

# Managing Major Coastal Flood Incidents

Craig Woolhouse  
East Coast Flood Risk Manager

5 June 2013

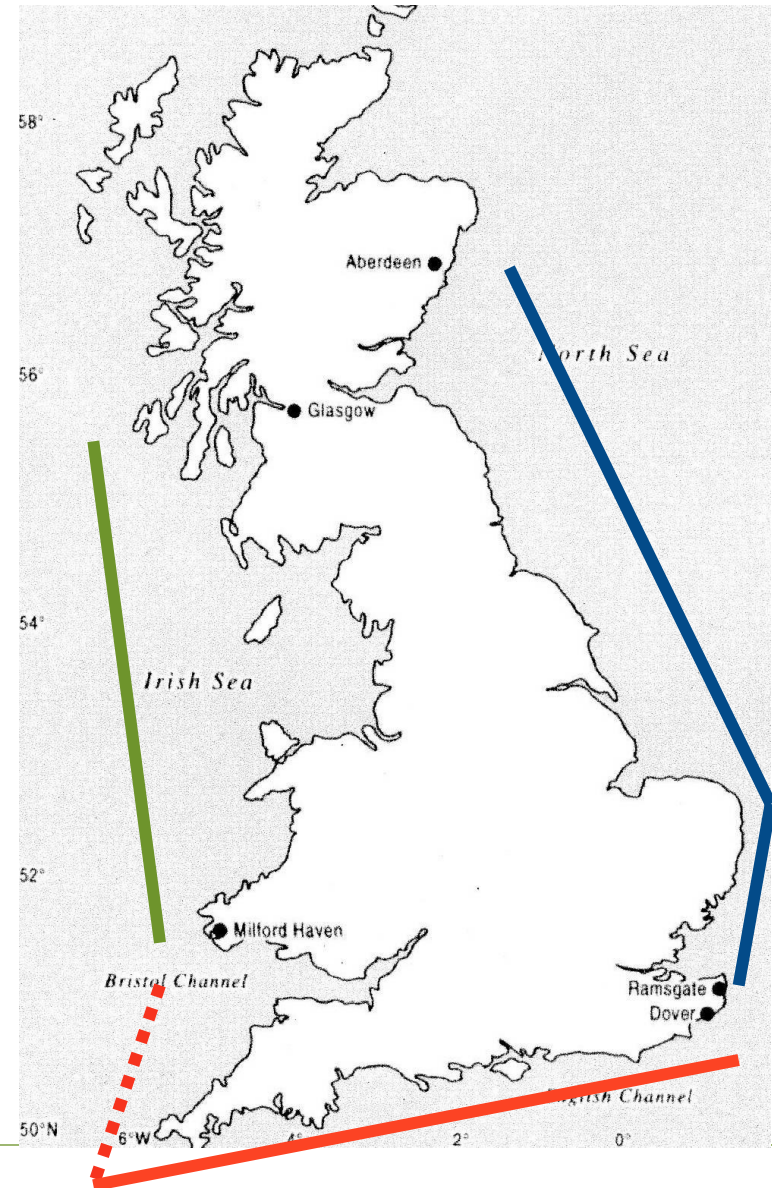
# Overview

- ➔ Risk profile - Why now ?
- ➔ National capability development
- ➔ Role of RFCC Coastal Members
- ➔ Next steps

Last 15 years	River	Coast
Significant events	1998, 2000, 2003, 2005, 2007, 2009, 2012	Nil
Expected vs. Actual Damages (£ bn)	12.2 vs. 13 (break even)	3.7 vs. <0.5 (£3bn deficit)
Expected Deaths	c.75	c. 150

# Major Coastal Flood Incident Zones

Zone	Regions	RFCC
East Coast	North East Anglian Midlands South East	Northumbria, Yorkshire Northern, Central, Eastern Trent Thames, Southern
West Coast	North West West	North-West
South-West Coast	Midlands South West	Severn Wessex, South-West
South Coast	South West South East	South-West, Wessex Southern



