




Kent and Medway Resilience

HZ visit

Civil Contingencies Act 2004

Duties Under the Act

- Risk Assessment
 - Emergency Planning
 - Business Continuity Management
 - Warning Informing and Alerting the Public
 - Information Sharing
 - Cooperation

 - Business Continuity management Promotion (Local Authorities)
- 



Category 1 & 2 Responders



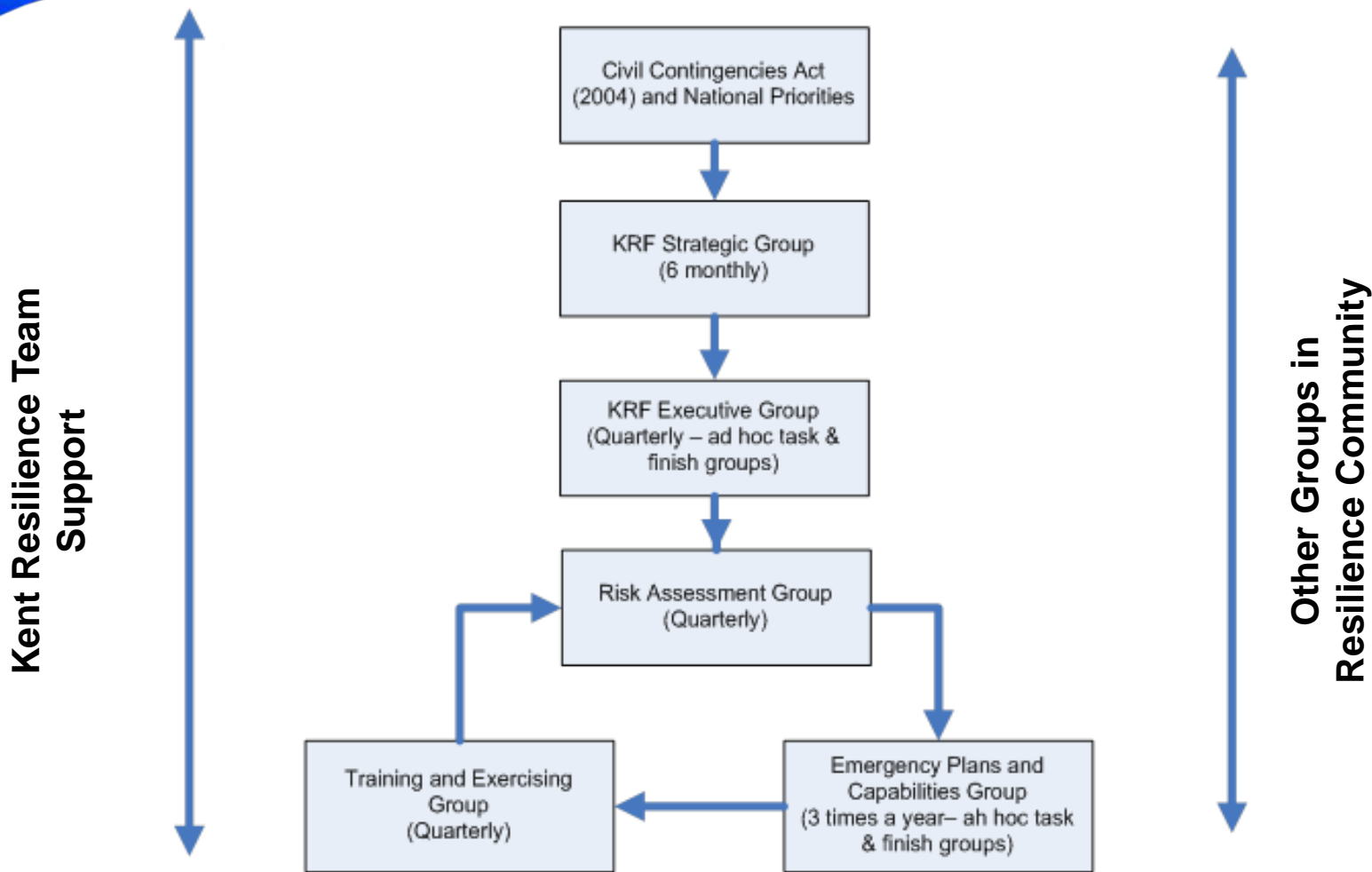
**Kent
Police**



**Kent Fire &
Rescue Service**



KRF Structure





Kent Resilience Team



Kent Fire &
Rescue Service



What is the KRT?

