HEALTH & SAFETY LABORATORY

MAHP GIS Database

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Health and Safety Laboratory

Contents

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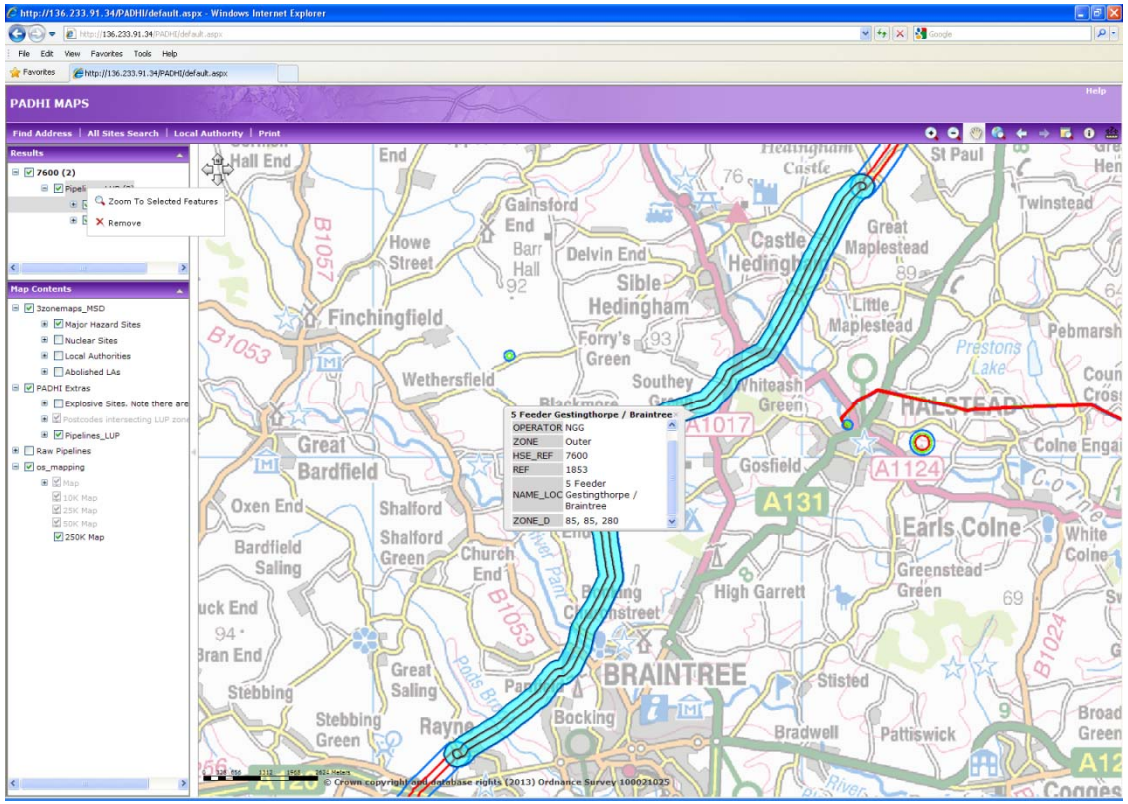
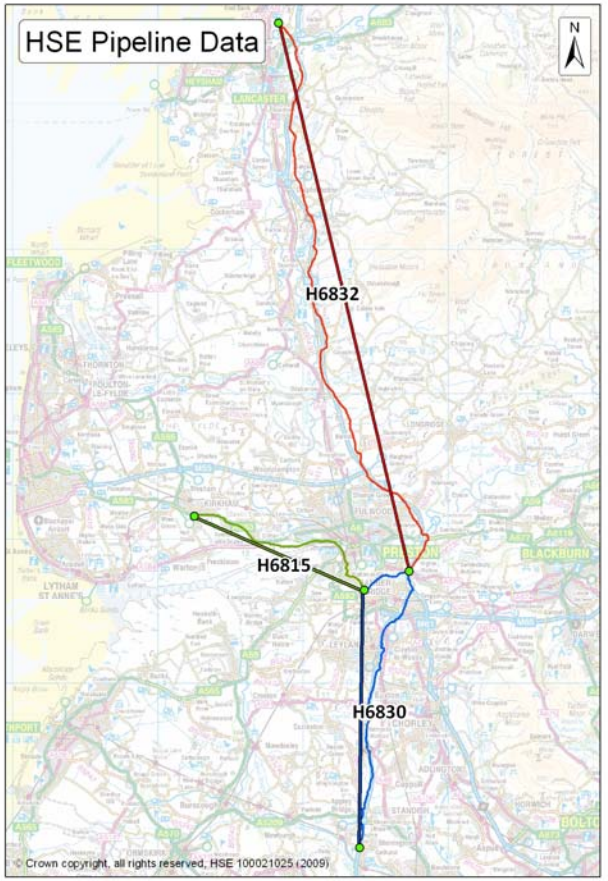
- Progress update
- HSE’s LUP Transformation Programme
- Issues for consideration

Where we were

- Had previously digitised around 95% of all major accident hazard pipelines
- Working with potentially out of date HSE records





Progress to date

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- Obtained up to date asset inventories from major operators
- Cross referencing these with the GIS data previously digitised
- Contacting smaller operators to obtain their routing information
  - BOC
  - BP
  - Bord Gais Eireann
  - British Sugar
  - Calor Gas
  - E.ON
  - Ineos
  - Perenco
  - Sabic
  - Sembcorp

