



**CIHT Learned Society 2019**

**A New Approach to Planning for the Future of Mobility**

**30 April 2019**

# CIHT Learned Society 2019

## A New Approach to Planning for the Future of Mobility

Our thanks to:



# CIHT Learned Society 2019

## A New Approach to Planning for the Future of Mobility

### Welcome and Introductions:

**Deborah Sims –**

**Senior Lecturer,**

**University of Greenwich & Vice President, CIHT**

**CIHT Learned Society 2019**

**A New Approach to Planning for the Future of Mobility**

**Address:**

**Glenn Lyons –**

**Mott MacDonald Professor of Future Mobility**

# A New Approach to Planning for the Future of Mobility

Glenn Lyons, Mott MacDonald Professor of Future Mobility

 <https://www.linkedin.com/in/glenn-lyons/>



2019 Learned Society Lecture,  
30 April, London Transport Museum



past



1999

present



2019

future?

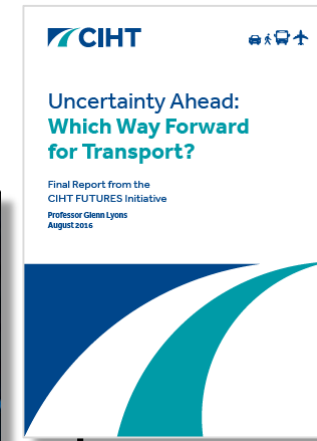
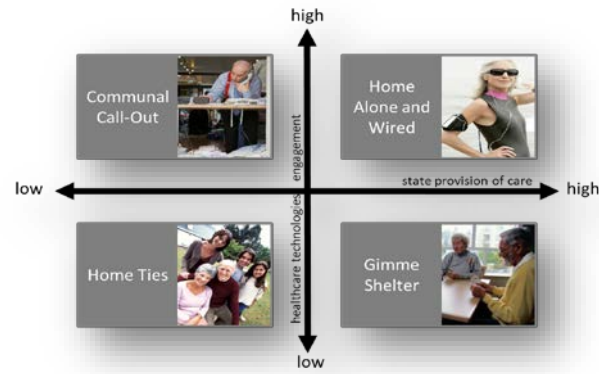


2039

# TRANSPORT VISIONS

The Young Professionals' Perspective

A Network sponsored by the EPSRC, the Rees Jeffreys Road Fund and the DfT



# FUTURES

A Mott MacDonald and UWE Bristol collaboration

1999

2001

2002 2003

2004

2006

2009

2012

2014

2015 2016

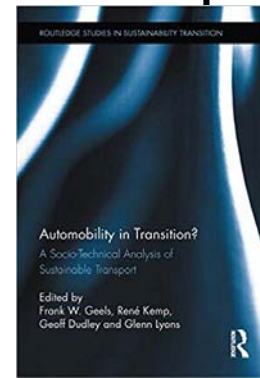
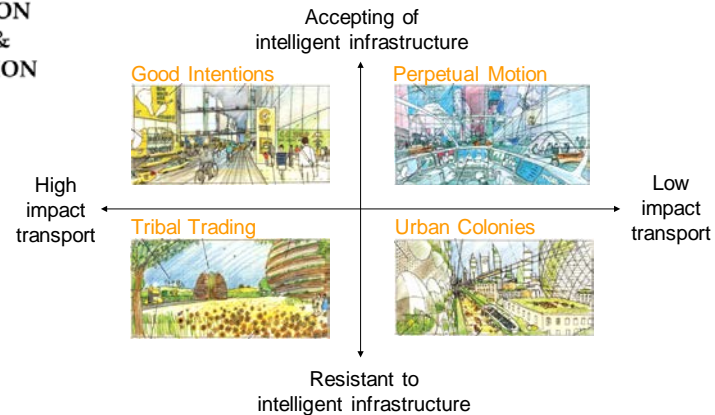
2018

2019

FUTURES



THE INSTITUTION OF HIGHWAYS & TRANSPORTATION



M  
MOTT  
MACDONALD

# Where we have been





# 1997

Department of the Environment, Transport and the Regions  
NATIONAL ROAD TRAFFIC FORECASTS  
(GREAT BRITAIN) 1997

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“there remains a range of uncertainty in the forecasts, as explained below, but, because the underlying relationships have been well determined and stable over long periods, probably less than exists in most forecasting”

“The numbers given for each of the years represent a low forecast, a central estimate that is considered the most likely outcome, and a high forecast.”



“Labour won 419 seats, including that of the Speaker, giving the party a huge majority of 179 in the House of Commons.”

# 1998

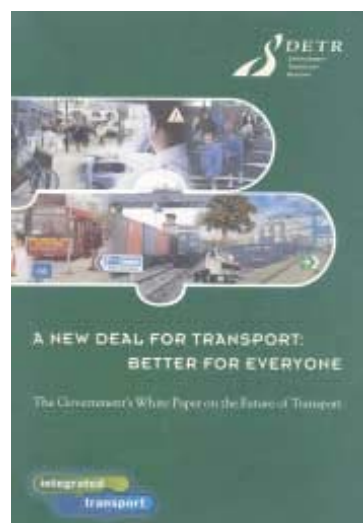


2.2 million UK households (9%) had access to the internet

“Predict **and provide**’ didn’t work.”

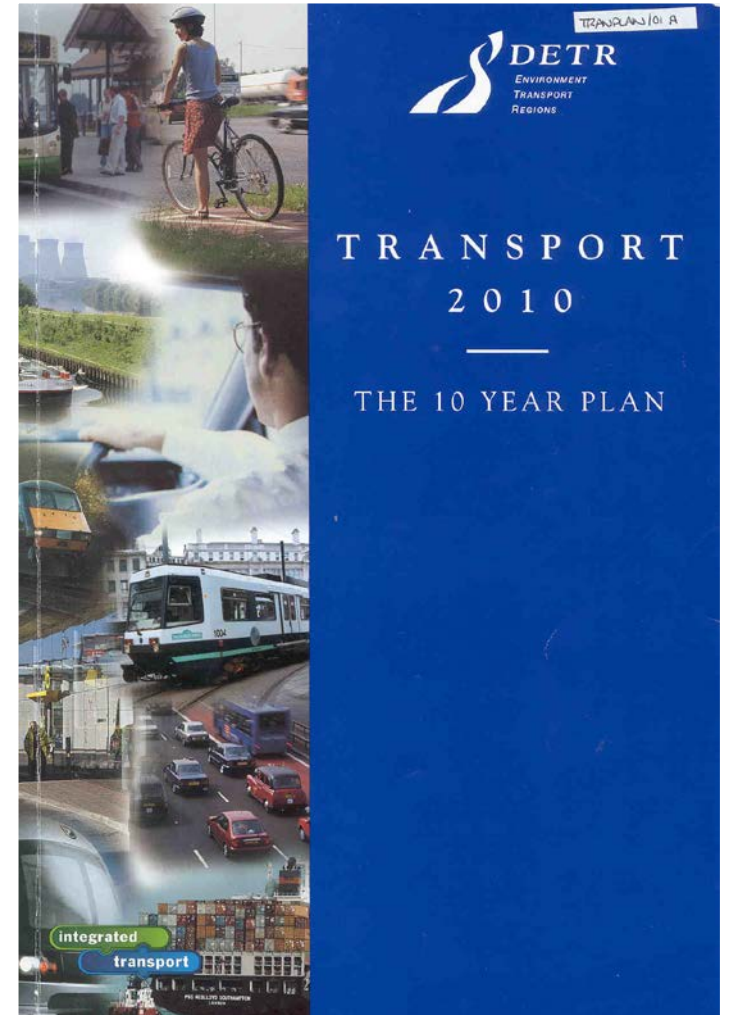
“The days of ‘predict and provide’ are over.”

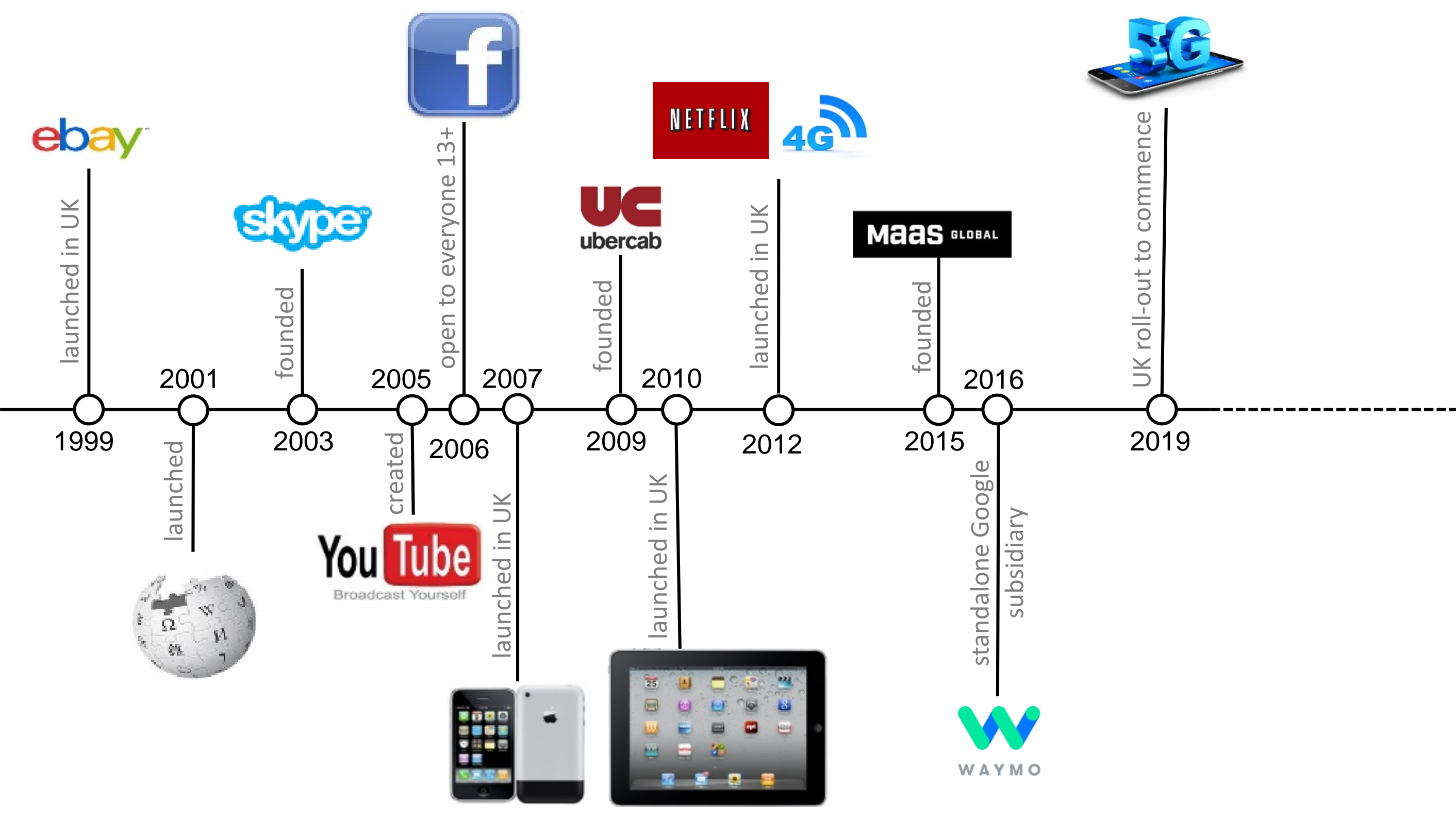
“We face an enormous challenge to deliver **our vision** of a transport system that supports sustainable development.”



# 2000

“The likely effects of increasing Internet use on transport and work patterns are still **uncertain, but potentially profound** and will need to be monitored closely.”





