Property

Product Guide
Version 1.0

Geoscape

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Preface

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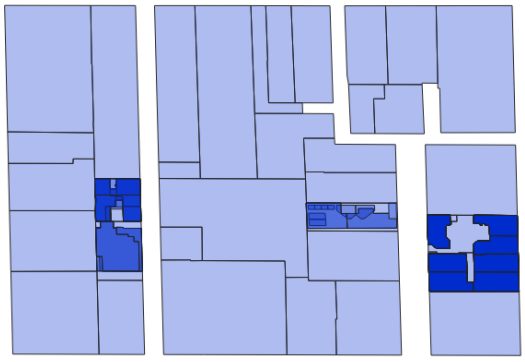
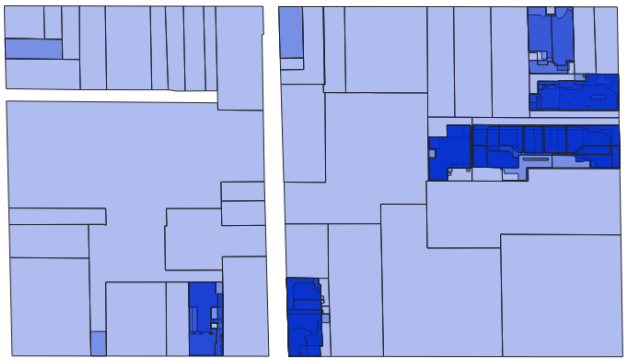
Product Version

1.0

Overview

Property is a seamless national representation of Australia's property parcels. A property is an area of land recognised by the Local Government (or equivalent agency in the ACT) as a singularly valued/rateable entity. The digital property boundaries and their legal identifiers have been derived from the relevant bodies from each Australian State and Territory. It may comprise one or more cadastral parcels or part of a parcel with boundaries not needing to align between the two (although commonly this is the case). Where the property is comprised of multiple parcels, the parcels do not have to be contiguous.





Property is designed to meet the needs of organisations that require a geospatial representation of Australia's property boundaries at both a local and broad scale. The attribution of records provided within Property, and its relationship to other Geoscape datasets such as Cadastre, allows for the application of the data across a wide range of commercial, government and research uses.

Geoscape Australia welcomes your feedback on the Property product. We also publish regular updates on the development of our products on the Geoscape website (www.geoscape.com.au).

Technical Description

Property is created through processing property data sourced from Australia's States and Territories. Source attributes are mapped and standardised to provide a coherent definition across the jurisdictional supplies, with associated geometry being cleaned and processed to output a topologically consistent layer of Australia's property boundaries at a national scale.

Each property record has a boundary representing the overall coverage of the single property and a Contributor ID which is the jurisdiction's reference to the property for land valuation and other property purposes. The Contributor ID can be utilised for searches in the relevant jurisdiction's land valuation system to provide the indicative value of the property for rating purposes.

