



How to Detect Missing Revenue





Detached House
UPRN
320000974923



How to: Find missing revenue by using your Local Land and Property Gazetteer

A Planning authority's Local Land and Property Gazetteer (LLPG) is a powerful resource in discovering and unlocking potential revenue for local authorities.

When departments are integrated with Unique Property Reference Numbers (UPRNs) from the LLPG, it allows data to be linked together and rapidly cross-checked enabling verification to take place. Rather than departmental data existing solely in their respective silos, UPRNs break these walls down, tying the information together, enabling information about the property to be connected and centralised. This builds up a picture of intelligence for each property which helps identify inconsistencies and contradictions in the data.

For example, a commercial property being registered as having a trade waste collection, but not appearing as a rateable premise in the non-domestic Rates (NDR) dataset when it should. And similarly, a residential property listed in the electoral registration system, but not appearing in the council tax dataset.

Each anomaly detected represents an invaluable source of address intelligence which should be investigated with a view to rationalising why it is missing and aligning it to the official address as held in the LLPG if different. It is the investigation of these address anomalies which can lead to potential revenue.

Other areas of potential lost council tax revenue include where people are paying single persons discount but there is more than one person registered to vote at the property. Our guidance focuses on analysis of property data rather than people data, which involve different processes.





Why do we trust the LLPG?

The address data in a LLPG represents the definitive and official source of truth.

The statutory Street Naming and Numbering (SNN) process underpins this at its core, ensuring that new addresses have gone through a robust process checking legality, convention, duplication and safety aspects via the emergency services. This involves an in-depth consultation process with key stakeholders and triggers the assignment of the Post Town and Postcode which is allocated by Royal Mail.

The SNN process creates the official address, the legally known representation of the property which should be adopted across the board. It is what all instances of addresses should conform to in terms of address conventions, but more so, if a property exists but has not passed through the SNN process nor is present in the LLPG, it raises real concerns as to how and why this is case.

It may mean that the property:

- lacks planning permission
- has not passed building control compliance checks
- is not registered with other authority departments
- is not paying council tax or NDR
- is not known to the emergency services, utilities or Royal Mail

Missing properties are critical to detect and investigate. They also represent an opportunity for local authorities to obtain missing and retrospective revenue in the form of council tax and NDR which supports the key public services they deliver.



How to **detect missing revenue** with your LLPG

Detecting potential missing revenue using your LLPG involves following multiple steps, however the rule of thumb is that the more populated (integrated) each dataset is with UPRNs, the easier and more rapid this whole process becomes. There is also a vast array of software, tools, programming languages and databases which can help you achieve this. This guidance however will be agnostic and outline the high-level principles alone which can be implemented within these various application and tools.

But first we need to cover some technical terms.

This guidance is all about comparing properties from a departmental system extract which we will call "**Dataset X**" (which could be from any department) against an extract of property data which will either be from your council tax or NDR system.



Dataset X

The properties we want to check



Council Tax /NDR

The properties we want to check against

As a high-level principle, if a property in Dataset X does not exist in council tax or NDR when it logically should, it may mean revenue is not being collected and will need further investigation. **It is these properties that we want to identify in Dataset X.**



Key datasets to compare

The datasets below can be used to detect missing properties in both council tax and NDR extracts. The data sources under Dataset X represent a logical assumption that if a residential or commercial property is listed in their system, then it should technically exist in either council tax or NDR.