# 2018

“of all households in Great Britain, **90%** had access to the internet”

“among all adults, **77%** had used the internet “on the go” using a mobile phone, smartphone, laptop, tablet or handheld device”

**46%** of adults watched video on demand

**69%** of adults used internet banking

**78%** bought goods or services online



Statistical bulletin

## Internet access – households and individuals, Great Britain: 2018

Internet access in Great Britain, including how many people have internet, how they access it and what they use it for.



Contact:  
Cecil Prescott  
esociety@ons.gov.uk  
+44 (0)1633 456767

Release date:  
7 August 2018

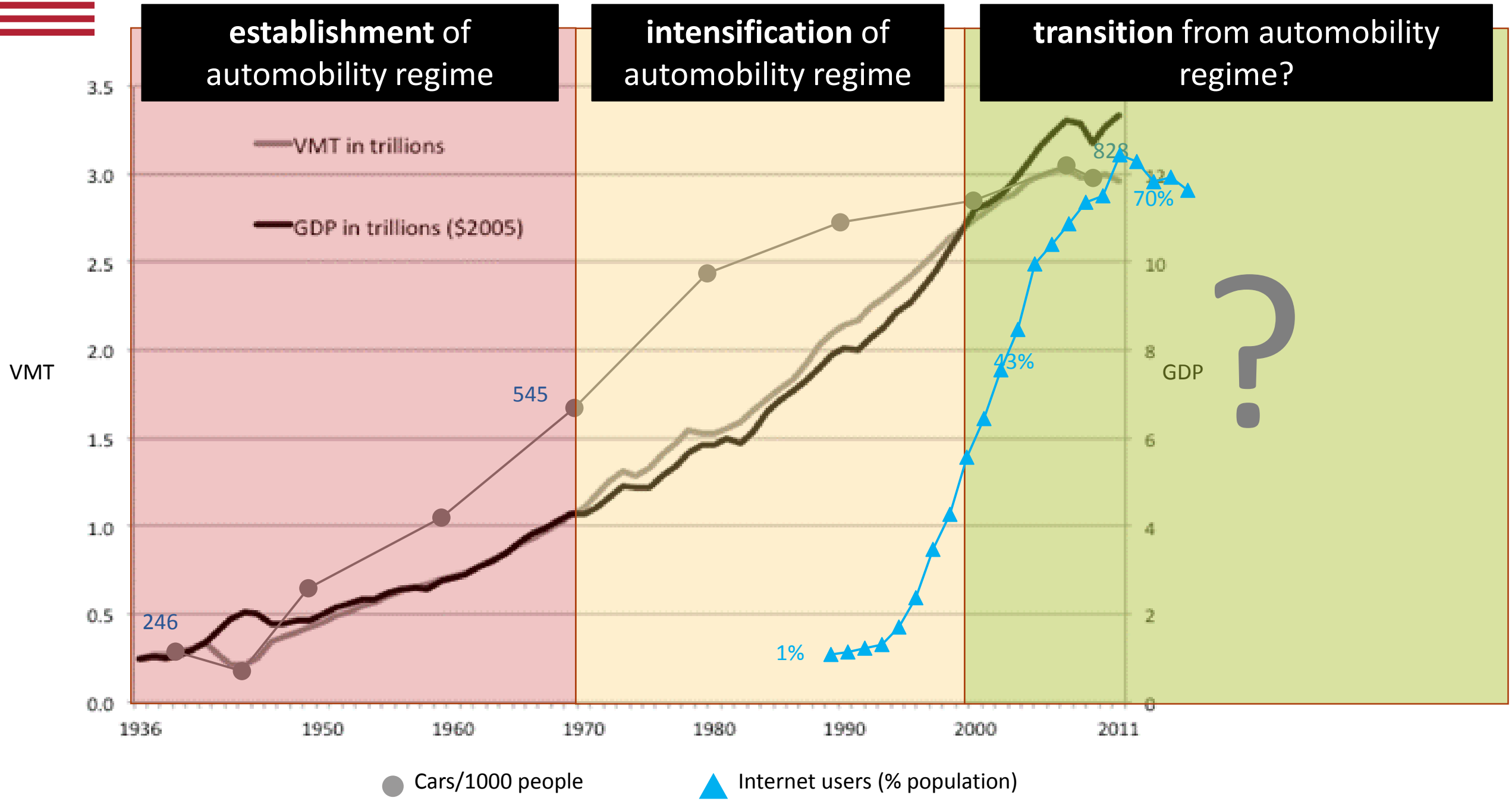
Next release:  
7 August 2019

### Table of contents

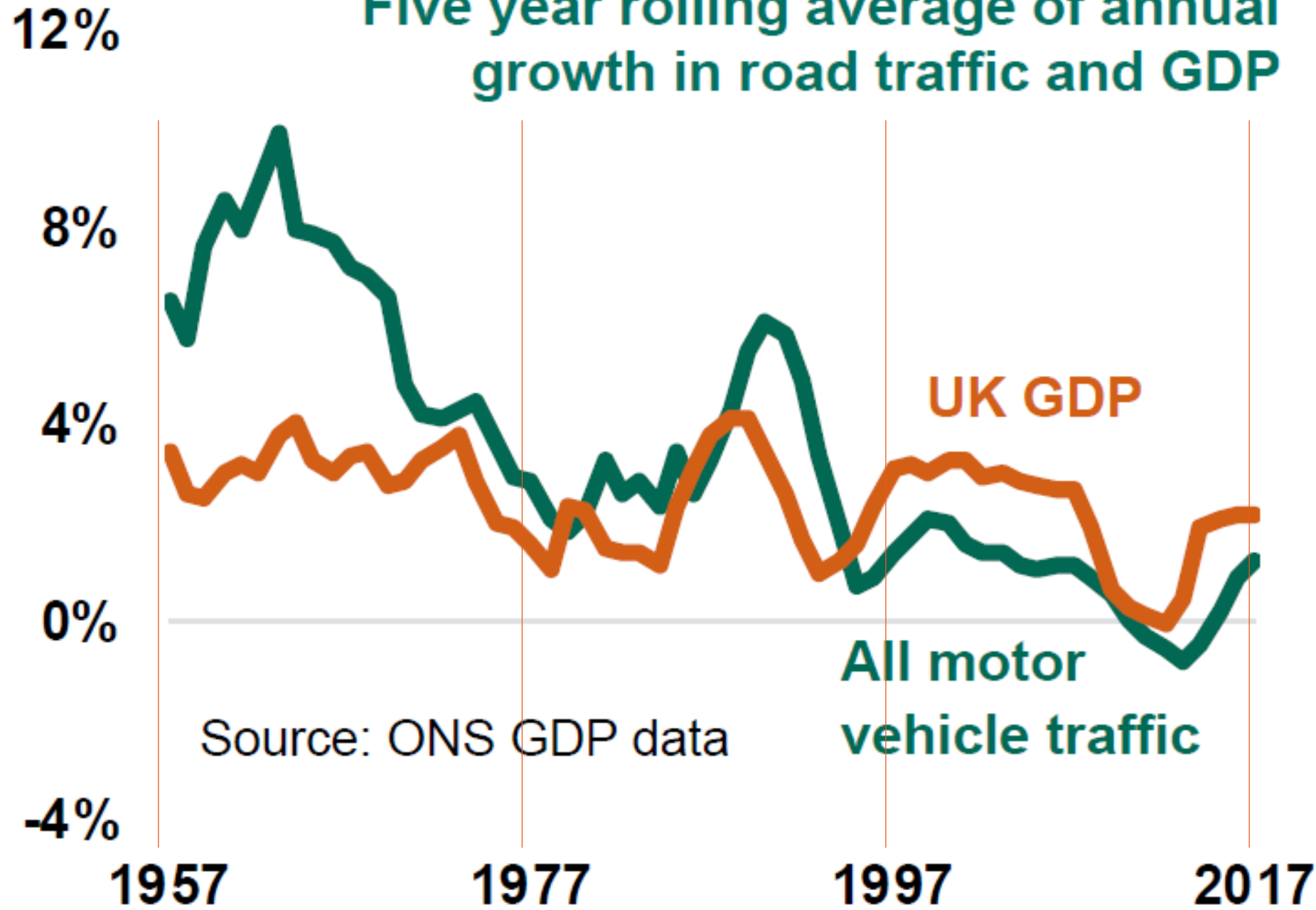
- [1. Main points](#)
- [2. Things you need to know about this release](#)
- [3. 9 out of 10 households have internet access](#)
- [4. Daily internet use has more than doubled since 2006](#)
- [5. Mobile phones or smartphones still most popular devices used to access the internet](#)
- [6. Nearly 8 out of 10 adults access the internet “on the go”](#)
- [7. Email remains the most common internet activity](#)
- [8. Older adults show largest increase in online shopping over the past decade](#)
- [9. 24% of smartphone users unaware of whether smartphone security has been installed](#)
- [10. Most employed adults believe they have the required computer skills for their jobs](#)
- [11. Quality and Methodology](#)



20-year percent change in average trips/person/year



# Five year rolling average of annual growth in road traffic and GDP



**1957-77:** road traffic growth greater than GDP

**1977-97:** lower road traffic growth more comparable to GDP

**1997-2017:** even lower road traffic growth and lower than GDP

Source: ONS GDP data

**All motor vehicle traffic**

**UK GDP**



# Lessons from the past

- There was a confidence in predicting even if predicting **and** providing was questioned
- The rapidly maturing digital age has collided, and is merging, with the motor age
- We (may) have entered a period of regime transition that is giving rise to deep uncertainty
- Transport does not merely serve society; it shapes and is shaped by society
- Scenario planning was practised outside the mainstream and disconnected from policymaking
- There was always a vision

# Where we have got to



## futuredemand

How could or should our transport system evolve in order to support mobility in the future?



Ministry of Transport

**Decide and provide** - decide on the future you want and provide an appropriate strategy to help get there – one which can accommodate the uncertainty that is outside your control

Transport professionals accept the plausibility of significantly different futures and want to move away from predict and provide towards decide and provide but are constrained by professional impotence

CIHT



## Uncertainty Ahead: Which Way Forward for Transport?

Final Report from the  
CIHT FUTURES Initiative  
Professor Glenn Lyons  
August 2016



## Handling uncertainty in transport planning and decision making

Report of a roundtable discussion held in London on 20 July 2018  
Professor Glenn Lyons  
September 2018

