improvement service

The 'go to' organisation for Local Government improvement in Scotland

Improvement Service Spatial Hub Local Government Data

Introduction

Local Government creates a huge amount of data in the course of delivering policies and services to citizens. The Spatial Hub was created to bring all of this useful data together and publish them to set standards – so that nobody else is burdened with having to do so.

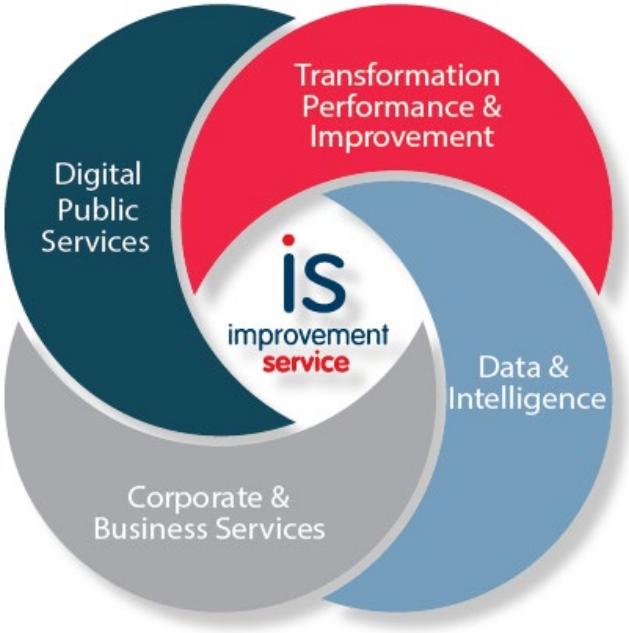
44 datasets are now made available to academia via DigiMap covering such diverse themes as environment, health, pollution, planning, society and transport.

These spatial datasets can be used by academia for any of their own specific research interests – whether that be looking at the nature of the planning system through planning-related data, how local authorities protect their valuable land through designations or how they go about providing services and facilities to their citizens.

Spatial Hub Infrastructure

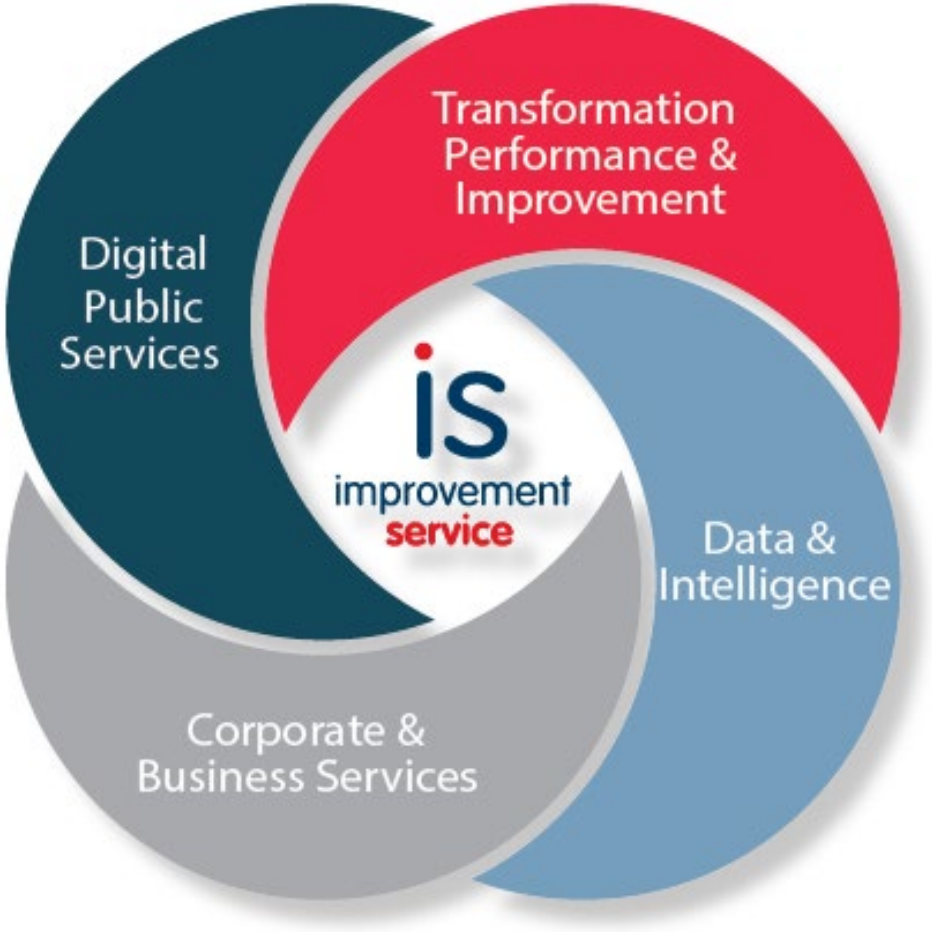
- What we do – the Improvement Service
- What we have – Spatial Hub Data
- How we get it – the Spatial Hub
- How it is supplied – the Spatial Hub
- How it is used – Digital Planning and Infrastructure

The Improvement Service



- Provide **leadership to Local Government** and the wider system on **improvement and transformation**;
- Develop **capability and capacity** for improvement within Local Government;
- Deliver **national improvement programmes** for Local Government and partners and support councils to improve at a local level;
- Provide **research, data and intelligence** to inform Local Government's policy-making and decision-making and to drive improvement;
- Deliver **national shared service applications** and **technology platforms**; and
- **Broker additional resources from outwith the sector** to support the delivery of Local Government's priorities.

