# Climate Change – Risks, Management and Challenges – England and Wales

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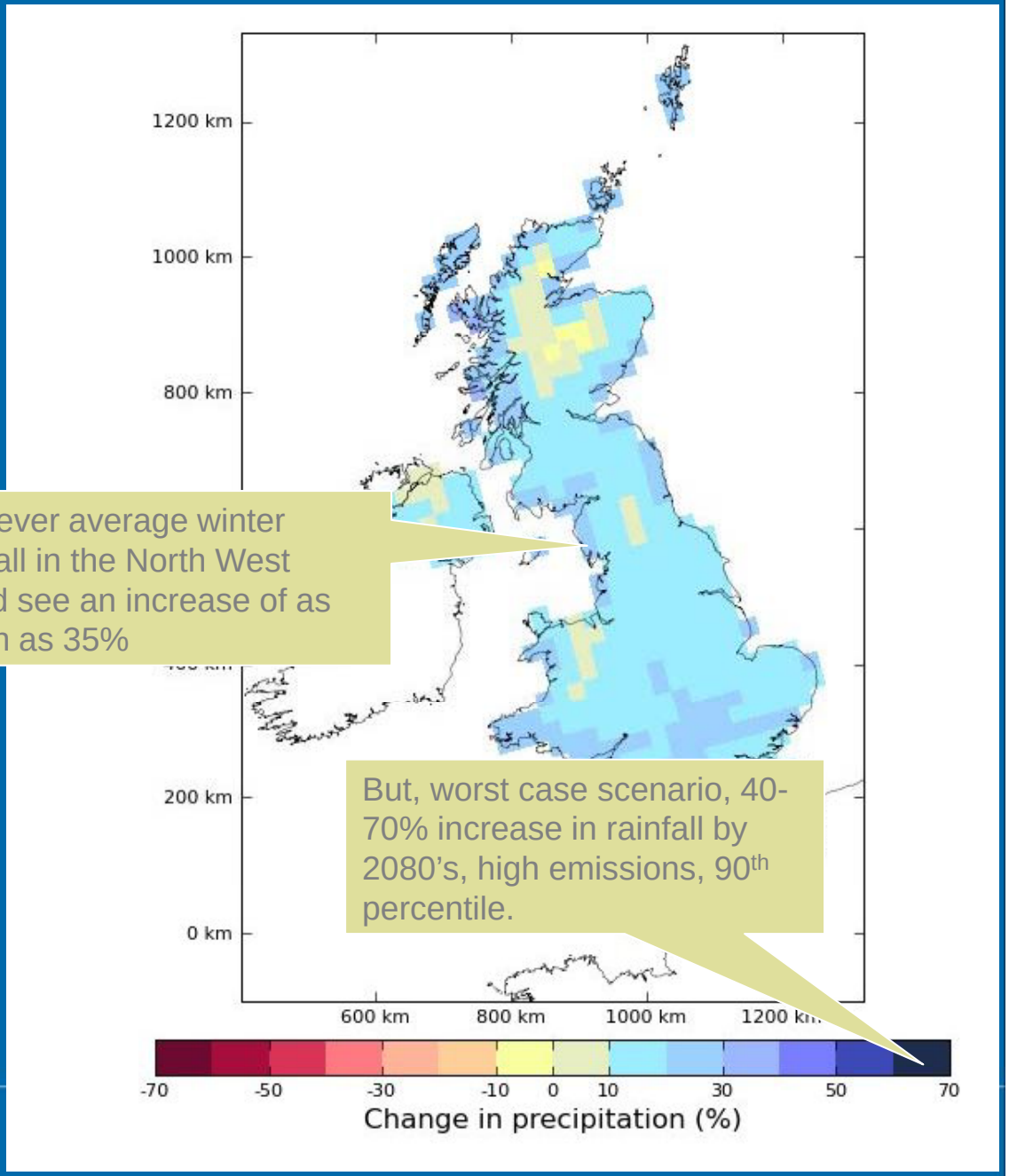
# This presentation

- Climate challenges
- But, many other challenges too
- Our responses to climate change
- Some big challenges remain

# Increases in Winter Rainfall in the 2080's, Medium Emissions, Central Estimat

**In winter, precipitation increases are in the range +10% to +30% over the majority of the country. The biggest changes in winter precipitation are seen along the western side of the UK.**