# Flood warnings to properties

	At risk	At high risk	FWD “opt in” (% high risk)	EDW “opt out” (% high risk)	Total Reach (% high risk)
East (excl. Thames Barrier)	331 665	287 660	67 359 (23%)	145 066 (51%)	212 425 (74%)
(Thames Barrier)	367 788		11 225 (3%)	114 193 (31%)	125 418 (34%)
South/SW	171 093	155 907	50 202 (32%)	64 337 (41%)	114 539 (73%)
West	62 108	48 274	11 699 (25%)	24 329 (50%)	36 028 (75%)
Wales	58 990	54674	19 957 (37%)	20 304 (37%)	40 261 (74%)
Scotland	27 374				

# 60<sup>th</sup> Commemoration of 1953 Flood : Main Impacts

- ➔ 307 dead
- ➔ 1200 breaches
- ➔ Floodwater 9km inland – 160 000 acres flooded
- ➔ 32000 evacuated
- ➔ 46000 dead animals



# 1953 Storm Surge

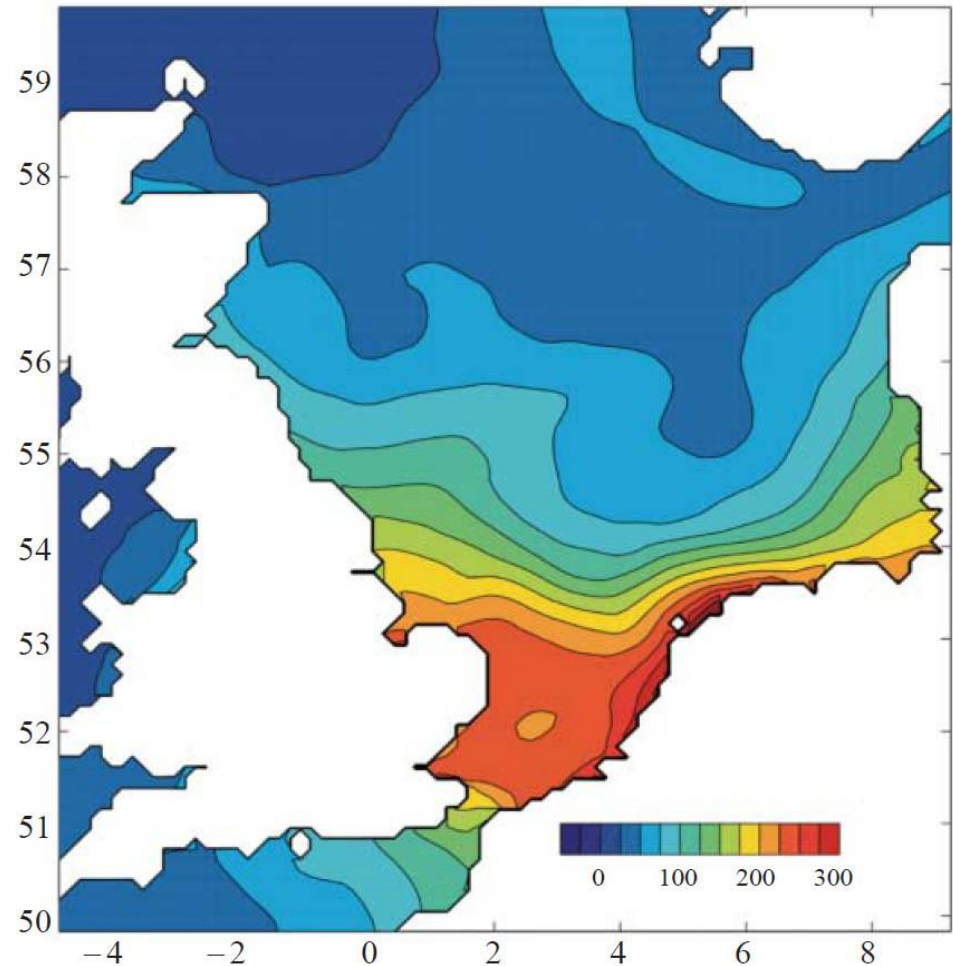
Maximum surge (cm)

