

LandXML – Landonline

Enumeration Mappings applicable to Landonline

Surveyors and developers reference document

Customer Systems
Customer Services
National Office
Land Information New Zealand
Private Box 5501
Wellington

Email: info@linz.govt.nz

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Enumeration Mappings applicable to Landonline

This document has been prepared to help surveyors and LandXML developers identify the LINZ set of enumeration mappings applicable to Landonline when an XML file is imported into Landonline or when an XML file is extracted from Landonline.

Issue History			
Issue	Date	Section No.	Summary of Changes / Amendments
0.1	1-10-07	1.10, 2.10	Incorporating changes for LandXML Schema 1.1. Changes incorporated to Crown Subdivision, LT Subdivision and Statutory Easement/Right Plans only.

Section.....	Page
1 Enumeration Mappings for LandXML to Landonline	3
1.1 Arc Direction	4
1.2 Equipment Type.....	4
1.3 Monument Condition	5
1.4 Monument Purpose	5
1.5 Monument State	6
1.6 Monument Type.....	7
1.7 Observation Type.....	7
1.8 Parcel State Type	8
1.9 Survey Type	8
1.10 Parcel Class.....	9
2 Enumeration Mappings for Landonline to LandXML	17
2.1 Arc Direction	17
2.2 Equipment Type.....	17
2.3 Monument Condition	17
2.4 Monument Purpose	18
2.5 Monument State	19
2.6 Monument Type.....	19
2.7 Observation Type.....	20
2.8 Parcel State Type	20
2.9 Survey Type	21
2.10 Parcel Class.....	21

1 Enumeration Mappings for LandXML to Landonline

This section identifies the mappings used by Landonline to resolve LandXML enumerations when importing a LandXML file.

The LandXML schema element and attribute mappings are interpreted by Landonline when the XML is imported.

LandXML schema enumeration → Landonline value → Landonline field
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The LandXML schema enumeration gets changed to a Landonline value that is recognised and gets populated into the Landonline field upon import. This process is known as parsing.

LandXML schema has elements and attributes that the surveyor chooses from a set list and some elements and attributes that the surveyor can enter as free text values.

The following list of elements and attributes have set values from which the user selects one option:

- arc direction
- equipment
- monument condition
- monument purpose
- monument state
- monument type
- observation type
- parcel state type
- survey type
- parcel class.

The following list of elements and attributes can be entered as free text values by the surveyor and should adhere to Landonline conventions. Examples are:

- mark name
- mark description
- adopted bearing and adopted distance source
- bearing correction
- survey date.

All elements and attributes have a one-to-one mapping with Landonline values with the exception of Parcel Class. Parcel Class will map to two Landonline values that populate two Landonline fields.

LandXML schema enumeration → Landonline value → Landonline field → Landonline value → Landonline field

Depending on the survey purpose of the *e-survey*, the parcel class will map to different Landonline Parcel Intent and Topology Classes.

There are instances when the Landonline value will not populate the Landonline field for Parcel Intent and Topology Class because there is more than one option that the values could populate. This forces the surveyor to make a decision and populate the field rather than Landonline populating it incorrectly.

1.1 Arc Direction

Indicates whether the arc of an arc observation is on the left (clockwise) or the right (counter clockwise) side of the arc chord.

LandXML Enumeration	Description	Landonline Value
cw	Clockwise	Left
ccw	Counter Clock Wise	Right

1.2 Equipment Type

Indicates the type of equipment used to make the measurement. Landonline does not require specific equipment type details, only the general type of equipment. Note that Landonline does not currently use “scale” and “other”, therefore these values do not map to Landonline values.

LandXML Enumeration	Description	Landonline Value
GPS	Global Positioning was used to determine the measurement for the observation	GPS
theodolite tape	A Theodolite/Tape was used to determine the measurement for the observation.	Theodolite Band
theodolite EDM	A Theodolite/EDM was used to determine the measurement for the observation	Theodolite EDM
unknown	The equipment used to measure the observation is unknown	Unknown
scale	A scale was used to determine the measurement for the observation	Unknown
other	Another type of equipment was used to determine the measurement for the observation	Unknown

1.3 Monument Condition

Indicates the physical condition of the monument/mark.

