

# Landonline and LandXML Extract

Surveyors and developers reference document

Version v 1.0

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March 2010

## Landonline and LandXML Extract

This document has been prepared to help surveyors and LandXML developers understand the interaction between Landonline extracted XML files and LandXML elements and attributes.

Issue History			
Issue	Date	Section No.	Summary of Changes / Amendments
0.1	1-10-07	8 and 12	Incorporating changes for LandXML Schema 1.1
1.0	15-3-10	8 and 12	Incorporating changes for LandXML Schema 1.1 and 1.2

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## **Landonline**

Landonline is an online service for surveyors, lawyers and other land professionals, providing access to New Zealand's authoritative database for land title and survey information. It enables land professionals to search and lodge title dealings and survey data digitally.

### **1. Extract background**

Landonline has the ability for surveyors to extract approved survey data from Landonline for use in XML compliant survey software. Extracting data is accessed through the Searches subsystem in Landonline.

The LandXML Schema elements and attributes that are included in the XML file extracted from Landonline are recognized, allowing the data to be edited in survey software and imported into Landonline in terms of the new survey.

The LandXML schema also has elements and attributes that are included in the extracted XML file but are not required for import. This may be because Landonline will calculate new values based on the new survey within the network.

Survey software using the XML file may not include all the possible elements and attributes the XML file has in it. These elements and attributes that are not utilised by survey software, but are required by Landonline, will need to be entered in Landonline. The amount of editing and capture work in survey software will vary depending on the ability of the survey software.

### **2. Benefits of extracting an XML file from Landonline**

The benefits of extracting an XML file to use in survey software are;

- the Landonline data for the new survey may not need to be re-typed
- mark identifiers can be associated to the marks so that they are automatically linked
- the descriptions for the marks can be retained
- parcel identifiers can be included for extinguished, referenced and affected parcels.

These benefits all equate to reduced time in the survey software and less chance of transposing figures.

### 3. What Landonline information is in an extracted XML file?

The following Landonline information may be included in the extracted XML file:

1. Survey header details including:

- coordinate system
- survey number
- survey purpose
- survey description
- surveyor finish date
- surveyor
- surveyor firm
- surveyor (file) reference
- dataset type
- survey class
- survey reference (label).

2. Mark information including:

- mark oID
- node oID
- mark names
- mark condition, state, type and purpose in terms of the survey extracted
- mark state in terms of Landonline
- mark descriptions
- mark coordinates in terms of the chosen circuit
- mark geodetic code
- mark survey order.

3. Observation information including:

- right line, bearing and distances
- arc observations, chord bearing, arc length, radius
- bearing and distance type
- bearing and distance class
- bearing and distance sources
- bearing and distance accuracies
- bearing and chord bearing corrections
- observation date
- equipment used
- irregular boundaries
- parcel boundary line oIDs.

4. Parcel capture including:

- parcel name
- parcel oID
- parcel areas
- parcel type
- parcel state
- parcel class
- parcels label
- title reference.

#### **4. What Landonline information is not in the extracted XML file?**

Landonline does not include the entire dataset in the extracted XML file. A survey dataset comprises captured data (in digital form) and supporting documents to supplement the captured information. The extracted data does not hold some information specific to LINZ and the New Zealand survey system.

The following information will not be in an XML file:

- surveyors registration
- images
- Territorial Authority information.

#### **5. When to extract data**

Data should be extracted prior to starting the new survey in survey software. This will identify what new data has to be manually captured and what can be adopted directly from Landonline data.

It will also identify if there is a need for LINZ to amend Landonline topology to enable the surveyor to correctly capture and link the data before the survey is complete.

XML files are extracted from Landonline as at a point in time. If an extracted XML file has been used to create a new survey and you know or suspect there have been other approved surveys that affect your survey, another more recent extract should be obtained prior to mark and parcel linking in preparation for creating a new XML file for import.

If LINZ needs to make topology changes to the underlying data, you will need to extract a new XML file to use in your survey software.

#### **6. Extracting by surveys**

Landonline allows data to be extracted by surveys. Surveys can be extracted one at a time or up to 20 at a time.

If one survey is extracted by survey number, the XML file will contain all information for that survey at the time of deposit (or approval if not yet deposited).

If up to 20 surveys are extracted by survey number, the XML file will contain all information for all surveys at the time of deposit or approval. This may mean some observations are in the XML file more than once because the observation was used by more than one survey extracted. The observation information may differ and the user will be left to determine which is the current observation held by Landonline.

