

Innovation in local UK highways: ADEPT Live Labs

Giles Perkins

*Head of Future Mobility, UK
& Programme Director, ADEPT Live Labs*

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Future Mobility

<https://www.wsp.com/en-GB/campaigns/future-mobility>



The future is already here—it's just not evenly distributed.

—William Gibson

ADEPT

LIVELABS

Transforming Local Places

ADEPT SMART PLACES LIVE LABS PROGRAMME

Twitter: @adeptlivelabs
<https://www.adeptnet.org.uk/livelabs>

The challenges for local roads

Today... tomorrow...

- Potholes
- Surface water
- Resilience
- Renewals
- Capacity
- Air quality
- Congestion
- Safety
- Poor satisfaction
- Growing £ cost

...early 2020s and beyond

- Digitisation & data
- Connected & Automated
- Electrification
- New materials
- Pre-fabrication
- Satisfied users
- New players / partners
- New business models
- Reducing £ cost
- ...?

‘Technology’ realities (for local roads)

- Media hype
- Vehicle focus
- Outcomes / impacts missing
- Day to day realities missing
- Resources & skills scarce
- Ongoing funding challenges
- Trajectories to change?
- How can we influence it?
- How can we be ‘Future Ready’

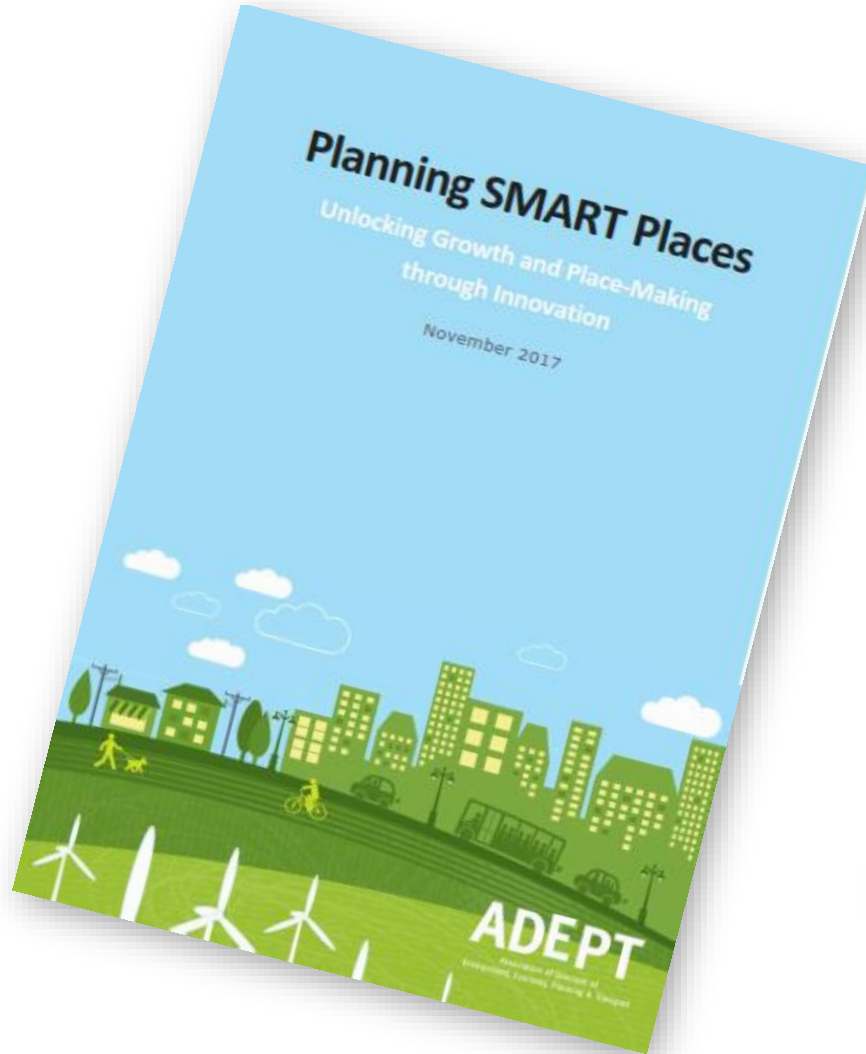


Focusing on the outcomes

- **Not using technology for the sake of it**
- Improving asset & service efficiency
- Improving safety & security
- Customer / user centric experience
- Reducing congestion & pollution
- Balancing choice, demand & supply
- Facilitating sustainable development
- Maximising capacity, improving reliability & resilience
- Enabling seamless, equitable, access and connectivity
- Enabling economic growth & productivity



