shellfish)	Investigation into the impact of commercial shell and fin fisheries to improve the risk assessment of the impact of these activities on ecology and to identify appropriate measures. Will use case studies, but outcomes will have a national application.	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation into ammonia, zinc, copper and cadmium failures required to confirm risk of failure of WFD Article 7	Swale, Ure, Nidd, Ouse Millstone Grit and Carboniferous Limestone	2012	Defra; Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Investigate discharges and cost effective solutions for permethrin and 2-4-D	Aire and Calder Catchment	2012	Environment Agency; Industry leads
Saline intrusion	Further investigations and review of abstraction licensing policy for the groundwater bodies	Tame Anker Mease - PT Sandstone Burton	2011	Environment Agency
Saline intrusion	Ongoing investigation into the implications of abstraction licensing on saline intrusion.	Derwent Malton Corallian Limestone; Derwent Vale of Pickering Corallian Limestone	Implemented	Environment Agency
Saline intrusion	Investigation to improve confidence in groundwater quantitative status result	Derwent Malton Corallian Limestone; Hull & East Riding Chalk	2012	Environment Agency
Sulphate; Sodium; Chloride	Further investigation required to confirm risk of failure of WFD Article 7	Marshchapel Drain; Waithe Beck lower Catchment (to Tetney Lock)	2010	Environment Agency; Water companies
Tributyltin (TBT) compounds	Investigate emissions from installations and appraise options (to reduce at source or treat, up to BAT) to meet Environmental Quality Standards and reduce/cease emissions in this or subsequent rounds, focussing on ship yards, timber treatment plants or treated timber storage areas (imported timber)	River Soar from Long Whatton Brook to River Trent; River Soar from Rothley Brook to Long Whatton Brook; River Trent from Moreton Brook to River Tame	2012	Industry

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures;	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending abstraction licences (See Annex D)	Humber RBD	2012	Environment Agency
Nutrients; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending Discharge/PPC Consents (See Annex D)	Humber RBD	2012	Environment Agency

C.9 Local and regional government

Local Government is responsible for working with the community to implement Government policy and maintain public services and facilities, from parks and education to social services and transport. In addition to the delivery of public services by individual councils and other statutory agencies, there is an increasing emphasis on the importance of organisations working in partnership with each other i.e. through Local Strategic Partnerships bringing together key service providers from the private, business, community and voluntary sectors into a single partnership.

There are 24 unitary authorities within, or partly within, the Humber River Basin District. These are single tier and deliver the full range of services, including education, social services, council tax and housing benefits, public libraries, museums and art galleries, traffic and transportation, refuse collection, recycling and disposal, planning, environmental health, swimming pools and leisure facilities, parks, open spaces and countryside including footpaths, cemeteries and crematoria, markets and fairs, registration of births, deaths, marriages and electorates, collecting council tax and business rates.

The remaining two tier authorities consist of nine county councils and 46 district councils. The responsibilities laid out above are split between the two tiers. Town and Parish councils exist at the most local level across the whole of the district.

In April 2009 Regional Spatial Planning became the responsibility of Joint Regional Boards made up of representatives from the Regional Development Agencies and Local Authority Leaders. There are 4 Joint Regional Boards wholly or partly within the Humber River Basin District.

Table C9: Action for local and regional government

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures	Promote water efficiency in new development through regional strategies and local development frameworks. A Water Cycle Study may be used to identify policy advice on water efficiency measures.	Humber RBD	2012	Local Authorities; Regional Planning Authority

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Promote existing codes of practice and guidance to the public and / or industry and trade to minimise the spread of invasive non-native species. For example, "All Choked Up" information postcard for garden centres and the Environment Agency information "Guidance for the control of non-native invasive weeds in or near fresh water".	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Local Authorities; Natural England
Alien species	Establish invasive non-native species forum for the RBD to improve communications, prioritise key species and coordinate projects. For example, the Calder Futures Partnership project has established a local forum for invasive weed management.	Humber RBD	2012	British Waterways; Environment Agency; Land managers and owners; Local Authorities; Natural England
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Fire service Memorandum of Understanding (MoU) on implementing pollution control measures in emergencies	Humber RBD	Implemented	Environment Agency; Local Authorities
Microbiology; Nutrients; Organic pollutants	Targeted campaigns to raise awareness of issues with septic tanks and village drains.	Humber RBD	2012	Local Authorities; Environment Agency; Water companies
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants	Work to increase awareness of the implications of WFD and promote sustainable drainage systems in new and existing developments, re-use of grey and storm water and the value of green infrastructure in urban developments.	Humber RBD	2012	Environment Agency; Local Authorities; Regional Assemblies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants; Nutrients	Education and awareness raising with home owners, SME's and Traders regarding wrong drainage connections (when toilets, washing machines, dishwashers, baths etc) are connected by mistake to the surface water drain instead of the foul sewer). For example, a partnership between Environment Agency, Birmingham City Council, Severn Trent Water and Community Service Volunteers has successfully tackled wrong connections as part of the Washwood Heath Brook project.	Humber RBD	2012	Construction Industry; Local Authorities; Water companies
Physical modification	Environment Agency to produce a WFD mitigation measures manual for flood and coastal erosion risk management and land drainage activities. This manual will set out best practice options for measures to mitigate against the impacts of such activities upon ecology. This will be used to ensure that new and existing schemes and management activities will take into consideration WFD requirements and will results in minimal ecological damage.	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Physical modification; Habitat Manipulation (restoration/improvement)	Joint working across the river basin to identify opportunities for ecological enhancement through restoration of a more natural inundation regime in washlands and / or wider river restoration projects resulting in a more natural flow regime and ecological functionality.	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Land managers and owners; Local Authorities; Natural England
Physical modification; Sediments (as a direct pollutant); Habitat Manipulation (restoration/improvement)	Initiatives to promote community involvement in environment will educate and raise profile of ecological status and importance of river basin's rivers. For example, as part of the Living Don project, Sheffield Wildlife Trust will work with local communities in Sheffield and Rotherham.	Humber RBD	2012	Environment Agency; Environmental NGOs; Local Authorities; Natural England
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Improved or more targeted street and drain cleaning and maintenance of storm water systems. For example, the Environment Agency and Highways Agency review of de-icing chemicals/ materials to identify products with minimal environmental impact, on the Birmingham motorway network.	Humber RBD	2012	Highways Agency; Local Authorities; Environment Agency; Water companies
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to reduce the impact of pesticide use through the Amenity Forum	Humber RBD	Implemented	Amenity Forum

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Sediments (as a direct pollutant); Microbiology; Physical modification; Nutrients	Restoration of plantations on ancient woodland sites and plantations on semi-natural habitat in upland headwaters to improve water quality and habitat. For example, the river restoration project in the Yorkshire River Derwent headwaters.	Humber RBD	2012	Environment Agency; Environmental NGOs; The Woodland Trust
Investigations				
Alien species	Investigate ability to share data between partners and map non-native species across the RBD. Ecological Records Centres currently hold much of this information.	Humber RBD	2012	Local Authorities; Natural England; Environment Agency; British Waterways; Wildlife Trusts
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of flood and coastal erosion risk management activities, improving the understanding of the cost/benefit and technical feasibility of such measures and developing understanding of the underlying processes, ecological responses and applicability. Will use case studies, but outcomes will have a national application.	Humber RBD	2010	Environment Agency
Natura 2000 protected areas and SSSIs				
Direct biological pressures; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through planning permission enforcement (See Annex D)	Humber RBD	2010	Local Authorities

C.10 Mining and quarrying

The varied geology of the Humber River Basin means that there has been considerable production of industrial and constructional minerals from quarries and underground mines. The Yorkshire Dales and Derbyshire Peak District are significant limestone quarrying areas in the UK and the Vale of York is also a major source of sand and gravels. Clay is also quarried across the basin with the potteries around Stoke perhaps being the best known. The most important environmental issues are to do with water quality and sediment management.