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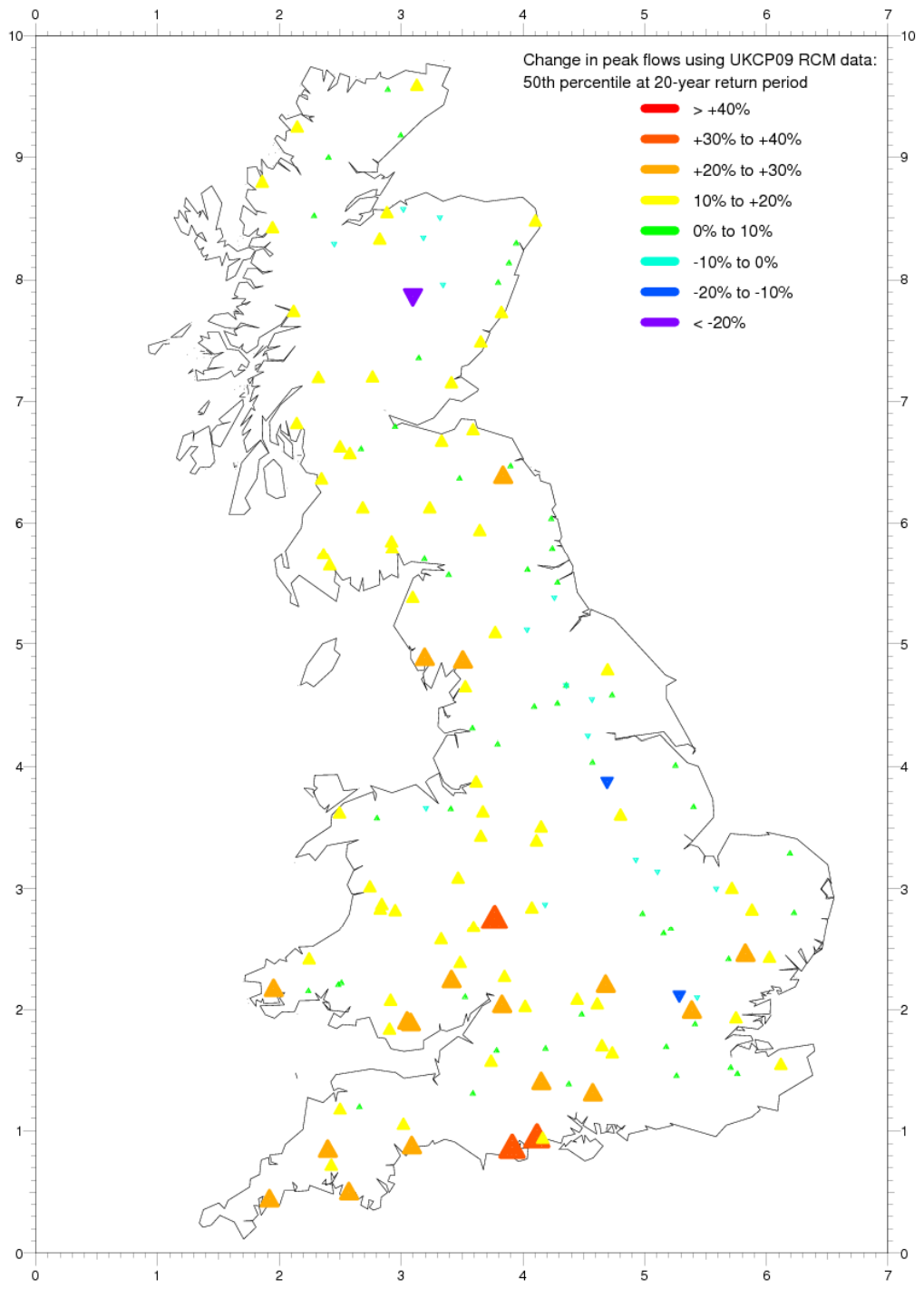
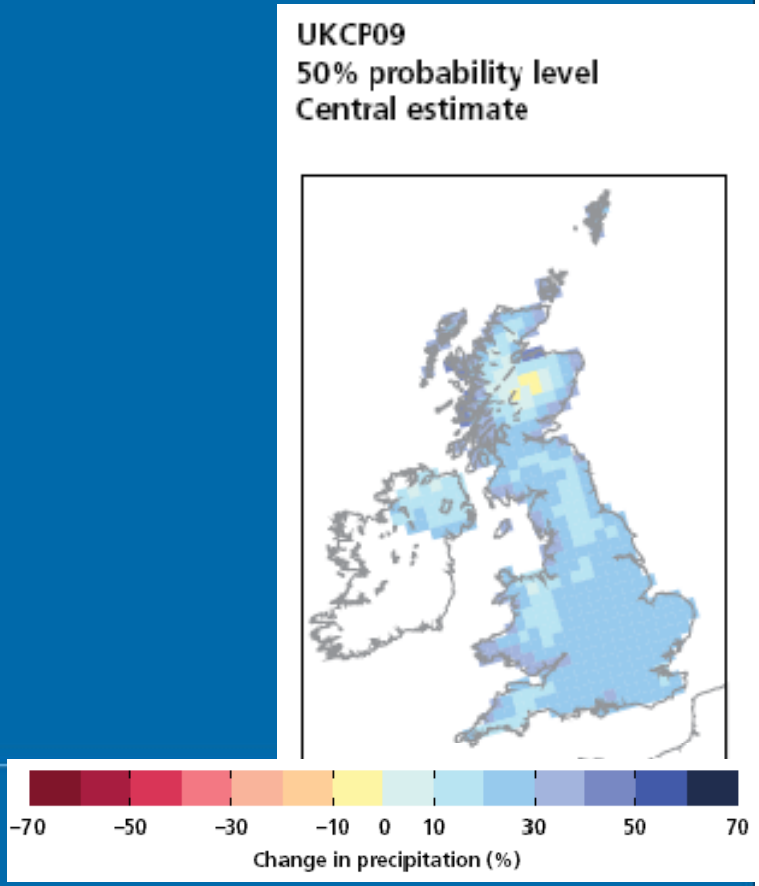