Quality checking with operators

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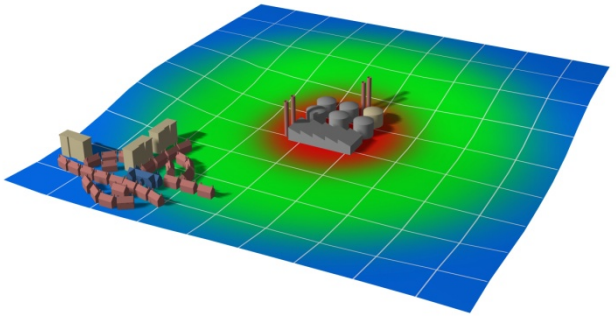
- Outputs checked by operator
  - W+W
  - NGG
- Outputs ready for checking by operators
  - Scotia
  - NGN
- Up to date pipeline inventories
  - NGG
  - Scotia

HSE's LUP Transformation Programme

- HSL's role



Local Authorities

Developers

- **Parcel of land**
- **Development information**

Core Planning Tool (CPT)

- **MH Site**
- **Pipelines**
- **Explosives**
- **(Quarries & Nuclear)**
- **HSE's LUP methodology**

HSE Advice

Information correct as of October 2013

Issues for consideration

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- Update cycles
  - Frequency
  - Mechanism
- Pipeline ID numbers
  - Consistent across operators
  - Remaining with pipeline if the operator changes
- Data display on Core Planning Tool
- Accuracy of pipeline routing data

The National Population Database (NPD)

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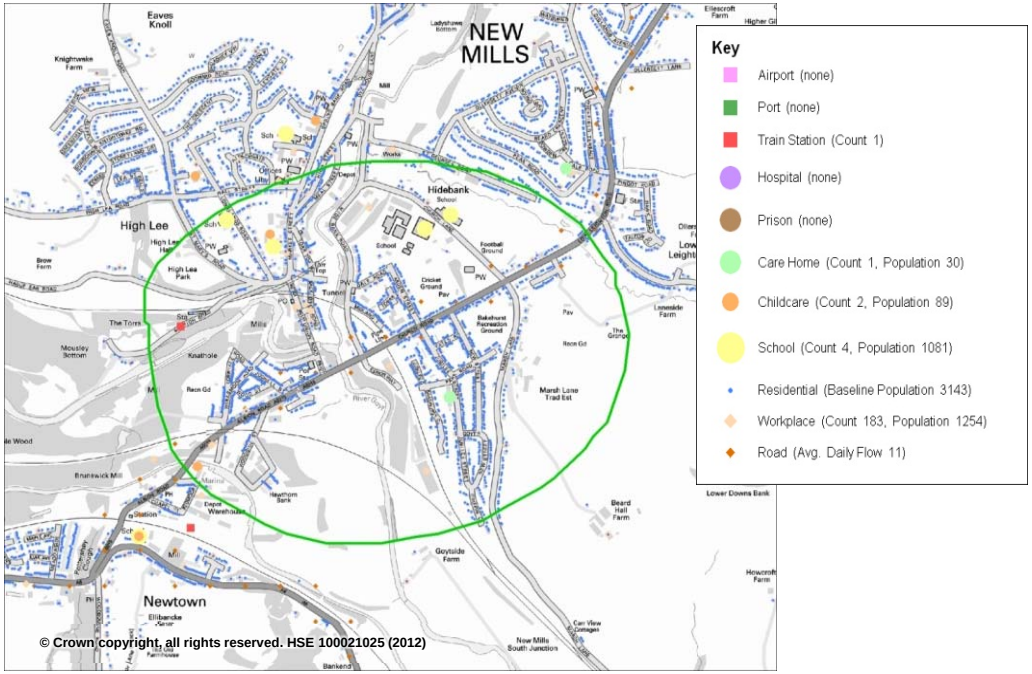
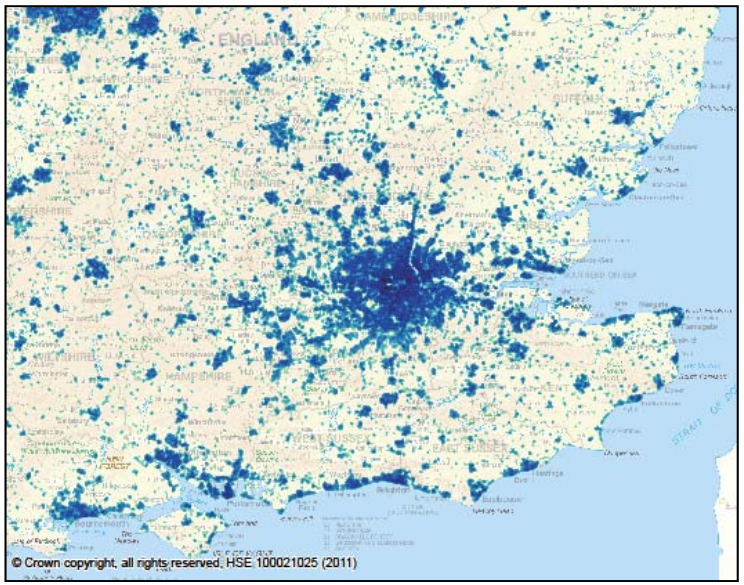
- HSL have developed a tool to provide population density and distribution estimates for GB - NPD
- Available for England, Scotland, Wales and Northern Ireland
- National to local levels of detail
- NPD is owned by HSE, and hosted, run, developed and maintained by HSL





