

Stringer ePlan - Victoria

Workbook - Version 2.0

May 2019

Digital
Data Download

Spatial
Analysis

Data Extraction
& Population

Title
Creation

3D Digital
Cadastral

Smart Data

Plan
Visualisation

Validation

Digital
Cadastral
Upgrade

ePlan

Digital
Examination

LandXML

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Stringer ePlan - Victoria

Workbook - Version 2.0

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1. Introduction to ePlan

ePlan is a national initiative spearheaded by the Intergovernmental Committee on Surveying and Mapping (ICSM) to replace the existing paper and PDF cadastral plans with a new electronic file format (ePlan). This enables the computerisation and automation of many industry and government processes resulting in a more efficient land administration business with higher quality of cadastral data. The ePlan implementation project in Victoria consists of the following:

- A Victorian ePlan Protocol
- ePlan supported survey software packages
- Internal government systems to manage ePlan throughout the land administration process.

This document provides guidance in the use of the ePlan supported survey software package – Stringer ePlan. The following sections explain the basic requirements for compiling an ePlan and an overview of how to create this in Stringer ePlan.

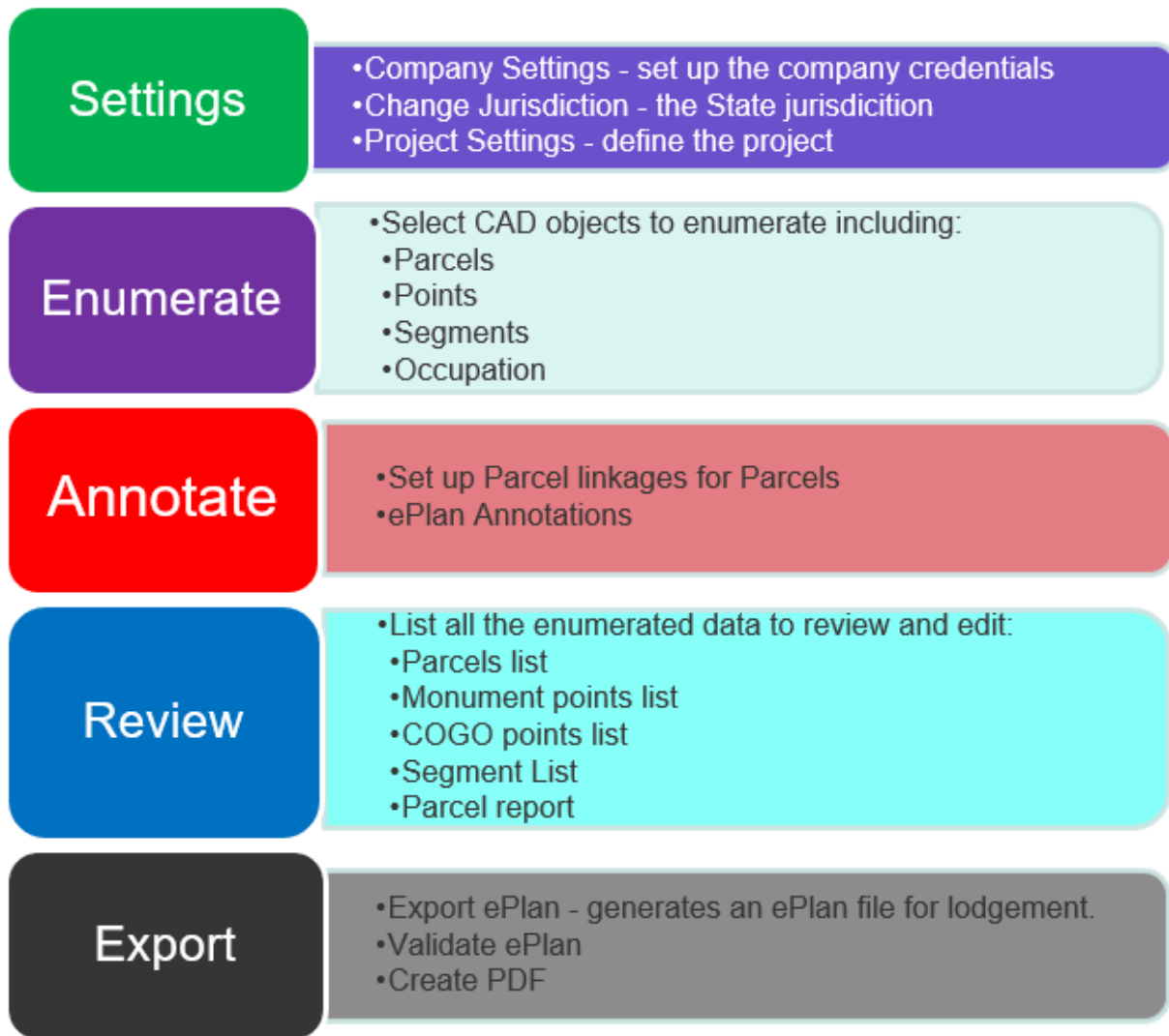
2. Install Stringer ePlan

Stringer ePlan can be downloaded from the following link:

<http://www.stringersurvey.com.au/index.php/download/#stringer-eplan>

To receive a license, contact sales@civilsurveysolutions.com.au

3. Stringer ePlan Workflow



4. Deliverable

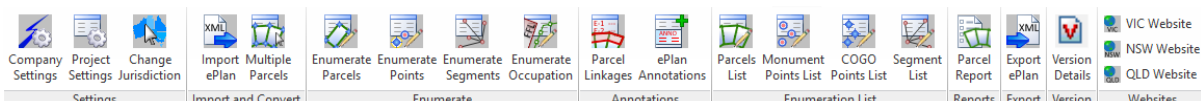
Stringer ePlan creates an XML file direct from CAD as an ePlan file. This XML includes the required data for creating an application in SPEAR and a PDF plan for your survey.

5. Getting started with ePlan

Stringer ePlan enables attribution and enumeration of CAD drawing objects for creating ePlans to lodge online in SPEAR at Land Use Victoria (Land Registry Services).

Stringer ePlan supports small to large scale plans by enumerating CAD files. Stringer ePlan operates in AutoCAD®, AutoCAD® Civil 3D® and BricsCAD® and directly enumerates objects in your drawing.

After installing Stringer ePlan, a ribbon is added to the CAD package.



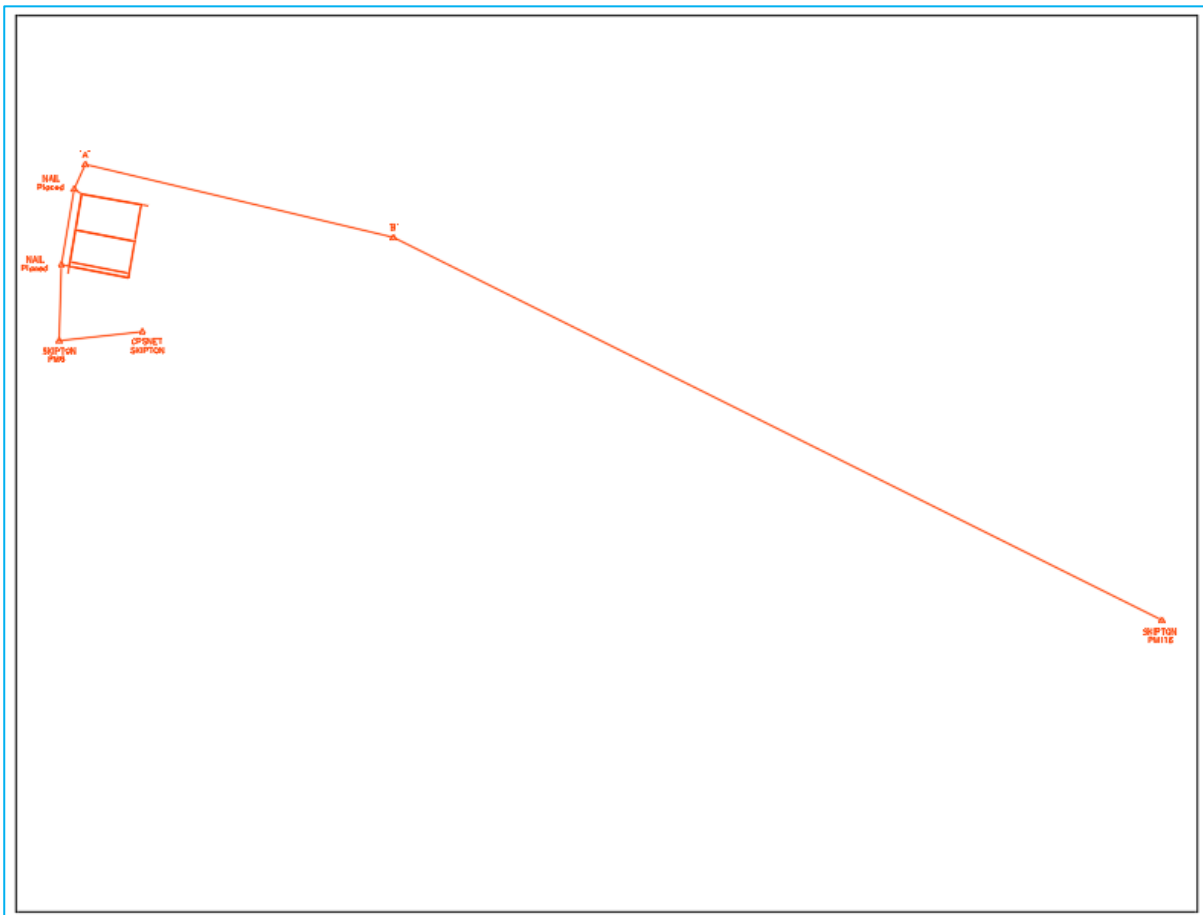
An ePlan file can be created by using various tools from left to right in the ribbon.

