

#### A guide to INSPIRE compliance in Local Government

Newly revised version May 2014

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***Purpose***

The purpose of the Infrastructure for Spatial Information in the European Community (INSPIRE) Regulations (2009) is to enable the sharing of environmental data among public sector organisations and to provide better public access to the same data.

This short guide is to assist local authorities to comply with INSPIRE regulations by outlining what the regulations mean, providing information about the technical specifications and listing the steps authorities need to take to become compliant.

***What is INSPIRE?***

INSPIRE is a set of regulations that define how to publish and share spatial data among public sector organisations through a common Europe wide spatial data infrastructure. Spatial data is information that corresponds to a location, allowing it to be viewed on a map. INSPIRE enables data to be comparable across regions, the UK and Europe to give decision makers consistent evidence about the environment. The regulation came into force in 2009 and its implementation is led by the UK INSPIRE team in Defra (for further information see <http://data.gov.uk/location/inspire>).

INSPIRE defines common technical standards for publishing spatial datasets such as addresses, transport networks, land use, protected areas and risk zones. In total 34 data themes are defined under INSPIRE grouped into three Annexes each with different implementation schedules. A full list of the data themes is shown in Appendix A.

***What does INSPIRE mean for local authorities?***

Local authorities are required to publish spatial data under INSPIRE. An indicative list of local government data topics which may fall under the INSPIRE themes is provided in Annex B.

To comply with INSPIRE local authorities must:

* Make data discoverable, by creating INSPIRE standard compliant metadata and publishing this through a discovery service (in the UK this service is data.gov.uk).
* Publish data through INSPIRE standards compliant network services to be able to view and download the data.
* Transform data to comply with a series of INSPIRE data specifications
* Put in place policies etc to enable sharing of data between public bodies including EU bodies.

A brief overview of the technical requirements in local government is given below, for detailed technical guidance please refer to <http://data.gov.uk/location/guidance_and_tools>.

***What do authorities need to do to comply?***

The implementation of INSPIRE is divided into two distinct phases:

Phase 1 – publishing your data as it is now.

Phase 2 – publishing INSPIRE compliant data.

Phase 1 – view and download services should now be available for existing INSPIRE datasets. These services and the datasets should be registered with the discovery services on data.gov.uk using compliant discovery metadata.

Milestones for complying with Phase 2 of the INSPIRE regulation are shown in the table below (for more details see <http://data.gov.uk/sites/default/files/UKL%20Getting%20Started%20Guide%203%20v2-1%20%282%29.pdf>)

|  |
| --- |
| **Phase 2** |
| **Date** | **Milestone** |
| December 2012  | Publish newly collected and extensively restructured INSPIRE **Annex I** compliant data available  |
| October 2015  | Publish newly collected and extensively restructured INSPIRE **Annex II and III** compliant data available.  |
| June 2017  | Publish INSPIRE **Annex I** compliant Data  |
| October 2020  | Publish INSPIRE **Annex III** compliant data  |

***Step by step guide to implement INSPIRE***

This guide describes a set of steps to guide and help authorities to publish data that meets INSPIRE standards:

Step 1: Evaluate and select data sets

Step 2: Create INSPIRE compliant metadata

Step 3: Check compliance with licencing terms

Step 4: Register data and services on data.gov.uk

Step 5: Publish data

Step 6: Transform data to INSPIRE standards

The flow diagram below highlights the steps on ways authorities can implement the INSPIRE agenda.

***INSPIRE FLOWCHART***

Evaluate and Select Data Sets

LGA Topic List

ANNEX B

INSPIRE DATA THEMES AI, AII, AIII

ANEX B

**Phase 1**

**Phase 2**

**Step 6**

**Step 5**

**Step 4**

**Step 3**

**Step 2**

**Step 1**

Create INSPIRE METADATA for

Data Sets and Services

Data.gov.uk/Location

GEMINI STDs

Check compliance with Licencing Terms

Open Government Licence / Other?

Register Data Sets and Services with [www.data.gov.uk](http://www.data.gov.uk) services

www. Data.gov.uk

Publish Data

Options:

Self/Shared Service/Hosted?