Fully integrated team

Co-located

Centre of excellence

Expertise and Engagement

Single point of contact

Partner Integration





Why have the KRT

To ensure compliance with CCA 2004

Delivery of Kent Resilience Forum work

Improved Response

Coordinated planning and exercising

Stream lining resource allocation

Overall reduction in costs





Risks and Threats



1953
1968
1987
1998
2000
2006
2007
2008
2009
2010
2011
2012
2013

Incidents and Events In Kent

Winter
Floods
2014

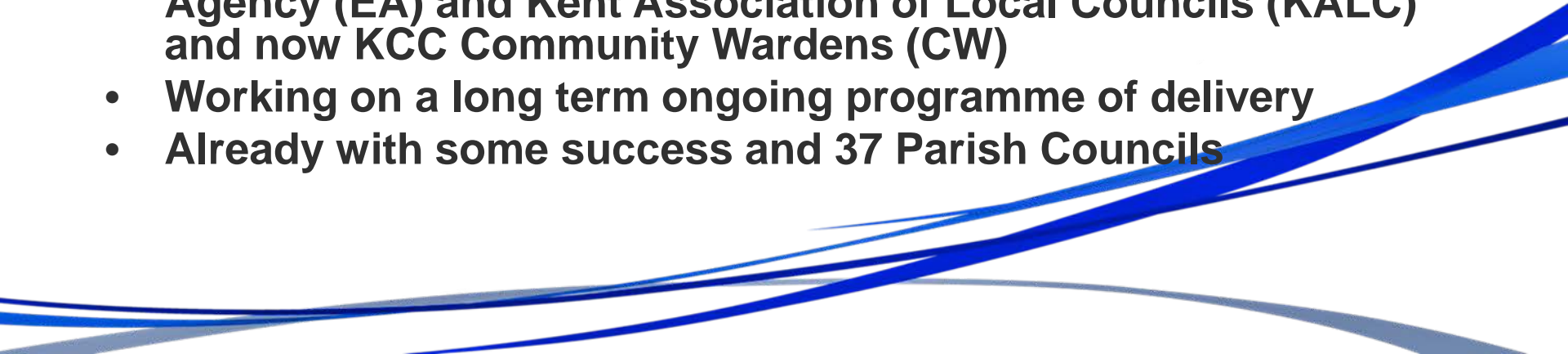


KRF Structure

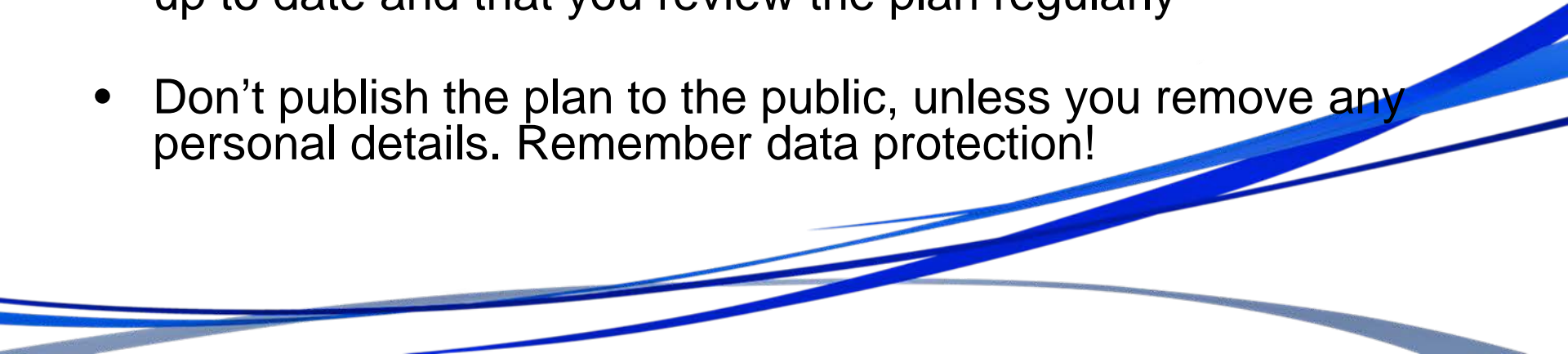


Community Resilience

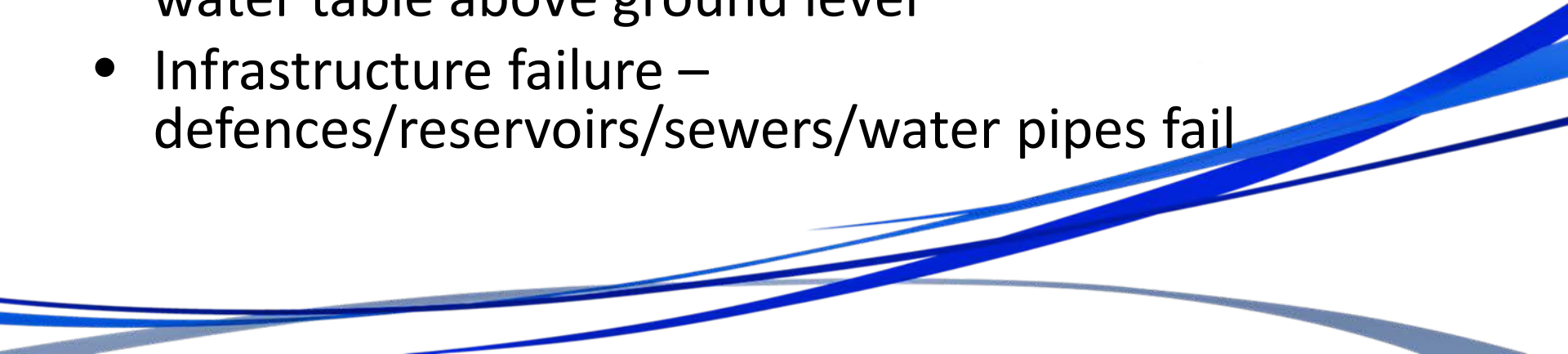
- **2008 Government Work-streams**
 - **Community Emergency Planning**
 - **No Statutory Responsibility**
 - **No Funding**

 - **In Kent we are delivering this currently through Parish Councils**
 - **We are delivering this in partnership with the Environment Agency (EA) and Kent Association of Local Councils (KALC) and now KCC Community Wardens (CW)**
 - **Working on a long term ongoing programme of delivery**
 - **Already with some success and 37 Parish Councils**
- 

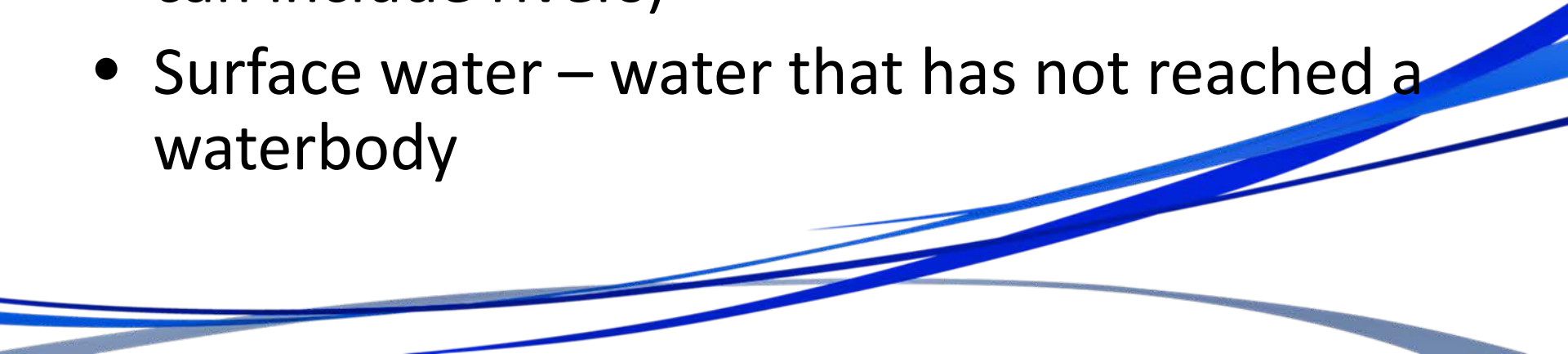
Engaging the Community

- It is vital that you engage with those you want to include in the plan before you write it!
 - Make sure you and those you involve understand what is in the plan and the roles that need to be played
 - Always make sure that you keep telephone contact numbers up to date and that you review the plan regularly
 - Don't publish the plan to the public, unless you remove any personal details. Remember data protection!
- 