The properties we want to check "Dataset X"	The properties we want to check against	What this can highlight
Electoral registration	Council tax	Residential properties not registered with council tax
Waste collection (Domestic)	Council tax	Residential properties not registered with council tax
Waste collection (Paid for green waste)	Council tax	Residential properties not registered with council tax
Waste collection (Commercial waste)	NDR	Commercial properties not registered with NDR
Environmental health (Commercial licensed properties)	NDR	Commercial properties not registered with NDR
LLPG (residential properties)	Council tax	Residential properties not registered with council tax
LLPG (commercial properties)	NDR	Commercial properties not registered with NDR
Residential Energy Performance Certificates (EPC)	Council tax	Residential properties not registered with council tax
Commercial Energy Performance Certificates (EPC)	NDR	Commercial properties not registered with NDR

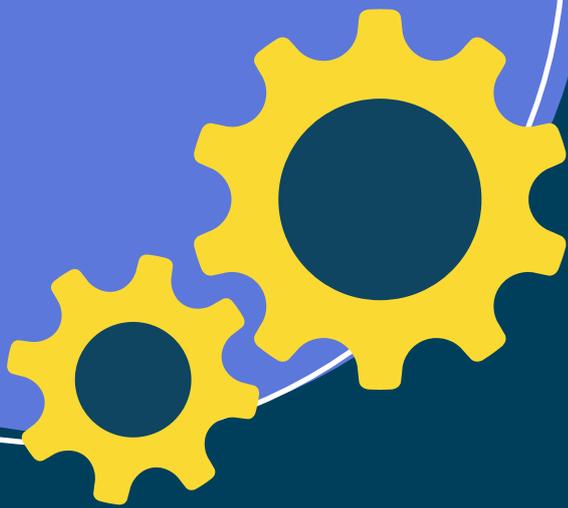


Using a Real-Life Scenario

Let's say you want to compare an extract of properties from your refuse collection system of businesses signed up for commercial waste contracts against what is held in NDR. The aim is to identify properties registered for trade waste which are not listed in NDR. These commercial premises should also be registered and paying NDR, and this represents a good opportunity to cross-check and investigate.

Please note, in the example steps below, NDR is compared against as it lists commercial properties which correspond with those in Dataset X. Should your own scenario require a comparison against residential properties, then an extract of council tax (residential) properties should be used instead.





Key Steps

If both datasets contain UPRNs for all properties, data-linking based on the UPRN enables an extremely accurate and rapid comparison to be made. However, if the datasets are sparsely populated with the UPRN, then a more manual, involved process needs to be employed. These eventualities are catered for below, however time should always be spent first to ensure the source datasets possess a high proportion of UPRNs where possible.

Step 1: Obtain an extract of property data for the two datasets you would like to compare

In our scenario Dataset X is a list of commercial properties in receipt of trade waste collection. This is being compared against an extract of NDR (commercial) properties.

- Ensure each extract contains the UPRN as this is how the information will be linked across both datasets. It may be the case that not all records will contain a UPRN, but these will be tackled later
- The property address must be included to identify what the UPRN relates to. It doesn't matter if the address exists as one single line or broken down into different fields. As long as it is supplied then this is key
- If the department's system has its own unique ID for the property in addition to the UPRN, then this should also be supplied
- The property data provided must relate to active records used by the department and exclude any historical or deleted entries no longer in use
- Only property data is required, no personal data is needed at all
- The data should not contain duplicates (records with the same UPRN and address). If this is the case, then these entries will need to be de-duplicated



Key Steps: Step 1

The high-level structure of each dataset should look like the below. **It is also useful to add a prefix to each field so you can identify its source, for example:**

Dataset X (commercial properties in receipt of trade waste collection)

ComWaste_UPRN	Unique Property Reference Number
ComWaste_Property_ID	The system's own internal property ID (if used)
ComWaste_Full Address	Full address of the property in a single line
OR	
ComWaste_Address Line 1	Address field relating to the property
ComWaste_Address Line 2	Address field relating to the property
ComWaste_Address Line 3	Address field relating to the property
ComWaste_Address Line 4	Address field relating to the property
ComWaste_Address Line 5	Address field relating to the property
ComWaste_Address Line x	Address field relating to the property

NDR Property Extract (what Dataset X is being compared against)