Technical Support

G-Cloud Store

Transformation

To INSPIRE Standards

Guidance

Data Models

***STEP 1: Evaluate and Select Data Sets***



***Which datasets will have to be published?***

The INSPIRE regulations define and describe 34 data themes divided into three annexes. The scope of the data themes are defined down to feature level through detailed data specifications.

The LGA - working in conjunction with representatives in local authorities - has produced an indicative list of the data topics which fall within scope of the INSPIRE themes based on their statutory requirements. Not all of the data themes are within the scope of a local authority’s public task. A copy of the list is shown at Annex B of this guide.

The list defines a minimum set of data sets. It is within the remit of each local authority to decide which datasets to publish under statutory duty. This varies between different authority types. The regulations cover existing spatial data sets and do not require the creation of new data sets. However, any new data sets created in the future will have to comply with INSPIRE regulations. There is no requirement to transfer data that is not held electronically into an electronic format.

Local authorities have to publish addresses, street networks and protected sites under **Annex I** data themes. These obligations have been passed on to national portals that collate and publish the data on behalf of local authorities. Namely, GeoPlace collates address and street data from local authorities and publishes them as part of the Data Corporation Agreement. Natural England collates and publishes local nature reserves data from local authorities and English Heritage does the same for conservation areas. You should check that your organisation has processes in place to pass relevant data to these organisations unless you publish your data already in compliance with INSPIRE.

Local authorities are not mandated to publish any of the **Annex II** data themes, however, if they hold the data they can - rather than must - publish the data.

Many of **Annex III** datasets fall within a local authority public task. Local authorities are mandated to publish the data if they have to create them under statutory duty.

Using the INSPIRE data themes each authority should evaluate its data catalogue/inventory to identify data within scope of INSPIRE. Authorities should then select relevant data topics and data sets to be shared.

***For example: From Appendix B in this document.***

* Theme: Utility and Government Services
* Topic Areas:
	+ Administrative and Government Services.
	+ Environmental management Facilities (waste disposal and recovery).
	+ Premises database/land and property assets.

Notes:

* A full list of data themes (AI, AII and AIII) can be found in Appendix A of this document.
* To support data selection, the LGA has developed an indicative data topic list. This is outlined in Appendix B of this document.
* However, to identify all the relevant topics and data sets, authorities may need to undertake a ‘data audit’ as part of this process.
* Local authorities may need to refer to the INSPIRE data specifications on the EU INSPIRE website for further details, available on <http://inspire.ec.europa.eu/index.cfm/pageid/2>.

***STEP 2: Create INSPIRE compliant METADATA for data and services***

Create INSPIRE METADATA for

Data Sets and Services

Data.gov.uk/Location

GEMINI STDs

**Metadata**

Metadata is the data about the datasets and services which councils are required to publish under INSPIRE regulations. Metadata provides the means for data users to discover what data exists and what services are available, or vice versa.

You will need to create two types of discovery metadata:

* Metadata for the dataset being published.
* Metadata for the network services being used to publish the data.

Both need to be managed together, as both must reference each other unless a publishing service is not available yet.

The metadata standard for data sets used for INSPIRE in the UK is the UK Location Application Profile of GEMINI2 which specifies a set of metadata elements for describing geographic data resources. This profile must be used to create INSPIRE compliant metadata for each data set. It will ensure that your metadata is compliant with the data.gov.uk discovery service.

You can use the on-line UKLP Dataset Metadata Template to create your metadata. We would advise you to test the process on a metadata record for a single data set and validate it first (see also step 4). Then use the approved template as a basis for creating new metadata XML files.

UK Location has created an online tool called the “Metadata Editor” for creating UK GEMINI2 metadata for registering on data.gov.uk.

Further guidance is available for:

* Creating, maintaining and registering metadata : <http://data.gov.uk/sites/default/files/DMS%20Operational%20Guide%202-2.pdf>.
* Implementing GEMINI2 UK metadata standards and an on-line tool for creating GEMINI2 metadata (the “Metadata Editor”): <http://data.gov.uk/location/guidance_and_tools#discoverymetadataservice>.

Note: Data.gov.uk is the UK INSPIRE compliant metadata portal.

***STEP 3: Check compliance with Licencing Terms***

Check compliance with Licencing Terms

Open Government Licence / Other?