# Central estimate of change in the 20-year return period flow under from latest climate models, 2080s, medium emissions



# For sea level rise (London), latest projections suggest:

2050s

+9 inches (22cm)

2080s

+14 inches (36cm)

Changes are relative to 1961-90

**Increased coastal erosion**

**Increased coastal flooding**

**Significant challenges for regeneration schemes, roads and homes**

**Risk to national infrastructure**

But, also modelled more extreme scenarios that give rises of up to **6ft (1.9 metres)** by the end of the century (High++ scenario)

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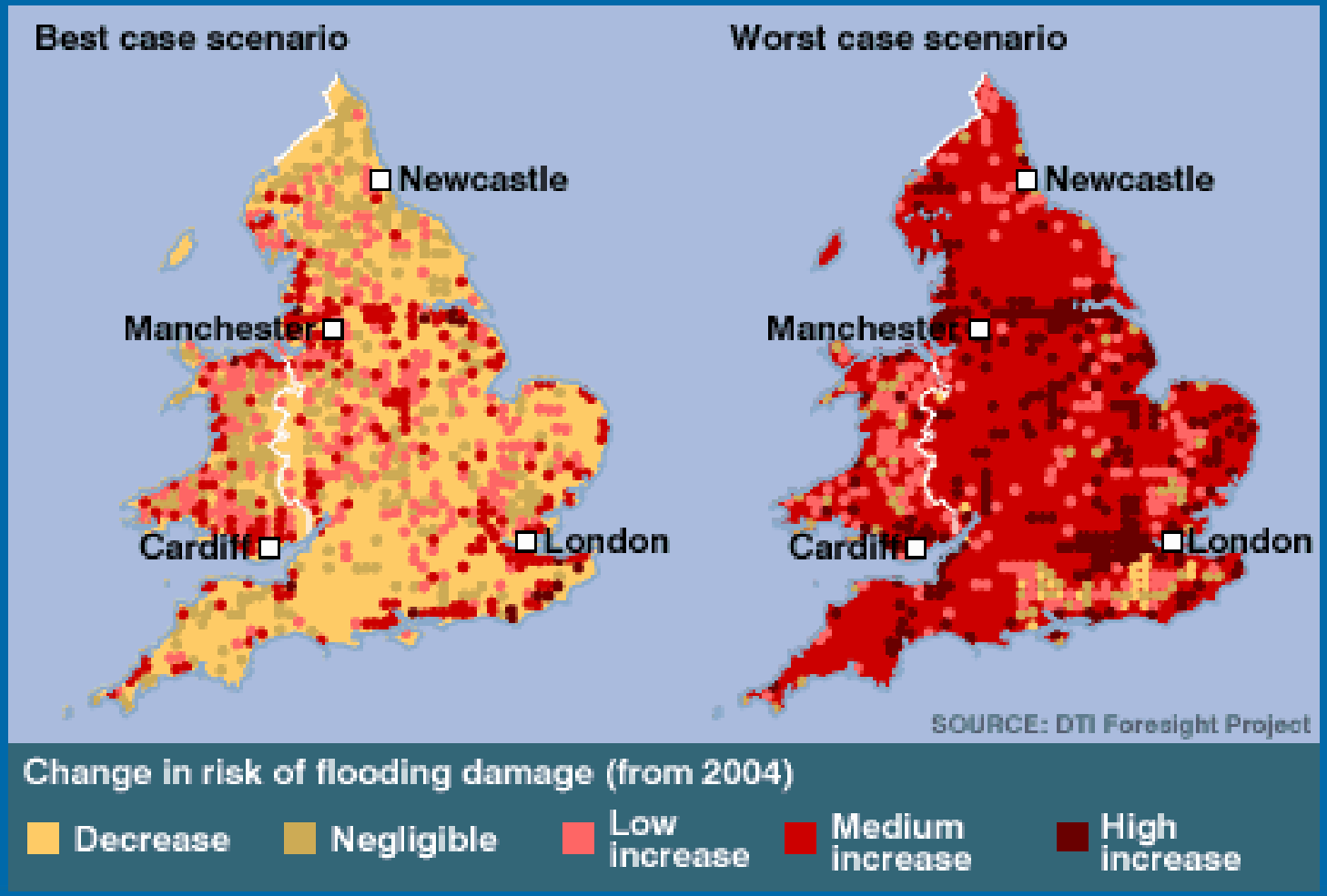
# Foresight Future Flood Risk