The Improvement Service



- An organisation of 70
- A team of 16:
  - Spatial
  - Wider data and research

Street and Address Gazetteers

Spatial Hub

Local Government Benchmarking Framework

Community Planning Outcomes Profile

Covid 19 Economic Impact Dashboard

Research and evaluation

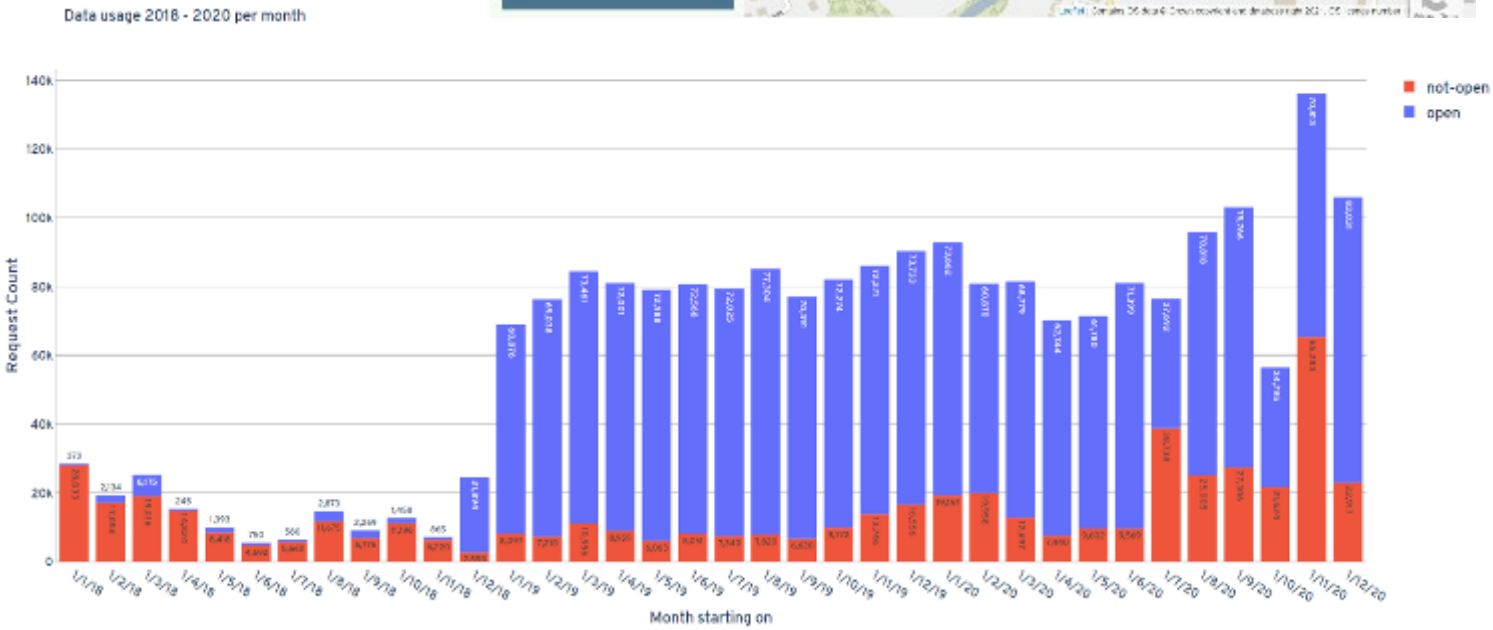
Sub Area Population Projections

Data Hub for Address Matching

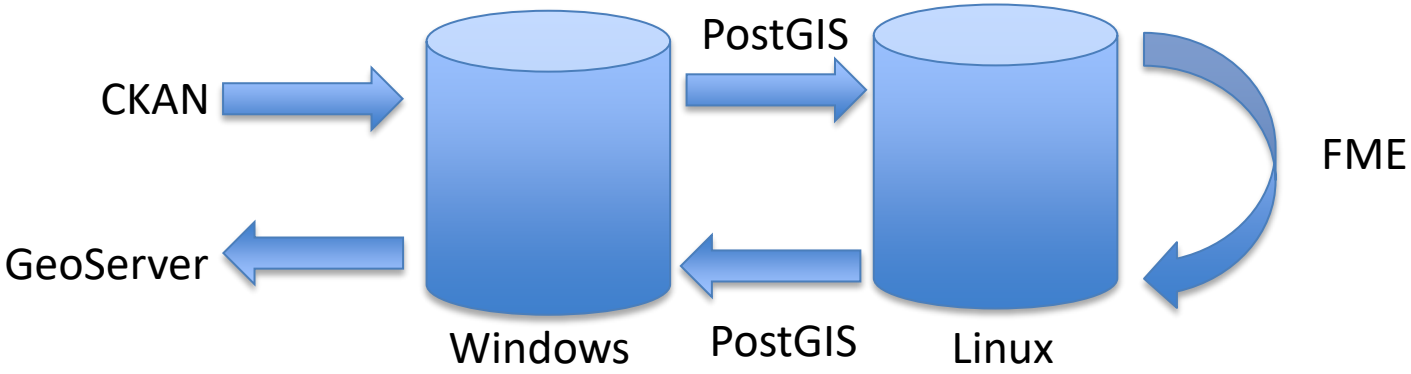
- Air Quality Management Areas
- Alcohol Prohibition Areas
- Building Standards
- Car Parking
- Care Homes for Older People
- Community Asset Transfer Register
- Community Council Boundaries
- Conservation Areas
- Contaminated Land
- Core Paths
- Council Asset Register
- Culverts
- Cycling Network
- Employment Land Supply
- Forestry and Woodland Strategy
- GP Practices
- Green Belt
- Gritting Routes
- Historic Environment Records
- Housing Land Supply
- Libraries
- Local Authority Boundaries
- Local Development Plans
- Local Landscape Areas
- Local Nature Conservation Sites
- Local Nature Reserves
- NHS Hospitals
- Pharmacies
- Planning Applications
- Polling Districts
- Polling Places
- Private Water Supply
- Recycling and Waste Facilities
- Renewable Energy Sites
- Safety Features
- School Catchments
- Septic Tanks
- Smoke Control Areas
- Street Furniture
- Town Centres
- Tree Preservation Orders
- Vacant and Derelict Land
- Wind Turbine Spatial Framework

The Spatial Hub - Data

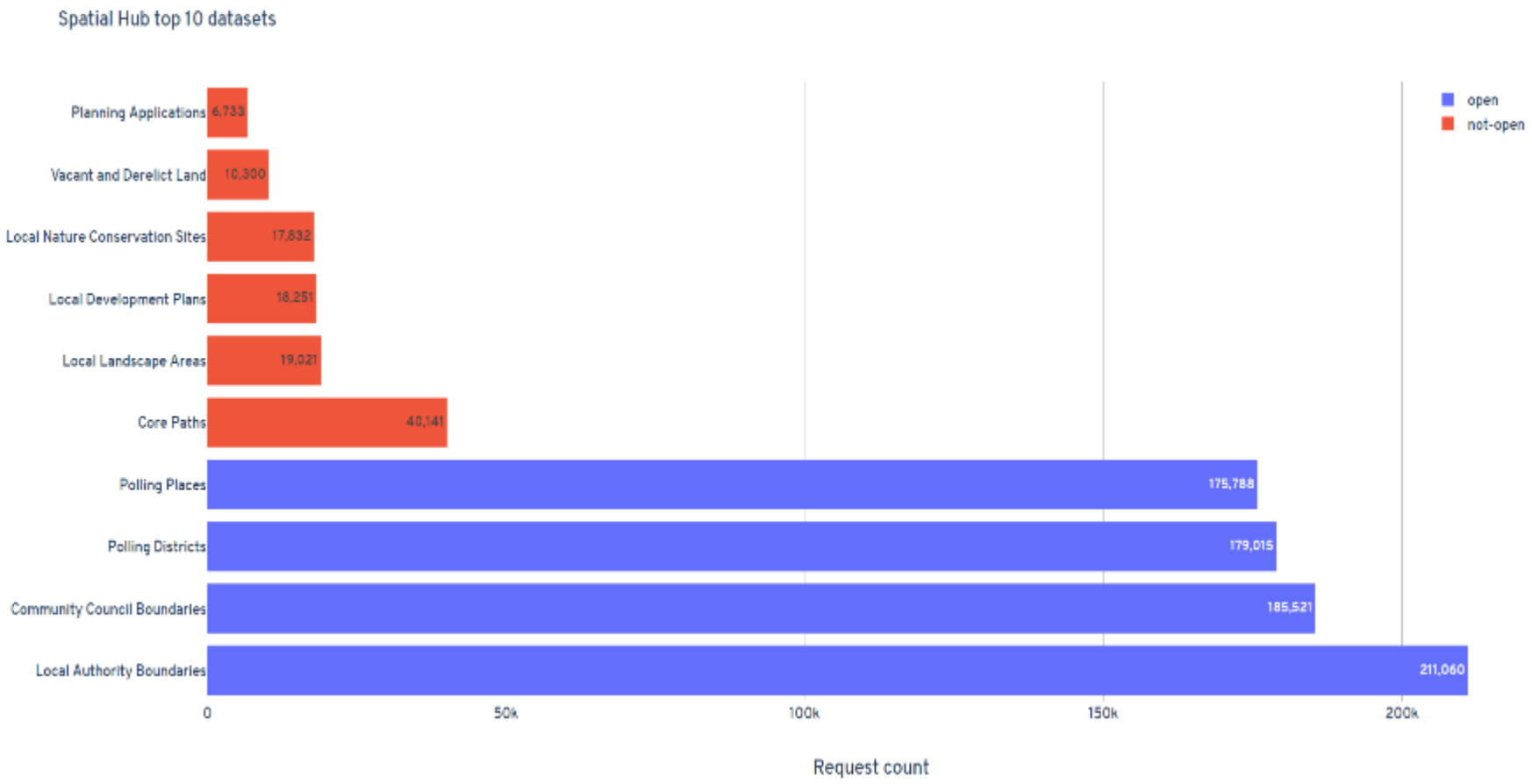
This model is based on the One Scotland Gazetteer (which has a simpler structure)



