Toitū Te Whenua
Land Information
New Zealand

NZ Addresses Data Dictionary

Version 1.1

30 January 2023

Te Kāwanatanga o Aotearoa
New Zealand Government

Versioning

Version number	Amendments	Date
1.0	Released to LINZ Data Service	January 2023
1.1	Added deprecated NZ Street Address information	February 2023

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1 Introduction

1.1 Purpose

This document provides a detailed data dictionary for New Zealand's Address Dataset maintained by Toitū Te Whenua Land Information New Zealand (LINZ). The Address Dataset is a combination of the NZ Addresses layer, and the Address Information Management System (AIMS) Street Address set. This data is sourced from the AIMS and Comprehensive Address Data Store (CADS) databases, centralised databases for the management of national addresses, including for electoral purposes.

1.2 Background

This dataset provides all the allocated addresses as advised to LINZ by Territorial Authorities (TAs), and contains the road number, road name, and suburb of an address plus Address ID and Territorial Authority.

Two address datasets are available on the LINZ Data Service:

- **NZ Addresses** – New Zealand's authoritative physical address spatial layer. Includes data from both the CADS and AIMS systems.
- **AIMS Street Address Dataset** – a set of related layers and associated look-up tables providing address information as a data model designed for technical applications. Does not include data from CADS.

Note: the 'source_dataset' field in NZ Addresses layer can be used to determine if records are sourced from CADS or AIMS.

Please refer to the Toitū Te Whenua website for more information about Addressing Roles and Responsibilities:

https://www.linz.govt.nz/guidance/property-addressing/addressing-roles-and-responsibilities

Information for Territorial Authorities supplying address data:
https://www.linz.govt.nz/sites/default/files/linzaddressnotificationmodel_v2.pdf

Addressing Standard:

https://www.linz.govt.nz/guidance/property-addressing/addressing-standards-and-guidelines

1.3 File Format

Data is provided in UTF-8 format to support macrons. The NZ Addresses layer provides data in both ASCII and UTF-8, to support users and enable backwards compatibility.

The source geometry of all spatial tables is NZGD2000 (New Zealand Geodetic Datum 2000).

1.4 Definitions

Text	Text
AIMS	Addressing Information Management System
CADS	Comprehensive Address Data Store
LDS	LINZ Data Service
Addressable Object	The object that may be unambiguously determined by an address. For example, property, building, access point. Property, Building, and Parcel (for certain AIMS business rules) are 'addressable objects' and are represented and identified by unique IDs. Addressable Objects need to have a well-defined and managed relationship with address. This relationship is modelled in the AIMS system. AIMS does not manage these relationships but consumes them in a manner similar to the reference datasets such as Statistics NZ meshblocks. This involves the periodical loading of the spatial objects and related attribute data into AIMS. **Currently, AIMS intends to use parcels as addressable objects. Over time it is our intention to more accurately implement the addressable object for example using rating unit and/or building information.**
Primary Address	This is the primary address of a primary address site as defined in AS/NZS 4819 and is the main address used to reference an addressable object (address site).
Sub-Address	This is a sub-address of a sub-address site that is part of a primary address site as defined in AS/NZS 4819.

Alternative Address	This is an alternative to a primary address where the primary address site has more than one access as defined in AS/NZS 4819. This means that in addition to its main address, a primary address site may be assigned one or more alternative addresses.

2 Data Model and Dictionary

To assist you in understanding these datasets, the structure and details of the data fields are described in tables below. The relationship between tables and directly related datasets is provided in a data model diagram. No attempt has been made to indicate cardinality, however, the arrows drawn between datasets point from the dataset containing the unique record, to the dataset that may contain one or more references to that record (i.e. primary key -> foreign key).

To enable changes between updates to be recorded and then queried using the LDS changeset service, every table has a primary key. Primary keys are shown by a bolded and underlined column name.

The AIMS data model has been designed to manage address data according to current address standards and to allow for future enhancements in address management. Not all of this data is currently available and data capture for these new fields will occur over time. The new fields requiring data capture are shown in italics in the tables below.