Authorities must ensure they comply with relevant licensing arrangements before publishing the data. If data are not bound by any third party licensing restrictions such as the Public Sector Mapping Agreement (PSMA) licence, it should be published under the Open Government Licence. Available here: <http://www.nationalarchives.gov.uk/doc/open-government-licence/>

***Licensing your data***

When publishing your data you should state how the data can be used and shared. Government policy encourages the publication of public data under the Open Government Licence which permits open onward reuse. For further information please visit: <http://www.nationalarchives.gov.uk/doc/open-government-licence/>.

Many of the geographic data collated by local authorities are derived from third party data most notably Ordnance Survey (OS) data. The PSMA licenses OS data to local authorities and other public sector bodies. The PSMA allows the publication of datasets which contain OS derived data under the terms of the PSMA licence.

The OS has issued an End User Licence for INSPIRE. The INSPIRE End User Licence allows PSMA members to release data in order to meet their INSPIRE obligations, including through the provision of Web Mapping Services (WMS) and Web Feature Services (WFS). This licence is drafted on the basis of click or deemed acceptance and does not require the PSMA member to retain details of the end user. The licence is available on <http://www.ordnancesurvey.co.uk/business-and-government/public-sector/mapping-agreements/inspire-licence.html>.

Further guidance is published as follows:

• Data sharing operational guidance <http://data.gov.uk/location/guidance_and_tools#datasharingoperationalguidance>

* Guidance on PSMA licences <http://www.ordnancesurvey.co.uk/oswebsite/public-sector/mapping-agreement/licensing.html>
* Guidance on PSMA INSPIRE licences: <http://www.ordnancesurvey.co.uk/business-and-government/help-and-support/public-sector/guidance/inspire.html>
* Licensing for open data publishers by the Open Data Institute <http://theodi.org/guide/publishers-guide-open-data-licensing>

***STEP 4: Register Data with www.data.gov.uk***

Register Data Sets and Services with [www.data.gov.uk](http://www.data.gov.uk)

data sets and services

www. Data.gov.uk

UK Location discovery metadata records are registered using the UK Government data publishing and discovery portal data.gov.uk. Data.gov.uk is a single point of registration, discovery and access for a range of data, not purely location information. It provides two channels for registering discovery metadata, one for location metadata (including INSPIRE) and one for everything else.

Publishing discovery metadata for UK Location for data and services is a four stage process:

1. Register your organisation on data.gov.uk so that your authority data and services can be searched externally.
2. Publish discovery metadata records for data and servicesto a harvest location (EG on your authorities website), from which the resources can be machine-accessed from the Internet.
3. Register your harvest locationwith data.gov.uk.
4. Collection (sometimes known as ‘harvesting’): data.gov.uk collects the metadata records from the registered location, makes them available within data.gov.uk, and for further collection on to Europe.

Once collected, the individual data and service discovery metadata records will be validated. If the validation is successful, the metadata record will be visible within data.gov.uk. Further guidance relating to creating, maintaining and registering metadata can be found here: <http://data.gov.uk/sites/default/files/DMS%20Operational%20Guide%202-2.pdf>.

***STEP 5: Publish the Data***



Under INSPIRE it is not sufficient to just publish the dataset on your website or to provide an interactive map.

INSPIRE specifies network service to directly stream data into other applications that

* Allow datasets to be searchable (**Discovery Service** provided by data.gov.uk)
* Allow datasets to be visualised (**View Service**)
* Provide access to data content (**Download Service**)

***Discovery Service***

* A discovery service enables searches of your online meta data catalogue (see above for further information on how to create metadata).
* In the UK this service is provided by UK Location Discovery Metadata Service on data.gov.uk.
* To publish the metadata into UK Location, you must first register yourself as a data publisher using the central registration service of data.gov.uk, your authority may already be registered with the site, user registration support can be obtained from the data.gov.uk team team@data.gov.uk.
* Once you publish your data you need to register your metadata, view and download services on data.gov.uk.

***View Service (Web Mapping Service (WMS))***

* A view service is a publically-accessible network service which provides an image of part of a spatial data set in response to user-defined requests defined by Open Geospatial Consortium Standards.
* It presents a snapshot of spatial data as an image (GIF, JPEG or PNG)
* INSPIRE View Services must be compliant with the INSPIRE Regulation on Network Services (<http://inspire.jrc.ec.europa.eu/index.cfm/pageid/3>).
* UK specific guidance is available on data.gov.uk at <http://data.gov.uk/location/guidance_and_tools#viewservices>
* Just publishing images of maps does not meet the requirements for view services.

