ADEPT LIVELABS
Transforming Local Places

Live Labs Expo
1st December 2021

The SMART Places programme is kindly supported by ADEPT's commercial partners

ADEPT Association of Directors of Environment, Economy, Planning & Transport
Department for Transport
SNC·LAVALIN
ATKINS Member of the SNC-Lavalin Group
EY
KIER
O2
RINGWAY
WSP

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Deborah Fox

Transport for West Midlands

Transport for West Midlands | Network Resilience Live Lab

Benefits realised

- Improved operational capability of RTCC
- Faster incident and accident management
- Reduced costs to public purse
- Worked faster towards ‘one camera estate’
- Improved the technology use case

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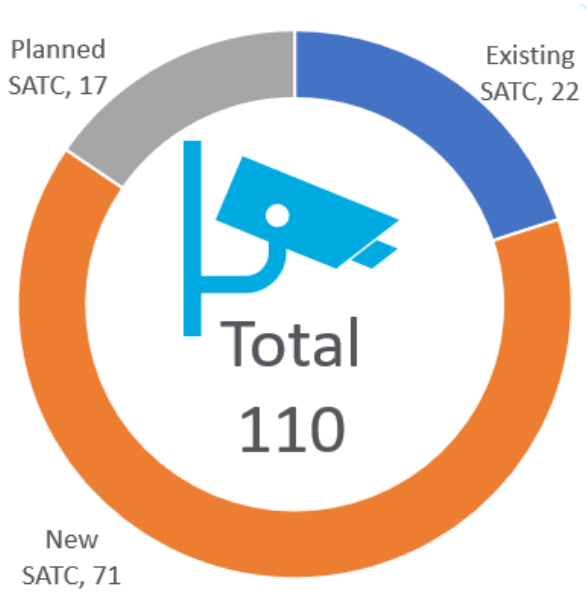
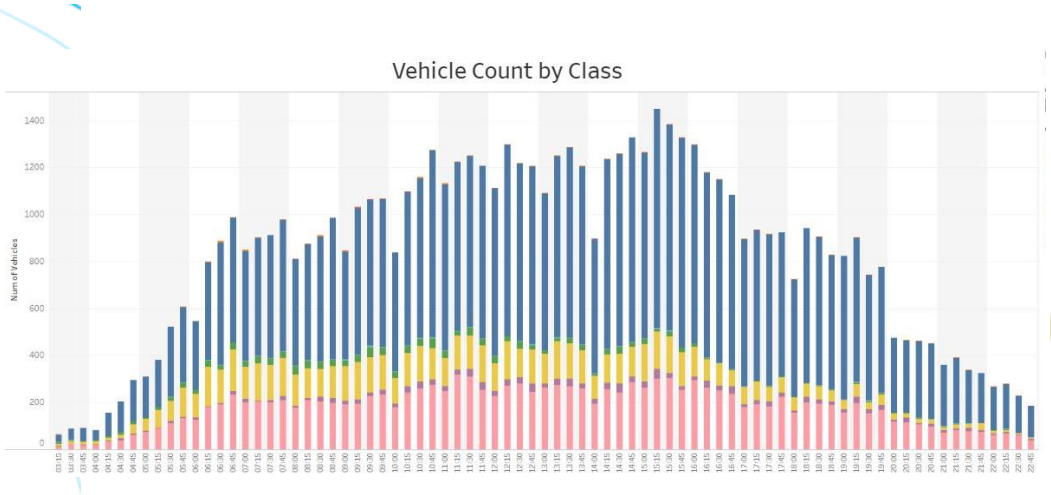
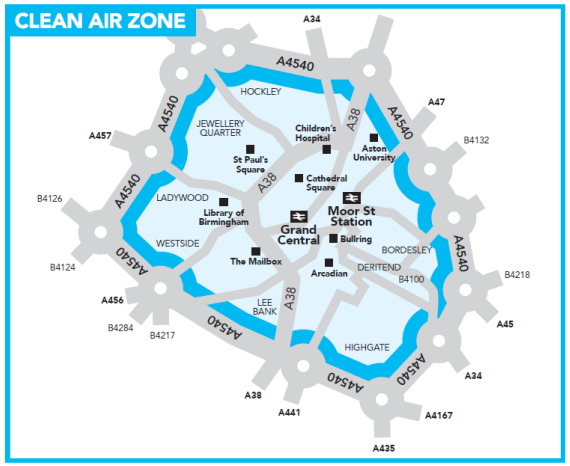
Menu of operational tools – infinite applications?





Adding value

- Using SATC to understand impact of the Clean Air Zone outside Birmingham city centre
- A trial decarbonisation campaign in Solihull
- Using segmentation and personas to inform MaaS product development.
- Working with bus operators and TfWM operations to apply segmentation and personas



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Essential for our legacy: mindset, behaviours, skills

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- Empathy
- Bravery
- Engaging
- Resilient/Adaptable
- Curiosity
- Focus

Overview of the NR Live Lab programme
https://youtu.be/YQ3omO53KV8

Visit www.tfwm.org.uk/livelab

How-to guide series and international webinars on YouTube

James Crosbie
Thames Valley Live Lab

Who are we and what are we doing?