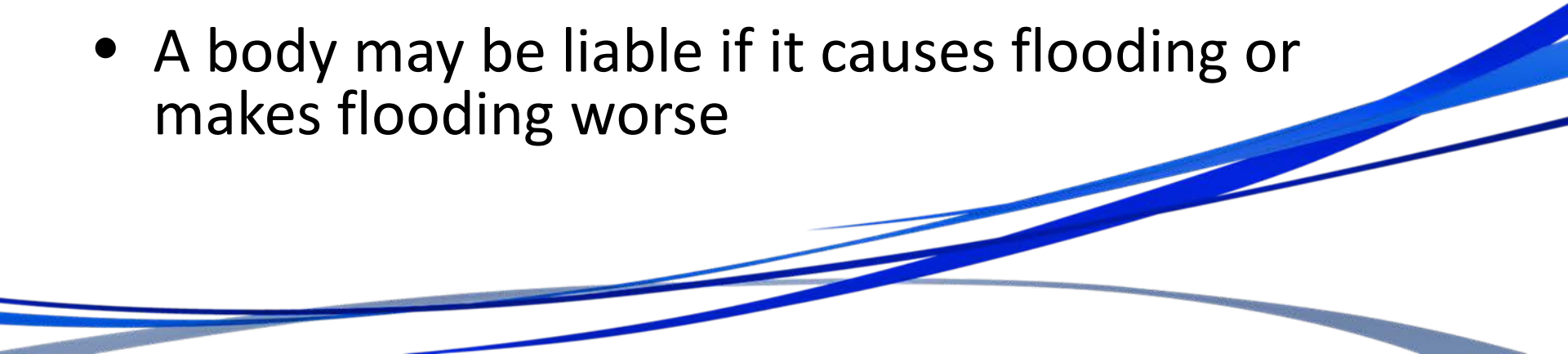
Flooding types

- Coastal – storms cause high water levels and high winds which blow waves over sea walls
 - River (fluvial) – excess rain over catchment creates more flow than river can cope with flooding low lying land
 - Surface water flooding (pluvial) – rain exceeds the capacity of drains and rivers
 - Groundwater – long term wet weather raises the water table above ground level
 - Infrastructure failure – defences/reservoirs/sewers/water pipes fail
- 


Definitions

- Main river – defined as main river and included on main river map held by the Environment Agency
 - Ordinary watercourses – all watercourses that are not main river
 - Coastline – where the land meets the sea (it can include rivers)
 - Surface water – water that has not reached a waterbody
- 

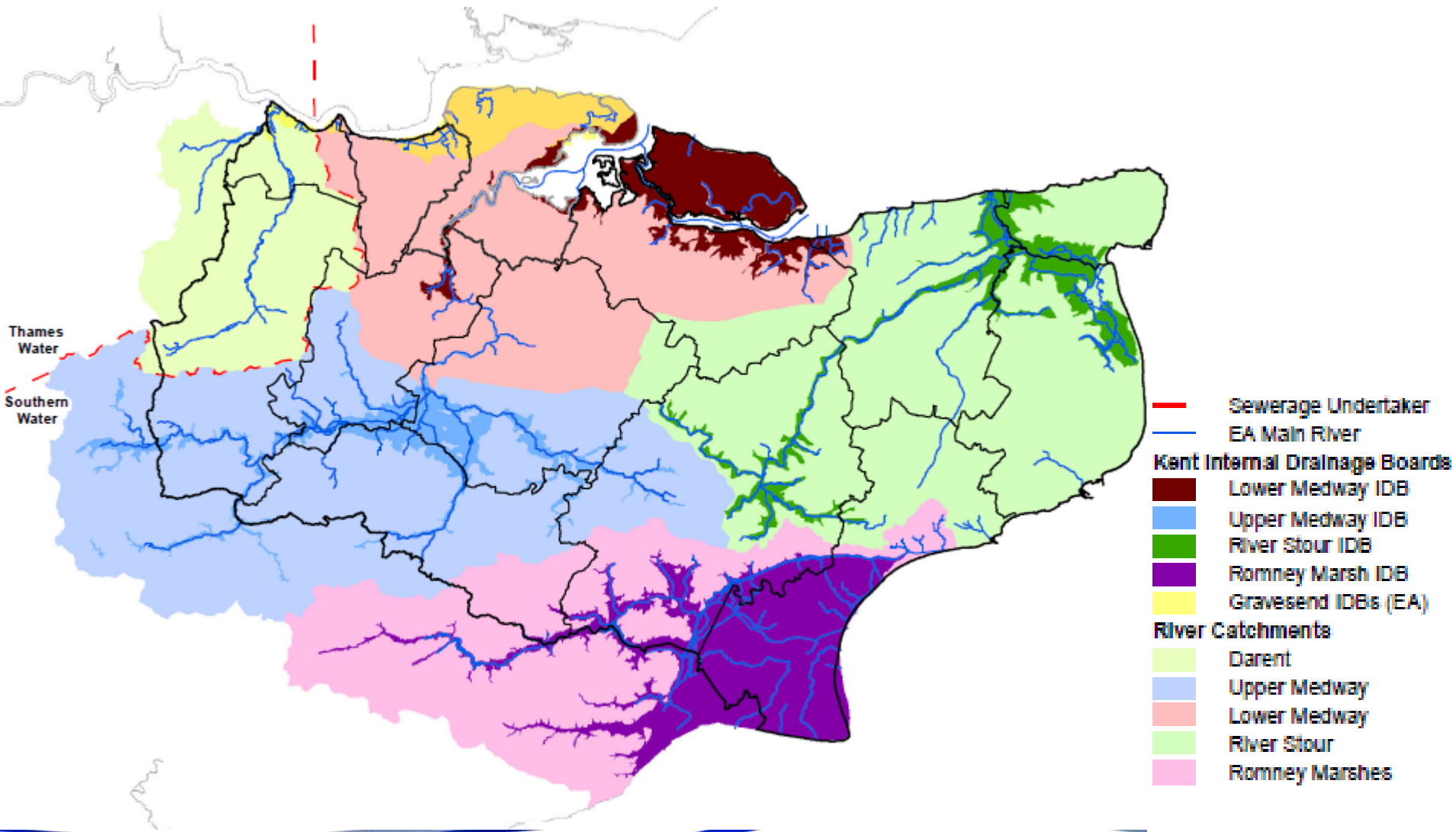
Who is responsible for flooding?