***Download Service (Web Feature Service (WFS))***

* A download service is a network service that provides access to the underlying data.
* There are three types of download service:

- two providing pre-defined datasets

1. Atom feed delivering pre-defined datasets

2. WFS delivering pre-defined datasets

 - one providing direct access download

3. WFS providing direct access to features

* INSPIRE Download Services must be compliant with the INSPIRE Regulation on Network Services (<http://inspire.jrc.ec.europa.eu/index.cfm/pageid/3>)
* UK specific guidance is available at: <http://data.gov.uk/location/guidance_and_tools#downloadservices>
* An overview of all services and tools is available on: <http://data.gov.uk/location/guidance_and_tools#gemini2technicalguidance>.

***Publishing Options***

The options for implementing publishing services are as follows:

* Proprietary software provider (often available as an additional module, ask your provider for options).
* Open Source (UKLP funded open source solution are GeoNetwork for catalogue service web, GeoServer for WMS and WFS).
* Hosted Service (through data publishing services).

To help publish data that meets the INSPIRE Standards and Discovery service, ready-made technical solutions are now available from suppliers to meet the publishing needs here: <http://data.gov.uk/location/guidance_and_tools#gemini2technicalguidance>.

Some suppliers provide their solution through a government framework contract on the GCloud store.

* The GCloud store offers digital and infrastructure services procured by the Government Procurement Service on behalf of the public sector. Public sector bodies can call of services offered on the GCloud store thereby reducing procurement costs. Further information about the GCloud store is available on

<http://gcloud.civilservice.gov.uk/cloudstore/>.

To determine the best way forward for your authority, discuss your publishing options with your business/IT, other service departments or other local authorities to identify the best way to provide INSPIRE compliant view and download services. You may also want to consult a GIS software supplier or check the GCloud Store.

***STEP 6: Transformation***

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In Phase 2 of the INSPIRE programme, the data will need to be transformed to INSPIRE standards so that it is comparable with data from other public sector organisations. The INSPIRE data specifications describe the requirements for each of the 34 data themes. Guidance and data models are available here:

<http://inspire.jrc.ec.europa.eu/index.cfm/pageid/2/list/2>

The transformation service maps your existing data schema to the new INSPIRE data schema. This can be done by either changing the database to meet INSPIRE structures at source or by transforming it before publication. Transformation Services can be categorised into different areas of functionality by transforming

* Data formats (e.g. from a proprietary format such as shape files to GML).
* Coordinate reference systems (CRS) (e.g. from the national gird to latitude and longitude).
* Data from a source logical schema to the INSPIRE logical schema (based on data specification models) (e.g. referring the name of one data column to a different standardised name).

Options for implementing transformation services:

* Part of a proprietary GIS software (often available as a separate module).
* Specialised transformation software.
* Use of external transformation services (bureau services or hosted site).

Data transformation tools are included in some software products or are available to purchase from separate providers from the GCloud store.

Further guidance on transformation services is available on <http://data.gov.uk/location/guidance_and_tools#transformationservices>.

Reformatting of local authority data sets may be achieved as a matter of course by 2017 for Annex I datasets and 2020 for Annex III datasets. Once the data has been transformed, update your metadata entry and publish it.

***What support is available?***

Defra has put into place new burdens funding arrangements for local authorities in England to implement INSPIRE publishing services. This was a one-off direct payment to local authorities in England to enable local authorities to implement a solution which best suits their needs.