2.1 NZ Addresses

https://data.linz.govt.nz/layer/105689

This dataset contains the core components of an address to support simple searching or use of this layer to provide context. The core components include the street number, street name and suburb of an address, as well as a unique ID and Territorial Authority

It is maintained in LINZ's Address Information Management System (AIMS) and Comprehensive Address Data Store (CADS), which are centralised databases for the management of national addresses, including for electoral purposes. The system manages all allocated addresses as advised to LINZ by Territorial Authorities (TAs).

Migrating from NZ Street Address (Deprecated) to NZ Addresses
NZ Addresses replaces NZ Street Address (Deprecated)
https://data.linz.govt.nz/layer/53353
The deprecated dataset can be swapped out for NZ Addresses noting the following:

1. The primary key *address_id* is common to both tables.
2. NZ Addresses has added the fields: *source_dataset, territorial_authority, unit_type, level_type, level_value, address_number_prefix, road_name_prefix, road_name, road_type_name, road_suffix, address_lifecycle*
3. NZ Addresses removed the field: *road_section_id*
4. NZ Addresses renamed the fields: *address_type* to *address_class*, *water_route_name* to *water_name*, *water_name* to *water_body_name*
5. NZ Addresses includes data from CADS which is not included in the AIMS Address Dataset. As such there will be records in NZ Addresses that have no corresponding records in AIMS. These records can be identified where the *source_dataset='CADS'*.

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_id	integer		32	0	505588	unique identifier for an address.
source_dataset	varchar	20			AIMS	The source dataset of the address. Includes: AIMS and CADS
change_id	integer		32	0	1304726	unique identifier for the address version.
full_address_number	varchar	100			1A	All number components concatenated for an address.
full_road_name	varchar	250			Joe Bloggs Road	All road name components concatenated for an address.
full_address	varchar	400			1A Joe Bloggs Road, Dannemora, Auckland	All address components concatenated for an address.
territorial_authority	varchar	80			Auckland	Territorial authority from Territorial authority layer (Supplied by StatsNZ)
unit_type	varchar	100			Shop	Unit type
unit_value	varchar	70			10	Alpha numeric value for a unit
level_type	varchar	100			Ground	Level type
level_value	varchar	70			1	Alpha numeric value for a level
address_number_prefix	varchar	26			A	Alpha numeric characters shown before the address number.
address_number	integer		32	0	1	Address number
address_number_suffix	varchar	10			A	Alpha numeric characters that follow the address number.
address_number_high	integer		32	0	0033	High address number of a ranged address.
road_name_prefix	varchar	100			Lower	A component of the road name shown before the name body. This will be blank for water addresses.
road_name	varchar	100			Beach	The name body of the road name the address relates to, excluding any existing prefix, type or suffix. This will be blank for water addresses.
road_type_name	varchar	100			Road	A component of the road name that follows the name body. This will be blank for water addresses.
road_suffix	varchar	100			South	A component of the road name that follows the road type. This will be blank for water addresses.
water_name	varchar	100			Awaroa Inlet	Name of the beach the water address relates to. Currently this contains the captured segment of coastline. This will be blank for Thoroughfare addresses.
water_body_name	varchar	100			Awaroa Bay	Water body the address relates to. This will be blank for Thoroughfare addresses.
suburb_locality	varchar	80			Dannemora	Suburb/Locality of the address from NZ Localities
town_city	varchar	80			Auckland	Town/City of the address from NZ Localities
address_class	varchar	20			Thoroughfare	The type of the address. Includes: Thoroughfare (same as the type 'Road' in AIMS look up table) and Water.
address_lifecycle	varchar	20			Current	The lifecycle of the address. Includes: Current and Proposed. Retired addresses are not included in this dataset.
gd2000_xcoord	numeric		20	8	174.9255518167	NZGD2000 X-coordinate for the address in metres.