Organised and sponsored by



Hosted by

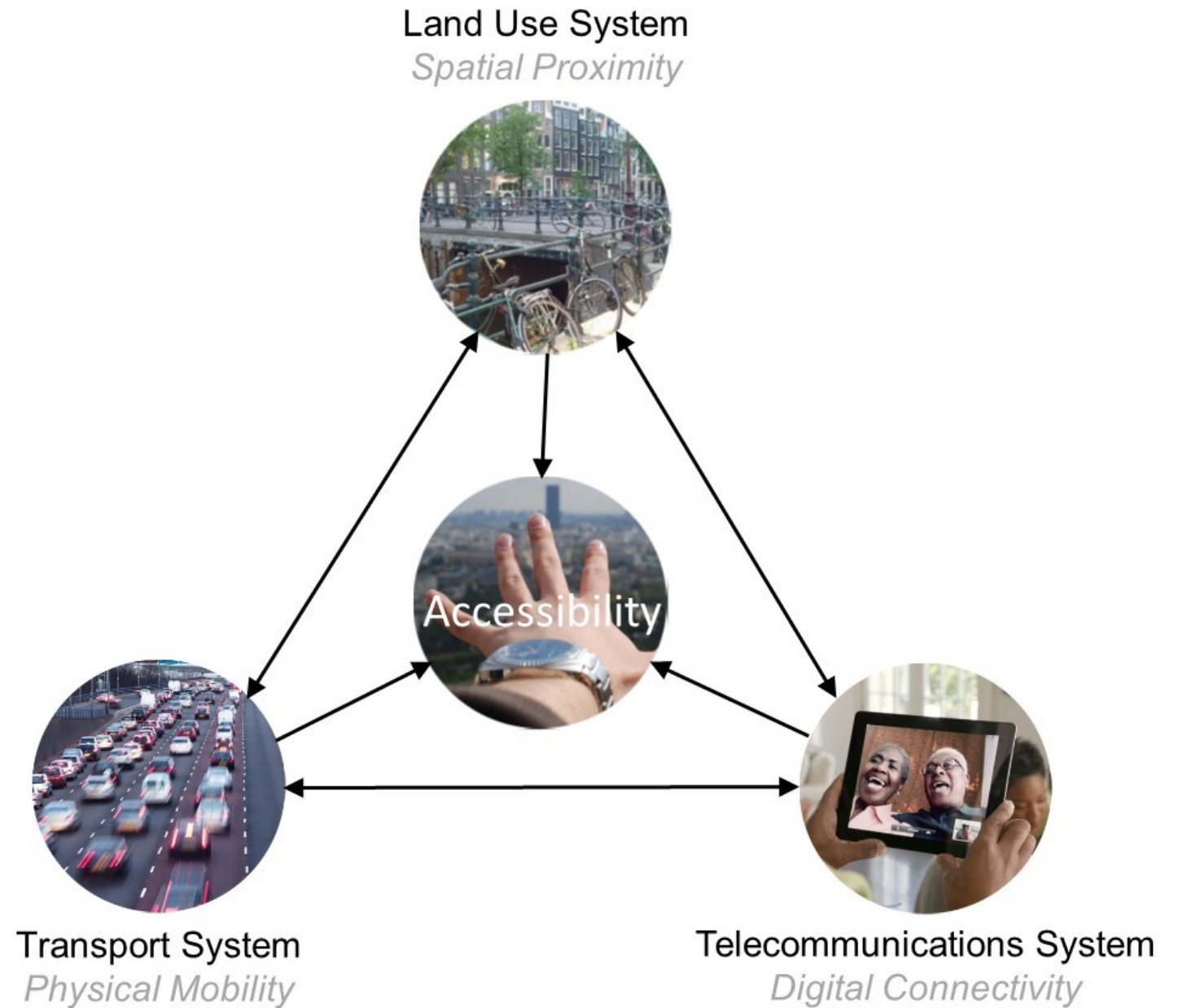


Supported by



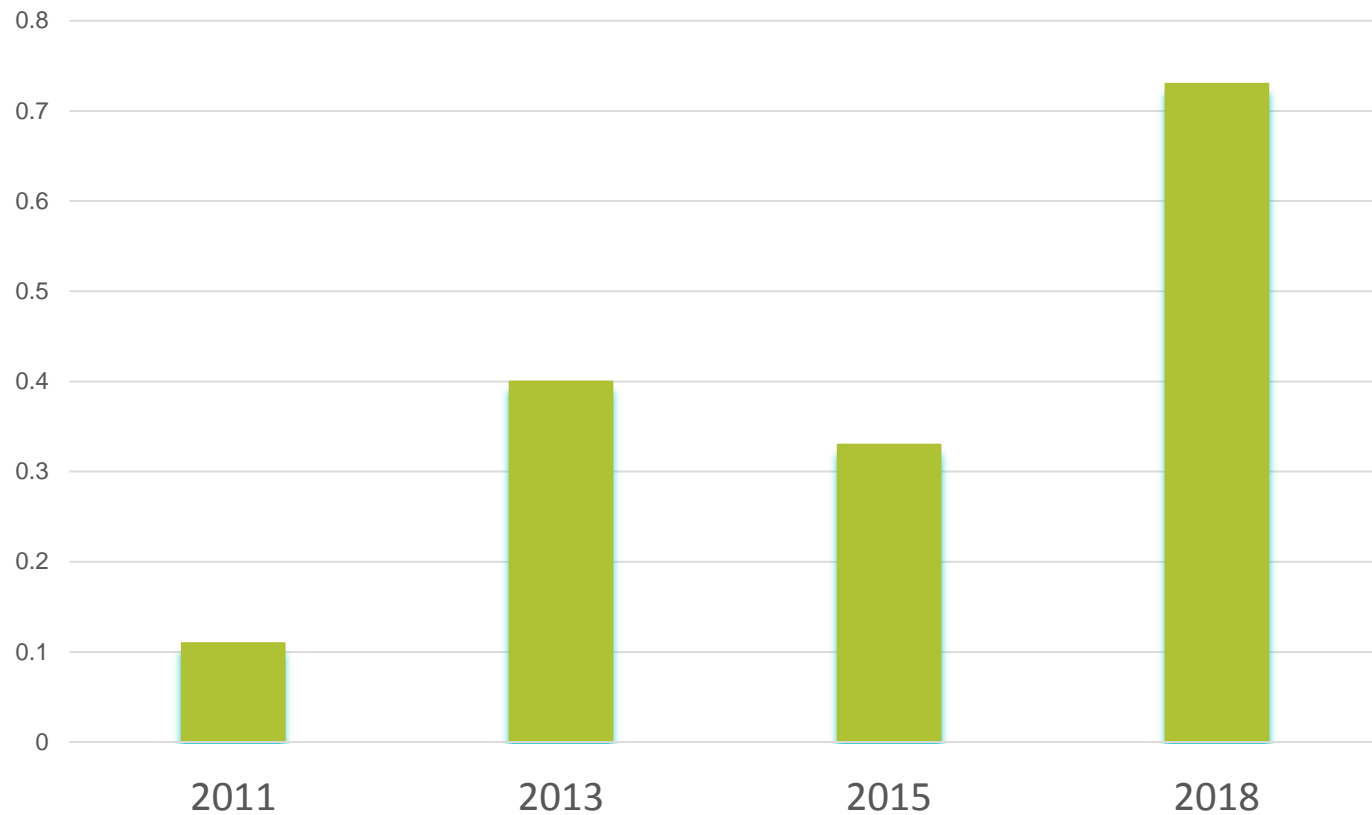
We need a learning by doing approach to accommodating uncertainty in forward planning with a willingness to share insights, constructively challenge, and rethink analytical robustness and proportionality of analysis within our resource constraints

# From transport planning to triple-access planning



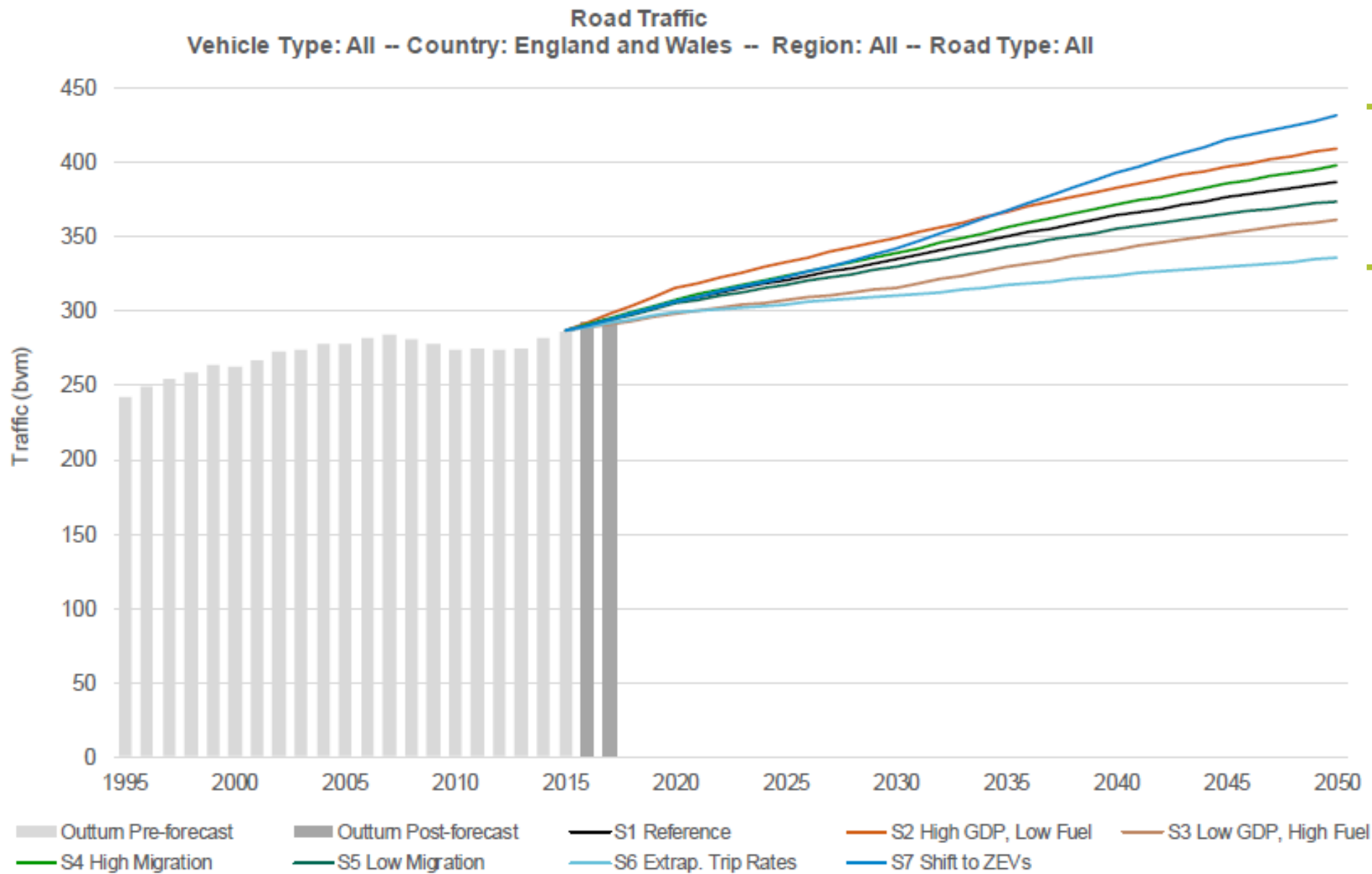
# Road Traffic Forecasts reports

‘uncertain’/page



# 2018

“While uncertainty in road traffic demand has always existed, it is perhaps now more uncertain than ever”



plausible scenarios

**Figure 25: Vehicle miles forecasts for England & Wales**

What 'do nothing' future(s) should we build a business case on?

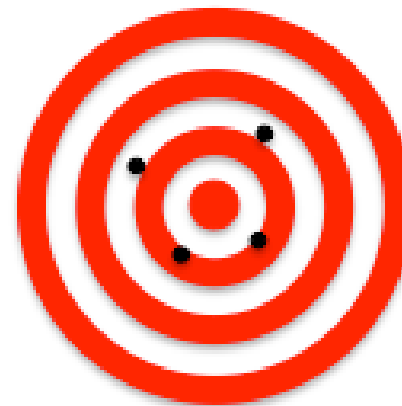
Accurate  
Precise



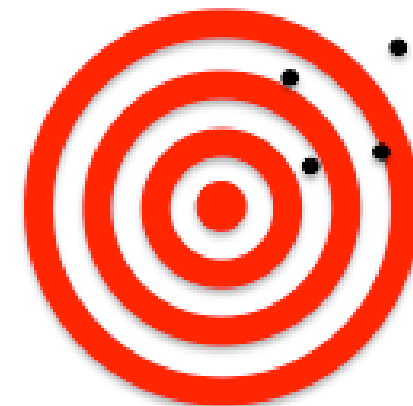
Not Accurate  
Precise



Accurate  
Not Precise



Not Accurate  
Not Precise



<prominent organisation> predicts growth of between 21.4 and 44.2%

it could go up by between 21-44%

it could go up by around 20-40%

it could go up quite a bit or a lot

Better to be approximately right than precisely wrong?



# Planning Inspectorate



What does, should or will constitute robust analysis?





