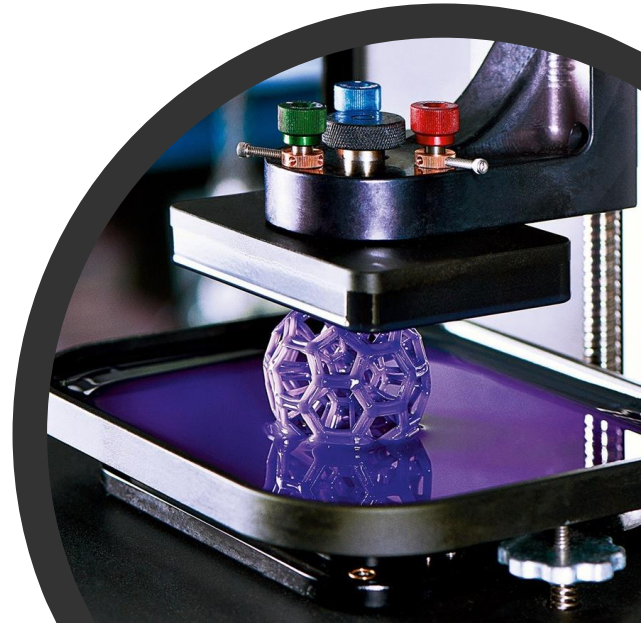




Oxfordshire Innovation Framework

Policy goal and instrument to influence local EV charging and local energy infrastructure development



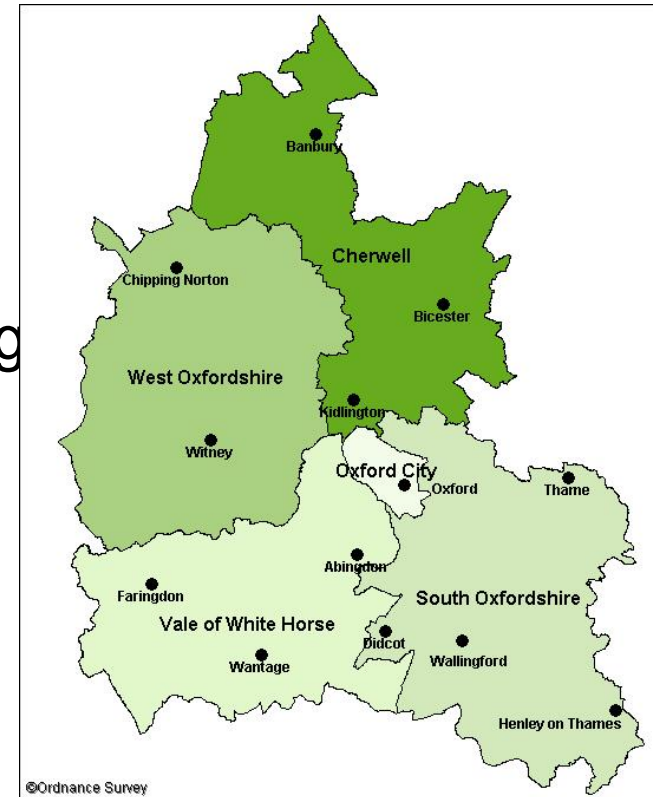
Who Are We?

Oxfordshire County Council:

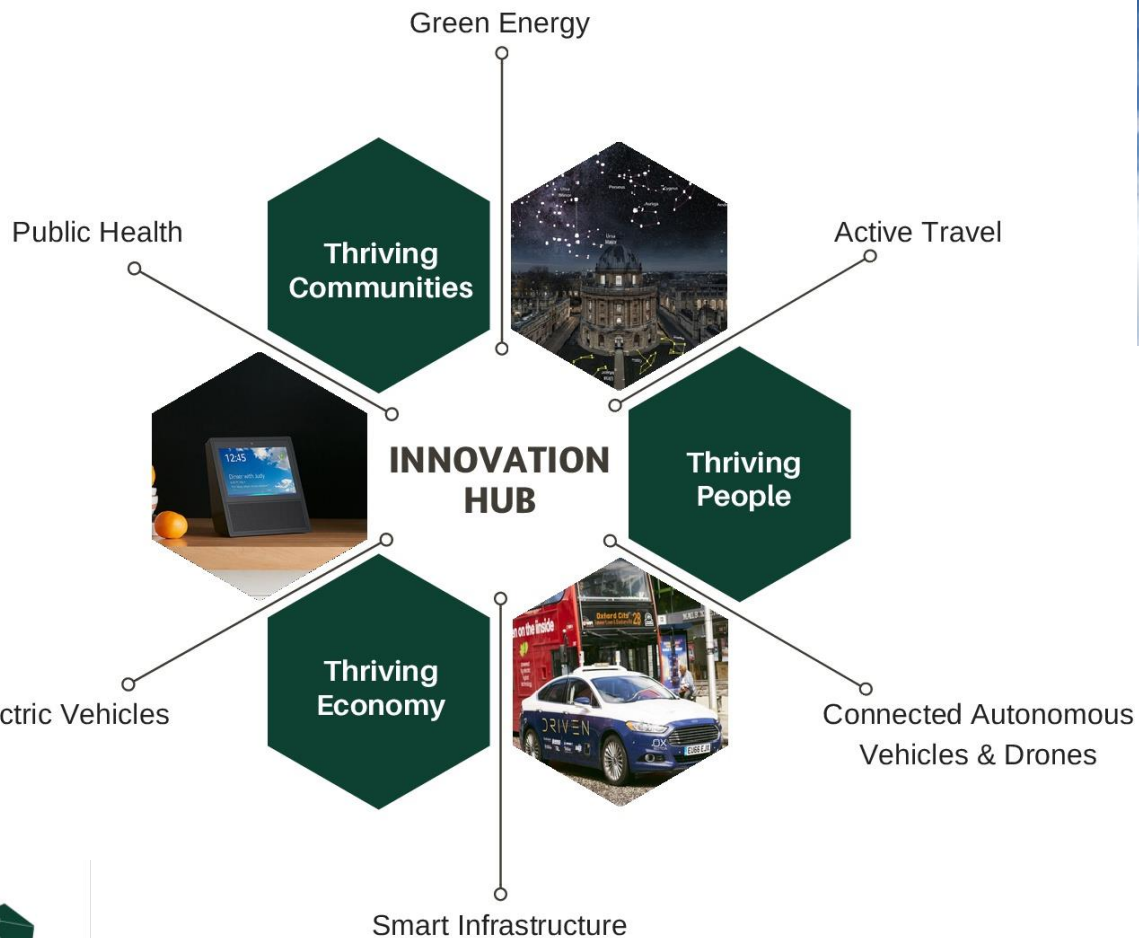
- Highways
- Land Use & Waste
- Public Health & Social Care
- Fire Service & Emergency Planning
- Consumer Protection
- Education, Libraries & Museums

Responsible for:

- £700m annual budget
- 667K people (+10% y-o-y)
- 3K miles of road (£4Bn worth)



OCC Innovation HUB





IF Components



4 key elements:

- Overarching document – sets out the need and the process
- Roadmap of innovations – links to evidence on innovation
- Innovation Plan template – set framework for innovation to be considered for development & infrastructure
- Monitoring tool – a tool to measure the impact of development and infrastructure



Over-arching IF Aims



Set out the case for considering innovation



Provide high level guidance for planners & developers, linking to more detailed information