To begin open the sample file (Start_ Drawing.dwg) located in:

- C:\CSS Training Data\Stringer ePlan\For Civil 3D\VIC
- C:\CSS Training Data\Stringer ePlan\For AutoCAD\VIC
- C:\CSS Training Data\Stringer ePlan\For BricsCAD\VIC

You will find the following objects in the sample drawing file:

- Parcels
- Easements
- Road
- Traverses
- Radiations



5.1 Company Setting

Settings

- Company Settings - set up the company credentials
- Project Settings - define the project
- Jurisdiction - the State jurisdiction

In this section, you can enter and save your company details once for future use.

The Company Settings icon allows you to add the name of the surveying firm, and the name of the licensed surveyor including the registration number. You can also add the name of the draft person in this window and 1234 as a random number.

Click on the Company Settings



icon and the following form will be displayed:

Stringer ePlan - Company Settings

New data


New company New Surveyor

Enter new Surveyor Name and Number, separated by a |

Company data

Company name

Surveyor name

1. Click on the item you want to add
2. New Company
3. New Surveyor - Enter Surveyor Name and Number separated by a pipeline key (|) with pressing Shift+
 
4. Click 'add new data'. It will add the Company name and Surveyor name. Click 'Save and Exit'

5.2 Project Settings

Stringer ePlan - Project Information

Project

Survey Firm

Jurisdiction **Victoria**

Plan Number

Surveyors Reference Ver.

Licensed Surveyor (and registration Number)

Data Entry By:

Purpose of Survey

Head(s) Of Power

Survey Format

Survey Type

Admin Areas

Coordinate System

Reference Surveys

Survey Description

Date of Survey

Complete the fields as shown below:

- **Survey Firm:** Click on the drop-down list and select your company name that was created in the Company Settings form
- **Jurisdiction:** Will be set once you click on the Stringer ePlan icons e.g.: VICTORIA
- **Surveyor Reference:** Manually add the reference required
- **Licensed Surveyor:** Select from the drop-down list which was created in the Company Settings form the Surveyor|Number
- **Data Entry By:** Select from the drop-down list
- **Purpose of Survey:** Click on the 'Select' button and select what type of survey e.g.: Plan of Subdivision. If you require more than one, hold Control down and add to your selection
- **Head(s) Of Power:** Click on the 'Select' button e.g.: *Subdivision Act 1988*. If you require more than one, hold Control down and add to your selection.
- **Survey Format:** Select from the drop-down list (Level Land)
- **Survey Type:** Select from the drop-down list (Surveyed)
 - Survey Type refers to whether the plan is based on survey, non-survey or partial survey. ePlan uses slightly different terminology as follows:
 - > Surveyed = Survey
 - > Computed = Non-survey
 - > Compiled = Partial-survey
- **Admin Areas:** Click on the 'Select' button and tick on the administrative area type (on top of the page) and select the name of area from each list. You can search for area name based on the first character. Select CORANGAMITE SHIRE, SKIPTON, SKIPTON TP for LGA, Parish and Township respectively. **NOTE: You don't need to assign the locality.**
- **Co-ordinate System:** Select a value from drop-down (e.g. MGA2020_Zone54)
- **Reference Surveys:** NOT Required
- **Survey Description:** NOT Required
- **Date of Survey:** Pick the date from the drop-down calendar
- **Default Scale Factor:** NOT Required
- Click the 'Save and Exit' button to save items from the face sheet

5.3 Change Jurisdiction



Click on Change Jurisdiction icon and select from the list below. For a Victorian plan, select 'Victoria'.

 A screenshot of a software dialog box titled 'Stringer ePlan'. The dialog contains a list of Australian states and territories with radio buttons next to each name. 'Victoria' is selected, indicated by a filled radio button. At the bottom of the dialog is a 'Proceed' button.

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia

Proceed

6. Enumerate

Enumerate

- Select CAD objects to enumerate including:
 - Parcels
 - Points
 - Segments
 - Occupation

6.1 Enumerate Parcels

After completing the first step, you can now enumerate objects in your drawing.

To create a parcel in Stringer ePlan use the Enumerate Parcel Tool. This tool is used for open and closed polylines to create parcels.

NOTE: Lines cannot be enumerated. Lines need to be converted into polylines. Use the command 'PE' to convert a line to a polyline. Closed polylines can be created using BPOLY.



- Click on the Enumerate Parcels icon.
- Click on the closed polyline around the border of the Lot
- The Enumerate Parcels Window will pop up

Complete the form for the cancelled parcel as follows:

- Enter the name of the parcel in the box top left: (1:PS716856)

NOTE: To become familiar with the Parcels naming convention, please refer to Section 2 of ePlan Handbook.

- Select 'extinguished' for Action in the drop-down for cancelled parcels
- **Parcel Intent:** Lot
- **Parcel Type:** Single
- **Parcel format:** Standard
- For Extinguished parcels provide the Volume and Folio (Vol/Fol) and choose the title type. Type the Vol/Fol in at the top (11439/484) and select 'Freehold' as Title Type. Also add the address to the parcel.

There is other information in this window which will be described later in this workbook.

- Enumerate Parcels Window
 - **Assigned:** The Assigned Bearing and Distance is assigned by the user which can be different from the calculated ones. The assigned values will overwrite the calculated ones and will be exported to ePlan LandXML.
 - **Area:** is the actual closed area from the linework
 - **REG Area:** This is the area that you would like to assign to this parcel and export in ePlan
 - **Action:** Select a state such as created, existing, extinguished for the parcel from the drop-down list
 - **Parcel Intent:** This drop-down is used to define various parcel types such as Lot, Easement, Common property
 - **Parcel Type:** This drop-down is used to define parcel type. It can be single, part, multipart or Administrative.
 - **Parcel Format:** This drop-down is used to define a Parcel Format. This can be Standard, Geometry (for easements), or 2D building for Lots including building boundaries.
 - 'Add link' is used for defining Restrictions, or Depth limitation

– **Description:** This field adds a description to a parcel (for example, road name or description for a restriction, or an SPI for extinguished Crown Allotments (e.g., TP123456).