- Everybody has a responsibility to protect themselves
 - No organisation has a duty to prevent flooding
 - Some bodies have duties to respond to floods, eg a sewer flood
 - But mostly flood management is exercised as a permissive power ie they don't have a duty to do it
 - A body may be liable if it causes flooding or makes flooding worse
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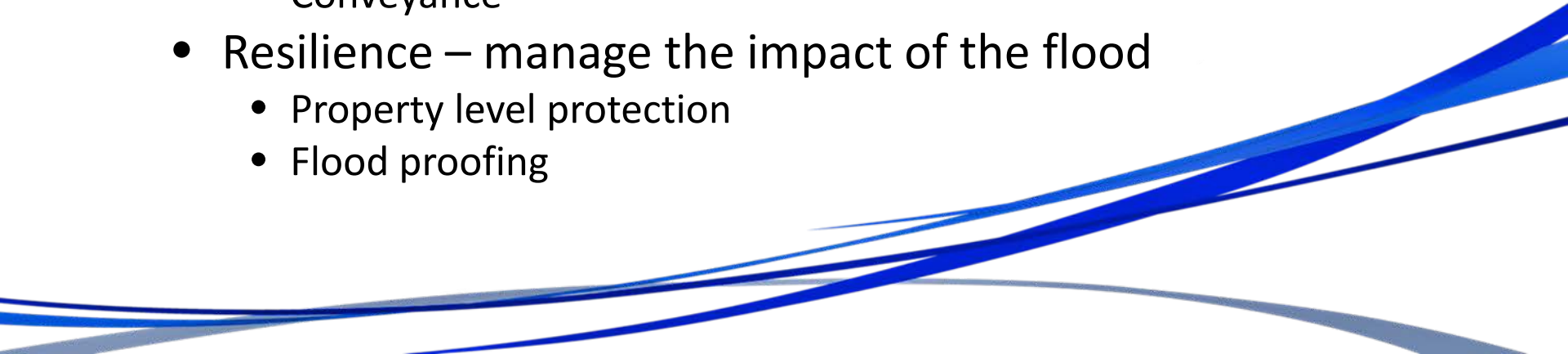
Risk Management Authorities

- Bodies with a role in flood risk management include:
 - Environment Agency – main rivers and coastal flooding
 - Sewerage Undertakers – sewers
 - District Authorities – coastal erosion
 - Internal Drainage Boards – ordinary watercourses
 - Lead Local Flood Authority – local flooding
- 


Risk management authorities in Kent



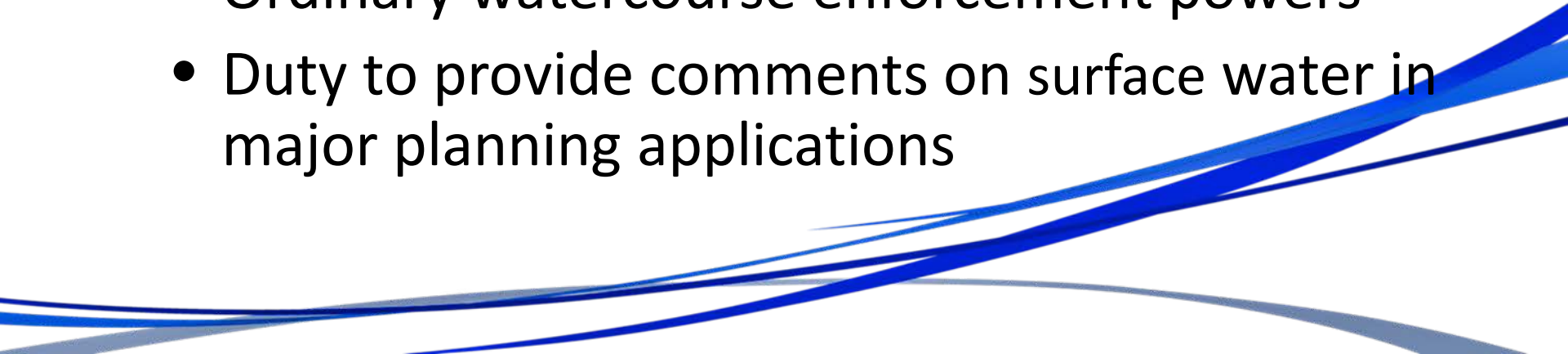
Flood risk management

- Reducing the risk of flooding
 - Avoidance – don't occupy flood risk areas
 - Planning
 - Prevention – stop it flooding
 - Reducing the amount of runoff
 - Managing river flows to prevent high flows
 - Protection – manage where it floods
 - Upstream storage
 - Flood walls/embankments
 - Conveyance
 - Resilience – manage the impact of the flood
 - Property level protection
 - Flood proofing
- 

KCC's role

- KCC is the highway authority responsible for drainage on the roads
 - KCC has a role in emergency planning and responding to flooding events
 - Flood and water management act makes us Lead Local Flood Authority
 - This gives us a new strategic overview role in flood risk management for “local flooding”
 - Local flooding is flooding from
 - Surface runoff
 - Groundwater
 - Ordinary watercourses
- 

Lead Local Flood Authority

- Our role as LLFA includes:
 - Duty to develop, maintain, apply and monitor a strategy for local flood risk management
 - Duty to investigate flooding
 - Duty to maintain a register of significant structures and features
 - Ordinary watercourse enforcement powers
 - Duty to provide comments on surface water in major planning applications
- 