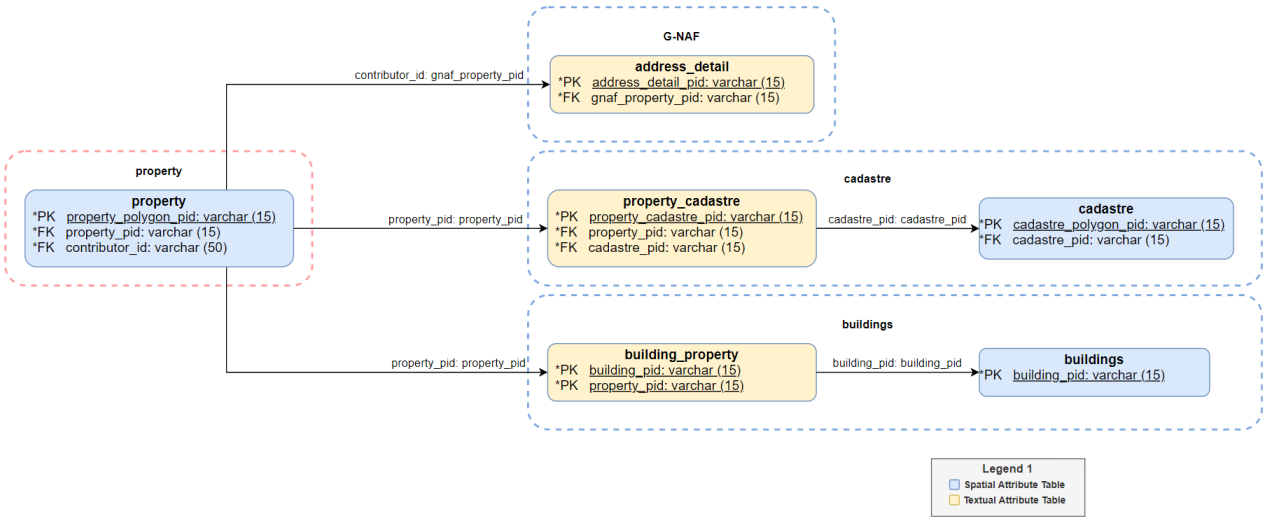
Property is updated and released regularly and has integrated relationships with other Geoscape Products. Further information regarding attributes, quality, coverage and product release details are outlined below.

Linkages

Property is integrated with the following Geoscape products:

- Cadastre
- G-NAF
- Buildings

The joins used to link to these products are shown below, with attributes used in the joins described.



The property_pid attribute can be used to link to a cadastre_pid in the Cadastre product where a relationship between Property and Cadastre exists. These relationships are represented within the property_cadastre table within the Property product. The three possible relationships between Cadastre and Property are:

- one cadastral parcel is equal to one property
- many cadastral parcels make up one property
- one cadastral parcel contains many properties

Attributes

Contributor ID

The Contributor ID is the property identifier provided by the jurisdiction that is searchable for land valuation and rates purposes. The associated attribute(s) in the jurisdiction source data for each State or Territory are found in the table below.

State	Jurisdiction Value	Notes
ACT	TITLE_NUMBER	Derived from the following dataset: 'ACT_PROPERTY'
	BLOCK + "/" + SECTION + "/" + DIVISION_CODE	Derived from the following dataset: 'BLOCKS'
NSW	PROPID	
NT	VOLUME_TYP + "/" + VOLUME_NO + "/" + FOLIO_NO	
QLD	PROPERTY_ID	
SA	ASSNO_TENSEQNO	
TAS	PID	
VIC	PFI	
WA	VPU_VE_NUMBER	

Source

The name of the State or Territory that the property data was sourced from.