NDR_UPRN	Unique Property Reference Number
NDR_Property_ID	The system's own internal property ID (if used)
NDR_Full Address	Full address of the property in a single line
OR	
NDR_Address Line 1	Address field relating to the property
NDR_Address Line 2	Address field relating to the property
NDR_Address Line 3	Address field relating to the property
NDR_Address Line 4	Address field relating to the property
NDR_Address Line 5	Address field relating to the property
NDR_Address Line x	Address field relating to the property



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Key Steps: Step 2

Step 2: Address matching to the UPRN

- Properties without a UPRN in both datasets should be matched to one where possible. This will increase the likelihood of matching properties together when data-linking with the UPRN (step 3)
- A range/selection of address matching tools, software, services and techniques is available to help you do this in high volumes. GeoPlace may be able to help you with your address matching requirements so please get in touch if required
- Alternatively, address matching can be manual and involves searching the LLPG to determine if the address in question exists. If it does, then obtain the UPRN from the LLPG directly
- For each property that has been successfully matched to a UPRN, ensure it is updated in the datasets you have obtained. The aim is to have as many properties populated with a UPRN as possible as this maximises the amount of matches that can be obtained in the step below.





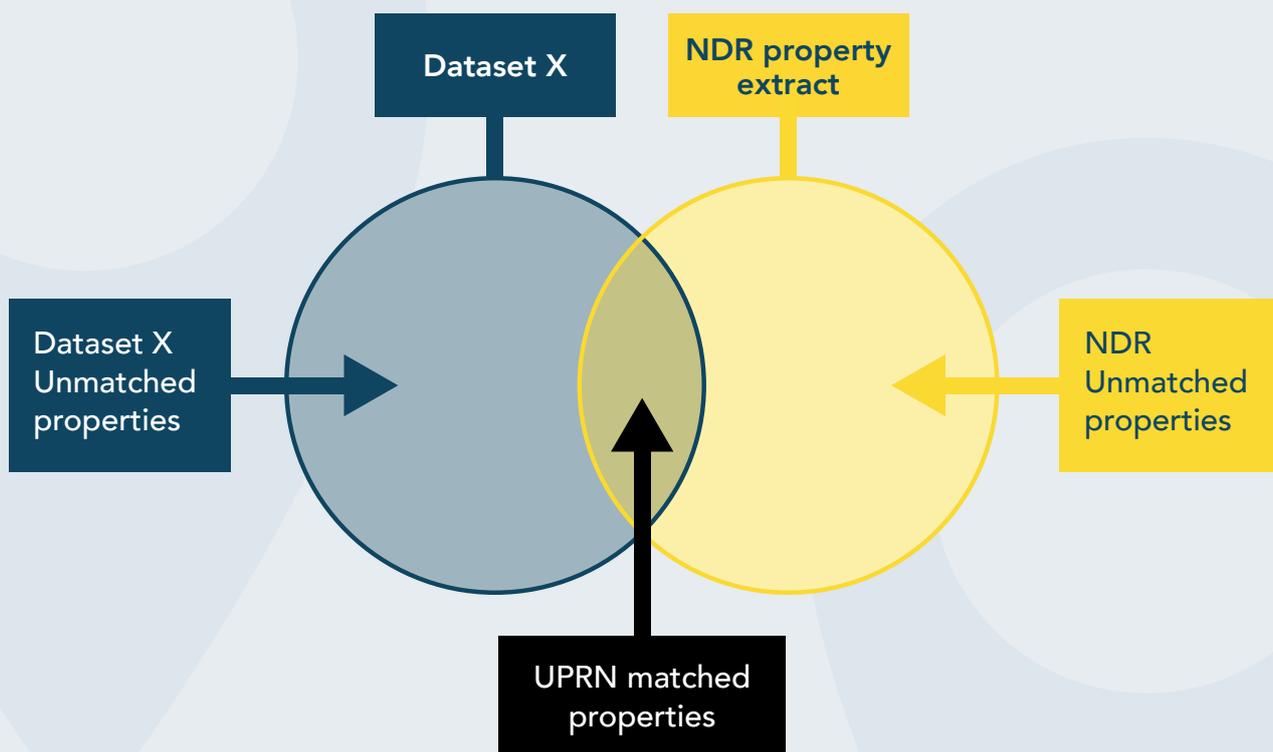
Key Steps: Step 3

Step 3: Using the UPRN as the join field, join Dataset X to the NDR dataset based on the UPRN.

