Wards

Product Guide
Version 1.0

Geoscape

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Preface

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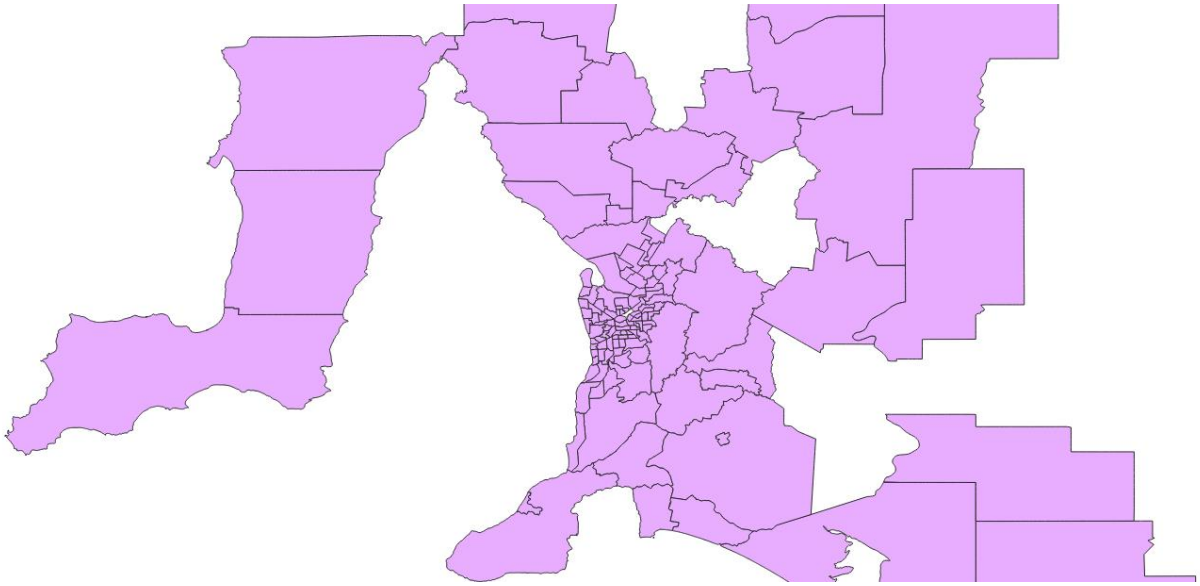
Product Version

1.0

Overview

Wards is a spatial representation of the gazetted ward districts, which are a subset of Local Government Area boundaries defined by the State and Territory governments of Australia. Wards represent distinct areas within a local government area that relate to the election of councillors for the related local government.

Not all Local Government Areas consist of Wards. Wards aggregates the representations unique to each jurisdiction into a consistent, seamless representation of the ward boundaries across Australia.



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

Technical Description

Wards is created through processing ward data sourced from Australia's States and Territories. Source attributes are mapped and standardised to provide a coherent definition across the jurisdiction supplies, with associated geometry being cleaned and processed to output a topologically consistent layer of Australia's ward boundaries at a national scale. Additional attributes have been generated and integrated by Geoscape to support the jurisdictional information as well as to provide convenience in the use and representation of the dataset.

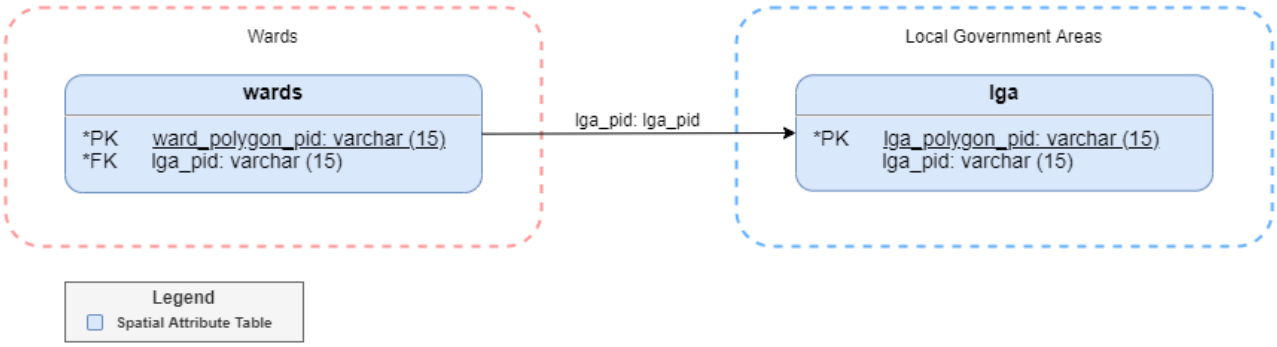
Wards is updated and released regularly and has integrated relationships with other Geoscape Products. Further information regarding attributes, quality, coverage and product release details are outlined below.