“I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail”

Abraham Maslow, 1966

Is where we've been, going to constrain where we could go?

# Responding to the story so far

“Uncertainty is an uncomfortable position. But certainty is an absurd one.”

Voltaire, 1694-1778

- We should aspire to vision-led strategic planning for an uncertain world
  - vision-led policy rather than policy led by the way of the world we have known
  - reducing and accommodating uncertainty not concealing it
- We need to open minds to a fresh approach and confront cognitive fluency and other biases
- We need a process that is manageable and deemed robust
- We need to share, learn and evolve in pursuit of fit for purpose transport planning

**1**  
Gearing  
up

**2**  
Preferred  
futures

**3**  
Opening  
out

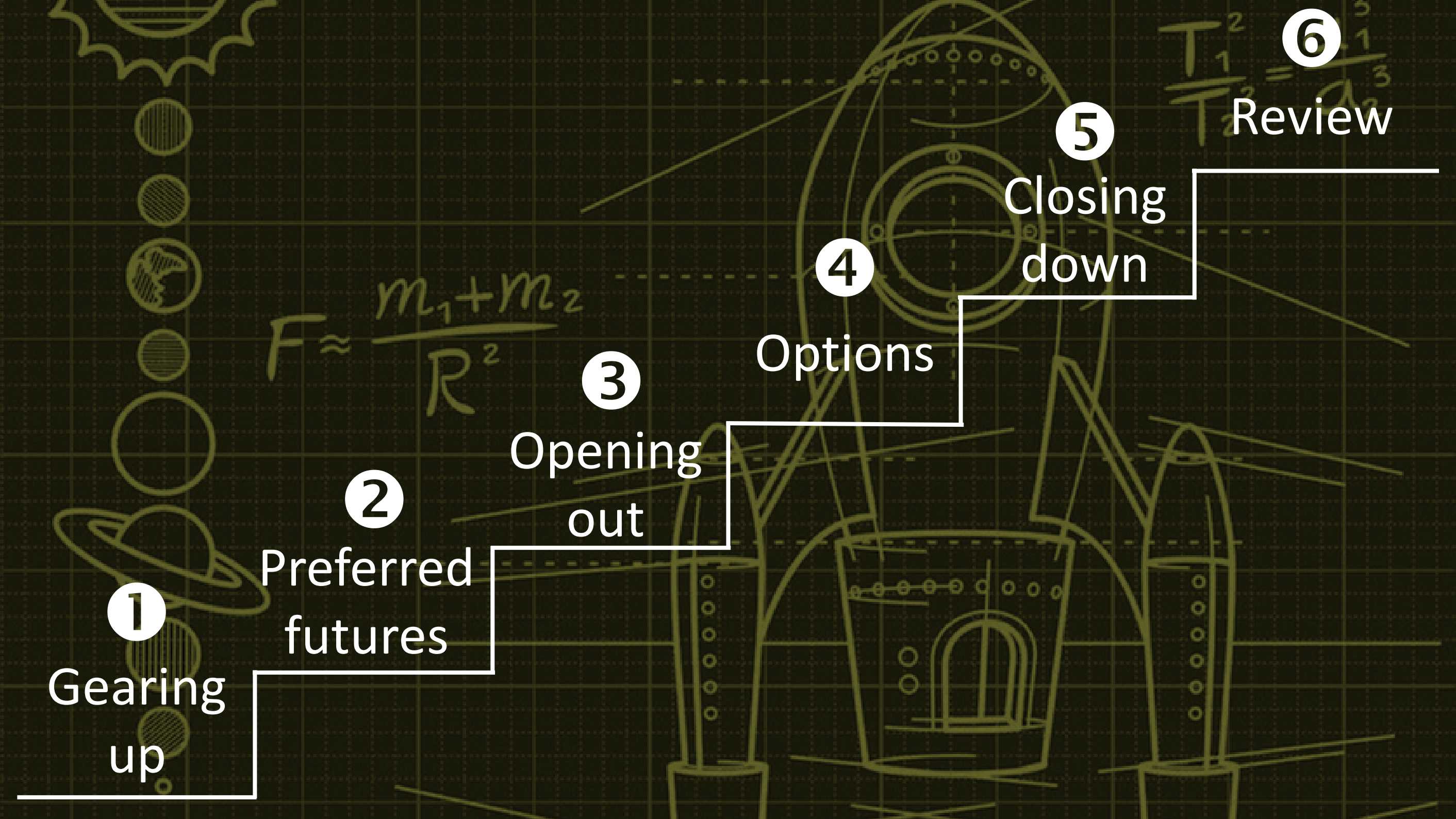
**4**  
Options

**5**  
Closing  
down

**6**  
Review

$$F \approx \frac{m_1 + m_2}{R^2}$$

$$T_1^2 = \frac{4\pi^2 a^3}{G(M_1 + M_2)}$$



1

## Gearing up

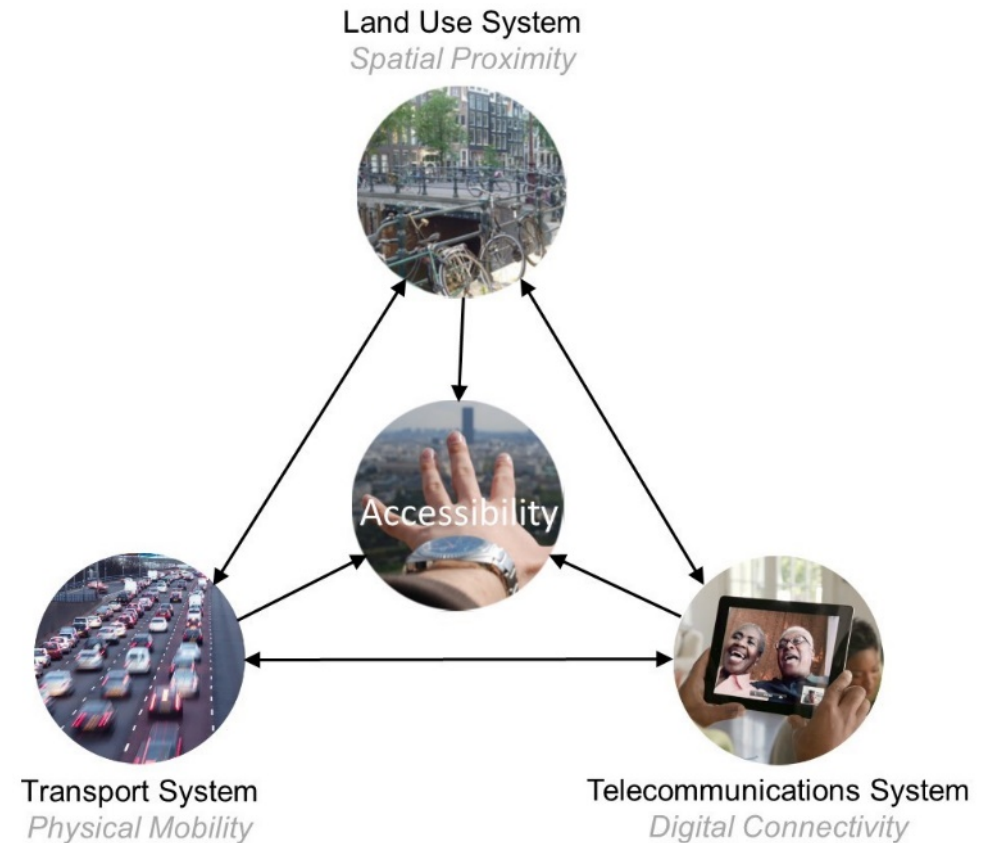
exposure to the approach's rationale, an opportunity to reflect on how it differs from business as usual and to appreciate how it can offer a 'fit for purpose' approach to planning for the future



# 2

## Preferred futures

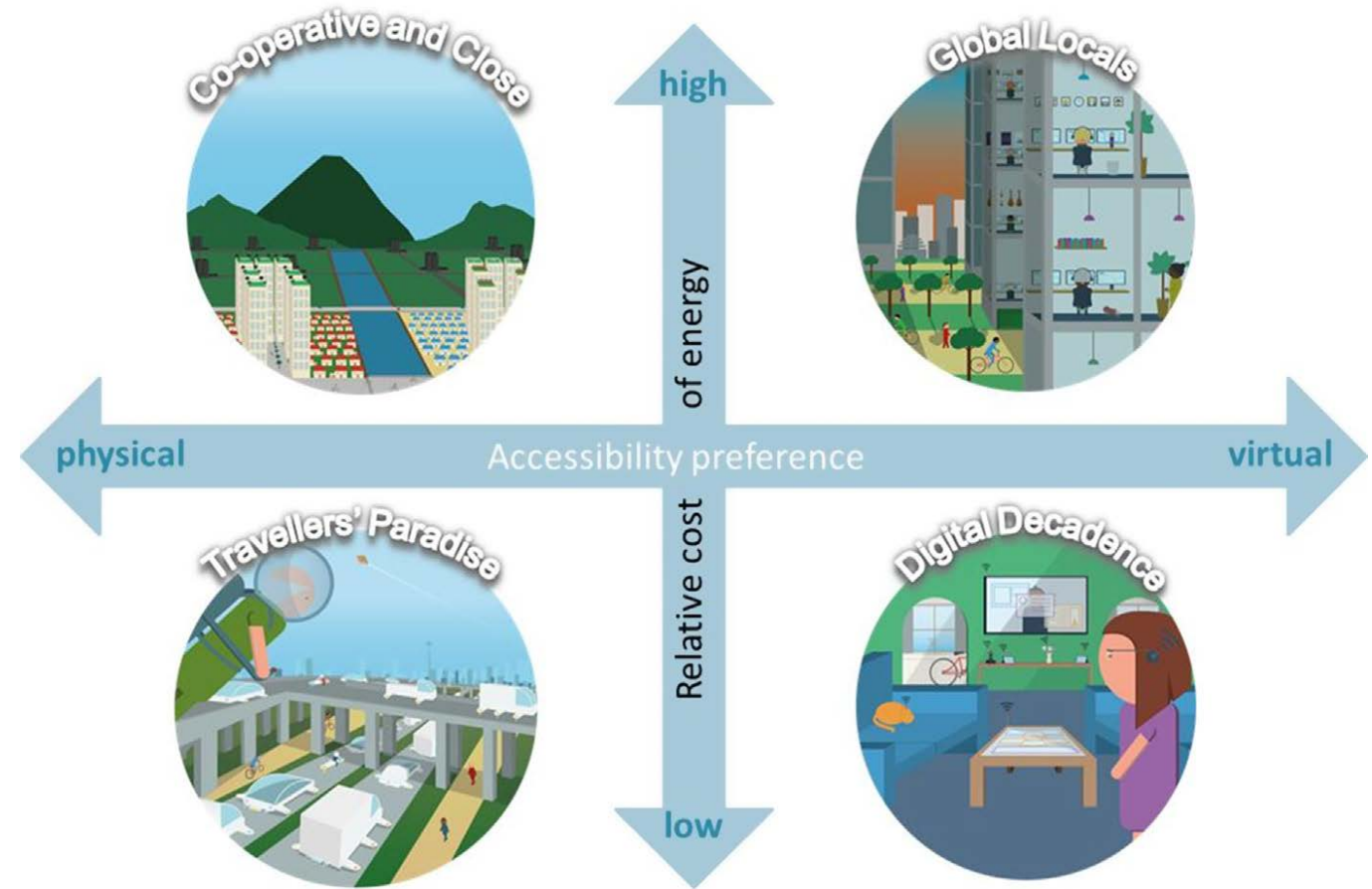
a grounded approach to decide upon a preferred future, supported by a process that brings constructive challenge while engaging the players involved