Coincided with high tide (+/- 3 hours) from Spurn Head to Kent

Lower than average river flows

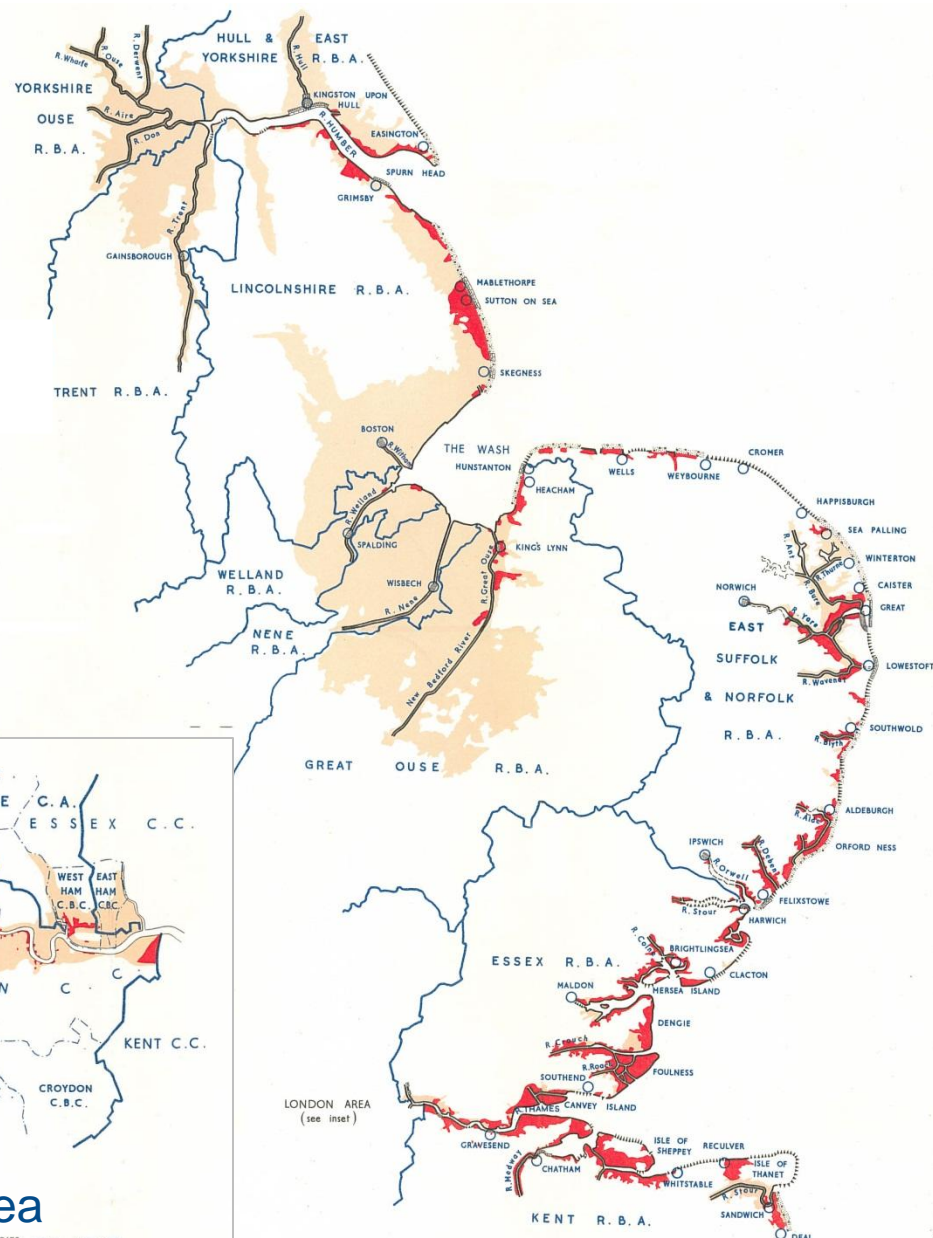
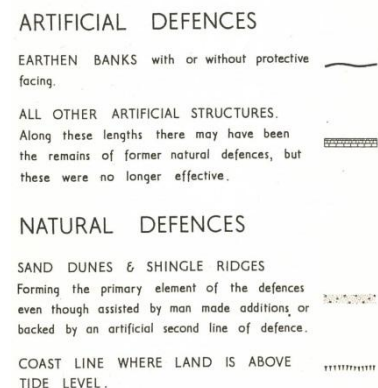
Tide travel time (hrs) from Wick:

+6.75	Immingham
+7.5	Cromer
+10.75	Lowestoft
+12.75	Harwich
+13.75	Sheerness



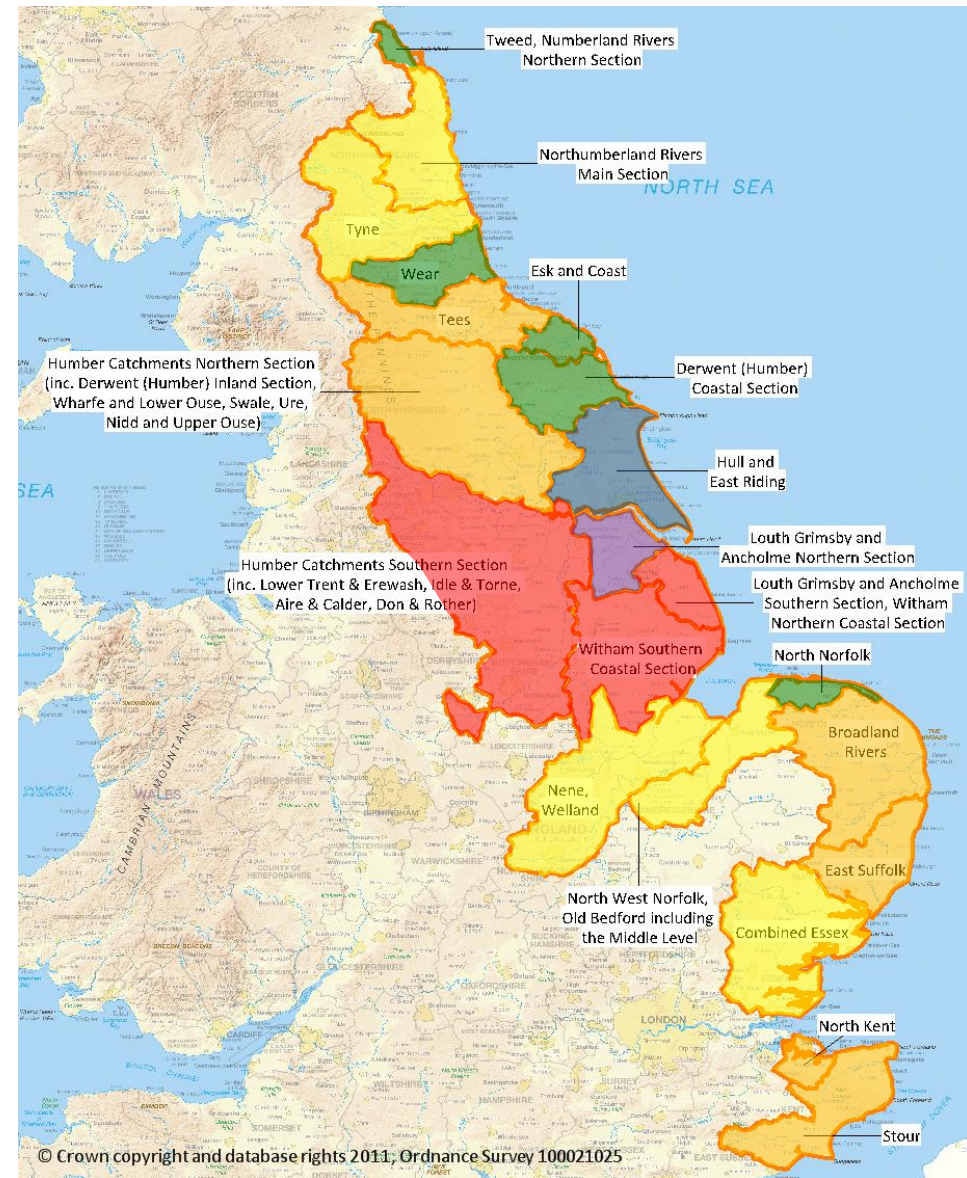


- ➔ Warning service
- ➔ Research
- ➔ Standards of protection
- ➔ London and Thames estuary



# H19 - East Coast (1 in 200 year event)

## Residential properties





# Progress in last 9 months...

## FOUNDATIONS: Incident Management Procedures

Environment Agency

Government

EC Flood Group (LRFs)