ADEPT enabling research



Smart Places research

- **Phase 1:** What is meant by SMART Places / Highways, what opportunities exist & explored best practice **(The What)**
- **Phase 2:** Why is best practice not mainstream practice, what needs to change, and priorities for action **(The Why)**
- **Phase 3:** Ongoing financial support from the project sponsors:

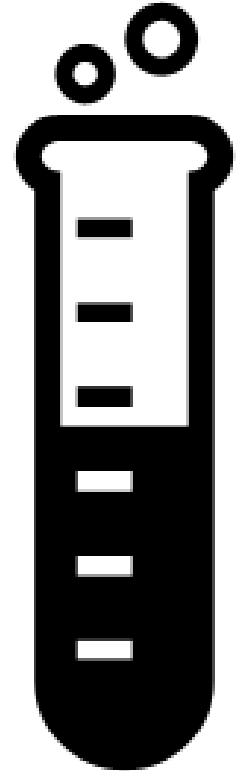
DfT, Atkins, EY, Kier, Ringway, O2 and WSP (The How)

➤ **Running highways and AV 'live labs'**

➤ Getting to grips with data

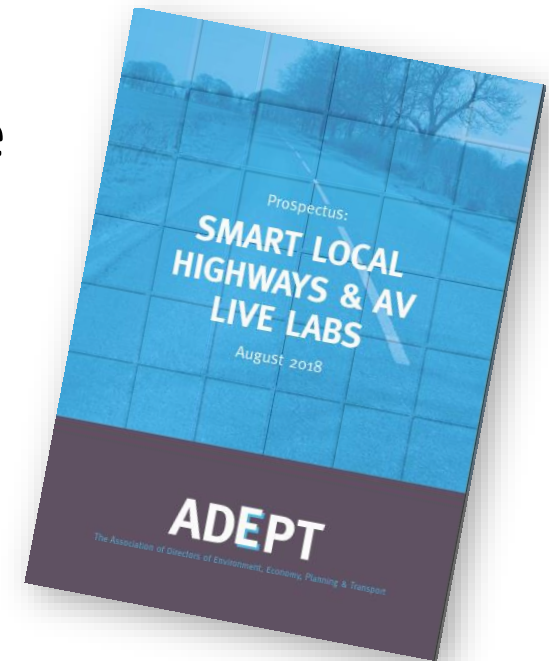
➤ A knowledge hub 'aggregator'