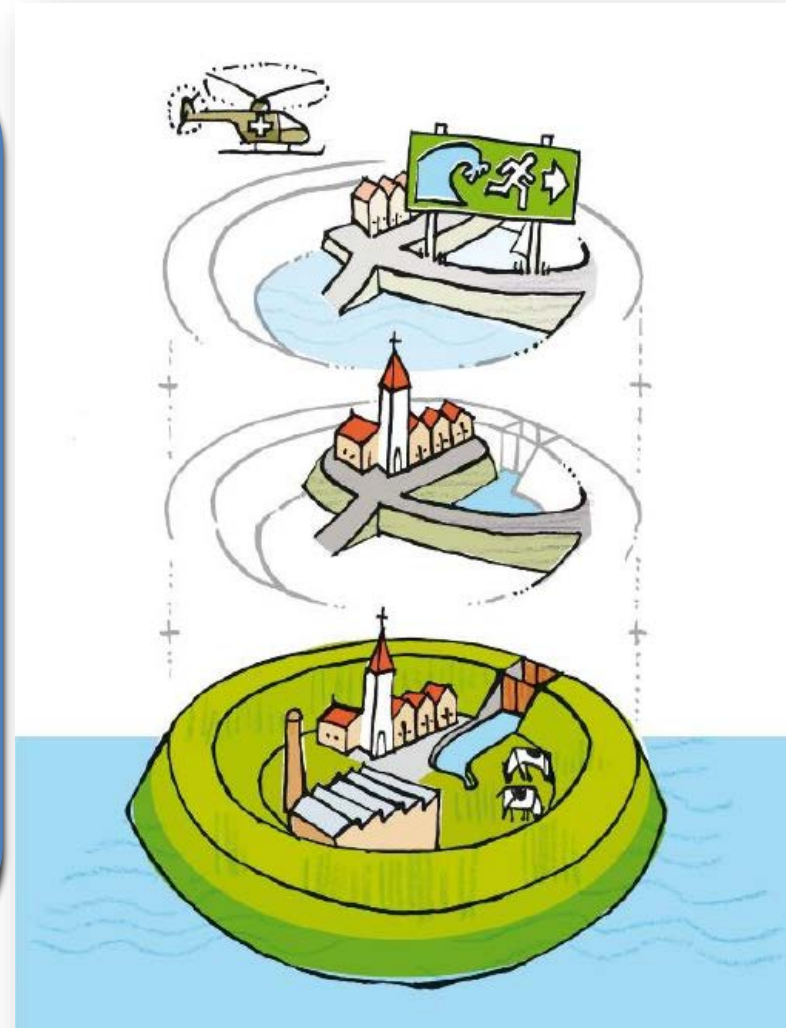
Kent Pilot

Flood Resilient Areas by Multi-layered Safety

What is Multi-Layered Safety?

Holistic
approach to
flood
management

- Prevent
- Reduce
- Respond
- Recover





Project Partners

- 15 partners, from 5 countries, lead by Province of Zuid-Holland



UK Partners

- UK partners: KCC, Rivers Trust Consortium (Rivers Trust, Tees Rivers Trust, Trent Rivers Trust, National Flood Forum)



Project focuses on 3 key themes of resilience

- Areas (geographical)
- Authorities (administrative)
- Communities (social/people) → *KCC is leading on this theme*



Budget & Time-frame

- Kent budget ~€700,000
- October 2016 – January 2020

Kent County Council

- Aims to build resilience across whole of health and social care sector

National Flood Forum

- Flood Forum work will support wider project through community group set up

Rivers Trust

- South-east rivers trust implementing whole catchment approach to flood-risk management

Reduce current risk

Identify and address future vulnerability to health and social care infrastructure

Understand the economic effects on the sector

Explore strategic response and improve long-term decision making

Explore opportunities for minimising risk and costs

Spatial Risk Assessments

- SHAPE Atlas (Strategic Health Asset Planning and Evaluation)
- Climate Just

Qualitative and Quantitative Assessments

- Linking to floods of 2013/14
- Learning from 'Operation Surge'
- Economic evaluations

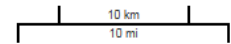
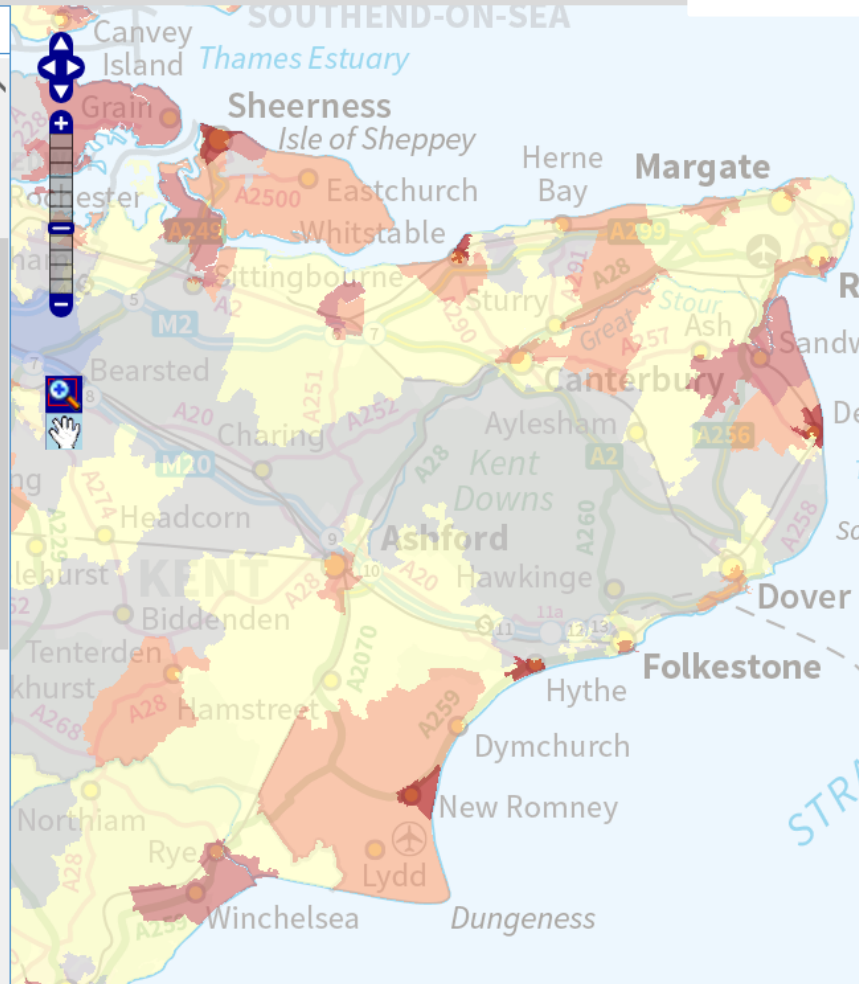
Develop tools to support first line responders, support service providers to adapt

- Resilience Measures
- Emergency Plans
- Training
- Awareness raising

Assessing vulnerabilities in Health & Social Care

- Sector wide spatial analysis
- Stakeholder analysis
- Tendering for 'Kent Climate Change Risk Assessment'
 - Economic impact analysis

