



UNIVERSITY OF
BIRMINGHAM

Planning pathways to climate- change-ready mobility infrastructure

Dr Andrew Quinn - University of Birmingham

Dr Erika Palin, Dr Victoria Chapman - UK Met Office

Mr John Dora - UK IOAF

BCRRE



Next Generation Infrastructure

- Infrastructure for the next generation
 - New infrastructure
 - Elements of current systems (100+ years life)
- Underlying problem
 - Resilient infrastructure is not enough
 - Resilient infrastructure systems are required
 - Robustness, Redundancy, Recovery

Infrastructure system components

- Structures
- Control, Power and Communications
- Vehicles
- Staff and Passengers
 - Wider society stakeholders
 - Tacit knowledge of disruption
 - ‘Value’ and ‘Risk’ perceptions

Resilience and adaptation

Climate is changing

International agreements (Paris, SDG, Sendai)

National commitments and NAPs

Space for coherent systemic action framework

Sector specific actions are happening

Estimates of costs of business/disruption exist

What this looks like in Rail

- Rail Adapt is sponsored by UIC
- Workshops in London/Beijing
- 90 people / 50 organisations / 20 countries
- Informed by a background document

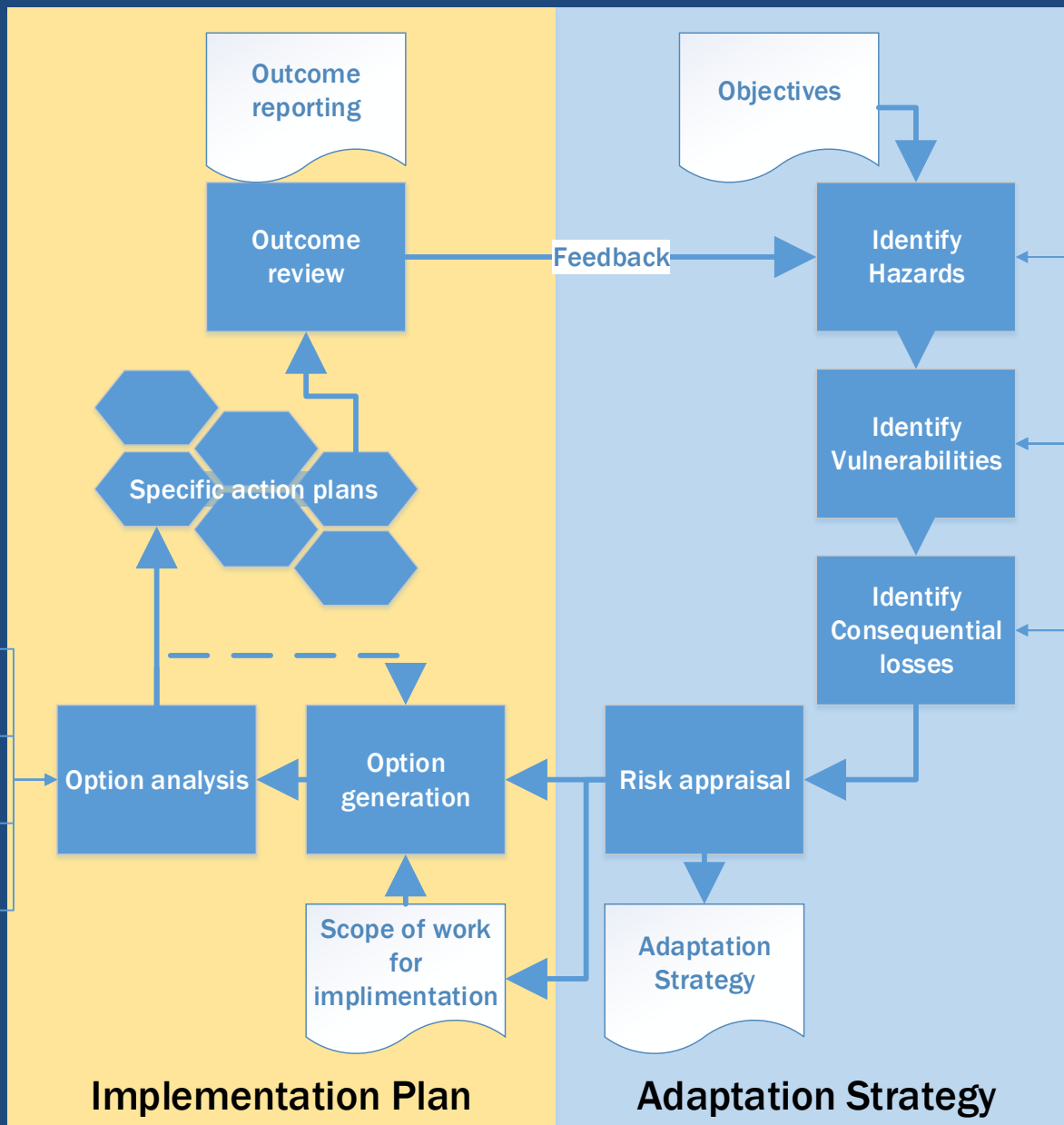


Principles 1/2

- Avoid reinvention (i.e. duplication)
 - Activities, processes, codes of practice etc.
- Link mitigation, adaptation, sus development
 - Mirroring common Sendai, Paris, SDG approaches
- Link broadly within an organisation
 - Avoid stand alone ‘department for adaptation’
- Link broadly outside an organisation
 - Mutual benefits and wider expertise

Principles 2/2

- In mobility field work across modes
 - e.g. Mutual support in times of disruption
 - e.g. Commonly certified contractors
- Adaptation is not a ‘project’ or ‘extra’
 - Needs to be iterative and business-as-usual



Option examples

- New infrastructure
 - Design codes, standards and specifications
 - Smart self-monitoring / repairing systems
- Existing short-life infrastructure
 - Enhanced recovery capability e.g. spare capacity
- Existing long-life infrastructure
 - Enhanced monitoring, inspection and renewal

Conclusions

- Cross-sector and inter-agency working
- Strategy that enables various options
- Giving variety of potential responses
- Future requirements are:
 - Consistent evaluation techniques and metrics
 - Whole system modelling capturing disruption

Next steps

- UIC framework report in development
- Published December 2017

Thank you