



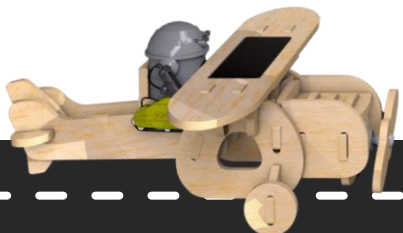
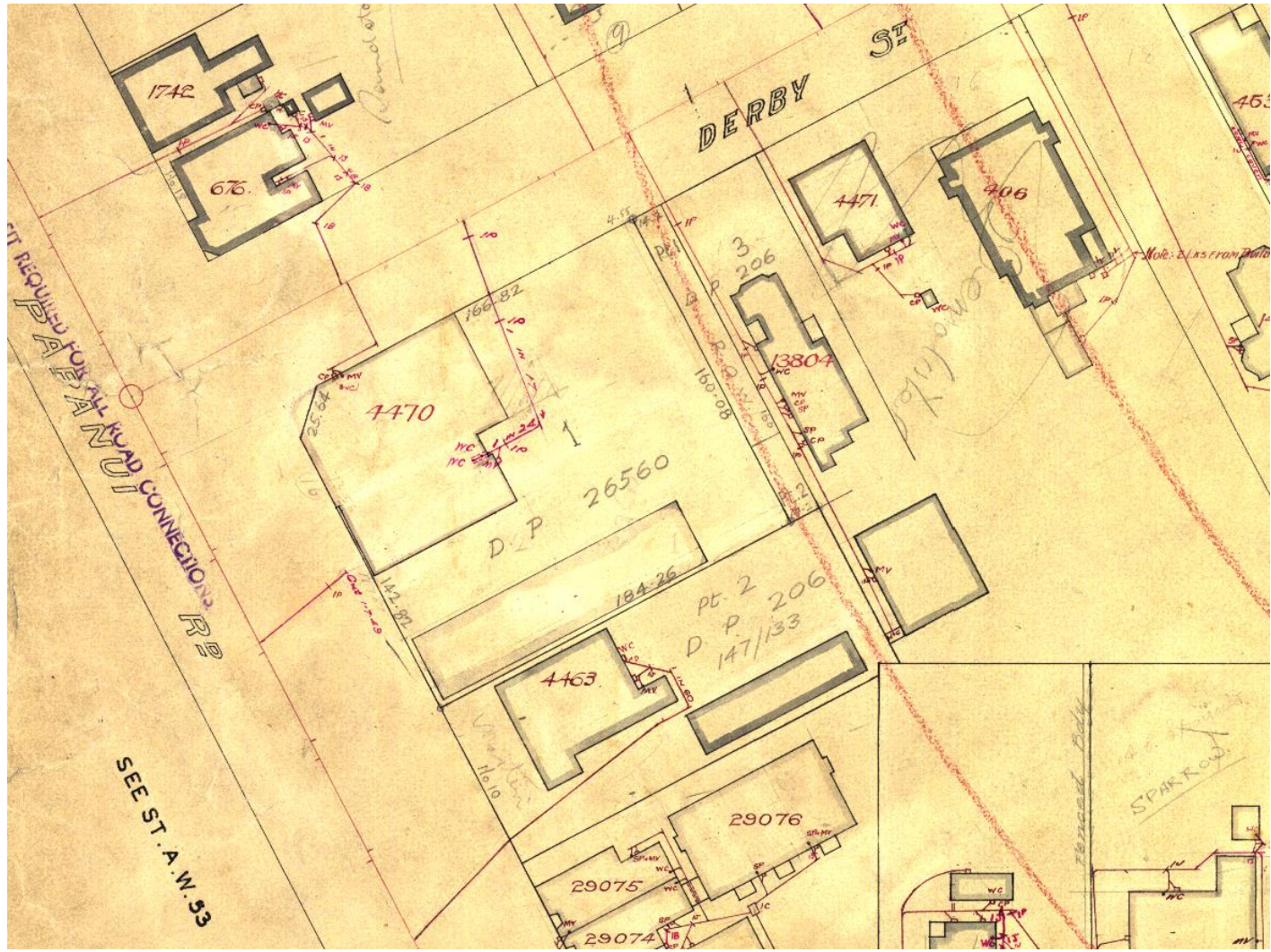
**WORLD TOUR**  
2018

**CCC Cadastre**

**CHRIS TREDINNICK**



# CCC CADASTRE



# LINZ CADASTRE



## NZ Parcels

LINZ / Survey & Title



Licence 55551 17228 Updated 12 May 2018



## NZ Parcel Boundaries Wireframe

LINZ / Survey & Title



25586 1

id	par_id	status	action	statutor...
35341	3032151	Current	Referenc...	Declared...
21390	3547632	Current	Create	Reaches...
21391	3458079	Current	Create	Assestion...
30529	3780105	Current	Create	Setoff U...
37811	4052524	Current	Create	Recreati...
43817	4081129	Current	Create	Secondar...
39528	4118847	Current	Create	Crown La...
80201	4148438	Current	Create	Recreati...
82700	4144179	Current	Create	Recreati...