The NPD

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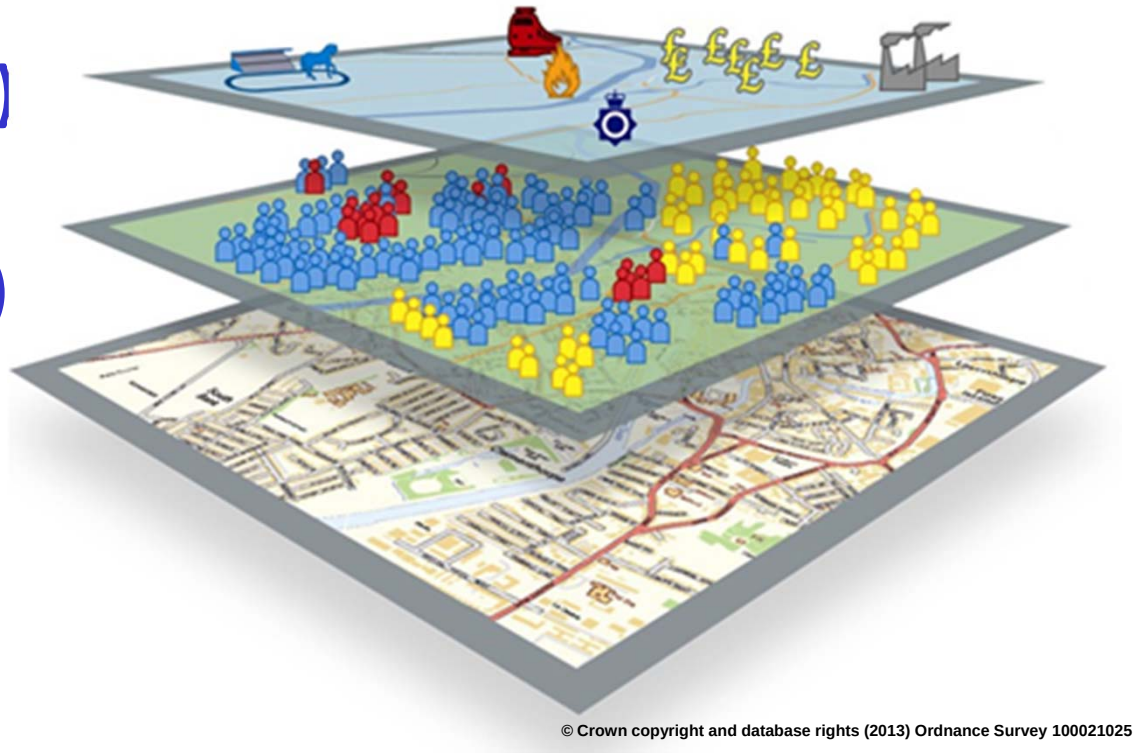
NPD - Population Data for England, Scotland, Wales and NI

- Populations include
  Residential (day/night)
  Sensitive populations (schools, hospitals etc)
  Workplace
  Retail
  Transport
  Leisure



- Resolution - 100m grid, postcodes, individual building
- NPD provides vulnerability, location, time differentiation

NPD Methodology

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- GIS based tool that uses a wide range of data sets to produce a variety of population estimates
- Data sets used include:

Ordnance Survey (OS) PSMA digital mapping products addressing, infrastructure and mapping data

Census data – residential and workplace data

Government data – schools, child-care and hospitals

Commercial data sets retail floorspace

Inter Departmental Business Register (IDBR) – workplace details

Microsoft Excel - England IND Hospitals ALPC.xls

File Edit View Insert Format Tools Data Window Help

F1 = 'Address Line 2

	A	B	C	D	E
1	Order	Type	Name	Id Number	Address
2	1	Acute Hospital	Lister Inhealth limited	61880	Angiography Suite St Peter`s Hosp
3	2	Acute Hospital	Westminster Clinic Ltd	61693	130 Harley Street
4	4	Acute Hospital	Cosmetic Rejuvenation Clinic	61837	9 - 10 Mollington Grange, Parkgate
5	5	Acute Hospital	Blakelands NHS Treatment Centre	61941	Smeaton Close
6	7	Acute Hospital	Casualty Plus	62162	Mill Lane
7	8	Acute Hospital	Cobham Day Surgery Unit	61273	Cobham Cottage Hospital, 168 Po
8	13	Acute Hospital	The Midlands NHS Treatment Centre	61482	Queens Hospital Campus, Belved
9	14	Acute Hospital	The Mid-Kent NHS Treatment Centre	61730	Maidstone District General Hospit
10	15	Acute Hospital	CARE Nottingham	61513	John Webster House, Lawrence P
11	16	Acute Hospital	Optimax Laser Eye Clinic Hull	61564	3 Hesslewood Country Office Park
12	18	Acute Hospital	The Clock House Medical Practice	62107	The Clock House, 4 Dorking Road
13	19	Acute Hospital	Rogers Medical Services Limited	62154	Stratford Health Care, Arden Stree

