

# Flood Risk Management Plans

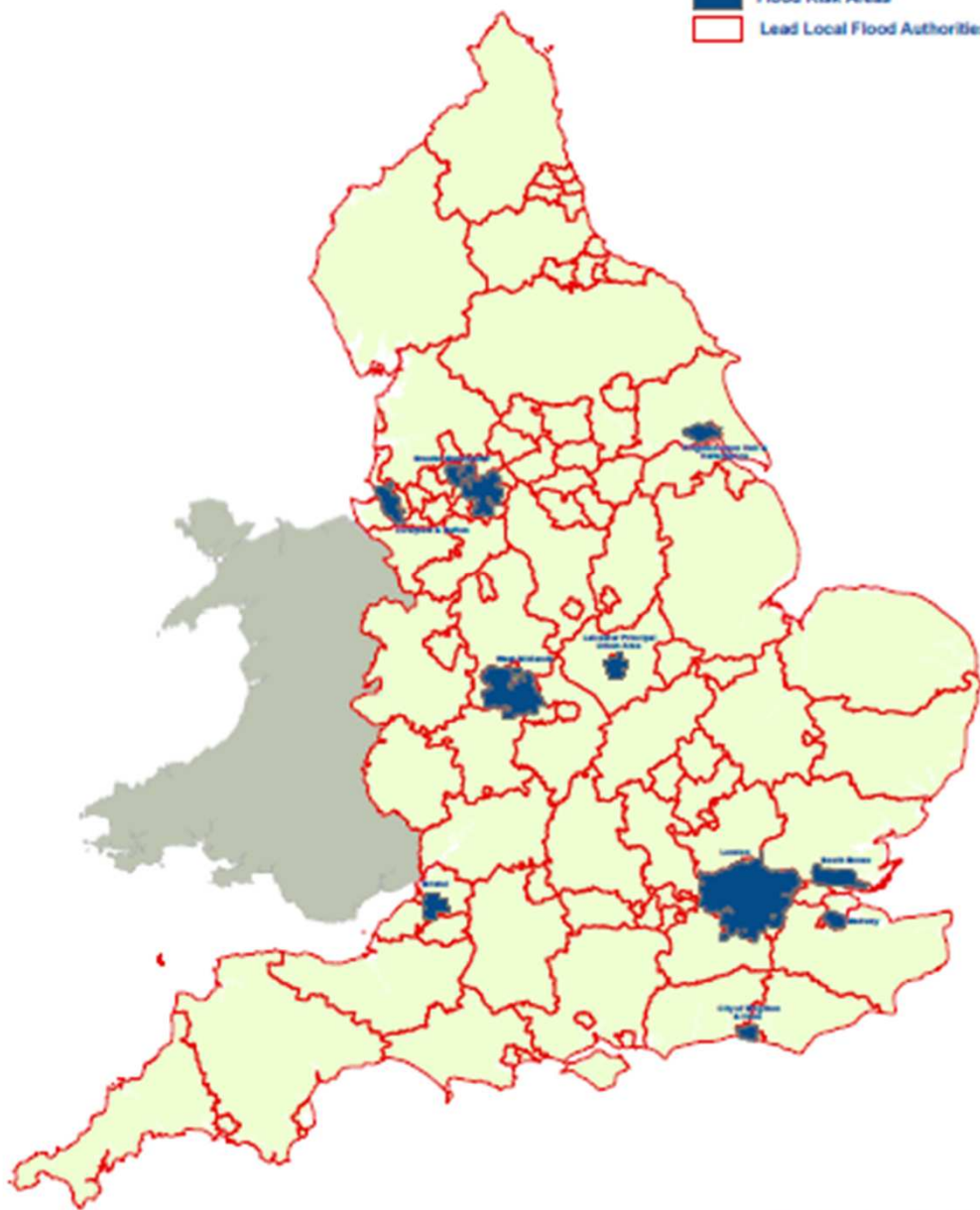
# Flood Risk Regulations 2009

- Preliminary Flood Risk Assessment 2011
- Hazard Maps (surface water) 2013
- Flood Risk Management Plans 2015

## Flood Risk Regulations - Flood Risk Areas in England



 Flood Risk Areas  
 Lead Local Flood Authorities



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# Flood and Water Management Act 2010

- National Flood & Coastal Erosion Strategy
- Local Flood Risk Management Strategy
- Lead Local Flood Authorities – and all its works...

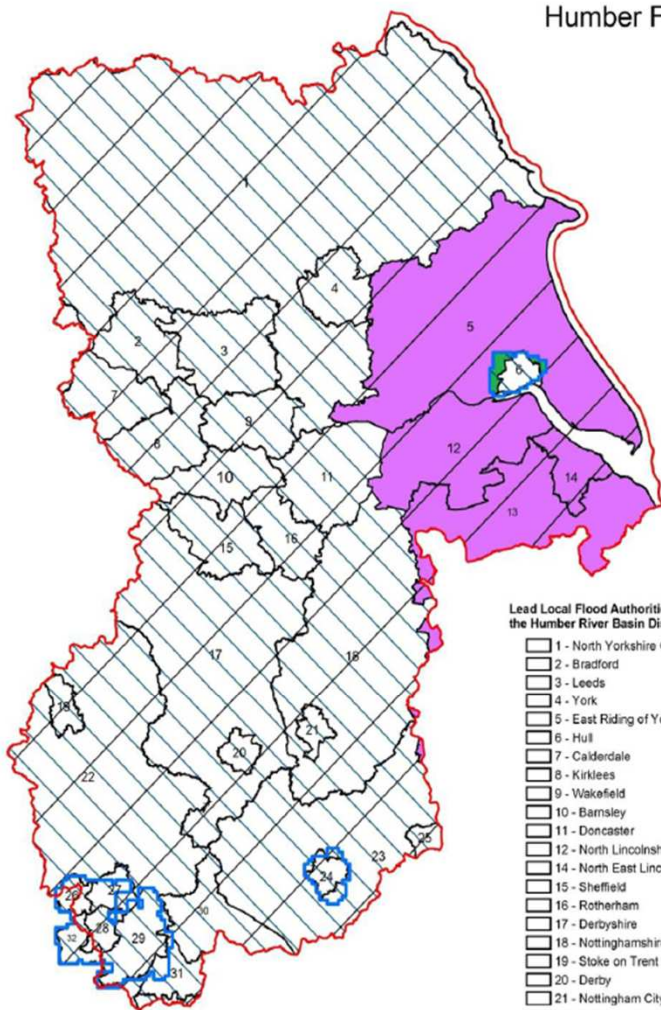
# In Lincolnshire

Partnership formed 2009-10

- Preliminary Flood Risk Assessment 2011
- Joint Flood Risk Management Strategy 2012
- Common Works Programme 2012 onwards
- Surface water flood risk maps 2013
- Developing detailed risk assessment (all sources) and local prioritization criteria for schemes
- ...and now the Flood Risk Management Plan