## NZ Parcel Statutory Actions List

LINZ / Survey & Title



Licence 3556 662 Updated 12 May 2018



## NZ Primary Parcels

LINZ / Survey & Title



Licence 1 142686 49029

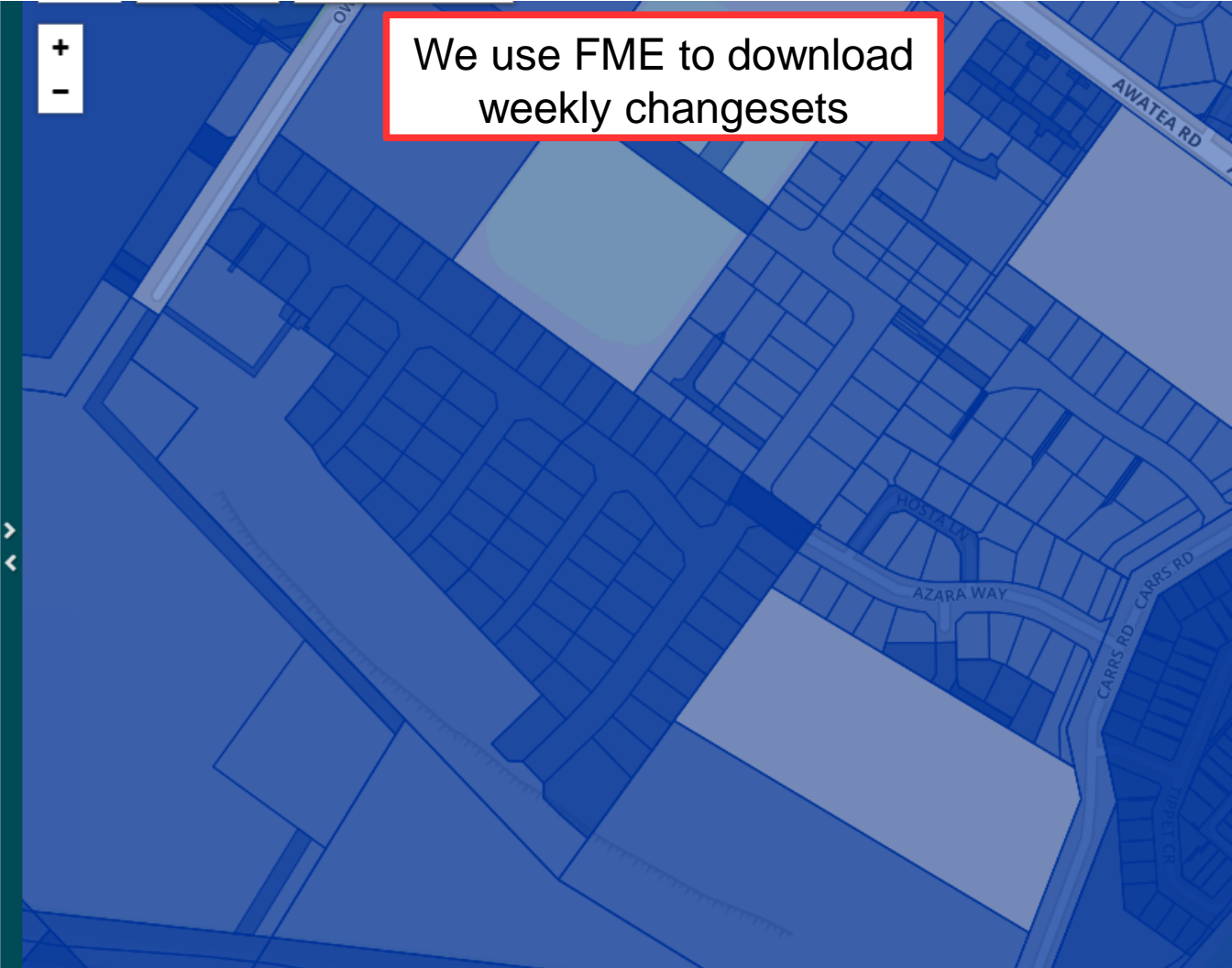


## NZ Linear Parcels

LINZ / Survey & Title
































Licence 4218 338 Updated 12 May 2018



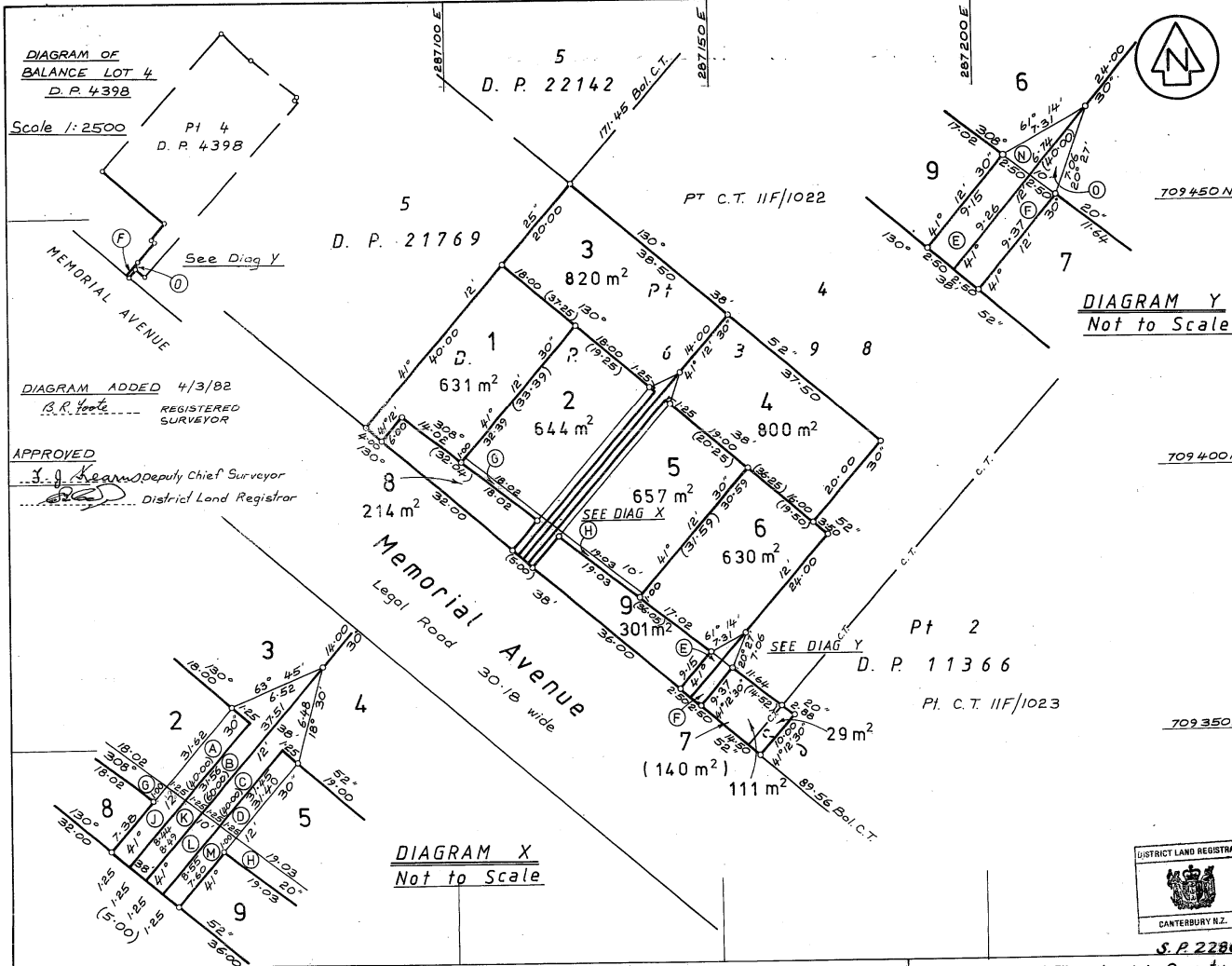
We use FME to download weekly changesets

# PRE-FME PROCESS

-  P04LINZParcelsForOutput (0)  
*Parcels to output to GISAFM*
-  A Labels of P04LINZParcelsForOutput (81)
-  C03BoundaryNOTINPlan (0)
-  C02BoundaryINPlan (0)
-  E06EasementsForOutput (0)  
*Easements to output to GISAFM*
-  B11BoundariesForOutput (0)  
*Boundaries to output to GISAFM*
-  LINZTempParcelOutput (109)  
*Working layer to edit LINZ parcels*
-  A02LINZParcelsInPlanSelection (6)  
*Selected LINZ parcels to output to working layer*
-  PlanSelection (1)  
*DP or SO plan to be worked on*
-  vwStreetAddressFull (0)
-  vwParcel (0)
-  BoundaryPoints (0)
-  StreetAddress
-  ★ Current (236)
-  ♦ Proposed (3)
-  StreetAddressLabels
-  StreetAddressBulkCreate (0)
-  RatingUnitComplexGeometry (0)
-  BoundaryToGenerateParcels (0)
-  ★ stLandParcelCentroid (242)
-  Easement (180)
-  Boundary (1108)
-  ★ stRatingUnitCentroid (0)
-  vwRatingUnit (0)
-  LandParcel
  -  Current (272)
  -  Proposed (2)
-  LandParcelNotLinked (0)
-  A Labels of vwStreetCentroid.inc (52)







Approved: M.W. Wilbrock

Registered Proprietor

**MEMORANDUM OF EASEMENTS**

Nature	Servient Tenement Lot N <sup>o</sup>	Shown	Dominant Tenement
Right of Way, Right to drain sewage & water, Right to convey water, electric power & telegraphic communications	Lot 6	A, J, K, L, M, F, N	Lot 4 & 5, 2, 3, 4, 5, 7, 8, 9, Pt Lot 2, D.P. 6398
Right to drain Sewage	Lot 6	F & O	Lot 11F/1022
Right of Way in Gross	Lot 6	J, K, L, M, F	Waimairi County Council
Right to drain Sewage in Gross	Lot 6	J, K, L, M	Christchurch Drainage Board

**AREA SCHEDULE**

Residential Lots 1-6 4182 m<sup>2</sup>

Local Purpose (Landscape) Reserve to Vest in Waimairi County Council, Lots 7-9 655 m<sup>2</sup>

**NOTE:**

CONDITIONAL APPROVAL DATED 16.9.81

Total Area 4837 m<sup>2</sup>

Comprised in Part C.T.s 11F/1022, 11F/1023.

1. Brian Robert Foote of CHRISTCHURCH Registered Surveyor and holder of an annual practicing certificate hereby certify that this plan has been made from Surveys executed by me or under my direction; that both plan and Survey are correct and have been made in accordance with the regulations under the Surveyors Act 1966

Dated at CHRISTCHURCH this 7th day of August 1981 Signature B. R. Foote

Field Book P. 36274, 38439, 44560  
Reference Plans D.P.s 6398, 11308, 11366, 21383, 21769, 22142, 29512, 30133, 41696, 43721, 50892, 5905

Examined T. Sharp Correct S. J. Kearns

Approved as to Survey  
S. J. Kearns Deputy Chief Surveyor  
14/1/1982

Deposited this 4th day of February 1982  
S. J. Kearns District Land Registrar

File No. **DP44579**

Received Instructions



LAND DISTRICT CANTERBURY  
SURVEY BLK. & DIST. X Christchurch  
NZMS 261 SHEET N<sup>o</sup>. M.35