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# Our framework to manage climate change

- Assess risk
- Planning risk management
- Reduce risk
- Working with others

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# Assessing risk

- Understand the current and future flood risk using the latest climate change science
- Understand our vulnerability to current and future flood risk

| *Parameter* | *2025* | *2055* | *2085* | *2115* |
|---|---|---|---|---|
| Peak rainfall intensity | *+5%* | *+10%* | **+20%** | *+30%* |
| Peak river flow volume | *+10%* | | **+20%** | |
| Offshore wind speed | *+5%* | | **+10%** | *+10%* |
| Extreme wave height | *+5%* | | **+10%** | *+10%* |

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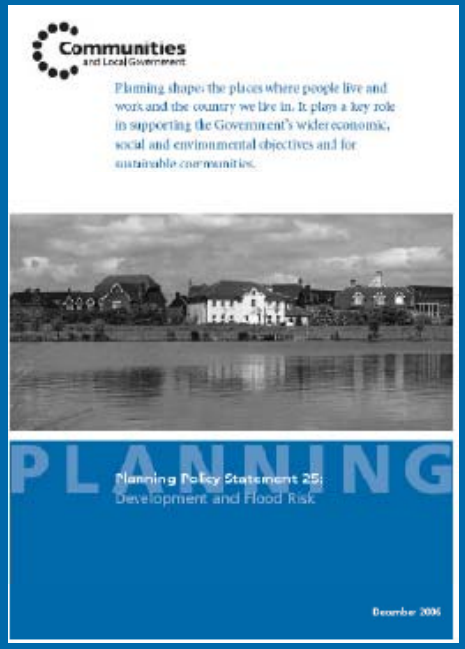
# Planning risk management

- Develop sustainable long term plans for new development, particularly for vulnerable uses, directing away from flood risk areas
- Take account of climate change over the whole lifetime of your decisions
- Develop flood management plans that will empower and enforce long term change