# Humber & Anglian Regions

### Humber FRMP Coverage



#### Lead Local Flood Authorities (LLFAs) within the Humber River Basin District (RBD)

- 1 - North Yorkshire County Council
- 2 - Bradford
- 3 - Leeds
- 4 - York
- 5 - East Riding of Yorkshire
- 6 - Hull
- 7 - Calderdale
- 8 - Kirklees
- 9 - Wakefield
- 10 - Barnsley
- 11 - Doncaster
- 12 - North Lincolnshire
- 14 - North East Lincolnshire
- 15 - Sheffield
- 16 - Rotherham
- 17 - Derbyshire
- 18 - Nottinghamshire
- 19 - Stoke on Trent
- 20 - Derby
- 21 - Nottingham City
- 23 - Leicestershire
- 24 - City Of Leicester
- 27 - Walsall
- 29 - City Of Birmingham
- 31 - Solihull

#### LLFAs partly within the Humber RBD

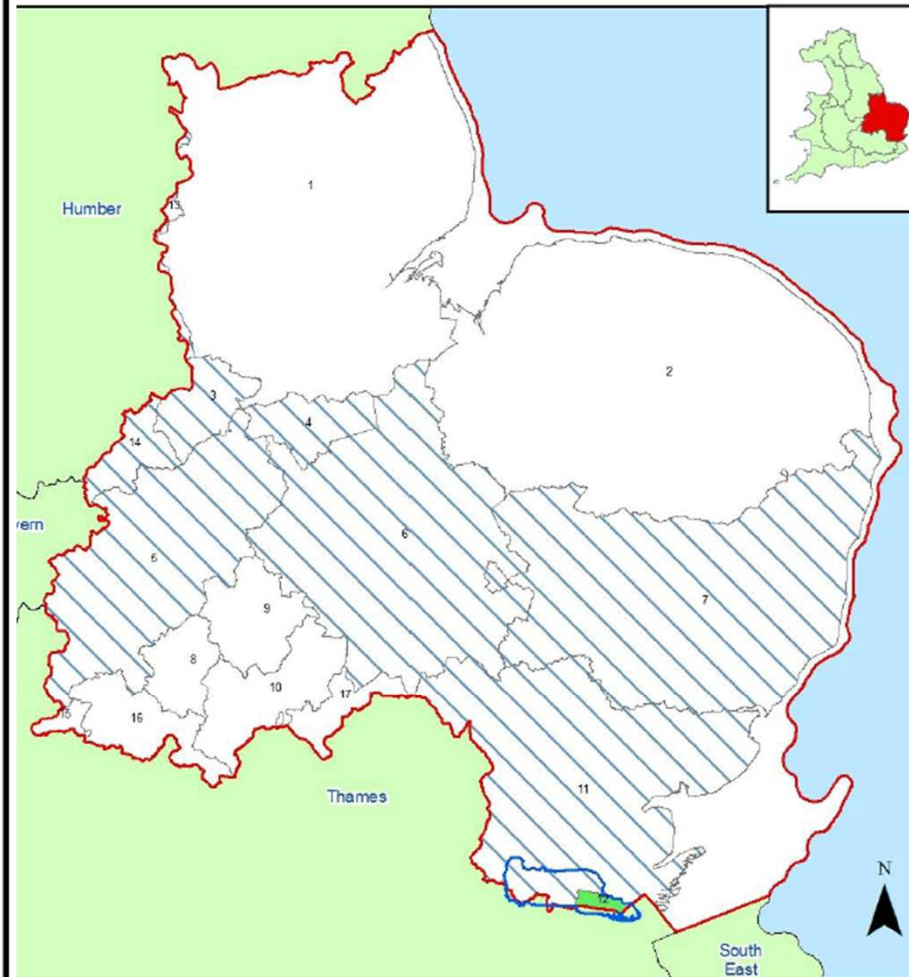
- 13 - Lincolnshire County Council
- 22 - Staffordshire County Council
- 25 - Rutland
- 26 - Wolverhampton
- 28 - Sandwell
- 30 - Warwickshire County Council
- 32 - Dudley Metropolitan Borough Council
- 33 - Worcestershire County Council
- 34 - Craven
- 35 - Lancashire County Council

#### Legend

- Working in partnership with the Environment Agency, producing separate plans to reflect local priorities and existing agreements
- Local Flood Risk information for FRA to be included in a separate FRMP
- Main river, sea & reservoir flood risk information included in this FRMP
- Local flood risk information included in this FRMP
- Humber River Basin District
- Flood Risk Areas



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#### LLFAs within the Anglian RBD

- 1 - Lincolnshire
- 2 - Norfolk
- 3 - Rutland
- 4 - Peterborough
- 5 - Northamptonshire
- 6 - Cambridgeshire
- 7 - Suffolk
- 8 - Milton Keynes
- 9 - Bedford
- 10 - Central Bedfordshire
- 11 - Essex
- 12 - Southend-on-Sea
- 13 - Nottinghamshire
- 14 - Leicestershire
- 15 - Oxfordshire
- 16 - Buckinghamshire
- 17 - Hertfordshire

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#### Legend

- Anglian River Basin District
- South Essex Flood Risk Area
- LLFA information included
- information not included. A separate FRMP will be produced by Southend Borough Council
- Anglian Water information included for the entire RBD
- Other River Basin Districts

