Addressing Address

Mike Judd
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Integrated Property Services
150. Land Information New Zealand should continue to work on initiatives that develop consistent national addressing protocols and make this information available to the general public.
Data Content Standard

Street Address

Purpose of this standard

Standards provide people and organisations with a basis for mutual understanding and enable data to be shared more easily and provide confidence in the data.

This is a simple outline of how to record street address. It is based on a full document developed by LINZ which provides further information. Use this standard if you want to capture an address for the purpose of knowing where something is physically located e.g. where a business resides, or to find someone e.g. where someone lives. For a postal address please see the guide ……

Definition

Used to physically locate a property, this is the most common type of address in New Zealand and can be urban or rural. Commonly referred to as a "street address", but sometimes also referred to as a "residential address" or "physical address".

Standard

A street address contains all the information needed to find a number along a named street. It is made up of four essential components, please outline the following in separate fields:
- Number
- Name of the road or street
- Suburb
- City

Additional options:
- Postcode: If the purpose is also to use for a postal address then add a postcode field
- Country: You may want to include all there are international addresses in the dataset
- Validation service: You may want to consider using validation software

15 RIMU ROAD CROFTON DOWNS WELLINGTON
100 Cathedral Square
Christchurch
Royal Commission of Enquiry, Volume 7, relating to Addresses:

150. Land Information New Zealand should continue to work on initiatives that develop consistent national addressing protocols and make this information available to the general public.
Address Problems

- No unique ID for address
- Territorial Authorities don’t hold all addresses
- LINZ only quality checks allocated addresses
- Addresses used as a key to join data
- A single address dataset won’t solve problem
• An allocation standard primarily for local councils
• Says nothing about how to store, manage or share addresses
• Focuses on customer information
• xml driven
• Address is an attribute of customer...
  no customer = no address!
Contributors

The Working Group for this standard was convened as a sub-group of the Standards New Zealand ISO/TC 211 International Review Group; administered by Standards New Zealand, and convened by the New Zealand Geographic Office, Land Information New Zealand.

The following organisations enabled the assembly of the body of experts to develop this standard:

<table>
<thead>
<tr>
<th>Department of Conservation</th>
<th>Statistics New Zealand</th>
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</thead>
<tbody>
<tr>
<td>Land Information New Zealand (lead)</td>
<td>Surveying and Spatial Sciences Institute</td>
</tr>
<tr>
<td>New Zealand Post</td>
<td>Wellington City Council</td>
</tr>
<tr>
<td>Spatial Industries Business Association</td>
<td></td>
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</table>
Address: Conceptual Model for New Zealand

The New Zealand Profile of ISO 19160-1:2015
Addressing – Part 1: Conceptual Model

Key concepts in ISO/WD 19160-1 Address model
243 views

Land Information New Zealand
Published on Apr 10, 2013

Mike Judd uses New Zealand address instances to present the main constructs in the ISO Working Draft.
NZ Profile Examples

**Address**
- Status
- Provenance
- Lifecycle stage
- Preference level
- Position
- Locale

**Addressed Period**
- Start Date
- End Date

**NZ Profile**
- Locale not used

**NZ Profile**
- Provenance added
ISO 19160 Benefits

• Consistent and well defined address formats
• Ability to validate addresses
• Cleaner addresses
• Easier geocoding
• Interoperability! Sender and receiver both have the same understanding of the address shared
# NZ Street Address

**LINZ / Addressing**

**Data Table**

<table>
<thead>
<tr>
<th>address_id</th>
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<th>unit_value</th>
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<td>20</td>
<td>121</td>
<td>Road</td>
<td>66</td>
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</tr>
</tbody>
</table>

**Map**

- **Streets**
  - Bowen St
  - Wellington Quay
  - Lambton Quay
  - Victoria University Law School
  - Parliament House
  - Wellington High Court

**Locations**

- **Wellington Central**
- **Wellington**
- **New Zealand Post Building**
- **Supreme Court of New Zealand**
- **Featherston St**
- **Stout St**
- **Buller St**
- **Buninyong St**
- **Victoria University Law School**
- **Wellington High Court**
- **Parliament House**
- **Bowel Building**
- **Memorial Park**
- **Wellington Urban Motorway**

**Additional Information**

- **License**: 14742
- **Updated**: 26 Nov 2017

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*Image of the New Zealand Data Service platform showing a table of NZ Street Addresses and a map of Wellington.*
However...

