The Foundation for Science and Technology Debate
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Making our transport systems more weather resilient

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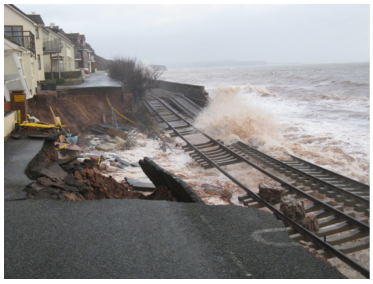
Why is resilience important?

- UK transport networks amongst most intensively utilised in the world
- Just-in-time operations increasingly prevalent
- Increasing dependence of transport operations on IT systems
- Current levels of extreme weather are already disruptive



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And we should expect more extreme weather events in future

- More rainfall over sustained periods in winter
- More intense localised rainstorms
- More hotter, drier summers
- Rising sea levels

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Three layers to resilience

- Physical resilience, so transport can keep people and goods moving
- Recovery processes to restore normal operations ASAP
- Effective communications to users and passengers to minimise impact of disruption

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Some core principles in ensuring higher resilience

- Clear economic rationale to judge what to spend
- Prioritise according to intensity of use
- Protect single points of failure
- Agree and prioritise "resilient networks" locally and nationally
- Look at end-to-end journeys

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Resilience should be a core part of good asset management

- Opex and maintenance more important than capex
- Road and rail line deterioration is driven by weight of useage and weather
- Resilience should be an integral part of Asset Management Plans

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Principal resilience risks to transport networks

- All modes
  - Protecting IT and electricity installations
  - Liaison with non-transport agencies on flood prevention
- Strategic roads
  - Snow and ice biggest risk
  - Managing traffic to reduce accident/incident risk
  - Ensuring swift response and clearance of incidents

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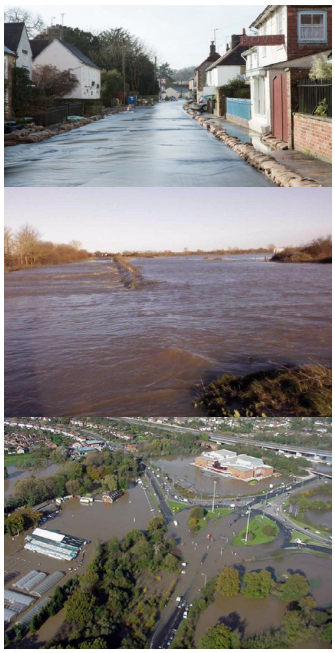
Local roads

- Biggest area of challenge
- 183,000 miles of roads, 152 Local Highway Authorities
- Drainage both of the road and surrounding land
- Highly variable asset condition, significant backlog of work



Principal resilience risks continued

- Rail
  - 150 year old embankments
  - Trees and vegetation management
  - Protection of signalling systems from water/flooding

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Ports and Airports

- Ports
  - Rising sea levels
- Airports
  - Snow and ice biggest risk
  - Protection from flooding
  - Better contingency planning with airlines

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Conclusions

- Much good practice already
- Much exceptional and commendable work in handling recovery
- Should share and learn lesson from others more widely
- Multiple organisations involved in flood prevention
- Ensure we don't take our eyes off the ball after one or more "quiet" seasons

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