Pressure associated with historical metal mining activities is evident across the whole river basin, with lead mining activity stretching the length of the Pennines from North Yorkshire to Derbyshire in the south. There has also been Copper, Zinc and Ironstone mining activities at specific locations throughout.

The basin also contains the majority of the UK historic coal mining which stretches from York, through West and South Yorkshire, the East Midlands and into Birmingham area. Uncontrolled discharges from former mine workings are often acidic and contain metals and other toxic substances and can have significant impacts on ecology. Ochreous discharges were prominent and typified by orange staining of rivers. Many of these have now been treated under a programme run by the Coal Authority but much remains to be done.

Current mining and quarrying activity is well regulated. There is however an ongoing need to ensure that, when they close, arrangements are in place to manage future discharges as groundwater levels return to normal. Dealing with this and the environmental legacy of historic activities will be expensive and presents a major technical challenge. Although we will make progress, it is likely that in places we will need to continue to live with the impacts for years to come.

Table C10: Mining and quarrying sector

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures; Physical modification; Sediments (as a direct pollutant); Temperature	River side gravel pit operation to be modified wherever possible in collaboration with gravel companies and in agreement with local authorities to include river restoration as part of works. For example, the On Trent and Central Rivers Initiatives links wetlands through strategic restoration of sand and gravel quarries to establish a north -south corridor for species.	Humber RBD	Implemented	Environment Agency; Industry leads; Local Authorities
Hazardous substances and non-hazardous pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants (Metals)	Implementation of best practice controls and remediation at abandoned coal mines as identified as the prevention and remediation schemes of the MOU.	Humber RBD	2015	Coal Authority
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Make use of site specific notices (served under Water Resources Action Section 86 and Section 161, Groundwater Regulations or Silage, Slurry, Agricultural Fuel Oil Regulations) to reduce pollution risk to groundwater.	Humber RBD	Implemented	Local Authorities

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Implement new regulatory approach arising from implementation of new Groundwater Directive (2006/116/EC), including Registration in conjunction with Standard Rules.	Humber RBD	2012	Environment Agency; Industry leads; Land managers and owners; Water companies
Priority Hazardous Substances, Priority Substances and Specific Pollutants (Metals)	Raise awareness with land owners of problems associated with disturbance of previously mined areas and how these can be avoided.	Humber RBD	2012	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants (Metals)	Establish a non coal mine strategy for the RBD to address environmental risk. Pilot remediation works for example Welsh Metal Mine Strategy. Highlight benefits and promote development into a national programme over future cycles.	Humber RBD	2012	Defra; Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants (Metals)	Improve awareness of the issues associated with non-coal mines e.g. metalliferous mines and get involvement on solutions to resolve them	Humber RBD	2012	Environment Agency
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Comply with site specific notices (served under Water Resources Act Section 86 and Section 161, Groundwater Regulations, contaminated land legislation), where issued by Environment Agency or Local Authority, to reduce pollution risk to groundwater.	Humber RBD	Implemented	Land managers and owners; Industry leads

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Develop and maintain a prioritised list of minewater pumping schemes to prevent intrusion of surface waters. As defined under Memorandum of Understanding (MOU) between the Environment Agency and Coal Authority.	Humber RBD	Implemented	Coal Authority
Priority Substances and Specific Pollutants (Metals); Hazardous substances and non-hazardous pollutants	Develop and maintain a prioritised list of minewater pumping schemes to prevent intrusion into groundwater. As defined under Memorandum of Understanding (MOU) between the Environment Agency and Coal Authority.	Humber RBD	Implemented	Coal Authority
Temperature; Sediments (as a direct pollutant); Physical modification; Abstraction and other artificial flow pressures	Implement a policy of linking gravel pits to rivers to create habitat lost through Land Drainage and Flood Defence schemes enhance fish stocks and create backwaters for other species, and using gravel pits to restore rivers	Humber RBD	Implemented	Mine operators
Investigations				
Abstraction	Further investigation required to confirm risk of failure of WFD Article 7.	Aire & Don Sherwood Sandstone.	2010	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants (Metals)	Investigate discharges from abandoned metal, and other non-coal mines. Prioritise for inclusion in national agreement with relevant mines partner organisations.	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants (Metals)	Investigation into changes in groundwater quality in the Crich Area	Derwent - Secondary Combined	2010	Environment Agency
Priority Hazardous Substances, Priority Substances and Specific Pollutants (Metals)	Sediment monitoring, modelling and bioaccumulation studies on heavy metals which may be related to sediment movements.	Humber RBD	2012	Environment Agency
Salinity; Ammonia	Investigation of Recovering Minewater (Coal Authority/Environment Agency)	Tame Anker Mease - Coal Measures Swadlincote	Implemented	Coal Authority

C.11 Navigation

Ports and marinas provide important regional infrastructure supporting local economies and businesses. Ports handle approximately 95 per cent of UK trade in tonnage terms. Domestic coastal freight services contribute to reducing road congestion and can provide a more environmentally friendly mode of transport than road or rail. The Humber Estuary has several important commercial ports at Immingham, Hull and Goole. Examples of key trades at Immingham include petroleum products and cars. There are also a number of harbours and marinas. The ports sector plays a key role as both regulators and undertakers of marine operations, including counter pollution responsibilities. Shipping relies on safe access to water of an adequate depth. Immediate entrances to docks require regular maintenance dredging because of the high siltation rates in the Humber Estuary. Dredging and disposal are highly regulated activities to minimise harm to the environment.

Most catchments are navigable throughout the tidal sections. Navigation is still very important along the tidal Ouse system and the River Hull. Commercial navigation is generally up to Naburn Lock where there is a large marina. Generally, it is pleasure craft that are seen travelling through towns/cities such as York. The River Ure is navigable through Ripon into Ripon Canal. Canal networks can still be seen 'intertwining' with river systems along the Calder, Don, and Aire. Historically, many of the rivers were deepened and straightened. This, with the impacts of weirs, has had a detrimental impact on the ecology of the rivers.