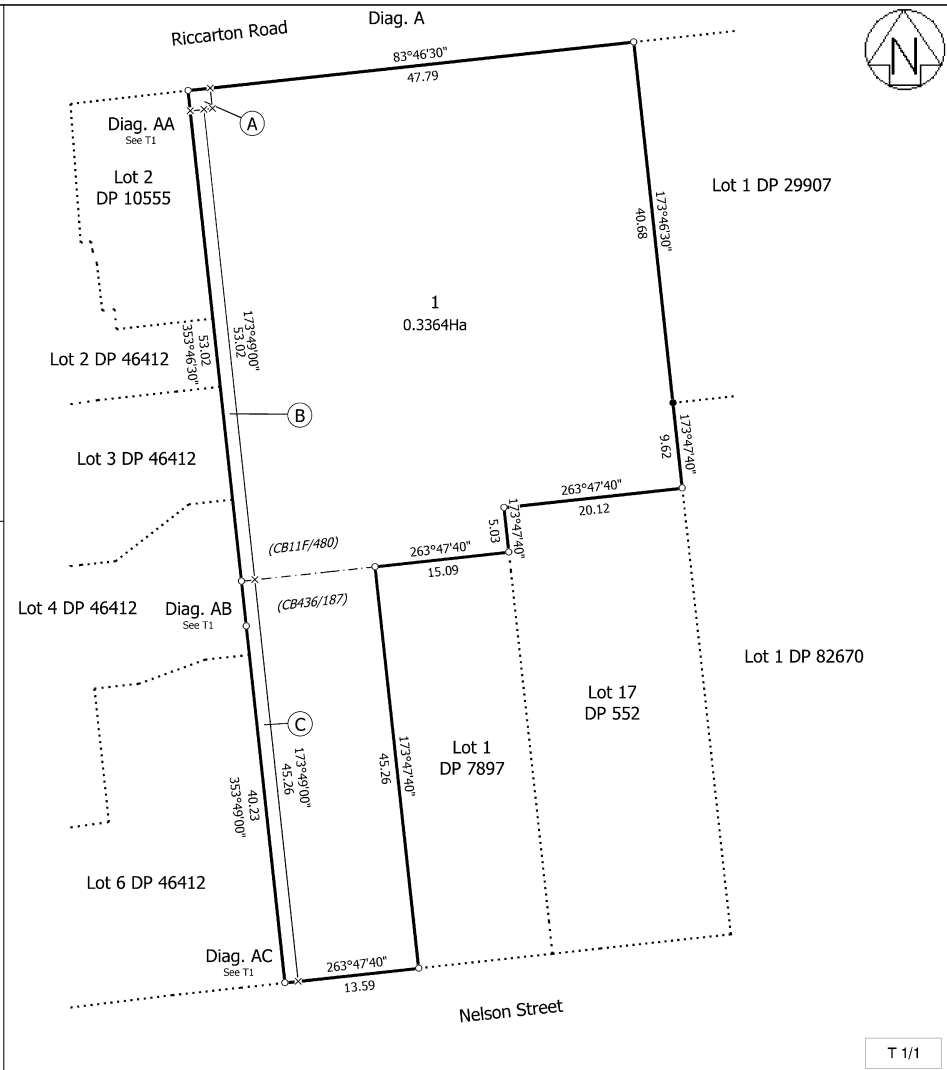
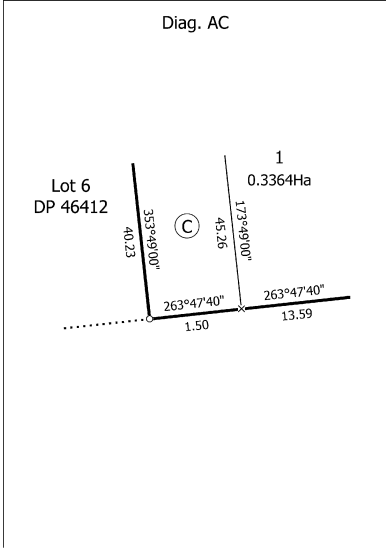
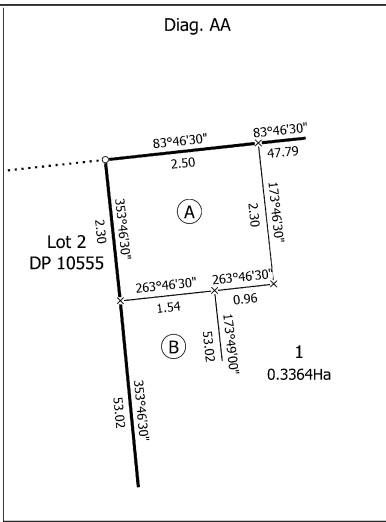
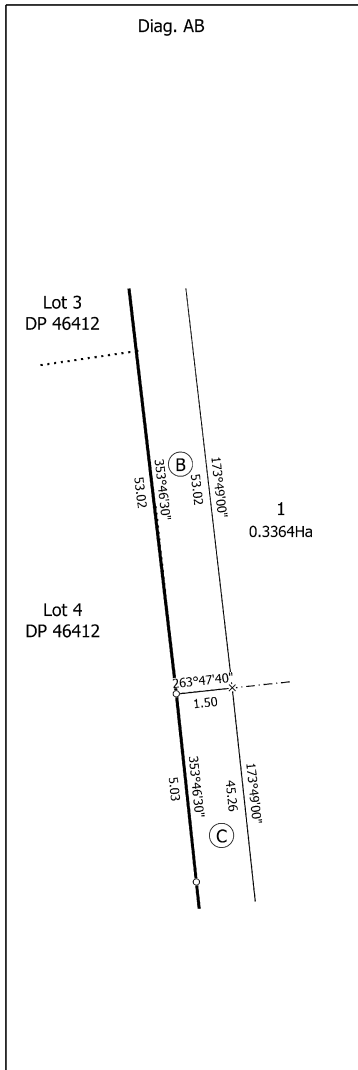
Lots 1-9 Being Subdivision of  
Part Lot 4 D.P. 6398 & Pt Lot 2 D.P. 11366

TERRITORIAL AUTHORITY Waimairi County  
Surveyed by McClelland Branthwaite & Assoc.  
Scale 1:500 Date August 1981

REMICOFILMED 4/3/1982 Ref: 5412

T

LSG FORM N 81



T 1/1

# PROBLEM

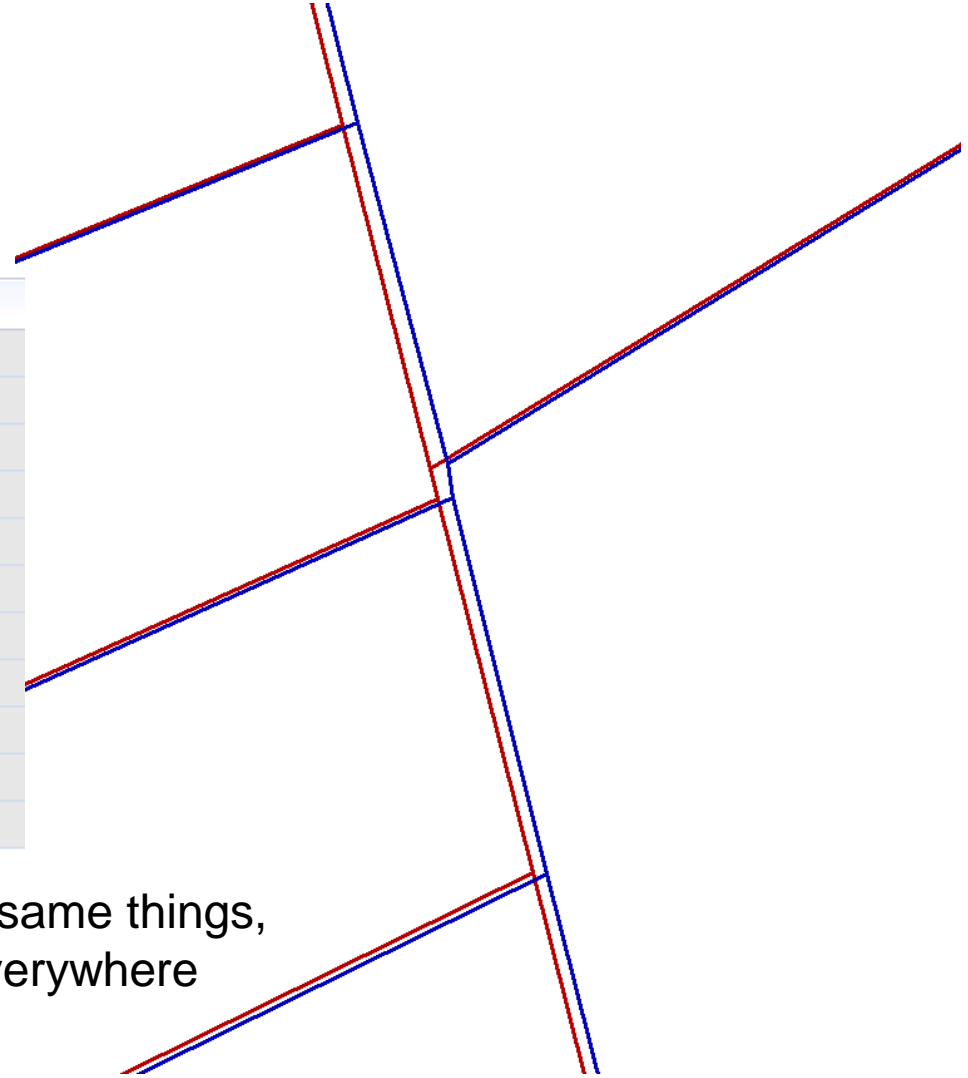
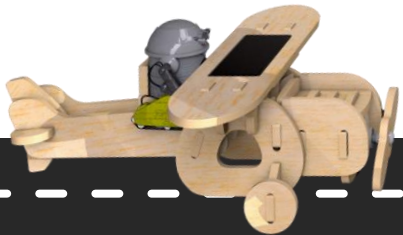
## CCC Attributes

	Name	Value
>	<b>ParcelID</b>	144295
	<b>prulpi</b>	600385
	PlanType	DP
	<b>PlanNumber</b>	365952
	ParcelType	Lot
	ParcelNumber	100
	PartIndicator	
	DrawnArea	732.90
	LegalArea	733.00
	<b>LandParcelStatus</b>	Current

## LINZ Attributes

	Name	Value
>	<b>LINZPrimaryParcelID</b>	38441
	ParcelID	6850033
	Appellation	Lot 100 DP 365952
	AffectedSurvey	DP 365952
	ParcelIntent	Fee Simple Title
	TopologyType	Primary
	StatutoryAction	
	LandDistrict	Canterbury
	Title	267264
	SurveyArea	733
	Area	732

Attributes describe mostly the same things,  
but geometries are different everywhere



