GWF

GEOSPATIAL WORLD FORUM

A Premium Geospatial Industry Conference

CLICK TO KNOW MORE

infrastructure coordination

Improving efficiencies and collaboration through sharing infrastructure data – from NUAR & IMA

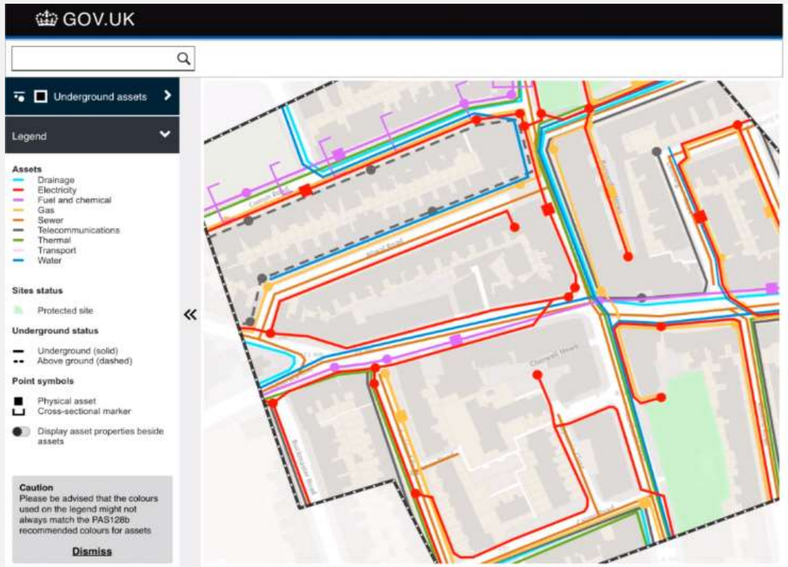
Infrastructure Data Sharing

The Greater London Authority (GLA) takes a data-enabled approach to infrastructure coordination, facilitating collaboration on streetworks, improving developer connections, and supporting planning for growth in London.

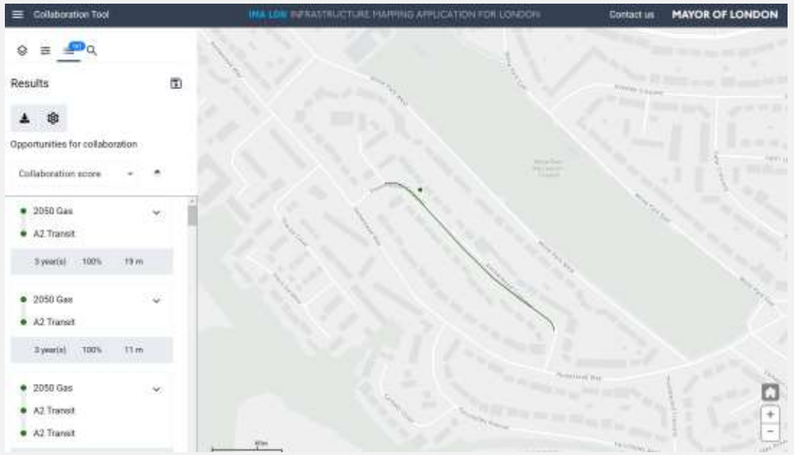
Some of the challenges facing the infrastructure sector include:

- **Utility strikes:** the estimated economic cost of accidental strikes on underground pipes and cables is **£2.4 billion a year.** Approximately **60,000 accidental strikes** per year.
- **Disruption:** As London continues to grow, streetworks-related congestion costs the economy **£100s of millions**
- **Fragmented sector:** Numerous utilities, transport and telecommunications providers navigating a **complex web of 33 London boroughs**

NUAR



IMA



Data shown for illustrative purposes only

National Underground Asset Register (NUAR)

NUAR is an interactive, digital map of underground pipes and cables that will revolutionise the way we install, maintain, operate and repair our buried infrastructure. NUAR is Cabinet Office project, funded by the Geospatial Commission.

What is NUAR?

- Data from 650+ asset owners will be standardised in it.
- The data will be held securely, and made immediately available to those excavating.
- It will streamline the way data is shared between owners of underground assets and those who dig up the ground (‘statutory undertakers’).
- Organisations can then use this data to plan and dig.
- Any missing / erroneous data can be fed back.