3

# Opening out

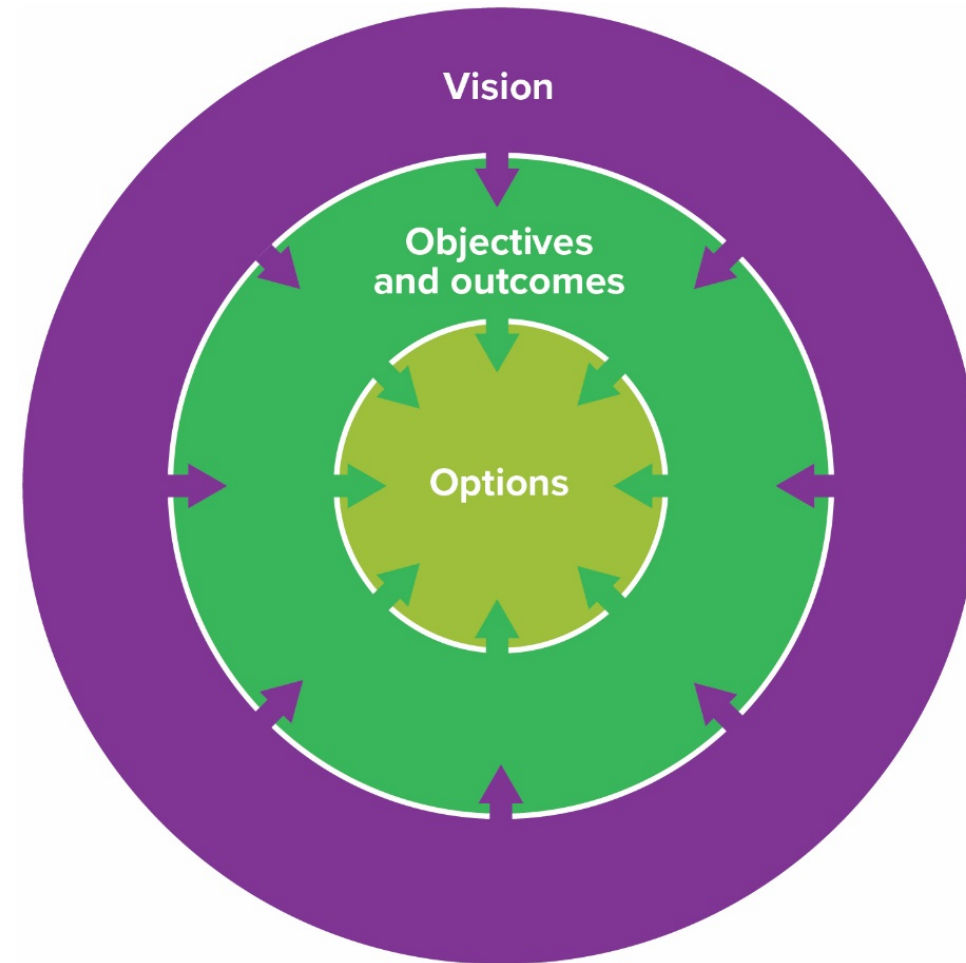
confidence in coming to terms with the future circumstances affecting delivery of the vision and a shared appreciation of the critical uncertainties faced



4

# Options

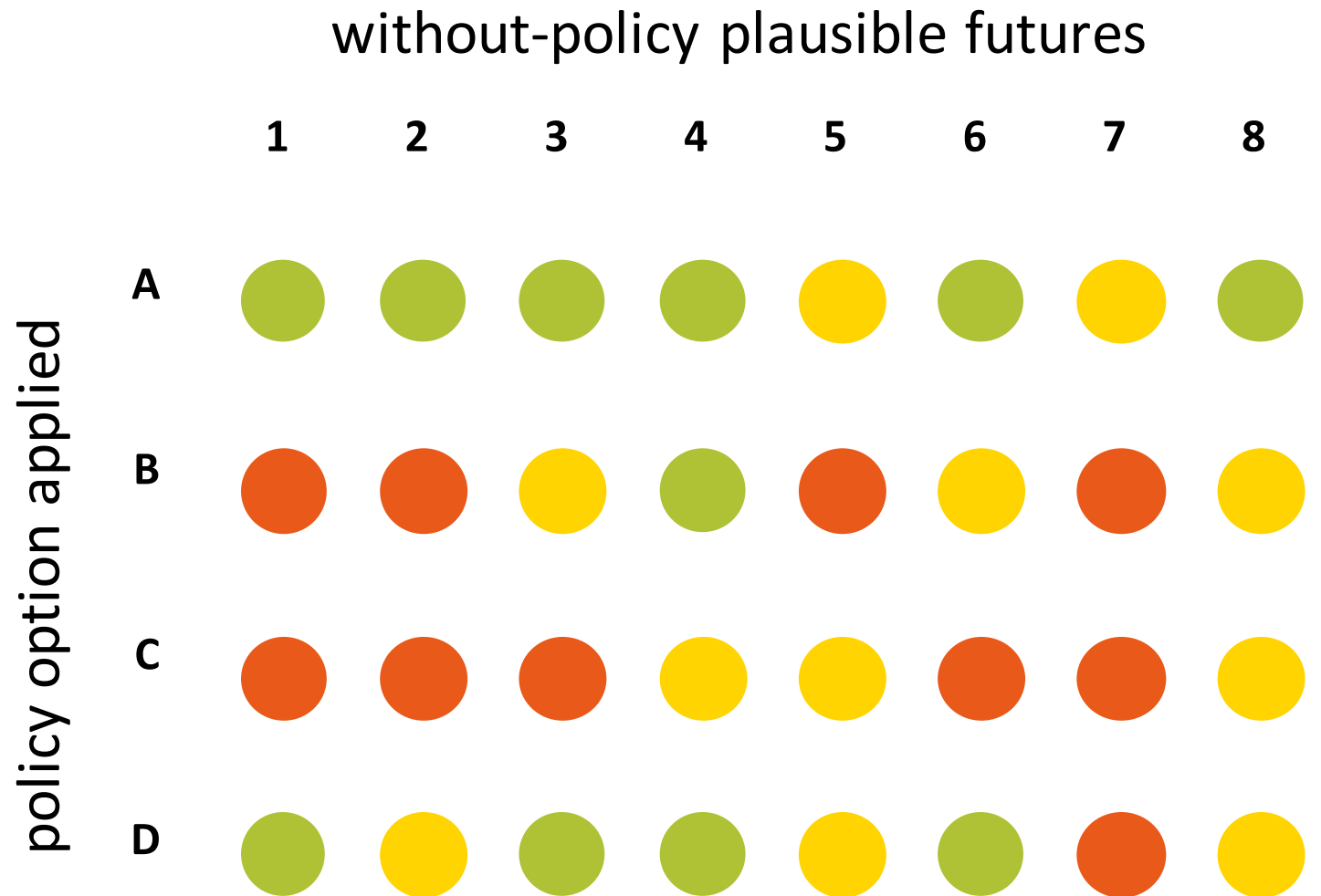
drawing upon wider global experience as well as context-specific insight to gather and generate, and then sift policy options for helping deliver the vision



# 5

## Closing down

confidence in developing a strategy to deliver the vision that is resilient to future uncertainty by stress-testing candidate policy options against different plausible scenarios



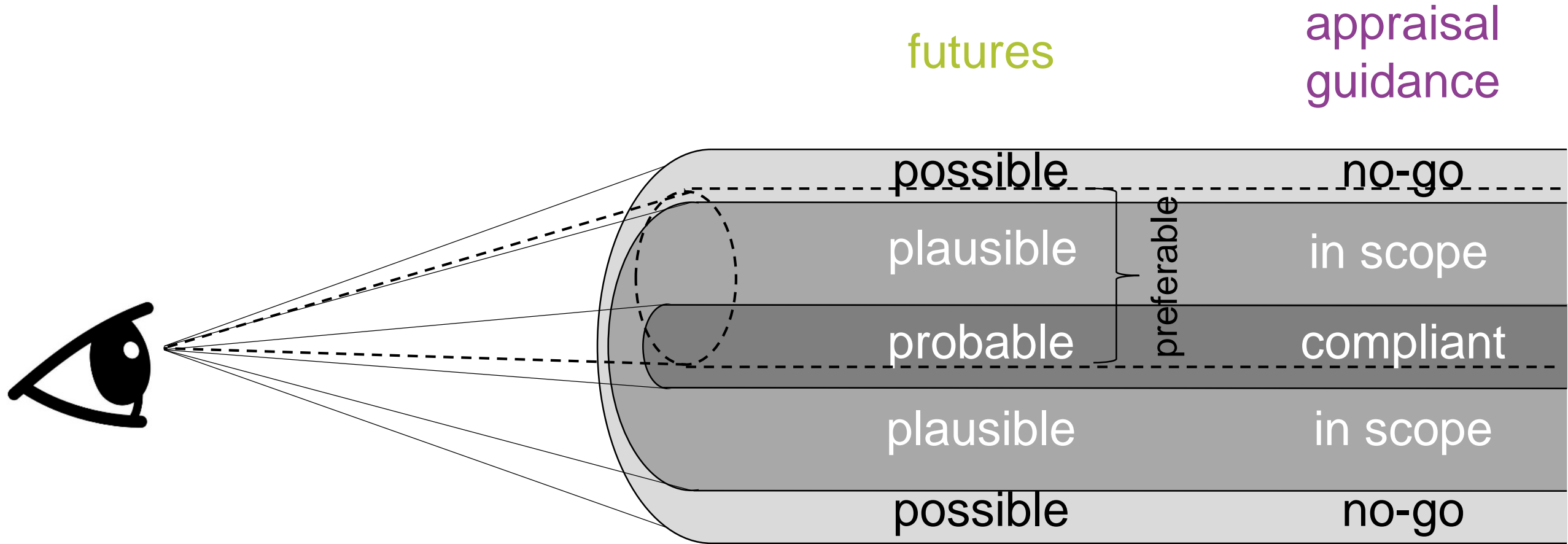


# 6

## Review

putting ongoing monitoring in place and being prepared to periodically review and, if necessary, revise the strategy in light of new evidence and signals of change