- £4.75m Grant Funding
- 6 local authorities
- 5 commercial partners
- University of Reading

Pot Holes

Congestion

Health

Energy

Air Quality

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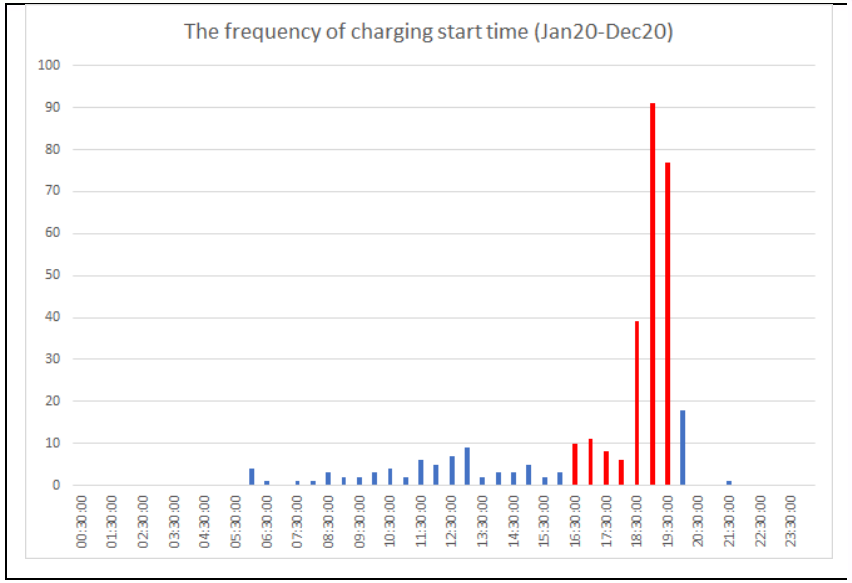
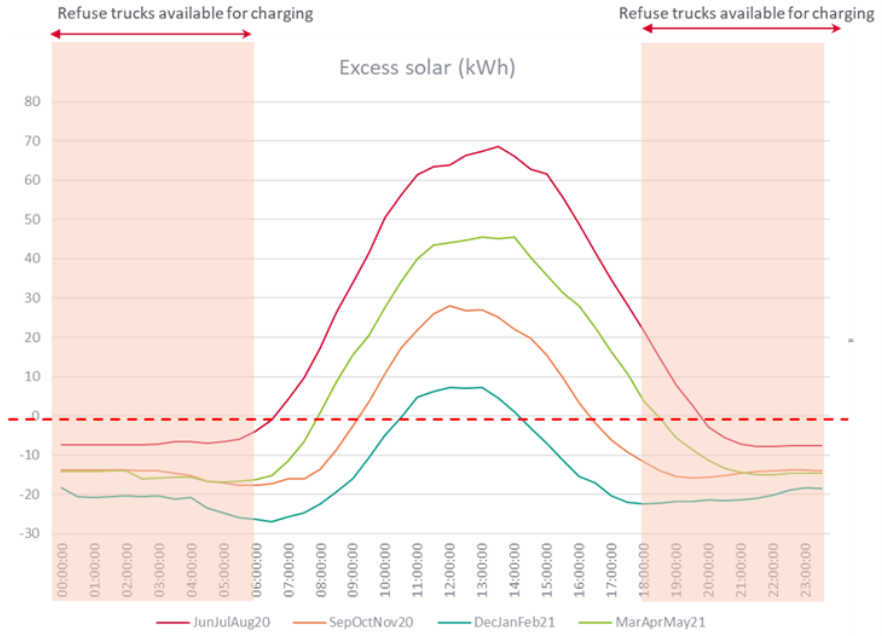
Bracknell Forest Council · smarter grid solutions · University of Reading · Slough · shoothill · Thames Valley Berkshire · West Berkshire · Royal Borough of Windsor & Maidenhead · Wokingham Borough Council · Stantec · O2 · Siemens · wayra · Reading Borough Council

How are we improving energy efficiency?

- Cross-Berkshire EV study
- Deployed building energy management in two authorities
- Project has showed that the energy management platform could more than pay for itself in saving EV charging costs.
- Clear opportunity to significantly reduce carbon, optimising solar and the grid at low carbon times.





How we are improving air quality?

- WHO have advised global safe NOx levels should be 10µg/m^3 and not 40µg/m^3
- 30 low-cost air quality sensors installed in 3 authorities
- 10m and 100m Berkshire live air quality model
- Demonstrated that people can reduce exposure by just crossing the road
- Traffic control strategies implemented to improve air quality - slightly increased average NOx but substantially reduced dangerous peaks in exceedance

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A Focus on People

- Mapping risk factors for obesity in children and adults and linking to transport accessibility – link between adult obesity and commuting behaviour.

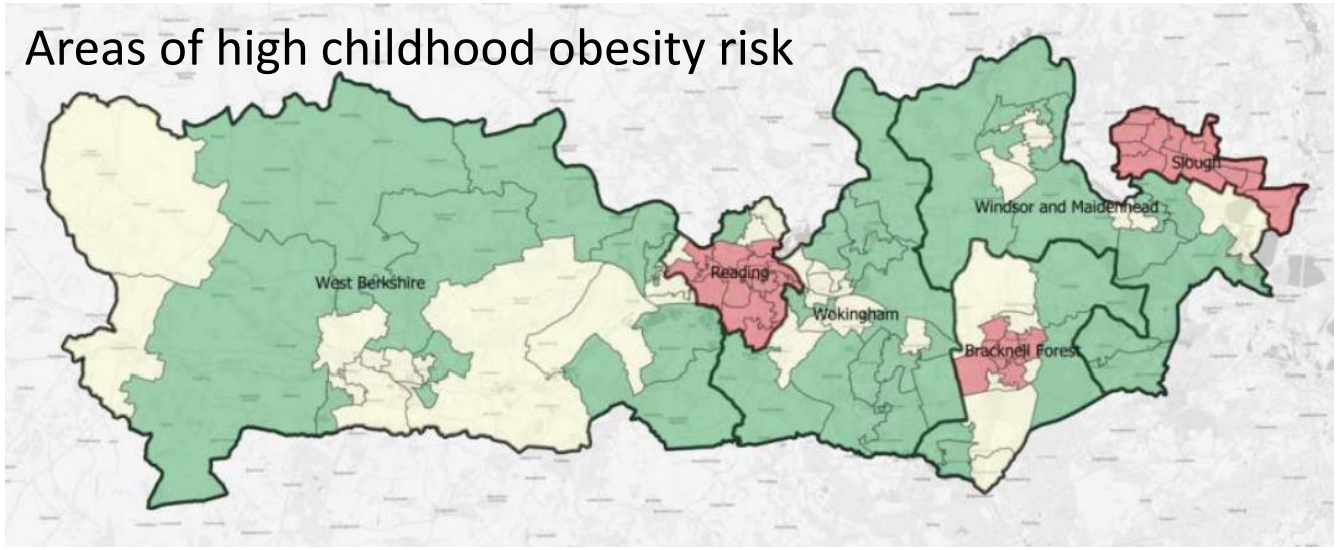
- Innovation Valley Rewards app to encourage sustainable transport across Berkshire.