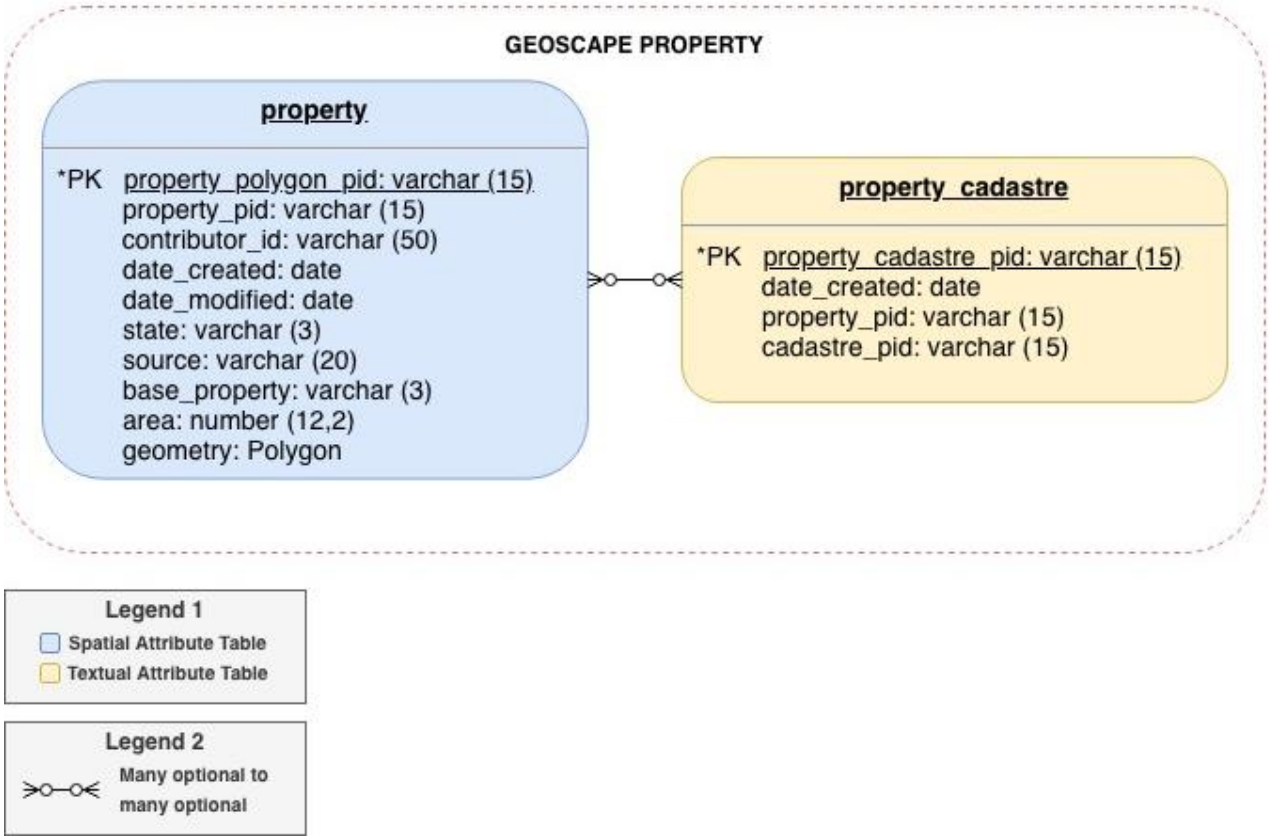
Base Property

The Base Property allows for a simple visualisation of property coverage across all States and Territories without overlapping parcels. Only property parcels which are not contained by another property can be part of the base representation.

Area

The area of each property polygon in square meters, calculated from the feature geometry using an equal area projection. The total area in square meters can be calculated by summing property parcels with a common Property PID.

Data Model


GEOSCAPE PROPERTY
property
*PK property_polygon_pid: varchar (15)
property_pid: varchar (15)
contributor_id: varchar (50)
date_created: date
date_modified: date
state: varchar (3)
source: varchar (20)
base_property: varchar (3)
area: number (12,2)
geometry: Polygon
property_cadastre
*PK property_cadastre_pid: varchar (15)
date_created: date
property_pid: varchar (15)
cadastre_pid: varchar (15)
Legend 1
Spatial Attribute Table
Textual Attribute Table
Legend 2
Many optional to many optional

Data Dictionary

property

Attribute	Data Type	Description	Primary Key	Mandatory	10 Character Alias
property_polygon_pid	Character String (15)	Persistent identifier for each property polygon.	Yes	Yes	PR_PLY_PID
property_pid	Character String (15)	Persistent Identifier for the property feature for the life of the property.	No	Yes	PR_PID
contributor_id	Character String (50)	An identifier used to link back to the contributor data where the contributor supplies a persistent identifier.	No	Yes	CNTRB_ID
date_created	Date	The date the record is first introduced to the Geoscape product.	No	Yes	DT_CREATE
date_modified	Date	The latest date that this record has been modified.	No	No	DT_MOD
state	Character String (3)	The abbreviated name of the State or Territory that the property spatially resides within.	No	Yes	STATE
source	Character String (20)	The State or Territory authority that has provided the source data for the property.	No	Yes	SOURCE
base_property	Character String (3)	A 'Yes' flag indicates that the parcel is part of the base representation.	No	No	BASE_PROP
area	Number (12,2)	The area in square metres of the polygon.	No	Yes	AREA
geometry	Polygon	The geometry of the polygon.	No	Yes	GEOMETRY