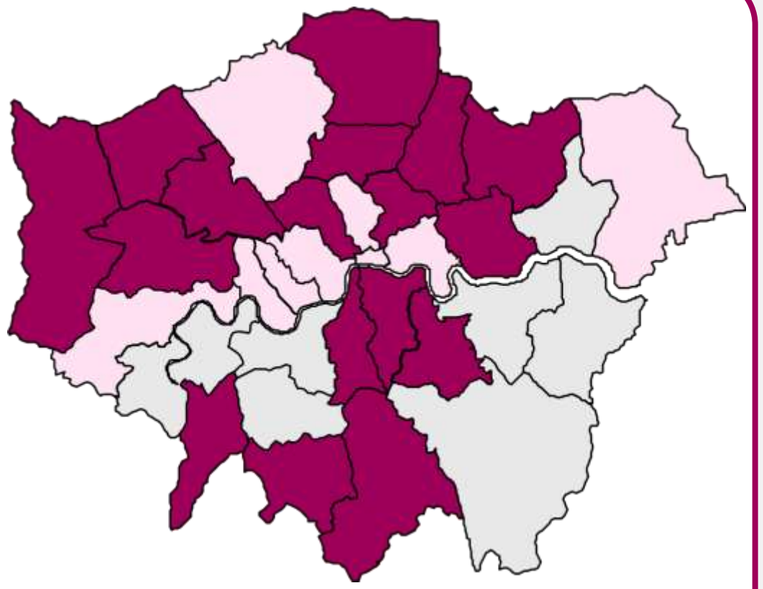
Use cases

- utility strike avoidance
- On-site efficiency
- Site planning
- Data exchange

NUAR engagement in London

Pilot phase
Summer ‘19 - March ‘20

Preparation phase
April ‘20 - March ‘21



Build phase
Sept. ‘21 onwards

Signed legal agreement & provided data	UKPN, SSEN, Thames Water, Affinity Water, SGN, Energy Assets Networks, Energy Assets Pipelines, GTC, TfL, Environment Agency, Tideway
Signed legal agreement & gathering data	Community Fibre
Engaged	Cadent, HS2, Canal & River Trust

NUAR enablers

Data Exploration Agreement (DEA)

- Enables initial access to individual Asset Owner data to determine transformation & ingestion process

Data Ingestion Specification (DIS)

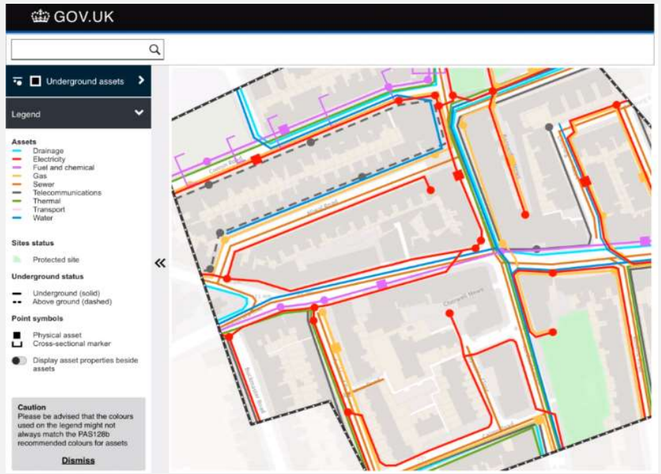
- Defines alignment of source data to NUAR data model for ongoing data ingestion