- Integrating live modelled air quality into app to enable people to make better travel choices

To track our progress and help your local area thrive, go to innovationvalleyrewards.co.uk and get rewarded using our Innovation Valley app.

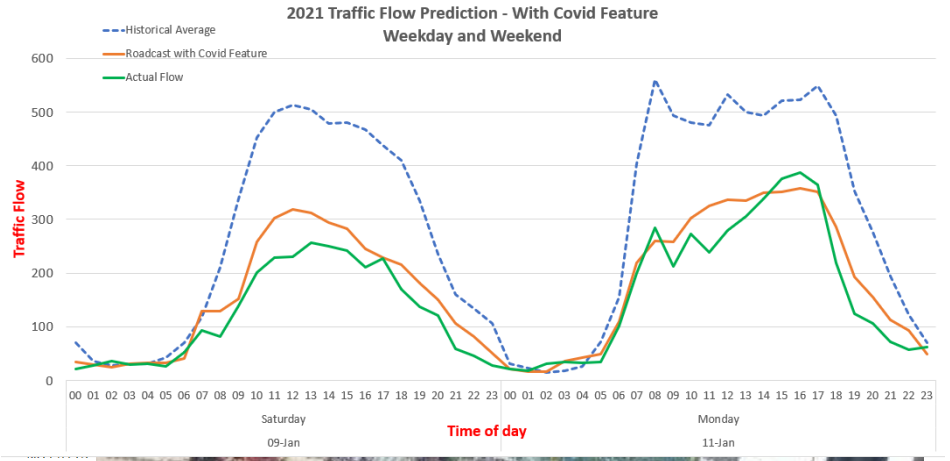
Innovation Valley

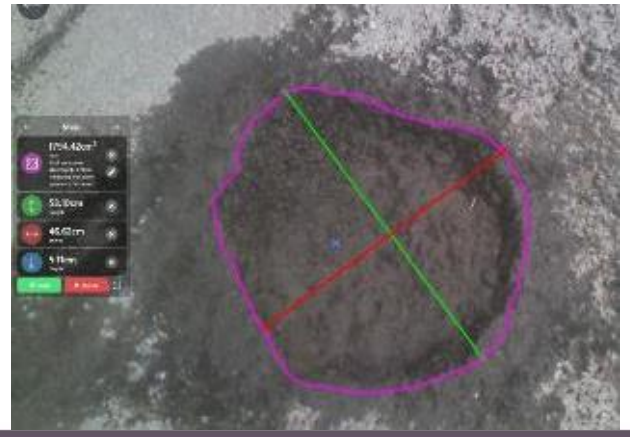
Areas of high childhood obesity risk



What have we learned?

- Big data can be very powerful but has to be the right data and at the right level of granularity.
- That we are not ready to reap the benefits of big data, both in the structure of our organisations or in the storage, integration and ownership of our data.
- The lack of standardisation of systems and data can significantly hinder the deployment of new technologies into legacy systems.
- That there is a lot of ground work to do to be able to take real steps to using technology to meet our carbon targets.





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Carol Valentine

Kent County Council

ADEPT LIVELABS

Kent County Council kent.gov.uk

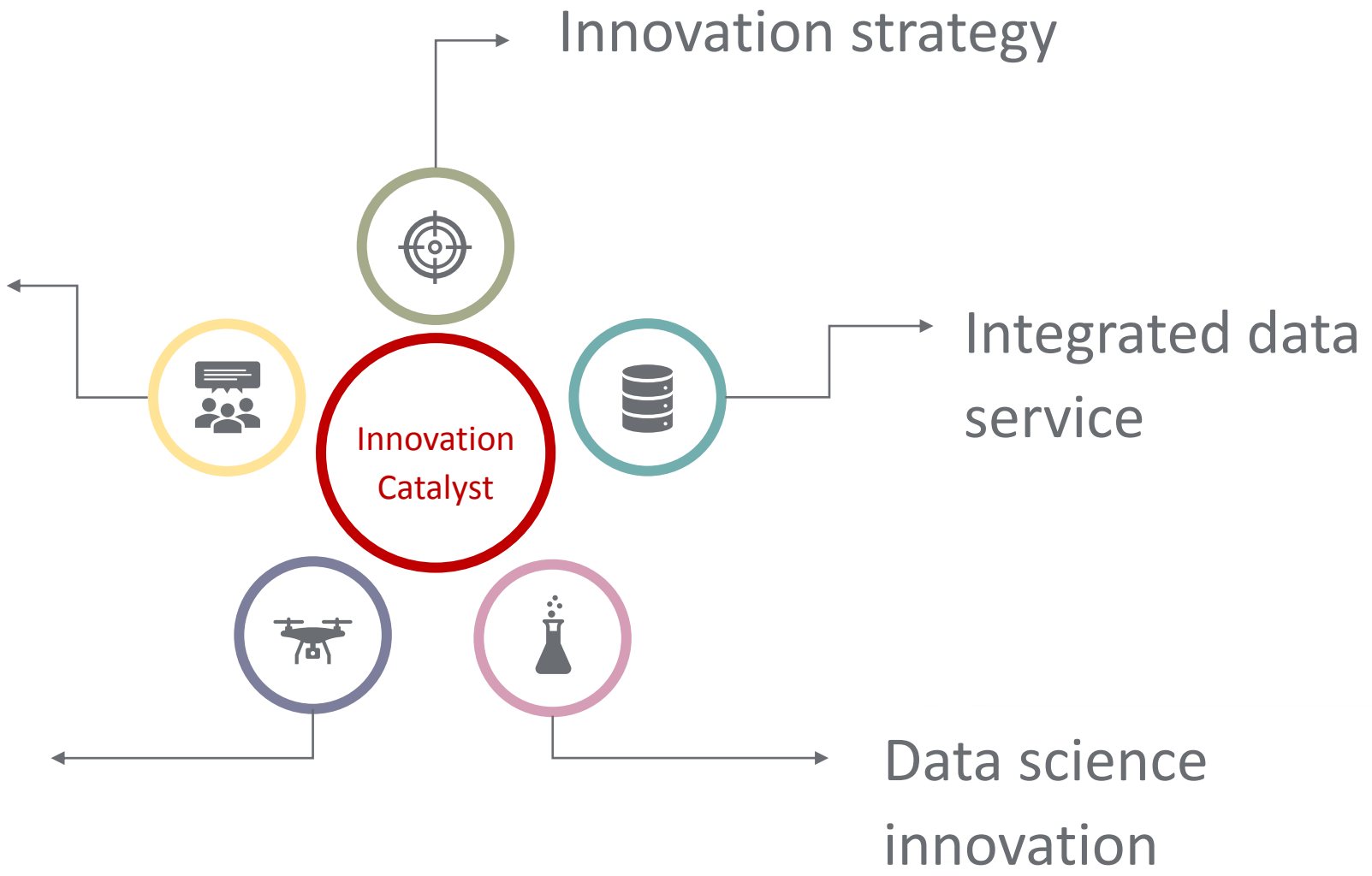
In partnership with amey amey consulting