- **The aim: to achieve a step-change, quickly**



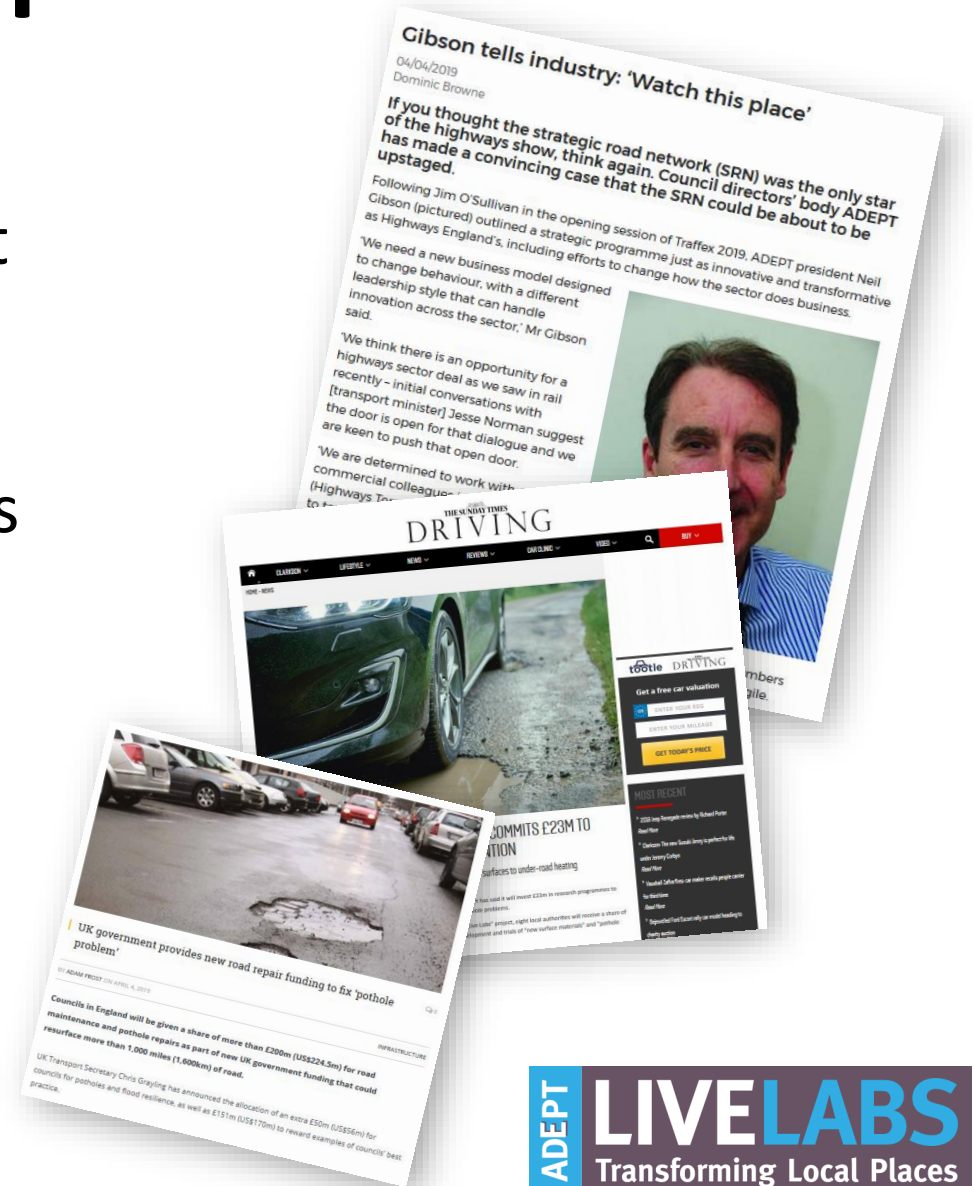
Smart Local Highways and AV live lab

- Development of 'live lab' application(s) at scale
- New settlements, suburbs & towns
- Innovative solutions to achieve step change performance of local highway assets & network
- Encompass materials, production methods, communications & energy latest thinking
- Support anticipated technology changes and future network usage e.g. electric, connected and autonomous vehicles
- Supported by DfT and private sector partners
- **Smart Materials, Communications, Energy & Mobility**



SMART Places Live Labs Competition

- 28 bids received from 35 ADEPT members
- Large geography: Cumbria to Kent / Dorset to Suffolk
- Term maintenance, academic, industrial, consultant, SME and international partners
- Innovation covering (Smart) Materials, Communications, Energy & Mobility, singularly and in combination
- 10 short listed to the Dragons' Den
- **8 successful bids, £23m secured for the two-year programme from DfT**



“Today’s trials will see how new technologies work in the real world to ensure our roads are built for the 21st century.”