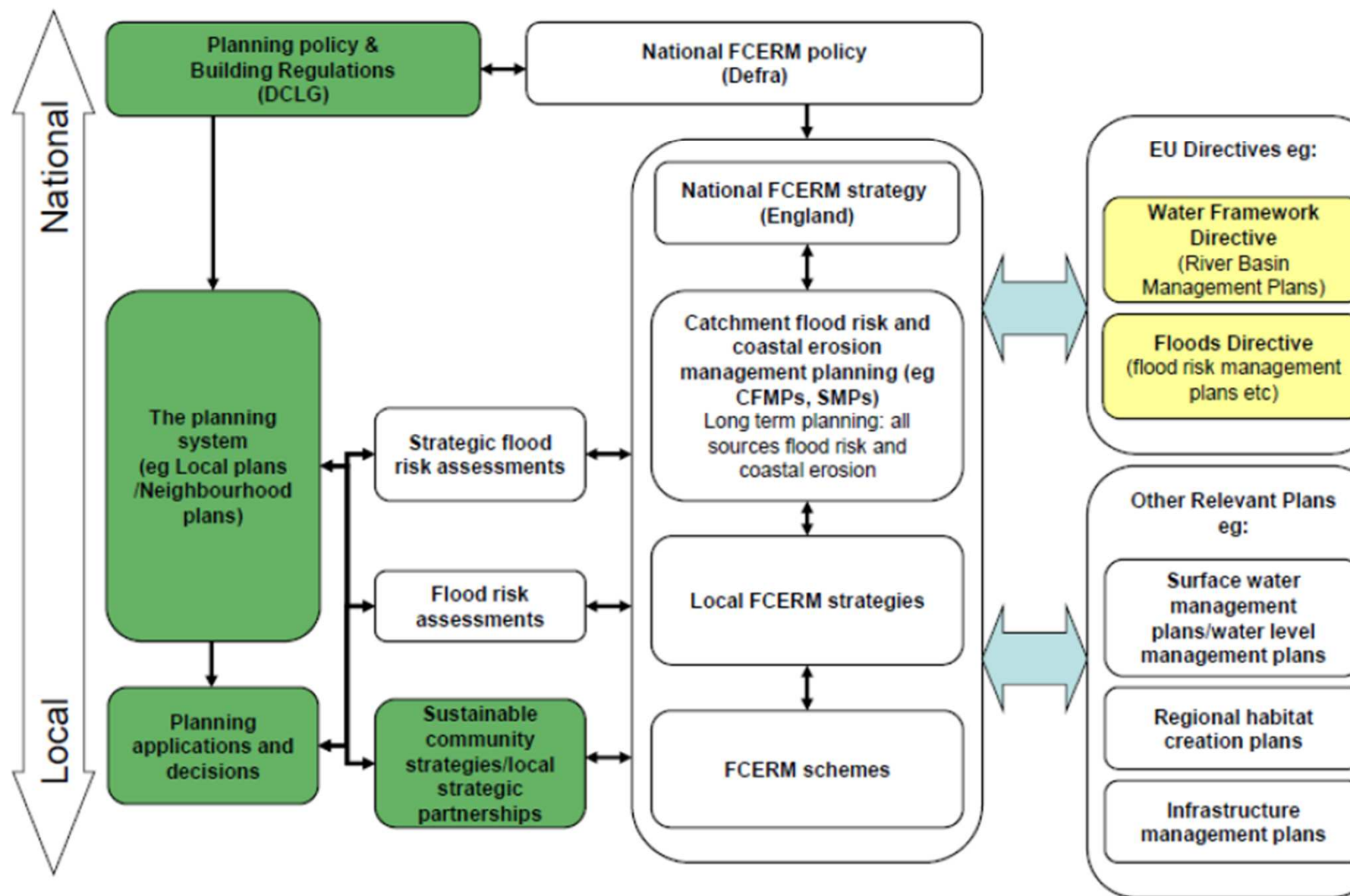


# Sections of the FRMP

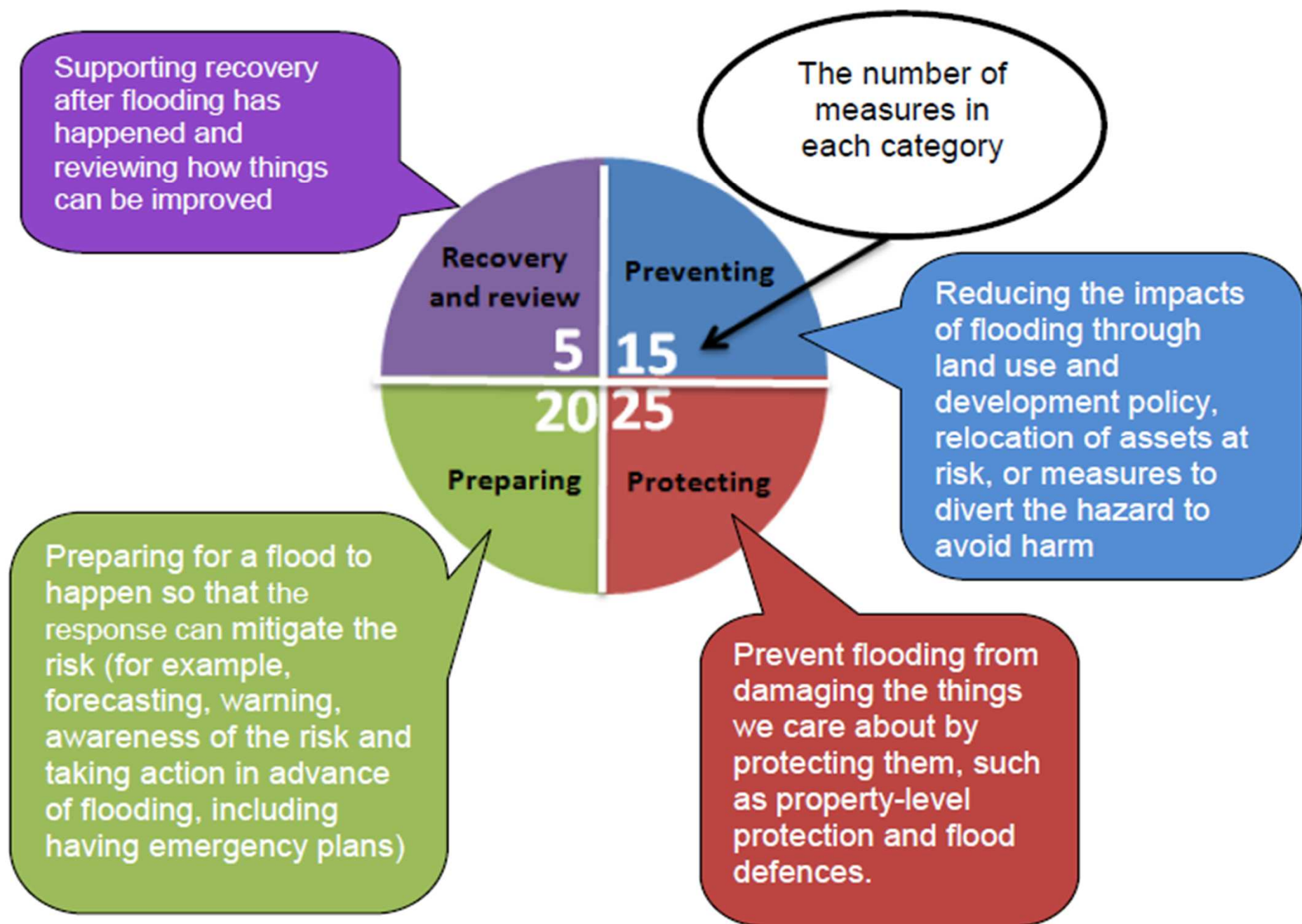
- Part A – The draft plan and how we developed it
- Part B – Managing Flood Risk in the Anglian/Humber River Basin District
  - General introduction
  - Key Flood Risk issues
  - Catchment by catchment profile
  - Other areas (eg Fens Strategic Area)
- Conclusions, Objectives, Measures & monitoring