LandXML Enumeration	Description	Landonline Value
destroyed	The mark was destroyed	Destroyed
damaged	The mark was damaged	Damaged
disturbed	The mark has been disturbed from its original position	Moved
not accessible	The mark was not accessible	Not Accessible
not found	The mark could not be found	Not Found
not specified	The condition of the mark was not determined while the survey was being conducted	Not Specified
reliable	The mark is in good condition and is suitable for survey purposes	Reliably Placed/Found
removed	The mark was removed when the survey was conducted	Removed
submerged	The mark was submerged	Submerged
temporary	The mark used during the survey was only a temporary mark	Temporary
threatened	The mark was in a position where it may become damaged or destroyed in future e.g. the mark is on the edge of a subsiding cliff	Threatened
unstable	The mark was in an unstable position	Unstable

1.4 Monument Purpose

Indicates the purpose of the monument/mark for the survey. Note that the MonumentPurpose enumeration is a list, and that one monument/mark can have more than one monument purpose on a given survey e.g. “witness boundary”.

LandXML Enumeration	Description	Landonline Value
boundary	The mark was used as a boundary mark in the survey	Boundary
naturalBoundary	The mark was used as a natural boundary mark in the survey	Natural Boundary Node
origin	The mark was used as an origin in the survey	Origin
traverse	The mark was used as a traverse mark in the survey	Traverse
witness	The mark was used as a witness mark in the survey	Witness

The following table identifies the combinations of the MonumentPurpose enumeration that Landonline recognises. Note that the order of the enumeration values is not important e.g. Landonline will recognise both “origin boundary” and “boundary origin” as “Origin Boundary”.

LandXML List Enumeration	Description	Landonline Value
origin boundary	The mark was used as an origin and as a boundary mark in the survey	Origin Boundary
origin witness	The mark was used as an origin and as a witness mark in the survey	Origin Witness
origin witness boundary	The mark was used as an origin as well as a witness mark and a boundary mark in the survey	Origin Witness Boundary
witness boundary	The mark was used as a witness mark and as a boundary mark in the survey	Witness Boundary

1.5 Monument State

Indicates the state of the monument/mark as used on the survey.

LandXML Enumeration	Description	Landonline Value
adopted	The mark existed before the survey was conducted and was adopted from a previous survey. i.e. It was not surveyed for this survey	Adopted
disturbed	The mark has been disturbed, hence has a new coordinated position. Note that an additional flag is set in Landonline to indicate that the mark has been disturbed	Old
original	The mark existed before the survey was conducted and the mark was surveyed as part of this survey	Old
new	The mark was created by this survey	New
replaced	The mark replaces an existing mark. Note that an additional flag is set in Landonline to indicate that the mark has replaced another mark	New

1.6 Monument Type

Indicates the physical type of the monument / mark.

LandXML Enumeration	Description	Landonline Value
disk	The monument is a disk	Disk
nail	The monument is a nail	Nail
not monumented	The mark does not have a physical monument identifying its position.	Unmarked
other	The monument type is other	Other
peg	The monument is a peg	Peg
pin	The monument is a pin	Pin
plaque	The monument is a plaque, including bronze plaque (BP)	Plaque
plug	The monument is a plug, including lead plug (LP)	Lead Plug
post	The monument is a post	Post, including nail in post
spike	The monument is a spike, including iron spike (IS)	Spike, Bar, Bolt, Rod, Dog
tube	The monument is a tube, including iron tube (IT)	Tube
Unknown	The type of monument is not known	Unknown

1.7 Observation Type

Indicates the method used to obtain the observation dimensions.

LandXML Enumeration	Description	Landonline Value
adopted	The dimensions of the observation where adopted from a previous survey where the dimensions had been measured	Adopted
calculated	The dimensions of the observation where calculated	Calculated
measured	The dimensions of the observation were measured when the survey was conducted	Measured
scaled	The dimensions of the observation were scaled from a graphical plot	Calculated

1.8 Parcel State Type

Indicates how the survey affects the parcel.