***Rt. Hon Chris Grayling MP
(then) Transport Secretary***

January 2019



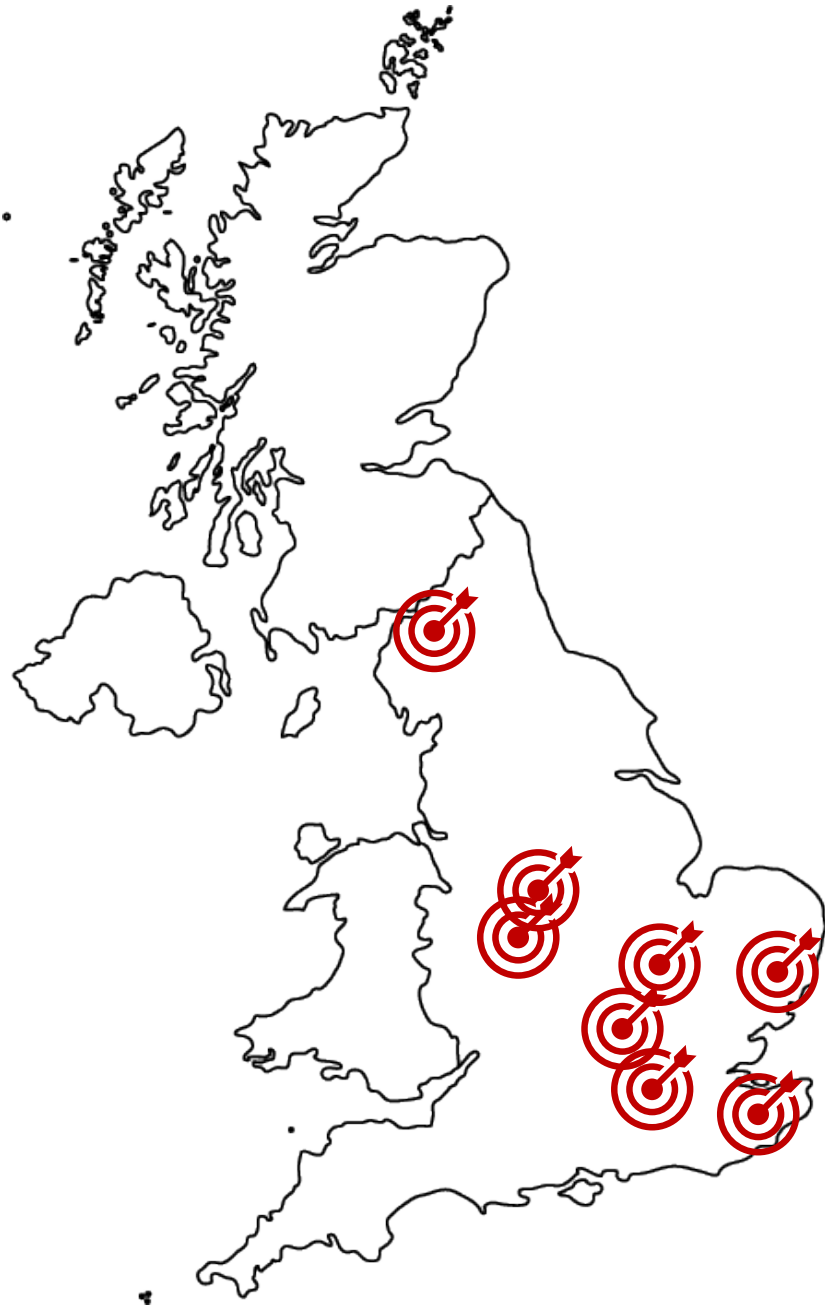
Department
for Transport



Key points

- Live Labs is 'open source'
- Learning / innovation will be shared widely
- Active engagement and import of ideas
- Applicability to local needs / challenges – now and in the future
- Practical application at scale
- Monitoring & evaluation programme
- Identify and articulate benefits





- Cumbria
- Staffordshire
- West Midlands
- Central Bedfordshire
- Buckinghamshire
- Reading
- Suffolk
- Kent

Year 1 headlines



£23m fund



8 Live Labs



Activity in
over 115
locations



70
suppliers

4 core themes (plus an emerging theme)



