

Safe roads, Reliable journeys, Informed travellers



Changing Climates – The Future of the North West's Transport Network and Travel Planning

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Twitter presentation

- **Can the NW Transport Network adapt to Climate Change Impacts?**
- **It has to**
- **Yes it can**
- **Its already started**
- **Any questions ?**

Can the NW Transport Network adapt to Climate Change Impacts?

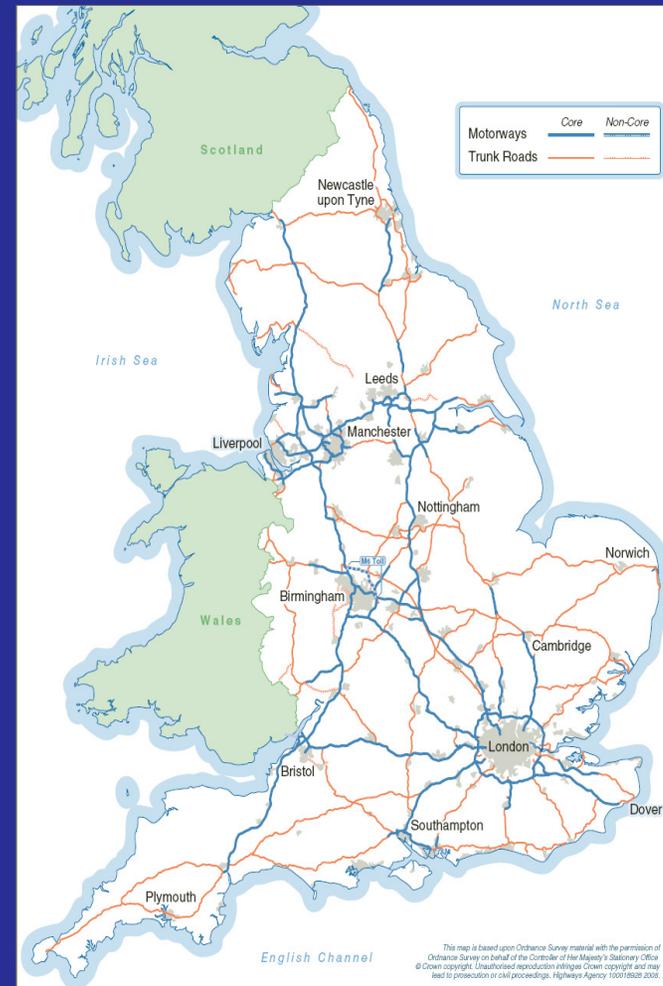
- Climate Change
- Our network
- Weather in 2050
- Mitigation / Adaptation
- Highways Agency Adaptation Strategy Model
- Conclusions

Climate Change Act

- November 2008
- Legally binding targets
 - GHG emissions reduced at least 80% by 2050, and
 - CO2 reductions at least 26% by 2020
- Carbon budget
 - cap emissions over 5 year periods
- Creation of a Committee on Climate change
- Adaptation:
 - Government report at least every 5 years on assessment of the risks to the UK of climate change
 - Actions going to take in response
 - HA invited to report to Secretary of State