property_cadastre

Attribute	Data Type	Description	Primary Key	Mandatory	**10 Character Alias**
property_cadastre_pid	Character String (15)	Persistent identifier for each property_cadastre record.	Yes	Yes	PR_CAD_PID
date_created	Date	The date the record is first introduced to the Geoscape product.	No	Yes	DT_CREATE
property_pid	Character String (15)	Persistent Identifier for the property feature for the linked property record.	No	Yes	PR_PID
cadastre_pid	Character String (15)	Persistent Identifier for the cadastre feature for the linked cadastre record.	No	Yes	CAD_PID

Domain Values

state

Domain Value	Description
ACT	The data is located within the Australian Capital Territory.
NSW	The data is located within the state of New South Wales.
NT	The data is located within the Northern Territory.
QLD	The data is located within the state of Queensland.
SA	The data is located within the state of South Australia.
TAS	The data is located within the state of Tasmania.
VIC	The data is located within the state of Victoria.
WA	The data is located within the state of Western Australia.

source

Domain Value	Description
ACT	The source data for the record was provided by the Australian Capital Territory Government.
NSW	The source data for the record was provided by the New South Wales Government.
NT	The source data for the record was provided by the Northern Territory Government.
QLD	The source data for the record was provided by the Queensland Government.
SA	The source data for the record was provided by the South Australian Government.
TAS	The source data for the record was provided by the Tasmanian Government.
VIC	The source data for the record was provided by the Victorian Government.
WA	The source data for the record was provided by the Western Australian Government.

base_property

Domain Value	Description
Yes	The property polygon has been identified as a base property. A base property is not contained by any other property parcel and provides base coverage across each state and territory.
<NULL>	The property parcel has been identified as not being a base property. Property parcels contained by other property parcels will have <NULL> values for this field.

Update Frequency

Property is continuously updated and released with the most up to date data available on a monthly schedule.

Data Quality

Positional Accuracy

Property has been created by combining land valuation/rates information with Cadastre. To achieve a single property representation a union of multiple Cadastre boundaries happens during production. This will preserve the outer boundaries accuracies as supplied by the jurisdiction. Geoscape makes minor changes only where they are required to create valid features described in Property Geometry Validity.

Coordinates Referencing the GDA2020 Datum

Spatial features referencing the GDA2020 datum are produced using a coordinate transformation from the GDA94 datum using the following parameters.

shift_x = 0.06155,

shift_y = -0.01087,

shift_z = -0.04019,

rotate_x = -0.0394924,

rotate_y = -0.0327221,

rotate_z = -0.0328979,

scale_adjust = -0.009994

Property Geometry Validity

Property geometry is validated to ensure polygons are a valid representation and free of self-intersection. Issues being detected and resolved include spikes, bow ties, duplicate vertices, null geometries, multipart geometries, and self-contacts. Minor overlaps are also resolved where a property has a Base Property of 'Yes'. Overlapping polygons will persist in the product as they can be valid geometries representing the jurisdictions intent.

Polygon orientation conforms to the following specifications:

- OGC Simple Feature Access Specification v1.2.1 [Section - 6.1.11.1]
- The GeoJSON Specification RFC7946 [Section 3.1.6 dot point 4]

This means the polygon outer boundary will be counter clockwise and the inner boundary will be clockwise for file formats that support the above standards.