Column Name	Data Type	Length	Precision	Scale	Example	Description
gd2000_ycoord	numeric		20	8	-36.9246773	NZGD2000 Y-coordinate for the address in metres.
shape	geometry				<geometry>	Spatial geometry for the point in long/lat GD2000 ESPG 4167.
road_name_ascii	varchar	100				road_name in ascii where macrons are not supported.
water_name_ascii	varchar	100				water_name in ascii where macrons are not supported.
water_body_name_ascii	varchar	100				water_body_name in ascii where macrons are not supported.
suburb_locality_ascii	varchar	100				suburb_locality in ascii where macrons are not supported.
town_city_ascii	character	100				town_city in ascii where macrons are not supported.
full_road_name_ascii	varchar	100				full_road_name in ascii where macrons are not supported.
full_address_ascii	varchar	250				full_address in ascii where macrons are not supported.

2.2 NZ Street Address (Deprecated)

This dataset is deprecated and replaced by the NZ Addresses dataset.

This dataset contains the core components of an address to support simple searching or use of this layer to provide context. It is sourced from LINZ's Address Information Management System (AIMS), a centralised database for the management of national addresses, including for electoral purposes. AIMS manages all allocated addresses as advised to LINZ by Territorial Authorities (TAs).

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_id	integer		32	0	505588	AIMS unique identifier for an address.
change_id	integer		32	0	1304726	AIMS unique identifier for the address version.
address_type	varchar	20			Road	The type of address. Includes: Road and Water.
unit_value	varchar	70				Alpha numeric value for a unit
address_number	integer		32	0	1	Address number
address_number_suffix	varchar	10			A	Alpha numeric characters that may follow the address number.
address_number_high	integer		32	0		High address number of a ranged address.
water_route_name	varchar	100				Name of the beach the water address relates to. Currently this contains the captured segment of coastline. This will be blank for ROAD addresses.
water_name	varchar	100				Water body the address relates to. This will be blank for ROAD addresses.
suburb_locality	varchar	80			Dannemora	Suburb/Locality from the NZ Localities (NZ Fire Service owned dataset).
town_city	varchar	80			Auckland	Town/City from the NZ Localities (NZ Fire Service owned dataset).
full_address_number	varchar	100			1A	All number components concatenated for an address.
full_road_name	varchar	250			Joe Bloggs Road	All road name components concatenated for an address. This has been derived from the 'Roads' Data table'.
full_address	varchar	400			1A Joe Bloggs Road, Dannemora, Auckland	All address components concatenated for an address.
road_section_id	integer		32	0	199943	Road Centreline ID (RCL_ID).
gd2000_xcoord	numeric		12	8	174.9255518167	NZGD2000 X-coordinate for the address in metres.
gd2000_ycoord	numeric		12	8	-36.9246773	NZGD2000 Y-coordinate for the address in metres.
shape	geometry				<geometry>	Spatial geometry for the point in long/lat GD2000 ESPG 4167.
water_route_name_ascii	varchar	100				water_route_name in ascii where macrons are not supported.
water_name_ascii	varchar	100				water_name in ascii where macrons are not supported.
suburb_locality_ascii	varchar	80				suburb_locality in ascii where macrons are not supported.
town_city_ascii	character	80				town_city in ascii where macrons are not supported.
full_road_name_ascii	varchar	250				full_address_number in ascii where macrons are not supported.
fulladdress_ascii	varchar	400				full_road_name in ascii where macrons are not supported.

2.3 AIMS Address Datasets

https://data.linz.govt.nz/set/87

The eight tables below make up the address dataset designed for use by data professionals who need to access address data in a data model format. These datasets have been sourced from LINZ's Address Information Management System (AIMS), a centralised database for the management of national addresses, including for electoral purposes.

The data model below illustrates the relationships between address data tables in AIMS.