The LGA and the Defra INSPIRE project team are working together to support and advice authorities in meeting the INSPIRE requirements. Existing online resources and guidance can be accessed on these sites. We are in the process of reviewing and complementing some of the existing guidance:

* Defra UK Location webpage <http://data.gov.uk/location>
* Local Government INSPIRE pages: <http://tinyurl.com/www-local-gov-inspire>
* Knowledge Hub INSPIRE forum <https://knowledgehub.local.gov.uk/group/inspiredirectiveanduklocationprogramme/>

If you would like to get in contact please e-mail:

* The LGA at inspire@local.gov.uk for policy or dataset advice.
* The Defra INSPIRE Programme at UK-INSPIRE-Help@Defra.gsi.gov.uk for technical advice.
* team@data.gov.uk for data registration on data.gov.uk

 **Appendix A: INSPIRE data themes grouped into three Annexes**

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| INSPIRE Data Themes |
| ANNEX I Coordinate reference systems  Geographical grid systems  Geographical names  Administrative units  Addresses  Cadastral parcels  Transport networks  Hydrography  Protected sites | ANNEX II Elevation  Land cover  Orthoimagery  Geology |
| ANNEX III Statistical units  Buildings  Soil  Land use  Human health and safety  Utility and governmental services  Environmental monitoring Facilities  Production and industrial facilities  Agricultural and aquaculture facilities  Population distribution and demography  Area management / restriction /  regulation zones & reporting units |  Natural risk zones  Atmospheric conditions  Meteorological geographical features  Oceanographic geographical features  Sea regions  Bio-geographical regions  Habitats and biotopes  Species distribution  Energy Resources  Mineral Resources |

**Appendix B: Indicative list of local government data topics for the INSPIRE data themes**

The table below lists data topics that may fall under INSPIRE **Annex I and III themes**. Currently, there are no obligations to local authorities to publish data under Annex II data themes. The list has been updated to reflect the outcome of the Defra review and additional information has been added. There may be considerable overlap between different themes especially between protected sites, area management and land use. Some further clarifications are required and the list will be updated accordingly. This list is an indicative list and may change. The LGA welcomes further comments and suggestions to inspire@local.gov.uk. The list is also available as a spreadsheet on <http://tinyurl.com/www-local-gov-inspire>.

Note: Unitary authorities (UA) include metropolitan districts and London boroughs, NPA = National Parks and Broad Authority, C=County councils, D= District Councils