## STRUCTURE: Overview Documents

EC Operational Instruction  
(June 2013)

Interim Guide  
(June 2013)

EC Flood Emergency  
Framework (January 2013)



## CONTENTS :National Products

Data Analysis; Decision  
Support Tool; Mapping,  
Breaching and Evacuation  
Guidance; Situational  
Awareness; Contractor  
Support; E&B Review

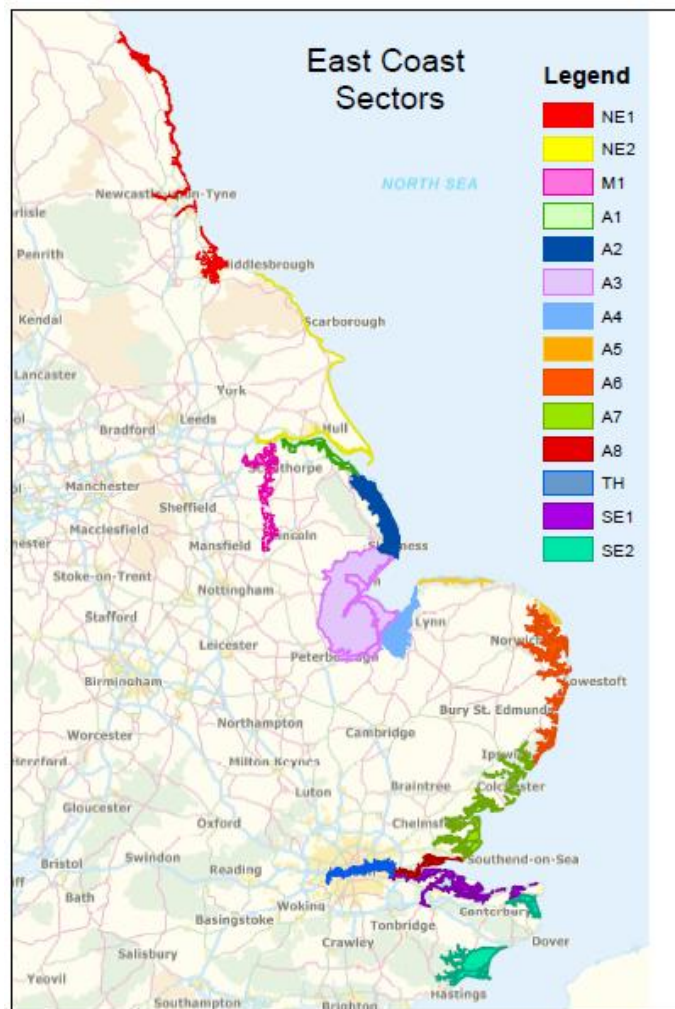
Action Plan tbc  
(Work through to  
December 2014)