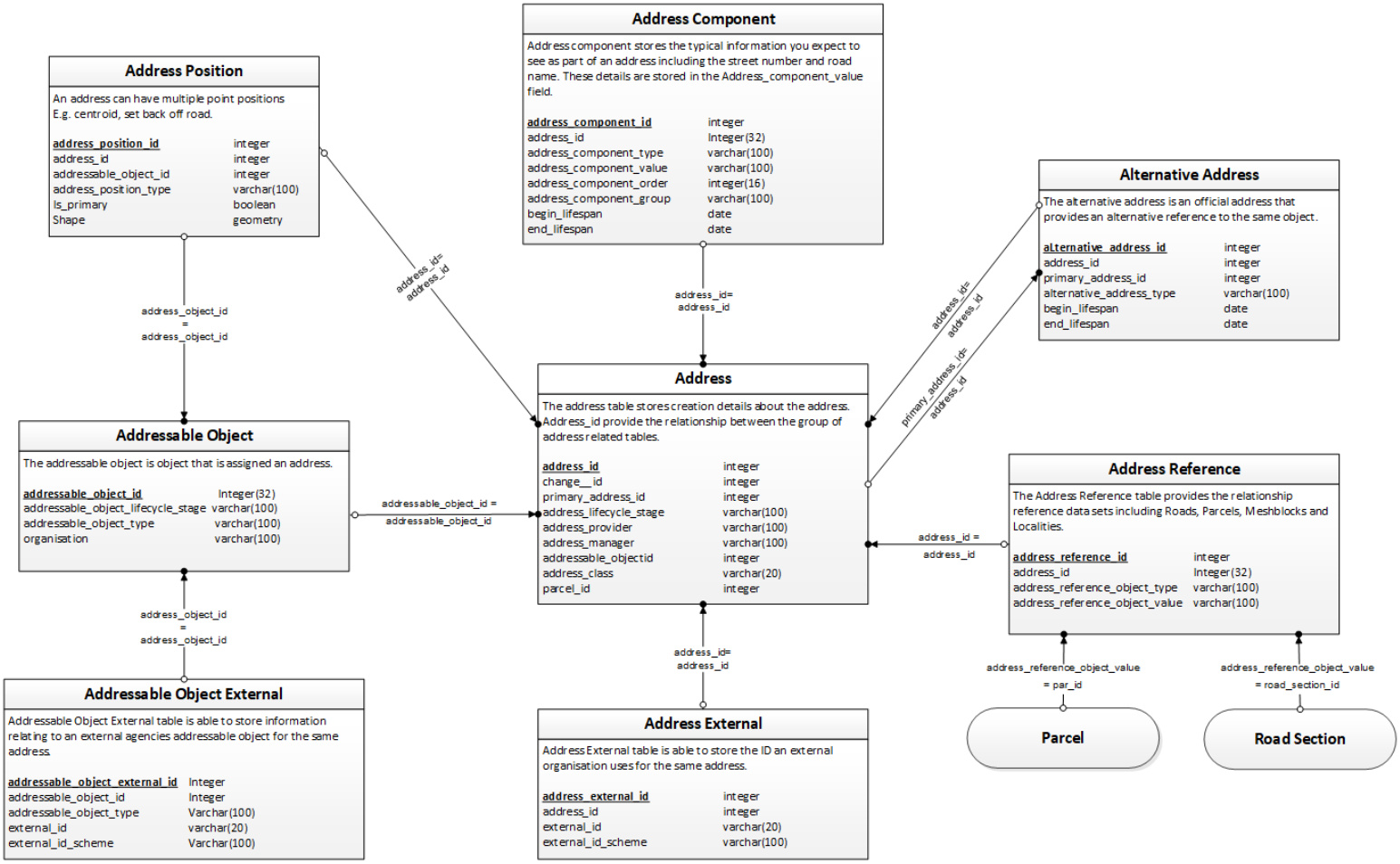


Figure 1 – Table relationship diagram for AIMS address data.

2.3.1 AIMS: Address

https://data.linz.govt.nz/table/3324

The Address table contains details relating to the creation and updating of an address including the version of an address.

This table uses a primary_address_id to manage the relationship between primary and sub-address. Sub-addresses are addresses contained within a primary address site, e.g., an apartment building, block of flats or marina. If the primary_address_id is populated the address is a sub-address.

The typical data associated with an address such as street number or road name is not stored in the Address table, this data is stored in the Address Component table.