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| --- |
| **Indicative list of local government data topics that may fall under INSPIRE Annex I and III data themes** |
| Theme | Abbre-viation | Link to description | Annex | Data topic | Authority type | Existing Publication Channel |
| Addresses | AD | <http://inspire.ec.europa.eu/theme/ad/>       | i | Local Land and Property Gazetteers | UA, D | GeoPlace/OS |
| iii | Local Air Quality Management Zones (AQMZ) | UA, D |   |
| iii | Quiet Area (noise control) | UA, D |   |
| iii | Smoke control Zones (Furnace Emission) | UA, D |   |
| iii | Stepping Stones | NPA, UA, D |   |
| iii | Wildlife corridors | NPA, UA, D |   |
| Bio-geographical Regions | BR | <http://inspire.ec.europa.eu/theme/br/> | iii | Local Landscape Character Areas | UA, C |   |
| Energy Resources | ER | <http://inspire.ec.europa.eu/theme/er/> | iii | Renewable Energy Schemes and Potential Maps |   |   |
| Environmental Monitoring Facilities  | EF | <http://inspire.ec.europa.eu/theme/ef/>   | iii | Furnace Emissions/smoke monitoring | UA, D |   |
| iii | Local Air Quality monitoring Stations | UA, D |   |
| iii | Water sampling | UA,D |   |
| Habitats and Biotopes  | HB  | <http://inspire.ec.europa.eu/theme/hb/> | iii | Aged or Veteran Tree |   |   |
| iii | Habitat & Species Inventories* Biodiversity Action Plan habitat
* Nesting/protected bird sites
* Species survey/protected species
 | NPA, C, UA |   |
| Human Health & Safety   | HH | <http://inspire.ec.europa.eu/theme/hh/> | iii | COMAH sites (emergency planning) | UA,C  | Public Register for COMAH sites - HSE |
| iii | Local Air Quality Monitoring - continuous assessment and annual mean/exceedences | UA, D |   |
| iii | Noise monitoring | UA,D |   |
| Hydrography  | HY | <http://inspire.ec.europa.eu/theme/hy/> | i | Structures of flood risk | UA, C |   |
| Land Use               | LU | http://inspire.ec.europa.eu/theme/lu/               | iii | Ancient Woodland |   | Natural England |
| iii | Allotments | NPA, UA, D |   |
| iii | Coastal Areas* Area of undeveloped coast
* Coastal Change Management Areas
 | UA, D | Natural England |
| iii | Compulsory purchase orders | UA, D,C, NPA |   |
| iii | Contaminated Land | NPA, UA, D |   |
| iii | Development Control Orders* Article 4 land
 | NPA, UA, D |   |
| iii | Greenbelt | NPA, UA, D | DCLG |
| iii | Open/Green Spaces* Green Infrastructure
* Recreational Areas
 | NPA, UA, D |   |
| iii | Parking Zones | UA, D,  |   |
| iii | Previously Developed Land (Brownfield sites) | NPA, UA, D | DCLG/HCA |
| iii | Registered Common Land | UA, C, NPA | Natural England |
| iii | Rural Exception Sites | UA, D |   |
| iii | Section 106/ community infrastructure levy | UA, D |   |
| iii | Statutory Safeguarding Zones | UA, D,C |   |
| iii | Strategic Cultural Areas | UA, D, C, NPA |   |
|          |  |          | iii | Strategic Industrial Locations | UA, D, C, NPA |   |
| iii | Town or Village Greens | UA, D, NPA |   |
| iii | Town Centre Classification | UA, D, NPA |   |
| iii | Town Centre Uses | UA, D, NPA |   |
| iii | Transport Schemes | UA, C |   |
| iii | Tree preservation orders | NPA, UA, D |   |
| iii | Urban area/ rural settlement boundaries | NPA, UA, D | ONS |
| iii | Various development zones* Regeneration Areas
* Opportunity and Intensification Areas
* Development Areas
* Sustainable Communities Growth Areas
* Strategic Regional Development Corridors
* Safer Neighbourhood areas
 | NPA, UA, D |   |
| Mineral Resources | MR     | http://inspire.ec.europa.eu/theme/mr/     | iii | Areas suitable and licenced for Energy Production | UA, D | Environmental Permit Registers |
| iii | Minerals of Local and National Importance | UA,C, NPA | British Geological Survey |
| iii | Minerals Safeguarding Areas | UA, C |   |
| iii | Mineral Consultation Areas | UA, C |   |
| iii | Permitted mineral reserves | UA, C |   |
| Natural Risk Zones | NZ | <http://inspire.ec.europa.eu/theme/nz/> | iii | Local flood risk management strategy areas | UA, C |   |
| Production and Industrial Facilities | PF  | <http://inspire.ec.europa.eu/theme/pf/>  | iii | Agricultural Waste Producers | UA,D | Environmental Permit Registers |
| iii | Environmental Permits (Industrial, Waste Operators, Radioactive Substances, Water Discharge) | UA,D | Environmental Permit Registers /Environment Agency |
|  |       |       | iii | Food production facilities | UA, D | Environmental Permit Registers |
| iii | Hazardous Waste Producers | UA, D | Environmental Permit Registers |
| iii | Permitted mineral reserves | UA, C |   |
| iii | Areas suitable for coal extraction and disposal of colliery spoil | UA, C, D |   |
| iii | Waste, Brokers, Carriers and Dealers | UA, D | Environmental Permit Registers |
| Protected Sites     | PS     | <http://inspire.ec.europa.eu/theme/ps/>     | i | Conservation Areas | UA, D, NP | English Heritage |
| i | Local Nature Reserves | UA, D, NP | Natural England |
| i | Area of Beauty in National Parks (Mountains, Moors, Wood, Coast) | NPA |   |
| i | Local Wildlife Sites | NPA, UA,D,C |   |
| iii | Hedgerows (Removal & Retention) | NPA, UA, D |   |
| Transport Networks | TN | <http://inspire.ec.europa.eu/theme/tn/> | i | Local Street Gazetteer | UA, C | GeoPlace |
| Utility & Governmental Services | US   | <http://inspire.ec.europa.eu/theme/us/>   | iii | Administrative and Government Services | All |   |
| iii | Environmental Management Facilities (waste disposal and recovery) |   |   |
| iii | Premises database/land and property assets | D, UA, C, NPA |   |

**Local Government Association**
Local Government House
Smith Square
London SW1P 3HZ

Telephone 020 7664 3000
Fax 020 7664 3030
**Email Inspire@local.gov.uk**
[www.local.gov.uk](http://www.local.gov.uk)

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