

National Planning Standards – Ministry for the Environment.

Submissions and refinement phase: June 2018 – January 2019

Submission notes from Location Information and The Office of the Survey General.

Land Information New Zealand

Background

The purpose of the National Planning Standards (referred to as ‘draft planning standards’) is to provide a new planning tool to support the Resource Management Act 1991 by providing national consistency; increasing the usability of plans and reducing duplication when working across multiple authorities.

The first set of national planning standards is now released for written submissions, closing 5.00pm on Friday 17 August 2018.

Introduction

Land Information New Zealand’s (LINZ) vision is to make geographic information accessible and usable, protect New Zealanders’ property rights, and ensure Crown property is sustainably managed. More specifically, we work to ensure that geographic and property information are used effectively to deliver value for New Zealand.

The draft planning standards have been identified as an opportunity to make resource management plans easier to access, and improve national consistency resulting in less time and fewer resources required to prepare and use plans. As such LINZ wishes to provide feedback on these draft planning standards, with particular reference to the sections relating to accessibility, exchange, re-use, and reducing unnecessary variation of geographic data.

Overarching Comment

LINZ supports the introduction of the draft planning standards. We consider that this approach will make plans easier to prepare, understand and use. The standardisation of terms, definitions and form is likely to increase compliance and will reduce duplication. This may be especially relevant for those working nationally or across neighbouring authorities. The standards related to mapping and e-delivery support the exchange, re-use and better comprehension of geographic data.

F-1: Electronic accessibility and functionality standard

The purpose of this standard is to prescribe requirements to improve the electronic accessibility and functionality of policy statements and plans.

LINZ is fully supportive of the ePlan requirements and is pleased to see that these standards will be promoted. ePlan will provide opportunities for significant time savings and improved use of data for both authorities and the public.

In general, the standard baseline requirements are clear, well described and consistent with other national initiatives, for example: the inclusion of data.govt.nz and the OpenData principles.

There are two recommendations for this section:

The first recommendation is to divide the category “data standards”, as there are four separate standards being presented here represented within two points.

Category	Instructions	Who
Data standards	Format: Machine readable format that makes it easy for others to re-use, in accordance with Open Data principles	All Local authorities
	Access: Make publically accessible digital datasets and available under Creative Commons licensing	
	Datums and Projections ¹ : compliant with New Zealand Geodetic Datum 2000 (NZGD2000), New Zealand Transverse Mercator 2000 (NZTM2000) and New Zealand Vertical datum 2016 (NZVD2016)	
	Discoverable: Found on data.govt.nz	

The second recommendation is that a further standard is required regarding the inclusion of metadata.

Metadata are a series of structured facts that describes information or the elements within a dataset. Metadata includes the what, when, who, where and how information such as: time and date, how the data was collected or what limitations may be applied. Real benefits can be lost if this metadata information is not included, vague or incorrect.

More information about metadata and the ANZLIC Metadata Profile is provided on the LINZ website:

<https://www.linz.govt.nz/about-linz/what-were-doing/projects/anzlic-metadata-profile/faqs-anzlic-metadata-profile>

F-2: Draft Mapping Standard

The purpose of this standard is to define how zones and commonly used symbols are displayed on planning maps.

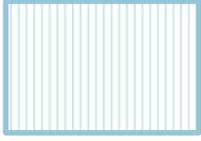
¹ More information about Datums, Projections and heights are provided as an appendix.

LINZ commends and supports the standardisation of RGBs values for zone symbology. This will make plans much more consistent and easier to compare and interpretation.

There is one recommendation for this section:

In table 22 there is only one symbol for 'hazard' which is a geometry polygon. Yet the standard identifies four different hazard types for this symbol (Coastal, Flood, Volcanic, Fault). The nature of each of these hazard types and the risks and mitigation of each are not alike.

It is unlikely that a single symbol will improve understanding when viewing the map. However a pragmatic recommendation could be to vary the pattern of the polygon fill i.e:

Coastal Hazard	
Flood Hazard	
Volcanic Hazard	
Fault Hazard	

An additional recommendation would be to use various colours for the different hazard types i.e. while 'water' hazards are well represented by blue, fault & volcano may better expressed as orange. However, it is noted that orange is already included in the zone colour palette for mix-use zones, and therefore it may be impractical to identify hazard by colour.

CM-1: Draft Definitions standard

The purpose of this standard is to provide mandatory definitions.

LINZ has discussed the criteria for terms with MfE and acknowledges that some of these terms are different with those defined in the Rules for Cadastral Surveying. Such as the term of elevation:

- Surveyors would define **Elevation** as height above or below a fixed reference point,

- Planners would define **Elevation** as the side of a building.