The Live Lab programme

- **£1.975m** + over **£600k** extra funding
- **15+** partners
- Over **16** individual projects
- Projects ranged from **data-science**, through to **intelligent materials** and **remote highway defect detection**
- Live-labs continues as the Innovation Catalyst

ADEPT LIVELABS Kent County Council kent.gov.uk In partnership with amey ameyconsulting

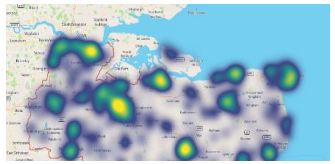
The Innovation Catalyst



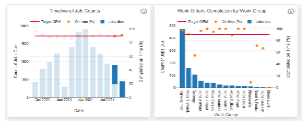
Data integration

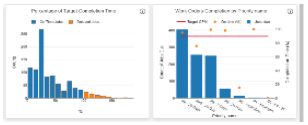
Optimisation of resources and productivity tracking

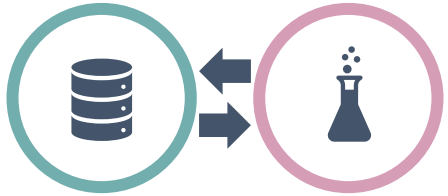
Incoming workload management and forecasting

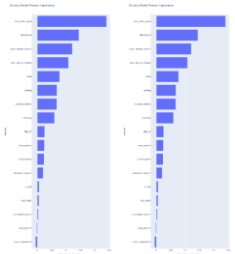


Monitoring process performance of TMC









Predictive network risk for schemes and road investment planning

Predictive road freezing model for gritting runs

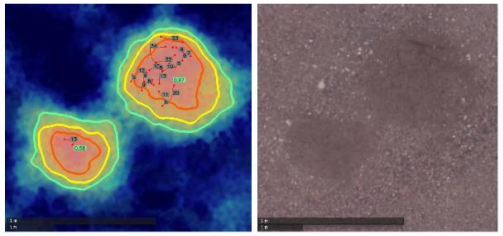
Vegetation estate risk profiling

Creating an ongoing pipeline of ground-breaking ‘UK first’ third party innovation

ameyVTOL

Collins Aerospace

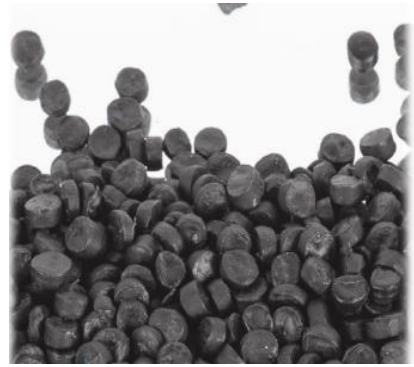
POTHOLES WITH CRACKS IN THEM



NEW ERA

TERCHIMICA

Third-party pipeline



Learning the lessons of Live Labs to create effective innovation

Early and ongoing engagement and buy-in from the business is essential

Strong partnerships and collaboration

Agile working/fail fast

Don’t forget the admin!

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Richard Webster

Suffolk County Council

University of Suffolk

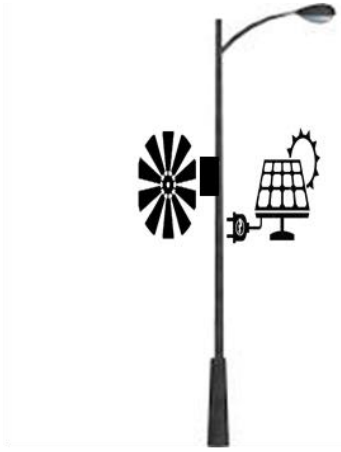
BT

bsi.