Data Distribution Agreement

- Enables Asset Owner data to be published and shared via the NUAR platform

NUAR Benefits

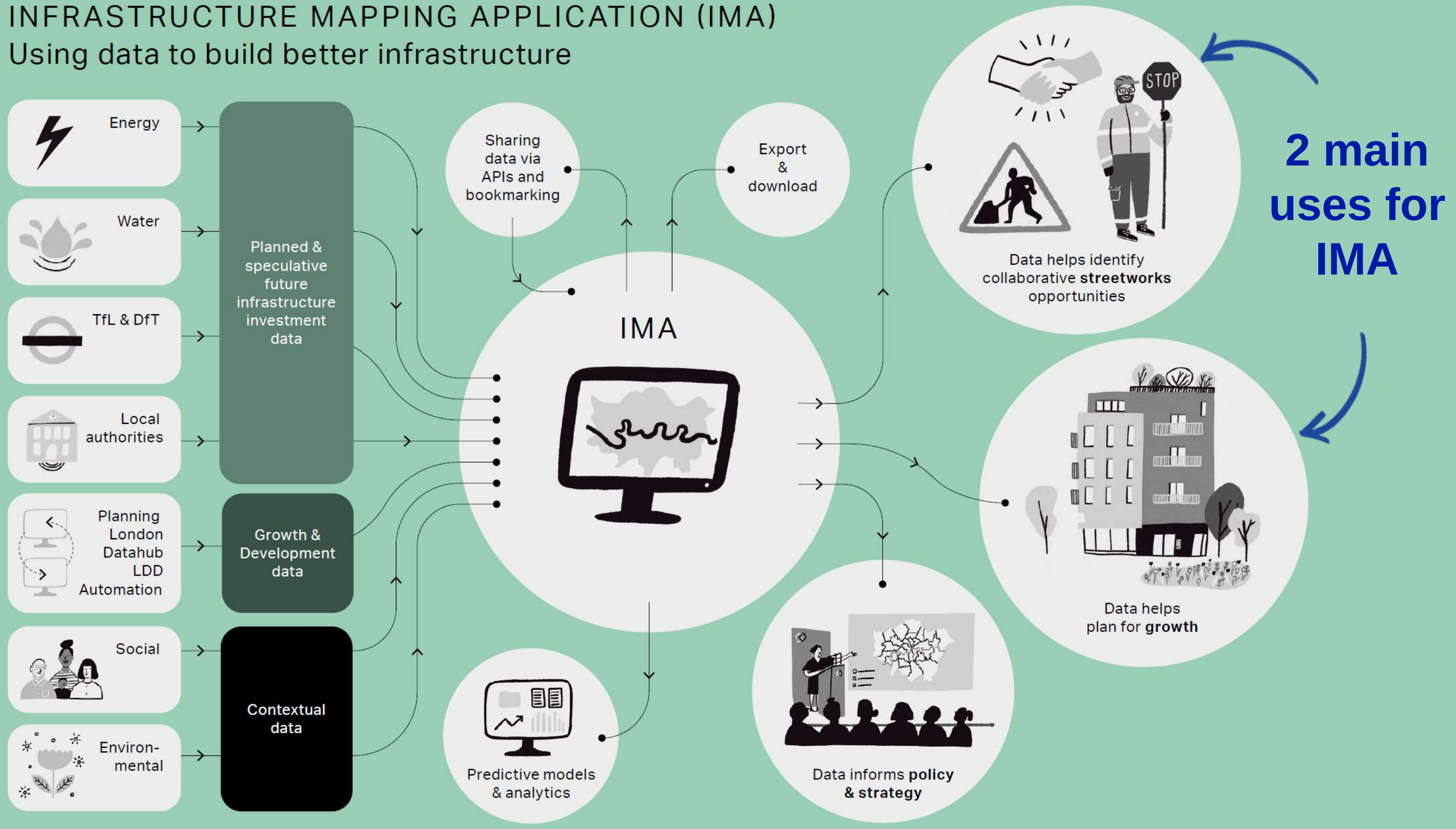
- The economic benefits of NUAR are estimated to be £350m per year. This consists of benefits in efficiencies, reduced asset strikes, and reduced delays to the public and businesses
- Reduced disruption to road users and local residents
- Reduced pollution, noise & CO2
- Avoid costs & delays caused by having to accommodate unforeseen/unknown assets discovered on site
- Catalyst to unlock future benefits e.g. better street works coordination



Data shown for illustrative purposes only

INFRASTRUCTURE MAPPING APPLICATION (IMA)

Using data to build better infrastructure



Infrastructure Coordination **Data**

IMA London partners

Infrastructure Providers

Cadent – Your Gas Network
SGN – Your gas. Our network.
Affinity Water
Thames Water
Essex & Suffolk Water – living water
Scottish & Southern Electricity Networks
UK Power Networks
nationalgrid
HS2
Environment Agency
Transport for London
NetworkRail

Local Authorities

Signed NDA (19)

Cleared to sign NDA (14)

IMA outcomes

Data outcomes

Snowball effect on data sharing – approx. **5k features processed in 2019; 25k in 2020**

Automating data connections – **4 APIs** established

Data volume continues to grow year on year, currently around **100 different datasets**

Collaboration outcomes

10 Collaborative Streetworks delivered

426 days of disruption **saved**

£859,000+ saved to works **promoters**

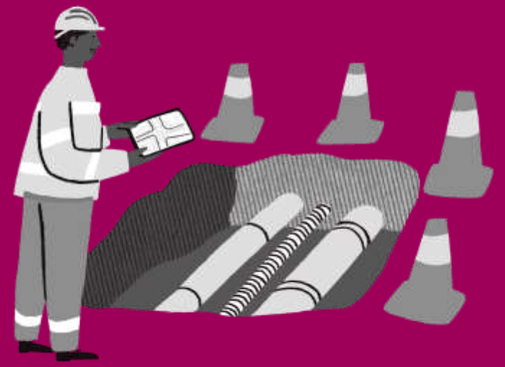
Up to **£4.1m** wider **social value** (1 project)

Infrastructure Data Sharing – challenges

Fragmentation of ownership within London's infrastructure sector makes data sharing challenging, with many different private and public stakeholders. We must source data from across London's 33 local authorities, in addition to utilities, digital connectivity companies and transport providers. Even with willingness from the multitude of actors involved, there is friction around:

- Varying capabilities and approaches to data sharing
- Different data taxonomies & formats
- Security concerns
- Regulation and legal constraints
- Reluctance to share speculative or incomplete data

Infrastructure Data Sharing: how to maximise the benefits of data sharing



infrastructure coordination

- Investment from partners and GLA to allocate and ringfence resourcing, need for people
- Security measures in place to address privacy concerns
- Legal agreements to govern the data sharing
- Data modelling, schema and standards – at the heart of this work.
- Need to have specific use cases to meet specific user needs and funder requirements
- Buy-in from complex partners – utilities, infrastructure providers, local authorities

infrastructure coordination

Thank you

https://maps.london.gov.uk/ima/

https://www.gov.uk/guidance/national-underground-asset-register-nuar