As such the only recommendation in this section is a review of the definition of height. The current definition is divided in to three sections. However, the definitions only vary with the identification of a reference point.

Height	The vertical distance from base to top
Height in relation to ground level	The vertical distance between ground level and the top part of the structure above that point
Height in relation to boundary	The vertical distance between the top of structure relative to its distance from the boundary
Height in relation to a reference point	The vertical distance above or below a fixed reference point. The where stated the reference point should be determined in terms of New Zealand Vertical Datum (NZVD2016).

When referring to a reference point plans such as the Auckland Unitary Plan often specified heights in regards to an RL (reduced level). Unfortunately without specifying a datum or reference mark these RL values can be ambiguous or difficult to determine.

For example In the Auckland plan when the datum is referenced, there are variations.

- DOSLI Datum 1946
- DOSLI Datum
- Lands and Survey New Zealand Datum
- Lands and Survey Datum (MSL) Auckland 1946
- Auckland Mean Sea Level
- LINZ Datum
- Mean Sea Level
- Auckland Datum 1946
- (not stated)

As the Auckland Vertical Datum 1946 ages it become more difficult to determine an RL in terms of this datum. It is also pertinent to note that the Auckland Vertical Datum 1946 is not a true reflection of mean sea level and should not be used as such.

New Zealand vertical Datum 2016 (NZVD2016) is a modernised height datum released in June 2016. It allows for the consistent collection and seamless exchange of heights across New Zealand, is compatible with technologies such as GPS and levelling. NZVD2016 is resilient to changes over time; such as sea-level rise, bench mark disturbance and earthquakes.

Appendix: Datum, Projections and Heights

LINZ maintains national reference surfaces: Datums, Projection and heights.

LINZ has the functionality to support local authorities and others to transform their datasets and offer a number of tools that can assist with data conversions.

For example: In 2016 LINZ worked with both Nelson and Tasman Councils to assist them to adopt NZVD2016.

Common GIS tools such as Esri's Arc products are also able to transform data to NZVD2016. This should allow the majority of local authorities to quickly convert their own height data.

Recommendation (as previously supplied):

- a. That New Zealand Geodetic Datum 2000 (NZGD2000; <http://www.linz.govt.nz/regulatory/25700>) be specified as the datum to define the positions of points in New Zealand.

NZGD2000 coordinates relates the physical location of a point with a coordinate in terms of latitude, longitude, and ellipsoidal height. The EPSG number for NZGD2000 is 4167.

NZD2000 is designed to provide constant unchanging coordinates for features even though New Zealand is continuously moving and deforming under the influence of the Australian and Pacific tectonic plates. By contrast global datums, such as the WGS84 are fixed to the earth as a whole and do not reflect the New Zealand environment.

Some plans refer to NZGD49 (New Zealand Geodetic Datum 1949), which was replaced in 1998

- b. That New Zealand Transverse Mercator 2000 (NZTM2000; <http://www.linz.govt.nz/regulatory/25002>) be specified as the projection used in mapping in New Zealand.

Coordinates in terms of a geodetic datum relate to a curved surface called an ellipsoid. It is not possible to represent them on a flat surface such as a map without introducing some sort of distortion. A projection is used to manage these distortions. An additional benefit of projections is that they have units of metres, which lets users measure meaningful distances directly from a map. The EPSG number for NZTM2000 is 2193

NZTM2000 uses a Transverse Mercator projection and is based on the NZGD2000 datum using the GRS80 reference ellipsoid. It was chosen because it is an internationally recognised type of projection that exhibits a low level of distortion at its east-west extents. The projection is only applicable for the main New Zealand island group (North, South, Stewart/Rakiura and the smaller coastal islands). Separate projections are defined for the New Zealand's offshore islands and for its continental shelf.

Some plans refer to NZMG (New Zealand Map Grid), which was replaced in 2001

Some plans refer one of 28 meridional circuits, these are used for Cadastral survey but have limited application in GIS software

- c. That New Zealand Vertical Datum 2016 (NZVD2016; <http://www.linz.govt.nz/regulatory/250029>) be specified as the vertical datum in New Zealand.

The height or depth of a reference point is its distance above or below a reference surface or vertical datum. The reference surface normally associated with heights is the mean level of the sea.

In New Zealand, many heights are provided in relation to sea level, determined by tide gauges at different ports. Because the average level of the sea around New Zealand's coast varies by up to 0.5 metres, the heights determined in relation to the different tide gauge-based datums are offset from each other. The EPSG number for NZTM2000 is 1169.

The official vertical datum for New Zealand region, including the continental shelf and offshore islands is the NZVD2016.

Currently plans use a raft of height references systems. Plans use one of the 13 historic datum managed by LINZ. While other used unique or arbitrary surfaces.