NPD Demo

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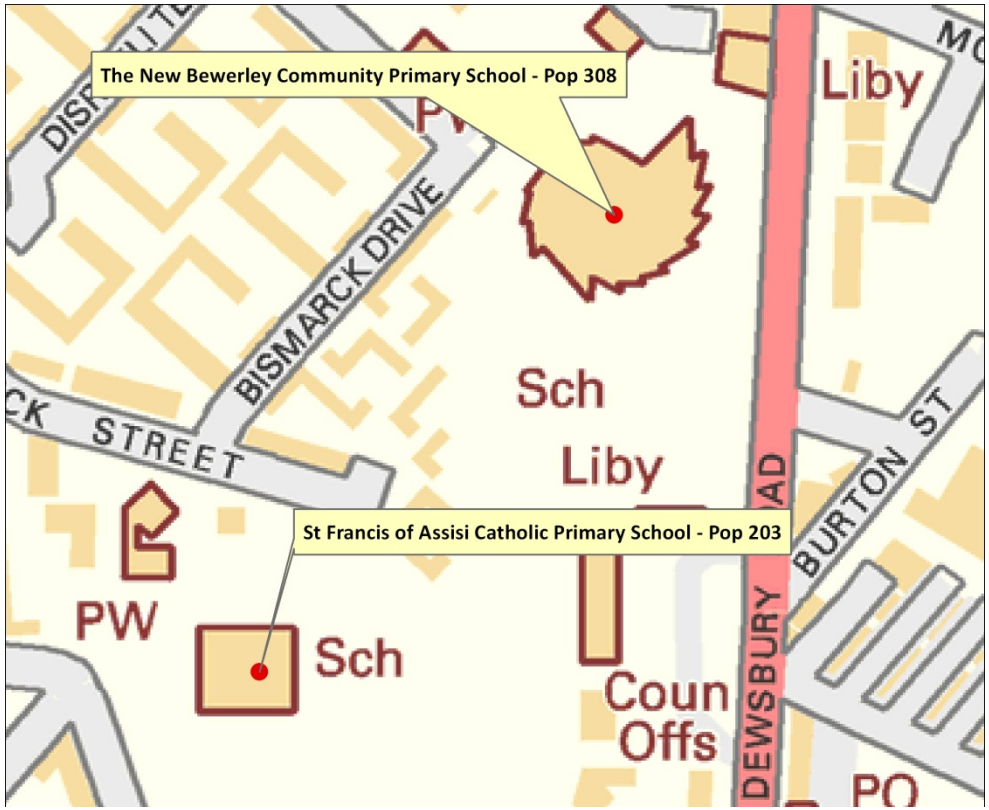
Population data for Pipelines



1. **Routing work for new or modified pipelines.**

2. **Population creep on existing pipelines**

The following graphics show that all layers of the NPD could be used to create grids of population density but there is a need to clarify how the population is proportioned

Population data for Pipelines

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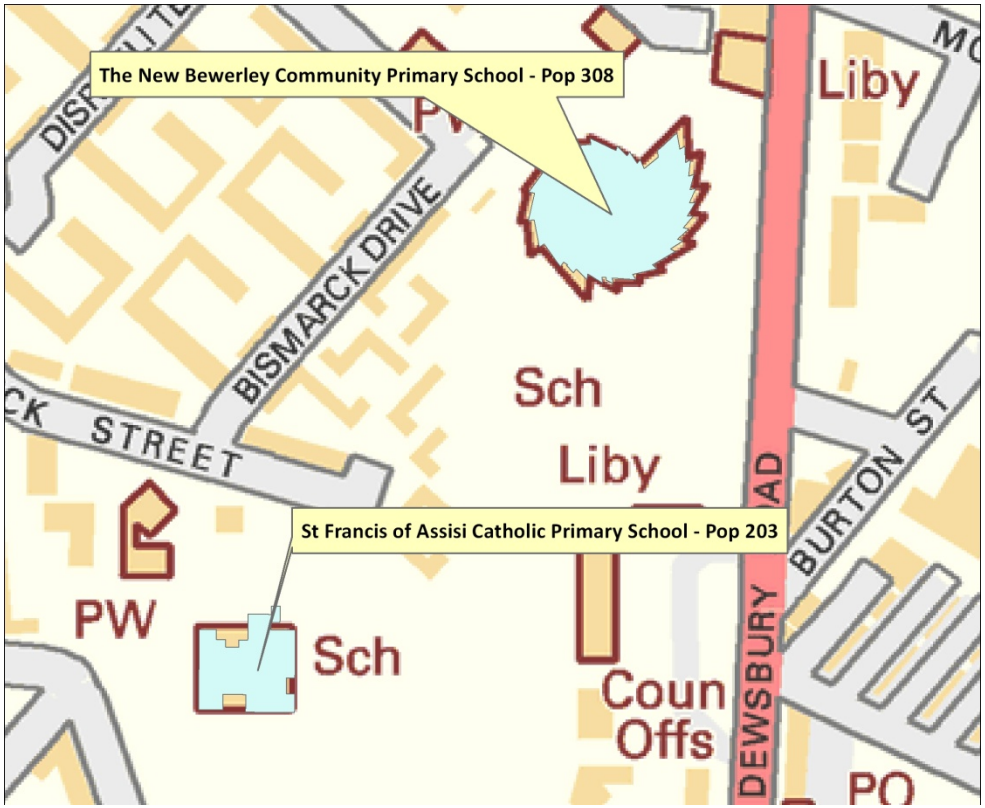