Stringer ePlan - Parcel

1:PS716856 Volume/Folio: 11439/484 Title Type: Freehold LocationAddress_001

Reverse Direction of Parcel <Add Links>

From	To	Calc Brg	Assigned Brg	Brg Type	Calc Dist	Assigned Dist	Dist Type	Radius	Purpose	Arc.L	B
1	2	189.5212	189.5212	Measured	50.287	50.287	Measured	0	normal	0	
2	3	281.0000	281.0000	Measured	40.750	40.750	Measured	0	normal	0	
3	4	9.4445	9.4445	Measured	49.616	49.616	Measured	0	normal	0	
4	1	100.0320	100.0320	Measured	40.850	40.850	Measured	0	normal	0	

From 1 To 2 Centroid 5 Upload

Bearing Distance

Actual 189.5212 50.287

Assigned 189.5212 50.287

Type Measured Measured

Apply Rounding Reset

REG Area 2037.774 Area : 2037.774

Misclose : 50.3721 0.000 1.633258.3

dE 0.000 dN 0.000

Segment Purpose normal

Segment Desc <none>

Parcel Owner <none>

Action extinguished

Parcel Intent Lot

Parcel Type Single

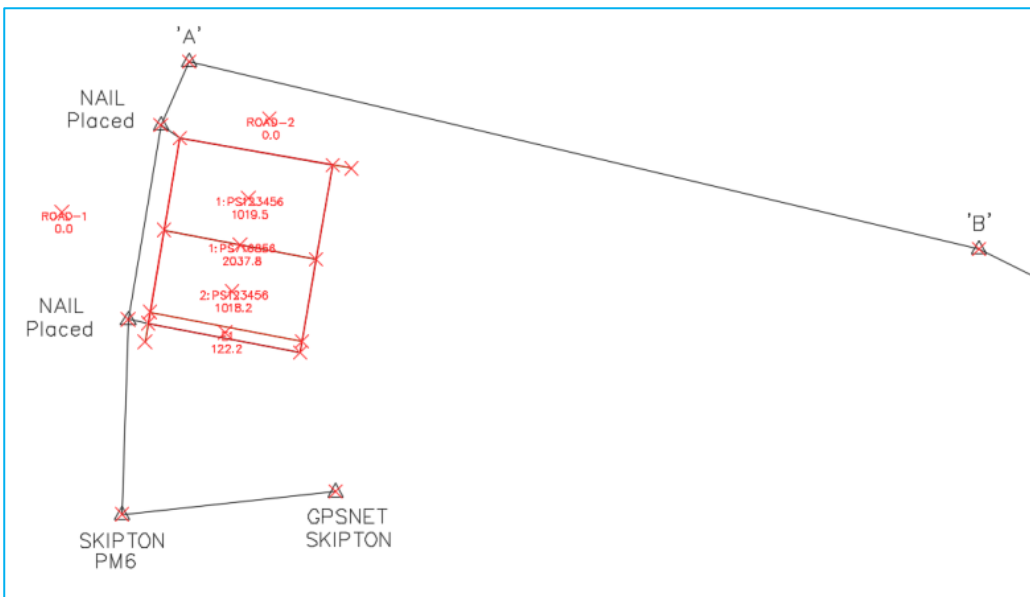
Parcel Format Standard

Parcel Use <none>

Description

Select Parcel Save to File Save Save and Exit Cancel

Below is a screenshot of the final enumeration of parcels:



NOTE: Once you have enumerated the parcel, click 'Save and Exit'. This will add a Centroid Point to the drawing and add the Lot Number and Area text to the parcel you just enumerated. If you need to edit the parcel, click on the Parcel Number and name text and the window will pop up.

Enumerated Parcel Points are added automatically as:

- **Survey Point Type:** boundary
- **State:** proposed

Centroid Points are added as

- **Survey Point Type:** sideshot

- **State:** proposed

6.1.1 The Address Form

Click on 'Add Address' to include the information in the following window:

- Click on the 'Add' button, bottom left
- Tick on 'Administrative Area & Road Name' at the top
- Complete the Administrative Area fields
- **Admin Area Type:** Select Locality from the drop-down
- **Admin Area Name:** Select a value from drop-down list (Skipton)
- **Post Code:** e.g. 3361
- **Road Name:** Blake
- **Road Name Type:** Select a value from the drop-down list (e.g. Street)
- **Road Name Suffix:** Select a value from the drop-down list (e.g. None)
- **Road Type:** Select a value from the drop-down list (Public - **NOTE: For private roads select 'private'**)
- **Parcel Reference:** None
- **Address Type:** Select a value from the drop-down list (e.g. Primary)
- **Number First:** (e.g. 41)

Click the 'Save and Exit' button to add the address to this parcel.

NOTE: If you DON'T want the address added to the parcel click 'QUIT'. If you have already given an address to a parcel, and no longer want it, click on the address in the parcel and then click 'QUIT'. The address will be removed from that parcel. You don't need to add address for created Lots, unless required.

You must enumerate all parcels in the plan by repeating the above steps. Make sure you have created the closed parcels for the 2 new Lots that are being created from the extinguished parcel.

6.1.2 Enumerate all Lots

The next step is to enumerate the other 2 new Lots.

- Lot 1

Stringer ePlan - Parcel

1:PS123456

<Add Address>

<Add Links>

From	To	Calc Brg	Assigned Brg	Brg Type	Calc Dist	Assigned Dist	Dist Type	Radius	Purpose	Arc. L	Bdy.Desc
10	11	280.5626	280.5626	Measured	40.803	40.803	Measured	0.000	normal	0	<none>
9	11	9.4445	9.4445	Measured	24.660	24.660	Measured	0.000	normal	0	<none>
14	9	100.0320	100.0320	Measured	40.850	40.850	Measured	0.000	normal	0	<none>
10	14	189.5212	189.5212	Measured	25.290	25.290	Measured	0.000	normal	0	<none>

From **10** To **11** Centroid **15** Create Upload Area : 1019.542

Actual Bearing 280.5626 Distance 40.803 Irregular Bdy REG Area **1019.5**

Assigned Apply Roundings Reset Action **created**

Type **Measured** **Measured** Segment Purpose **normal** Parcel Intent **Lot**

Parcel Owner Segment Desc **<none>** Parcel Type **Single**

Parcel Use **<none>** Parcel Format **Standard**

Misclose : 100.2445 0.000 1:281762.8
dE 0.000 dN 0.000

Description

Select Parcel Save to File Save Save and Exit Cancel

- Lot 2

Stringer ePlan - Parcel

2:PS123456

<Add Address>

<Add Links>

From	To	Calc Brg	Assigned Brg	Brg Type	Calc Dist	Assigned Dist	Dist Type	Radius	Purpose	Arc. L	Bdy.Desc
8	12	281.0000	281.0000	Measured	40.750	40.750	Measured	0.000	normal	0	<none>
11	8	9.4445	9.4445	Measured	24.956	24.956	Measured	0.000	normal	0	<none>
10	11	100.5626	100.5626	Measured	40.803	40.803	Measured	0.000	normal	0	<none>
12	10	189.5212	189.5212	Measured	24.997	24.997	Measured	0.000	normal	0	<none>

From **8** To **12** Centroid **13** Create Upload Area : 1018.233

Actual Bearing 281.0000 Distance 40.750 Irregular Bdy REG Area **1018.2**

Assigned Apply Roundings Reset Action **created**

Type **Measured** **Measured** Segment Purpose **normal** Parcel Intent **Lot**

Parcel Owner Segment Desc **<none>** Parcel Type **Single**

Parcel Use **<none>** Parcel Format **Standard**

Misclose : 318.1339 0.000 1:368358.6
dE 0.000 dN 0.000

Description

Select Parcel Save to File Save Save and Exit Cancel

6.1.3 Enumerate an Easement Parcel

Creating an easement is like creating a Lot. However, you need to assign correct attributes as shown below:

Stringer ePlan - Parcel

E1

<Add Address>
<Add Links>

From	To	Calc. Brg	Assigned Brg	Brg Type	Calc Dist	Assigned Dist	Dist Type	Radius	Purpose	Arc. L	Bdy Desc
12	17	189.5212	189.5212	Measured	3.000	3.000	Measured	0.000	normal	0	<none>
8	12	281.0000	281.0000	Measured	40.750	40.750	Measured	0.000	normal	0	<none>
16	8	9.4445	9.4445	Measured	3.000	3.000	Measured	0.000	normal	0	<none>
17	16	100.5959	100.5959	Measured	40.757	40.757	Measured	0.000	normal	0	<none>

From 12 To 17 Centroid 18 Create Upload Area: 122.233

Actual Bearing 189.5212 Distance 3.000 Irregular Bdy REG Area 122.2

Assigned 189.5212 3.000 Apply Roundings Reset Action created

Type Measured Measured Segment Purpose normal Parcel Intent Easement

Parcel Owner Parcel Use <none> Parcel Type Single Parcel Format Geometry

Misclose: 93.5338 0.001 1:173650.1
dE 0.001 dN 0.000

Description

Select Parcel Save to File Save Save and Exit Cancel

The easement then has the following completed:

- **Parcel Name:** E1 (correct naming convention for easements)

NOTE: Dash character like E-1 is not accepted for naming easements.

- **Action:** created
- **Parcel Intent:** Easement
- **Parcel Type:** Single
- **Parcel Format:** Geometry

Click the 'Save and Exit' button.

6.1.4 Enumerate Road Parcels

There are two road abutments next to the extinguished Lot which need to be enumerated.