- ▾ Flooding
 - ▾ Flood disadvantage (2011) [info](#)
 - River & coastal flood disadvantage [info](#)
 - ▾ Surface Water disadvantage [info](#)
 - 1 in 30 years
 - 1 in 100 years
 - 1 in 1,000 years
 - ▾ Flood exposure (2011)
 - River & coastal flood exposure (%) [info](#)
 - ▾ Surface water flood exposure (% of area) [info](#)
 - 1 in 30 years
 - 1 in 100 years
 - 1 in 1,000 years
 - ▾ Environment Agency Flood Maps (current) [info](#)
 - ▾ Flood socio-spatial vulnerability (2011)
 - Flood vulnerability index [info](#)
 - ▾ Sensitivity [info](#)
 - Sensitivity index
 - ▾ Age
 - Older people (% people over 75 years) [info](#)
 - Young children (% people under 5 years) [info](#)
 - ▾ Health
 - People in ill-health (% people whose day-to-day activities are limited) [info](#)
 - Households containing at least one person in ill-health (%) [info](#)
 - ▾ Enhanced Exposure [info](#)
 - Enhanced exposure to flooding index
 - ▾ Physical Environment
 - Built up area (% not greenspace) [info](#)
 - Lack of domestic gardens (area of building/domestic gardens) [info](#)

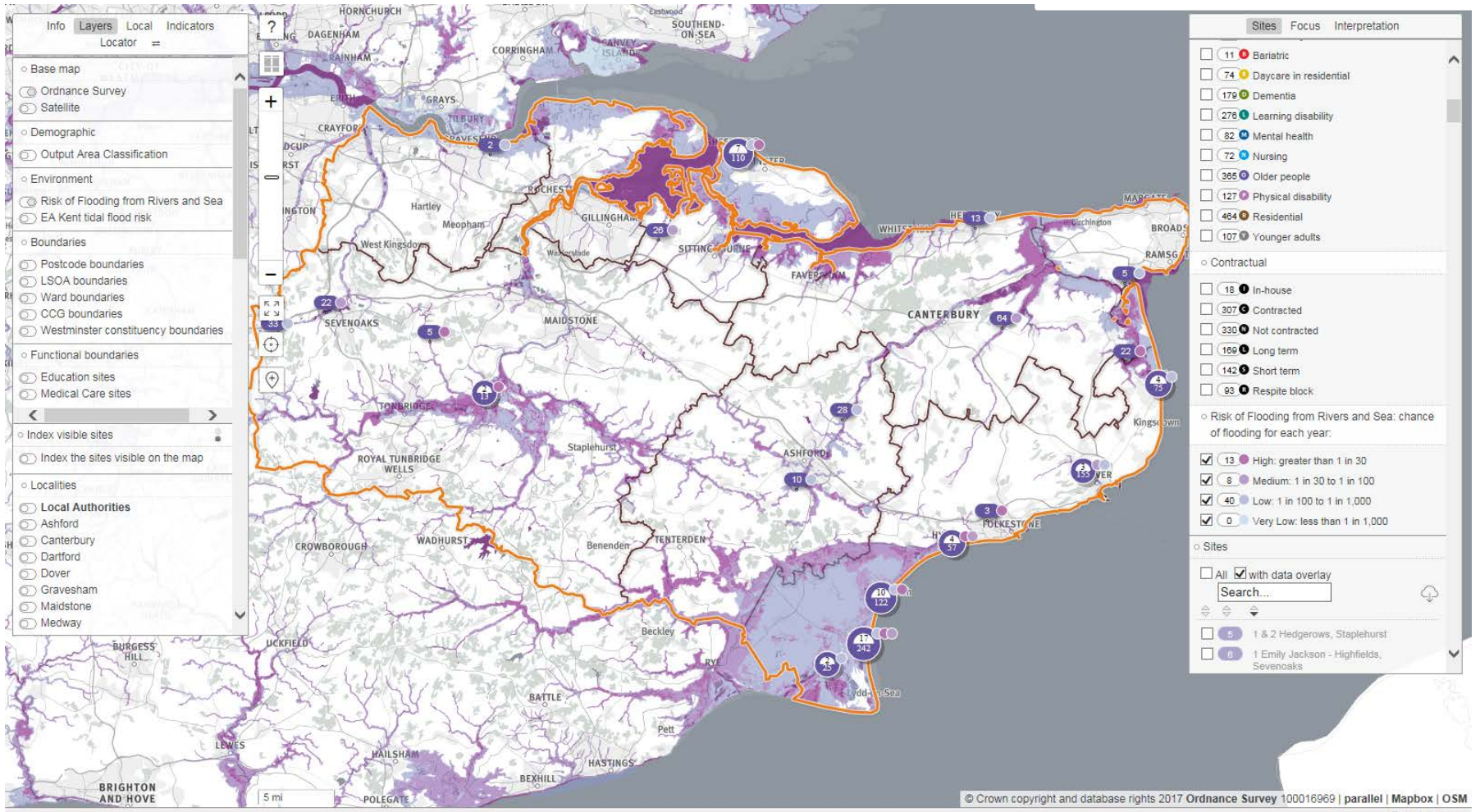


Toggle map query on/off
 off
Search for a place

River & coastal flood disadvantage

Map Transparency: 60%

- Slight
- Extremely low
- Relatively low
- Average
- Relatively high
- Extremely high
- Acute





Severe Weather Impacts Monitoring System (SWIMS)

Samantha Simmons

Sustainable Business and Communities Team

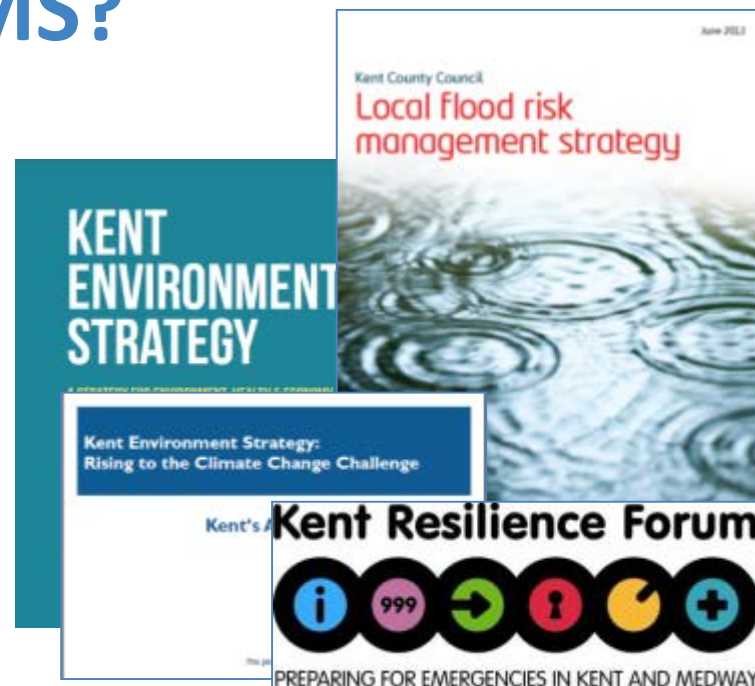
Kent County Council

What is SWIMS?