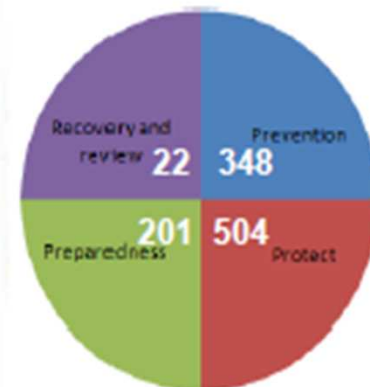
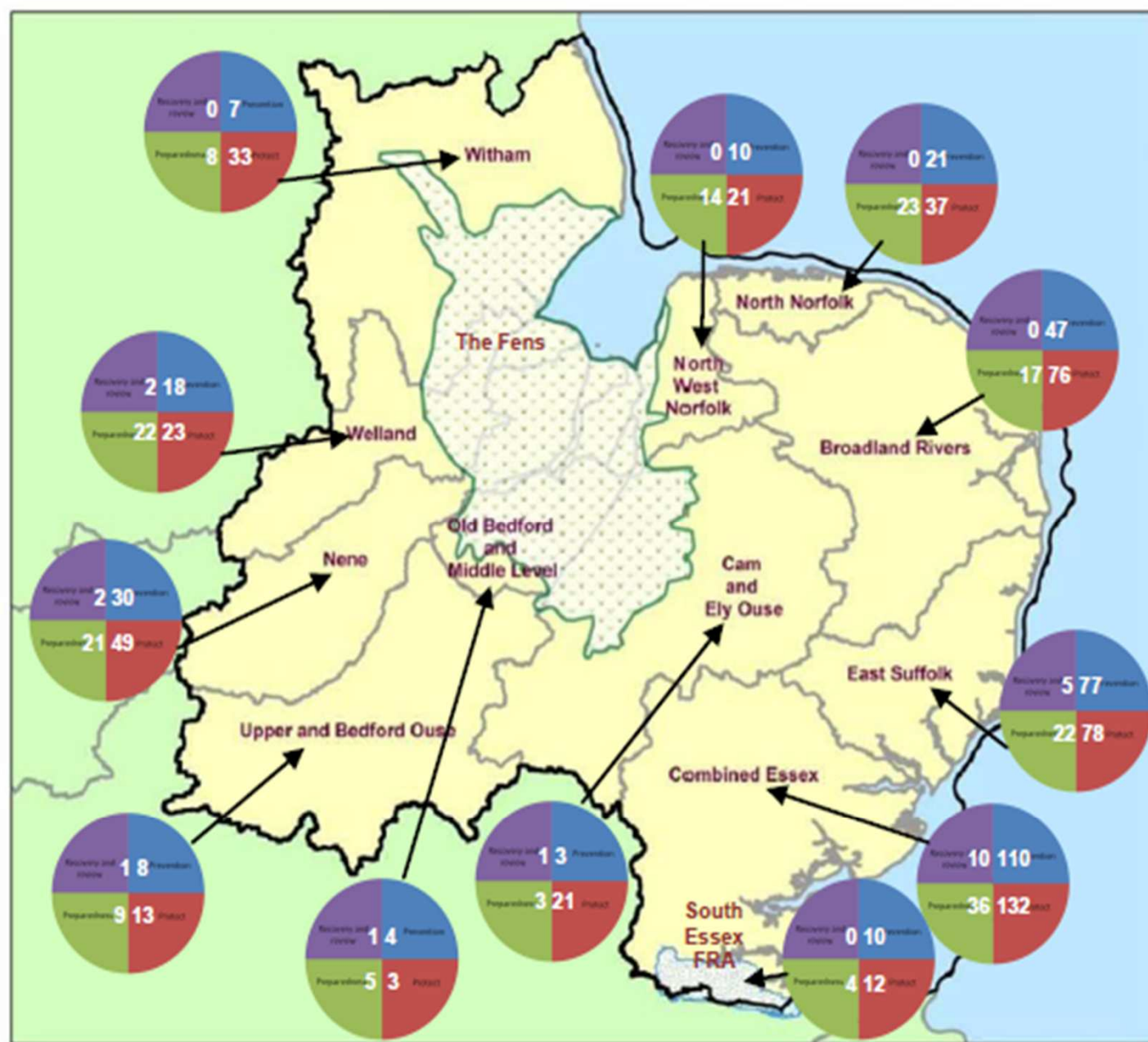
Figure 1: Flood Risk Management Plans and their relationship to other planning initiatives (taken from the National Flood Management Strategy for England)



**Figure 3: The types of measures for managing risk (example numbers used)**



## Anglian River Basin District



## Key Statistics

Table 7.2: Summary flood risk from rivers and sea to people, economic activity and the natural and historic environment across the Anglian RBD.

River and Sea	Total in RBD	High risk	Moderate risk	Low risk	Very low risk
<b>Risk to people:</b>					
Number of people in area:	5,968,929	55,904	145,655	336,818	9,583
Number of services:	13,920	622	733	959	28
<b>Risk to economic activity:</b>					
Number of non-residential properties:	860,034	15,821	42,701	59,179	1,618
Number of airports:	2	0	0	0	0
Length of roads (primary routes) (km):	4503	70	202	273	4
Length of railway (km):	1,567	66	151	118	3
Agricultural land (ha):	2,156,384	118,789	227,932	131,699	781
<b>Risk to the natural and historic environment:</b>					
Number of EU designated bathing waters within 50m:	6	3	0	0	0
Number of EPR installations within 50m:	194	14	12	9	0
Area of SAC within area (ha):	152,647	10,960	1,219	4,616	42
Area of SPA within area (ha):	159,766	18,824	1,807	6,046	165
Area of RAMSAR site within area (ha):	117,324	18,064	1,723	5,696	132
Area of World Heritage Site within					

Figure 10.11.2 – Flood Risk from Rivers and the Sea in the Witham Catchment – National Flood Risk Assessment (NAFRA)