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_id	integer		32	0	505588	AIMS unique ID for an address.
change_id	integer				1304726	AIMS unique identifier for the address version.
primary_address_id	integer		32	0		Please note this ID is not currently populated, but this field is intended to store the primary address ID for any sub address.
address_lifecycle_stage	varchar	100			Current	The life cycle status for an address. See look-up table list below.
address_provider	varchar	100			LINZ	The organisation that protects or maintains the address.
address_manager	varchar	100	32	0	LINZ	The organisation that manages the address.
addressable_object_id	integer		32	0	2229405	AIMS Unique Identifier for an addressable object.
address_class	varchar	20			ROAD	The type of address. See look-up table list below.
parcel_id	integer				4935231	LINZ Landonline Parcel ID (PRIM) that the address position is located in via point in polygon.

2.3.2 AIMS: Address Position

https://data.linz.govt.nz/layer/3355

The Address Position table contains the point location of an address. An address can have multiple point positions. The address_position_type describes the position e.g., centroid, set back from road.

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_position_id	integer					System generated unique identifier
address_id	integer		32	0	505588	AIMS unique ID for an address.
addressable_object_id	integer		32	0	2229405	AIMS unique identifier for an addressable object.
address_position_type	varchar	100			Unknown	Position type for the address. See look-up table list below.

Column Name	Data Type	Length	Precision	Scale	Example	Description
is_primary	boolean				true	This address type flag indicates the primary address type for an address.
shape	geometry				<geometry>	Spatial geometry for the point in long/lat GD2000 EPSG 4167.

2.3.3 AIMS: Address Component

https://data.linz.govt.nz/table/3354

This table contains core information relating to a street address such as Street Number or Road Name and is stored in the address_component_value column of the Address Component table. The address_component_type describes the type of component, e.g., Address number, road name, town/city.

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_component_id	integer					System generated unique identifier.
address_id	integer		32	0	505588	AIMS unique ID for an address.
address_component_type	varchar	100			Address Number	Address component type. See look-up table list below.
address_component_value	varchar	100			11	Value of the address component.
address_component_order	integer		16		8	The order in which the component is used to construct and address.
address_component_group	varchar	100			Address Number Elements	The address group the component belongs to. Includes: Address Number Element, Road Name Element and Reference Object Element.
begin_lifespan	date				2015/02/23	Creation date for the address component.
end_lifespan	date					End date for the component. This is null for a component currently in use.

2.3.4 AIMS: Alternate Address

https://data.linz.govt.nz/table/3351

Please note this table is not currently populated, but this table is intended to contain the official allocated address that provides an alternative reference to an object e.g., a dual frontage site. The alternative_address_type column describes the type of alternative address e.g., a corner site or different road name but could be extended to include other data types in the future. An alternative address can also be a sub-address, which is the case when primary_address_id is populated.

Column Name	Data Type	Length	Precision	Scale	Example	Description
alternative_address_id	integer					System generated unique identifier.
address_id	integer				3278385	AIMS unique ID for an address.

Column Name	Data Type	Length	Precision	Scale	Example	Description
primary_address_id	integer				9999999	The AIMS unique ID for the primary address of the alternative address.
alternative_address_type	varchar	100			Alternative	The type of alternative address. See look-up table list below.
begin_lifespan	date				2015/02/23	Creation date for the alternative address.
end_life_span	date					End date for the alternative address. This is null for an alternative address currently in use.

2.3.5 AIMS: Address External

https://data.linz.govt.nz/table/3328

Please note this table is not currently populated but this table is intended to contain the unique ID of an address from an external organisation. The external_id is to be supplied by the external organisation.

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_external_id	integer					System generated unique Identifier.
address_id	integer				505588	AIMS unique ID for an address.
external_id	varchar	20			1256864	External organisation unique ID for an address.
external_id_scheme	varchar	100			LINZ LDS Address Namespace - SUFI	Namespace for the organisation.

2.3.6 AIMS: Address Reference

https://data.linz.govt.nz/table/3331

Address Reference provides the relationship between Address data and other related datasets including Roads, Parcels, and Suburbs which are available on the LDS.