60<sup>th</sup> Commemoration  
Conference; Rescue  
Capability; EU Exchange of  
Experts; Evacuation Traffic  
Planning; Exercise Pack  
(tbc); Evacuation Guidance



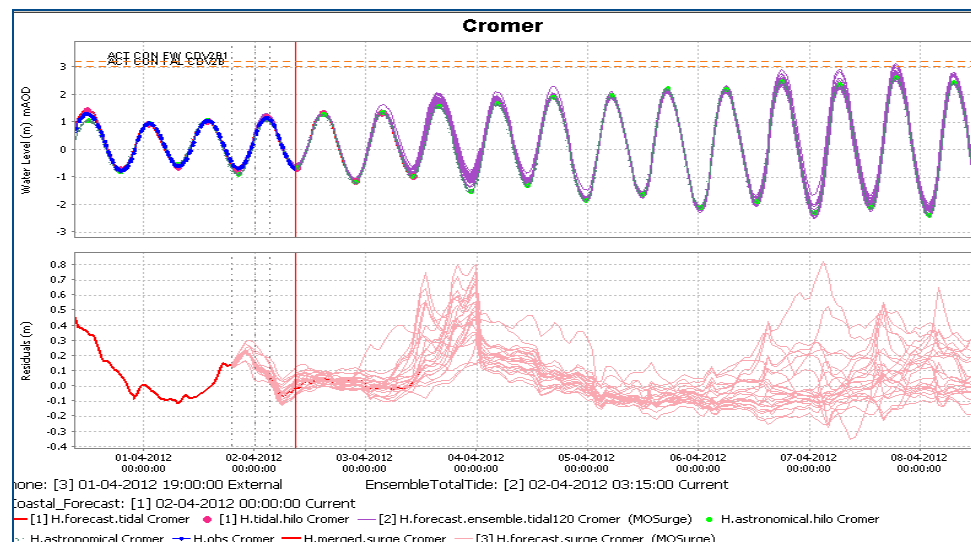
Area Action Plans

# Strategic Support: 3-5 days out



## *National Response Strategies*

- pre-deploy national assets
- prepare to get people to safety
- secure critical national and local infrastructure