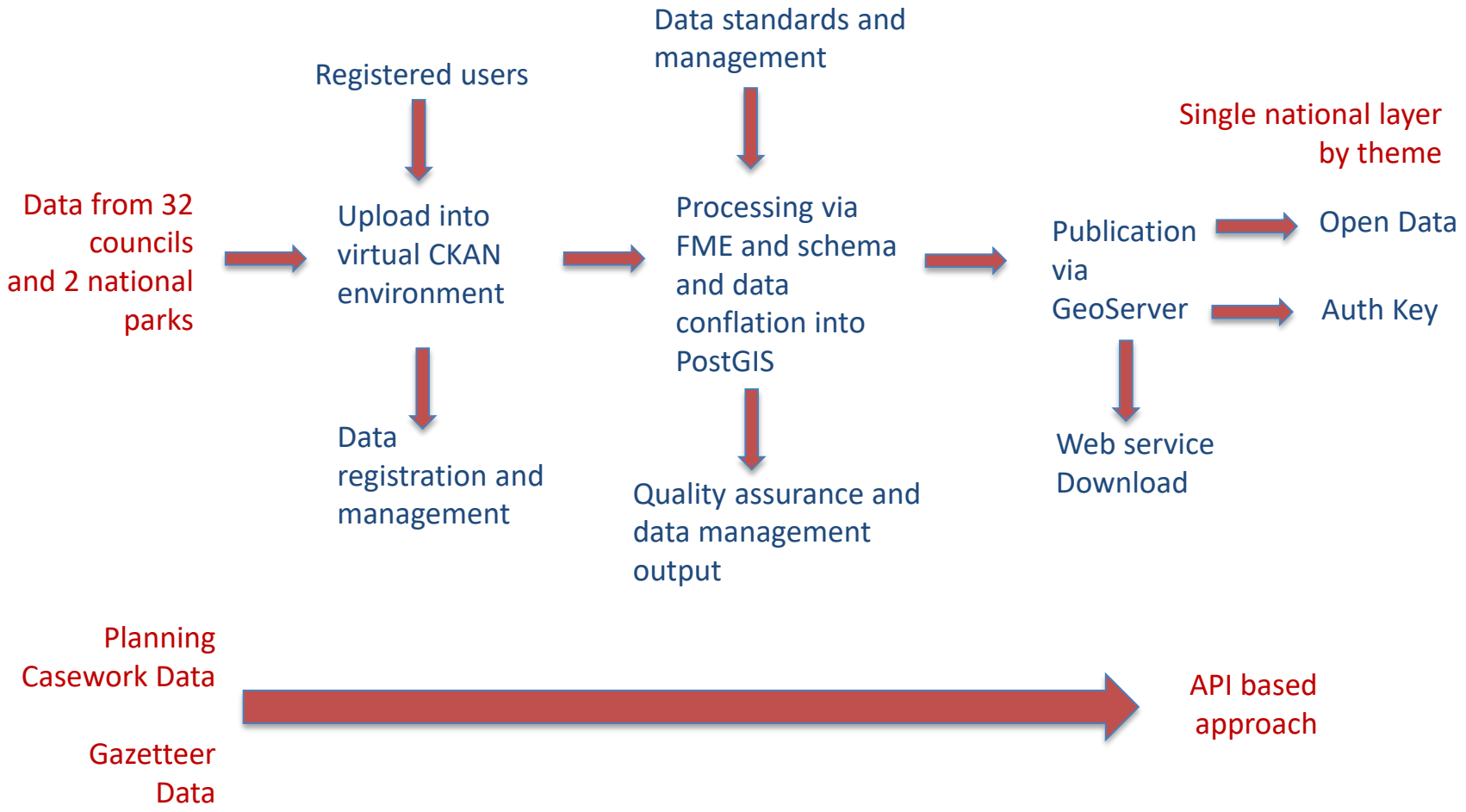
The Spatial Hub - Infrastructure



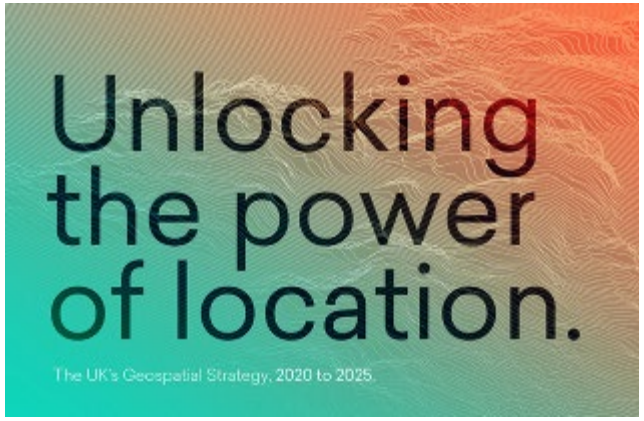
Growth of Spatial Hub



Spatial Hub Data Supply



Growth of Geospatial and Data



Urban Big Data Centre

THE DATA LAB
value from data

Data Use – Digital Planning

- Digital Planning and Digital Transformation
  - Scottish Government planning reform
  - Digital-led planning system
  - Entirely dependant upon data (spatial)

- Assembly of Planning Policy Information
  - A discrete example of the requirement for spatial data from local authorities
  - Two-yearly modelling of past and planned development
  - Scottish Water and Transport Scotland

- Datasets
  - Planning applications (where development is permitted)
  - Local development plans (allocation of development land in advance)
  - Housing and Employment Land Supplies (evidence of adequate land)

Planning Pathfinders

- 2020: a focus on data quality, standards and governance in support of the Digital Planning Strategy

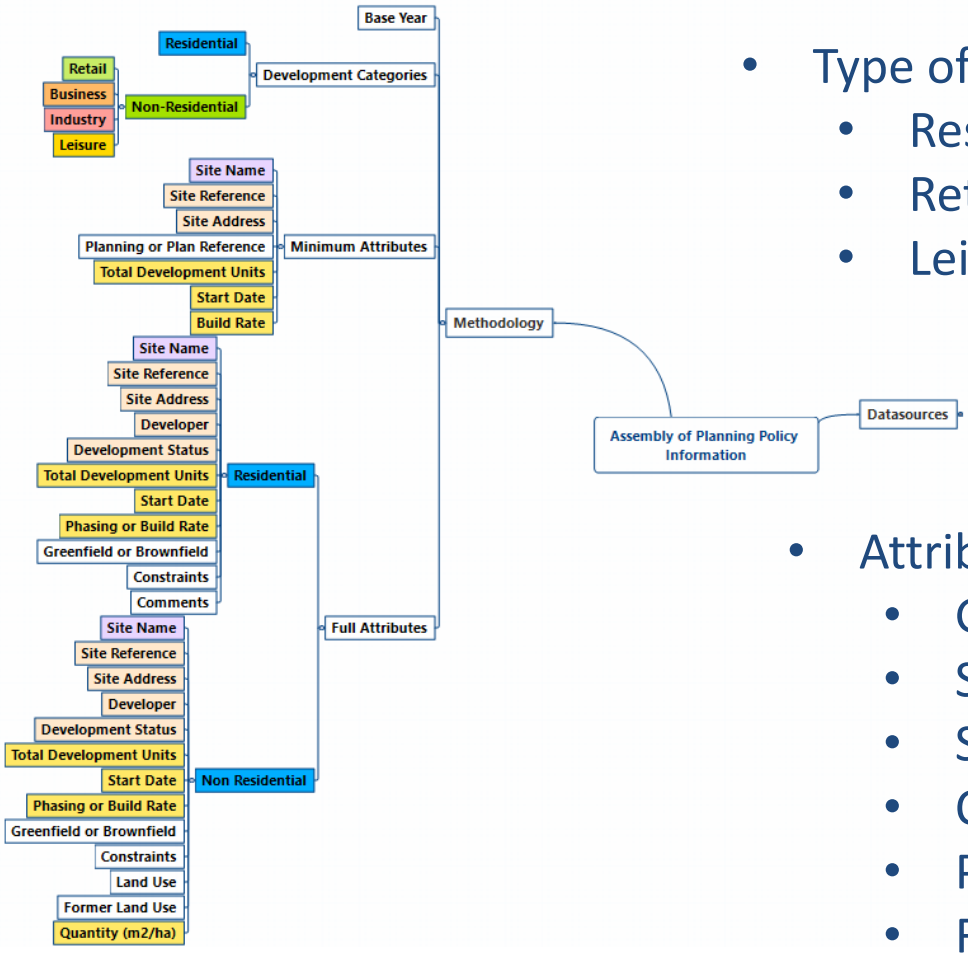
- 2021: implementation of data standards, quality and governance on a “data ecosystem basis”