Column Name	Data Type	Length	Precision	Scale	Example	Description
address_reference_id	integer					System generated unique identifier.
address_id	integer		32	0	505588	AIMS unique ID for an address.
address_reference_object_type	varchar	100			Parcel	Reference object type for an address. See look-up table list below.
address_reference_object_value	varchar	100			3206001	Value for the reference object.

2.3.7 AIMS: Addressable Object

https://data.linz.govt.nz/table/3333

An Addressable Object is the object the address is assigned to. This could be a parcel, building or unit. Parcel will be used as the Addressable Object initially. Over time LINZ will more accurately implement the addressable object, for example using rating unit and building information. More information relating to Addressable Object is available in the Definition section of this data dictionary.

Column Name	Data Type	Length	Precision	Scale	Example	Description
addressable_object_id	integer		32	0	2229405	AIMS Unique ID for an addressable object.
addressable_object_lifecycle_stage	varchar	100			Current	The life cycle status for an addressable object. See look-up table list below.
addressable_object_type	varchar	100			Parcel	The type of addressable object. See look-up table list below.
organisation	varchar	100			LINZ	Organisation who supplied the addressable object.

2.3.8 AIMS: Addressable Object External

https://data.linz.govt.nz/table/3334

The Addressable Object External table is able to store the unique ID for an external organisations' Addressable Object. The addressable_object_external_id will be supplied by the external organisation.

Column Name	Data Type	Length	Precision	Scale	Example	Description
addressable_object_external_id						System generated unique identifier.
addressable_object_id	integer				3278385	AIMS Unique ID for an addressable object.
addressable_object_type	varchar	100			Parcel	The type of addressable object. See look-up table list below.
external_id	varchar	20			4154123	External organisation unique ID for an addressable object.
external_id_scheme	varchar	100			LINZ LDS Parcel Namespace	Namespace for the organisation.

2.3.9 Look-up Tables

2.3.9.1 AIMS: Addressable Object Type

https://data.linz.govt.nz/table/3350

addressable_object_type_id	addressable_object_type
1	Property
2	Parcel
3	Building

2.3.9.2 AIMS: Address Position Type

https://data.linz.govt.nz/table/3330

address_position_type_id	address_position_type
1	Centroid
2	Label
3	Set Back Off Road
4	Unknown

2.3.9.3 AIMS: Address Class

https://data.linz.govt.nz/table/3325

address_class_id	address_class
1	Road
2	Water

2.3.9.4 AIMS: Addressable Object Lifecycle Stage

https://data.linz.govt.nz/table/3335

addressable_object_lifecycle_stage_id	addressable_object_lifecycle_stage
1	Current
2	Retired
3	Proposed

2.3.9.5 AIMS: Address Lifecycle Stage

https://data.linz.govt.nz/table/3329

address_lifecycle_stage_id	address_lifecycle_stage
1	Current
2	Retired
3	Proposed

2.3.9.6 AIMS: Address Reference Object Type

https://data.linz.govt.nz/table/3332

address_reference_object_type_id	address_reference_object_type
1	Meshblock
2	Parcel
3	Locality
4	RoadCentreline

2.3.9.7 AIMS: Address Component Type

https://data.linz.govt.nz/table/3327

address_component_type_id	address_component_type	address_component_order	address_component_group
1	Unit Type	1	Address Number Element
2	Unit Value	2	Address Number Element
3	Level Type	3	Address Number Element
4	Level Value	4	Address Number Element
5	Building Part	5	
6	Building Name	6	
7	Address Number Prefix	7	Address Number Element
8	Address Number	8	Address Number Element
9	Address Number Suffix	9	Address Number Element
10	Address Number High	10	Address Number Element
11	Road Name Prefix	11	Address Number Element
12	Road Name	12	Road Name Element
13	Road Type Name	13	Road Name Element
14	Road Suffix Name	14	Road Name Element
15	Water Route Name	15	Road Name Element
16	Water Body Name	16	Road Name Element
17	Suburb/Locality Name	17	Reference Object Element
18	Town/City Name	18	Reference Object Element
19	Postcode	19	
20	Suburb/Locality ID	20	
21	RoadCenterLine	21	