LandXML Enumeration	Description	Landonline Value
affected	The parcel must be amalgamated with one or more parcels created by the survey when the survey is deposited	Affected
created	The parcel is being created by the survey	Created
encroached	The parcel has been subject to natural erosion and/or accretion and the definition of the parcel has been/should be updated. Relevant where the parcel affected by the accretion/erosion is not extinguished by the survey	Encroached
existing	The parcel is referenced by the survey	Referenced
extinguished	The parcel is being replaced by one or more parcels created by the survey	Extinguished
referenced	The parcel is referenced by the survey	Referenced
proposed	The parcel is introduced on the survey but has not actually been 'created'. This will generally only apply to parcels such as Future Development Units (FDU) on a Proposed Unit Development plan (PUD). The parcel will be created in a subsequent plan, e.g. Stage 1 of the Unit Development	Proposed

1.9 Survey Type

Indicates the primary method used to obtain the survey dataset information

LandXML Enumeration	Description	Landonline Value
compiled	The survey was compiled from existing survey information	Compiled
computed	The survey was computed from existing survey information	Computed
surveyed	The survey was conducted in the field to obtain the survey information	Survey

1.10 Parcel Class

LandXML schema requires a parcel entry in the XML file for it to import into Landonline.

The majority of surveys will have created parcels and extinguished parcels in the *e-survey*. Some *e-surveys* may only have referenced parcels. A small percentage of surveys will not require any parcel to be listed in Landonline.

To abide to the LandXML rule that requires a parcel in the XML file, some *e-surveys* will have parcel entries that will require deleting from Landonline. An example of this would be an *e-survey* with the survey purpose of Survey Information.

A slightly different example would be an *e-survey* with the survey purpose of Redefinition, where the referenced parcel is not included in the XML file. Landonline will populate a created parcel in the parcel list. This parcel will have to be deleted and the referenced parcel captured.

All elements and attributes have a one-to-one mapping with Landonline values with the exception of Parcel Class. Parcel Class will map to two Landonline values that populate two Landonline fields.

LandXML schema enumeration → Landonline value → Landonline field → Landonline value → Landonline field

Depending on the survey purpose of the *e-survey*, the parcel class will map to different Landonline Parcel Intent and Topology Classes.

There are instances when the Landonline value will not populate the Landonline field for Parcel Intent and Topology Class because there is more than one option that the values could populate. This forces the surveyor to make a decision and populate the field rather than Landonline populating it incorrectly.

The effect of the Landonline fields not populating means that the observation layers for the parcel will not map. This is because parcel topology could not be determined. Landonline will default all observation layers to the traverse layer when the observations should map to 'Primary' or 'Non-primary' or combinations thereof.

Examples of XML parcel class mappings to Landonline values based on survey purpose are shown in the table below:

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
LT Subdivision	allotment	Fee Simple Title	Primary
LT Subdivision	easement	Easement	Secondary
LT Subdivision	cross parcel easement	Easement	Tertiary
LT Subdivision	Marginal Strip	Marginal Strip	Tertiary
Complete Stage Unit Plan	accessory building	Accessory Unit	No Topology
Complete Stage Unit Plan	building	Principal unit	No Topology
Complete Stage Unit Plan	covenant	Common Property	No Topology

Table 2 – XML parcel class mappings to Landonline values based on survey purpose

Example: An XML file with a parcel with parcel class ‘allotment’ will map to different parcel intents based on survey purpose as shown in the table below:

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
LT Subdivision	Allotment	Fee Simple Title	Primary
Amalgamation	Allotment	Maori	Primary
Parliamentary	Allotment	Statutory	Primary

Table 3 – XML parcel class ‘Allotment’ mappings to Landonline values based on survey purpose

Indicates the use of the parcel. Landonline uses this information in combination with the survey purpose to derive the parcel intent as well as the topology class (e.g. Primary, Secondary, etc) of the parcel.

LandXML Enumeration	Description
accessory building	The parcel is an accessory building
accretion	The parcel has resulted from natural accretion
allotment	The parcel defines an allotment of land that can be subject to ownership rights
building	The parcel is a building
covenant	The parcel is subject to a land use restriction
cross parcel easement	Easement parcel that crosses more than one parcel
cross parcel easement centerline	Centerline easement parcel that crosses more than one parcel
easement	Easement parcel that does not cross more than one parcel
easement centerline	Centerline easement parcel that does not cross more than one parcel
erosion	The parcel has resulted from natural erosion
hydrography	The parcel defines an area of water

lease	The parcel defines an area of land subject to lease
legalisation	The parcel defines an area of land subject to legalisation
other	The parcel class is other
railway	The parcel is used for rail
reclamation	The parcel defines an area of reclaimed land
reserve	The parcel defines an area of land that is subject to reserve
road	The parcel is used for road
strata	The parcel exists as strata information and has vertical limitations, e.g. tunnel

The following table identifies the Landonline Parcel Intent and Topology Class values assigned to a parcel given its LandXML Parcel Class enumeration and survey purpose. Note that not every Parcel Class enumeration has a Landonline mapping for every survey purpose. This is either because the Parcel Class is not pertinent to surveys of that purpose, or because more than one Parcel Class enumeration maps to the same combination of Landonline Parcel Intent and Topology Class values (these can be seen by comparing these mappings with the Landonline export mappings).

