

Information Note

Producing the Scottish Postcode Directory

2023
National Records of Scotland (NRS)

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What is the Scottish Postcode Directory (SPD)?

The Scottish Postcode Directory is released bi-annually (Feb/Mar and Aug/Sept) and contains

Spatial Data

- Postcode unit boundaries and grid references for live 'digitised' postcodes in Scotland.
- Postcode sector boundaries and grid references.
- Postcode district boundaries and grid references.

Postcode Index

The Index links live and deleted postcodes to administrative, health, statistical and other areas. It also contains the Gridlink® one metre grid reference as well as National Records of Scotland (NRS) assigned grid references.

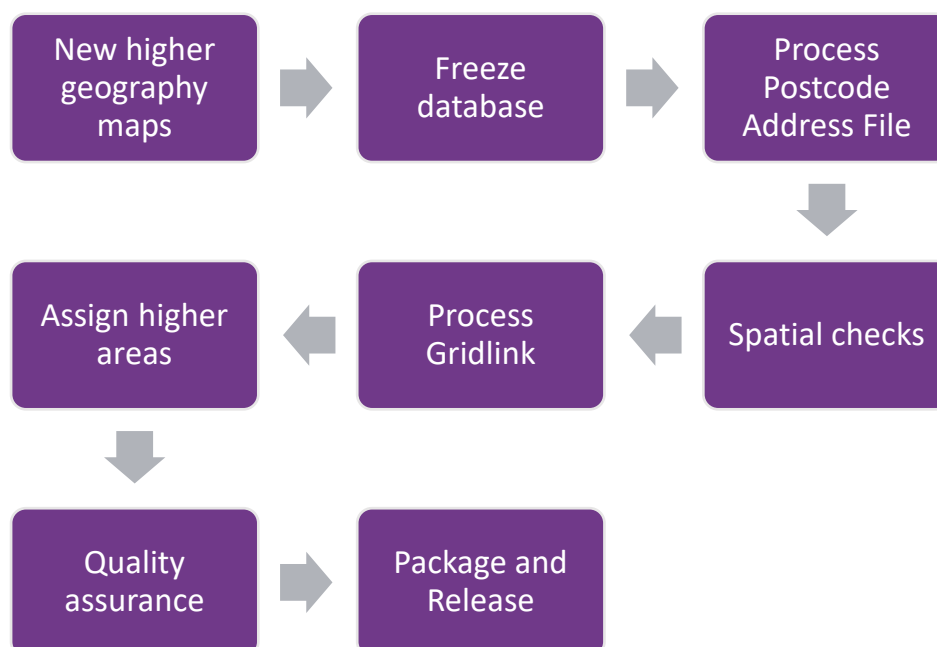
- The Index is split into 2 tables for customer output:
 - Small User and Large User.
- The SPD Index allocates postcodes directly to a number of higher geographies, using the postcode's 1-metre grid reference.
- The Index is supplemented by geography code to name lookups.

News Bulletin

A bulletin advising the latest statistics for the Postcode Index, changes from previous index, changes to maps, and information on reviews in progress.

How NRS Geography process the SPD

The following flowchart shows the various stages to processing the SPD. These stages are explained fuller below.



New higher geography maps

Prior to SPD production, NRS Geography check if there are any planned boundary changes that need to be included. This could be

- a full geography refresh for example latest version of settlements and localities, or
- it could be a partial refresh for example the boundary between two councils has changed.

Any new higher geography maps that we add to the NRS postcode database are checked for geometry errors before being added.

We also check that all postcode grid references (whether live or deleted) will get an allocation via Point in Polygon method for 'All Scotland' geographies. Where there are no allocations, the map will be updated on our database to avoid failures.

If changes need to be applied, this work is ideally processed in the interim period between the 2 SPD releases. Dependant on timing of the new data being released it may not always be possible to include the changes in the SPD, in these cases a supplementary file is produced, and the changes are applied to the next SPD.

Database freeze

NRS Geography freeze the postcode database to allow for quality assurance and spatial checks prior to loading the quarterly Postcode Address File for processing. This allows any anomalies discovered to be investigated and fixed.

Comparison to previously produced postcode index

By comparing the live database to the previously produced postcode index we can identify any anomalies which are investigated and fixed prior to loading the new PAF.

Spatial checks

The postcode dataset for live postcode boundaries and grid references is checked for missing postcodes, duplicate postcodes, and topological errors (such as gaps, overlaps, 1 grid reference to 1 boundary).

Process Postcode Address File

NRS Postcode boundaries are based on the Postal Address File (PAF®) received on a quarterly basis from Royal Mail®.

The file provides details of new and deleted postcodes.

- New postcodes are assigned to groups of new addresses. For example, houses in a new building development will be assigned a completely new postcode.
- Deleted postcodes where there are no longer any addresses. For example, there may be a programme of housing demolition which will result in there being no addresses remaining for that particular postcode.

Using all available data, NRS Geography plot the changes of these new and deleted postcodes to the NRS postcode database.

Spatial checks

The postcode dataset for live postcode boundaries and grid references is checked for missing postcodes, duplicate postcodes, and topological errors (such as gaps, overlaps, 1 grid reference to 1 boundary).