- This is a one-to-one join, meaning we are expecting only one occurrence of a UPRN in each dataset i.e. no duplication
- For clarity, in SQL logic terms the type of join we are doing is a “left join” or “left outer join”
- This same type of join logic can be achieved in many different systems, databases, Export Transform Load (ETL) tools and programming languages. The steps or functions may be different, but the principles remain the same in that the goal is to identify those properties in Dataset X which do not match in NDR (or council tax – whichever is applicable)

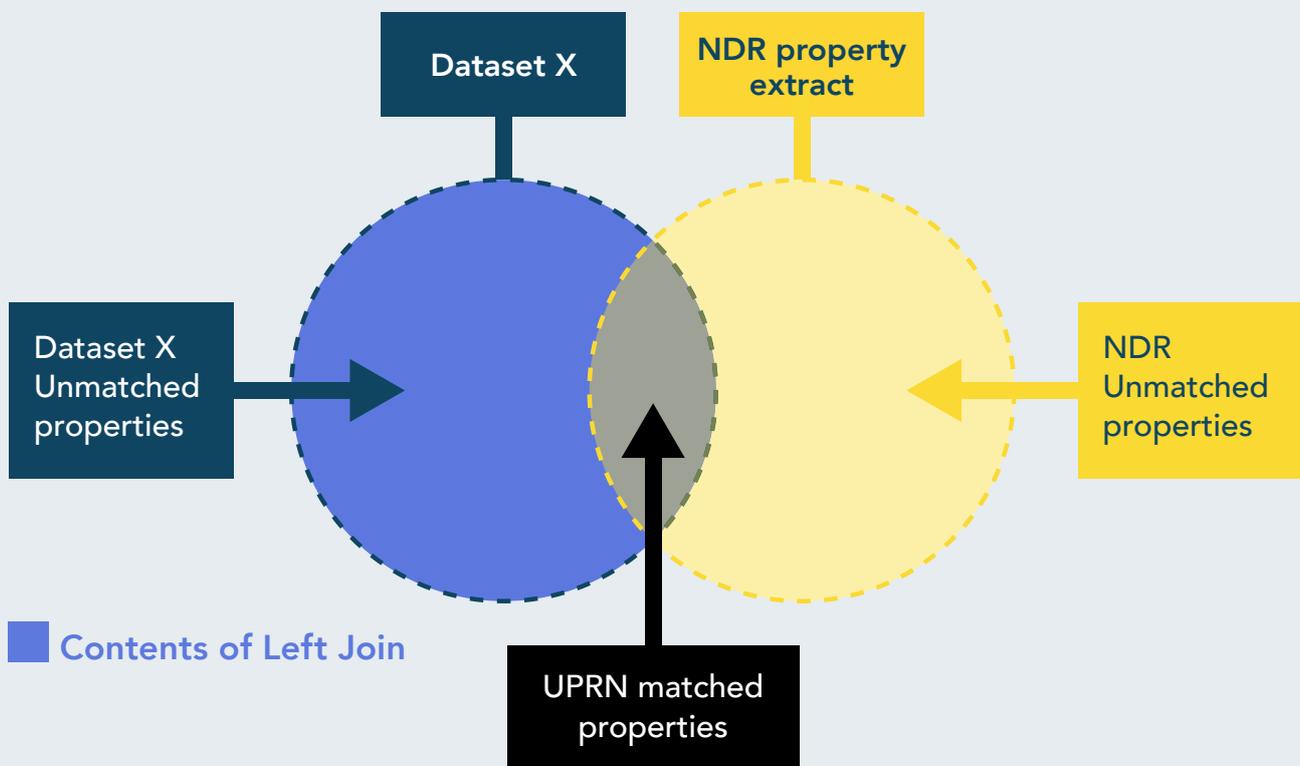
If we were to visualise the join logic, it would look like the below:

General Join logic:



Key Steps: Step 3

What a "Left Join" includes:



The result of the "Left Join" will include all the property records in Dataset X. This will result in a join output table looking like the below containing the colour coded types of records:

- = UPRN matched properties
- = Unmatched properties with a UPRN
- = Unmatched properties without a UPRN

Key Steps: Step 3

“Left Join” Output

Dataset X (commercial waste)			NDR Dataset Fields		
ComWaste_UPRN	ComWaste_Property_ID	ComWaste_Full Address	NDR_UPRN	NDR_Property_ID	NDR_Full Address
100012300078	1235	12 High Street..	100012300078	90505	12 High Street
100012308587	1654	52 Station Road..	NULL	NULL	NULL
100012309811	7436	Unit 1, Fountain House	100012309811	90024	Unit 1, Fountain House
100012307847	7387	Marks Café, Hill street..	NULL	NULL	NULL
NULL	7245	The Paper Mill, 52 Green Lane..	NULL	NULL	NULL
NULL	6245	Wine Cellar, 12 Long Drive...	NULL	NULL	NULL
100012378453	7583	We R Kitchens, High Street..	100012378453	83400	We R Kitchens, High Street..
NULL	5643	Mobile Repair, 10 Station Hill	NULL	NULL	NULL
NULL	2564	Taste of China, Valley Road..	NULL	NULL	NULL

- = UPRN matched properties
- = Unmatched properties with a UPRN
- = Unmatched properties without a UPRN



Key Steps: Step 3

UPRN matched properties:

- These represent where a property exists in both datasets e.g. has a commercial bin collection account (Dataset X) and is listed in NDR. No investigation is needed on these
- When a match has been successfully made to a UPRN in the NDR dataset, its NDR fields will also be populated.

Unmatched properties with a UPRN:

- These represent where a property exists in only Dataset X e.g. it receives a commercial bin collection, but is not listed in NDR. Investigation is needed on these as potential revenues may be currently missed
- When a match has not been made between the two datasets e.g. a property in Dataset X does not match to NDR, the NDR fields will contain "NULL" values as information about that property does not exist in NDR
- The unmatched properties in the example above appear to be:
 - UPRN: 100012308587 52 Station Road..
 - UPRN: 100012307847 Marks Café, Hill Street..

Unmatched properties without a UPRN:

- These are properties which exist in Dataset X (receive a commercial bin collection) but do not have a UPRN, nor could one be assigned to them after conducting address matching. Investigation is needed on these as potential revenues may be currently missed
- As a result, there is no UPRN to join to the NDR dataset with, so it is not possible to know if this exists from using a data extract alone. A different approach needs to be employed and this is quite manual.

- = UPRN matched properties
- = Unmatched properties with a UPRN
- = Unmatched properties without a UPRN

Key Steps: Step 4

Step 4: Investigating the “unmatched properties with a UPRN” and sharing the intelligence

- It is important to note that these properties are simply anomalies at this stage and not 100% guaranteed to be liable for revenue collection
- A thorough investigation of these missing (unmatched) properties may result in some (if any) being retrospectively added and liable for revenue collection
- If your relationship with council tax or NDR Team (or Revenues Inspector) permits it, then report these properties to them on the basis that they appear in another departments dataset as commercial but are not listed in NDR
- If you have the time or ability to access any of the systems below and find any references (e.g. a planning reference number) relating to a property’s existence, then note this down.
 - Planning / planning enforcement – does it have planning permission, or any cases logged?
 - Building control (if relevant) – is it registered on the system?
 - SN&N – has the property passed through SN&N at any point?
 - Electoral services (if relevant) – is the property listed as a voter’s residence?
- These references if provided to the NDR team or any other department will aid them in their investigation.
- As the properties in Dataset X already have a UPRN (known in the LLPG) and if the software systems above can be searched based on the UPRN, then it makes looking them up very simple
- The final action here is to keep in close communication with the NDR team and to be updated if any unmatched properties provided can be brought into rating.