Smart
Materials



Smart
Communications



Smart Energy

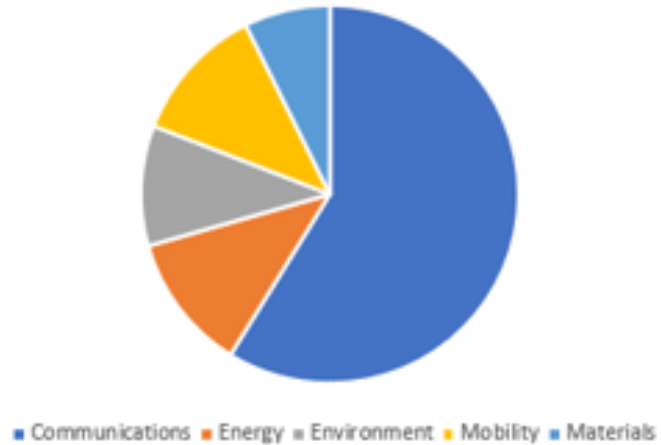


Smart Mobility

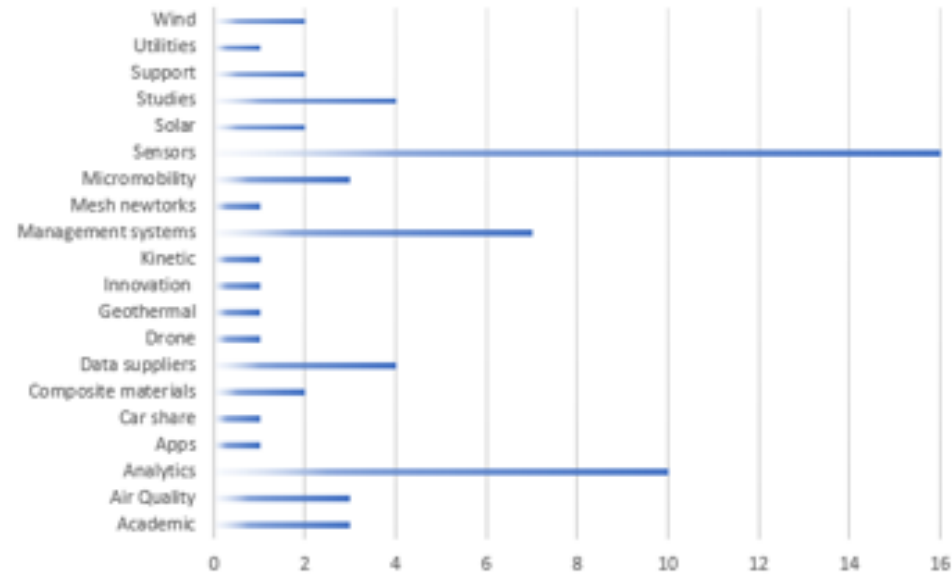


Smart
Environment
(emerging)

Year 1 headlines



Mix of projects



Mix of suppliers

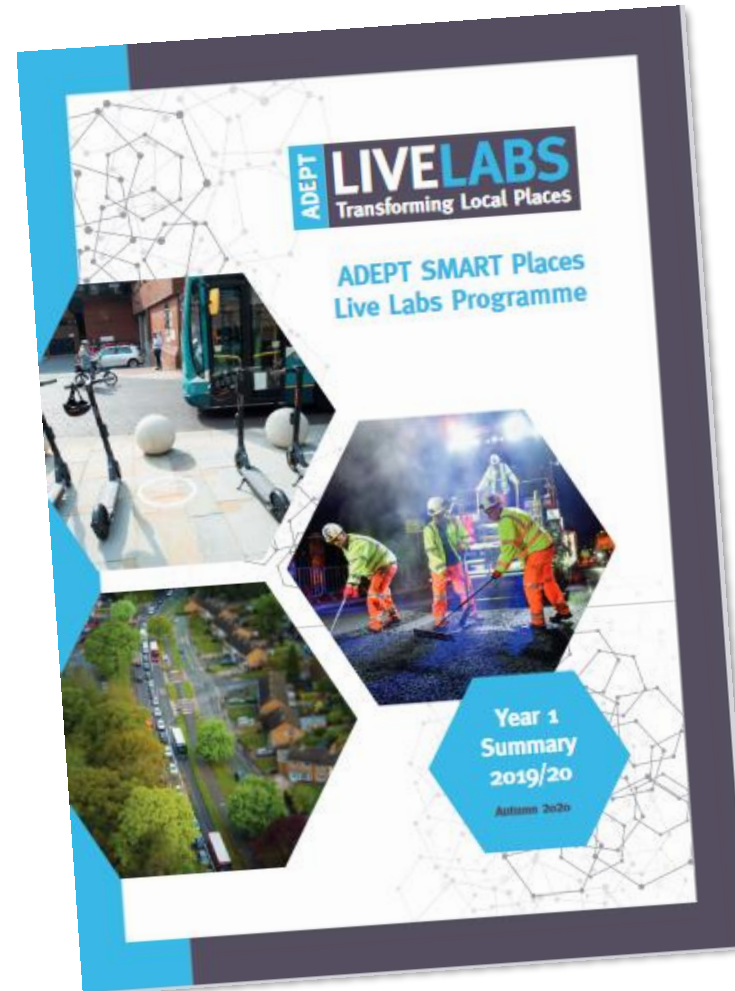
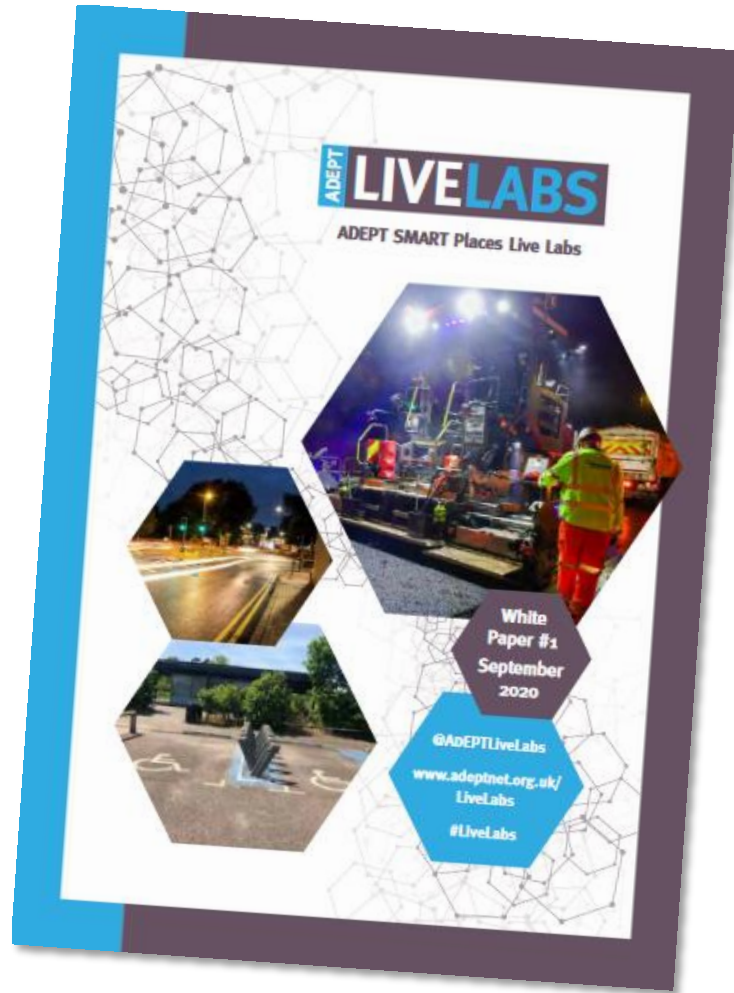