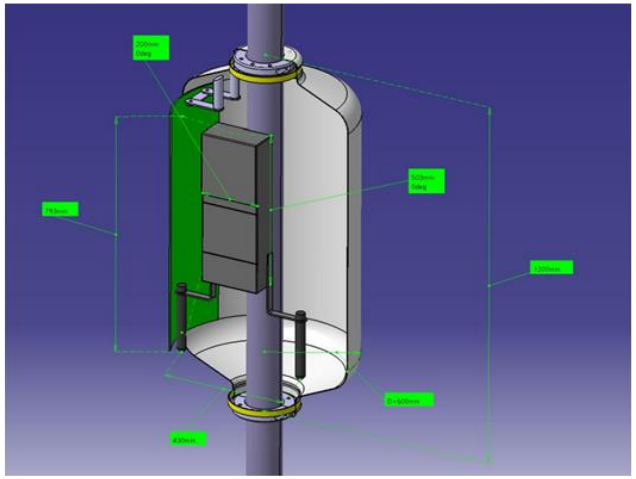
Decision Equipped.
proving

Suffolk County Council

Range of sensors deployed



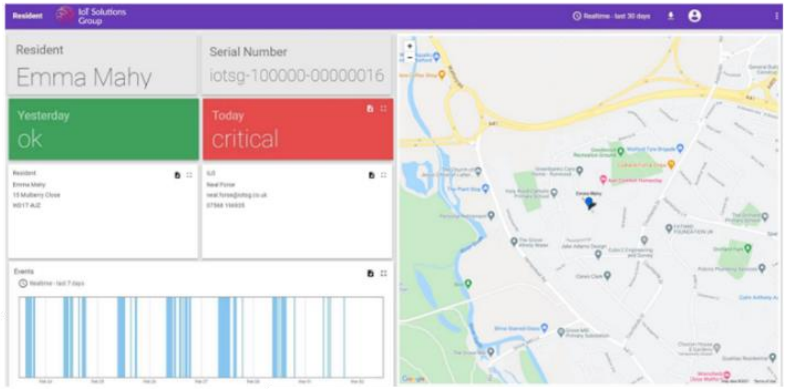
4G/5G and assets portfolio



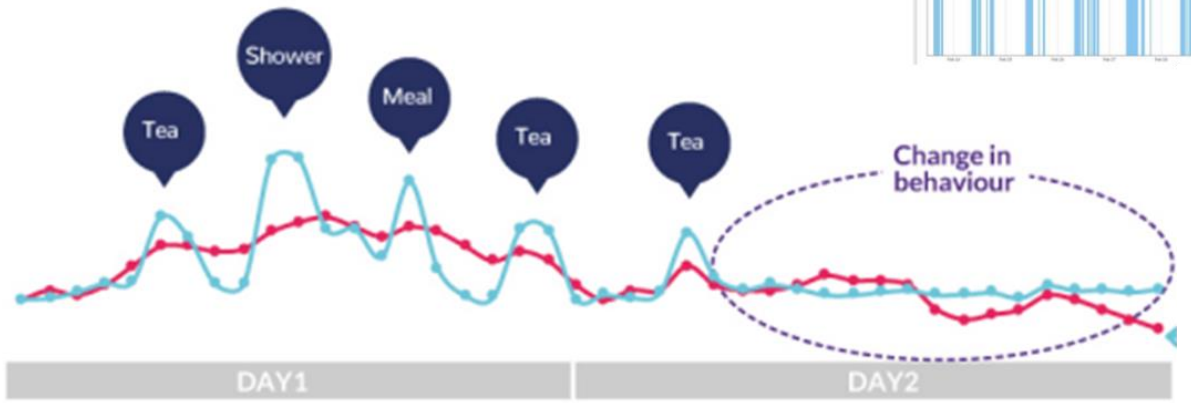
- RFT cowl developed to house antenna – aesthetically pleasing
- Assets portfolio developed

Using sensors in the home

- Movement
- Temperature/humidity
- Water leak
- Light path
- Our user experience