- ROAD-1

Stringer ePlan - Parcel

ROAD-1

<Add Address>
<Add Links>

From	To	Calc. Brg	Assigned Brg	Brg Type	Calc Dist	Assigned Dist	Dist Type	Radius	Purpose	Arc. L	Bdy Desc
20	9	9.4445	9.4445	Measured	54.616	54.616	Measured	0.000	normal	0	<none>

From 20 To 9 Centroid 21 Create Upload Area: 0.000

Actual Bearing 9.4445 Distance 54.616 Irregular Bdy REG Area 0.0

Assigned 9.4445 54.616 Apply Roundings Reset Action existing

Type Measured Measured Segment Purpose normal Parcel Intent Road

Parcel Owner Parcel Use <none> Parcel Type Single Parcel Format Standard

Misclose: 9.4445 54.616 1:1.0
dE 9.245 dN 53.828

Description BEAUFORT ROAD

Select Parcel Save to File Save Save and Exit Cancel

This Road is enumerated as a parcel from a polyline drawn where the road is.

NOTE: This is an open polyline which is converted to a parcel.

The ROAD has the following completed:

- **Name:** ROAD-1
- **Description:** BEAUFORT ROAD
- **REG Area:** 0
- **Action:** existing
- **Parcel Intent:** Road
- **Parcel Type:** Single
- **Parcel Format:** Standard

Once you have completed all details, click on the 'Save and Exit' button.

NOTE: Once you have added the centroid for the Road Parcel to the drawing, you can move that Centroid point so the Road name in the PDF Plan is placed wherever you want.

- ROAD-2

The screenshot shows the 'Stringer ePlan - Parcel' window. At the top, the parcel name is 'ROAD-2'. Below it are buttons for '<Add Address>' and '<Add Links>'. A table lists the segment details:

From	To	Calc Brg	Assigned Brg	Brg Type	Calc Dist	Assigned Dist	Dist Type	Radius	Purpose	Arc. L	Bdy.Desc
9	22	100.0320	100.0320	Measured	45.850	45.850	Measured	0.000	normal	0	<none>

Below the table, there are fields for 'From' (9) and 'To' (22), and a 'Centroid' dropdown set to '23'. There are 'Create' and 'Upload' (checked) buttons. The 'Area' is 0.000. There are also 'Apply Roundings' and 'Reset' buttons. The 'REG Area' is 0.0. The 'Action' is 'existing'. The 'Parcel Intent' is 'Road', 'Parcel Type' is 'Single', and 'Parcel Format' is 'Standard'. The 'Description' field contains 'BLAKE STREET'. At the bottom are buttons for 'Select Parcel', 'Save to File', 'Save', 'Save and Exit', and 'Cancel'.

6.2 Enumerate Segments

In ePlan traverse lines and radiations need to be enumerated by using the Enumerate Segments function.



Click on the Enumerate Segment icon and select the line you want to enumerate.

Click on the line between GPSNET SKIPTON and SKIPTON PM6

- **Purpose:** Select what is required - In this case it is 'traverse'
- **Upload:** Ensure it is ticked if you want it to be added to the XML
- **Save & Exit:** Click this button to save

Stringer ePlan - Segment

1	CGPNT-1	CGPNT-1
2	CGPNT-2	CGPNT-2
	Assigned	Computed
Bearing	263.5217	263.5217
Distance	56.583	56.583
	Apply Roundings	Rad 0
Instrument	Theodolite and EDM	Purpose
Coordinate Ref		
Description (optional)		
Physical Boundary Description	<none>	

Upload

Below are the Line Segments as enumerated in the drawing.

- From PM6 to Nail 1 Placed

Stringer ePlan - Segment

2	CGPNT-2	CGPNT-2
3	CGPNT-3	CGPNT-3
	Assigned	Computed
Bearing	1.4225	1.4225
Distance	51.450	51.450
	Apply Roundings	Rad 0
Instrument	Theodolite and EDM	Purpose
Coordinate Ref		
Description (optional)		
Physical Boundary Description	<none>	

Upload

- From Nail 1 Placed to Nail 2 Placed

Stringer ePlan - Segment

3	CGPNT-3	CGPNT-3
4	CGPNT-4	CGPNT-4
	Assigned	Computed
Bearing	9.3345	9.3345
Distance	52.015	52.015
	Apply Roundings	Rad 0
Instrument	Theodolite and EDM	Purpose
Coordinate Ref		
Description (optional)		
Physical Boundary Description	<none>	

Upload

- From Nail 2 Placed to Datum 'A' point at the top Left

Stringer ePlan - Segment

4	CGPNT-4	CGPNT-4
5	CGPNT-5	CGPNT-5
	Assigned	Computed
Bearing	24.1520	24.1520
Distance	18.320	18.320
	Apply Roundings	Rad 0
Instrument	Theodolite and EDM	Purpose
Coordinate Ref		
Description (optional)		
Physical Boundary Description	<none>	

Upload

- From Datum 'A' to Datum 'B'

Stringer ePlan - Segment

5	CGPNT-5	CGPNT-5
6	CGPNT-6	CGPNT-6
	Assigned	Computed
Bearing	103.2100	103.2100
Distance	213.975	213.975
	Apply Roundings	Rad 0
Instrument	Theodolite and EDM	Purpose
Coordinate Ref		
Description (optional)		
Physical Boundary Description	<none>	

Upload

- From Nail 1 to boundary point (CGPNT-8).

Stringer ePlan - Segment

3	CGPNT-3	CGPNT-3
8	CGPNT-8	CGPNT-8
	Assigned	Computed
Bearing	101.0200	101.0200
Distance	5.390	5.390
	Apply Roundings	Rad 0
Instrument	Theodolite and EDM	Purpose
Coordinate Ref		
Description (optional)		
Physical Boundary Description	<none>	

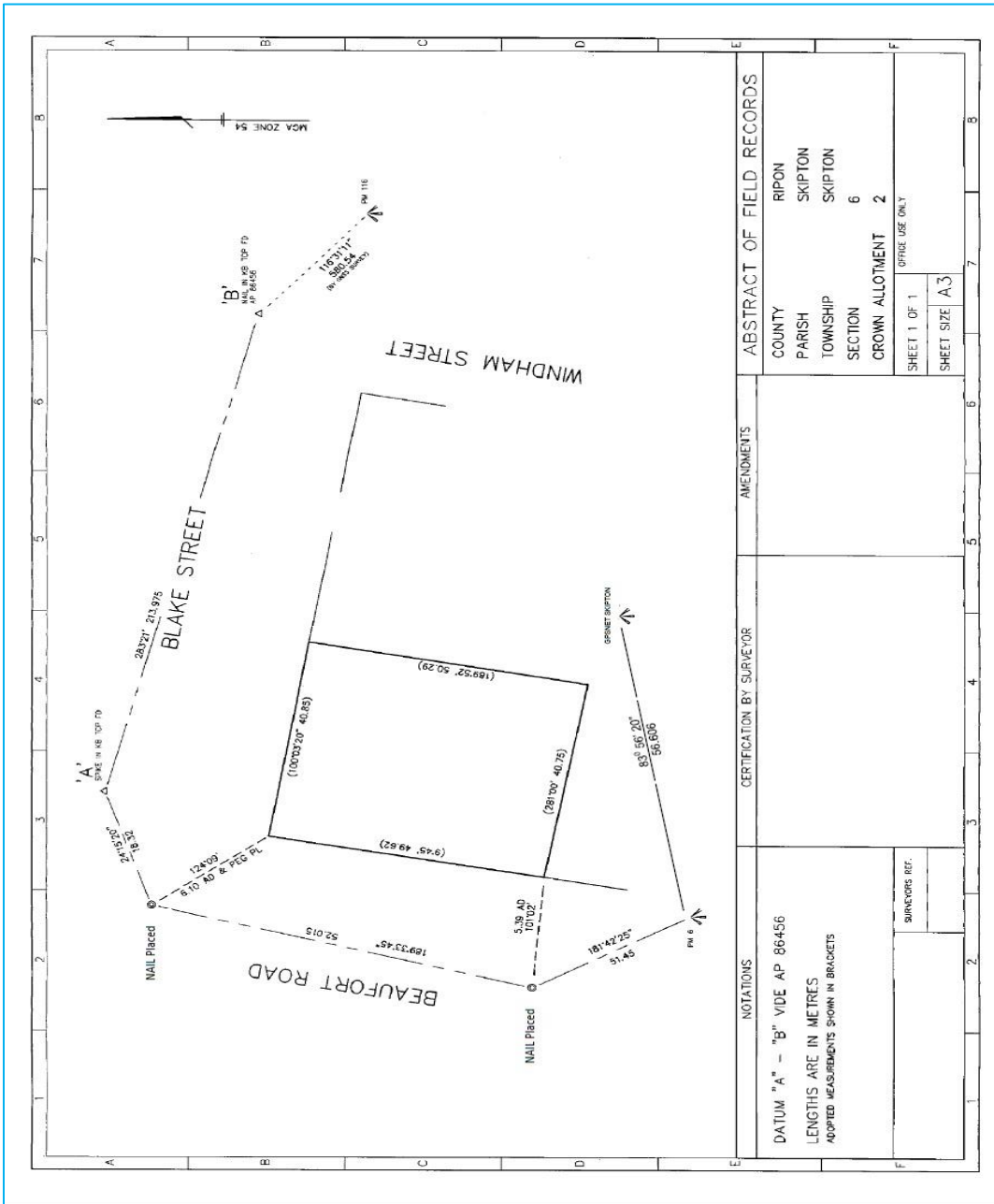
Upload

- From Nail 2 to boundary point (CGPNT-9).