For any values not specified in the table below, the Parcel Intent and the Topology Class will be left unpopulated on import (for subsequent entry using Landonline). The values shown as N/A will be left unpopulated on import (for subsequent entry using Landonline).

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
Amalgamations	allotment	Maori	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	strata	Maori	Strata
Application	allotment	Fee Simple Title	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	hydrography	Hydro	Primary
	road	Road	Primary
	strata	Fee Simple Title	Strata
Complete Stage Unit Plan	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
Complete Stage Unit Plan with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Consolidations	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	hydrography	Hydro	Primary
	road	Road	Primary
	strata	Maori	Strata
Crown Subdivision	allotment	Fee Simple Title	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
(LandXML schema v1.1)	marginal strip	Marginal Strip	Tertiary
	hydrography	Hydro	Primary
	reserve	N/A	Primary
	road	Road	Primary
	strata	Fee Simple Title	Strata
CT Diagram Plan	allotment	Fee Simple Title	Primary
	hydrography	Hydro	Primary
	road	Road	Primary
	strata	Fee Simple Title	Strata
Customary Entitlement	covenant	Customary Entitlement	Tertiary
Easement	covenant	Land Covenant	Tertiary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
First Stage Unit Plan	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
First Stage Unit Plan with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Flat plan/Cross-lease	accessory building	Cross lease Subsidiary	No Topology

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
		Building	
	building	Cross Lease Building	No Topology
	covenant	Right of Use Area	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Flat plan/Cross-lease with Survey Sheet	accessory building	Cross lease Subsidiary Building	No Topology
	building	Cross Lease Building	No Topology
	covenant	Right of Use Area	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Graphical Description	No mappings for Graphical Description		
Lease	covenant	Land Covenant	Tertiary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary Centreline
	easement centerline	Easement	Secondary
	lease	Lease	Tertiary
Legalisation	allotment	Fee Simple Title	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	hydrography	Hydro	Primary
	legalisation	Legalisation	Primary
	railway	Railway	Primary
	road	Road	Primary
	strata	N/A	Strata
Limited Title	accretion	Accretion	Primary
	allotment	Fee Simple Title	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	erosion	Hydro	Primary
	hydrography	Hydro	Primary
	strata	Fee Simple Title	Strata
LT Subdivision	accretion	Accretion	Primary
	allotment	Fee Simple Title	Primary
	covenant	Land Covenant	Tertiary
(LandXML schema v1.1)	marginal strip	Marginal Strip	Tertiary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	erosion	Hydro	Primary
	hydrography	Hydro	Primary
	strata	Fee Simple Title	Strata
Mining	covenant	Covenant Area	Tertiary
Nohoanga (Campsite)	covenant	Nohoanga (Campsite) Entitlements	Tertiary
Parliamentary	allotment	Statutory	Primary
	cross parcel easement	Statutory	Tertiary
	cross parcel easement centerline	Statutory	Tertiary Centreline
	easement	Statutory	Secondary
	easement centerline	Statutory	Secondary Centreline
	strata	Statutory	Strata
Partition	allotment	Maori	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	road	Road	Primary
Proposed Unit Development	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Proposed Unit Development with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Reclamation	reclamation	Reclamation Area	Primary
	hydrography	Hydro	Primary
Redevelopment Unit Plan	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
Redevelopment Unit Plan with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
	easement centerline	Easement	Secondary Centerline
Revesting	allotment	In Lieu of a Reserve	Primary
Roadway	road	Road	Primary
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	strata	Road Strata	Strata
Stage Unit Plan	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Stage Unit Plan with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Standard Unit Plan	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Standard Unit Plan with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Statutory Easement/Right	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
(LandXML schema v1.1)	marginal strip	Marginal Strip	Tertiary
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Statutory Vesting	allotment	Fee Simple Title	Primary
	cross parcel easement	Easement	Tertiary
	cross parcel easement	Easement	Tertiary Centreline