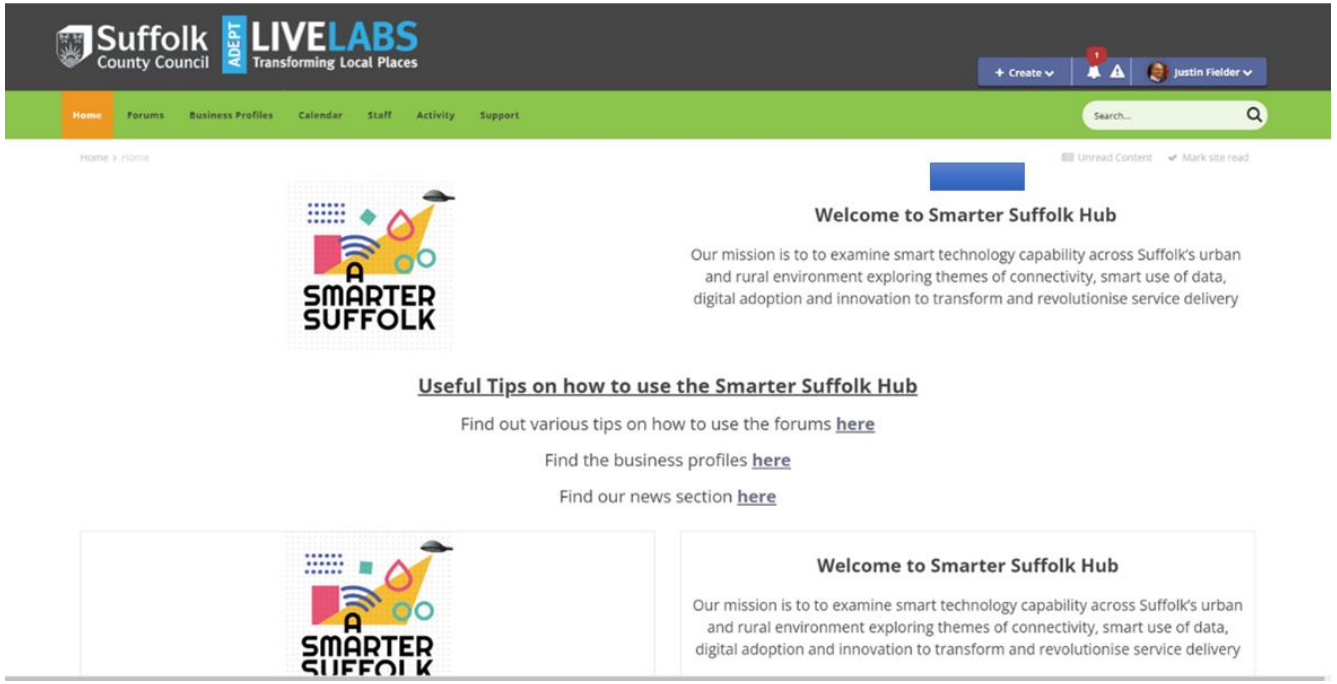


User dashboard



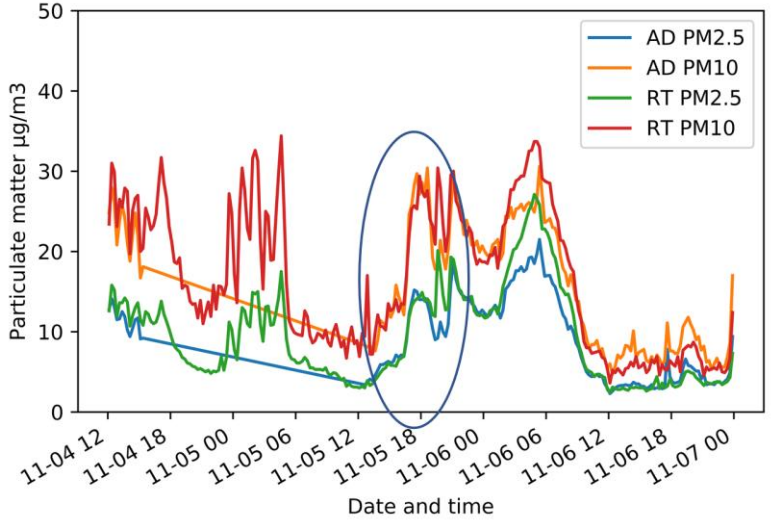
Knowledge share platform

- Repository for information
- Encouragement of debate and challenge
- Celebrate good practice
- Advice and guidance



Selection of positive outcomes

- Adaptive lighting up to 40% energy savings above the change to LED
- First large-scale particulate matter monitoring in Suffolk
- Accurate data being provided for winter maintenance and gully levels
- Public feedback of solar solution very high
- BT proposing trial with composite cowl
- Knowledge Share Platform to use and scale up nationally



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Jake Harrison

Staffordshire County Council

ADEPT LIVELABS Staffordshire County Council amey SIMULATE LIVE LAB

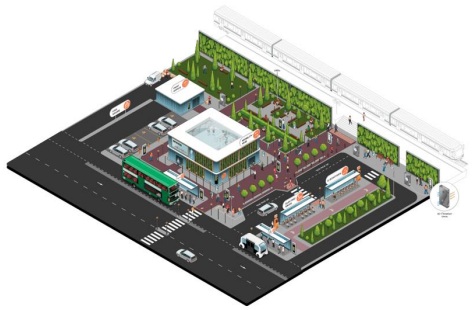
The Live Labs programme

- **£1.975m** + over **£500k matched funding**
- **13+** partners
- SIMULATE is a UK first; combining unique **SME innovations** with industry support, expertise and funding
- **£1m** of further work already generated for SMEs
- Over **12** individual projects in delivery
- Projects ranged from **e-scooter trials**, through to **green walls** and **intelligent traffic systems**

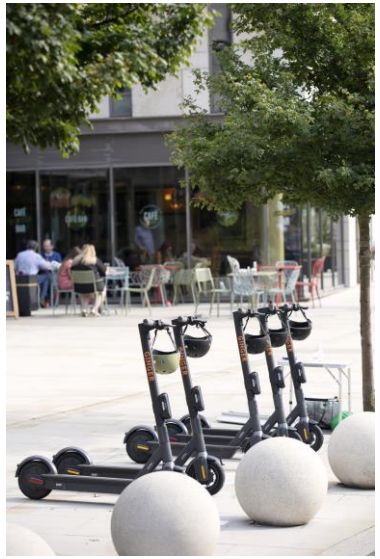
SIMULATE is an end-to-end Future Mobility and Cleantech living laboratory

SIMULATE LIVE LAB
INCUBATION | PILOTING | SCALE UP

Vision Definition	Challenge Creation	Challenge Sharing	Partner Selection	Incubation	Live Trialling
Sept '19 – Oct '19	Dec '19 – Jan '20	Feb '20 – Apr '20	May '20	Jun '20 – Dec'20	Aug '20 – Nov '21



GINGER ZWINGS
FOtech solutions
biotecture
urban | electric
forty two.
mev Manchester Electric Vehicles
EARTHSENSE
nowwireless
ISCLEANAIR BREATHE YOUR LIFE
Liftango



Innovation is structured around the delivery of a future place ecosystem

Staffordshire County Council · amey · CATAPULT Connected Places · Keele University