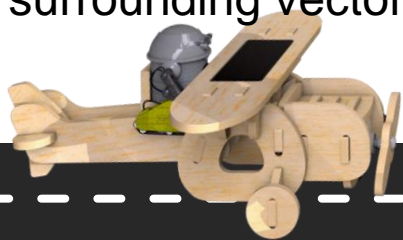
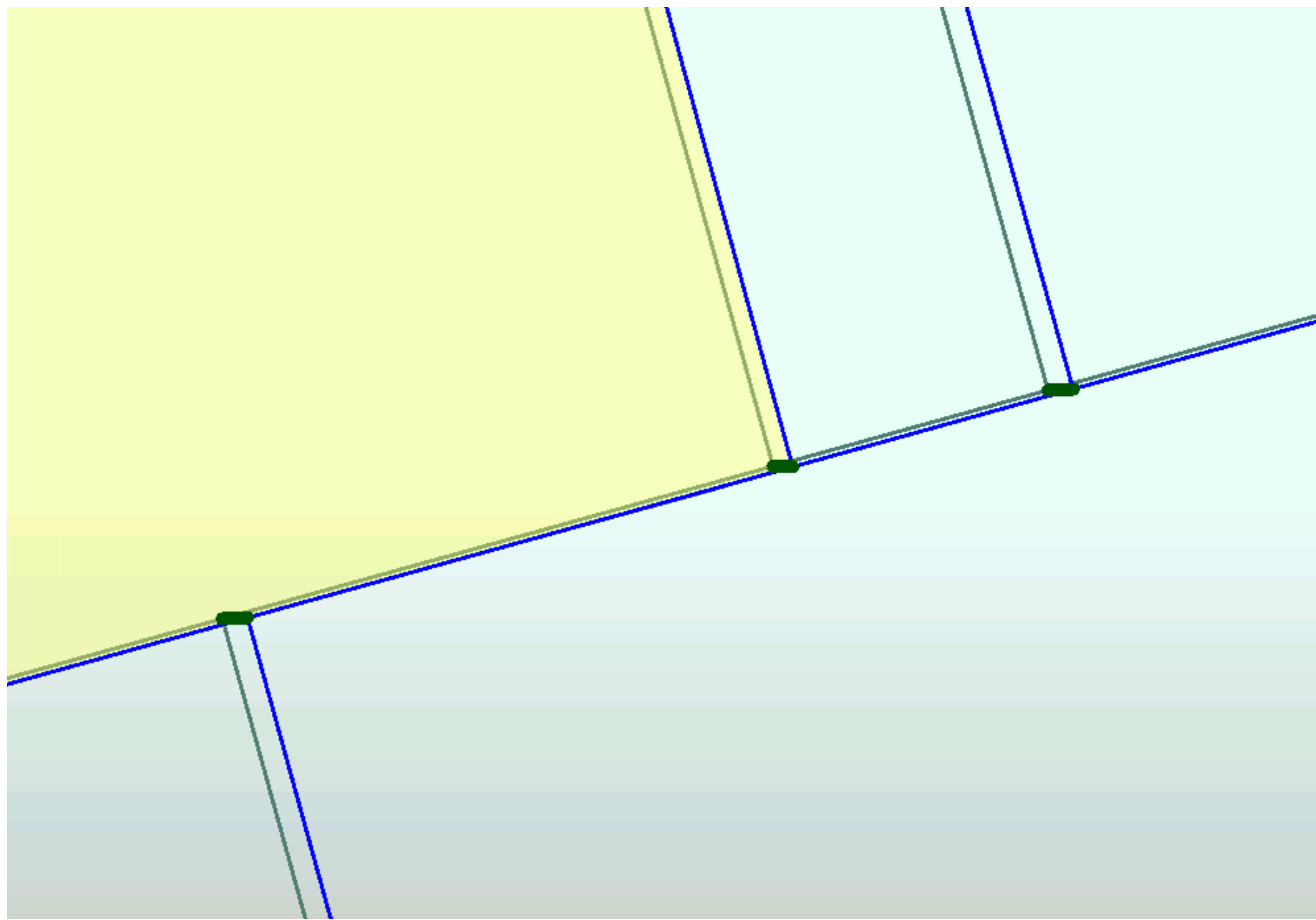


# WARPING

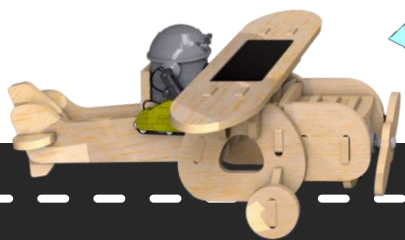
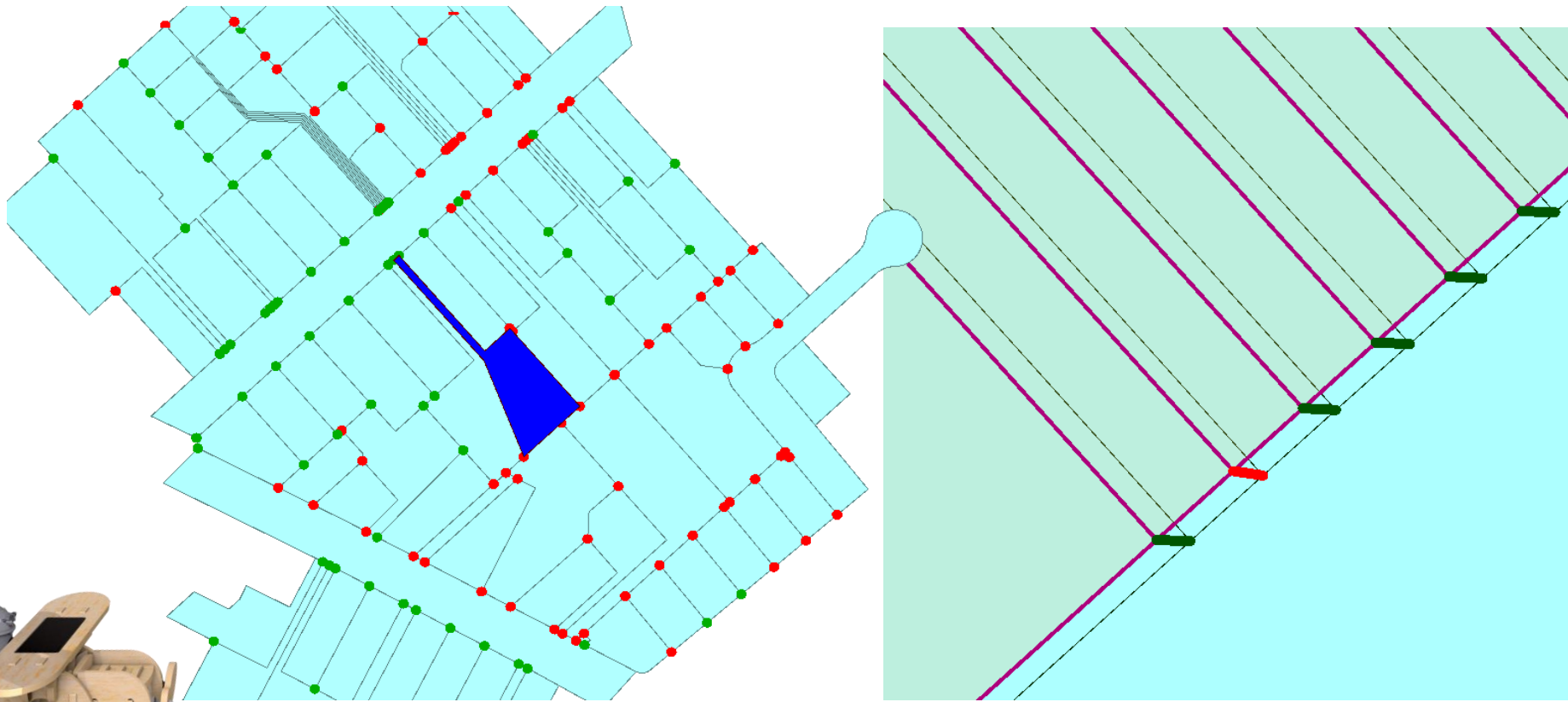
Find the nearest point.  
If it's a good match,  
then warp there.

Good means other  
points also warp in the  
same distance and  
direction.

Bad points have to  
warp according the  
average of  
surrounding vectors.



# WARPING II



# RUBBER SHEETER vs AFFINE WARTER

[List of Transformers](#)

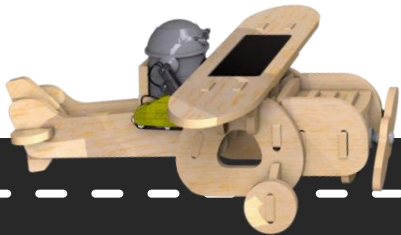
## RubberSheeter

---

Performs warping operations on the spatial coordinates of features. Using inverse distance weighting, RubberSheeter adjusts a set of observed features so they more closely match some set of reference features. This transformer applies a different transformation to each **Observed** vertex, depending on its distance to nearby **Control** vectors. It produces good corrections when the distortions in the **Observed** data are not constant.