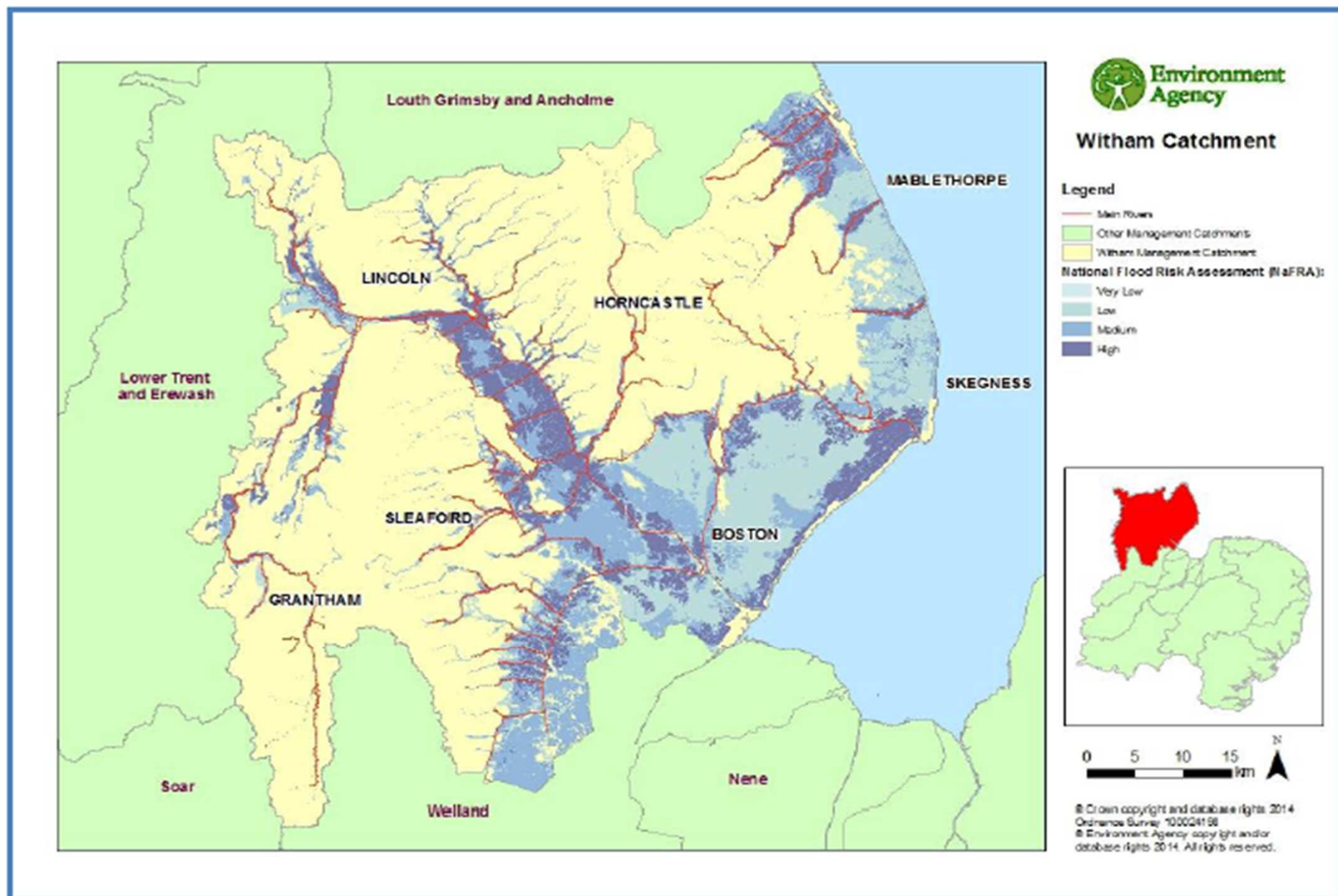
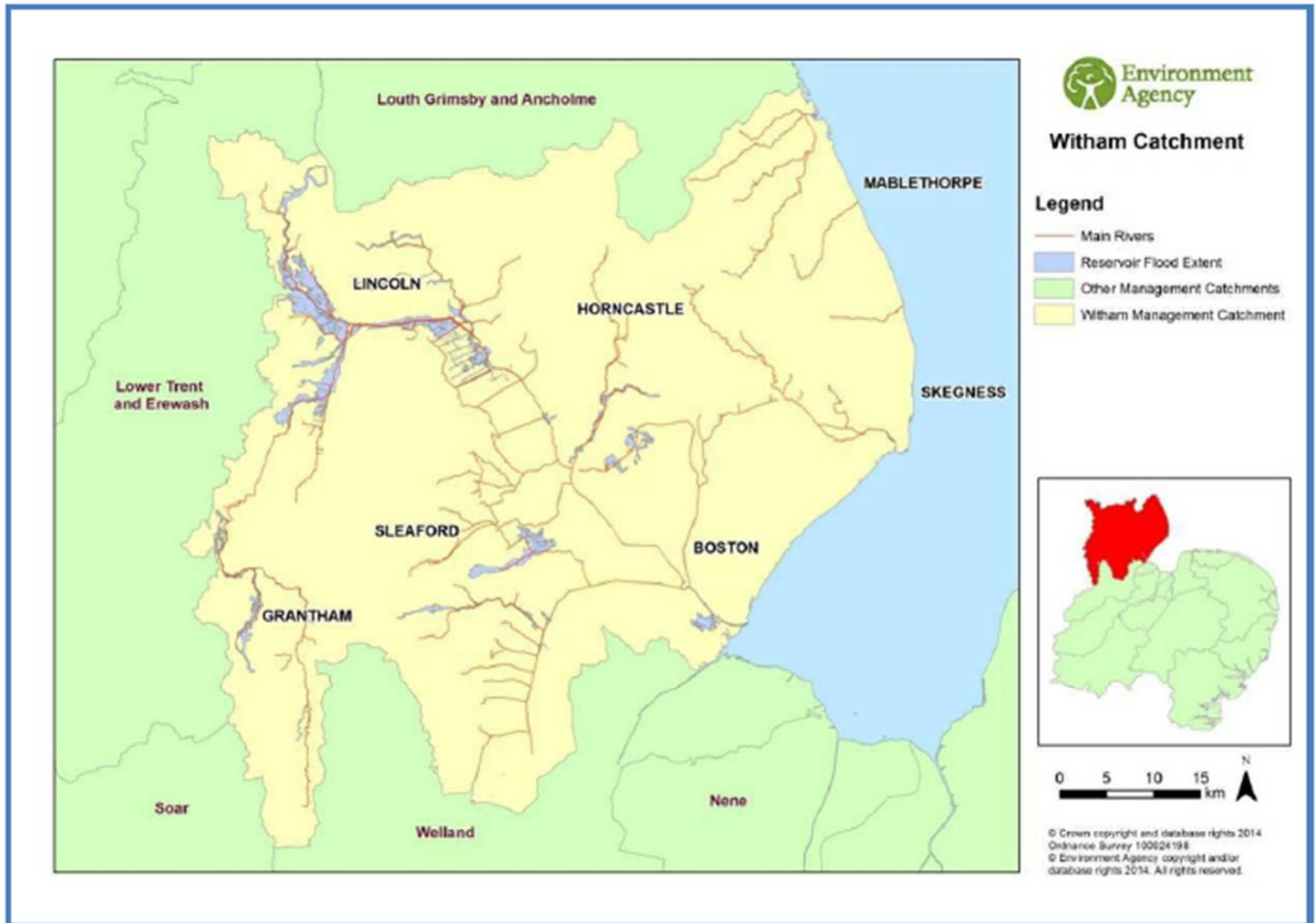