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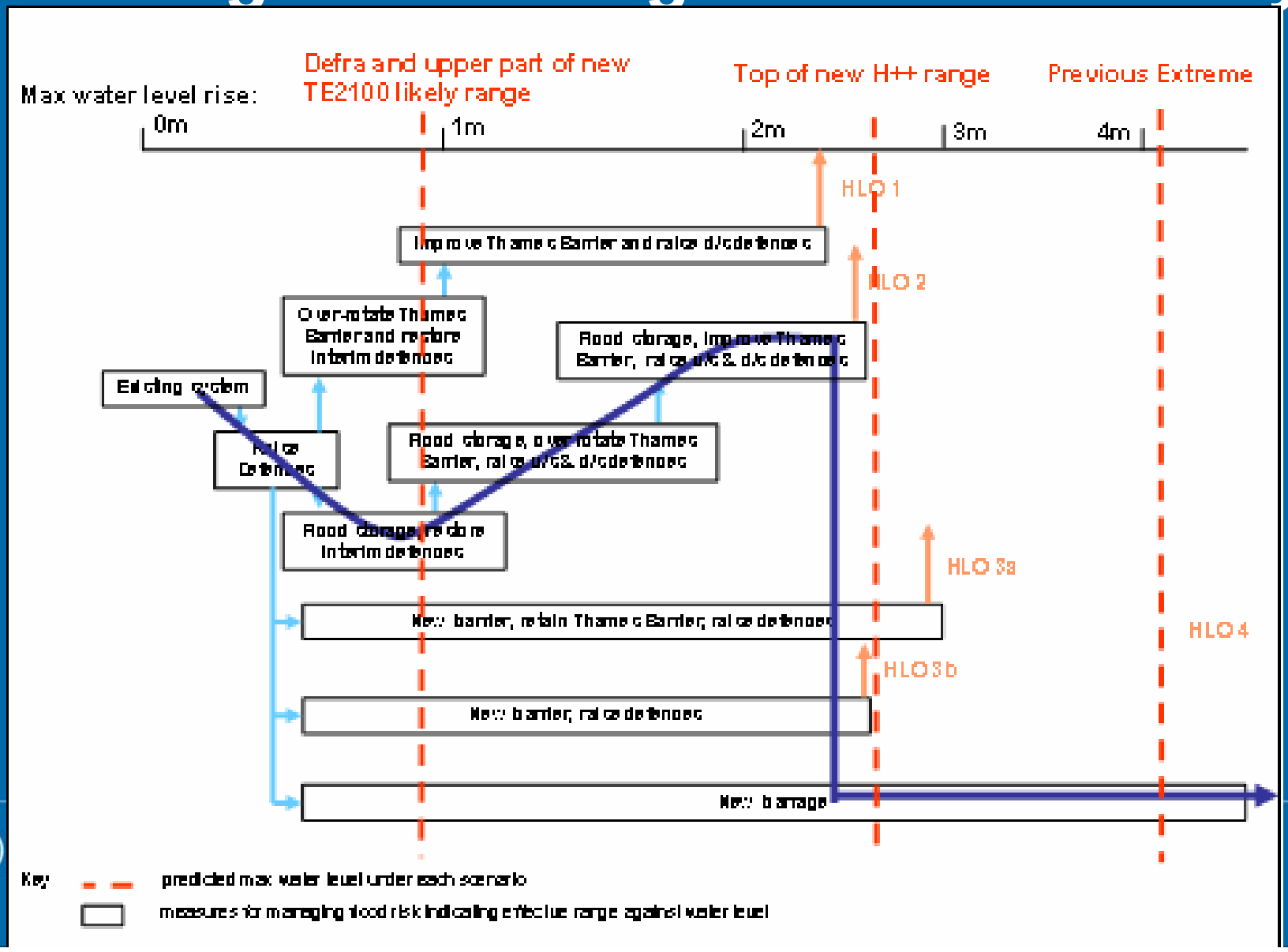
# Planning risk management - flexibility



# Reducing risk

- Make space for water, through flood storage, permeable surfaces, recreate functional floodplains
- Take opportunities to relocate existing buildings and infrastructure or increase their resilience
- Use flood resilient materials, raise floor levels, and widen drains to increase capacity
- Increase the performance of flood protection

# Reducing risks – critical infrastructure

# Reducing risks - flexibility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# Working with others

- Engage with communities as early as possible as the future risks may require the consideration of some radical changes
- Ensure spatial and water management plans are fully integrated with catchment, surface water and emergency plans

# Working with others - coastal management

- Managed realignment
- Abbotts Hall Farm
- Alkeborough

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# Big Challenges 1

- Long term plans that deliver over long term
- Low public understanding of climate change
- Decreasing interest in issue
- Conflicts over land use and coastal risks
- Wildlife vs people
- Can we adapt fast enough

# Big Challenges 2

- Big increasing costs
- Funding?
- Move to local funding, but isn't climate change a result of all our pollution?
- How do you accommodate a 20-40% increase in river flows through many of our towns?
- We can't protect everywhere, how do we manage the transition?
- How valuable is land and how do we want it to be managed in the future?