Stringer ePlan - Segment

4	CGPNT-4	CGPNT-4
9	CGPNT-9	CGPNT-9
	Assigned	Computed
Bearing	<input type="text" value="124.0900"/>	124.0900 <input type="text" value="Measured"/>
Distance	<input type="text" value="6.100"/>	6.100 <input type="text" value="Measured"/>
	<input type="button" value="Apply Roundings"/>	Rad 0
Instrument	<input type="text" value="Theodolite and EDM"/>	Purpose <input type="text" value="sideshot"/>
Coordinate Ref	<input type="text"/>	
Description (optional)	<input type="text"/>	
Physical Boundary Description	<input type="text" value="<none>"/>	

Upload



6.3 Enumerate Points

6.3.1 Boundary Points

Once the parcels are enumerated, points are automatically added to their corners. Once added to the parcel they have a default setting on Parcel Points as follows:

- **Mark Name:** CGPNT-8 (next available)
- **Survey Point Type:** boundary
- **State:** proposed

Stringer ePlan - Monument

Point Number 8 E 708007.162 N 5826573.690

Mark Name CGPNT-8

Description

Survey Point Type boundary

State proposed

Horizontal Monument Vertical Monument

Horizontal Control

Datum

Order

Fix

Vertical Control

Datum

Order

Fix

Height

Cur.Date 2016-05-24

Reference Plan

Upload

Zoom To Save Save and Exit Cancel

6.3.2 Centroid Points

The Centroid Point is also added to the drawing and its default items are:

- **Mark Name:** CGPNT-18
- **Survey Point Type:** sideshot
- **State:** proposed

Stringer ePlan - Monument

Point Number 18 E 708027.418 N 5826571.280

Mark Name CGPNT-18

Description

Survey Point Type sideshot

State proposed

Horizontal Monument Vertical Monument

Horizontal Control

Datum

Order

Fix

Vertical Control

Datum

Order

Fix

Height

Cur.Date 2016-05-24

Reference Plan

Upload

Zoom To Save Save and Exit Cancel

Road Parcel Extensions also get points:

- **Mark Name:** CGPNT-22
- **Survey Point Type:** boundary
- **State:** proposed

Stringer ePlan - Monument

Point Number 22 E 708060.706 N 5826614.584

Mark Name CGPNT-22

Description

Survey Point Type boundary

State proposed

Horizontal Monument Vertical Monument

Horizontal Control

Datum

Order

Fix

Vertical Control

Datum

Order

Fix

Height

Cur.Date 2016-05-24

Reference Plan

Upload

Zoom To Save Save and Exit Cancel

6.3.3 Control Marks

In ePlan, pursuant to the Surveying Regulations 2015, there must be at least three PMs or PCMs to be connected to the survey for up to and including 10 parcels. If there are more than 10 parcels, further PMs or PCMs must be placed within the subdivision so that the distance between these marks is not greater than 100 metres.

In the sample plan, you need to enumerate the Control Marks as follows:

- **Mark Name:** CGPNT-1 (next available, can't be the same number and must be unique)
- **Description:** GPSNET SKIPTON
- **Survey Point Type:** control
- **State:** existing

Tick the Plan Monument box

- **Monument Type:** Plaque
- **State:** Existing
- **Condition:** OK

Tick the Horizontal Monument box

- **Datum:** MGA2020_Zone54
- **Order:** 3
- **FIX:** Adjustment
- **Identification Number (oID)** - 348901330
- Current Date - 2016-05-20

NOTE: In ePlan, distances are based on the ground observation. There is no need to use a scale factor in ePlan. When including the Control Marks in your drawing, consider one of those as a base point with True MGA coordinates. Then, use bearing and ground distance to connect your marks together. In this case, if you have a control mark far from your base control mark, there may be a discrepancy with the MGA coordinates of that point. This discrepancy maybe in the validation report which you can justify. If you have GNSS control points in your drawing, you need to convert the coordinates into local coordinates and connect them by bearing and ground distances.

Stringer ePlan - Monument

Point Number 6 E 708057.194 N 5826530.785

Mark Name CGPNT-6 Identification Number (oID) 348901330

Description GPSNET SKIPTON

Survey Point Type control State existing

Horizontal Monument Vertical Monument

Horizontal Control Datum MGA2020_Zone54 Order 3 Fix Adjustment

Vertical Control Datum Order Fix Height

Plan Monument

Monument Type Plaque State Existing Condition OK Monument Description

Cur Date 2019-05-06 Reference Plan

Upload Zoom To Save Save and Exit Cancel

Skipton PM6

Stringer ePlan - Monument

Point Number 7 E 708000.910 N 5826524.738

Mark Name CGPNT-7

Description SKIPTON PM 6

Survey Point Type control
State existing

Horizontal Monument Vertical Monument

Horizontal Control Datum MGA2020_Zone54
Order 3
Fix Adjustment

Vertical Control Datum
Order
Fix
Height

Plan Monument

Monument Type Plaque
State Existing
Condition OK
Monument Description

Cur.Date 2019-05-06
Reference Plan

Upload

Nail 1 Placed- is enumerated as a traverse point.

Stringer ePlan - Monument

Point Number 3 E 708001.872 N 5826574.721

Mark Name CGPNT-3

Description

Survey Point Type traverse
State proposed

Horizontal Monument Vertical Monument

Horizontal Control Datum
Order
Fix

Vertical Control Datum
Order
Fix
Height

Plan Monument

Monument Type Plaque
State New
Condition Abandoned

Cur.Date 2016-05-20
Reference Plan

Upload

Nail 2 Placed- is enumerated as a traverse point.

Stringer ePlan - Monument

Point Number 4 E 708010.512 N 5826626.013

Mark Name CGPNT-4

Description

Survey Point Type traverse
State proposed

Horizontal Monument Vertical Monument

Horizontal Control Datum
Order
Fix

Vertical Control Datum
Order
Fix
Height

Plan Monument

Monument Type Plaque
State New
Condition Abandoned

Cur.Date 2016-05-20
Reference Plan

Upload

Datum 'A' – is enumerated as a traverse point.

The screenshot shows the 'Stringer ePlan - Monument' form for Point Number 5. The form is divided into several sections:

- Point Information:** Point Number 5, E 708018.038, N 5826642.716.
- Mark Name:** CGPNT-5
- Description:** A
- Survey Point Type:** traverse (dropdown), State: proposed (dropdown).
- Plan Monument:** Plan Monument. Monument Type: Plaque (dropdown), State: New (dropdown), Condition: Abandoned (dropdown), Monument Description: (empty).
- Horizontal Monument:** Horizontal Monument. Horizontal Control: Datum (dropdown), Order (dropdown), Fix (dropdown).
- Vertical Monument:** Vertical Monument. Vertical Control: Datum (dropdown), Order (dropdown), Fix (dropdown), Height (dropdown).
- Cur.Date:** 2016-05-20 (dropdown).
- Reference Plan:** (dropdown).
- Buttons:** Upload, Zoom To, Save, Save and Exit, Cancel.

Datum 'B'- is enumerated as a traverse point.

The screenshot shows the 'Stringer ePlan - Monument' form for Point Number 6. The form is divided into several sections:

- Point Information:** Point Number 6, E 708226.231, N 5826593.310.
- Mark Name:** CGPNT-6
- Description:** B
- Survey Point Type:** traverse (dropdown), State: proposed (dropdown).
- Plan Monument:** Plan Monument. Monument Type: Plaque (dropdown), State: New (dropdown), Condition: Abandoned (dropdown), Monument Description: (empty).
- Horizontal Monument:** Horizontal Monument. Horizontal Control: Datum (dropdown), Order (dropdown), Fix (dropdown).
- Vertical Monument:** Vertical Monument. Vertical Control: Datum (dropdown), Order (dropdown), Fix (dropdown), Height (dropdown).
- Cur.Date:** 2016-05-20 (dropdown).
- Reference Plan:** (dropdown).
- Buttons:** Upload, Zoom To, Save, Save and Exit, Cancel.