- **Mission 1: Data**
  Unlock the value of planning data
- **Mission 2: Digital Technologies**
  Deliver an end-to-end digital planning experience
- **Mission 3: Ways of working**
  Create the conditions for digital to flourish
- **Mission 4: People**
  Use digital tools to drive collaboration and engagement
- **Mission 5: Innovation**
  Embed a culture of digital innovation

Data Ecosystem

- The systems that contain the data
- The processes around the data – standards, governance, management
- The skills of those creating and maintaining the data
- The purpose and uses of the data
- The data itself – quality, standards etc

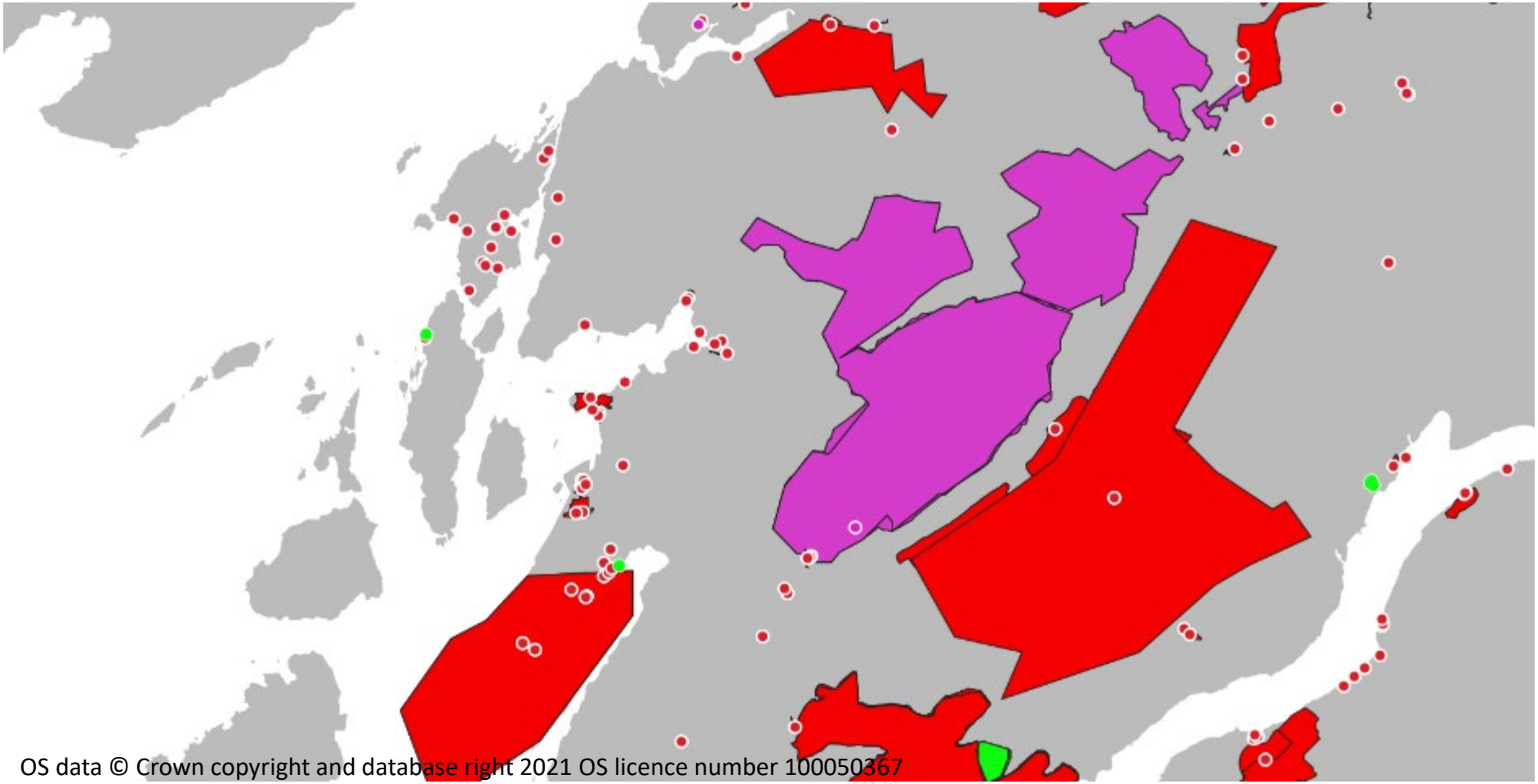
Data Use – Infrastructure Models



- Type of development
  - Residential
  - Retail, Business, Industry,
  - Leisure, Education, Health

- Attributes
  - Geometry
  - Site information
  - Site size
  - Capacity
  - Past development
  - Future phasing of development

Data Use – Infrastructure Models



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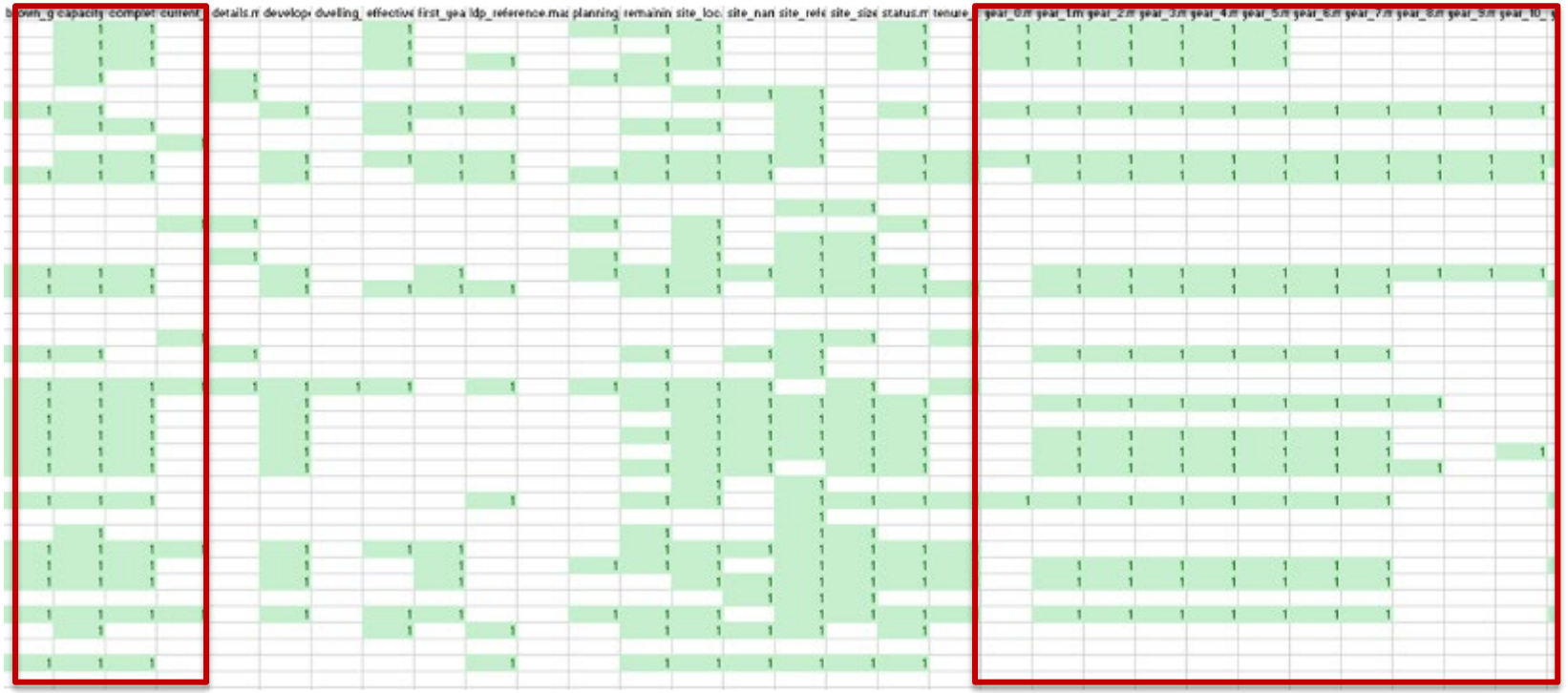
Data Use – Infrastructure Models