# Hurricane Sandy

## ➔ **Evacuation** Stories from Beach Heights

➔ **Christine Weighman, 25**

➔ **Don Wagner, 53 (owner of “Don's Debris Clearance”)**

➔ **Bill Welch, 50**

➔ **President Obama, 51**

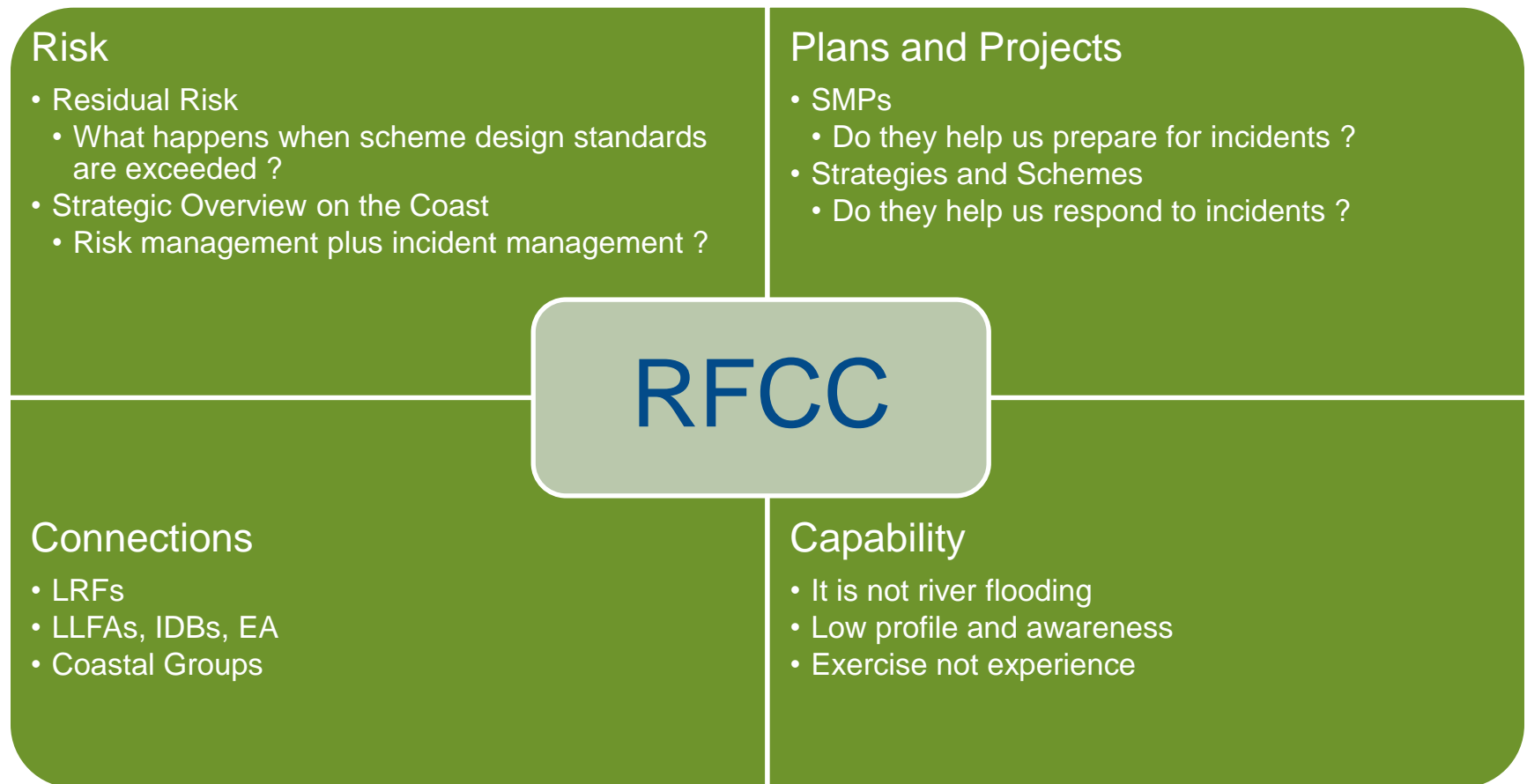
“Don’t pause, don’t delay, don’t question”



# Hurricane Sandy - Recovery

Issue	Scale	Time
People	560 000 registered for assistance	By 5 April 2013
New York Mass Transit Authority	\$4.8 bn (equiv to 2 years LU capital investment)	2 years
Pick-up(waste)	4.3 m cubic metres (equiv. to 3 months of domestic waste collection in England)	95% clear - 150 days
FEMA staff	2800 - recovery 3200 - recovery 2000 – response	Day 150 Day 30 Day -1
Power (CNI/CLI)	6 m homes without	1 to 16 days
Pumping	1.8 m cubic metres (equiv to 10 hours average flow of the river Thames)	13 days
Flights	19 729 cancelled	3 days

# Role of RFCC Coastal Members





# Staying “match fit”



## Annual

- September – Coastal Readiness Statement
- September – Area Exercises
- May – National Coastal Incident Management Conference
- Team exchanges



## Adaptable

- Form S “surge chaser”
- International Network of Experts
- “Just in Time “ training



## Special

- Major exercise every 3 years (first by end of 2015)
- OI Review every 2 years

# Next Steps – to 2015

## Environment Agency

- National Handover Plan
- Area Action Plans (East Coast)
- National Programme Manager (24 months from July 2013)
- South Coast (with NRW)
- West Coast (with NRW)

## Government

- Interim/Final Report (June 2013/ December 2014)  
*Craig Woolhouse* is EA lead
- National Coastal Group (18 months from July 2013)

## East Coast Flood Group

- On-going
- *Charlie Beardall* is EA lead
- South and West Coast groups to be developed ?