## Case Study

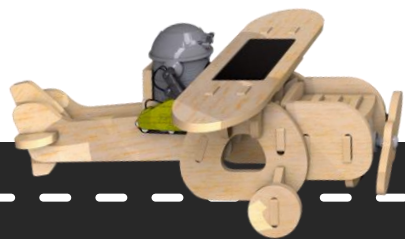
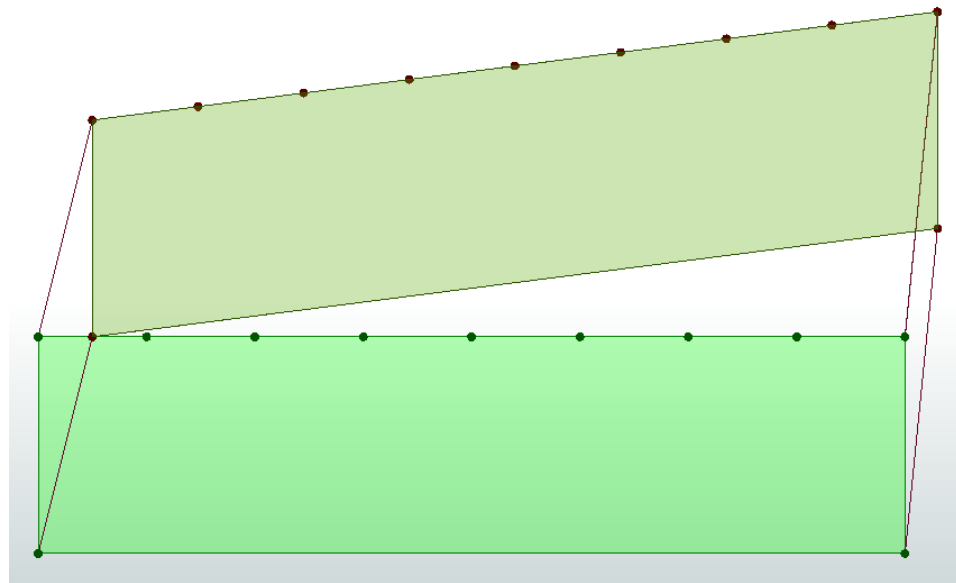
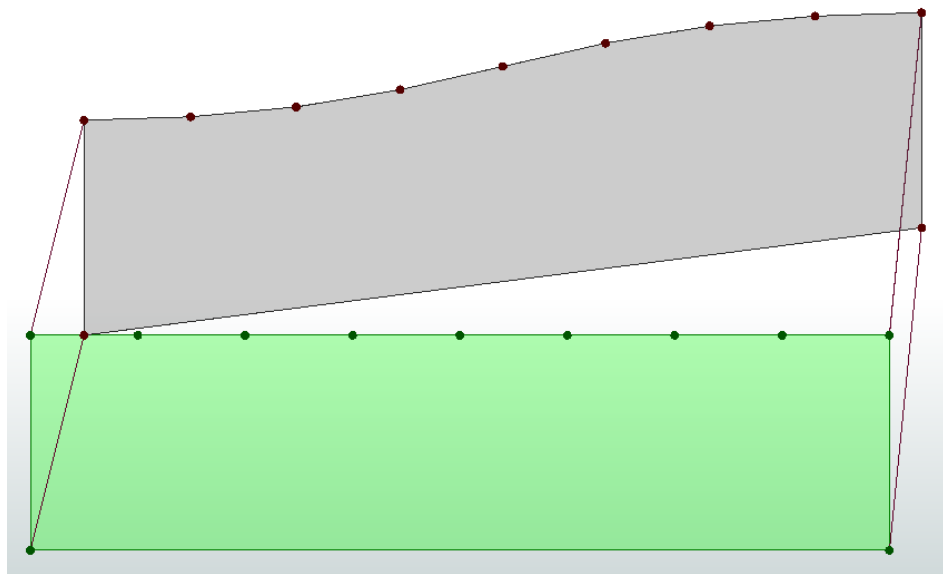
Click [here](#) to read how FME's RubberSheeter was used to combine Manukau City Council's existing parcel-dependent cadastral data with a newer "survey accurate" national digital cadastre.



# RUBBER SHEETER


vs

# AFFINE WARTER




# Friendship ended with


## Now


AffineWarper 

Control 

RubberSheeter 

Control 

Observed 

Constraint 

Corrected 

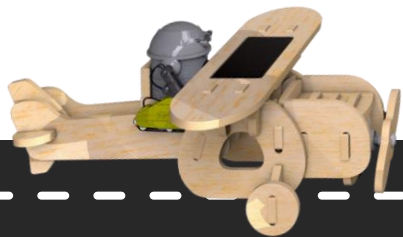
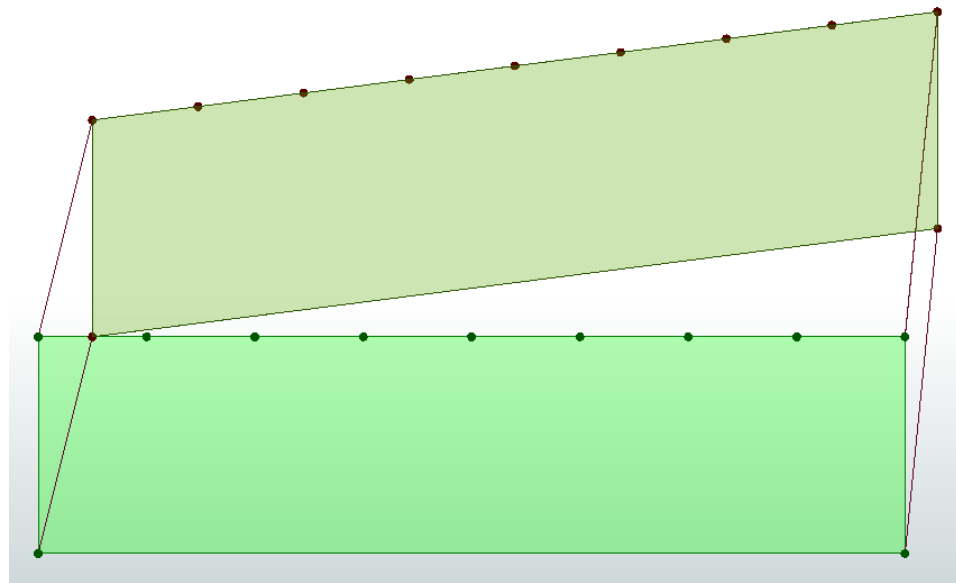
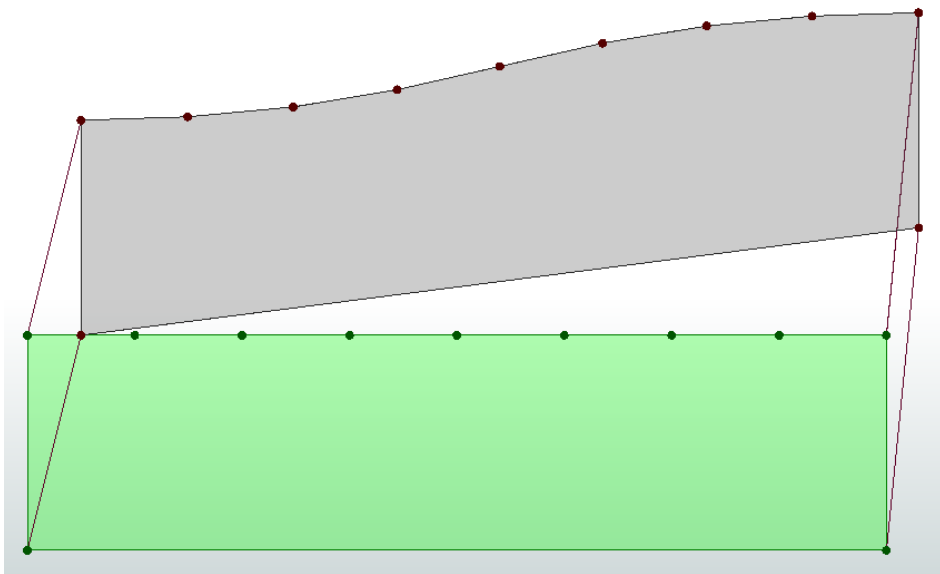
# is my best friend