Key Steps: Step 5

Step 5: Investigating the "unmatched properties without a UPRN" and sharing the intelligence

- These properties need to be thoroughly investigated since they could not be matched to an existing UPRN even after address matching in Step 2
- There is an increased likelihood that these properties may well be missing from not just NDR, but other departments who will need to know they exist
- Follow the same process outlined in Step 4, however if the property is also missing in any of the following systems, alert your colleagues there as they will want to investigate it as well
 - Planning / planning enforcement
 - Building control
 - SN&N
 - Electoral services
- Doing this can ensure that the property is legal, safe, known to other departments (including the emergency services), visible to credit reference agencies and utility providers, who all provide their critical services. For example;

Planning / planning enforcement – establishes if lawful planning permission exists

Building control – ensures adherence to building regulations

SN&N – officially names and numbers the property, communicates this authority-wide in addition to Royal Mail and the emergency services

Electoral services – ensures occupiers are registered to vote and shares 1property information with credit agencies.



- Keep in close communication with the NDR team and other teams who you have reported the missing property to and ask to be updated if any unmatched properties can be brought into rating.



Key Steps: Step 6

Step 6: Adding the "unmatched properties without a UPRN" to the LLPG

- Although these properties have not been through the SN&N process and may be missing from other departments such as planning, they can still be added to the LLPG and allocated a UPRN if required. (Please consult the DEC Address V3.4 for further details)
- Since they are already in existence and possibly occupied:
 - Add these as "In Use" and "Approved" BLPUs with "Approved Preferred" LPIs
 - On the LPI:
 - **"POSTAL_ADDRESS"** – select the most applicable value for the situation but in this scenario it would be "A" (assumed). Ensure this is updated as the investigation progresses.
 - **"OFFICIAL_FLAG"** - If the property has not been through SN&N, set this to 'N' (unofficial address). Ensure this is updated as the investigation progresses.
- It is of paramount importance that these properties are updated as investigations unfold and new information becomes known, and for example, if it is eventually assigned an official address by SN&N
- Representing these properties in your LLPG at this stage ensures that the property is not only visible and available to your own authority to use, but also to the wider community of address data users under the Public Sector Geospatial Agreement (PSGA)
- This includes central government, local government, the emergency services. In addition, this property data is also used by utility companies, commercial organisations and banks who provide many of the day-to-day services we come to rely upon.





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Key points to take away

Using the LLPG and the UPRN to detect missing revenue is an activity which can be undertaken by all local authorities. The process is simplified and expedited if properties in both datasets possess as close to 100% population of the UPRN as possible. This allows data-linking based on the UPRN to take place which is extremely accurate and rapid and avoids having to conduct further manual steps as outlined above. Time should always be spent ensuring datasets are populated with the UPRN to their fullest.

The correct utilisation and handling (integration) of the UPRN in local authority software systems maximises this ability and makes it possible. Integration should be prioritised and improved where appropriate.

The address intelligence which can be gained through following the above steps is invaluable. Whilst also generating revenue, it also ensures missing properties are identified and become known to other departments across the authority and more widely, the rest of the public sector. This allows the critical public services they provide to become accessible, inclusive and ultimately more effective.

Should you have any queries regarding the approaches outlined above or on the topic of UPRN integration then please get in touch at support@geoplace.co.uk.