Population data for Pipelines

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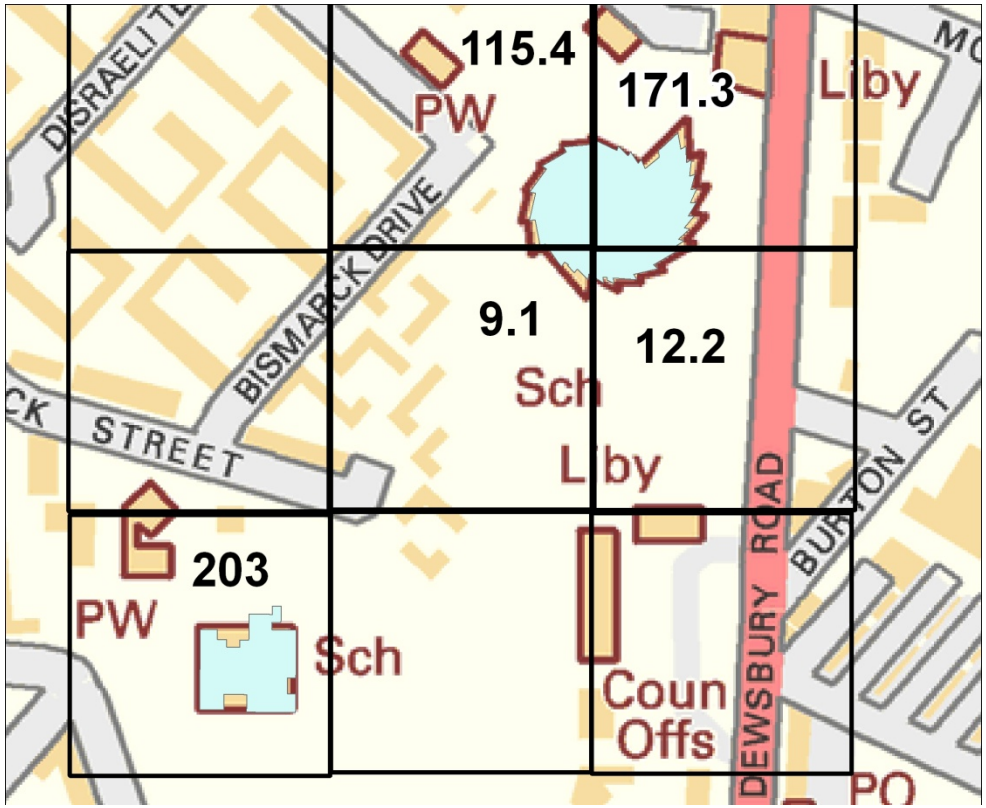

Population data for Pipelines

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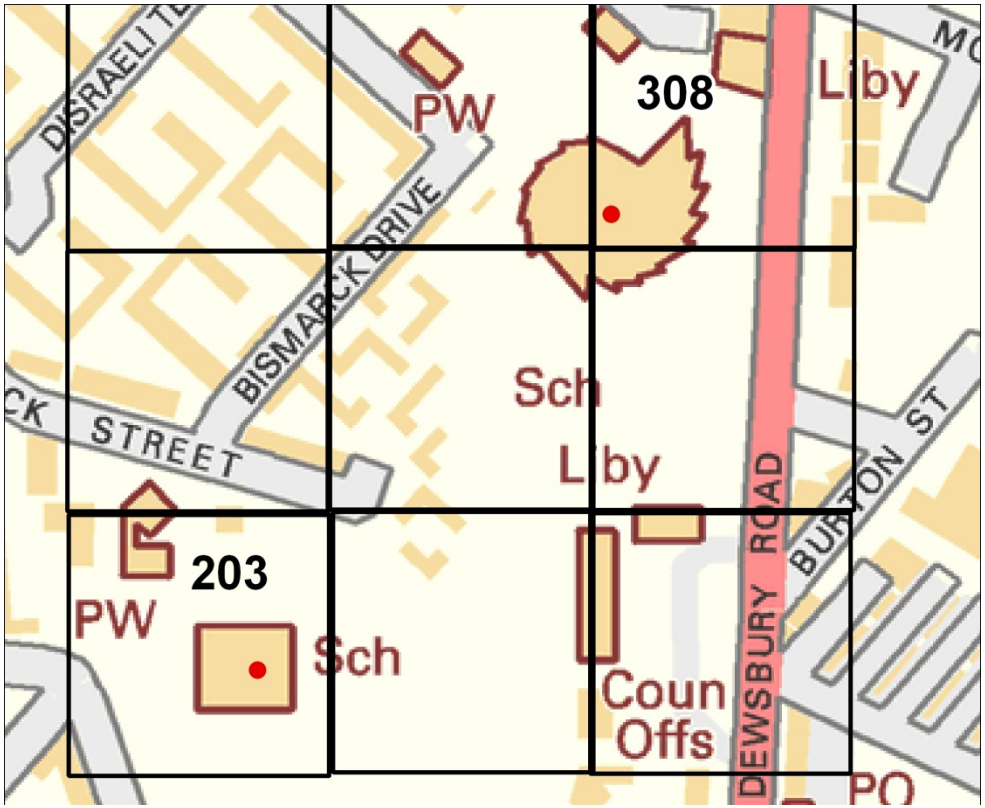

Disclosure of workplace data

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All layers within the NPD are held at a point level of accuracy apart from detailed workplace information which is currently held at postcode.