Table C11: **Actions for the Navigation sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	Humber RBD	2012	Environment Agency
Alien species	Establish invasive non-native species forum for the RBD to improve communications, prioritise key species and coordinate projects. For example, the Calder Futures Partnership project has established a local forum for invasive weed management.	Humber RBD	2012	British Waterways; Environment Agency; Land managers and owners; Local Authorities; Natural England
Dredging (sediment management)	Apply national guidance framework on dredging and dredged material disposal (ports sector) to provide guidance to all those undertaking or permitting navigation dredging and dredged material disposal activities to assist in achieving the statutory objectives of the WFD and related EQS Directive (2008/105/EEC) and refine local measures as appropriate (where not disproportionately costly or technically infeasible).	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Navigation (boat traffic)	Awareness raising / information boards (invasive species)- A programme of awareness raising will be implemented by April 2011	Grand Union Canal, Leicester Line, Worcester and Birmingham Canal	2011	British Waterways
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Apply national guidance framework on disposal of dredgings to refine local measures as appropriate (where not disproportionately costly or technically infeasible)	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2012	Marine and Fisheries Agency; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Apply national guidance framework on dredging to refine local measures as appropriate (where not disproportionately costly or technically infeasible)	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2012	Marine and Fisheries Agency; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Develop national guidance framework on disposal of dredgings to inform Programme of Measures to meet WFD objectives	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2010	Defra

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Develop national guidance framework on dredging to inform Programme of Measures to meet WFD objectives	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2010	Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Review existing controls for disposal of dredgings inside and outside harbour limits as appropriate	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2012	Marine and Fisheries Agency; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Review existing controls for dredging inside and outside harbour limits as appropriate	Barrow Clay Pits; ESK (E); HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; North Killingholme Haven Pitts; Northcoates Point Lagoon; Welton Waters; Yorkshire South / Lincolnshire	2012	Marine and Fisheries Agency; Defra
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Organic pollutants; Nutrients	Ports, harbours and navigation authorities to prepare a dredging and disposal strategy (where disposal is to water), such as the baseline document recommended under the Maintenance Dredging Protocol.	Humber RBD	2012	Ports and Harbours Authorities
Tributyltin (TBT) compounds	EU-wide non-application of TBT to boat hulls from July 2003. From January	Humber RBD	2010	EU

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	2008 TBT should not be used on ship hulls or there should be a coating to prevent leaching of underlying TBT anti-foulants			
Tributyltin (TBT) compounds	Help prevent illegal use of old TBT containing products	Humber RBD	Implemented	British Marine Federation; British Waterways; Environment Agency; Royal Yachting Association
Tributyltin (TBT) compounds	EU-wide ban on marketing of TBT as a biocide in the EU	Humber RBD	2010	EU
Investigations				
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Sediment monitoring, modelling and bioaccumulation studies on heavy metals which may be related to sediment movements.	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Tributyltin (TBT) compounds	Investigate the reason for failure: to assess the contribution from dredging or disposal activities on EQS compliance as appropriate	Aire from River Calder to River Ouse; Ancholme from Bishopbridge to the Humber; Bentley Mill Stream Lower to River Don; Buck Beck from Source to N Sea; Calder from River Colne to River Aire; Don from Greasborough Dyke to River Dearne; Don from Mill Dyke to River Ouse ; Don from River Dearne to Mill Dyke; Don from River Rother to Greasborough Dyke; Goxhill and New Holland Area; HUMBER LOWER; HUMBER MIDDLE ; HUMBER UPPER; River Dove from Hilton Brook to R Trent; River Hull from West Beck to Arram Beck; River Idle from River Ryton to River Trent; River Soar from Long Whatton Brook to River Trent; River Soar from Rothley Brook to Long Whatton Brook; River Sow from R Penk to R Trent; River Tame from Conf of the two arms to R Blythe; River Tame from River Anker to Tiver Trent; River Trent from Fowlea Brook to Tittensor; River Trent from Moreton Brook to River Tame; River Trent from River Soar to Carlton-on-Trent; River Trent from Tittensor to River Sow; Winterton Beck from Source to the Humber	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Natura 2000 protected areas and SSSIs				
Physical modification	Contribute to achieving favourable condition on Ashby Canal SSSI by regulation of boat movements	Tame Anker and Mease Catchment	2012	British Waterways
Sediments (as a direct pollutant)	Contribute to achieving favourable condition on Chesterfield Canal SSSI, Grantham Canal SSSI, and Kilby - Foxton Canal SSSI by implementing appropriate dredging programme	Idle & Torne Catchment; Lower Trent & Erewash Catchment; Soar Catchment	2012	British Waterways

C.12 Urban and transport

Almost 11 million people live in the Humber River Basin District. Although predominantly rural in character the district contains several major urban centres such as York, Leeds, Bradford, Sheffield, Rotherham, Doncaster, Barnsley, Hull, Grimsby, Nottingham, Derby, Leicester, Stoke on Trent and Birmingham.

Current and historical land-use around the major towns and cities in the district gives rise to pollution pressures. Runoff and drainage from urban areas and transport infrastructure can contain a range of contaminants including sewage, metals, sediment and other substances that wash directly into rivers or enter via the sewerage network. Extreme runoff events are likely to become more frequent as climate change continues. The legacy of land contamination in some former industrial areas has led to pollution of groundwater resources and some of our rivers. Predicted housing growth in and around several towns and cities in the district will also increase pressure on the water environment unless the potential impacts are well managed.

Encouraging the sustainable use and management of water resources and a move to more sustainable drainage systems will help reduce the impacts associated with abstraction and urban runoff, with benefits for all water users. Sustainable and integrated drainage systems also offer potential benefits for managing the risk of flooding in urban areas.

Table C12: **Actions for the urban and transport sector**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Alien species	Establish invasive non-native species forum for the RBD to improve communications, prioritise key species and coordinate projects. For example, the Calder Futures Partnership project has established a local forum for invasive weed management.	Humber RBD	2012	British Waterways; Environment Agency; Land managers and owners; Local Authorities; Natural England
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Implement new regulatory approach arising from implementation of new Groundwater Directive (2006/116/EC), including Registration in conjunction with Standard Rules.	Humber RBD	2012	Environment Agency; Industry leads; Land managers and owners; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implementation of Network Rail Pesticide protocol	Humber RBD	Implemented	Environment Agency; Industry leads
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Make use of site specific notices (served under Water Resources Action Section 86 and Section 161, Groundwater Regulations) to reduce pollution risk to groundwater.	Humber RBD	Implemented	Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Pesticides Code of Practice - comply with published advice for operators on control of plant protection products	Humber RBD	Implemented	Industry leads