Extracting by surveys is useful when the survey observations and parcels cover a large area. This method of extraction may include the trig observation and trig mark information in the XML file.

The spatial window is not required to be open to extract by survey. If the spatial window is open, survey reference labels can be selected and added into the extract screen to avoid transposition of survey numbers.

## **7. Extracting by area of interest**

Landonline allows data to be extracted by area of interest. The benefits of extracting by area of interest are that the user will get the current observation and mark information for the surveys in the area defined. This information will not be repeated.

If area of interest method is used to extract the survey information, only the observations, marks and parcels that fall wholly within the area defined will be extracted.

To extract by area of interest, Landonline requires the spatial window to be open.

## **8. Extracting by LandXML Schema**

Landonline allows the extraction of survey data using LandXML.

Prior to v3.4 release Landonline has supported two LandXML Schema's – v1.0 and v1.1.

Since LandXML Schema version 1.1 was ratified on 21 July 2006, users of LandXML have been providing enhancements and changes to the schema. These enhancements and changes have been included in an updated version of the schema which was ratified on 15<sup>th</sup> August 2008. The new version is v1.2.

Landonline v3.4 allows users to extract using either LandXML schema version 1.0, v1.1 or v1.2 by selecting from a drop down box.

## **9. Extract limitations**

Regardless of the method used to extract the survey information, Landonline limits the extract file size around 2000 kb (ie 2Mb).

## **10. Extract and delivery options**

Landonline allows the user to select the extract options for the survey information being extracted.

The extract options are:

- all - all includes marks, observations and parcels.
- marks only
- marks and observations
- marks and parcels
- extract coordinate system.

Landonline holds an NZGD 2000 coordinate for every mark recorded in the database. When you extract data from Landonline, you can transform the coordinates into another coordinate system. This transformation does not modify

details of the survey observations extracted. These transformations are automatically performed when you select a coordinate system

Landonline does not allow the extract of coordinates in Old Cadastral Datum because transformations between NZGD 2000 and Old Cadastral Datum are not available.

The delivery options are:

- Now – Users must save to their local PC drive for the extract to be successful. Users can name the file that they save.
- Online Messaging – Users will get an online message in their workspace with the XML file attached. The attached file will have been named by Landonline.
- e-mail – Users will get an email with the XML file attached. The attached file will have been named by Landonline.

## 11. What gets extracted from Landonline?

Not all elements and attributes that LandXML schema caters for are used by Landonline, as the LandXML schema is used by other similarly related professions. Landonline also holds information that is catered for by LandXML schema but is not included in the extracted XML file. The elements and attributes have the following extract code:

- NP – Not Populated
- PE – Populated if it Exists
- CP – Conditionally Populated
- P – Populated.

### Not Populated

Landonline will not populate the element or attribute.

### Populated if it Exists

Landonline will populate the element or attribute if that information is recorded in Landonline.

### Conditionally Populated

Landonline will populate the element or attribute if certain conditions are met.

### Populated

Landonline will always populate the element or attribute.

The amount of information in the XML file is also dependent on the survey extracted and how the data from that survey was captured into Landonline.

Examples of the amount of data in an extracted file;

- a non-SDC area – survey description, surveyor, coordinate system, parcel topology
- SDC converted area – all of the above, some traverse observations, primary parcel boundary observations, parcel topology
- paper plan survey above the 300000 series - all of the above however all traverse observations will be captured
- e-surveys – all of the above including non-primary parcel boundary observations

## **12. What can be done with the extracted XML file?**

Once the XML file has been extracted, how and what it can be used for is determined by the software vendors using the file.

Each software vendor will have made the decision on how many elements and attributes their software can read and interpret.

The surveyor will now be able to create a new survey in the survey software with the ability to create a new XML file to import into Landonline. If the survey software vendor has updated to the latest LandXML schema in their software, then the surveyor should be writing to LandXML schema v1.1 or v1.2. (depending on what version was updated)

If the survey software has not been updated with the new schema version, then the LandXML schema will be v1.0. This will have an impact on the surveyor after Import of the LandXML file. In particular, many of the data values in surveys that are in terms of the Rules for Cadastral Survey 2010 (produced using Landonline v3.4 or later) will not be able to be correctly populated in a v1.0 LandXML file.