Landonline Survey Purpose	LandXML Enumeration	Landonline Parcel Intent	Landonline Topology Class
	centerline		
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
	strata	Fee Simple Title	Strata
Substituted Proposed Unit Development	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Substituted Proposed Unit Development with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Units Plan in Substitution	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centreline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline
Units Plan in Substitution with Survey Sheet	accessory building	Accessory Unit	No Topology
	building	Principal Unit	No Topology
	covenant	Common Property	No Topology
	cross parcel easement	Easement	Tertiary
	cross parcel easement centerline	Easement	Tertiary Centerline
	easement	Easement	Secondary
	easement centerline	Easement	Secondary Centreline

2 Enumeration Mappings for Landonline to LandXML

This section identifies the mappings used by Landonline to identify LandXML enumerations when exporting a LandXML file.

2.1 Arc Direction

Indicates whether the arc of an arc observation is on the left (clockwise) or right (counter clockwise) side of the arc chord.

Landonline Value	Description	LandXML Enumeration
Left	Arc is on the left side of the chord	cw
Right	Arc is on the right side of the chord	ccw

2.2 Equipment Type

Indicates the type of equipment used to make the measurement. Landonline does not require specific equipment type details, only the general type of equipment.

Landonline Value	Description	LandXML Enumeration
GPS	Global Positioning was used to determine the measurement for the observation	GPS
Theodolite Band	A Theodolite/Tape was used to determine the measurement for the observation.	Theodolite tape
Theodolite EDM	A Theodolite/EDM was used to determine the measurement for the observation	theodolite EDM
Unknown	The equipment used to measure the observation is unknown	Unknown

2.3 Monument Condition

Indicates the physical condition of the monument/mark as found on the survey.

Landonline Value	Description	LandXML Enumeration
Destroyed	The mark was destroyed	destroyed
Damaged	The mark was damaged	damaged
Moved	The mark has been disturbed from its original position	disturbed
Not Accessible	The mark was not accessible	not accessible
Not Found	The mark could not be found	not found
Not Specified	The condition of the mark was not determined while the survey was being conducted	not specified
Reliably Placed/Found	The mark is in good condition and is suitable for survey purposes	reliable

Removed	The mark was removed when the survey was conducted	removed
Submerged	The mark was submerged	submerged
Temporary	The mark used during the survey was only a temporary mark	temporary
Threatened	The mark was in a position where it may become damaged or destroyed in future e.g. the mark is on the edge of a subsiding cliff	threatened
Unstable	The mark was in an unstable position	unstable
Conversion	The mark was converted	not specified
Dangerous	The mark is in a dangerous	not accessible
Emplaced	A new mark was placed	reliable
Mark Found	The mark was found to be stable.	Reliable

2.4 Monument Purpose

Indicates the purpose of the monument/mark for the survey. Note that a mark can have more than one purpose in a survey and the LandXML MonumentPurpose enumeration allows for a list of values to accommodate this.

Landonline Value	Description	LandXML Enumeration/s
Boundary	The mark was used as a boundary mark in the survey	boundary
Natural Boundary Node	The mark was used as a natural boundary mark in the survey	naturalBoundary
Origin	The mark was used as an origin in the survey	origin
Traverse	The mark was used as a traverse mark in the survey	traverse
Witness	The mark was used as a witness mark in the survey	witness
Origin Boundary	The mark was used as an origin and as a boundary mark in the survey	origin boundary
Origin Witness	The mark was used as an origin and as a witness mark in the survey	origin witness
Origin Witness Boundary	The mark was used as an origin as well as a witness mark and a boundary mark in the survey	origin witness boundary
Witness Boundary	The mark was used as a witness mark and as a boundary mark in the survey	witness boundary

2.5

2.6 Monument State

Indicates the state of the monument/mark in relation to the survey

Landonline Value	Description	LandXML Enumeration
Adopted	The mark existed before the survey was conducted and was adopted from a previous survey. i.e. It was not surveyed for this survey	adopted
New	The mark was created by this survey	new
Old	The mark existed before the survey was conducted and the mark was surveyed as part of this survey	original
System Added	The mark was automatically added to the survey by Landonline during Plan Capture to resolve topology differences between the survey and the underlying cadastral network.	Original

2.7 Monument Type

Indicates the physical type of the monument / mark.