Live-Lab Management

SIMULATE LIVE LAB
INCUBATION | PILOTING | SCALE UP

Mobility Hub strategy and feasibility — amey

forty two. · OXFORDSHIRE COUNTY COUNCIL

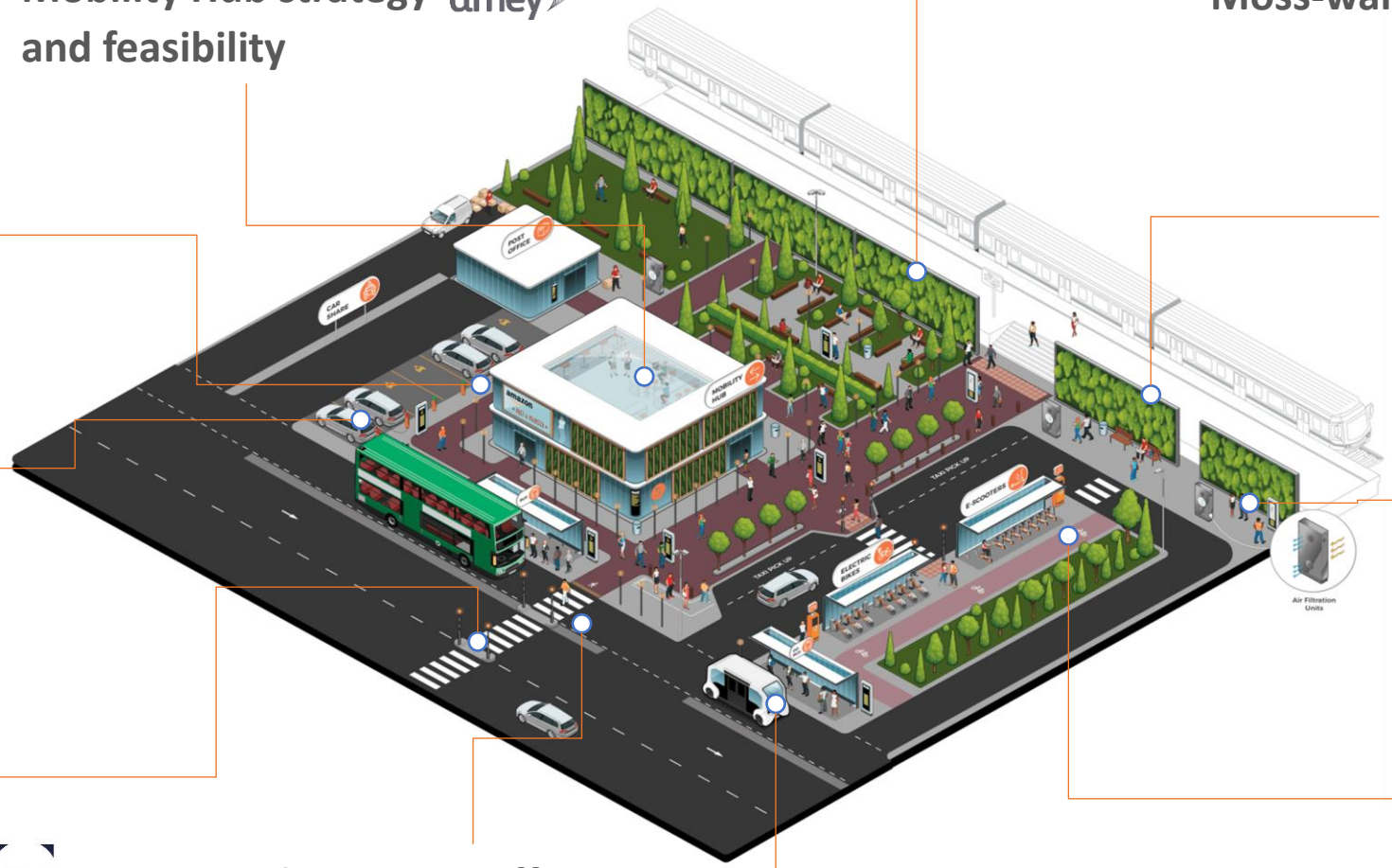
Moss-wall Carbon Sink

Pop-up Electric Charging Hubs

urban | electric

biotecture

Active Greenwall



Electric Car Share UK first

mev Manchester Electric Vehicles

Deploying water-based air filtration technology

ISCLEANAIR BREATHE YOUR LIFE

Pollution monitoring across 4 locations including 3 AQMAs

nowwireless · EARTHSENSE

E-Scooter deployment and monitoring

GINGER · ZWINGS

Fibre optic traffic management — FOtech solutions

Demand Responsive Transport — Liftango

Benefits across the innovation ecosystem

People and place

Reduced exposure to air pollution

Carbon saving of 2000 tonnes

Reduced pollution levels in city centre hotspots

Electric chargers improving the street scene

Providing travel to those in social isolation

Learning/academia

4 industry/academia projects progressed through Keele University

6+ research experts in sustainable transport

Step change momentum in Staffordshire's Mobility Hub ecosystem

Staffordshire embedded with network of partners advising future transport strategy

SME growth

£1m+ funding raised

13 further trials

60 commercial leads

5 new contracts so far

SIMULATE
LIVE LAB
INCUBATION | PILOTING | SCALE UP

Next Steps

1. Scale the successful innovations!
2. Share the learning as far as possible
3. Continue to develop Staffordshire's future transport ecosystem
4. Exploit the benefits to improve the lives of everyone!

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Matt Waning

Cumbria County Council

Cumbria County Council

ADEPT
Association of Directors of Environment, Economy, Planning & Transport

ADEPT LIVELABS

Hanson
HEIDELBERGCEMENT Group

WSP

pts

MACREBUR®
The Plastic Road Company

DSD
DSD CONSTRUCTION LTD

University of Nottingham
UK | CHINA | MALAYSIA

AGGREGATE INDUSTRIES

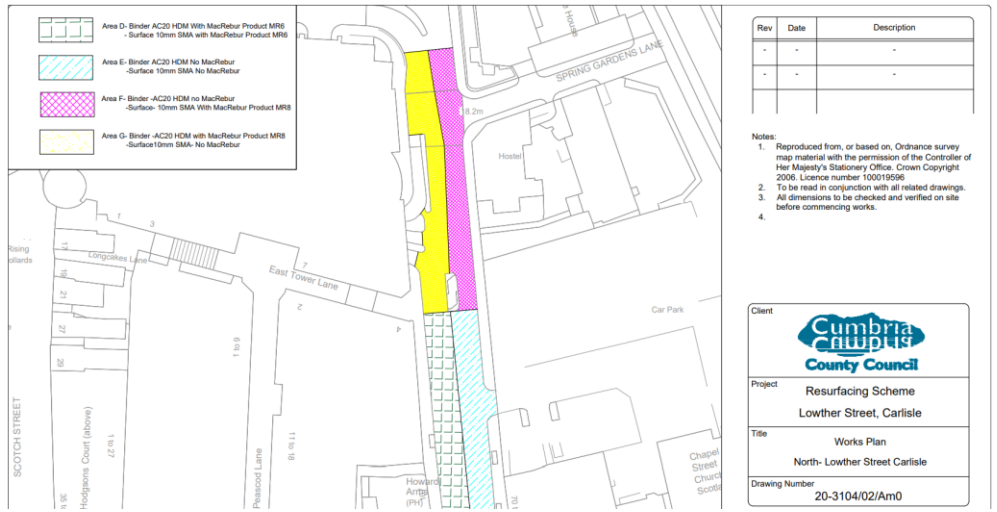
Shell Bitumen

Risks and opportunities

- Push boundaries and learn
- Reduced budgets
- Enabling change & innovation
- Financial freedom to learn