SKIPTON PM116

The screenshot shows the 'Stringer ePlan - Monument' form for Point Number 9. The form is divided into several sections:

- Point Information:** Point Number 9, E 708746.292, N 5826335.528.
- Mark Name:** CGPNT-9
- Description:** SKIPTON PM 116
- Survey Point Type:** control (dropdown), State: existing (dropdown).
- Plan Monument:** Plan Monument. Monument Type: Plaque (dropdown), State: Existing (dropdown), Condition: OK (dropdown), Monument Description: (empty).
- Horizontal Monument:** Horizontal Monument. Horizontal Control: Datum: MGA2020_Zone54 (dropdown), Order: 3 (dropdown), Fix: Adjustment (dropdown).
- Vertical Monument:** Vertical Monument. Vertical Control: Datum (dropdown), Order (dropdown), Fix (dropdown), Height (dropdown).
- Cur.Date:** 2019-05-06 (dropdown).
- Reference Plan:** (dropdown).
- Buttons:** Upload, Zoom To, Save, Save and Exit, Cancel.

Parcel Linkages

Annotate

- Set up parcel linkages for parcels
- ePlan Annotations

The Parcel Linkages tool is used for defining non-spatial parcels. For example, an easement or restriction can be defined by using this tool.



For the sample plan, define an easement using Parcel Linkages. Click the Parcel Linkages icon and complete the fields required:

- **Name:** EAS1\PS123456
- **Action:** created
- **Parcel Intent:** Easement
- **Parcel Type:** Single
- **Parcel Owner:** CORANGAMITE SHIRE COUNCIL
- **Parcel Use:** Drainage
- **Parcel Format:** Standard
- **Upload:** Ticked

To link the geometry parcels to this non-spatial parcel, tick 'Has Linkages' and select the Parcel Reference from the drop-down list and click on 'Save Changes'. To link more geometries, click 'add New Association':

- **Parcel Reference:** E1 (from drop-down list)
- Click 'Save Changes' (if you do not click 'Save Changes' anything added will not be saved)

7. ePlan Annotation

Annotation element is used to capture various pieces of textual information. Depending on the Annotation,



the requirements for each field differs. Click on the ePlan Annotations icon to enter the annotations to the plan.

NOTE: Ensure after adding each annotation you save changes before adding another annotation.

Below images reflect what has been added in the ePlan Annotations for this Plan:

ANNO-1

ANNO-2

ANNO-3

NOTE: This annotation (ANNO-3) requires a parcel reference to the easement to show the width.

To view all the annotations added to this form, click on the 'Annotation Name' at the top of the form. The form below shows all added data for the ePlan Annotations.

Link Name	Parcel	Type	Description
ANNO-1	<none>	Crown Section	6
ANNO-2	<none>	Crown Allotment	2
ANNO-3	E1	Easement Width	3

8. Review



- List all the enumerated data to review and edit:
 - Parcels list
 - Monument points list
 - COGO points list
 - Segment List
 - Parcel Report

8.1 Parcel List

The Parcels List lets users confirm the parcels that have been enumerated and make edits.



Click on the Parcels List icon.

A window selection can be made around all the data in the drawing – only the enumerated parcels will be included in the list. The list will appear as follows:

Parcel ID	Class	State	Upload	Area	Act.Area	Type	Owner	Use
ROAD-2	Road	existing	1	0.0	0.000	Single	<none>	<none>
ROAD-1	Road	existing	1	0.0	0.000	Single	<none>	<none>
2.PS123456	Lot	created	1	1018.2	1018.233	Single	<none>	<none>
1.PS123456	Lot	created	1	1019.5	1019.542	Single	<none>	<none>
E1	Easement	created	1	122.2	122.233	Single	<none>	<none>
1.PS716856	Lot	extinguished	1	2037.8	2037.774	Single	<none>	<none>

REG Area:

Upload

Parcel Owner:

Parcel Use:

Action:

Parcel Intent:

Parcel Type:

Buttons: Assign values, Save, Cancel, Save and Exit

Clicking on a row in the list will zoom to and highlight that parcel in the drawing. You can also edit any of the drop-down lists from this form.

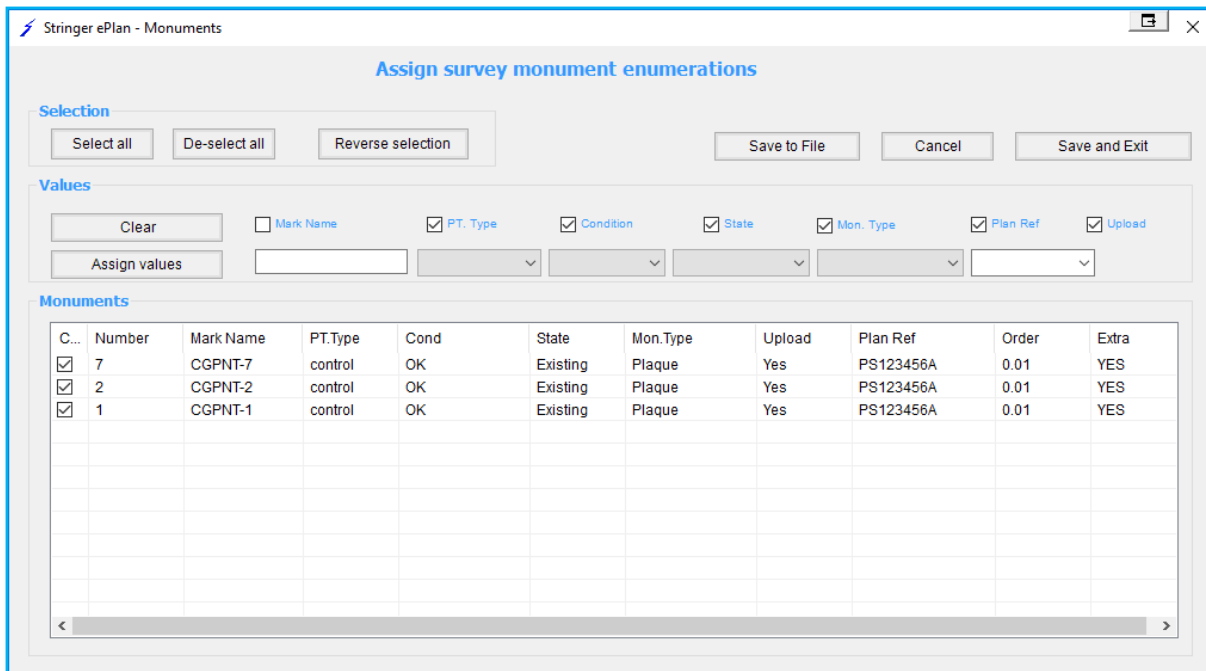
8.2 Monument Points List

The Monument Points List allows users to confirm they have the correct attributes for control points and reference marks.



Click on the Monument Points List icon.

A window selection can be made to select all the Monuments for review. The list will appear as follows:



Clicking on a point in the list will zoom to that point in the drawing.

This list provides an opportunity to review points that you have enumerated. Any enumeration errors can be corrected here.

NOTE: The Values frame provides the option to apply bulk edits to points. To use this, tick on the properties you want to change the point/s in the Values frame (e.g., Point Type, Condition, State, Mon, Type, Plan Ref, etc). In the Monuments list, tick the points to be altered, then click the 'Assign Values' button to make the changes.

8.3 COGO points List

The COGO Points List allows users to review all enumerated COGO points in the drawing.



Click on the COGO Points List icon.

The screenshot shows a dialog box titled "Stringer ePlan - Cogo Points". It has three main sections: "Selection", "Values", and "Monuments".

Selection: Contains four buttons: "Select all", "De-select all", "Reverse selection", and "Clear".

Values: Contains three checked checkboxes: "PT. Type", "State", and "Upload". Below them are two dropdown menus and an "Assign values" button.

Monuments: A table with columns: Chk, Number, PT.Type, State, Upload, Extra, and an empty column. The table contains 17 rows of data.