• End users and those capturing addresses needed help also

• Our standards weren’t giving them that help
Customer addresses

- Two separate activities
  - Census cabinet paper
  - Address research (Optimization)
- The two activities aligned
- Guidance was something we could do relatively quickly
Government Enterprise Architecture for New Zealand (GEA-NZ) - Standards

New Zealand Government OASIS CIQ Address Profile

Department of Internal Affairs
31 October 2012
Version Final

Address: Conceptual Model for New Zealand

The New Zealand Profile of ISO 19160-1:2015 Addressing – Part 1: Conceptual Model
Setting the scene

- Why did we want to provide guidance?
- Who were we writing guidance for?
- What did we already have?
Connecting New Zealanders to the services they need

Why provide guidance to agencies on collecting addresses?

Guidance increases the awareness of good practice within agencies when they collect address data.

Customers provide addresses to agencies, and expect to receive services efficiently based on the address they have provided.

Higher quality addresses in the address system are more easily and accurately shared between agencies to connect government services.

Why do we want a better address system?

- Systems and process improvements/benefits from change to how agencies work with addresses.
- A more linked up service to customers
- Can locate customers with confidence

Why LINZ?
LINZ is best placed to take a leadership role in Address. We are experts in the management of address datasets, and are uniquely able to take a whole of systems view and work with others to deliver a better address system. We are expected to share this expertise with others. This positions us well to provide guidance and support to agencies collecting addresses from customers.

Higher quality addresses entering the address system will improve the overall address system.

- Trusted ✓
- Efficient ✓
- Consistent ✓

Why for my agency?

- Government uses address information from the address system to support strategic thinking, policy development, and evidence-based decision making.

Why for All of Government?

- Links to wider drivers to participate as a good data citizen for address management:
  - Participating in a better New Zealand
  - Doing a little bit more to help NZers

Ministry of Education
The Ministry of Education collects address information from schools for all students. This address information is then used to locate the student’s home, and determine eligibility for school bus transport. About 50,000 addresses that the Ministry receives every year cannot be geocoded, and require manually locating. Improving the quality of address data as it is captured by schools, from parents, will reduce the manual intervention, and result in more efficient and improved calculation of eligibility.

New Zealand Business Number

Census transformation

DIA Customer transformation

New Zealand Transport Agency – Driver Licensing
Ground Rules

- It’s all about the content
- Relevant and useful to stakeholders
- Peer reviewed
- Hand drawn diagrams
- Someone else can make it look pretty
What is an address?

Let's start with something we're all familiar with: a street address. This is what a pretty normal street address looks like:

15 Rimu Road, Crofton Downs, Wellington.

Because we're all so familiar with a street address, we instinctively know how we use it. We know that if we go to that street, in that suburb, we will likely find a property with that number on the letterbox.

How would we describe what a street address is and what it does? A very basic description of an address is something like:

structured information that uniquely identifies a location.

For a street address, uniquely identifies a location on a street, in a suburb, city, and country.

What do we mean by “structured”?

An address is made up of a number of separate pieces of information, in a set order, and each part means something:

1. **Rimu Road**: The name of the road.
2. **Crofton Downs**: The name of the suburb.
3. **Wellington**: The name of the city.

What do we mean by unique?

There are two different things:

1. The combination of the pieces of information that make up the address occurs only once. For a street address: the combination of number, road name, suburb, and city only occurs once anywhere in New Zealand.
2. The address locates only one location. Example: 15 Rimu Road, Crofton Downs occurs only once anywhere in New Zealand, and there is only one location that can be found using the address.

What do we mean by “a location”?

A geographic place that you can navigate to using the address.

For a street address, identifies a location along a street, usually a certain distance along the street from the start of the street (where number 1 is).

For computer mapping purposes, the location of an address is commonly represented as a point.

What do we NOT mean by location?

What is not the location specified by the address is not the same as the location itself. The location does not tell us anything about what we will find at that location when we get there. A street address does not tell us whether the location specified by the address is a property, or a building, etc.

What’s at the location?

For an address to be useful there are two pieces of information we need to know that are not contained within the address itself. We need to know:

- what is at the location specified by the address, and
- what is at the location actually using the address.

Addresses in New Zealand are generally used to locate properties, or buildings, or sometimes access points like entrances and doorways.

Example: When we arrive at 15 Rimu Road, Crofton Downs, we find that at that location is a commercial property.
Types of Address in New Zealand

Addresses are used in New Zealand for a number of purposes. For some of those purposes, the information contained in an address will be specific to that purpose.

Here are two different addresses:

A street address contains all the information needed to find a number along a named street. An example has these components:

```
121 WAIHA ROD KAKAPOTHAI
```

The number along the Road
The name of the Road
The locality the address is physically located in.