Advice and Lessons

- Procurement and legal challenges
- Be open-minded and take risks
- Communicate
- Don’t assume



Successes

- Knowledge
- Networking
- Live Labs 2?
- Independent report

Next steps

- Snapshot in time
- Continue testing and monitoring
- Climate Recovery and Renewal – looking ahead to a decade of action

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Jack Bowers

Central Bedfordshire Council

Central Bedfordshire

Aims

- Reduce carbon footprint
- Trial innovative technology
- Harvest renewable energy
- Mitigate risk of rising energy prices

Our three Live Labs trials

Kinetic Energy

Pavegen

Leighton Buzzard Station

Kinetic Energy

Eurovia – Power Road

Thorn Turn Highways Depot

Solar Energy

Colas

Thorn Turn Highways Depot

42 articles

across national, regional and sector-specific press

6,000,000 Total Reach

For all comms activity for all projects

90,000 engagements

across all social media platforms

MP Site Visit

MP Selous site visit to Leighton Buzzard

What we have learnt

- Learning from failure
- Risks from utility companies
- Problems with battery storage
- Changing location
- Procurement process

The future for our technologies

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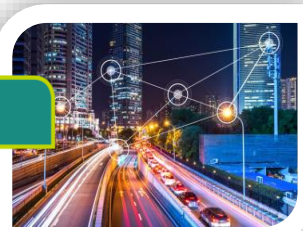
Rob Smith

Buckinghamshire Council

SMART materials



SMART energy

SMART communication

SMART mobility

- Solar PV columns are located in Gawcott, SW of Buckingham and the wind turbine and kinetic road trial is located in Aylesbury.
- Smart sensors enabled by a mesh communications network – sensors include gulley sensors, environmental sensors and adult social care sensors
- Aylesbury Vale Parkway to Waddesdon Manor Greenway
- Composite Lighting Columns

SMART materials

- 170 composite lighting columns

SMART energy

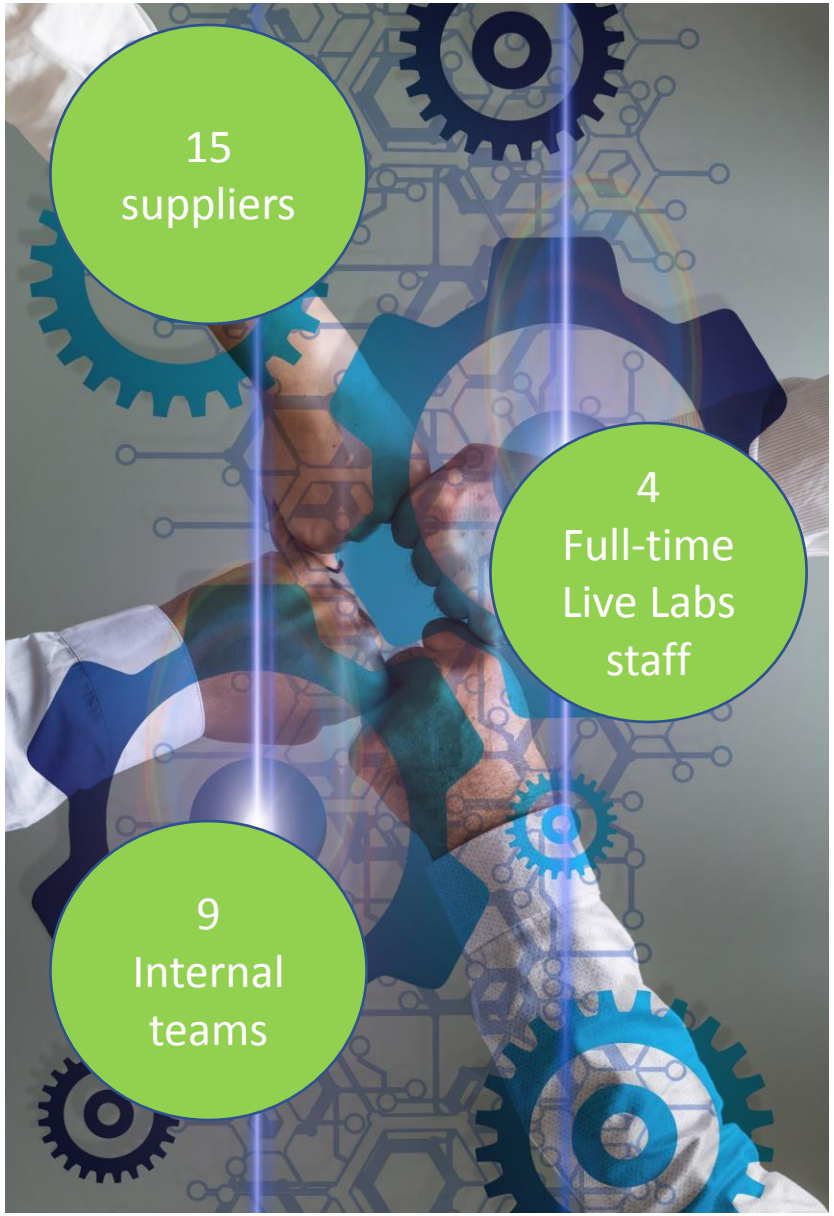
- 4 double wind turbines
- 4 solar columns
- 20 kinetic road harvesters

SMART communication

- 1863 environmental sensors
- 30 home sensors (asc)
- 11 gully Sensors
- CMS

SMART mobility

- 20 docked E-bikes
- Last Mile Mobility Feasibility Study



Challenges and Opportunities

Challenges

- Unitary
- COVID-19
- Brexit
- Fatality on site
- Managing risk

Opportunities

- Collaborative work
- Staff Upskilling

Lessons Learned

- Be flexible
- Be proactive
- Adopt a hybrid project management approach
- Engagement with service areas
- Manage risks