Landonline Value	Description	LandXML Enumeration
Disk	The monument is a disk	disk
Nail	The monument is a nail	nail
Unmarked	The mark does not have a physical monument identifying its position.	Not monumented
Other	The monument type is other	other
Peg	The monument is a peg	peg
Pin	The monument is a pin	pin
Plaque	The monument is a plaque, including bronze plaque (BP)	plaque
Lead Plug	The monument is a plug, including lead plug (LP)	plug
Post, including nail in post	The monument is a post	post
Spike, Bar, Bolt, Rod, Dog	The monument is a spike, including iron spike (IS)	spike
Tube	The monument is a tube, including iron tube (IT)	tube
Unknown	The type of monument is not known	unknown
DCDB	The mark record was created from DCDB.	Unknown

2.8 Observation Type

Indicates the method used to determine the observation dimensions

Landonline Value	Description	LandXML Enumeration
Adopted	The dimensions of the observation where adopted from a previous survey where the dimensions had been measured	adopted
Calculated	The dimensions of the observation where calculated	calculated
Measured	The dimensions of the observation were measured when the survey was conducted	measured
Pseudo	The dimensions of the observation were calculated by Landonline from the coordinates of the local and remote setup's	calculated

2.9 Parcel State Type

Indicates how the survey will affect the parcel

Landonline Value	Description	LandXML Enumeration
Affected	The parcel was amalgamated with one or more parcels created by the survey when the survey was deposited	affected
Created	The parcel was created by the survey	created
Encroached	The parcel has been subject to natural erosion and/or accretion and the definition of the parcel has been/should have been updated. Relevant where the parcel affected by the accretion/erosion was not extinguished by the survey	encroached
Extinguished	The parcel was replaced by one or more parcels created by the survey	extinguished
Referenced	The parcel is referenced by the survey	referenced
Proposed	The parcel was introduced on the survey but may not have actually been 'created'. This will generally only apply to parcels such as Future Development Units (FDU) on a Proposed Unit Development plan (PUD). The parcel will be created in a subsequent plan, e.g. Stage 1 of the Unit Development	proposed

2.10 Survey Type

Indicates the primary method used to obtain the survey dataset information

Landonline Value	Description	LandXML Enumeration
Compiled	The survey was compiled from existing survey information	compiled
Computed	The survey was computed from existing survey information	computed
Survey	The survey was conducted in the field to obtain the survey information	surveyed

2.11 Parcel Class

Landonline uses the Parcel Intent, Parcel Topology Class and the purpose of the survey that originally created the parcel to determine a parcel's LandXML ParcelClass. If some of this information is not available, or Landonline cannot determine an appropriate LandXML ParcelClass using this information, then Landonline defaults the ParcelClass to "other"

The following table identifies the Parcel Intent, Topology Class and Survey Purpose to LandXML ParcelClass mappings Landonline uses when exporting survey information.

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration	
Amalgamations	Easement	Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
		Maori	Primary	allotment
		Strata	strata	
Application	Easement	Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
	Fee Simple Title	Primary	allotment	
		Strata	strata	
	Hydro	Primary	hydrography	
		Road	Primary	road
Complete Stage Unit Plan	Accessory Unit	No Topology	accessory building	
		Common Property	covenant	
		Easement	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
Principal Unit	No Topology	building		
Complete Stage Unit Plan with Survey	Accessory Unit	No Topology	accessory building	

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
Sheet			
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Principal Unit	No Topology	building
	Road	Primary	road
Consolidations	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Fee Simple Title	Primary	allotment
	Hydro	Primary	hydrography
	Maori	Primary	allotment
		Strata	strata
	Road	Primary	road
Crown Forest Lease	Forestry Right	Secondary	lease
		Tertiary	lease
	Lease 20 years or More	Primary	lease
		Secondary	lease
		Tertiary	lease
	Lease Less than 20 years	Secondary	lease
		Tertiary	lease
Crown Subdivision	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Fee Simple Title	Primary	allotment
		Strata	strata
(LandXML schema v1.1)	Marginal Strip	Tertiary	marginal strip
	Hydro	Primary	hydrography
	Land Covenant	Secondary	covenant
		Tertiary	covenant
	Road	Primary	road
CT Diagram Plan	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Fee Simple Title	Primary	allotment
		Strata	strata
	Hydro	Primary	hydrography
	Road	Primary	road
Customary Entitlement	Customary Entitlement	Secondary	covenant
	Nohoanga (Campsite) Entitlements	Secondary	covenant

