Case Study
BRINGING LOCATION TO LIFE

Using the UPRN to scrutinise government activity and understand delivery at a local level

NAO | LOCATION DATA IN ANALYTICS AND AUDITS

The National Audit Office (NAO) is the UK's independent Parliamentary body responsible for scrutinising central government departments, government agencies and non-departmental public bodies. In the financial year from 2017 to 2018, the NAO audited over 370 departmental accounts.

The NAO also carries out value for money (VFM) audits into the administration of public policy: making sure that Parliament holds government to account. It focuses on 'the effectiveness, efficiency and economy of government spending', as opposed to government policy itself.

In all, the NAO issues around 60 publications annually, split between Value for Money reports and Investigations into specific aspects of government operation. These reports, and the associated report recommendations, help government to improve public services. In 2018 alone, the joint activity of the NAO's study teams led to audited savings of £539m. The need for consistent insights is essential in this work, and the NAO's Mapping Disciple is one of eight teams supporting those study teams.

> "
> Public services get delivered locally. Geospatial data supports our work by enabling us to understand how well those services are delivered across the country.
>
> **Dr Marc Adams**
> Senior Analyst and MESH Mapping Lead, National Audit Office
> "

It is important to remember that all public services are delivered somewhere. The National Audit Office audits the economy, the efficiency and the effectiveness of public service delivery. To do this, it sees addressing data as an essential part of its toolkit: the integrity of that addressing data is improved by use of the UPRN.

Where appropriate, the NAO uses the Unique Property Reference Number as an authoritative point of reference and validation. Depending on the context of the audit, the NAO uses the UPRN to help establish:

- What is being delivered where
- To what level of service/quality/cost
- Servicing which populations
- Where there are changes in service delivery: what are the potential impacts

The NAO's audits are wide-ranging. From auditing the finances of the Ministry of Defence, the British Tourist Authority, and the Department for Work and Pensions, to creating reports on the financial efficiency of the Supreme Court.

Examples of its work include analysing and reporting on the distribution of the Ministry of Defence's civilian workforce and, in relation to those operations, the impact for transfers of work and staff to or from regional centres. In this kind of analysis, the ability to use verified location data is essential. It plays a formative role in correlating and contrasting datasets.

However, addressing exists in various forms across government due to the prevalence of legacy systems and datasets. This can make address matching hard in that analysis. Challenges have included:

- Partial or incorrect postcodes in a dataset
- No postcode provided for an address
- Un-addressable locations
- Postcodes entered as part of an address string
- Genuine postcodes, allocated in error

Some of these challenges can be overcome by ensuring the UPRN is used as a single point of reference across the appropriate datasets. Looking to the future, the NAO aims to expand its use of the UPRN, and use it in a wide range of solutions for address matching:

- Automated checking using OS AddressBase
- Batch cleaning, processing and appending of plottable co-ordinates.
- Checking that address strings conform to postcodes so that analysts might understand where there may not be a match.

In addition, the NAO is aiming to undertake deeper location analytics, including the provision of addressing multiple services to locations; the application of spatial interaction models; and the use of spatial data in departmental operational planning and delivery where appropriate.

The National Audit Office uses location data to underpin its analytics in work that audits the economy, the efficiency, and the effectivenes of public service delivery across the UK.

We are GeoPlace
Bringing location to life

We are GeoPlace, the team managing a central hub of around 44 million addresses and over 1.39 million streets in the UK.

We take feeds of address and street data from local authorities in England and Wales, central government, Ordnance Survey and Royal Mail. We also take data from Scotland, Northern Ireland, Isle of Man and the Channel Islands via the Improvement Service, Land & Property Services, Isle of Man Government and Digimap respectively.

This data goes through a rigorous validation process, which includes 364 Address data checks and 550 Street data checks, before being accepted into the National Street Gazetteer and National Address Gazetteer.

Overall, we update around 2 million records every month. The information in our database is also enriched with attributes from other datasets to enhance detail and quality - it's an ongoing process of co-operation and collaboration.

The end result is a unified, authoritative source for all addressing and street data in the UK.

Our Gazetteers are prized and respected national assets. They make it easier for central and local government, commerce, organisations and individuals to access Unique Property Reference Numbers (UPRNs) and Unique Street Reference Numbers (USRNs) with confidence.