Chk	Number	PT.Type	State	Upload	Extra	
<input type="checkbox"/>	23	sideshot	proposed	Yes	NO	
<input type="checkbox"/>	22	boundary	proposed	Yes	NO	
<input type="checkbox"/>	21	sideshot	proposed	Yes	NO	
<input type="checkbox"/>	20	boundary	proposed	Yes	NO	
<input type="checkbox"/>	19	sideshot	proposed	Yes	NO	
<input type="checkbox"/>	18	sideshot	proposed	Yes	NO	
<input type="checkbox"/>	17	boundary	proposed	Yes	NO	
<input type="checkbox"/>	16	boundary	proposed	Yes	NO	
<input type="checkbox"/>	15	sideshot	proposed	Yes	NO	
<input type="checkbox"/>	14	boundary	proposed	Yes	NO	
<input type="checkbox"/>	13	sideshot	proposed	Yes	NO	
<input type="checkbox"/>	12	boundary	proposed	Yes	NO	
<input type="checkbox"/>	11	boundary	proposed	Yes	NO	
<input type="checkbox"/>	10	boundary	proposed	Yes	NO	
<input type="checkbox"/>	9	boundary	proposed	Yes	NO	
<input type="checkbox"/>	8	boundary	proposed	Yes	NO	
<input type="checkbox"/>	7	control	existing	Yes	YES	

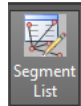
At the bottom of the dialog are three buttons: "Save to File", "Cancel", and "Save and Exit".

Clicking on a point in the list will zoom to that point in the drawing. The form enables review/edit of the following:

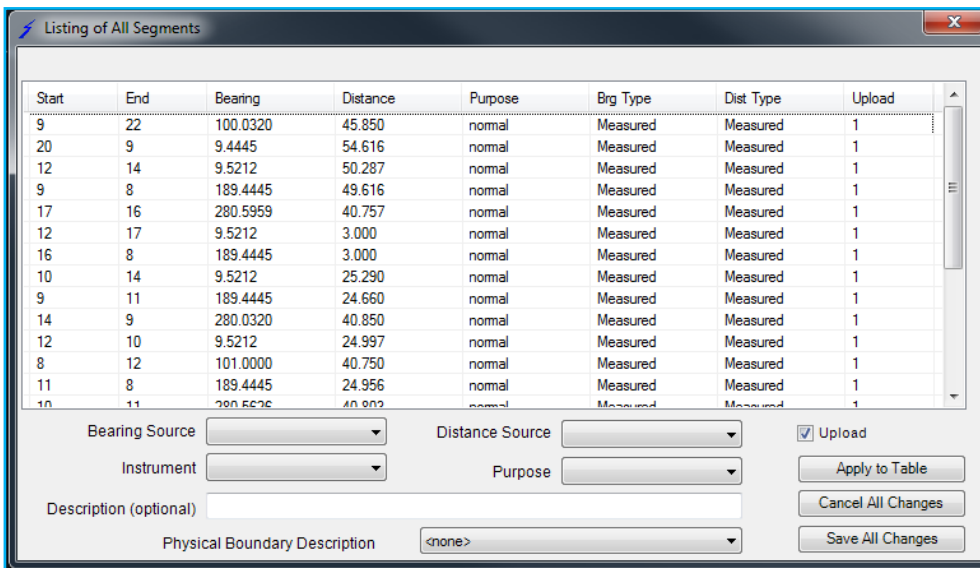
- PT Type
- State
- Upload

Use the Values controls to apply bulk edits to highlighted Monuments in the list.

8.4 Segment List



Click on the Segment List icon to view all the segments enumerated in the plan.

A screenshot of a software window titled 'Listing of All Segments'. It contains a table with columns: Start, End, Bearing, Distance, Purpose, Brg Type, Dist Type, and Upload. Below the table are several dropdown menus for 'Bearing Source', 'Distance Source', 'Instrument', and 'Purpose', along with a text field for 'Description (optional)' and a dropdown for 'Physical Boundary Description'. On the right side, there are buttons for 'Upload', 'Apply to Table', 'Cancel All Changes', and 'Save All Changes'.

Start	End	Bearing	Distance	Purpose	Brg Type	Dist Type	Upload
9	22	100.0320	45.850	normal	Measured	Measured	1
20	9	9.4445	54.616	normal	Measured	Measured	1
12	14	9.5212	50.287	normal	Measured	Measured	1
9	8	189.4445	49.616	normal	Measured	Measured	1
17	16	280.5959	40.757	normal	Measured	Measured	1
12	17	9.5212	3.000	normal	Measured	Measured	1
16	8	189.4445	3.000	normal	Measured	Measured	1
10	14	9.5212	25.290	normal	Measured	Measured	1
9	11	189.4445	24.660	normal	Measured	Measured	1
14	9	280.0320	40.850	normal	Measured	Measured	1
12	10	9.5212	24.997	normal	Measured	Measured	1
8	12	101.0000	40.750	normal	Measured	Measured	1
11	8	189.4445	24.956	normal	Measured	Measured	1
10	11	280.5959	40.850	normal	Measured	Measured	1

You can edit any segment using this window.

8.5 Parcel Report

A window selection can be made around all the data in the drawing – only the enumerated parcels will be included in the report. A CSV file will be created, with the Bearing and Distance of each line segment (Actual and Assigned) and misclosure of each Lot. This report can be opened in Excel or Notepad and printed for QA and documentation purposes.

The report will appear as follows:

Parcel ROAD-2								
Parcel Class : Road								
Parcel State : existing								
Parcel Owner :								
Parcel Use : <none>								
Start	End	Assigned Brg	Calced. Brg	Type	Assigned Dist.	Calced. Dist	Type	
	9 22	100.032	100.032	Measured	45.85	45.85	Measured	
Misclose : 100.0320 45.850 1:1.0								
Area : 0.000								
Assigned Area : 0.0								
Parcel ROAD-1								
Parcel Class : Road								
Parcel State : existing								
Parcel Owner :								
Parcel Use : <none>								
Start	End	Assigned Brg	Calced. Brg	Type	Assigned Dist.	Calced. Dist	Type	
	20 9	9.4445	9.4445	Measured	54.616	54.616	Measured	
Misclose : 9.4445 54.616 1:1.0								
Area : 0.000								
Assigned Area : 0.0								
Parcel 2:PS123456								
Parcel Class : Lot								
Parcel State : created								
Parcel Owner :								
Parcel Use : <none>								
Start	End	Assigned Brg	Calced. Brg	Type	Assigned Dist.	Calced. Dist	Type	
	12 8	281	281	Measured	40.75	40.75	Measured	
	8 11	9.4445	9.4445	Measured	24.956	24.956	Measured	
	10 11	100.5626	100.5626	Measured	40.803	40.803	Measured	
	10 12	189.5212	189.5212	Measured	24.997	24.997	Measured	
Misclose : 318.1339 0.000 1:368358.6								
Area : 1018.233								
Assigned Area : 1018.2								

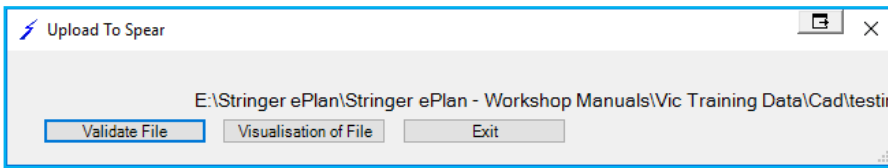
9. Export

Export

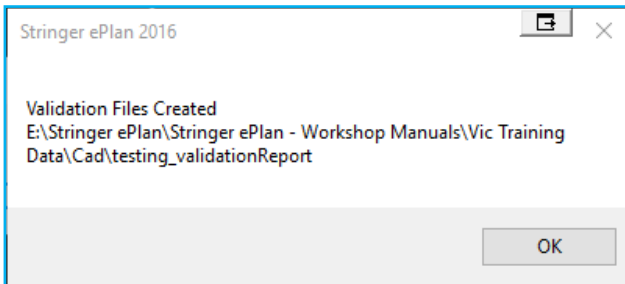
- Export ePlan - generates an ePlan file for lodgement
- Validate ePlan
- Create PDF



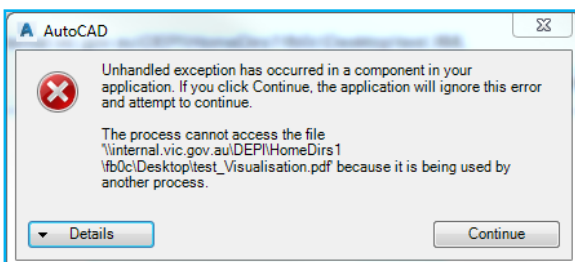
Click on the 'Export ePlan' button. The XML file will be saved to the folder you select. You have 2 options once the export has been saved as shown below:



Click 'Validate File' and 'Visualisation of File', to receive a validation report and a visualised plan in PDF format from SPEAR.