Figure 10.11.3 – Flood Risk from Reservoirs in the Witham Catchment



## Key Statistics

**Table 10.11.1: Summary flood risk from rivers and sea to people, economic activity and the natural and historic environment across the Witham Catchment.**

River and Sea	Total in Catchment	High risk	Moderate risk	Low risk	Very low risk
<b>Risk to people:</b>					
Number of people in area:	523,128	16,591	27,119	109,507	129
Number of services:	1367	111	114	233	0
<b>Risk to economic activity:</b>					
Number of non-residential properties:	95,035	3147	8254	18,704	72
Number of airports:	0	0	0	0	0
Length of roads(primary routes)(km):	494	7	20	73	0
Length of railway (km):	223	7	15	46	0
Agricultural land (ha):	361,676	38,009	44,497		
<b>Risk to the natural and historic environment:</b>					
Number of EU designated bathing waters within 50m:	0	0	0		
Number of EPR installations within 50m:	110	17	11		
Area of SAC within area (ha):	2877	101	86		
Area of SPA within area (ha):	2801	91	82		
Area of RAMSAR site within area (ha):	2805	91	82		
Area of World Heritage Site within area (ha):	0	0	0		
Area of SSSI within area (ha):	4559	134	102		
Area of Parks and Gardens within area (ha):	2109	45	12		
Area of Scheduled Ancient Monument within area (ha):	898	43	75		
Number of Listed Buildings within area:	4319	85	131		
Number of Licensed water abstractions within the area:	1583	676	252		

**Table 10.11.2: Summary flood risk from reservoirs to people, economic activity and the natural and historic environment across the Witham Catchment.**

Reservoirs	Total in Catchment	Maximum extent of flooding
<b>Risk to people:</b>		
Number of people in area:	523,128	24,031
Number of services:	1367	56
<b>Risk to economic activity:</b>		
Number of non-residential properties:	95,035	2043
Number of airports:	0	0
Length of roads (km):	494	10
Length of railway (km):	223	9
Agricultural land (ha):	361,676	7905
<b>Risk to the natural and historic environment:</b>		
Number of EU designated bathing waters within 50m:	0	0
Number of EPR installations within 50m:	110	2
Area of SAC within area (ha):	2877	2
Area of SPA within area (ha):	2801	2
Area of RAMSAR site within area (ha):	2805	2
Area of World Heritage Site within area (ha):	0	0
Area of SSSI within area (ha):	4559	9
Area of Parks and Gardens within area (ha):	2109	61
Area of Scheduled Ancient Monument within area (ha):	898	12
Number of Listed Buildings within area:	4319	67
Number of Licensed water abstractions within the area:	1583	192

**Objectives:**

Our objectives when preparing this flood risk management plan have been as follows:

**Social**

- Reduce Risk to People
- Promote Understanding of Flood Risk and Work in Partnership
- Prepare Communities and Build Resilience
- Minimise Community Disruption
- Consider Flood Risk in Development Plans
- Maintain Existing Assets that protect people
- River, watercourse and tidal defence maintenance

**Economic**

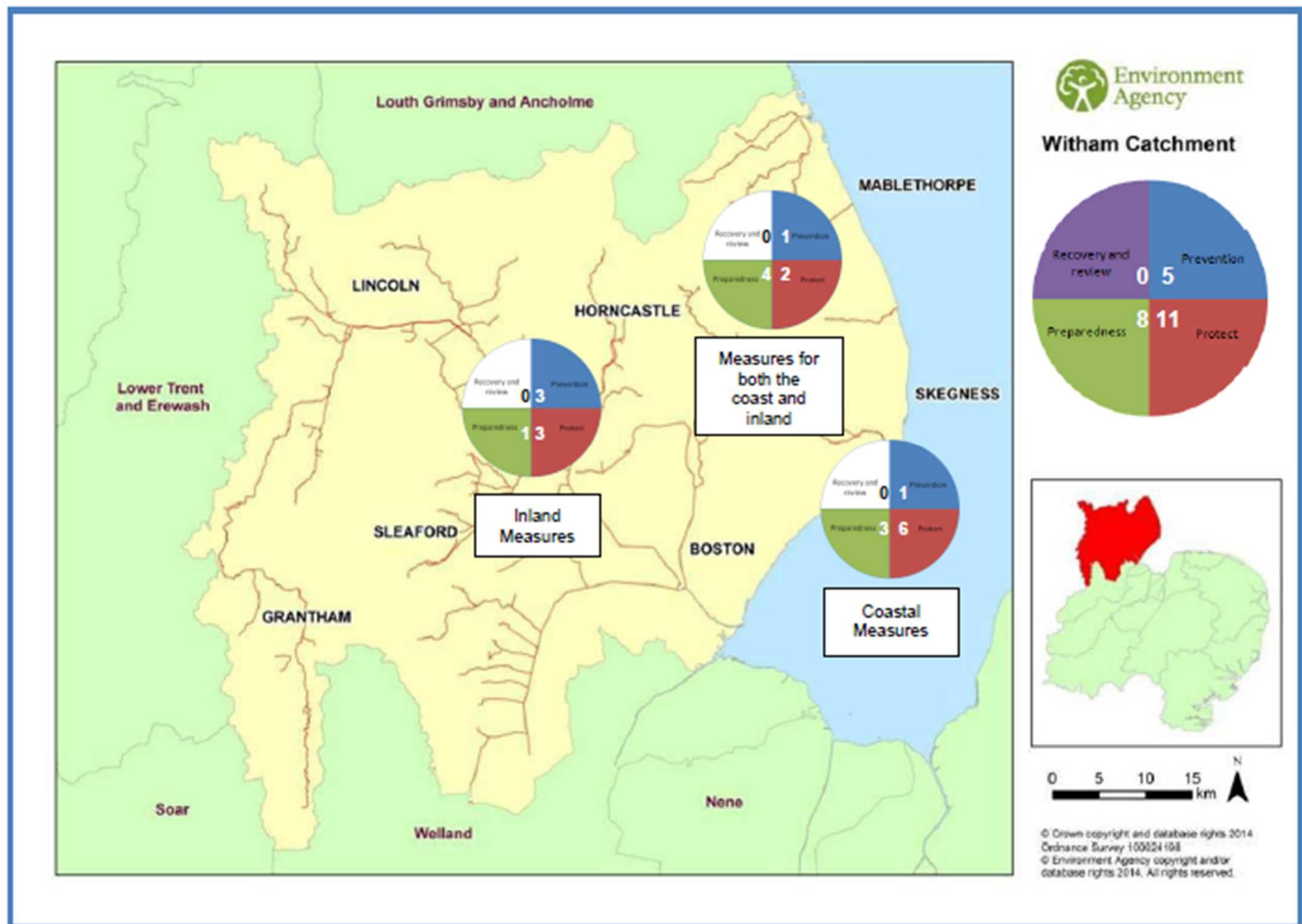
- Reduce Economic damage
- Maintain existing assets that protect business
- Protect Transport Services
- Consider Flood Risk to Agricultural Land
- Protect Tourism when undertaking Flood Risk Management