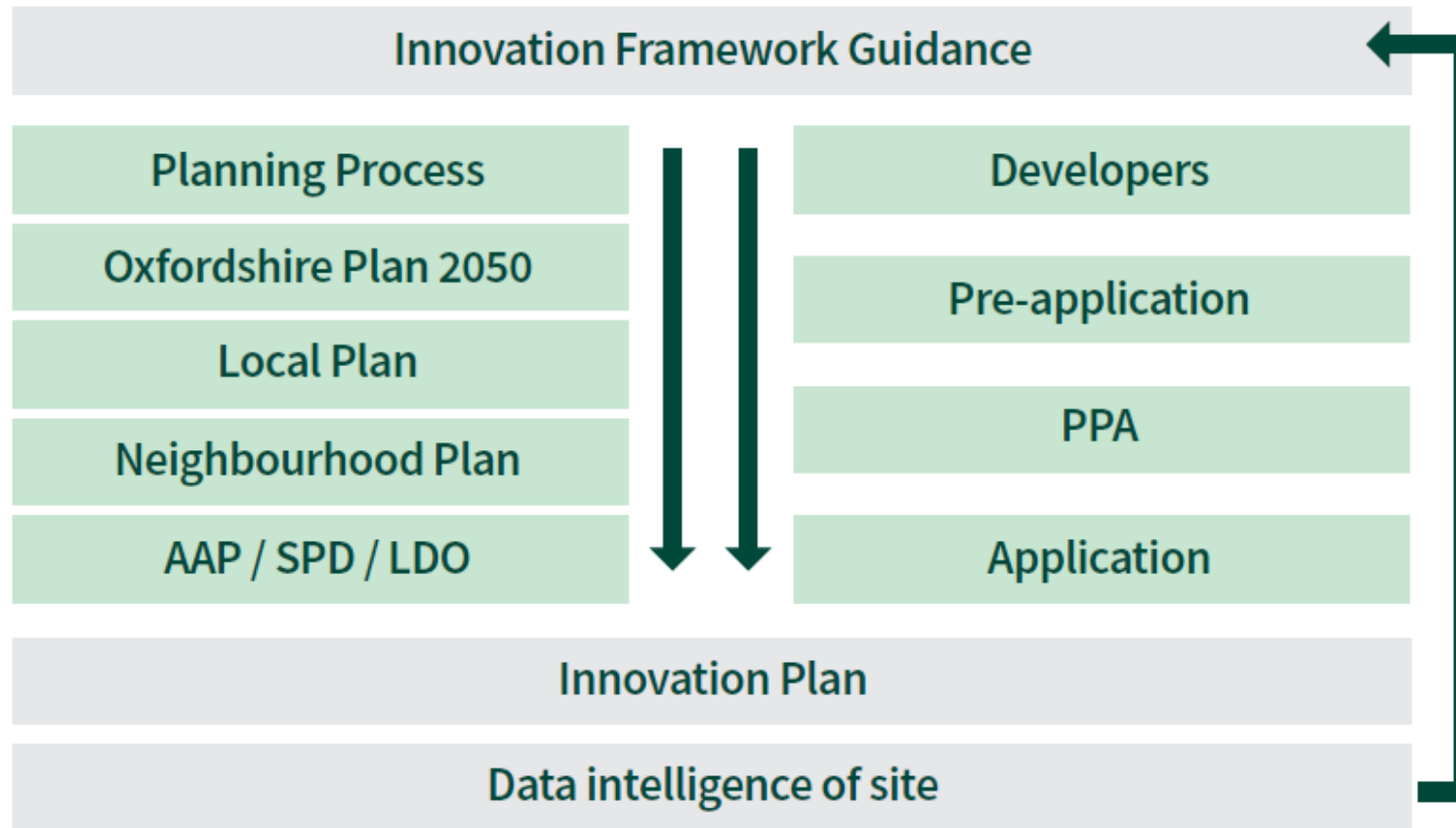


Strategic links to provide a framework of principles and aims which innovation should support / challenges it could help overcome





IF & the Planning Process





What do we want to achieve?