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Follow Sustainable Drainage Systems (SuDS) Code of Practice - comply with published advice for operators on sustainable drainage systems	Humber RBD	Implemented	Industry leads
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	Environment Agency and Highways Agency Memorandum of Understanding (MoU) and associated initiatives	Humber RBD	Implemented	Highways Agency
Microbiology; Nutrients; Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant)	National Fire Service Protocol to minimise the risk of pollution during fire emergencies	Humber RBD	Implemented	National Fire Service
Physical modification	Environment Agency to produce a WFD mitigation measures manual for flood and coastal erosion risk management and land drainage activities. This manual will set out best practice options for measures to mitigate against the impacts of such activities upon ecology. This will be used to ensure that new	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	and existing schemes and management activities will take into consideration WFD requirements and will results in minimal ecological damage.			
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Improved or more targeted street and drain cleaning and maintenance of storm water systems. For example, the Environment Agency and Highways Agency review of de-icing chemicals/ materials to identify products with minimal environmental impact, on the Birmingham motorway network.	Humber RBD	2012	Highways Agency; Local Authorities; Environment Agency; Water companies
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Comply with site specific notices (served under Water Resources Action Section 86 and Section 161, Groundwater Regulations, contaminated land legislation), where issued by Environment Agency, to reduce pollution risk to groundwater.	Humber RBD	Implemented	Land managers and owners
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Comply with new EC Sustainable Use of Pesticides Directive to control use of plant protection products	Humber RBD	2012	Land managers and owners
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Comply with Water Resources Act consent conditions	Humber RBD	Implemented	Consent holders

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Investigations				
Diuron	This substance has been banned or is shortly to be withdrawn from use in the UK. No further measures should be required although surveillance monitoring will be done to confirm this.	Humber RBD	2010	Central Government; Environment Agency
Glyphosate	Further investigation required to confirm risk of failure of WFD Article 7	Blackbrook Reservoir; R Blythe from Patrick Bridge to R Tame; River Trent from R Dove Conf to River Derwent	2010	Environment Agency; Water companies
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation into ammonia, zinc, copper and cadmium failures required to confirm risk of failure of WFD Article 7	Swale, Ure, Nidd, Ouse Millstone Grit and Carboniferous Limestone	2012	Defra; Environment Agency
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Highways Agency Programme to investigate soakaways	Humber RBD	Implemented	Highways Agency
Physical modification	Investigations into the ecological outcomes of measures to mitigate against effects of flood and coastal erosion risk management activities, improving the understanding of the cost/benefit and technical feasibility of such measures and developing understanding of the underlying processes, ecological	Humber RBD	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	responses and applicability. Will use case studies, but outcomes will have a national application.			

C.13 Water industry

There are three water and sewerage service companies operating in the Humber river basin district; Yorkshire Water, Severn Trent Water and Anglian Water. In addition, one water supply-only company also operates in the District, South Staffordshire Water. Only a portion of South Staffordshire Water customers are within the district, they predominantly abstract from the River Severn, with a portion coming from the River Trent. Together the companies provide water and sewerage services to around 5 million households as well as commercial and business sites. Our rivers support a diverse ecology as well as providing water for use as a commodity and recreation. Protecting our waters and ensuring these uses can continue means that sewage and other effluents need to be treated to very high standards.

Although the water industry is regulated consistently across the country as a whole, the challenges faced by individual companies vary across the district. The level of rainfall is higher in the west of the district, and the proportion of water available for supply from surface water and groundwater sources varies between company areas, meaning companies operate in different ways to provide a secure high quality water supply.

Levels of urbanisation vary between company areas. Proposed new housing growth in some parts of the river basin district will be challenging in terms of providing water resources and the environmental capacity of rivers to receive treated sewage effluent from the new development. New water supply, waste water and sewerage infrastructure will also be required.

Table C13: **Actions for the water industry**

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Extension of abstraction control to include previously exempt uses (abstractions by Ports and Harbour authorities from tidal waters under certain conditions likely to remain exempt)	Humber RBD	2012	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction	Reduction of leakage through systematic replacement of customer supply pipes	Humber RBD	Implemented	Water companies
Abstraction	Reduction of demand through promotion of free household meters	Humber RBD	Implemented	Water companies
Abstraction and other artificial flow pressures	Roll out delivery from the Reservoir Compensation release project to create more naturalised flows and improve ecology. Use this as best practice to apply to a wider geographic area where appropriate.	Humber RBD	2012	Environment Agency; Environmental NGOs; Fisheries and Angling Interests; Natural England; Riparian owners; Water companies
Abstraction and other artificial flow pressures	Undertake education campaigns to targeted audiences to raise awareness of sustainable water use, including conservation and re-use.	Humber RBD	2012	Central Government; Environment Agency; Local Authorities; Water companies; water users
Abstraction and other artificial flow pressures	Schools based education and awareness campaigns for sustainable water use, for example as done by Severn Trent in the Midlands.	Humber RBD	Implemented	Environment Agency
Abstraction and other artificial flow pressures	Reduction of leakage through active leakage control and	Humber RBD	Implemented	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	customer supply pipe repair policies			
Abstraction and other artificial flow pressures	Reduction of leakage through increased rate of replacement of old or damaged pipes	Humber RBD	Implemented	Water companies
Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Improve ammonia levels at sewage treatment works discharges to help comply with Freshwater fish designations, One sewage treatment works at Earl Shilton STW.	Soar Catchment	2014	Severn Trent Water
Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Improve ammonia levels at sewage treatment works discharges to help comply with Freshwater fish designations, One sewage treatment works at Newthorpe STW.	Lower Trent & Erewash Catchment	2014	Severn Trent Water
Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Improve ammonia levels at sewage treatment works discharges to help achieve good status, One sewage treatment works at Armthorpe STW.	Idle & Torne Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Colour	Develop detailed 5-year Catchment Action Plan for Safeguard Zone.	Warland Reservoir; White Holme Reservoir	2010	Environment Agency
Dissolved Oxygen	Actions under PR09 (AMP5) Water Industry Investment programme - Improve dissolved oxygen levels at sewage treatment works discharges to help achieve good status, One sewage treatment works at Barnhurst STW.	Staffordshire Trent Valley Catchment	2012	Severn Trent Water
Habitat Manipulation (restoration/improvement); Physical modification; Sediments (as a direct pollutant); Abstraction and other artificial flow pressures	The OnTrent Initiative is a partnership project involving a wide range of public, voluntary and commercial organisations. The project is working to secure a sustainable balance between the natural and historic heritage, agriculture, commercial activity and development along the River Trent between Stoke on Trent and the Humber Estuary.	Lower Trent & Erewash Catchment; Staffordshire Trent Valley Catchment	Implemented	Environmental NGOs
Hazardous substances and non-hazardous pollutants; Nitrate; Priority Substances and Specific Pollutants	Implement Groundwater Protection: Policy & Practice - External education on groundwater pollution prevention	Humber RBD	Implemented	Environment Agency; Land managers and owners
MCPA	Address issue as priority action within this VI Pilot Catchment. Water industry catchment	Blithfield Reservoir	2010	Pesticides Voluntary Initiative