Further Comments

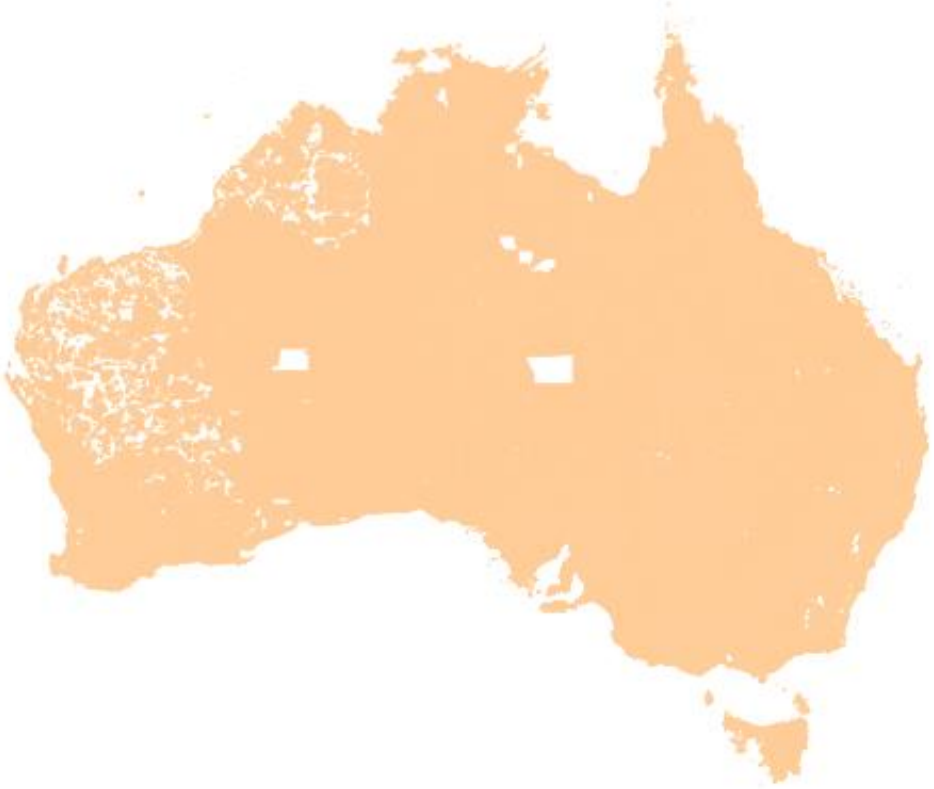
Property has been processed to assure all polygons are stored as single part features to improve capability with a range of software applications. Due to this there is duplication of the Property PID and Contributor ID information.

Extent/Geographic Description

The spatial coverage of Property includes Australia's land mass and surrounding offshore islands.

The Bounding Box for this data is as follows:

- North bounding latitude: -8°
- South bounding latitude: -45°
- East bounding longitude: 155°
- West bounding longitude: 112°



A detailed description of the coverage for each State and Territory is provided in the table below.

State	Coverage
ACT	Complete coverage
NSW	Complete coverage
NT	Complete coverage
QLD	Complete coverage
SA	Complete coverage
TAS	Complete coverage
VIC	Complete coverage.
WA	Complete coverage.

Spatial Reference System

GDA94

Horizontal Datum: The Geocentric Datum of Australia 1994 (GDA94) is the target horizontal datum.

Coordinate System: Geographic Coordinate System Geocentric Datum of Australia 1994 (GDA94).

GDA2020

Horizontal Datum: The Geocentric Datum of Australia 2020 (GDA2020) is the target horizontal datum.

Coordinate System: Geographic Coordinate System Geocentric Datum of Australia 2020 (GDA2020).

Delivery Format

Property is provided at a National and State/Territory level, depending on the file format selected. The data is made available in the File Geodatabase, GeoJSON, ESRI Shapefile and MapInfo TAB formats described below.

Format	National	State/Territory
File Geodatabase	Yes	Yes
GeoJSON	Yes	Yes
ESRI Shapefile	-	Yes
MapInfo TAB	-	Yes

File Geodatabase

Format name

File Geodatabase – ESRI™

Specification

This format includes files with the following extensions: *.gdb
ESRI File Geodatabase Technical Description. Follow this link:
http://desktop.arcgis.com/en/desktop/latest/manage-data/administer-file-gdbs/file-geodatabases.htm

Language

English

GeoJSON

Format name

GeoJSON

Specification

This format includes files with the following extensions: *.geojson

GeoJSON specification: https://tools.ietf.org/html/rfc7946

NOTE: The GeoJSON specification states that the coordinate reference system for all GeoJSON coordinates is:

"a geographic coordinate reference system, using the World Geodetic System 1984 (WGS 84) datum, with longitude and latitude units of decimal degrees"

Property will be provided with coordinates using the datum selected for download (GDA94/GDA2020) with longitude and latitude units of decimal degrees.