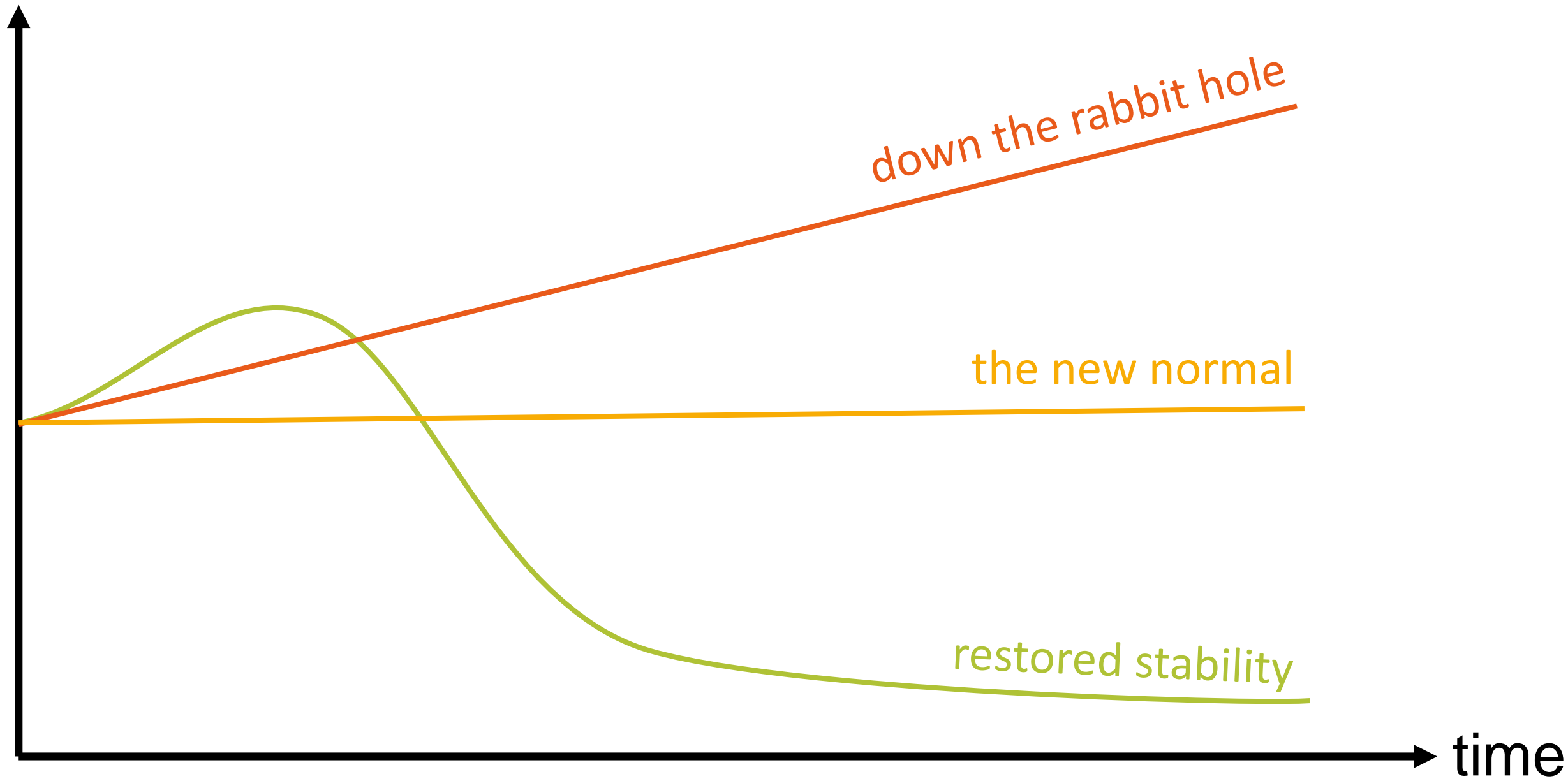


Matters of interpretation

# Where we are going



uncertainty



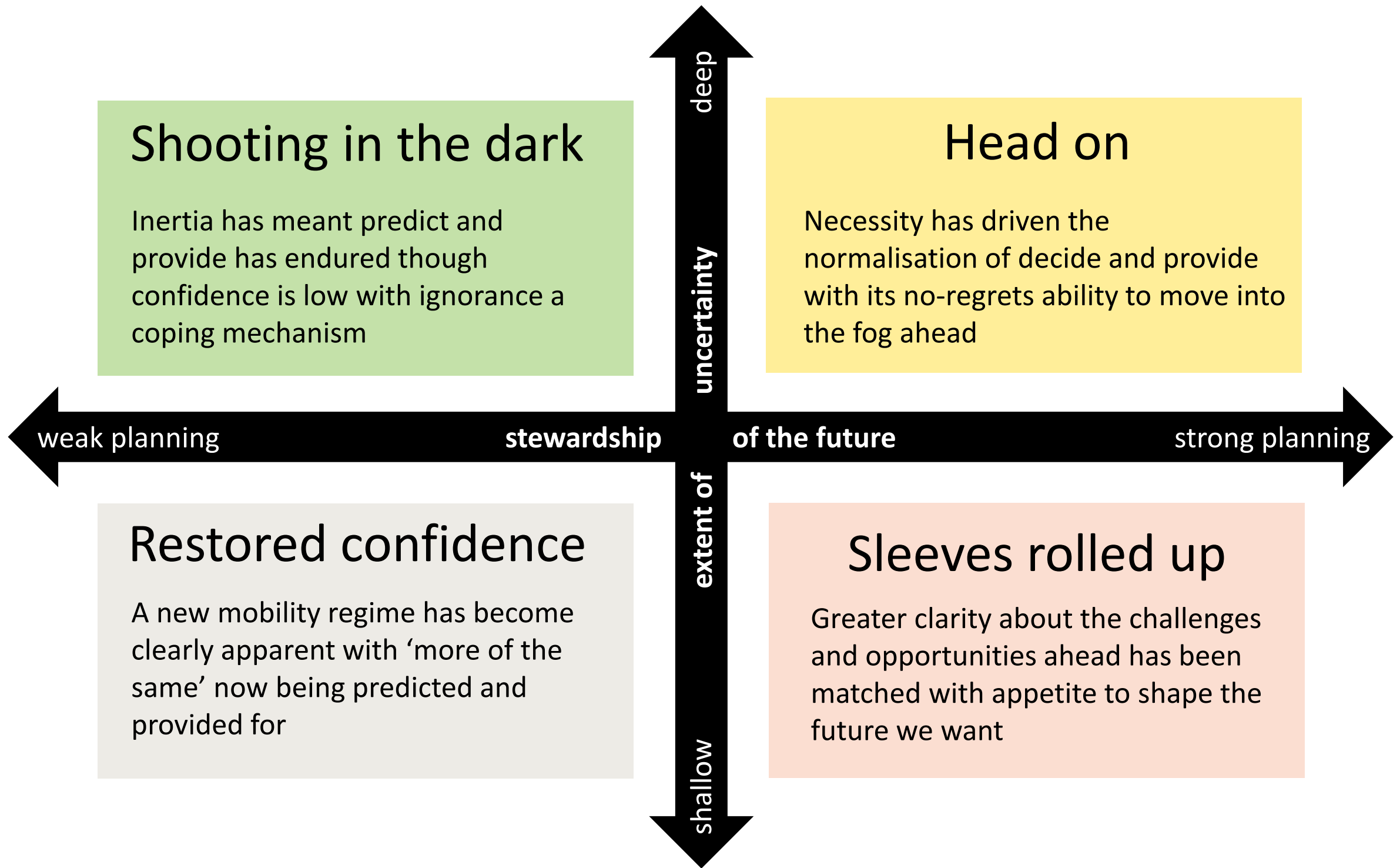
down the rabbit hole

the new normal

restored stability

time

transport planning 2039



## Shooting in the dark

Inertia has meant predict and provide has endured though confidence is low with ignorance a coping mechanism

## Head on

Necessity has driven the normalisation of decide and provide with its no-regrets ability to move into the fog ahead

## Restored confidence

A new mobility regime has become clearly apparent with 'more of the same' now being predicted and provided for

## Sleeves rolled up

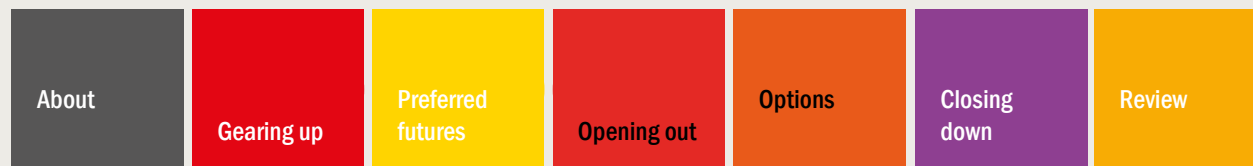
Greater clarity about the challenges and opportunities ahead has been matched with appetite to shape the future we want

# FUTURES

A Mott MacDonald and UWE Bristol collaboration

## Future Uncertainty Toolkit for Understanding and Responding to an Evolving Society

An interactive guide



# CIHT Learned Society 2019

## A New Approach to Planning for the Future of Mobility

### Responses:

**Stephen Cragg - Senior Transport Planner,  
Strategic Transport Planning, Strategy and  
Analysis Directorate, Transport Scotland**

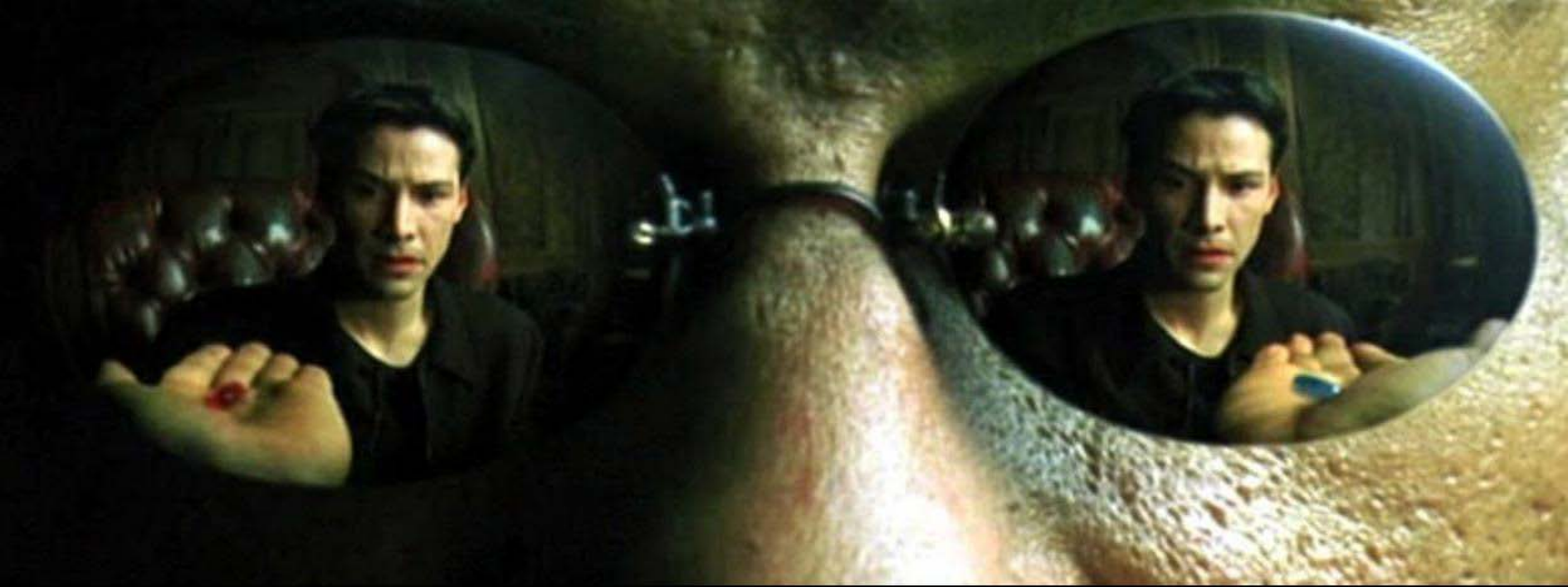


# A Vision for Transport in Scotland



TRANSPORT  
**SCOTLAND**  
CÒMHDHAIL ALBA

Stephen Cragg  
Senior Transport Planner  
Transport Scotland



You take the 'predict and provide' pill – the story ends, you wake up in congestion and believe whatever you want to believe about transport planning.  
You take the 'decide and provide' pill – you stay in Wonderland, and I show you how deep the uncertainty goes.

# National Transport Strategy Review

The review of the NTS will:

- set out an updated vision for what kind of transport system we want for the whole of Scotland over the next 20 years or so and how we plan to get there
- look at how we can successfully address the strategic challenges facing our transport system and how we can take advantage of any opportunities that present themselves
- inform the update of the Strategic Transport Projects Review (STPR) by setting out the national outcomes we want to achieve from our investment when reviewing recommendations for strategic infrastructure priorities across Scotland
- be aligned with the emerging policy and legislative landscape in Scotland including the outcomes from the independent planning review, Climate Change Plan, Enterprise and Skills review, City and Region Growth Deals and the Transport Bill.