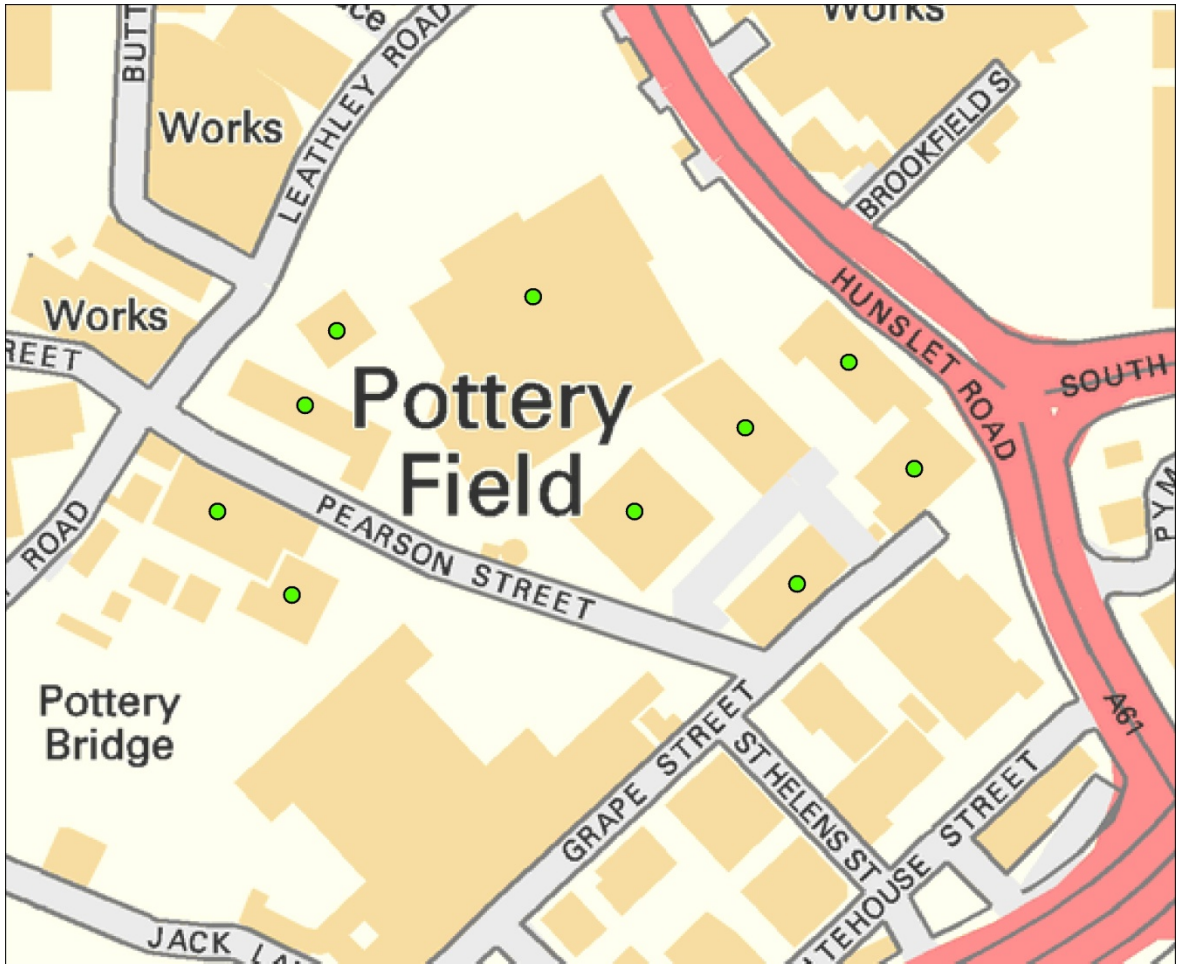
The data is provided by the ONS and is collected for tax purposes. This means to use the data HSL have to work with a number of disclosure rules. The main rule of disclosure is that no individual / business should have its information exposed by the data and the minimum level that data can be reported is as an aggregate of five businesses.

This means there are two main ways to provide detailed workplace data for use in grids / density analysis

1. **Workplace polygon to grid – This involves taking the aggregated data of five points (IDBR disclosure rules) which is represented by a polygon and then proportion the employment numbers of those 5 businesses across the commercial buildings within the workplace polygon. These buildings can now be proportioned into grids for use in density analysis.**

   The following graphics show how we could currently work with the rules of disclosure to create a usable population density.