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration	
Easement	Easement	Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
		Walkway Centreline	Secondary Centreline	easement centerline
			Tertiary Centreline	cross parcel easement centerline
First Stage Unit Plan	Accessory Unit	No Topology	accessory building	
	Common Property	No Topology	covenant	
	Easement	Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
	Future Development Unit	No Topology	building	
	Principal Unit	No Topology	building	
First Stage Unit Plan with Survey Sheet	Accessory Unit	No Topology	accessory building	
	Common Property	No Topology	covenant	
	Easement	Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
	Future Development Unit	No Topology	building	
	Principal Unit	No Topology	building	
Flat plan/Cross-lease	Cross Lease Building	No Topology	building	
	Cross lease Subsidiary Building	No Topology	accessory building	
	Easement	Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
	Right of Use Area	No Topology	covenant	
	Flat plan/Cross-lease with Survey Sheet	Cross Lease Building	No Topology	building
Cross lease Subsidiary Building		No Topology	accessory building	
Easement		Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	
		Tertiary Centreline	cross parcel easement centerline	
Right of Use Area		No Topology	covenant	
Graphical Description		Fee Simple Title	Primary	allotment
	Statutory	No Topology	allotment	
		Secondary	easement	
		Secondary Centreline	easement centerline	
		Tertiary	cross parcel easement	

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
		Tertiary Centreline	cross parcel easement centerline
Land Transfer Plan Land Covenant	Land Covenant	Secondary	covenant
		Tertiary	covenant
Lease	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Lease 20 years or More	Primary	lease
		Secondary	lease
		Tertiary	lease
	Lease Less than 20 years	Secondary	lease
		Tertiary	lease
		Tertiary	lease
	Railway Leased	Secondary	lease
		Tertiary	lease
Legalisation	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Fee Simple Title	Primary	allotment
		Strata	strata
	Hydro	Primary	hydrography
	Legalisation	Primary	legalisation
	Railway	Primary	railway
		Strata	strata
	Railway Leased	Secondary	lease
		Tertiary	lease
	Road	Primary	road
		Strata	strata
Limited Title	Accessway	Primary	road
	Accretion	Primary	accretion
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Erosion	Primary	erosion
	Fee Simple Title	Primary	allotment
		Strata	strata
	Government Purpose Reserve	Primary	reserve
	Historic Reserve	Primary	reserve
	Hydro	Primary	hydrography
	In Lieu of a Reserve	Primary	allotment
	Land Covenant	Secondary	covenant
		Tertiary	covenant
	Lease 20 years or More	Primary	lease
		Secondary	lease
		Tertiary	lease

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
	Lease Less than 20 years	Secondary	lease
		Tertiary	lease
	Licence/Permit	Secondary	lease
		Tertiary	lease
	Local Purpose Reserve ()	Primary	reserve
	Nature Reserve	Primary	reserve
	Recreation Reserve	Primary	reserve
	Road	Primary	road
	Scenic Reserve	Primary	reserve
	Scientific Reserve	Primary	reserve
	Sec 237A RM Act	Primary	reserve
	Service Lane	Primary	road
	State Highway	Primary	road
LT Subdivision	Accessway	Primary	road
	Accretion	Primary	accretion
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
(LandXML schema v1.1)	Marginal Strip	Tertiary	marginal strip
	Erosion	Primary	erosion
	Fee Simple Title	Primary	allotment
		Strata	strata
	Government Purpose Reserve	Primary	reserve
	Historic Reserve	Primary	reserve
	Hydro	Primary	hydrography
	In Lieu of a Reserve	Primary	allotment
	Land Covenant	Secondary	covenant
		Tertiary	covenant
	Lease 20 years or More	Primary	lease
		Secondary	lease
		Tertiary	lease
	Lease Less than 20 years	Secondary	lease
		Tertiary	lease
	Licence/Permit	Secondary	lease
		Tertiary	lease
	Local Purpose Reserve ()	Primary	reserve
	Nature Reserve	Primary	reserve
	Recreation Reserve	Primary	reserve
	Road	Primary	road
	Scenic Reserve	Primary	reserve
	Scientific Reserve	Primary	reserve
	Sec 237A RM Act	Primary	reserve
	Service Lane	Primary	road
	State Highway	Primary	road
Marine Farming	Lease 20 years or More	Primary	lease
		Secondary	lease