Language

English

JSON

Format name

JSON

Specification

This format includes files with the following extensions: *.json

JSON specification: https://www.json.org/json-en.html

Language

English

ESRI Shapefile

Format name

Shape – ESRI™

Specification

This format includes files with the following extensions: *.shp, *.shx, *.dbf

ESRI Shapefile Technical Description, an ESRI White Paper, July 1998. Follow this link: www.esri.com/library/whitepapers/pdfs/shapefile.pdf

Language

English

MapInfo TAB

Format name

TAB – MapInfo Professional™

Specification

This format includes files with the following extensions: *.tab, *.dat, *.id, *.map

The MapInfo TAB format is a popular geospatial vector data format for geographic information systems software. It is developed and regulated by MapInfo as a proprietary format. TAB files support geospatial standards such as Open GIS, the OGC, ISO, W3C and others.

Language

English

Product Versioning

Property versioning is managed through incrementing when there is a change to the product schema or a significant change in data population, these are described further below:

- A schema change can affect a major or minor increment to the versioning. Additive changes (changes that won't break customers' ability to work with the data) will be incremented with a minor version increment, an example is the addition of a new attribute. Removal of attributes or changing the structure of the Property schema will enact a major change to identify that this requires the attention of all customers and partners.
- Where a significant geography of Australia either has a new population of data for an attribute or is populated from a much higher quality source a minor increment will be applied to the product version.

Therefore, Property versioning will not increment with every data update, published releases will have a name e.g. 'May 2021' and will reference a version of the Property product e.g. '1.0'.

Annex A – User Guide

Contributor IDs and how to find valuation information

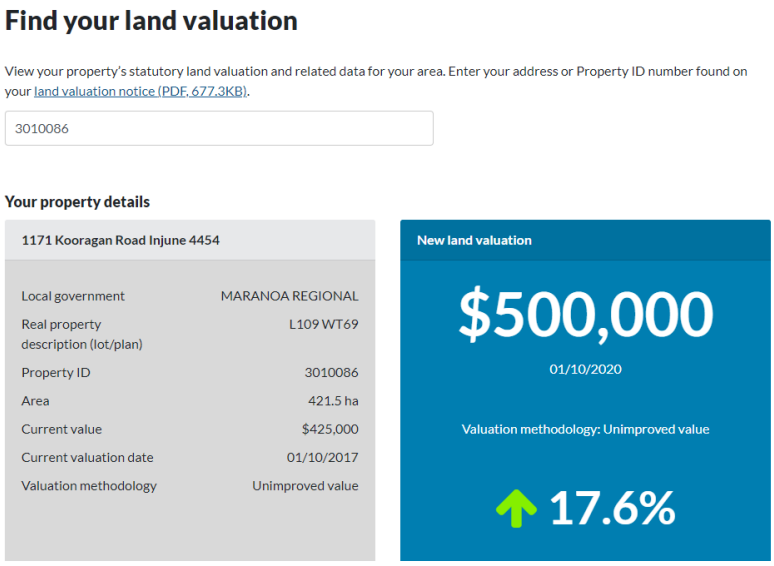
The contributor_id is the property identifier provided by the jurisdiction that is searchable for land valuation and rates purposes.

An example of this can be seen for the Queensland property parcel (orange polygon) with contributor_id of '3010086' (white text) located at 148.4439620, -25.9151996 shown on the right.

Note that properties with base_property = 'Yes' are the only searchable properties in Queensland.

The valuation for this parcel can be found through the Queensland land valuation website: https://www.resources.qld.gov.au/qld/environment/land/title/valuation/search.

To do this, input the contributor_id of the parcel (3010086) into the search bar as this is the Property ID. The returned valuation information for this property is shown below.



Screenshot taken from Queensland land valuation website © The State of Queensland 2021. Available under CC BY 4.0 licence.