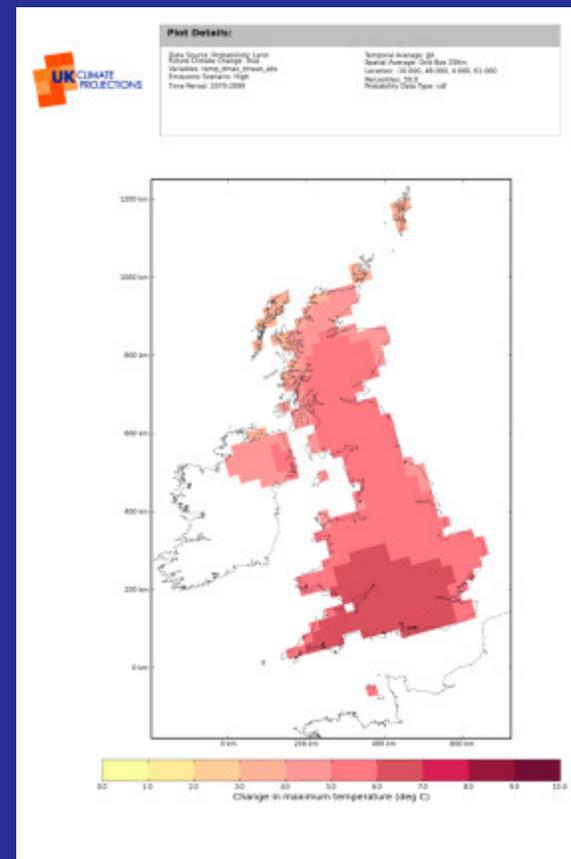
Our Network

- Consists of 7,100km of motorways and trunk roads
- Largest government owned asset valued at over £84 Billion
- It carries a third of all traffic and up to two thirds of all freight
- Role / function
- PSA targets



2080 weather projection

- Warmer, drier summers
- Warmer, wetter winters
- Increased frequency and intensity of extreme weather



NW projections 2080

medium emissions – central estimate

- **winter mean temperature** is up 2.6°C; it is very unlikely to be less than 1.4°C and is very unlikely to be more than 4.1°C.
- **summer mean temperature** is up 3.7°C; it is very unlikely to be less than 2°C and is very unlikely to be more than 5.9°C.
- **winter mean precipitation** changes 16%; it is very unlikely to be less than 3% and is very unlikely to be more than 35%.
- **summer mean precipitation** changes - 21%; it is very unlikely to be less than -42% and is very unlikely to be more than 0%.