A rural post delivery address contains all the information needed to provide a rural mail service. This service requires some information that is specific to a rural post delivery address. An example has these components:

```
121 WAIHA ROD 01 3857 RASS 7885
```

The number along the road
The name of the road
The NZ Post Rural Delivery number
The town the mail is delivered from

These two addresses share the same number and road name, and ultimately refer to the same property. But because they are used for different purposes (one to physically locate the property, one to deliver mail to a rural letterbox) they contain different components containing information with meaning specific to that purpose.

In some instances, components of an address may look very similar even if they contain information with a different meaning. In the examples above, “Kakapothai” and “Ross” are both localities on the West Coast. But they mean different things in the two addresses. Kakapotahi is used as the locality within which the address is located, while Ross is used to show the town the mail is delivered from.

Addresses that all contain the same components, with the same meaning, are said to be of the same Address Class.

Address Classes

We have currently identified four types of Address Class in New Zealand:

- Thoroughfare
- Water
- Delivery Service
- Rural Post Delivery

Thoroughfare

These are the most common type of address in New Zealand, and are urban and rural. They are commonly referred to as a street address. These addresses are used to find a location.

Water

Where properties have no road access, but do have access to water frontage (coastline or riverbank or lakefront), a water address uses the name of a water feature (for example, islands, rivers, bays, or peninsulas).

Delivery Service

Defined by New Zealand Post, and used exclusively for NZ Post services other than standard mail delivery. Addresses in this class include PO Box, Private Bag, and Counter Delivery addresses.

Rural Post Delivery

Defined by New Zealand Post, these addresses are assigned by NZ Post for customers who purchase a rural delivery service (mail and also other goods).
Validation

What is validation?

A general introduction to what validation is, what it does, and the various behaviours you can expect to see when using a validation service.

Checks that the components have values that are valid for the possible range of values for the given dataset. SuburbLocality is a list of valid suburbLocality for the given townCity.

Address validation is done in an address validation service.

Is validation the same as verification?

Generally, when validating something, it is made officially acceptable or approved. When verifying something, it is shown to be true or accurate.

In address terms, this could translate as:
- Validation makes sure that an address is acceptable. The address is structured as we would expect an address to be. “Yes, this is an address.”
- Verification confirms that the address is accurate. The address actually exists. “Yes, this address is correct.”

However, to all practical intents and purposes, the terms Validation and Verification are used interchangeably when referring to addresses.

Why do we need validation?

Validation increases the likelihood that the customer addresses being collected are well structured, well located, already exist, and will be able to be easily used and shared.

Verification of an address may be performed to help identify a person’s connection to that address, for instance, when the address is for use in real life.

Information recently collected by Land Information New Zealand shows that:
- Validation at point of capture results in between 95–97% of customer addresses matching to an address in the reference dataset being used.
- Using post-entry validation results in approximately 88% of customer addresses matching to an address in the reference dataset being used.
- Not validating addresses at any point results in between 34–80% of customer addresses matching to an address in the reference dataset being used.

Process of validating an address

The steps in the process:

1. Capture
   - The address has to be captured, either from a person on a form or webpage, full address (one text string), components (separate fields) or interactive (Type-ahead dropdown style).
2. Parse
   - The address is split into components to enable address validation and address matching. This is called Address Parsing. Validation service needs to know what components an address should have.
3. Validate
   - Once parsed, the address can be validated. Validation checks that the components have values that are valid for the possible range of values for the given dataset. SuburbLocality is a list of valid suburbLocality for the given townCity.
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15 RIMU ROAD, CROFTON Downs, WELLINGTON
Addressing Property
Proposed interventions

- Open access to all core property data and raise awareness
- Improve data quality (including currency, consistency and completeness)
- Enable a full digital view of property
- Create leadership and a shared vision
11 Reading Street, Karori, Wellington

An owned property with multiple titles:

- **Territorial Authority**: Wellington City Council
- **Valuation Reference**: 16910-34100
- **Address**: 11 Reading Street, Wellington City
- **Legal Description**: PT LOTS 22 23 24 DP 1029 LOT 1 DP 18035
- **Property Type**: Residential - Dwelling House
- **Ownership Type**: Individual
- **Land Area**: 1,346m²
- **Building Floor Area**: 310m²
- **Building Site Coverage**: 159m²

**PARKING**
- **Contour**: Level
- **View**: None

**BUILDING CONSTRUCTION**
- **Year Built**: 1914-1920
- **Wall Construction**: Wood in all forms, including treated plywood and compressed wood products
- **Wall Condition**: Good
- **Roof Construction**: Iron, including steel and corrugated long run
- **Roof Condition**: Good

**OTHER FEATURES**
- **Deck**: Yes
- **Separate Laundry or Workshop**: Yes
- **Other Improvements**: Yes

**CURRENT VALUATION**
- **Land Value**: $800,000
- **Improvements Value**: $1,140,000
- **Capital Value**: $1,940,000