Base polygons and how they represent a non-overlapping property layer

Base property features are properties that have been flagged with the intention of providing a non-overlapping layer representation of properties. A user can simply identify these records by selecting where base_property = 'Yes'.

Below, the two images show the property layer with no filter applied (left), as well as only where base_property equals 'Yes' (right).

No filter applied

Filtered on base_property = 'Yes'

Below, the base property layer is shown for a site in Queensland (orange polygons) with the searchable contributor_ids labelled in white text.

Linking Cadastre and Property

The property_cadastre table provides a linkage between Property and Cadastre through the property_pid and cadastre_pid.

Property to Cadastre

For example, at 130.84019138, -12.43302423 in the Northern Territory, there is a property polygon with a property_pid of 'prpafc82e6b6d7e' and contributor_id of 'CUFT/778/934'. When this property_pid is searched in the property_cadastre table, the property_pid is shown to link to three cadastre_pids (shown below).

	property_cadastre_pid	date_created	property_pid	cadastre_pid
1	prca851a6b95914	2021-05-18	prpafc82e6b6d7e	cade155f90fdb2f
2	prc633b32b79985	2021-05-18	prpafc82e6b6d7e	cad13ef0a2975f0
3	prcc5071c8acdfa	2021-05-18	prpafc82e6b6d7e	cad94228e2389b6

The three cadastre_pids relate to three cadastre records, with the related parcel_ids shown below.

	cadastre_polygon_pid	cadastre_pid	parcel_id
1	cpf5e13b1070041	cad13ef0a2975f0	200//8546/
2	cpce99496c4c9c1	cad94228e2389b6	200//8545/
3	cp5fcb8b9fbbfec	cade155f90fdb2f	200//5513/

Cadastre to Property

An example of the link in the other direction can be seen for the Victorian cadastre polygon at 144.962222249, -37.772255012 with cadastre_pid of 'cad7de4f40ee0d9' and parcel_id of '1\TP619430'. This cadastre_pid links to 16 property_pids (shown below) in the property_cadastre table.

	property_cadastre_pid	date_created	property_pid	cadastre_pid
1	prc1db31fb05532	2021-05-18	prp21a0763efcb4	cad7de4f40ee0d9
2	prcf2cd70b56c80	2021-05-18	prp28525c0c5427	cad7de4f40ee0d9
3	prc94fa8a04f188	2021-05-18	prp589a299d8c9a	cad7de4f40ee0d9
4	prc97eded8ba3d0	2021-05-18	prp7799f2547ee1	cad7de4f40ee0d9
5	prca097bf6fa46c	2021-05-18	prp818259922497	cad7de4f40ee0d9
6	prc1c2660d4a024	2021-05-18	prp8a71a08fe110	cad7de4f40ee0d9
7	prc113c67d91e41	2021-05-18	prp932530ca738f	cad7de4f40ee0d9
8	prc5ddc3ef67ca7	2021-05-18	prpcd9036743f4e	cad7de4f40ee0d9
9	prc5f850c5438b7	2021-05-18	prpe1a0fcaeeae9	cad7de4f40ee0d9
10	prcb07ca360bc5b	2021-05-18	prp0792f14bd0d3	cad7de4f40ee0d9
11	prcaf0b8a35dd0e	2021-05-18	prp19fab3ef6bfb	cad7de4f40ee0d9
12	prc9f7afcdb8cc8	2021-05-18	prp4c89c4190173	cad7de4f40ee0d9
13	prc2565fb68ba95	2021-05-18	prp90dcbc84fa4b	cad7de4f40ee0d9
14	prc5738a86532be	2021-05-18	prpcb4323ad5823	cad7de4f40ee0d9
15	prcf33ceb8925ac	2021-05-18	prpdb97b302f129	cad7de4f40ee0d9
16	prc955f08553daf	2021-05-18	prpdf14ade75b30	cad7de4f40ee0d9