2.3.9.8 AIMS: Organisation

https://data.linz.govt.nz/table/3338

organisation_id	organisation	address_id_scheme	addressable_object_id_scheme
1	e-Spatial		
2	LINZ		
3	NZFS		
4	Statistics NZ		

2.3.9.9 AIMS: Alternative Address Type

https://data.linz.govt.nz/table/3337

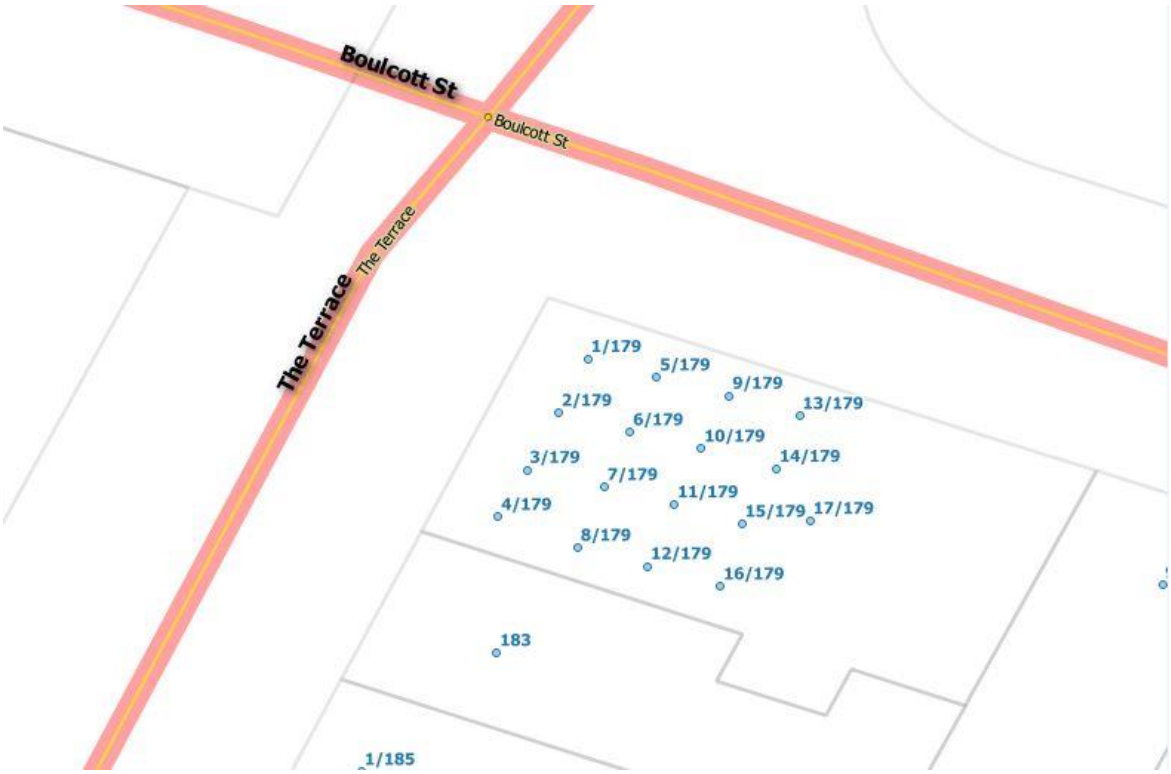
alternative_address_type_id	alternative_address_type
1	Corner Section
2	Different Road Name

3 Key Concepts

3.1 Stacked Address Points

New addresses are stacked rather than captured as a grid.

Gridded address formation



Stacked address formation

4 Change Sets

A changeset is the difference between two revisions of a dataset. Changesets are created through a feature-by-feature comparison between the latest and the previous revision of a dataset, which identifies new, updated, or deleted features.

The LINZ Data Service Changeset API enables easy data updates by providing access to only the data that has changed between revisions.

For more information please see:

https://www.linz.govt.nz/guidance/data-service/linz-data-service-guide/changesets/changeset-api