- Decision-support tool, to:
 - **Capture data** on how severe weather affects our services
 - 100+ users, 28 organisations
 - **Build a robust evidence base (incl ££) to:**
 - Inform risk management, policy and strategy
 - Help develop business cases for taking action, changing service or acquiring funding.
 - **Generate severe weather summary reports**
 - Highlight common barriers and/or good practice
 - Co-ordinate action, saving money.

Why did we develop SWIMS?

- **Climate change is not a 'new' risk** but includes a change in duration, severity and frequency of severe weather events
- Building understanding of current impacts can inform planning for the future... **but need an evidence base**
- **Kent Environment Strategy** – bridge gaps in our understanding of risks/opportunities from climate change and severe weather

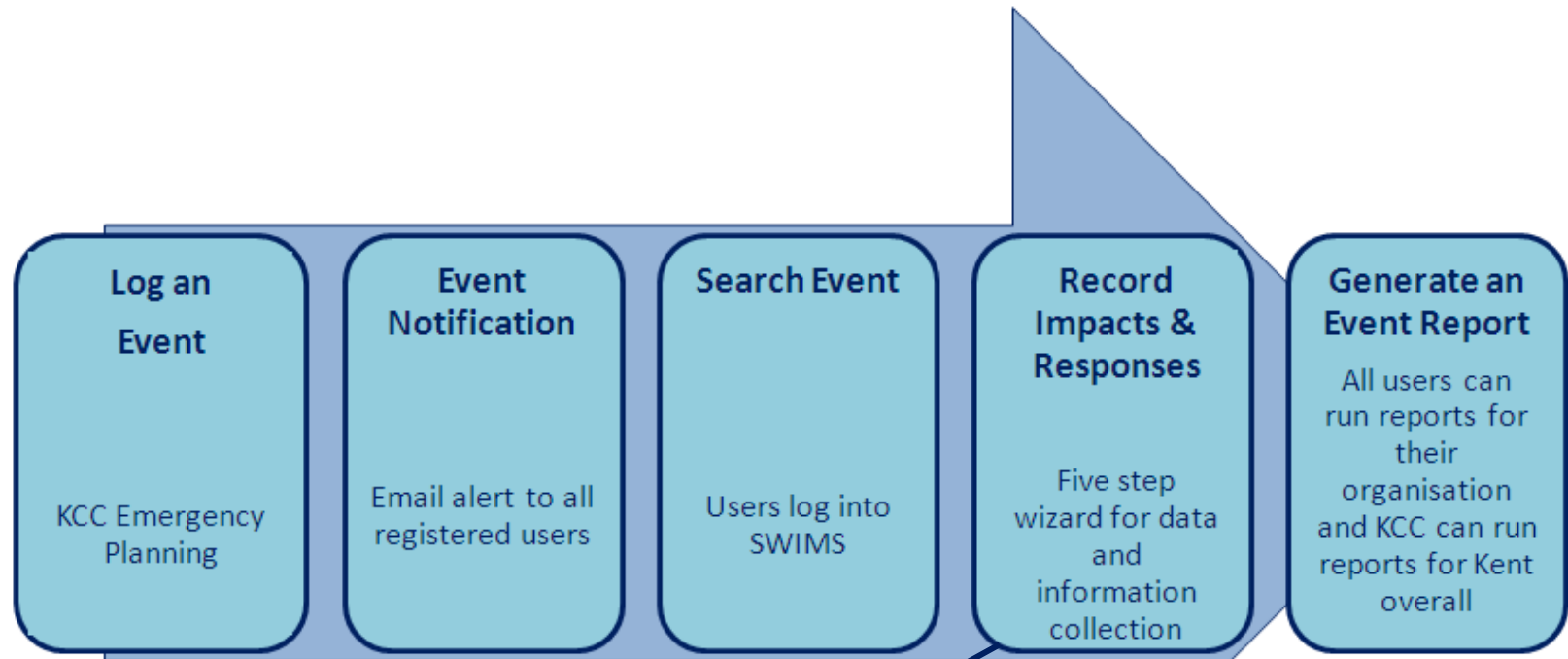


Kent Community Risk Register – Risk Rating Groups

High		High Cont...		Medium Cont...	
	Page		Page		Page
1.0	14	1.2	22	1.17	23
1.1	14	1.3	22	1.18	23
1.2	14	1.4	22	1.19	23
1.3	14	1.5	22	1.20	23
1.4	14	1.6	22	1.21	23
1.5	14	1.7	22	1.22	23
1.6	14	1.8	22	1.23	23
1.7	14	1.9	22	1.24	23
1.8	14	1.10	22	1.25	23
1.9	14	1.11	22	1.26	23
2.0	14	1.12	22	1.27	23
2.1	14	1.13	22	1.28	23
2.2	14	1.14	22	1.29	23
2.3	14	1.15	22	1.30	23
2.4	14	1.16	22	1.31	23
2.5	14	1.17	22	1.32	23
2.6	14	1.18	22	1.33	23
2.7	14	1.19	22	1.34	23
2.8	14	1.20	22	1.35	23
2.9	14	1.21	22	1.36	23
3.0	14	1.22	22	1.37	23
3.1	14	1.23	22	1.38	23
3.2	14	1.24	22	1.39	23
3.3	14	1.25	22	1.40	23
3.4	14	1.26	22	1.41	23
3.5	14	1.27	22	1.42	23
3.6	14	1.28	22	1.43	23
3.7	14	1.29	22	1.44	23
3.8	14	1.30	22	1.45	23
3.9	14	1.31	22	1.46	23
4.0	14	1.32	22	1.47	23
4.1	14	1.33	22	1.48	23
4.2	14	1.34	22	1.49	23
4.3	14	1.35	22	1.50	23
4.4	14	1.36	22	1.51	23
4.5	14	1.37	22	1.52	23
4.6	14	1.38	22	1.53	23
4.7	14	1.39	22	1.54	23
4.8	14	1.40	22	1.55	23
4.9	14	1.41	22	1.56	23
5.0	14	1.42	22	1.57	23
5.1	14	1.43	22	1.58	23
5.2	14	1.44	22	1.59	23
5.3	14	1.45	22	1.60	23
5.4	14	1.46	22	1.61	23
5.5	14	1.47	22	1.62	23
5.6	14	1.48	22	1.63	23
5.7	14	1.49	22	1.64	23
5.8	14	1.50	22	1.65	23
5.9	14	1.51	22	1.66	23
6.0	14	1.52	22	1.67	23
6.1	14	1.53	22	1.68	23
6.2	14	1.54	22	1.69	23
6.3	14	1.55	22	1.70	23
6.4	14	1.56	22	1.71	23
6.5	14	1.57	22	1.72	23
6.6	14	1.58	22	1.73	23
6.7	14	1.59	22	1.74	23
6.8	14	1.60	22	1.75	23
6.9	14	1.61	22	1.76	23
7.0	14	1.62	22	1.77	23
7.1	14	1.63	22	1.78	23
7.2	14	1.64	22	1.79	23
7.3	14	1.65	22	1.80	23
7.4	14	1.66	22	1.81	23
7.5	14	1.67	22	1.82	23
7.6	14	1.68	22	1.83	23
7.7	14	1.69	22	1.84	23
7.8	14	1.70	22	1.85	23
7.9	14	1.71	22	1.86	23
8.0	14	1.72	22	1.87	23
8.1	14	1.73	22	1.88	23
8.2	14	1.74	22	1.89	23
8.3	14	1.75	22	1.90	23
8.4	14	1.76	22	1.91	23
8.5	14	1.77	22	1.92	23
8.6	14	1.78	22	1.93	23
8.7	14	1.79	22	1.94	23
8.8	14	1.80	22	1.95	23
8.9	14	1.81	22	1.96	23
9.0	14	1.82	22	1.97	23
9.1	14	1.83	22	1.98	23
9.2	14	1.84	22	1.99	23
9.3	14	1.85	22	2.00	23
9.4	14	1.86	22	2.01	23
9.5	14	1.87	22	2.02	23
9.6	14	1.88	22	2.03	23
9.7	14	1.89	22	2.04	23
9.8	14	1.90	22	2.05	23
9.9	14	1.91	22	2.06	23
10.0	14	1.92	22	2.07	23

LCLIP 2009

- Collected information from across partners (52 events)
- No co-ordinated system
- Gap around financial impacts (Only 5%)