TRANSPORT  
**SCOTLAND**  
CÒMHDHAIL ALBA

We will have a  
sustainable, inclusive  
and accessible transport  
system helping to  
deliver a healthy,  
prosperous and fair  
Scotland for  
communities, business  
and visitors

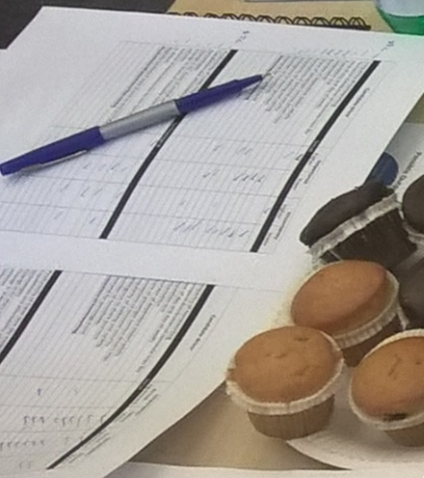
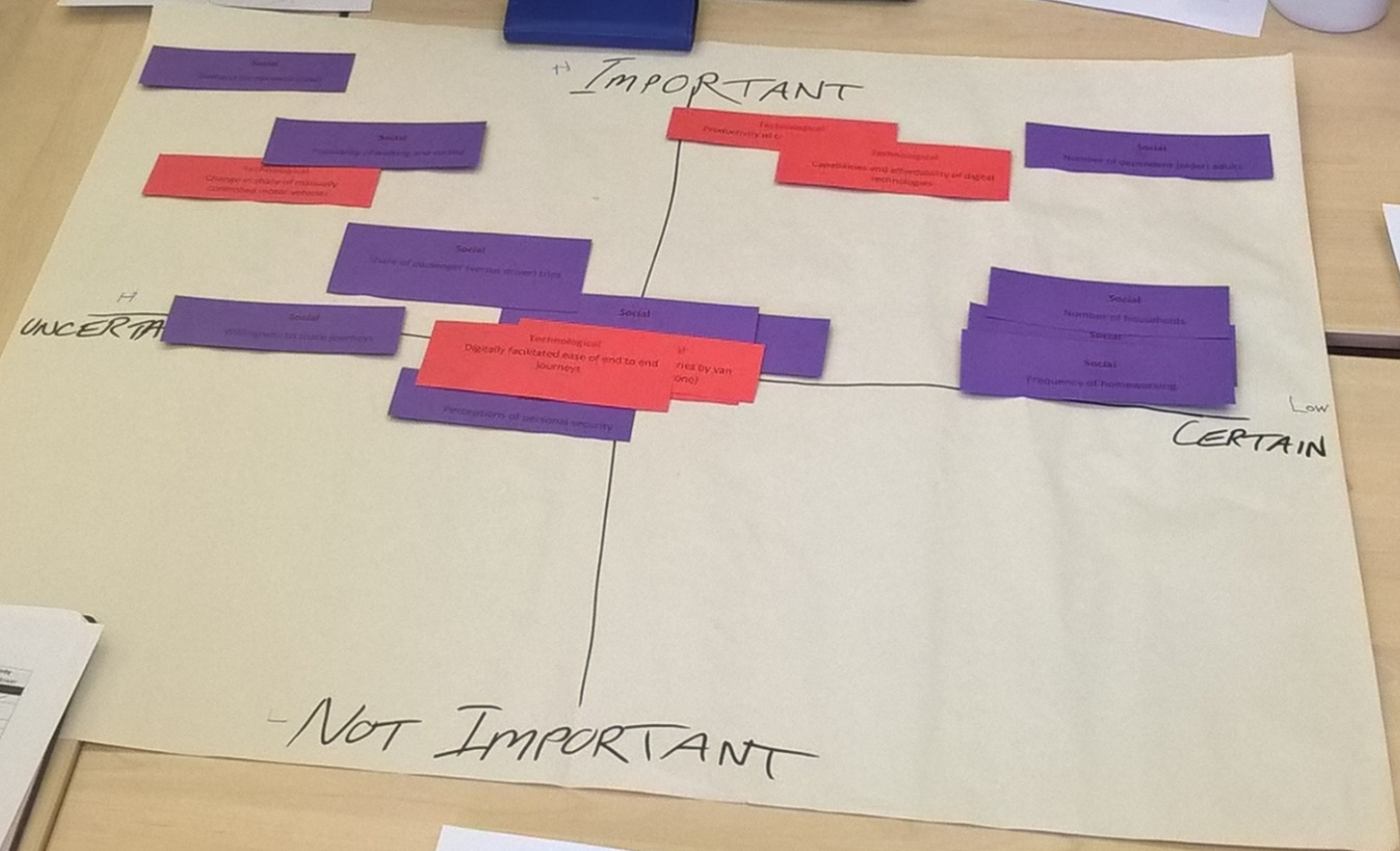


# Plausible Futures



## Key Drivers of Uncertainty

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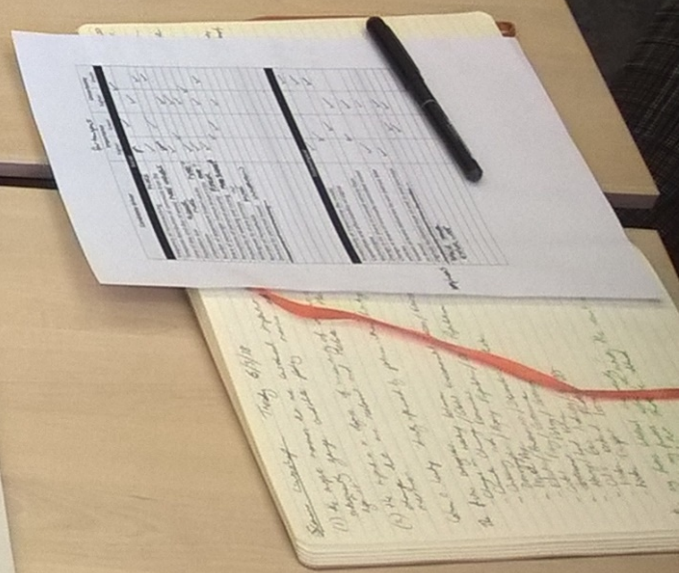


Handwritten notes and a table titled 'Candidate driver'.

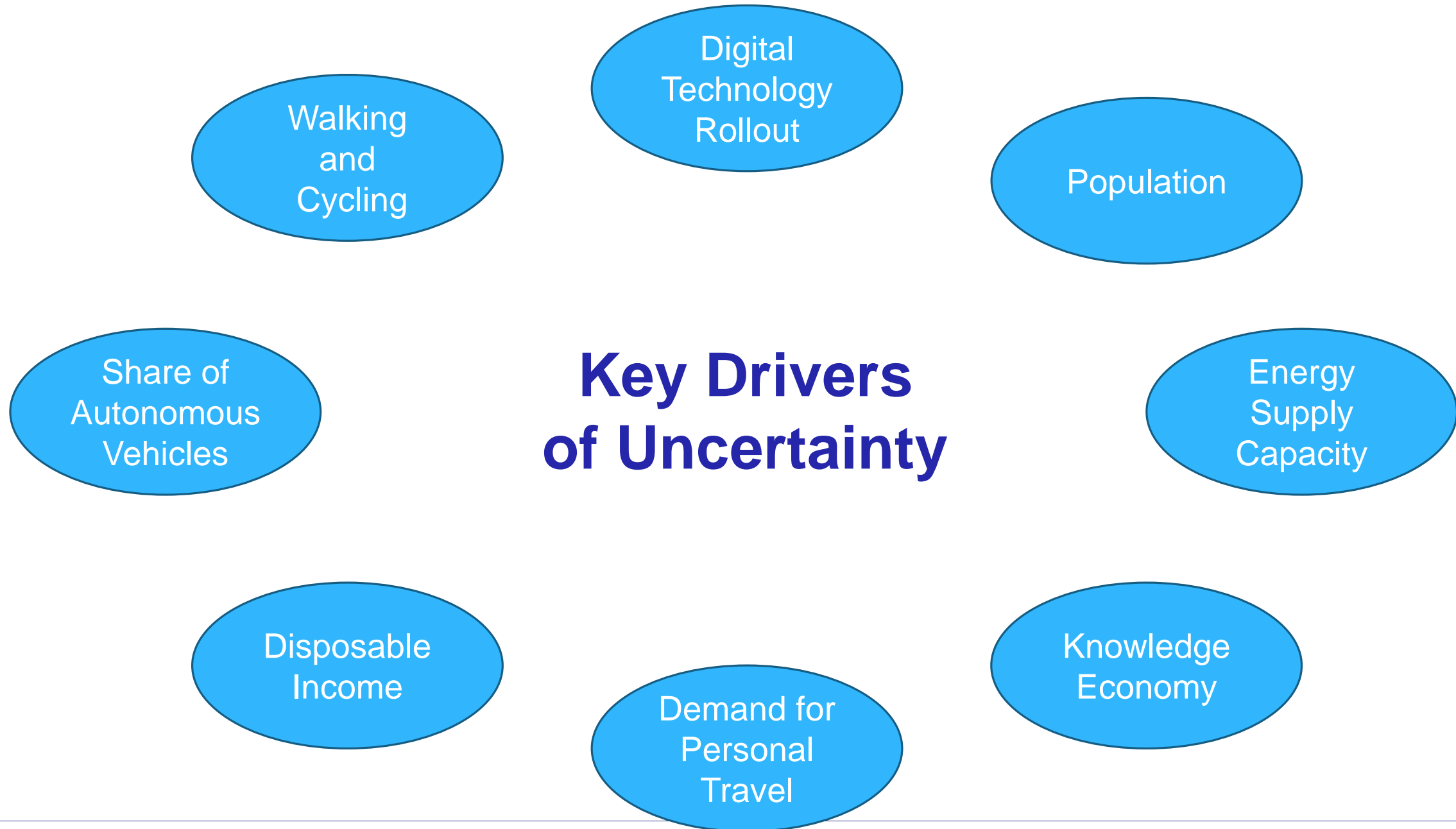
Candidate driver	Importance		Uncertainty	
	Higher	Lower	Higher	Lower
Frequency of participation				
Temporal distribution of complete trips (by time of day and day of week)				
Population size				
Urbanization				
Number of dependent (older) adults				
Share of passenger (older) adults				
Perceptions of personal security				
Willingness to share space and cycling				
Number of households				
Frequency of participation				

Printed table titled 'Candidate driver'.

Candidate driver	Importance		Uncertainty	
	Higher	Lower	Higher	Lower
Frequency of participation				
Temporal distribution of complete trips (by time of day and day of week)				
Population size				
Urbanization				
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Share of passenger (older) adults				
Perceptions of personal security				
Willingness to share space and cycling				
Number of households				
Frequency of participation				



# Plausible Futures





*Without-policy Plausible Futures + Measure: Support transport's role in improving peoples' health and wellbeing*

NTS Outcome	Healthy & Wealthy	Mindful travellers	Cyber-Ecos	Top Gear	Straightened stay-homers	White-collar Connectors	Multi-modal movers	Cyber-boomers
Is reliable, efficient and high quality	Light Red	Red	Light Blue	Red	Light Blue	Light Red	Red	Light Red
Gets us where we need to go	Light Blue	Light Blue	White	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Uses beneficial innovation	White	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Is safe and secure for all	Light Blue	Light Red	Light Blue	Light Red	Light Blue	Light Blue	Light Red	Light Red
Enables us to make healthy travel choices	Dark Blue	Light Blue	Light Blue	Light Blue	Dark Blue	Light Blue	Dark Blue	Light Blue
Helps make our communities great places to live	Light Blue	Light Blue	Light Blue	Light Red	Light Blue	Light Red	White	White
Adapts to the effects of climate change	Light Red	Red	Light Blue	Red	Light Blue	Light Red	Red	Red
Takes steps to mitigate further climate change	Light Red	White	Light Blue	White	Light Blue	Light Blue	White	Light Red
Promotes greener, cleaner choices	Light Red	White	Light Blue	Light Red	White	White	Light Red	Light Red
Provides fair access to services we need	Light Red	Light Red	Light Blue	Light Red	Light Blue	White	Light Red	Light Red
Is easy to use for all	White	White	White	Light Red	White	Light Red	Light Red	Light Red
Is affordable for all	White	Red	Light Blue	Light Red	Light Blue	Light Blue	Light Red	Red