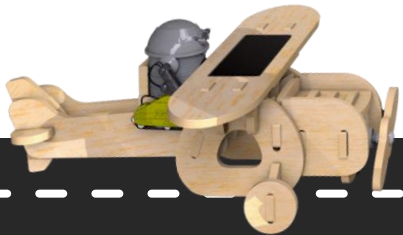
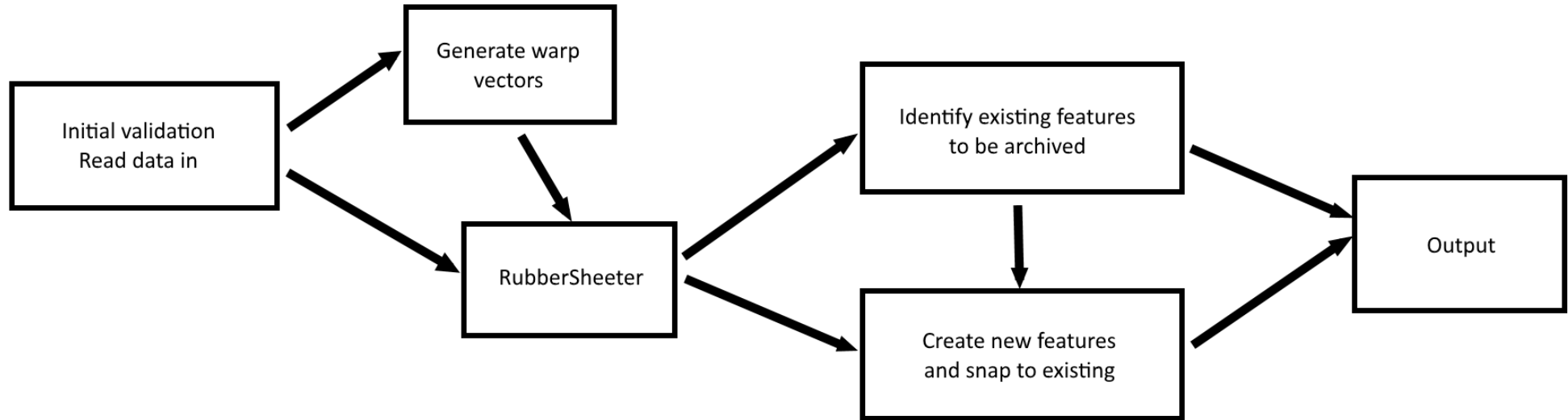
# RUBBER SHEETER

vs

# AFFINE WARTER



# WORKBENCH OVERVIEW





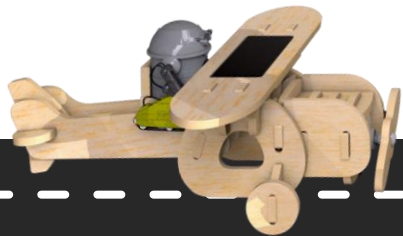
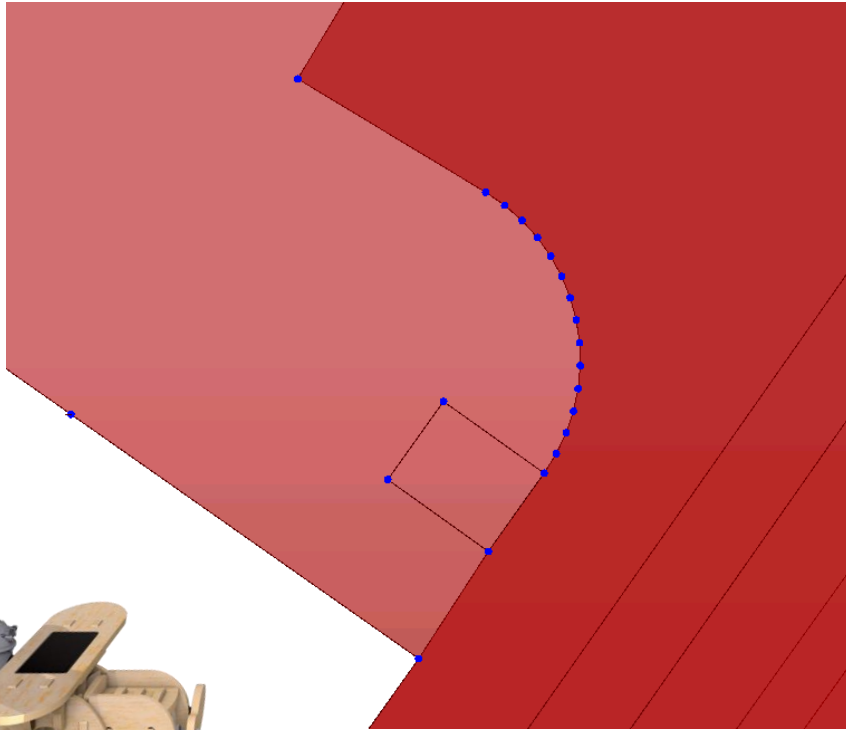
**BACK TO WARPING**



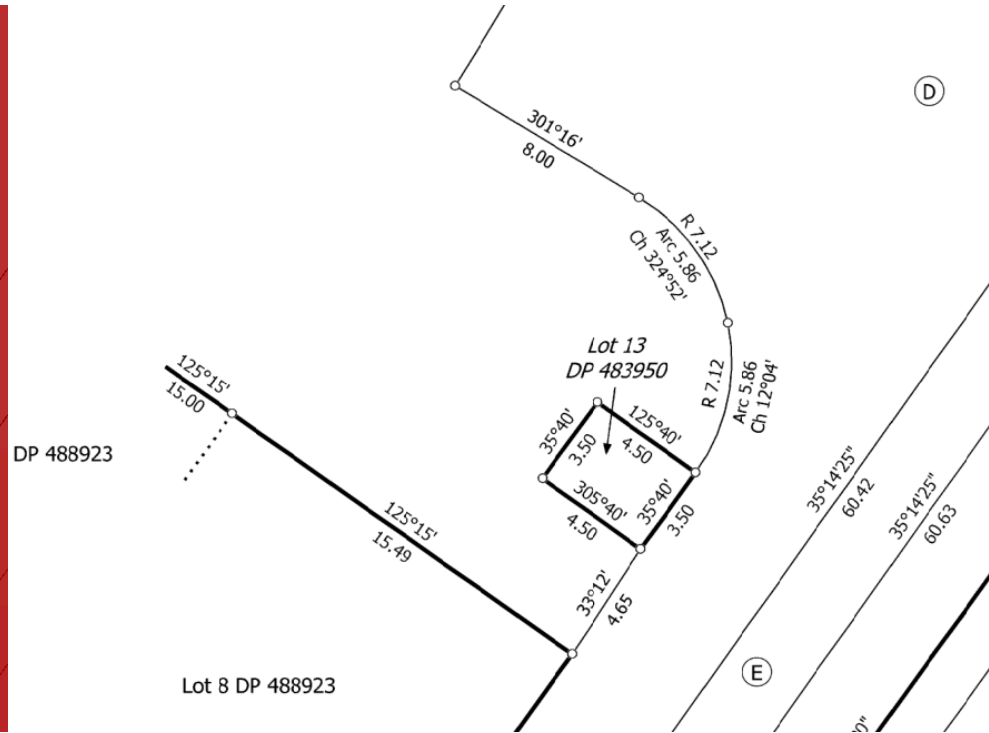
# CURVES

## Straight line GIS

Many of these points are not real,  
so are not good points to warp from.



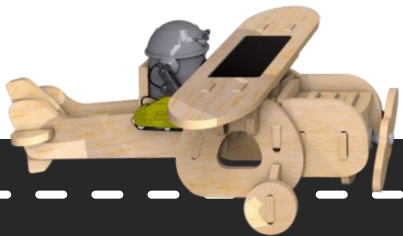
## Curved Survey



# RURAL SUBDIVISIONS

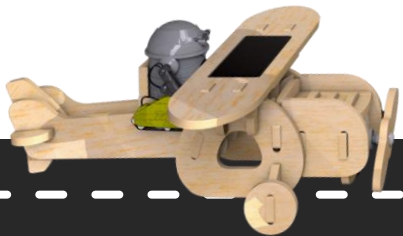
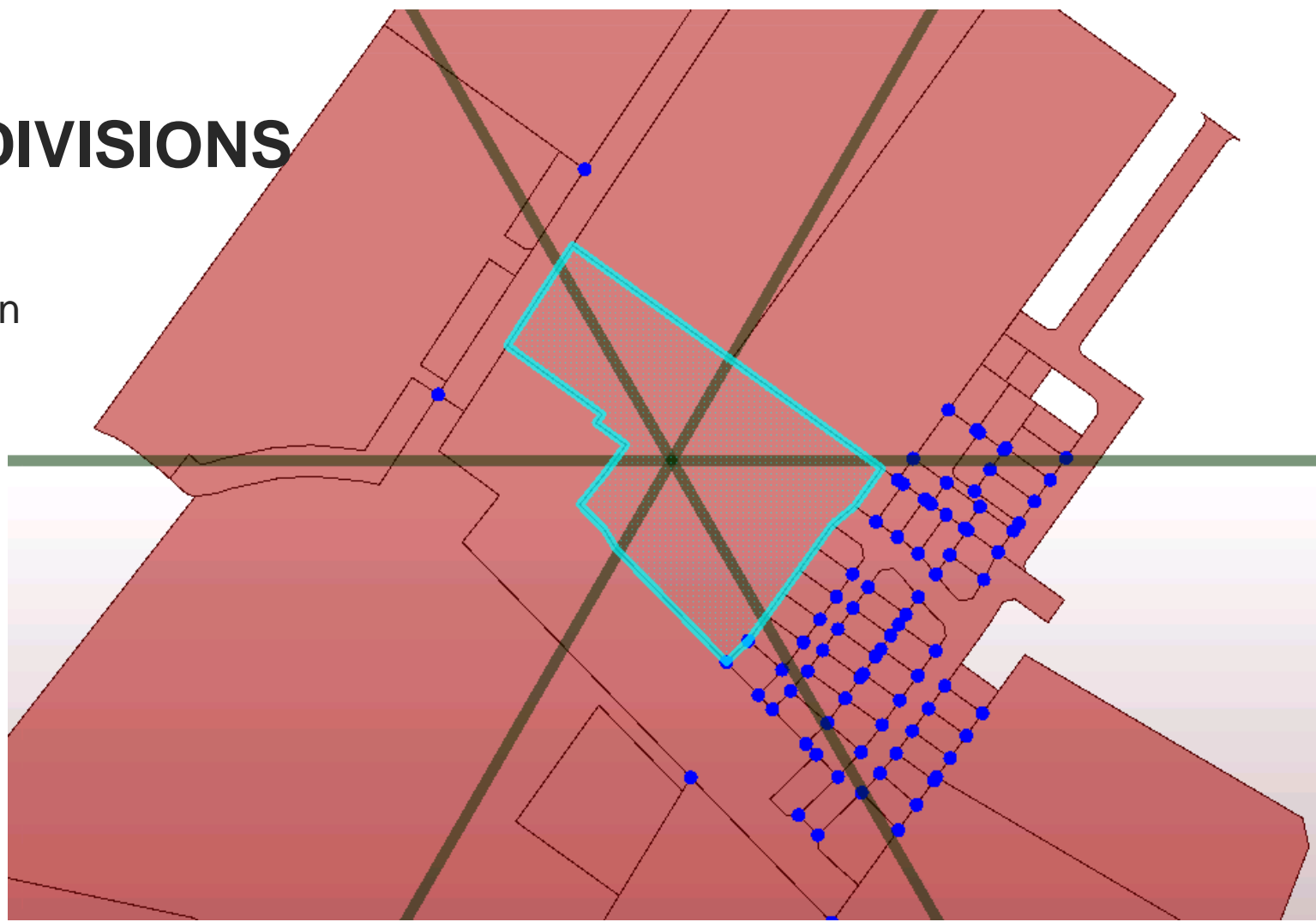
All the warp points (blue) are on one side.