NOTE: If the PDF file is already opened for visualisation or validation, and the PDF file has not been closed, the following error message will appear on opening the PDF for the second time. To avoid the above error, you need to close the opened PDF first.



ePlan Validation Report

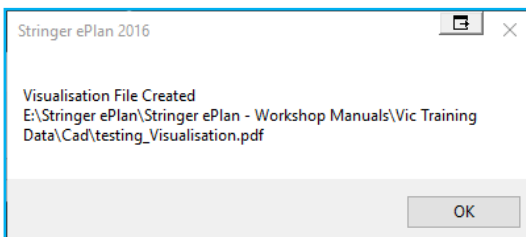
1 Error 0 System Error 0 Input Required 2 For Information 69 Pass 56 Not Applicable

Organisation: Land Use Victoria **Validation Status:** **Fail**
SPEAR Reference Number: Not Applicable **Validated on:** 06/05/2019 04:10 PM
ePlan plan number: PS123456A **Validator:** 4.8.2
ePlan version: 1

Rule Name	Result	Rule Message
VR023 - Surveyor Registration Number		According to the Surveyors Registration Board of Victoria, "ALAN ROLLEY" has the registration number "1234". This does not match the provided surveyor name "DAVOOD SHOJAEI".
VR034 - Depth Limitation Manual Check		Plan has identified that depth limitation does not apply.
VR116 - Prior Survey Date		The previous plan "PS716856" with volume/folio of "11439/484" is not an ePlan in SPEAR, a manual check of the previous survey date is required.
VR001 - ePlan CIF Schema Validation		
VR002 - Survey Header Completeness		
VR004 - Parcel Geometry Exists		
VR005 - Easement Purpose Exists		
VR008 - Road Parcel Description Exists		
VR009 - Primary Parcel Address Exists		
VR010 - PM and PCM Completeness		
VR012 - Instrument Point Completeness		
VR014 - Instrument Setup to Point Reference		
VR015 - Instrument Setup in Observation		
VR016 - Instrument Setup in Observation		

NOTE: If you require assistance with resolving any ePlan validation issues, please contact the ePlan team on 03 9194 0612 and press 3, or send an email to spear.info@delwp.vic.gov.au

Below is an example of the PDF after Visualisation of File.



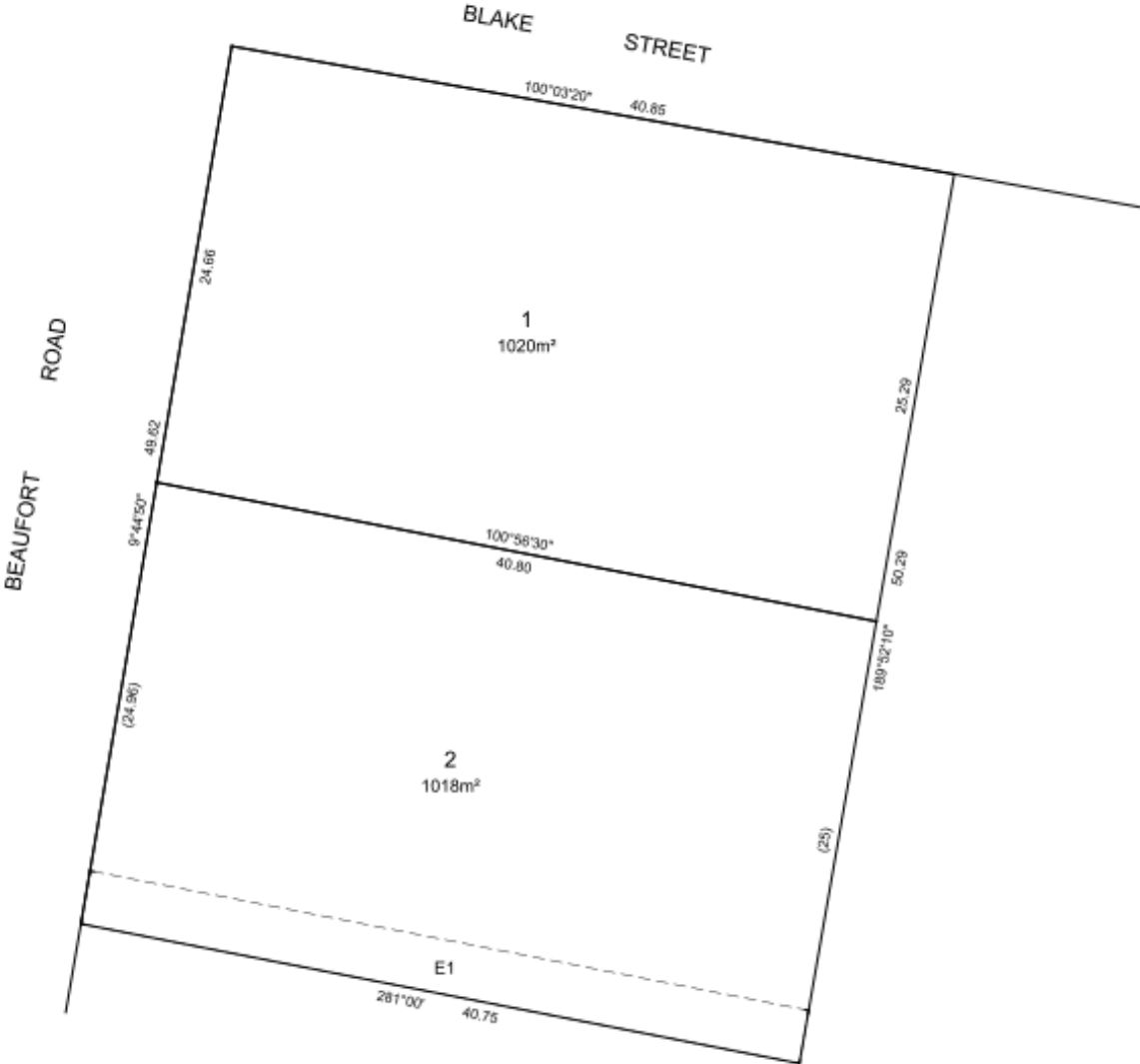
The PDF created from the Visualisation Service in plan template is based on [Technical Note 4](#).

NOTE 1: Once you sign in to SPEAR, your firm's logo will be watermarked on the visualised PDF.

NOTE 2: To enhance the presentation of the visualised PDF, use the ePlan Visualisation Enhancement Tool (VET). For more information, refer to [SPEAR User Guide 57](#).

PLAN UNDER SECTION 22 OF THE SUBDIVISION ACT 1988		EDITION 1		PS123456A	
PLAN OF SUBDIVISION					
LOCATION OF LAND		COUNCIL NAME: CORANGAMITE SHIRE COUNCIL			
PARISH:	SKIPTON				
TOWNSHIP:	SKIPTON				
CROWN DESCRIPTION:	CA. 2, CROWN SECTION 6				
TITLE REFERENCES:	VOL. 11439 FOL. 484				
LAST PLAN REFERENCE:	LOT 1 ON PS716856				
POSTAL ADDRESS:	41 BLAKE STREET SKIPTON 3361				
<small>(at time of subdivision)</small>					
VESTING OF ROADS AND/OR RESERVES					
IDENTIFIER		COUNCIL/BODY/PERSON			
NIL		NIL			
NOTATIONS					
DEPTH LIMITATION:		Does Not Apply			
This is an ePlan					
SURVEY:					
This plan is based on survey.					
EASEMENT INFORMATION					
LEGEND: A-Appurtenant Easement E-Encumbering Easement					
IDENTIFIER	PURPOSE	WIDTH (m)	ORIGIN	LAND BENEFITED/IN FAVOUR OF	
E1	DRAINAGE	3	THIS PLAN	CORANGAMITE SHIRE COUNCIL	
SURVEYORS FILE REF: 1			ORIGINAL SHEET SIZE: A3	SHEET 1 OF 2	
LICENSED SURVEYOR: DAVOOD SHOJAEI			This plan is unregistered and may be subject to change.		
VERSION 1			Plan generated date/time: 06/05/2019 04:07 PM		

PS123456A



SCALE 1 : 250		ORIGINAL SHEET SIZE: A3	SHEET 2
		This plan is unregistered and may be subject to change.	
LICENSED SURVEYOR: DAVOOD SHOJAEI		Plan generated date/time: 06/05/2019 04:11 PM	
VERSION 1			