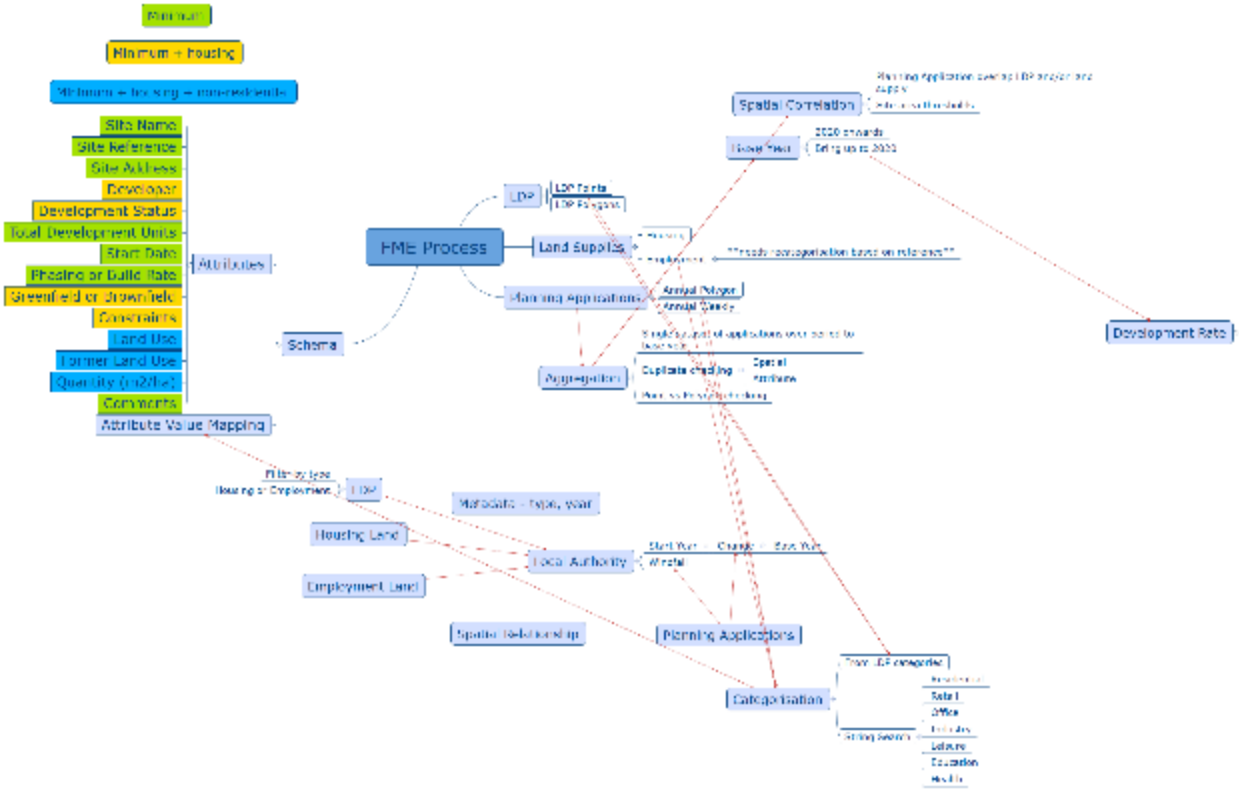
- Schema coverage for housing land data
- Sometimes data is separated into spatial and tabular
- Capacity, completions, remaining and phasing needed for quantitative analysis



Data Use – Infrastructure Models

- Using FME with conflated layers
- Some pre-categorisation
- Others fall into clear categories