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	investigation to establish source of pollutant			
Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures	River Derwent from Troutdale Beck to River Rye	2010	Metaldehyde Steering Group
Microbiology; Faecal indicator organisms	Improvement of Yorkshire Water's assets in the Esk & Coast catchment, identified as causing or contributing to 'poor' or 'at risk sufficient' quality, to achieve at least 'sufficient' quality including: Bridlington CSOs and WwTW, Scarborough CSOs.	Esk and Coast Catchment	2012	Yorkshire Water
Nitrate	Address issue as priority action within this CSF catchment. Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions.	Marshchapel Drain	2010	Natural England
Nitrate	Nitrates Action Programme in Nitrate Vulnerable Zones will help address high nitrate concentrations in drinking water abstractions in Nitrates	R Blythe from Patrick Bridge to R Tame	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	Vulnerable Zone			
Nitrate	Provision of first time rural sewerage schemes	Humber RBD	Implemented	Water companies
Nitrate	Sludge Regulations - advice to operators	Humber RBD	Implemented	Environment Agency; Water companies
Nitrate	Sludge Regulations – monitoring and enforcement	Humber RBD	Implemented	Environment Agency; Water companies
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater	Humber RBD	Implemented	Water companies; Environment Agency
Nitrate; Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Implement new regulatory approach arising from the new Groundwater Directive (2006/116/EC), including Registration in conjunction with Standard Rules.	Humber RBD	2012	Water companies; Land managers and owners; Industry leads; Environment Agency
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from	Staffordshire Trent Valley Catchment	2014	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	six sewage treatment works discharge at Lichfield STW, Brancote Stafford STW, Cannock STW, Pirehill STW, Rugeley STW, Strongford STW.			
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from six sewage treatment works discharge at Packington STW, Claymills STW, Coleshill STW, Minworth STW, Rayhall STW, Stanton STW.	Tame Anker and Mease Catchment	2014	Severn Trent Water
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from four sewage treatment works discharges; Gainsborough STW, Milton STW, Stoke Bardolph STW, Newark Crankley Point STW.	Lower Trent & Erewash Catchment	2014	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nutrients; Phosphate	Actions under PR09 (AMP5) Water Industry Investment programme - To ensure compliance with Urban Waste Water Treatment directive Sensitive area designation, phosphates will be removed from sewage treatment works discharge at Belper STW	Derbyshire Derwent Catchment	2014	Severn Trent Water
Organic pollutants; Ammonia; BOD	Ensure compliance with the Groundwater Directive and Groundwater Daughter Directive: Schemes to re-engineer the discharges at Fridaythorpe, Garton on the Wolds, Huggate, North Dalton, West Lutton WwTWs to avoid the direct discharges of pollutants to groundwater. Schemes to improve the treatment of discharges to groundwater at these sites and at Foxholes, Langtoft, Middleton on the Wolds, Weaverthorpe and Wetwang WwTWs.	Hull and East Riding Catchment	2012	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants; Ammonia; BOD	Ensure compliance with the Groundwater Directive and Groundwater Daughter Directive: Schemes to improve the treatment of discharges to groundwater at Thornton Watlass WwTW. Schemes to re-engineer the discharges at this site and at Ellingstring WwTW to avoid the direct discharges of pollutants to groundwater.	Swale, Ure, Nidd & Upper Ouse Catchment	2012	Yorkshire Water
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure compliance with the Groundwater Directive and Groundwater daughter Directive Schemes to improve / re engineer the discharges to avoid the direct discharge of pollutants to groundwaters at one sewage treatment works; Waterhouses STW.	Dove Catchment	2012	Severn Trent Water
Organic pollutants; Ammonia; BOD	Ensure compliance with the Groundwater Directive and Groundwater Daughter Directive: Schemes to improve the treatment of the discharge to groundwater at Newton-on-Rawcliffe WwTW. Schemes to re-	Derwent (Humber) Catchment	2012	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	engineer the discharges at this site to avoid the direct discharges of pollutants to groundwater.			
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at six sewage treatment works; Arnesby STW, Gaulby STW, Wymondham STW, Asfordby STW, Ashwell STW, Great Glen STW.	Soar Catchment	2015	Severn Trent Water
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at five sewage treatment works; Aslockton STW, Flintham STW, Nether Broughton STW, Rampton STW, Findern STW.	Lower Trent & Erewash Catchment	2015	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at three sewage treatment works; Ambergate STW, Fritchley STW and Weston Underwood STW.	Derbyshire Derwent Catchment	2015	Severn Trent Water
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at three sewage treatment works; Baldwins Gate STW, Bishopswood STW, Lichfield STW.	Staffordshire Trent Valley Catchment	2015	Severn Trent Water
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at two sewage treatment works; Church Warsop STW, Epworth STW.	Idle & Torne Catchment	2015	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Ensure no deterioration of receiving water quality due to increased consented discharge flows at two sewage treatment works; Atherstone STW, Snarestone STW.	Tame Anker and Mease Catchment	2015	Severn Trent Water
Organic pollutants; Ammonia; BOD	Improvement of Yorkshire Water's assets in the Don & Rother catchment under the next round of company investment (PR09) including: Blackburn Meadows WwTW, Aldwarke WwTW, Woodhouse Mill WwTW and Old Whittington WwTW.	Don and Rother Catchment	2014	Yorkshire Water
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - Improve BOD & ammonia levels at sewage treatment works discharges to help achieve good status, One sewage treatment works at Southwell STW.	Lower Trent & Erewash Catchment	2012	Severn Trent Water
Organic pollutants; Ammonia; BOD	Improvement of Yorkshire Water's assets in the Aire & Calder catchment under the next round of company investment (PR09)	Aire and Calder Catchment	2014	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	including: Snaygill WwTW, Caldervale WwTW and Knostrop WwTW storm tanks.			
Organic pollutants; Ammonia; BOD	Ensure no deterioration of receiving water quality due to increased consented discharge flows at Mill Lane (Normanton) WWTW. Scheme to enhance treatment capacity.	Aire and Calder Catchment	2014	Yorkshire Water
Organic pollutants; Ammonia; BOD	Ensure no deterioration of receiving water quality due to increased consented discharge flows at Holmesfield WWTW. Scheme to enhance treatment capacity.	Don and Rother Catchment	2015	Yorkshire Water
Organic pollutants; Ammonia; BOD	Improvement of water company assets in the Louth Grimsby and Ancholme catchment under the next round of company investment (PR09), including: Improved treatment at two sewage treatment works to ensure no deterioration in river quality for BOD and/or Ammonia.	Louth, Grimsby and Ancholme Catchment	2015	Anglian Water
Organic pollutants; Nutrients	Education and awareness raising with home owners, SME's and Traders regarding wrong drainage connections (when toilets, washing machines, dishwashers,	Humber RBD	2012	Construction Industry; Local Authorities; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	baths etc) are connected by mistake to the surface water drain instead of the foul sewer). For example, a partnership between Environment Agency, Birmingham City Council, Severn Trent Water and Community Service Volunteers has successfully tackled wrong connections as part of the Washwood Heath Brook project.			
Organic pollutants; Priority Hazardous Substances, Priority Substances and Specific Pollutants; Nutrients	Raise awareness with householders, SME's and traders on the problems caused by what people put down their drains. Specifically on chemicals in the products used, vehicle washing and disposal of fats, oils and greases.	Louth Grimsby and Ancholme Catchment	Implemented	Water companies
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone	Cropston Reservoir	2010	Environment Agency
Physical modification; Habitat Manipulation (restoration/improvement)	Joint working across the river basin to identify opportunities for ecological enhancement through restoration of a more natural inundation regime in washlands	Humber RBD	2012	British Waterways; Environment Agency; Environmental NGOs; Land managers and