This is the last time these can be checked and where necessary fixed before producing the SPD.

Process Gridlink

Once all checks have passed, NRS Geography run systems that update our NRS grid references with Gridlink grid references.

NRS extract the Gridlink grid reference for higher area assignment providing the Gridlink grid reference is within the NRS postcode boundary. Gridlink grid references

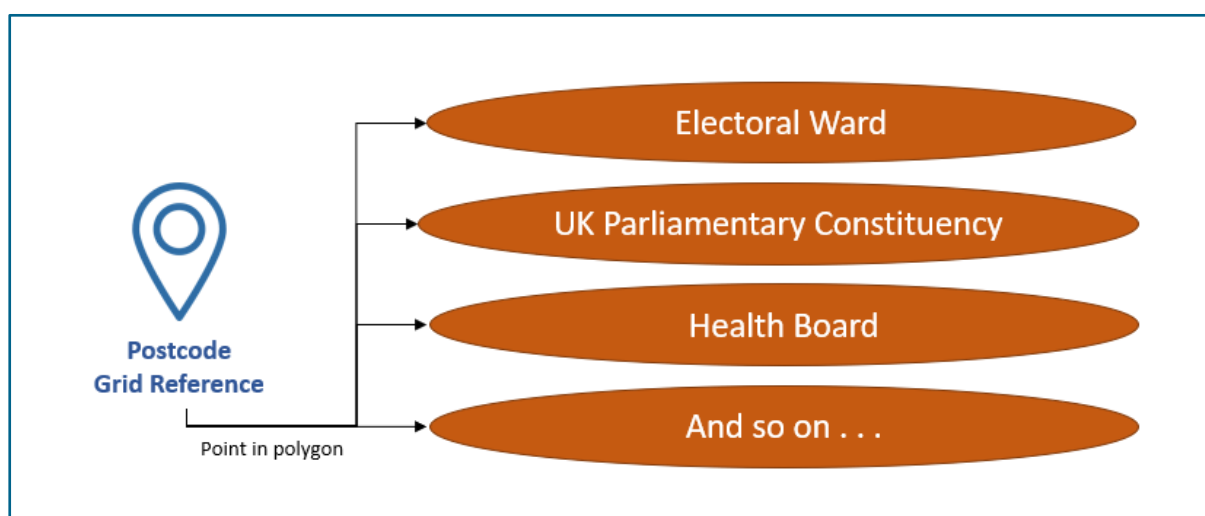
falling out-with the postcode boundary are replaced with a NRS grid reference that lies within the postcode boundary.

More information on Gridlink is available in the Geography Policy section of the NRS website.

Assign Higher Areas

Once Gridlink has been applied, NRS Geography run systems that assign the postcodes data to higher geographies.

Postcodes are plotted to administrative, electoral and health areas by 'best-fit' allocation using the postcode grid reference. This process uses point-in-polygon methodology.



More information on best-fit and exact-fit can be found in the Geography Policy section of the NRS website.

Quality Assurance

When all the postcodes have been assigned higher areas, checks are applied to the Postcode Index that has been produced.

NRS Geography Data Quality Procedures

Data quality procedures are important for detecting missing mandatory information, detecting errors made during updates and detecting duplicates.

We are continually reviewing our processes to identify errors in our data. While it is impossible to catch everything, where a customer discovers an anomaly we investigate it, rectify it for future releases and if necessary, implement new checks.

Some QA checks cannot easily be automated and require manual checks, usually based on a sampling approach, although for some criteria, 100 percent checks are possible.

Postcode Index Relationship checks

Examples of relationship checks are:

- Council Area to Health Board Area
- All Scotland (full extent) geographies have a higher area allocation.

Generally, a relationship fail is due to the grid reference not falling within the boundary of the 'higher geography' map. Many of the higher geography maps are historic and have inland water removed, or different depictions of coastline than what is currently available. In these cases, we would move the grid reference to a location within the postcode boundary where it would pass a Point in polygon to the higher geography in question. We would also update our 'Gridlink Exceptions' dataset to include the postcode that failed so that the Gridlink grid reference is not used in future.

Postcode Index Completeness checks

Ensuring that all 'All Scotland' geographies have been allocated a postcode.

Ensuring that all fields are complete with data unless explicitly deemed optional.

Ensuring that data is unique so that there is only one record for a given postcode and context.

Package and Release

When the SPD has passed its quality assurance it is packaged up for release to users.

The SPD is available on the NRS website and/or via Geography Customer Services. The spatial data is also available on SpatialData.gov.scot metadata portal.

Licensing

Postcode boundaries and grid references

Free access to these datasets are restricted to members of the [Public Sector Geospatial Agreement](#) (PGSA) (Ordnance Survey website).

Access to these datasets are being made available for your personal, non-commercial use under the terms of the [INSPIRE End User Licence](#) (Ordnance Survey website) because it includes Ordnance Survey (OS) Licensed data.

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Indexes and Look-ups

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Inclusion of Postcode Address File (PAF) information

For data with PAF information displayed the following statement should also be added:

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