- However, further categorisation needed



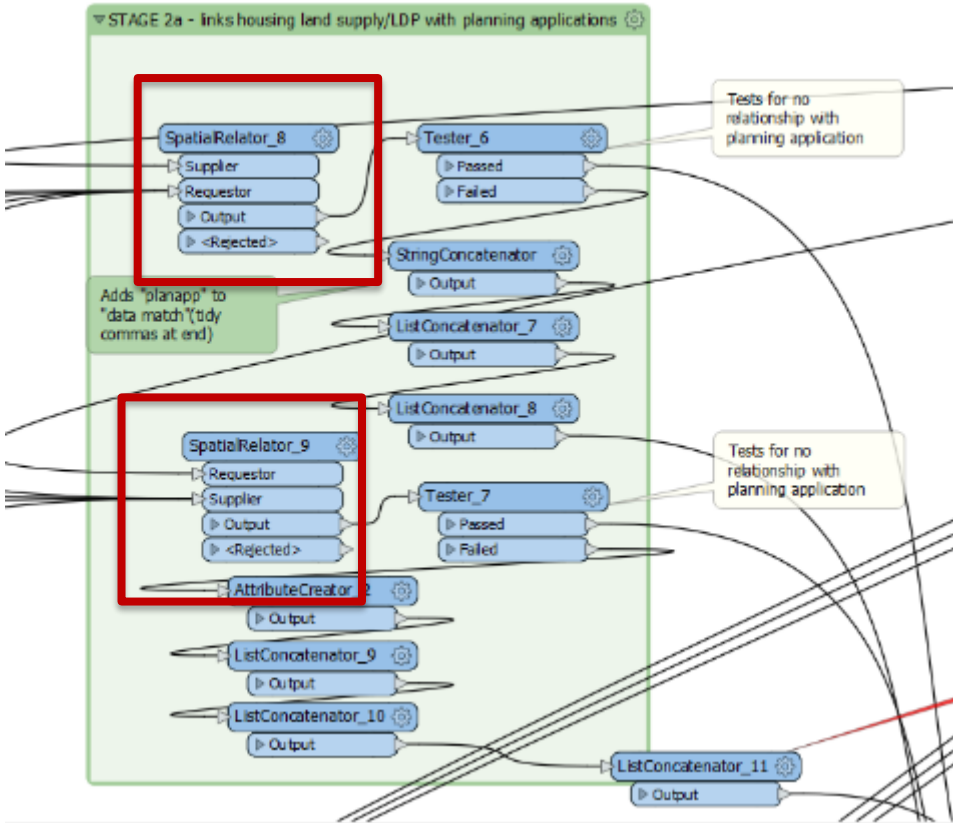
Data Use – Spatial Relationships

Local Development Plan sites

Housing Land

Employment Land

Planning Applications

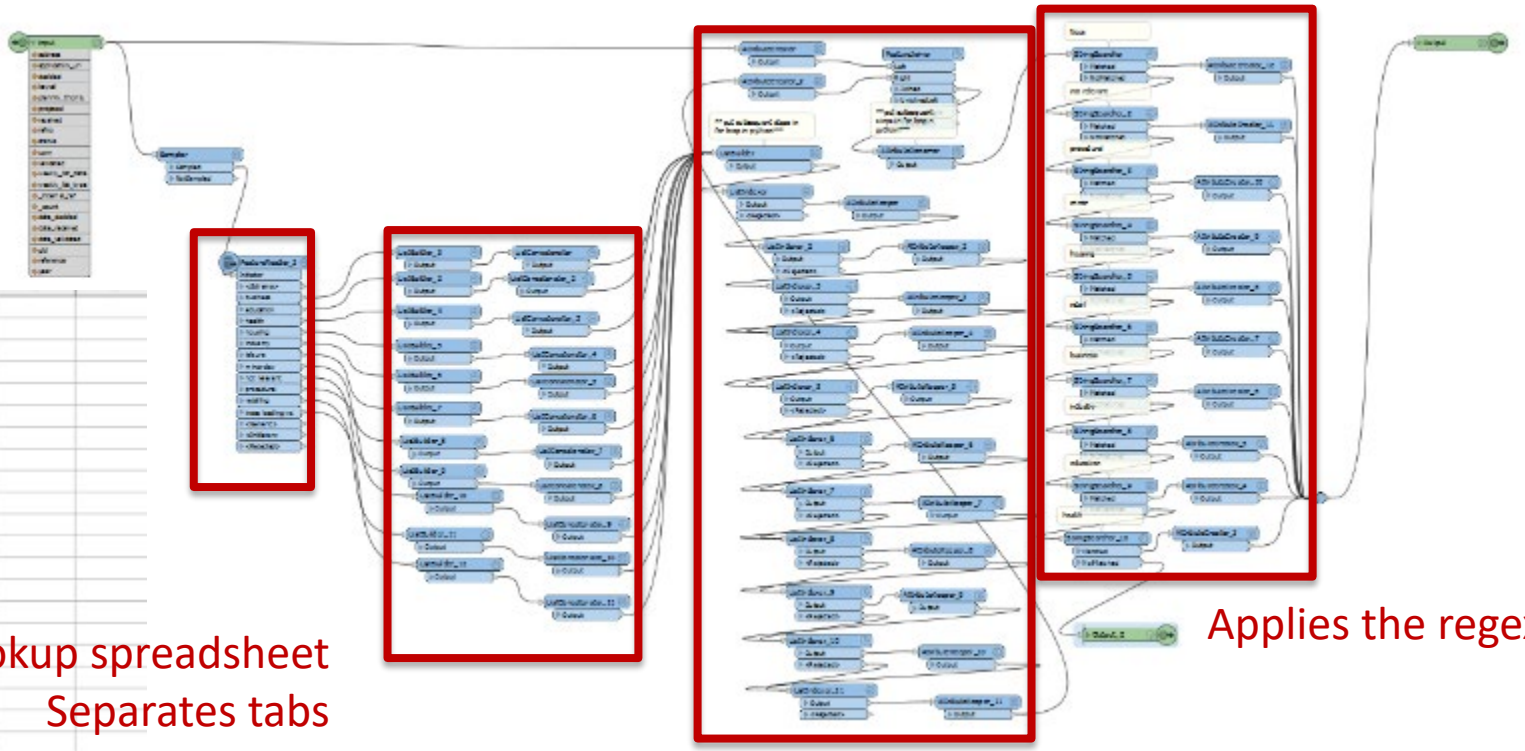


Data Use – Attribution

1	regex
2	change of use
3	change use
4	use change
5	vary
6	variation
7	section 75
8	condition
9	conservation area
10	listed building
11	amendment
12	amend
13	renewal
14	substitution
15	use of
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	

trees leading ws / minor dev / procedural / not

Reads in lookup spreadsheet
Separates tabs



Creates lists for regex lookup

Applies the regex

Outputs

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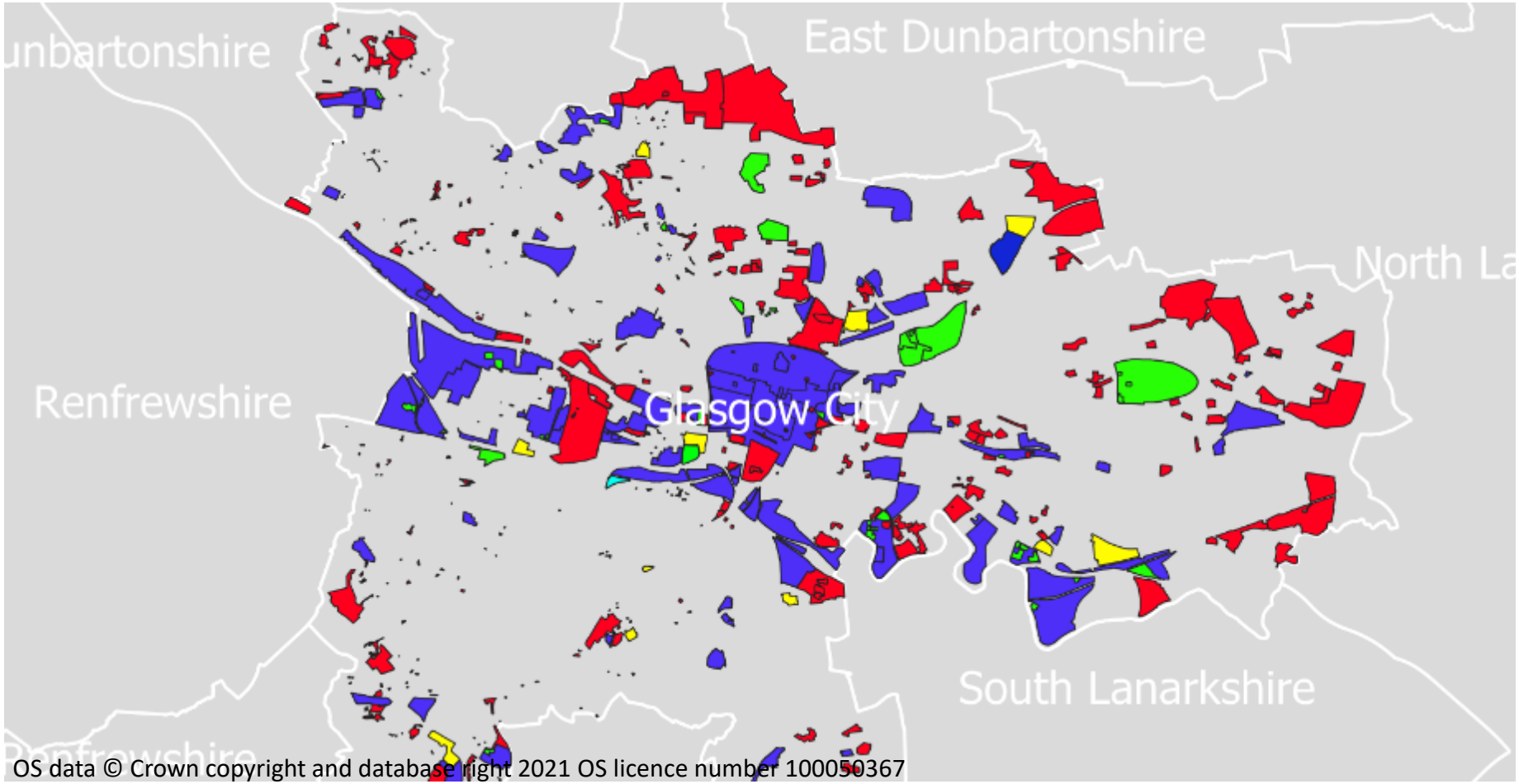

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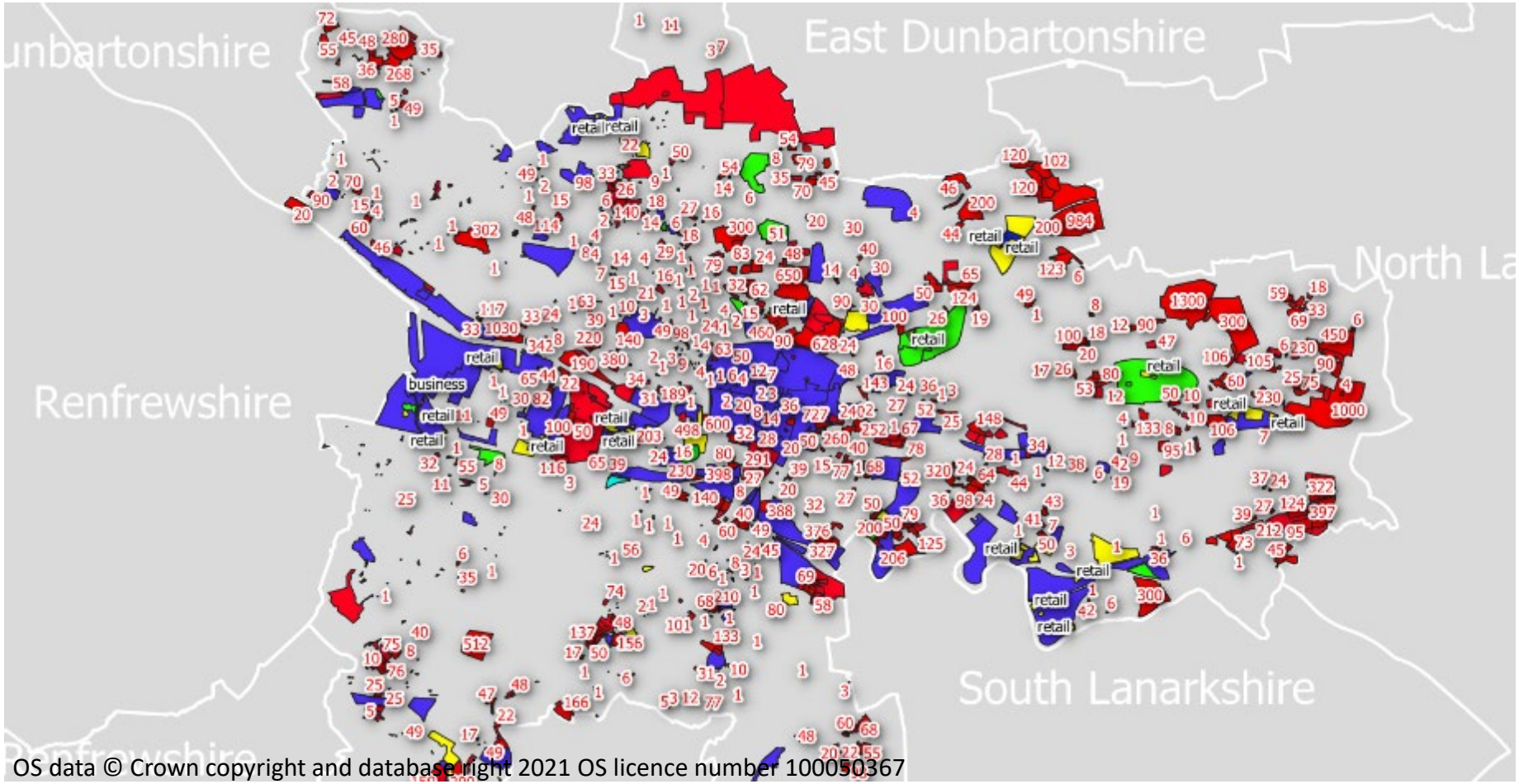
Outputs