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	and / or wider river restoration projects resulting in a more natural flow regime and ecological functionality.			owners; Local Authorities; Natural England
Priority Hazardous Substances, Priority Substances and Specific Pollutants	General guidance to reduce the impact of pesticide use through the Amenity Forum	Humber RBD	Implemented	Amenity Forum
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Sediments (as a direct pollutant); Nutrients; Organic pollutants	Partnership working to implement initiatives to target and tackle significant local issues, particularly on pesticide and sheepdip. For example, the Voluntary Initiative to reduce pesticides into Blithfield Reservoir and Ingbirchworth Reservoir.	Humber RBD	2011	Health and Safety Executive; Levy Boards; Natural England; Water companies; Environment Agency
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants	Control of minewater intrusion by reducing groundwater abstraction	Humber RBD	Implemented	Environment Agency; Water companies
Priority Substances and Specific Pollutants; Hazardous substances and non-hazardous pollutants; Nitrate	Comply with discharge consent conditions	Humber RBD	Implemented	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Saline intrusion	Catchment Abstraction Management Strategies – Implement abstraction licencing controls to minimise and manage risks from saline intrusion	Humber RBD	Implemented	Environment Agency; Water companies
Sediments (as a direct pollutant); Nutrients; Organic pollutants	Work in partnership to deliver habitat improvements through land management solutions. For example the Esk Pearl Mussel and Salmon Recovery Project aims to improve river habitat, restore the pearl mussel population and increase populations of salmon and trout through the promotion of good land management in the catchment and includes a demonstration farm. On the Derbyshire Derwent and it's tributaries, key spawning headwaters have been fenced off to provide buffer strips and prevent cattle poaching and siltation.	Humber RBD	2012	Land managers and owners; National Farmers' Union; National Park Authorities; Natural England; Water companies; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Temperature; Physical modification; Organic pollutants; Nutrients; Abstraction and other artificial flow pressures; Microbiology	Large scale restoration of peat moorlands to benefit biodiversity, water resources, water quality and potentially help manage peak flows. For example, Yorkshire Peatscapes and, in the Peak District and South Pennines, Moors for the Future.	Humber RBD	2012	Environmental NGOs; National Park Authorities; Environment Agency; Water companies
Investigations				
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Skitter Beck	Brocklesby tributary of Skitter Beck; Grimsby Ancholme Louth Chalk Unit	2012	Anglian Water Services; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Scotch Brook	Scotch Brook Catchment (trib of Trent); Staffordshire Trent Valley - PT Sandstone Staffordshire	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Gravel Hill Plantation, Lake and Gipsy Plantation, Rossington	Idle Torne - PT Sandstone Nottinghamshire&Doncaster; R Torne / Three Rivers from Mother Dr to R Trent	2012	Environment Agency; Water companies
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Carsington Reservoir & Henmore Brook	Carsington Water; Henmore Brook Catch (trib of R Dove)	2012	Environment Agency; Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: River Noe and River Ashop	River Noe from Source to Peakshole Water	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Bourne Brook and Hopwas Hayes	Tame Anker Mease - PT Sandstone Birmingham Lichfield	2012	Environment Agency; South Staffordshire Water
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Dover Beck (Blidworth)	Dover Beck Catchment (trib of the Trent)	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological potential: East Halton Beck	Grimsby Ancholme Louth Chalk Unit; Skitter Bk / E Halton Bk from Ulceby Skitter to Humber Estuary	2012	Anglian Water Services; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological potential: Ranskill Brook	Idle Torne - PT Sandstone Nottinghamshire&Doncaster; Ranskill Brook Catchment (trib of the River Idle)	2012	Severn Trent Water; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage	Barton Blow wells drainage; Grimsby Ancholme Louth Chalk Unit	2012	Environment Agency; Anglian Water Services

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	abstraction to support good ecological potential: Far Ings Drain			
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Mawmbridge Drain	Grimsby Ancholme Louth Chalk Unit; Mawnbridge drain	2012	Anglian Water Services; Environment Agency
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Tittesworth Reservoir	Dove - PT Sandstone Leek; River Churnet from Meerbrook to Leekbrook	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Rainworth Water	Idle Torne - PT Sandstone Nottinghamshire&Doncaster; Rainworth Water from Gallow Hole Dyke to R Maun; Rainworth Water from Source to Gallow Hole Dyke	2012	Severn Trent Water; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological potential: Barrow Beck	Barrow Beck (upper end); Grimsby Ancholme Louth Chalk Unit	2012	Anglian Water Services; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological potential: Laceby Beck	Grimsby Ancholme Louth Chalk Unit; Lacby Beck / River Freshney Catchment (to N Sea)	2012	Anglian Water Services; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage	River Ashop from Source to R Alport	2012	Environment Agency; Severn

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	abstraction to support good ecological status: River Ashop			Trent Water
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Meece Brook	Meece Brook from Chatcull Brook to R Sow; Staffordshire Trent Valley - PT Sandstone Staffordshire	2012	Severn Trent Water; Environment Agency
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological status: Sow (Upper)	Meece Brook from Source to Chatcull Brook; Staffordshire Trent Valley - PT Sandstone Staffordshire	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation to determine cost effective action to manage abstraction to support good ecological potential: Churnet	Rudyard Reservoir Catch (trib of River Churnet)	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Derwent Valley	River Derwent from R Amber to Bottle Brook	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : Rising Brook	Rising Brook; Staffordshire Trent Valley - PT Sandstone Staffordshire	2012	Environment Agency; South Staffordshire Water
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be adversely affected by abstraction : River Greet	River Greet Catchment (trib of Trent)	2012	Severn Trent Water; Environment Agency
Abstraction and other artificial flow pressures	Investigation at local nature conservation site perceived to be	River Dove from Hilton Brook to R Trent	2012	Environment Agency; Severn