# What Next?

Strategic Transport Projects Review will consider at national level infrastructure investment in:

- Active Travel
- Island Connectivity
- Buses
- Ferries
- Rail
- Road



# Thanks



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CÒMHDHAIL ALBA

# CIHT Learned Society 2019

## A New Approach to Planning for the Future of Mobility

### Responses:

**Lynn Basford - Independent Consultant and CIHT  
lead on CIHT FUTURES**

# A New Approach to the Planning of Future Mobility:

## Which Way for Practitioners?

Lynn Basford



basfordpowers



2019 Learned Society Lecture,  
30 April, London Transport  
Museum

# Which Way Forward?



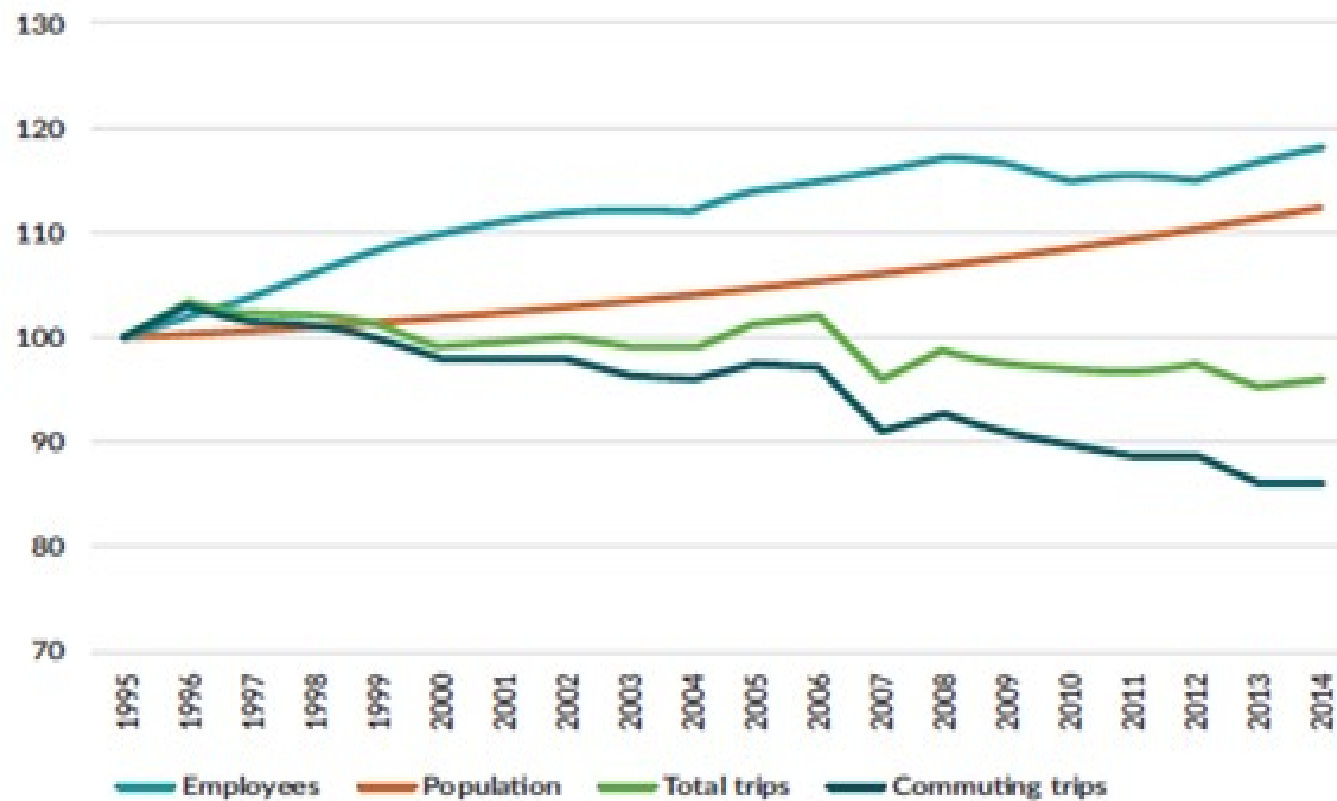
*'Would you tell me,  
please, which way I  
ought to go from  
here?'*



# Trends and Case Making

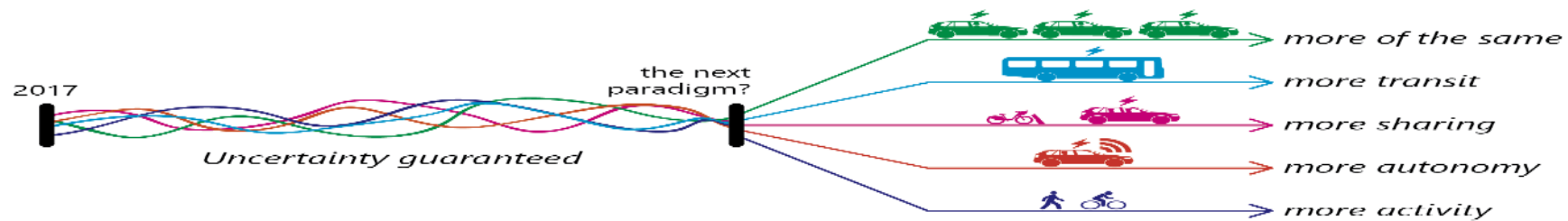


**Decline in commute trips set against the rise in employees**  
(Source: Le Vine et al., 2018)





# Trends and Uncertainty



Source: [All Change? The future of travel demand and the implications for policy and planning](#) The Commission on Travel Demand May 2018

And so to practice...



# Kingswood : Questioning and deciding



- ▶ What sort of place are we creating?
- ▶ What kinds of activities do we need to travel for?
- ▶ How will we provide for mobility?



# Kingswood : A Place of Beauty



- ▶ Variety of activities.
- ▶ Walkable Neighbourhoods.
- ▶ Concentration of Activities.
- ▶ Education.
- ▶ Movement of people.



# Our Approach : Policy Compliant?



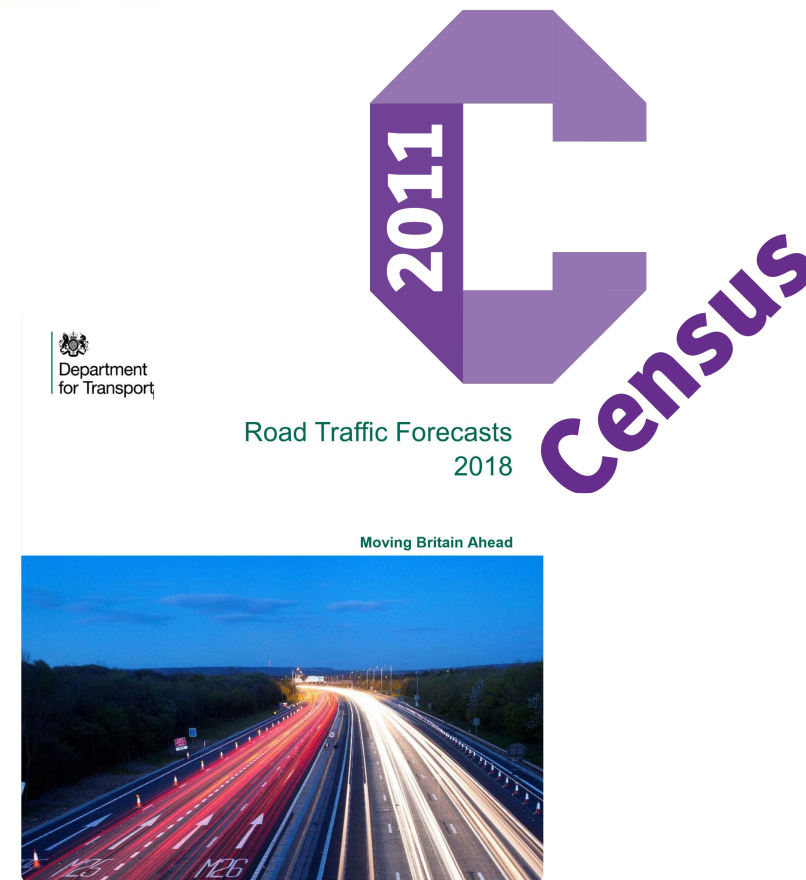
- ▶ Responsive to the UN IPCC special report on global warming of 1.5°C.
- ▶ Challenge “rear view mirror” policies – parking.
- ▶ Support trends.
- ▶ Support change in behaviour.



# Developing the Evidence Base



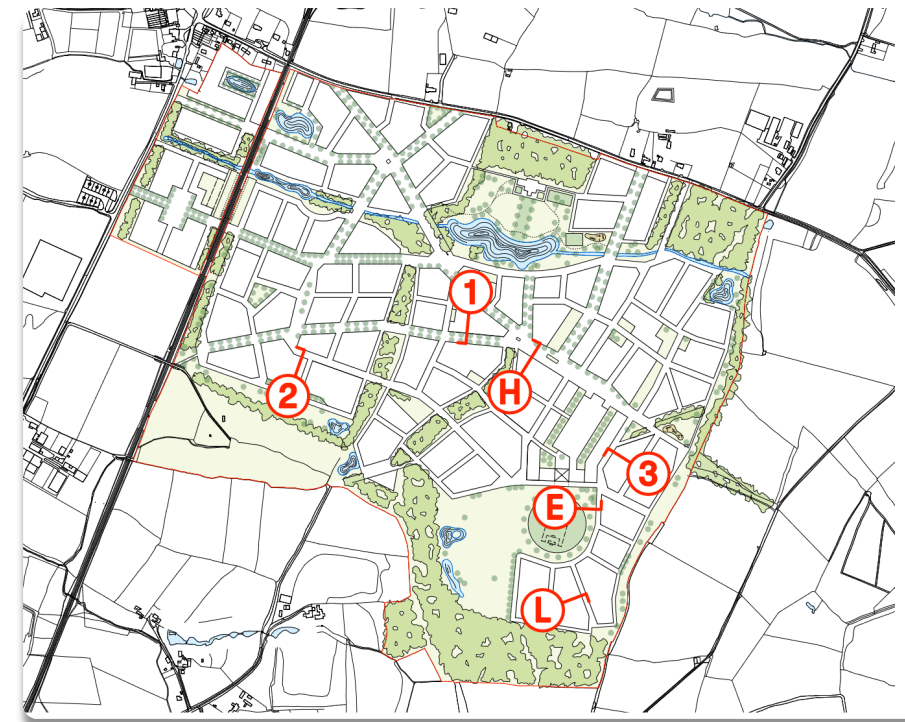
- ▶ Recognised the value and applicability of data sets.
- ▶ DfT Scenarios from Road Traffic Forecast 2018 have provide reference case and scenarios.
- ▶ DfT Scenario 6 includes trends in trip rates up to 2043.
- ▶ Kingswood scenarios developed with trends factored into the future traffic growth and the Kingswood Vision.
- ▶ Assessed the quantum of trips by journey purpose and mode for 2028, 2033 and 2043.



# Case Making and Strategy Development



- ▶ A flipped approach with Vision and decisions on what to provide.
- ▶ Scenario planning and a regime testing rather than regime compliant approach.
- ▶ We looked to deal with the extended time-frame and uncertainty.
- ▶ A build out and phasing strategy with community infrastructure being in place in the initial phase to influence behaviour.



Which way now?



WINNERS...  
ARE NOT  
THOSE WHO  
NEVER FAIL

BUT...  
THOSE WHO  
NEVER QUIT

**Banksy**



To Conclude in the spirit of Alice's adventures



# In Wonderland



[lynnbasford@basfordpowers.com](mailto:lynnbasford@basfordpowers.com)