**Environmental**

- Achieve WFD Objectives through Flood Risk Management
- Protect Designated Nature Conservation Sites
- Protect Designated Heritage Sites



Figure 10.11.4 – Ongoing Measures within the Witham Catchment



Across the Witham Catchment the on-going measures to manage flood risk include:

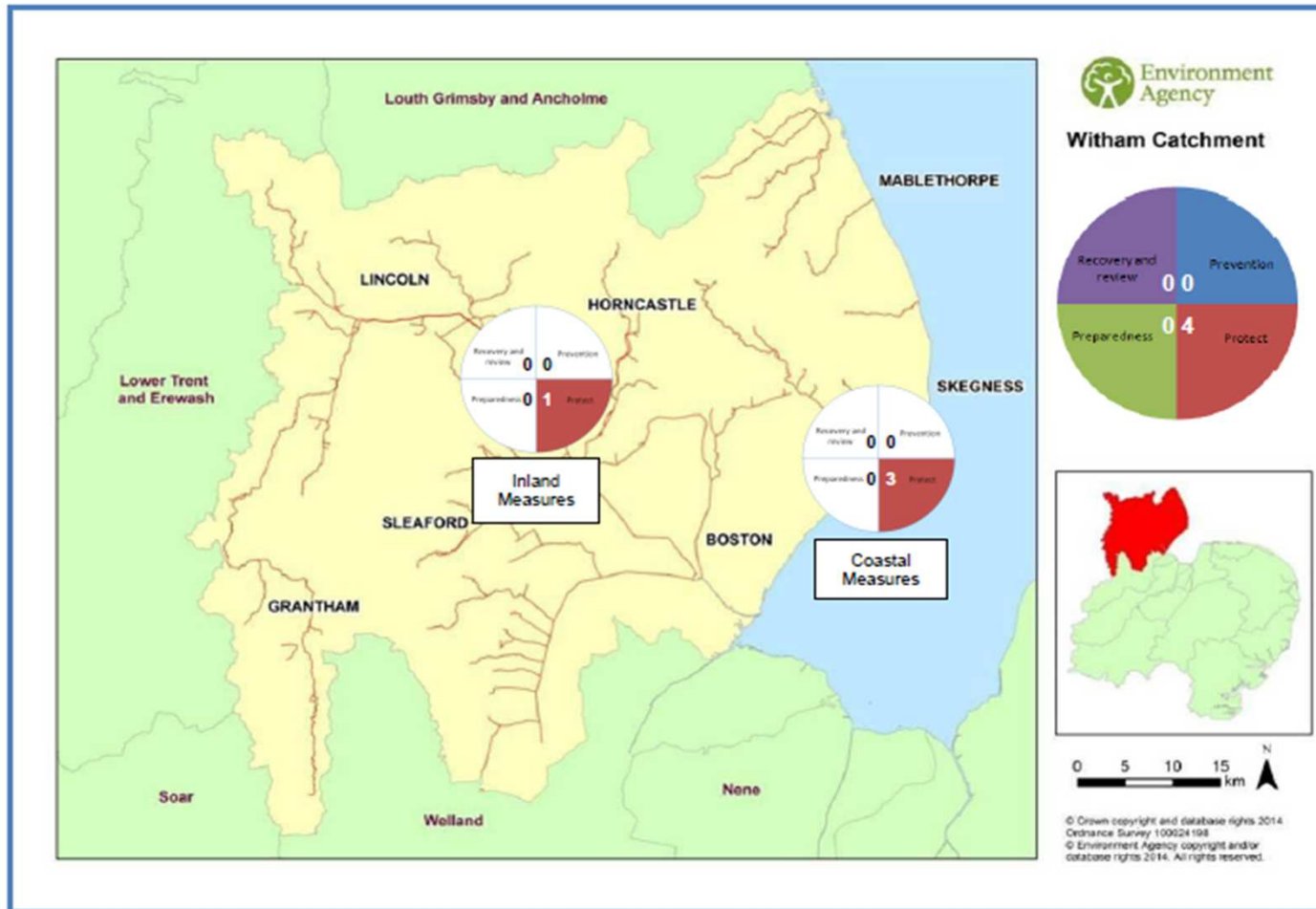
**Preventing risk:** 5 measures which include measures to avoid inappropriate development in the flood plain and improving our understanding of all sources of flooding to inform future flood risk management.

**Preparing for risk:** 8 measures which include measures to develop and improve emergency response plans with partners, improving flood mapping, install a new tidal gauge, maintaining our flood forecasting and warning systems and working to raise community awareness and improve their preparedness.

**Protecting from risk:** 11 measures which include measures to construct flood risk management schemes, continue with beach nourishment to protect tidal defence structures and maintain and replace when necessary major flood defence structures,

**Recovery and review of risk:** there are no ongoing measures over and above existing flood risk work.

Figure 10.11.5 – Agreed Measures within the Witham Catchment



Across the Witham Catchment the agreed measures to manage flood risk include:

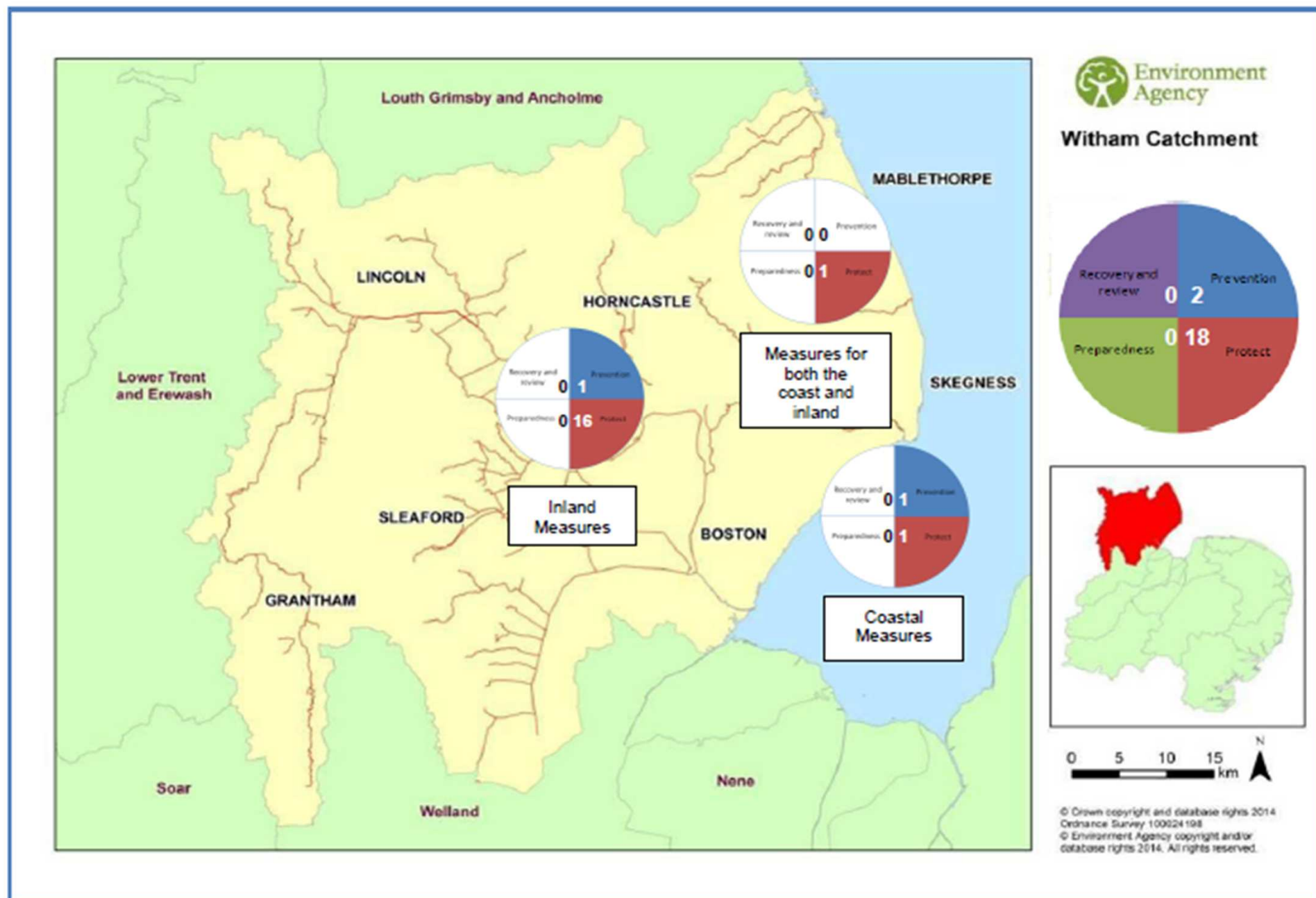
**Preventing risk:** there are no agreed measures over and above existing flood risk work.

**Preparing for risk:** there are no agreed measures over and above existing flood risk work.

**Protecting from risk:** 4 measures which include repairs to major flood defence assets, a flood risk management scheme and strategy for future coastal management.

**Recovery and review of risk:** there are no agreed measures over and above existing flood risk work.

Figure 10.11.6 – Proposed measures within the Witham Catchment



In the Witham Catchment there are 20 measures proposed to manage risk from 2015 and beyond. These are shown in Figure 10.11.6 and summarised as follows. The measures are described more fully in table 10.11.3.

**Preventing risk:** 2 measures which include a strategic study and possible managed realignment project and the preparation of a flood risk management strategy for Rutland.

**Preparing for risk:** there are no proposed measures over and above existing flood risk work.

**Protecting from risk:** 18 measures which include measures to construct future coastal management and defence schemes, fluvial flood risk management schemes including working with natural processes to reduce catchment runoff and river restoration projects and projects to install property level protection.

**Recovery and review of risk:** there are no proposed measures over and above existing flood risk work.

Table 10.11.3 – The Witham Catchment Measures

Action Location	Source of flood risk or coastal erosion										Category of objective	Objective	Measure Type	Action Details	Timing	Priority	Partnership implementing measures	Statutory or voluntary measure	Status of measure	
	Flooding from rivers (main rivers) Flooding from Rivers (ordinary watercourses) Flooding from Rivers (main river plus ordinary watercourses) Flooding from the Sea Coastal erosion Flooding from reservoirs Surface water flooding Groundwater flooding Sewer flooding Social Environment Economic												Prevention, protection, preparedness etc		FRMP Planning Cycles e.g. 2015 - 2021; 2021 - 2027 etc	Critical, Very High, High, Moderate, Low	Action owner, plan owner and support organisations	Statutory or voluntary	On-going, agreed or proposed	
Witham, Welland, Nene and North West Norfolk Catchment Coast	N	N	N	Y	N	N	N	N	N	Y	N	N	Minimise flood risk to people, property and the environment.	M6 - Other	Implementation of SMP policies and actions through continuation of periodic CSG and EMF meetings. This will ensure formal tracking of the SMP Action Plan and will also be essential in ensuring that findings of specific studies / monitoring is communicated back to key stakeholders.	2015 - 2021	High	Environment Agency   AI Partners	Statutory FRMP	On going
Witham, Welland, Nene and North West Norfolk Catchment Coast	N	N	N	Y	N	N	N	N	N	Y	N	N	Minimise flood risk to people, property and the environment. Community adaptation.	M4 - Preparedness	Continue consultation with key stakeholders and general public in the period up to SMP3 (progress of action plan; conveying messages around flood and erosion risk, potential coastal change).	2015 - 2021	High	Environment Agency   AI Partners	Statutory FRMP	On going
Witham, Welland, Nene and North West Norfolk Catchment Coast	N	N	N	Y	N	N	N	N	N	Y	N	N	Minimise flood risk to people, property and the environment.	M2 - Prevention	Ensure that local and regional development planning documents take account of SMP policies and flood and erosion risks.	2015 - 2021	High	Environment Agency   Planning Authorities	Statutory FRMP	On going
Witham, Welland, Nene and North West Norfolk Catchment Coast	N	N	N	Y	N	N	N	N	N	Y	N	N	Minimise flood risk to people, property and the environment.	M4 - Preparedness	Development, monitoring and review of emergency response plans to prepare for extreme events that exceed standard.	2015 - 2021	Moderate	Environment Agency   Local Authorities	Statutory FRMP	On going
Witham, Welland, Nene and North West Norfolk Catchment Coast	N	N	N	Y	N	N	N	N	N	Y	N	N	Minimise flood risk to people, property and the environment.	M4 - Preparedness	Continue with improvements to flood risk maps and inundation modelling to provide improved flood warning service.	2015 - 2021	Moderate	Environment Agency	Statutory FRMP	On going

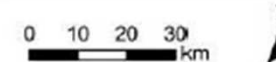
# Fens Strategic Area



## Anglian River Basin District

### Legend

- Other River Basin Districts
- Anglian RBD
- Management Catchments
- The Fens Strategic Area
- South Essex Flood Risk Area



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# Comments

- Comments common to both FRMPs
  - Measures
  - Status of objectives
  - Level of detail
  - Level of prioritisation
- Specific comments
- By catchment
- Fens 'strategic area' – value of this?



# Next steps

- Committee comments will shape partnership response
- Response will be drafted on basis of today's comments and discussed by partnership
- Final draft then compiled early January and shared with members & all partners
- Deadline 31<sup>st</sup> January