The screenshot shows the 'Maintain Basic Impact Details' page in the SWIMS system. The interface includes a navigation menu on the left with sections for 'Navigation', 'Admin', and 'Contacts'. The main content area has a progress indicator at the top showing five steps: 1. Basic Details, 2. Cost Details, 3. Registration Details, 4. Locality Details, and 5. Response Details. The current step is '1. Basic Details'. The form contains the following fields and options:

- Maintain Basic Impact Details**: A note indicates that an asterisk (*) means mandatory information.
- Please provide Basic Impact Details**:
 - Duration**: Input field with the value '4'.
 - Duration Units**: Dropdown menu set to 'Days'.
 - Has flooding occurred?**: A checked checkbox.
 - Please enter the type of flooding, if flooding has occurred**:
 - Flooding Type**: Dropdown menu set to 'Surface'.
- To add a new impact category to the list below, click the 'Add' button. Please ensure that the record does not already exist before adding.**
- Use the Category Description link in the results grid to display further impact response details.**
- No impact categories found**: A message displayed below a table.
- Buttons**: 'Cancel', 'Add', and 'Save' buttons are visible at the bottom.

The Winter Events

28 October 2013 – 31 March 2014



Key statistics

- **Scale of Impacts:** affecting all districts in Kent. Equivalent of 1,230 days
- **Most affected services include (££):** EA, Kent Police, KCC Emergency Planning, Thanet Engineering, KCC Highways
- **Most affected areas:** Yalding
- **Key Impacts Include**
 - £1.5mil + impact on Kent road network from fallen trees, flood damage, road closures...and a 15ft sink hole!
 - 30,856 calls. KCC H&T received 3370 about potholes and 4,000+ flood enquiries
 - 22,000 sandbags delivered
 - 768 homes and businesses flooded

Total Cost: £4.4 mil

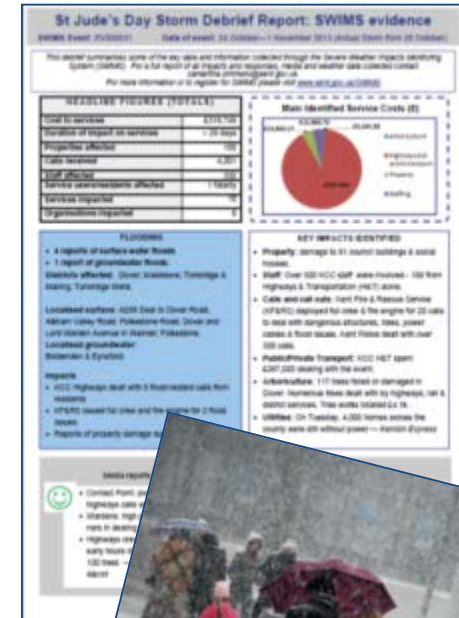
- £11.2 mil investment
- 1 fatality
- 63 Flood alerts for Kent
- 30,000 properties affected
- 28,500 properties without power in Kent
- 1,876 staff affected
- 1,327 service users affected

Informing future planning

- Staff
 - A review of staff protocols or policies during emergencies could help to safeguard the welfare of staff
- Procurements and supply chains
 - Review to ensure key supplies can be delivered & contractors can assist emergencies
- Infrastructure and assets
 - Review management of assets to identify assets at risk
- Communications
- Resource coordination....sandbags?
- Decision-making
 - Incorporate review of SWIMS data into existing risk management processes

How we are using the information....

- Influence government policy & strategy
 - NAP and CCC progress report
- Support financial claims
 - Bellwin & the Severe Weather Recovery Scheme
- Evidence how we are communicating CC
 - Science & Technology Committee 2013
- Supporting health and sustainability outcomes
 - JSNA
- Inform risk management
 - Risk Registers; KRF Risk Assessment Group
- Inform Business and Resilience planning
 - Met Alerts; de-briefs; opportunities for coordinated action
- Developing thresholds and cost avoidance messages



...building the business case for action!



SWIMS National Roll Out



- Key action within the National Adaptation Programme and Climate Ready
- Hosted by Climate UK
- Roll out to 26 partnerships across the UK
- Often led by Resilience Forums



Thank you

Any Questions?