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	adversely affected by abstraction : River Dove			Trent Water
Abstraction and other artificial flow pressures	Programme of investigation of ecological impacts of managed flows in HMWBs with Water supply use	Humber RBD	2012	Environment Agency; Water companies
Ammonia	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Rothley Brook Catchment (trib of Soar)	2010	Environment Agency
Ammonia	Further investigation required to confirm risk of failure of WFD Article 7	River Derwent from Bottle Brook to R Trent	2010	Environment Agency; Water companies
Ammonia	Further investigation required to confirm risk of failure of WFD Article 7	R Blythe from Patrick Bridge to R Tame	2010	Environment Agency; Water companies
Ammonia	Further investigation required to confirm risk of failure of WFD Article 7	River Trent from R Dove Conf to River Derwent	2010	Environment Agency; Water companies
Ammonia	Further investigation required to confirm risk of failure of WFD Article 7	Blackbrook Reservoir	2010	Environment Agency; Water companies
Atrazine; Dieldrin; Isoproturon; Mecoprop; Simazine; Asulam	These substances have been banned, or are shortly to be withdrawn, from use in the UK. No further measures should be required although surveillance	Humber RBD	2010	Central Government; Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	monitoring will be done to confirm this.			
Chloride	Further investigation required to confirm risk of failure of WFD Article 7	Waithe Beck lower Catchment (to Tetney Lock)	2010	Environment Agency; Water companies
Colour	Investigate reasons for failure of WFD Article 7 so safeguard zone and development of detailed 5-year catchment action plan can be considered	Rothley Brook Catchment (trib of Soar); River Churnet from Meerbrook to Leekbrook; Ladybower Reservoir; River Trent from R Dove Conf to River Derwent; River Derwent from R Wye to R Amber	2010	Environment Agency
Colour	Further monitoring/investigation to confirm reasons for failure. Water industry scheme to address diffuse pollution in the catchment	Agden Reservoir; Chelker Reservoir; Dale Dike Reservoir; Keighley Moor Reservoir; Midhope Reservoir; Ponden Reservoir; Scar House Reservoir; Thornton Moor Reservoir; Water Sheddles Reservoir; Wharfe Barben Beck/River Dibb to River Washburn	2010	Environment Agency; Water companies
Glyphosate	Further investigation required to confirm risk of failure of WFD Article 7	Blackbrook Reservoir; R Blythe from Patrick Bridge to R Tame; River Trent from R Dove Conf to River Derwent	2010	Environment Agency; Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. Eight sewage treatment works; Rampton STW, Newthorpe STW, Balderton STW, Calverton STW, Scunthorpe STW, Hallem Fields (Ilkeston) STW, Kirton in Lindsey STW, Kirby in Ashfield STW.	Lower Trent & Erewash Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. Seven STWS; Huthwaite STW, Wirksworth STW, Marehay STW, Swanwick STW, Westwood Brook STW, Heage STW, Kilburn STW.	Derbyshire Derwent Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. One STW at Marchington STW	Dove Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Further investigation into ammonia, zinc, copper and cadmium failures required to confirm risk of failure of WFD Article 7.	Swale, Ure, Nidd, Ouse Millstone Grit and Carboniferous Limestone	2012	Environment Agency; Defra
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. Seven sewage treatment works; Coleshill STW, Walsall Wood STW, Goscote STW, Barston STW, Langley STW, Overseal STW, Meriden STW.	Tame Anker and Mease Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. Five sewage treatment works; Shirebrook STW, Dinnington STW, Warmsworth STW, Maltby STW, Clowne STW	Idle & Torne Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. Three sewage treatment works; Snarrows STW, Loughborough STW, Oadby STW.	Soar Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At three drinking water sources in the Staffordshire Trent Valley catchment.	Staffordshire Trent Valley Catchment	2012	Severn Trent Water; South Staffordshire Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At three drinking water sources in the Lower Trent and Erewash catchment.	Lower Trent & Erewash Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At three drinking water sources in the Tame, Anker &	Tame Anker and Mease Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	Mease catchment.			
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At five drinking water sources in the Idle and Torne catchment.	Idle & Torne Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigate emissions from STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce / cease emissions in this or subsequent rounds. One sewage treatment works; Cannock STW.	Staffordshire Trent Valley Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At two drinking water sources in the Soar catchment.	Soar Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At one drinking water source in the Derwent valley.	Derbyshire Derwent Catchment	2012	Severn Trent Water
Hazardous substances and non-hazardous pollutants; Priority Substances and Specific Pollutants	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of drinking water source catchments to identify problems and appraise options to facilitate compliance with Article 7 of WFD. At one drinking water source in the Dove catchment.	Dove Catchment	2012	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Metaldehyde	Investigate reasons for failure of WFD Article 7 so safeguard zones and development of detailed five year catchment action plan can be considered. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures.	River Derwent from Elvington Beck to River Ouse; River Derwent from Kirkham to Elvington Beck; River Swale/Ouse from Wiske to Naburn	2010	Metaldehyde Steering Group
Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone. Proactive implementation of Metaldehyde Steering Group 'Get Pelletwise' measures. Water industry catchment investigation to establish source of pollutant	Staunton Harold Reservoir	2010	Metaldehyde Steering Group
Methabenzthiazuron; Propyzamide; 2,4-D; Metazachlor; Mecoprop; MCPA; Linuron; Diflufenican; Conductivity; Colour; Ammonia; Chlortoluron; Fen propimorph; Carbetamide	Further investigation required to confirm risk of failure of WFD Article 7	Blackbrook Reservoir; R Blythe from Patrick Bridge to R Tame; River Bourne from Didgeley Brook to R Tame; River Derwent from Bottle Brook to R Trent; River Derwent from R Wye to R Amber; River Trent from R Dove Conf to River Derwent; Rothley Brook Catchment (trib of Soar); Waithe Beck lower Catchment (to Tetney Lock)	2010	Environment Agency; Water companies
Microbiology; Faecal indicator organisms	Investigations and modelling to provide the evidence base of the	Esk and Coast Catchment	Ongoing	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	impact of Yorkshire Water's assets in the Esk and Coast catchment on designated bathing waters. Identification of the improvements required to secure 'sufficient/good/excellent' quality under the new Bathing Water Directive in the next round of company investment (PR09).			
Nutrients	Severn Trent Water catchment investigation at Chequer House to establish source of pollutant	Idle Torne - PT Sandstone Nottinghamshire&Doncaster	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Budby Forest to establish source of pollutant	Idle Torne - PT Sandstone Nottinghamshire&Doncaster	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Far Baulker to establish source of pollutant	Lower Trent Erewash - PT Sandstone Wollaton	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Amen Corner to establish source of pollutant	Idle Torne - PT Sandstone Nottinghamshire&Doncaster	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Papplewick to establish source of pollutant	Lower Trent Erewash - PT Sandstone Wollaton	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Whitmore to establish source of pollutant	Staffordshire Trent Valley - PT Sandstone Staffordshire	2012	Water companies

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nutrients	Severn Trent Water catchment investigation at Rufford to establish source of pollutant	Idle Torne - PT Sandstone Nottinghamshire&Doncaster	2012	Water companies
Nutrients	Severn Trent Water catchment investigation at Hatton to establish source of pollutant	Staffordshire Trent Valley - PT Sandstone Staffordshire	2012	Water companies
Nutrients	Anglian Water catchment investigation at Barrow to establish source of pollutant	Grimsby Ancholme Louth Chalk Unit	2012	Water companies
Nutrients	Anglian Water catchment investigation at North Pickenham to source of pollutant	Grimsby Ancholme Louth Chalk Unit	2012	Water companies
Nutrients	Anglian Water catchment investigation at Risby to establish source of pollutant	Grimsby Ancholme Louth Chalk Unit	2012	Water companies
Nutrients	Anglian Water catchment investigation at Irby to establish source of pollutant	Grimsby Ancholme Louth Chalk Unit	2012	Water companies
Nutrients; Phosphate	Investigation of the impact of Yorkshire Water's assets in the Swale, Ure, Nidd & Upper Ouse catchment under the next round of company investment (PR09). Nutrient balance studies on the River Ure downstream of Hawes WwTW.	Swale, Ure, Nidd & Upper Ouse Catchment	2012	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Organic pollutants; Ammonia; BOD	Better understanding of the impact of Yorkshire Water's assets in the Don & Rother catchment including UPM type investigations for groups of intermittent discharges in Sheffield, Rotherham, Wath, Grimethorpe and Royston.	Don and Rother Catchment	2012	Yorkshire Water
Organic pollutants; Ammonia; BOD	Requirement to meet a target under the UK Biodiversity Action Plan: investigations of the impact of Yorkshire Water's discharges on white clawed crayfish populations in Roundhay Park Lake and Meanwood Beck.	Aire and Calder Catchment	2012	Yorkshire Water
Organic pollutants; Ammonia; BOD	Better understanding of the impact of Yorkshire Water's assets in the Aire & Calder catchment including UPM type investigations for groups of CSOs in Leeds, Halifax and Morley.	Aire and Calder Catchment	2012	Yorkshire Water
Pesticides; Metaldehyde	Develop detailed 5-year Catchment Action Plan for Safeguard Zone, Water industry catchment investigation to establish source of pollutant	Blithfield Reservoir	2010	Environment Agency