All but two aren't, and this is mostly luck (saved by Owaka Road in this case).



# RURAL SUBDIVISIONS

Create 12 sectors and  
guarantee the selection  
of one vector in each.

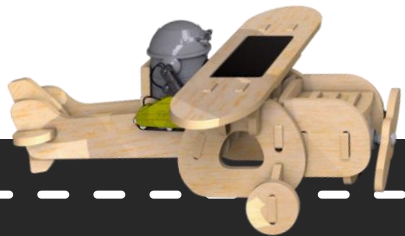


# BOUNDARIES

Subdivision is limited within scope of original parcel.

New boundaries are only created on the inside.

Done by self-intersecting the parcels. Relies on LINZ data being topologically correct.

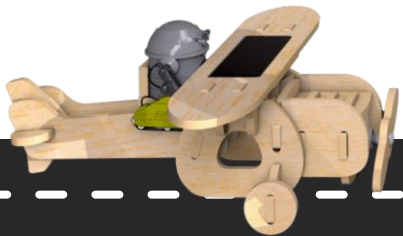
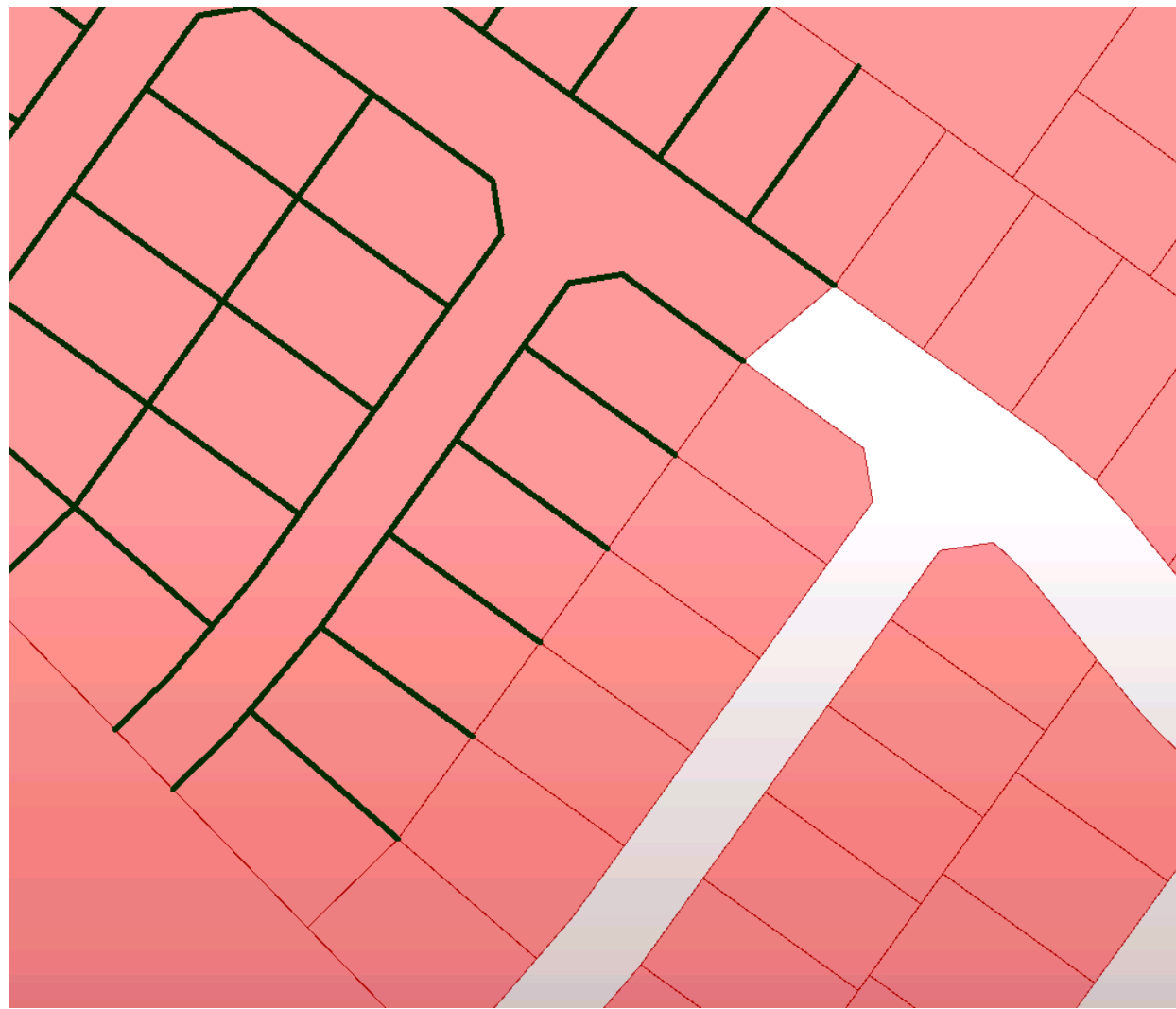


# BOUNDARIES

New boundaries first snap to existing boundary vertices. Then snap to nearest line.

Warp accuracy is used to inform the snapping tolerance.

If any boundaries do not snap, then continue, but user is notified this has happened, so they can fix manually.



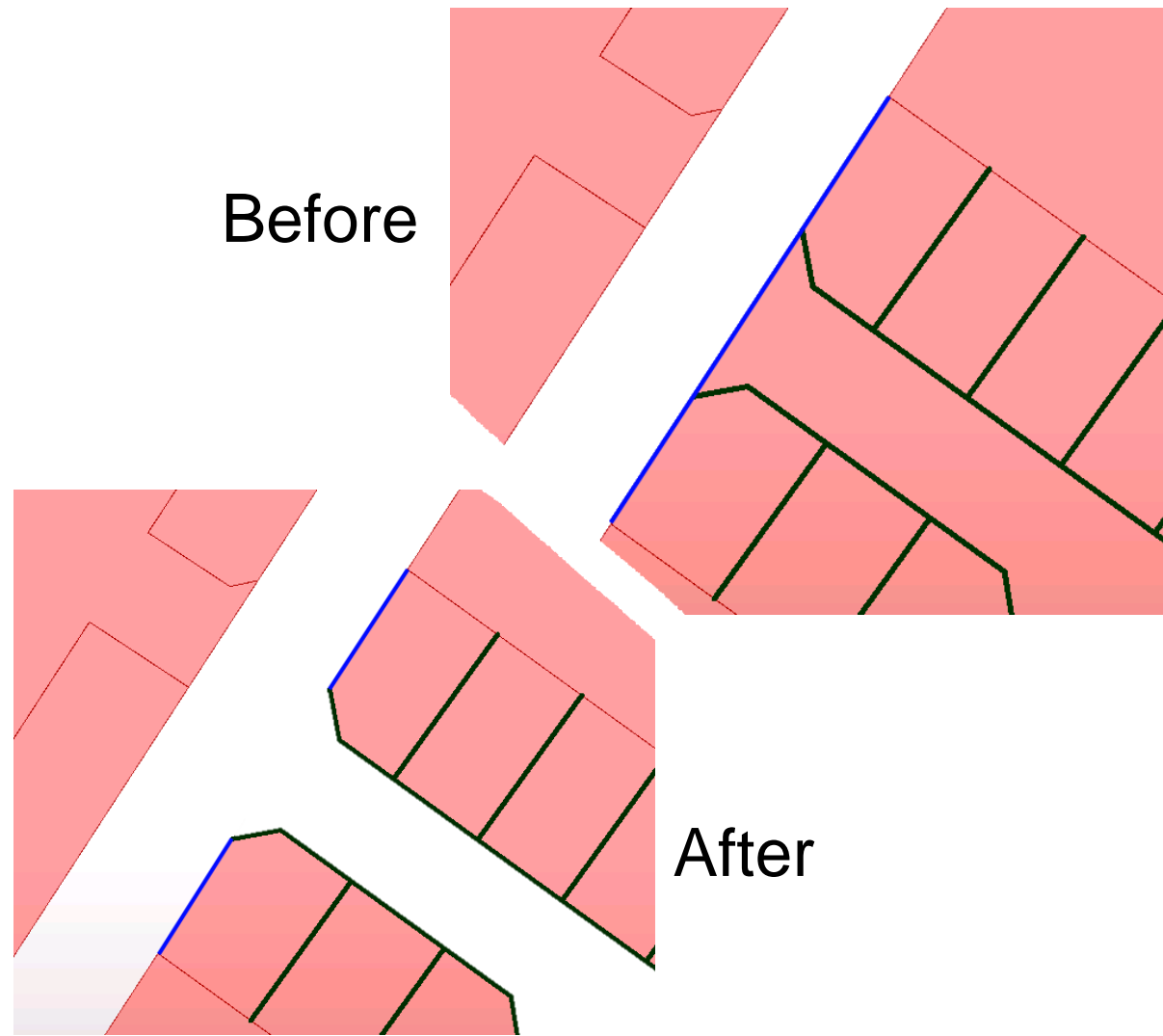
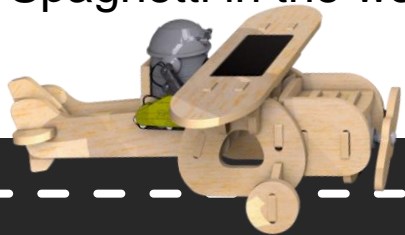
# ROAD BOUNDARIES