Disclosure of workplace data



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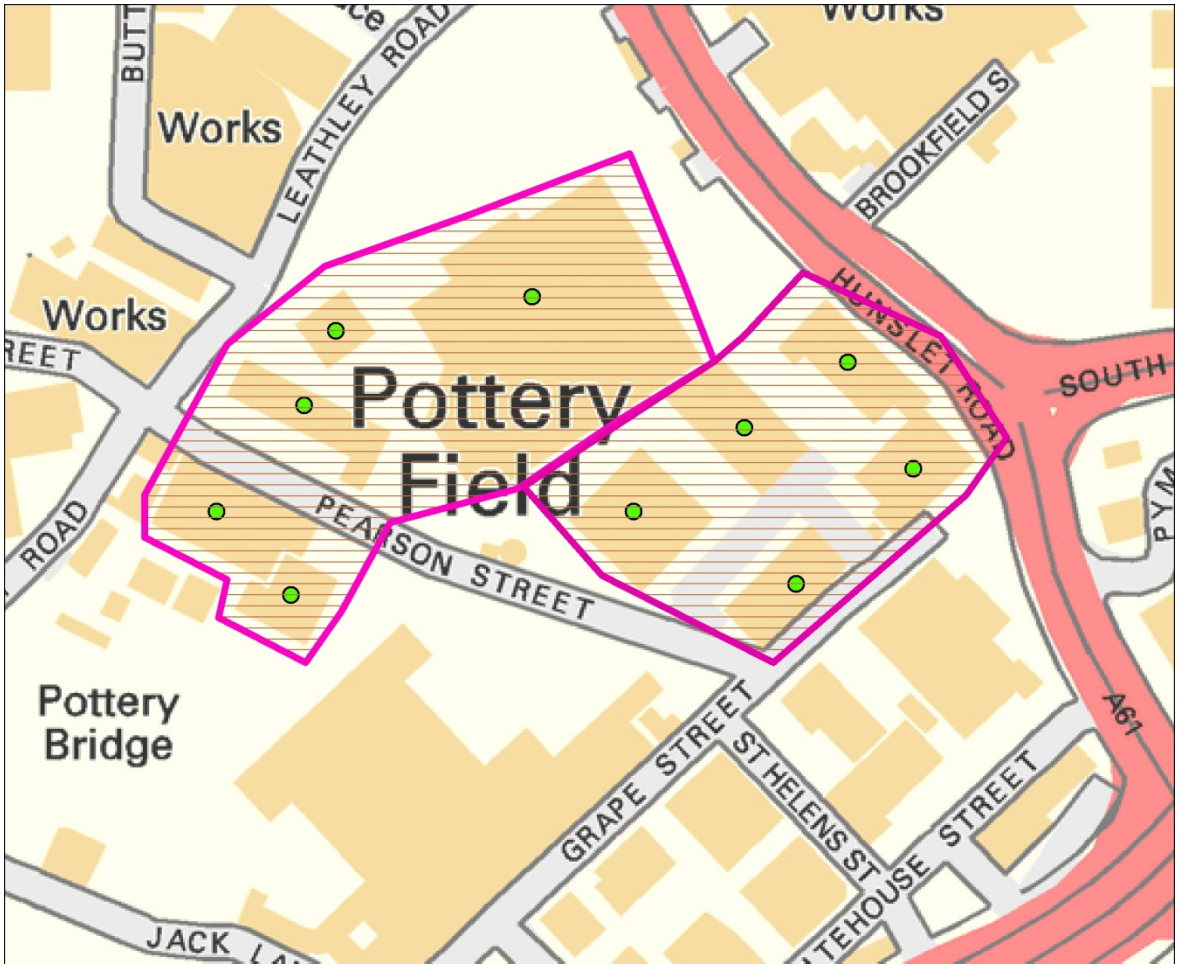

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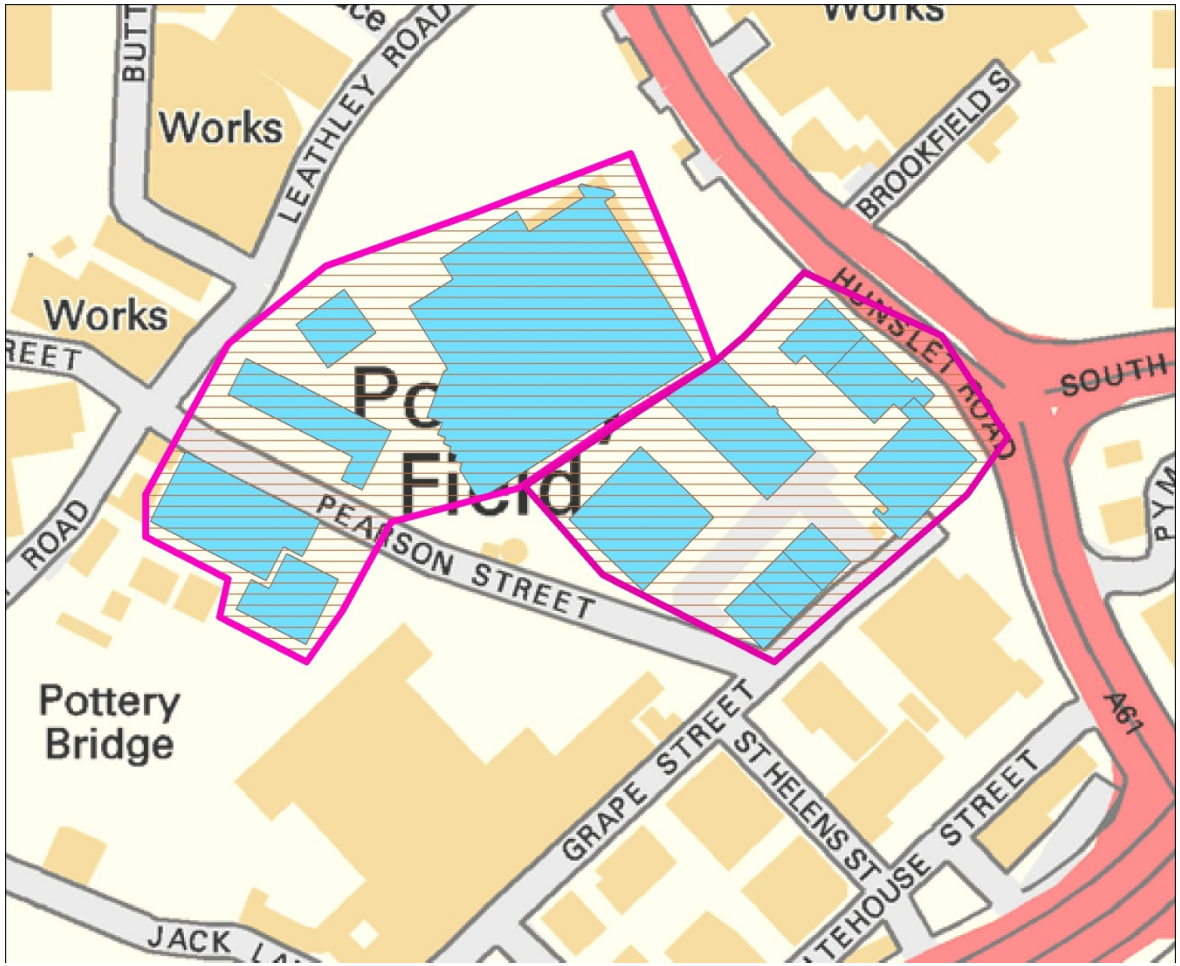