1 further innovation
competition within a Live Lab



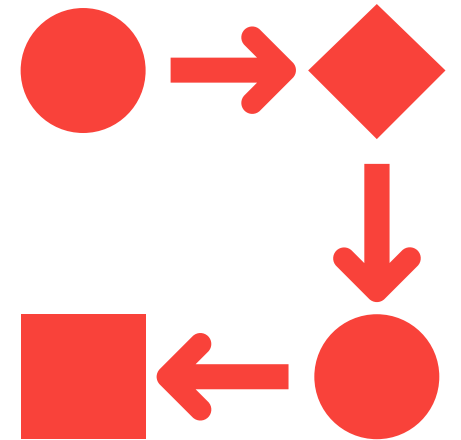
With 130 applications from
Mexico to Australia

Sharing and dissemination



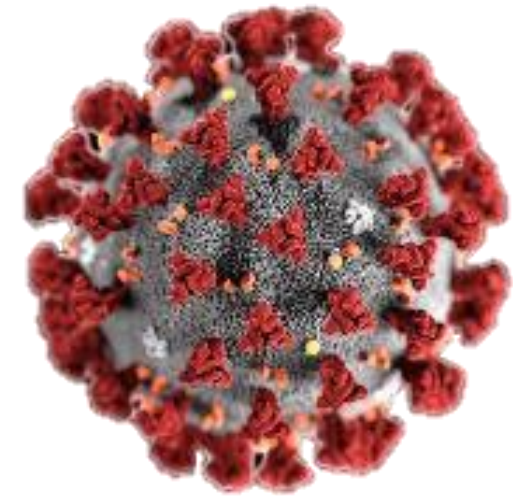
Procurement challenges

- Innovation and uncertainty of outputs / outcomes
 - Capital vs revenue designations
 - Needs for speed and flexibility
 - Private sector expectations vs. public checks & balances
 - Time required for legals
 - Local appetite for risk
-
- But, we have learnt lots!



Covid-19 and innovation

- Supply chain delays
- Installation challenges
- Capitalising on Covid-19 'benefits'
- Programme extension to Nov 2021
- More efficient working methods
- Greater collaboration and sharing
- Planning for 'shock events'



More details...

Website - <https://www.adeptnet.org.uk/livelabs>

Social - @adeptlivelabs #livelabs

Blog - <https://www.adeptnet.org.uk/live-labs-blog>

Discussion, lessons to date





**Let's change the
way we think. *Let's
create change.***



Thank you

Giles Perkins

Head of Future Mobility, UK

+44 (0)7966 210 401

giles.perkins@wsp.com

[@gilesbgperkins](#)

wsp.com

Future Mobility

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