Warmer summer



Flooding



Flooding



Storms



Embankment failure



High wind



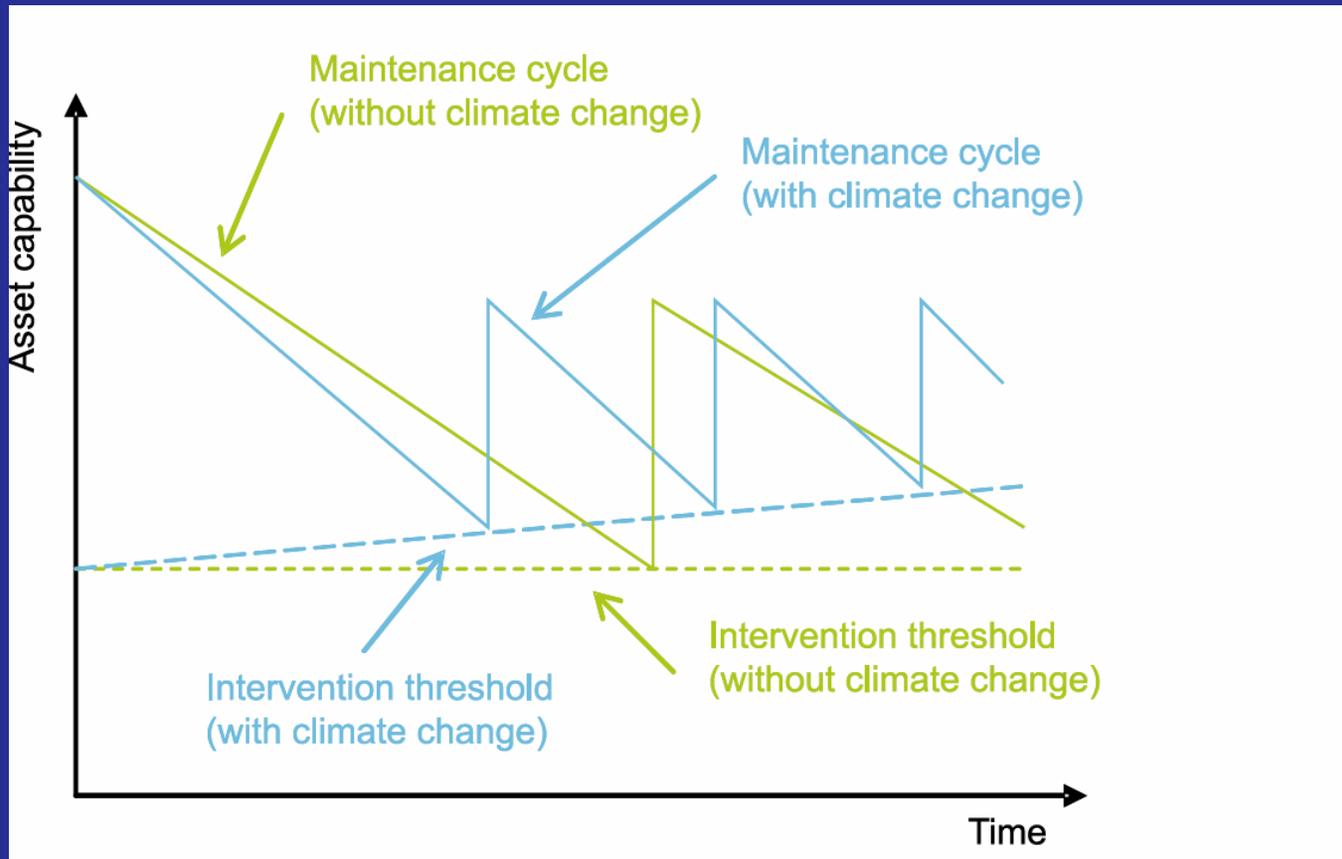
Snow and ice



Melting roads



Maintenance cycle



Mitigation

- Spatial planning
 - Reduce need to travel by car
 - Traffic Impact Assessment Tool
- Influence Travel Behaviour
 - Conditioned and voluntary Travel Plans
- Midnight switch off
 - 40% reduction CO2
 - Reduce light pollution
- HoV lanes / Managed Motorways / Hard Shoulder Running
 - Smooth flow
- Better information to travellers
 - Before and during journey
- Roadworks
 - Better planning



Adaptation – changing behaviour

- **Network Integrity**
 - Changes from the historic norms
- Network resilience
 - Increasingly prone to extreme weather
- **Network demand**
 - More car travel, more UK holidays

Elements of Adaptation Strategy

- Defining climatic changes
- **Assessing + prioritising risks**
- Examining adaptation options
 - Cost benefit analysis
 - Timescales for adaptation + impacts
- **Produce Adaptation plans**
- Implement Adaptation measures
- **Educate staff and allow risk understanding and ownership**

Adaptation : Key principles

- A process that:
 - Is aligned with our objectives
 - Focuses on activities
 - Identifies priorities for action
 - Integrates with current processes
 - Overview of progress and management of residual risk
 - Can accommodate changing demands and developments in climate science



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Step 1 : Define Objectives and Decision-making Criteria

- Systematically develop and implement response
- Support delivery corporate objectives
- Decision making framework and criteria needed
- Optimum balance between
 - whole-life cost
 - certainty of outcome
 - residual risk

Step 2 : identify climate trends

- Primary (eg increase in ave / max temp, more extreme rainfall events)
- Secondary (eg flooding, fewer foggy / icy days)
- Help identify vulnerabilities

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Step 3 – Identify vulnerabilities

- Activities that could be affected by climate change
- Positive or negative
- 80 identified (activities HA may need to change in future)
- Listed in vulnerability schedule
- Establish relationship to climate change hazard and risk to corporate objectives

Step 4 – Risk Appraisal

- Nature of risk for each vulnerability
- Score risk / rank vulnerability
- Uncertainty / rate of climate change / extent disruption / severity disruption

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Step 5 – Option analysis

- Identify and assess options
- Future proof design
- Retro-fit solutions
- Develop contingency plans
- Update operating procedures
- Monitor & Research
- Compare option against “do-minimum”
- Provides robust basis for option selection

Step 6 – Develop and implement Adaptation Action Plan

- Preferable to modify existing standards, specification, procedures

Step 7 – Adaptation programme review

Conclusions

- Climate change happening
- Many activities affected / influenced
- Mitigation and adaptation
- Embed in day-to-day activities
- Early consideration reduces costs
- Assess potential risks
- HAASM
- Not just HA

Twitter presentation

Can the NW Transport Network adapt to Climate Change Impacts?

- **It has to**
 - impact on network performance
 - Implication for society, economy, environment
- **Yes it can**
 - structures / surfacing
- **Its already started**
 - HAASM

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