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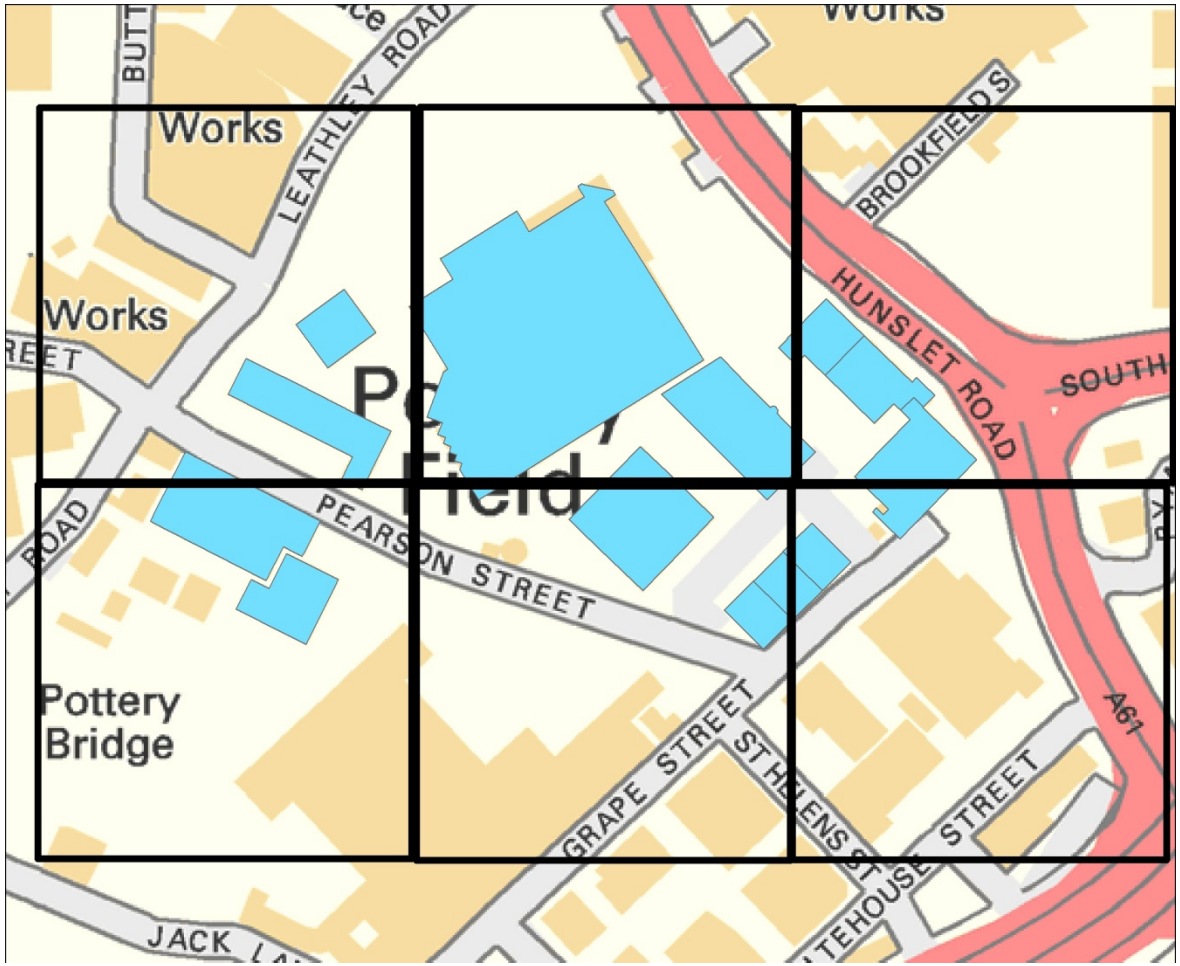

Disclosure of workplace data

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Option 2 - Apply the disclosure rules at a later date. In the current scenario HSL would be providing UKOPA with data. If HSL provided a service and worked alongside the pipeline operator in their risk assessment this would mean that the outputs of the risk assessment would have been aggregated enough so that it would be impossible to recreate the source data.

This way of working with the data would ensure the best possible accuracy of workplace population but would mean that providers would not have access to the data.

Conclusions

The NPD can be a very useful tool for working with population densities around pipelines on a national scale

It has hopefully become clear that if UKOPA are interested in taking this area of work forward some meetings between key stakeholders would need to take place to iron out the data required and level of accuracy required for risk assessment in the pipeline industry.

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