Local, renewable energy infrastructure provision



Grid balancing technology use



Appropriate EV-charging infrastructure roll-out
Balanced against the need for modal shift



Different Needs and Constraints

- Rural vs urban vs peri-urban
- Historic layouts / space constraint
- Ecological & environmental drivers
- Existing infrastructure
- Grid constraints against increasing electrification
- Demographic make-up





Providing the tools





MOBILITY & TRANSPORT

2021

2025

2030

Alternative fuel Vehicles – Electric & Hydrogen



Hydrogen being tested in different settings

2020 > 10.7% of new vehicles registered were electric or plug-in hybrid electric (3.2% in 2019)

By 2023 > retrofit of trains available to switch to hydrogen

2022 > Oxford Zero Emissions Zone full roll out

By 2025 > 1st UK hydrogen transport hub operational

By 2025 > 90% of Oxfordshire new vehicles electric

By 2025 > 15% of UK buses electrified

By 2030 > 2000km hydrogen backbone in place (National Grid)

By 2030 > 100% of new car sales electric; approx. 80% of total private cars

Early 2030s > 50 hydrogen hubs for transport anticipated

Connected & Autonomous Vehicles (CAV)



Low-level automation (L1 and L2) built into some new vehicles

2019 > over 3M vehicles in UK with internet connectivity

New vehicles mostly equipped with low level automation and connectivity

By 2023 > connectivity units available to retrofit non-connected vehicles

By 2025 > commercial HGV highway platooning

By 2025 > up to 2% of vehicles with L4 or L5 autonomy; 1%-5% with L3 autonomy

By 2026 > Short-range delivery robot/pods integrated to daily life

By 2028 > automated logistics hubs rolled out

By 2030 > between 1% and 23% of vehicles with L4 or L5 autonomy

By 2030 > all vehicles meet minimum connectivity standards

By 2035 > between 5% and 65% of vehicles with L4 or L5 autonomy

Unmanned Aerial Vehicles (UAV)



Civil Aviation Authority published roadmap for beyond-line-of-sight approvals, needed for autonomy

2021 > 1st beyond-line-of-sight approval given

Late 2021 > 1st UK based air-hub in operation, Coventry

Worldwide drone market expected to double between 2020 and 2025

Inspection and deliveries likely most significant drone applications

By 2030 > delivery drones are business as usual

By 2030 > UK drone market share £42Bn

Longer term potential for passenger transfer beyond trials

Micromobility



50 e-scooter trials around the UK operating, inc. Oxford

2023 > potential for full legalisation of e-scooters (dependent on trial results)

2025 > global micromobility market forecast to grow by 15% from 2020

Global market size projected to almost quadruple 2020-2030

Evidence base

Park & Charge

Residential EV charging hubs in Council car parks

FLLIP

Testing simulated charging cycles for eVTOL at super-rapid EV chargers

MaaS:CAV

Merging CAVs in a seamless mobility offering

DoorSTEP

EV charging at kerbside using home energy supply

Traffic Prediction

Traffic flow prediction

LEO

Local Energy Oxfordshire

OmniCAV

AI Simulation Package for CAVs readiness

HARMONY

Traffic Modelling that for new mobility

NM^2

Network Management for New Mobility

5G Heart

5G use cases for transportation

Congestion Tool

Congestion planning and responding

NEVFMA

Traffic Management for AQ

ResiCAV

Real Time CAM Cybersecurity

DT-4-CT

Digital Twin for Cyber Testing

Data Driven Road Safety Tool

Accident Mapping and Prediction

Ox Gul-e

EV cable channels for residents without off-street parking



**OXFORDSHIRE
COUNTY COUNCIL**

Innovation Plan Template

- Guidance for how to consider site-specific innovation
- Similar to a Travel Plan template
- To:
 - Identify site-specific challenges and goals
 - Find innovations to help address them
 - Identify futureproofing needs
 - Identify targets
 - Involve stakeholders





Thank you