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
		Tertiary	lease
	Lease Less than 20 years	Secondary	lease
		Tertiary	lease
	Licence/Permit	Secondary	lease
Mining	Covenant Area	No Topology	covenant
	Licence/Permit	Secondary	lease
		Tertiary	lease
Nohoanga (Campsite)	Nohoanga (Campsite) Entitlements	Secondary	covenant
Parliamentary	Statutory	Primary	allotment
		Secondary	easement
		Secondary Centreline	easement centerline
		Strata	strata
		Tertiary	cross parcel easement
			cross parcel easement centerline
		Tertiary Centreline	
Partition	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
			cross parcel easement centerline
		Tertiary Centreline	
	Fee Simple Title	Primary	allotment
		Strata	strata
	Maori	Primary	allotment
		Strata	strata
Proposed Unit Development	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
			cross parcel easement centerline
		Tertiary Centreline	
	Principal Unit	No Topology	building
	Road	Primary	road
Proposed Unit Development with Survey Sheet	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
			cross parcel easement centerline
		Tertiary Centreline	
	Principal Unit	No Topology	building
	Road	Primary	road
Reclamation	Reclamation Area	Primary	reclamation
	Hydro	Primary	hydrography
Redevelopment Unit Plan	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Future Development Unit	No Topology	building
	Principal Unit	No Topology	building
	Road	Primary	road
Redevelopment Unit Plan with Survey Sheet			
	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Future Development Unit	No Topology	building
	Principal Unit	No Topology	building
	Road	Primary	road
Revesting	Accessway	Primary	road
	Government Purpose Reserve	Primary	reserve
	Historic Reserve	Primary	reserve
	In Lieu of a Reserve	Primary	allotment
	Local Purpose Reserve ()	Primary	reserve
	Nature Reserve	Primary	reserve
	Recreation Reserve	Primary	reserve
	Road	Primary	road
	Scenic Reserve	Primary	reserve
	Scientific Reserve	Primary	reserve
	Sec 237A RM Act	Primary	reserve
	Service Lane	Primary	road
	State Highway	Primary	road
Roadway	Road	Primary	road
		Strata	strata
Stage Unit Plan			
	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Future Development Unit	No Topology	building
	Principal Unit	No Topology	building
	Road	Primary	road
Stage Unit Plan with Survey Sheet			
	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
		Tertiary Centreline	cross parcel easement centerline
	Future Development Unit	No Topology	building
	Principal Unit	No Topology	building
Standard Unit Plan	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Principal Unit	No Topology	building
Standard Unit Plan with Survey Sheet	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Future Development Unit	No Topology	building
	Principal Unit	No Topology	building
	Road	Primary	road
Statutory Easement/Right	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
(LandXML schema v1.1)	Marginal Strip	Tertiary	marginal strip
Statutory Vesting		Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Fee Simple Title	Primary	allotment
		Strata	strata
	Land Covenant	Secondary	covenant
		Tertiary	covenant
	Lease 20 years or More	Primary	lease
		Secondary	lease
		Tertiary	lease
	Lease Less than 20 years	Secondary	lease
		Tertiary	lease
	Licence/Permit	Secondary	lease
		Tertiary	lease
Substituted Proposed Unit Development	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline

Landonline Survey Purpose	Landonline Parcel Intent	Landonline Topology Class	LandXML Enumeration
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Principal Unit	No Topology	building
	Road	Primary	road
Substituted Proposed Unit Development with Survey Sheet	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Principal Unit	No Topology	building
	Road	Primary	road
Survey Office Plan Land Covenant	Land Covenant	Secondary	covenant
		Tertiary	covenant
Units Plan in Substitution	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Principal Unit	No Topology	building
	Road	Primary	road
Units Plan in Substitution with Survey Sheet	Accessory Unit	No Topology	accessory building
	Common Property	No Topology	covenant
	Easement	Secondary	easement
		Secondary Centreline	easement centerline
		Tertiary	cross parcel easement
		Tertiary Centreline	cross parcel easement centerline
	Principal Unit	No Topology	building
	Road	Primary	road