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Severn Trent Water catchment investigation at Clipstone Forest to establish source of pollutant	Idle Torne - PT Sandstone Nottinghamshire&Doncaster	2012	Water companies
Priority Hazardous Substances, Priority Substances and Specific Pollutants	Anglian Water catchment investigation at Riddlesworth to establish source of pollutant	Grimsby Ancholme Louth Chalk Unit	2012	Water companies
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Chemicals - Specific pollutants	Investigate emissions from Yorkshire Water's STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds: Skidby, Melton, Beverley, Saltend (Hull) WwTWs.	Hull and East Riding Catchment	2010	Yorkshire Water
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Chemicals - Specific pollutants	Investigate emissions from Yorkshire Water's STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds: Huddersfield, Esholt and Mitchell Laithes WwTWs.	Aire and Calder Catchment	2010	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Chemicals - Specific pollutants	Investigate emissions from Yorkshire Water's STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds: Williamthorpe, Adwick and Grimethorpe WwTWs	Don and Rother Catchment	2011	Yorkshire Water
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Chemicals - Specific pollutants	Investigate emissions from Yorkshire Water's STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds: Askham Bryan WwTW.	Swale, Ure, Nidd & Upper Ouse Catchment	2011	Yorkshire Water
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Chemicals - Specific pollutants	Investigate emissions from Yorkshire Water's STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds: Reighton WwTW.	Esk and Coast Catchment	2011	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Priority Hazardous Substances, Priority Substances and Specific Pollutants; Chemicals - Specific pollutants	Investigate emissions from Yorkshire Water's STWs and appraise options (to reduce at source or treat at STW) to meet EQS and reduce/cease emissions in this or subsequent rounds: Seamer WwTW.	Derwent (Humber) Catchment	2011	Yorkshire Water
Natura 2000 protected areas and SSSIs				
Abstraction and other artificial flow pressures	Undertaking specific management works to improve conditions on Sites of Special Scientific Interest at Kedleston Park, Hatfield Chase Ditches, Blackbrook Reservoir, Buddon Wood and Swithland Reservoir and Ripon Parks	Derbyshire Derwent Catchment; Idle & Torne Catchment; Soar Catchment; Swale, Ure, Nidd & Upper Ouse Catchment	2010	National Trust; Severn Trent Water; Yorkshire Wildlife Trust; Environment Agency
Abstraction and other artificial flow pressures	Modification of Abstraction licence to ensure no adverse effect on integrity of Natura 2000 site (Installation of screens for abstraction above current rates or from currently unused intakes): River Ouse	River Swale/Ouse from Wiske to Naburn	2015	Yorkshire Water; Environment Agency
Abstraction and other artificial flow pressures	Modification of Abstraction licence to ensure no adverse effect on integrity of Natura 2000 site	River Derwent from Kirkham to Elvington Beck	2015	Environment Agency; Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	(prevent fish entrainment): River Derwent- Lower Derwent Valley SAC			
Abstraction and other artificial flow pressures	Investigation at Site of Special Scientific Interest perceived to be adversely affected by abstraction : Charnwood Reservoirs	Cropston Reservoir; Swithland Reservoir	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures	Investigation at Site of Special Scientific Interest perceived to be adversely affected by abstraction : River Blythe	River Blythe from Source to Cuttle Brook	2012	Environment Agency; Severn Trent Water
Abstraction and other artificial flow pressures; Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending abstraction licences (See Annex D)	Humber RBD	2012	Environment Agency
Abstraction and other artificial flow pressures; Nutrients	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Implementing AMP Schemes (See Annex D)	Humber RBD	2012	Water companies
Abstraction and other artificial flow pressures; Nutrients; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through Specific Management Works to address water quality, hydrology	Humber RBD	2012	Land managers and owners; Natural England

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	and morphology pressures (See Annex D)			
Ammonia	Actions under PR09 (AMP5) Water Industry Investment programme - Schemes to improve ammonia content of discharges to meet requirements of Habitats Directive RoC. One sewage treatment works at Packington STW	Tame Anker and Mease Catchment	2015	Severn Trent Water
Nutrients	Contribute to achieving favourable condition on Chesterfield Canal SSSI, Clumber Park SSSI, River Eye SSSI, Cop Mere SSSI and River Blythe SSSI by revoking or amending discharge consents	Idle & Torne Catchment; Soar Catchment; Staffordshire Trent Valley Catchment; Tame Anker and Mease Catchment	2012	Environment Agency
Nutrients	Contribute to achieving favourable condition on Clumber Park SSSI, Hatfield Chase Ditches SSSI and Rainworth Lakes SSSI by implementing AMP schemes	Idle & Torne Catchment	2010	Severn Trent Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
Nutrients	Investigations under PR09 (AMP5) Water Industry Investment programme - Investigation of the impact of Severn Trents assets on the requirements of the CROW Act at five sites; Bradgate park & Cropston reservoir, Buddon Wood & Swithland reservoir, Groby Pool & woods, Blackbrook Reservoir	Soar Catchment	2012	Severn Trent Water
Nutrients; Direct biological pressures; Abstraction and other artificial flow pressures; Physical modification	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas through SSSI Management Agreement (See Annex D)	Humber RBD	2012	Environmental NGOs; Natural England
Nutrients; Physical modification; Sediments (as a direct pollutant)	Contribute to maintenance of, or restoration to, favourable conservation status on Natura 2000 Protected Areas by revoking or amending Discharge/PPC Consents (See Annex D)	Humber RBD	2012	Environment Agency
Nutrients; Phosphate; Nitrate	Investigation of the impact of Yorkshire Water's assets in the Aire & Calder catchment on the requirements of the CROW Act under the next round of company investment (PR09). Nutrient balance study at Fairburn &	Aire and Calder Catchment	2012	Yorkshire Water

Pressures	Description of the action			Lead organisation and partners
	What will happen	Where it will happen	Start date	
	Newton Ings SSSI. and Cold Hiendley Lake.			
Organic pollutants; Ammonia; BOD	Actions under PR09 (AMP5) Water Industry Investment programme - CROW Act Schemes to relocate discharges to protect SSSIs, two sewage treatment works; Epworth STW, Maltby Low Common STW.	Idle & Torne Catchment	2015	Severn Trent Water