Existing road boundary needs to be split, to make way for new road

Steps:

- Determine new boundaries inside.
- Snap to outside boundaries.
- Split outside boundaries (delete and recreate in parts).
- Do not recreate if new part was originally a road boundary, and now overlaps a new road.

Spaghetti in the workbench.



# IDENTIFY PARCEL TO BE SUBDIVIDED

Majority are easy to find,  
are Lot or Sections.

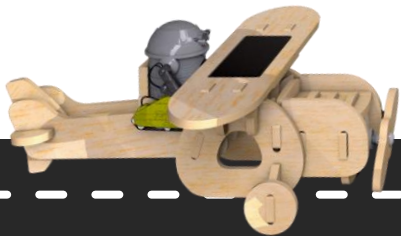
Two Part Parcels can have the  
same legal description.

Some parcels are smaller than the  
average warp distance.

Need to match by overlap area  
and legal description.

	Name	Value
>	<b>ParcelID</b>	144295
	<b>prulpi</b>	600385
	PlanType	DP
	<b>PlanNumber</b>	365952
	ParcelType	Lot
	ParcelNumber	100
	PartIndicator	
	DrawnArea	732.90
	LegalArea	733.00
	<b>LandParcelStatus</b>	Current

	Name	Value
>	<b>LINZPrimaryParcelID</b>	38441
	ParcelID	6850033
	Appellation	Lot 100 DP 365952
	AffectedSurvey	DP 365952
	ParcelIntent	Fee Simple Title
	TopologyType	Primary
	StatutoryAction	
	LandDistrict	Canterbury
	Title	267264
	SurveyArea	733
	Area	732



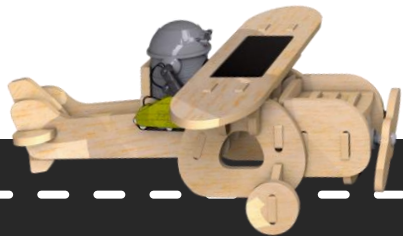
# IDENTIFY PARCEL TO BE SUBDIVIDED

There are too many possible types of Appellation:

	Name	Value
>	<b>LINZPrimaryParcelID</b>	67363
	ParcelID	3373077
	Appellation	Lot 12 Block 3 DP 2315
	AffectedSurvey	DP 2315
	ParcelIntent	DCDB
	TopologyType	Primary
	StatutoryAction	
	LandDistrict	Canterbury
	Title	CB36C/1213, CB39C/710
	SurveyArea	768
	Area	768

	Name	Value
>	<b>LINZPrimaryParcelID</b>	53668
	ParcelID	3328911
	Appellation	Section 27 Camelot SETT
	AffectedSurvey	SO 4803
	ParcelIntent	DCDB
	TopologyType	Primary
	StatutoryAction	
	LandDistrict	Canterbury
	Title	CB353/181
	SurveyArea	804
	Area	807

	Name	Value
>	<b>LINZPrimaryParcelID</b>	117046
	ParcelID	3528053
	Appellation	Rapaki Maori Reserve 875 17 Block
	AffectedSurvey	SO 1310
	ParcelIntent	DCDB
	TopologyType	Primary
	StatutoryAction	
	LandDistrict	Canterbury
	Title	492009
	SurveyArea	1012
	Area	1010



Let the user input our parcel ID if it can't be matched automatically.



# PARAMETERS

Translation Parameters

User Parameters

What is the survey plan number? Include the prefix. (e.g. LT 500883, DP 495501):

Do you want to process a complete or partial survey? Sections in SO plans are frequently approved separately:

For plotting only a part of an SO plan, please input a list of section numbers to process as a comma separated list (eg 2,3,5,7):

Which email will receive any success or failure messages?:

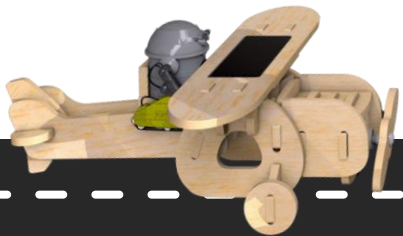
Do you want to archive LandParcel, Boundary and Easement features on GISAFM?:

Do you want to insert new Boundary, Easement and LandParcel features on GISAFM?:

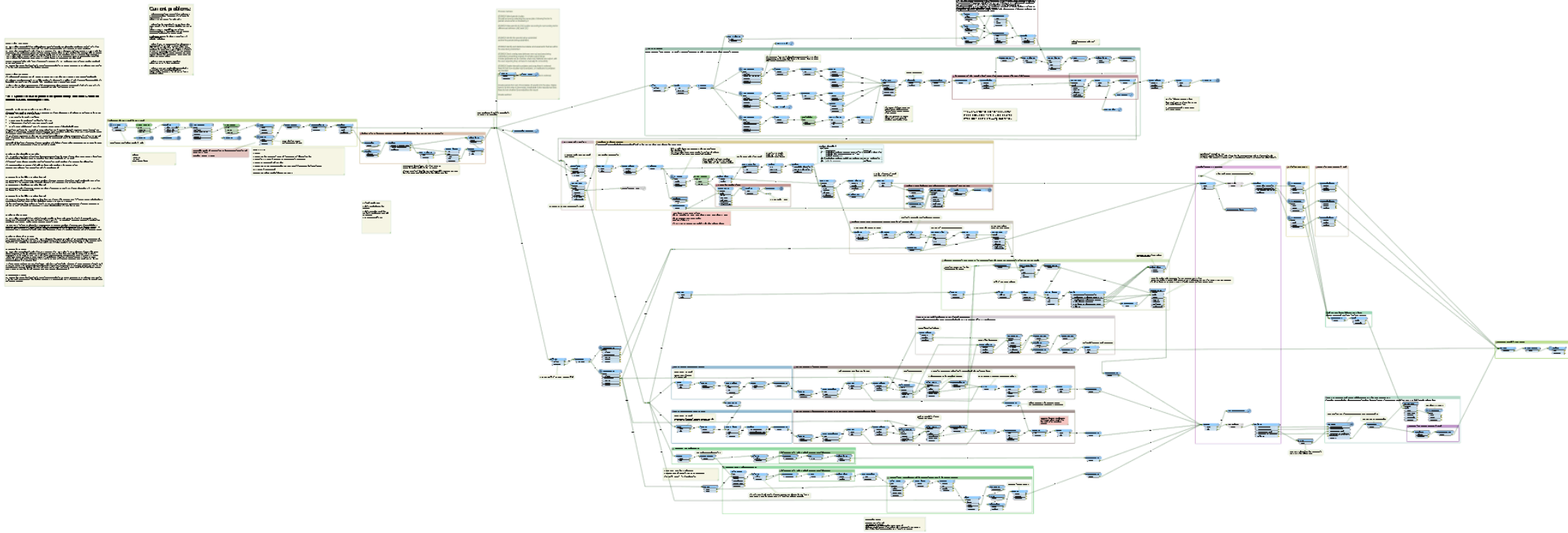
If a CCC parcel couldn't be found to be archived, input ParcelID(s) here to force its inclusion in the subdivision. Enter multiple parcels as a comma separated list:

This is the buffer distance to be used when identifying neighbouring parcels. Increase to 200, 500 etc when doing rural subdivisions. Default: 100:

OK Cancel



# END.





Wednesday, May 20, 2018

*meetup*

**Christchurch FME Meetup 2**