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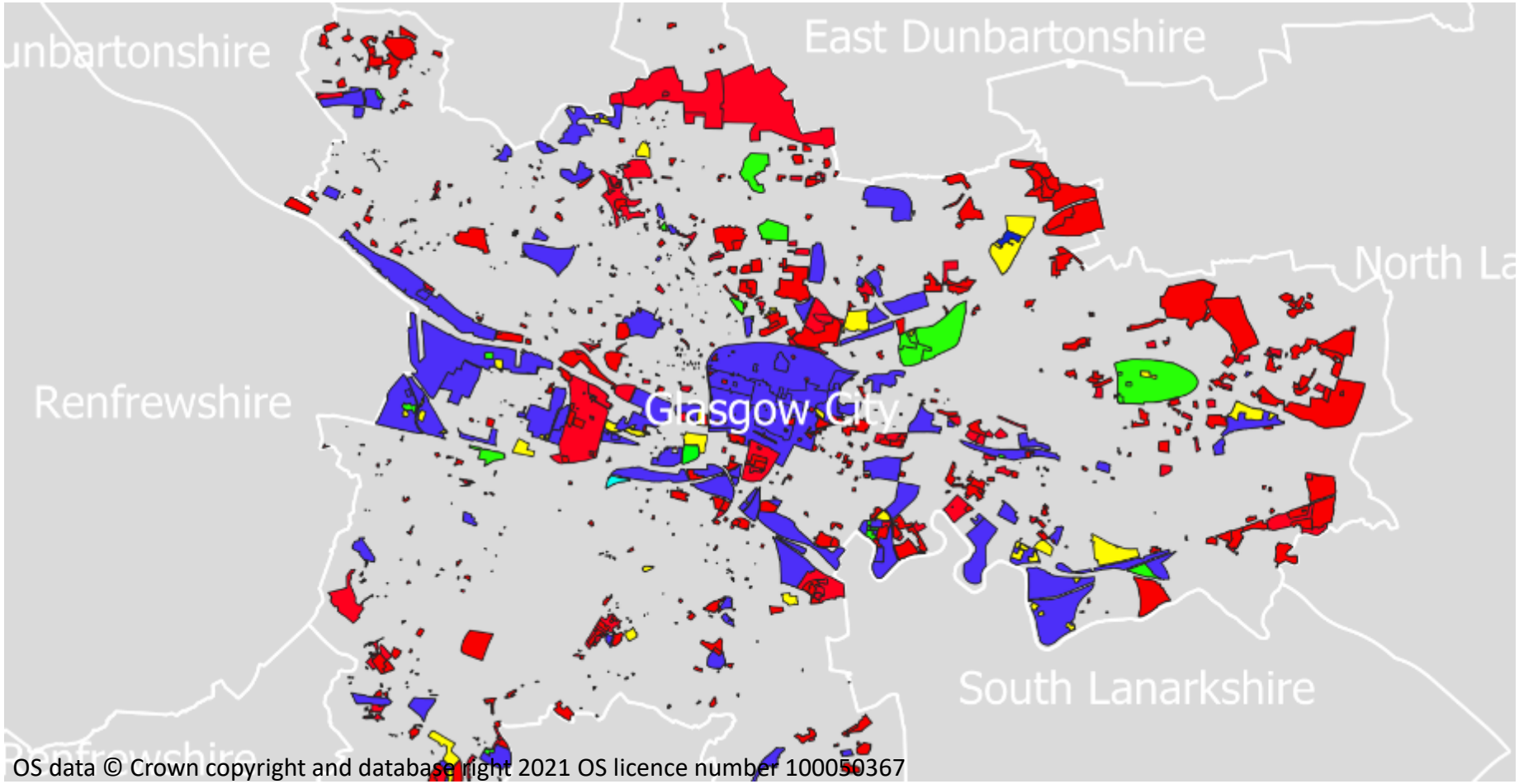

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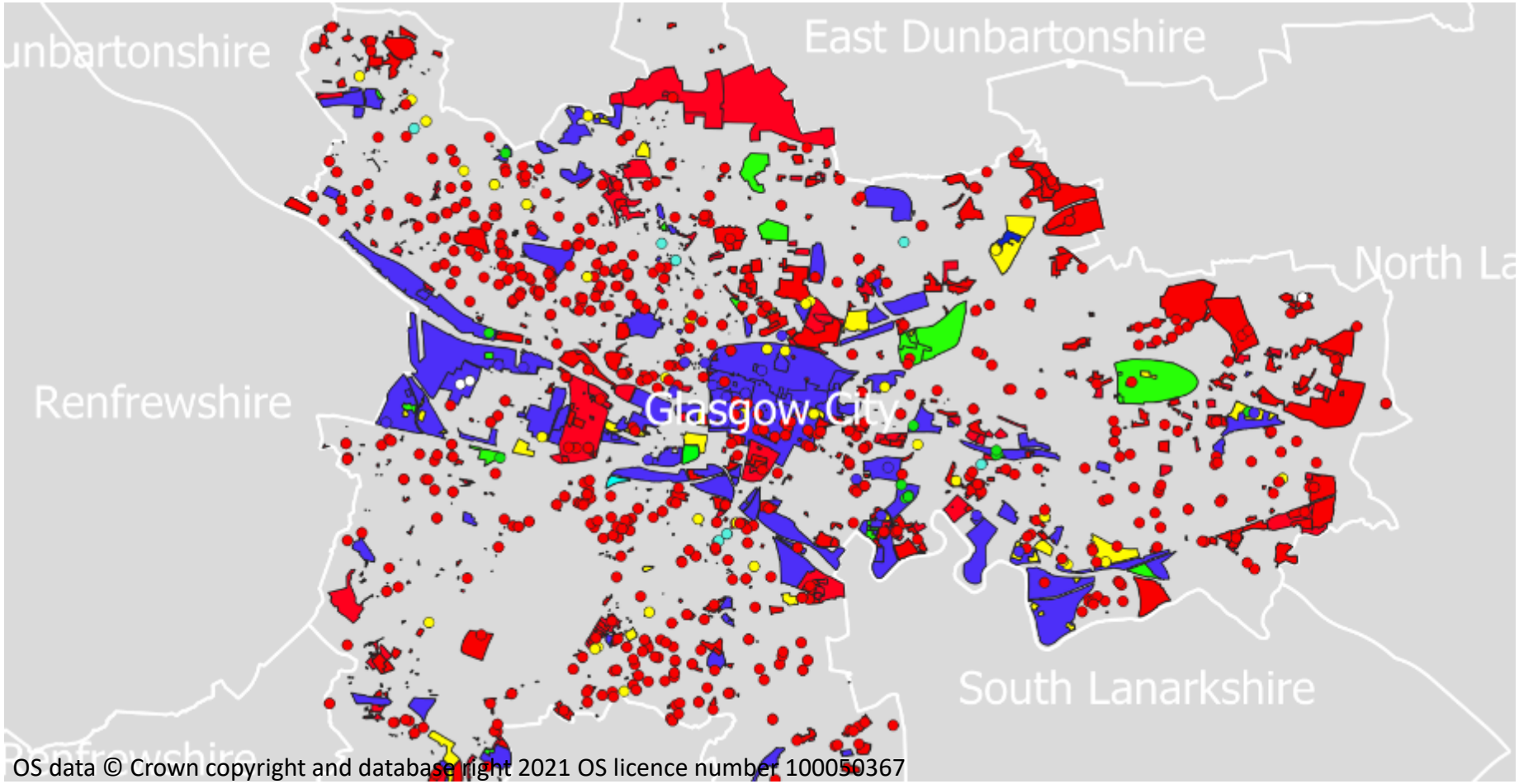