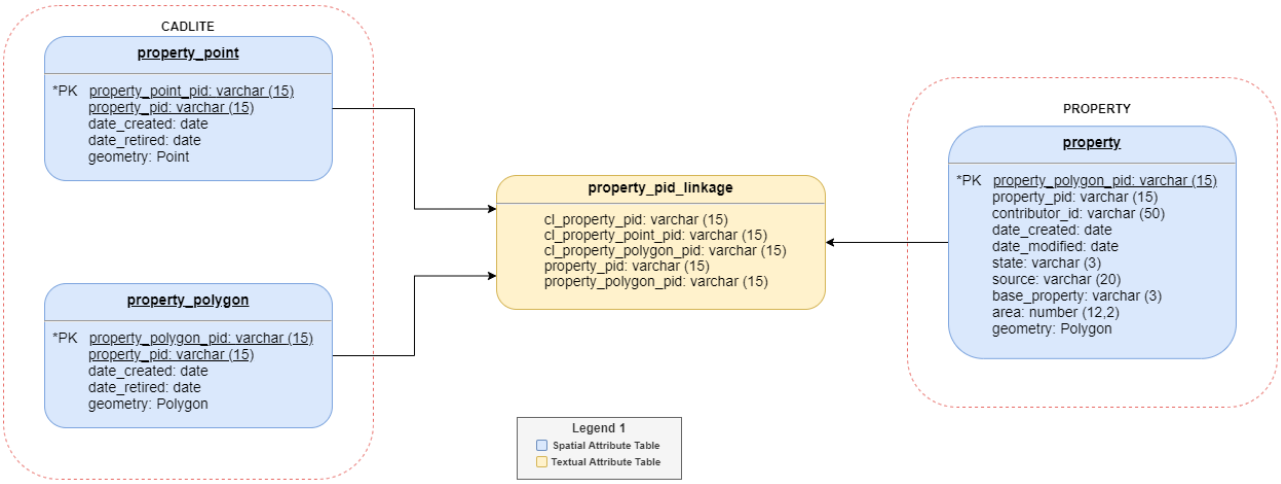
These 16 property_pids relate to 16 property records, with related contributor_ids shown below.

	property_polygon_pid	property_pid	contributor_id
1	ppae01b64e51194	prp818259922497	213675155
2	ppf2e4491696640	prp8a71a08fe110	215157505
3	pp2d3c0e668e7a7	prp0792f14bd0d3	753352
4	pp5d99f999eccfd	prpcd9036743f4e	215159031
5	ppd57409c8c0dbf	prp932530ca738f	213675171
6	ppace7beababc71	prp90dcbc84fa4b	422221796
7	pp962b2e5b16149	prpe1a0fcaeeae9	758164
8	ppec9537af7d5bd	prpcb4323ad5823	219056698
9	ppc6646daa503e0	prp7799f2547ee1	219056695
10	ppd124ba1fc518a	prp4c89c4190173	219056470
11	ppa1476bc1fc984	prp21a0763efcb4	758170
12	pp35bce003b8127	prp28525c0c5427	758171
13	pp3c668c7592fce	prp589a299d8c9a	758173
14	pp977ade6951201	prp19fab3ef6bfb	758169
15	pp511bc9cd45f79	prpdb97b302f129	215158404
16	ppe6714133dfc0e	prpdf14ade75b30	219054622

Linking CadLite to Property

A linkage table has been included to facilitate the transition between the CadLite Property theme and the new Property product. This table enables the link between the Property_Point and Property_Polygon features in CadLite to their corresponding Property feature where possible.

The link was created by matching the CadLite jurisdiction_id with the Property contributor_id, supported by a spatial comparison where there was more than one match resulting from the join.



If a property does not have a record in the linkage table, a link between CadLite and Property could not be created. This occurred where:

- There was no match between the CadLite jurisdiction_id and a Property contributor_id. This may happen if:
  - the feature is no longer represented in Property,
  - the CadLite jurisdiction_id no longer exists,
  - the Property contributor_id is new, or
  - the values could not confidently be joined during the linking process
- There were multiple matches between a CadLite jurisdiction_id and a Property contributor_id and:
  - the spatial check did not support the join, or
  - the spatial check could not identify a one-to-one link