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Strategic Infrastructure Modelling

Scottish Water Operational Boundaries

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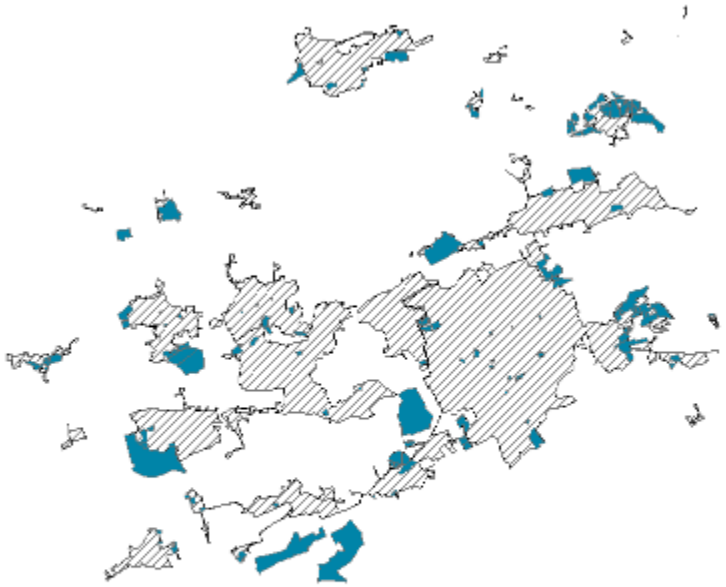
Data from Scottish Water

Strategic Infrastructure Modelling

Spatial Hub polygons of Housing Land Supply plus additional information on development start date, build out rate, and completions



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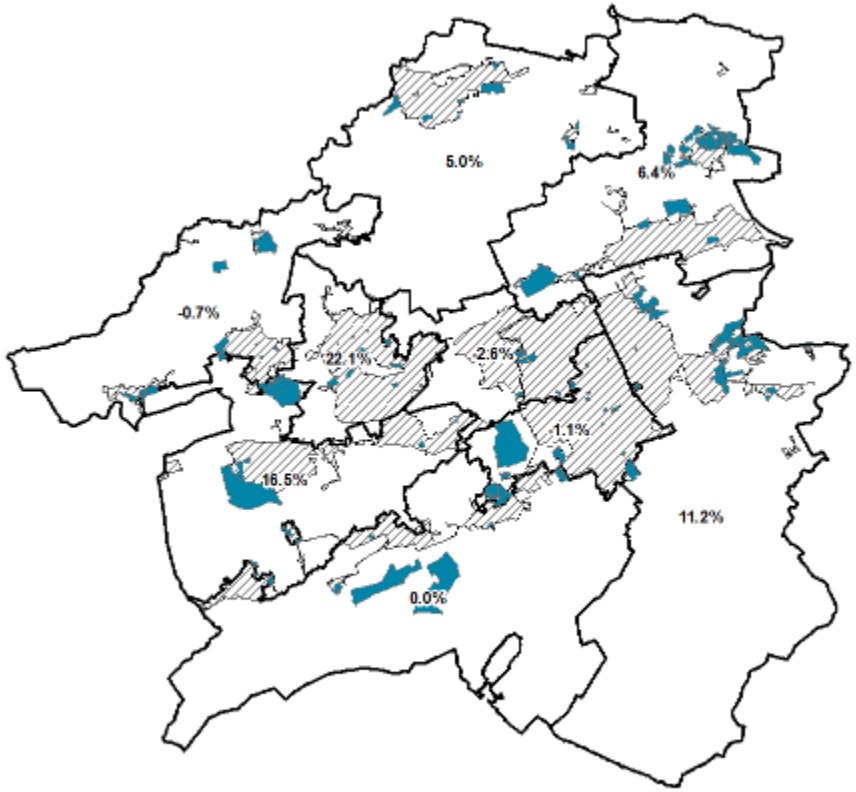
Data from Scottish Water

Strategic Infrastructure Modelling

NRS population projections (Improvement Service has recently made available the NRS 2018 sub-council population projections)



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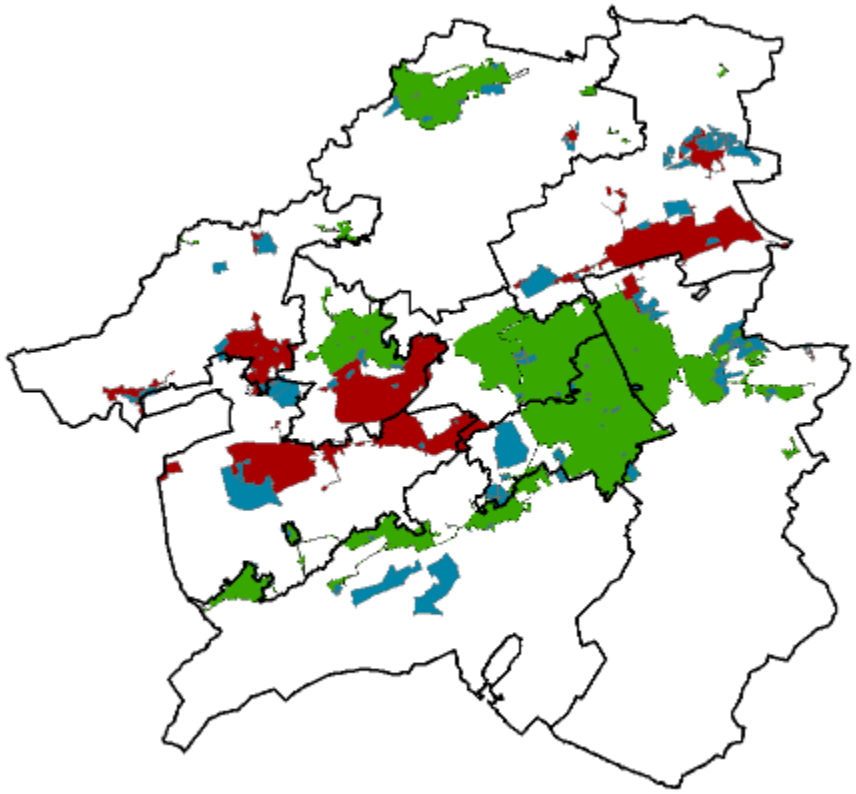
Data from Scottish Water

Strategic Infrastructure Modelling

Scottish Water model the growth at each water and waste water operational area using previously-shown data plus other data from Scottish Water's assets such as current demand (population)

Different scenarios are modelled. In this diagram, the expected growth operational areas are red



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Data from Scottish Water

Future Development

- Data Standardisation
  - Consistency at data source and move away from central cleaning by IS
  - LDPs, planning applications, land supplies – common categorisation
  - Self-assembling at regional and national scales

- Data Governance and Provision
  - Building a “data ecosystem”
  - Delivery through Digital Planning programme
  - Open Data – requires funding

- Innovation
  - Removal of data cleaning burden
  - Move away from spreadsheet modelling
  - Use of data science techniques – clustering, classification, regression
  - More sophisticated analyses of site constraints – infrastructure and market

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