Linkages

This product is integrated with the following Geoscape products:

- Local Government Areas

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



Attributes

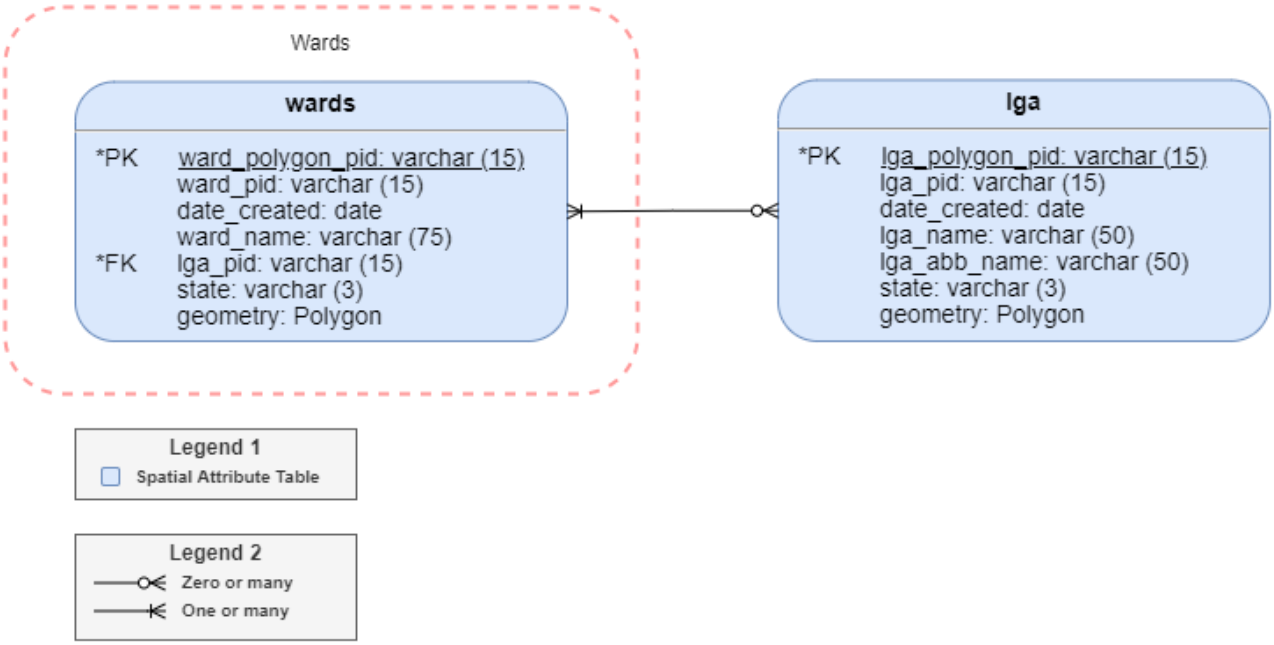
Ward Name

The Ward Name attribute provides the name of the ward in Title Case (e.g. 'Central Ward', 'O'Shannassy Ward', 'Colac Otway Shire'). Geoscape has provided these names with reference to jurisdictional definitions.

LGA PID

The LGA PID attribute provides information on the Local Government Area that is related to the ward. Wards represent a subdivision of Local Government Area boundaries, therefore a ward_pid will only relate to a single lga_pid.

Data Model



Data Dictionary

Attribute	Data Type	Description	Primary Key	Mandatory Field	10 Character Alias
ward_polygon_pid	Character String (15)	Unique persistent identifier for the ward polygon.	Y	Y	WD_PLY_PID
ward_pid	Character String (15)	Persistent identifier for the ward.	N	Y	WARD_PID
date_created	Date	The date the record is first introduced to the Geoscape product.	N	Y	DT_CREATE
ward_name	Character String (75)	The name of the ward.	N	Y	WARD_NAME
lga_pid	Character String (15)	The persistent identifier for the local government area that the ward is related to.	N	Y	LGA_PID
state	Character String (3)	The abbreviated name of the State or Territory that the ward spatially resides within.	N	Y	STATE
geometry	Polygon	The geometry of the polygon.	N	Y	GEOMETRY

Domain Values

state

Domain Value	Description
NT	The data is located within the Northern Territory.
SA	The data is located within the state of South Australia.
VIC	The data is located within the state of Victoria.
WA	The data is located within the state of Western Australia.

Update Frequency

This product is continuously updated and released with the most up to date data available on a quarterly schedule in the months of February, May, August and November.

Data Quality

Positional Accuracy

This product has been created by combining ward boundary information from multiple jurisdictional sources. Each jurisdiction has a range of collection methodologies to capture the digital representation of the ward boundary. The varying approaches to maintaining the boundaries will contribute to the dataset's overall accuracy. As the jurisdiction capture programs improve or otherwise change ward boundaries, we incorporate these changes as an update into the product and the positional accuracy is maintained. Geoscape makes minor changes only where they are required to create valid features described in 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

Geometry Validity

The 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. Gaps and overlaps are also resolved for polygons within each state or territory. Gaps and overlaps between State or Territory boundaries are not resolved. Where valid holes are present in the jurisdictional data, such as lakes or rivers, these holes are retained.

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

Wards has been processed to assure all polygons are stored as single part features to improve compatibility with a range of software applications. As a result, there can be a duplication of the ward_pid for some wards that are represented by multiple, separate, polygons.

Extent/Geographic Description

The spatial coverage of this dataset includes Australia's land mass for the Northern Territory, South Australia, Victoria and Western Australia.

The Bounding Box for this data is as follows:

- North bounding latitude: -8°
- South bounding latitude: -45°
- East bounding longitude: 168°
- West bounding longitude: 96°

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

State	Specific Area	Coverage
ACT		No coverage
NSW		No coverage
NT		Complete coverage
OT	Christmas and Cocos (Keeling) Islands	No coverage
	Jervis Bay	No coverage
	Norfolk Island	No coverage
QLD		No coverage
SA		Complete coverage
TAS		No 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

The data is provided at a National and a 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	Yes
MapInfo TAB	Yes	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"

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

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

The product 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 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, the product's versioning will not increment with every data update. Published releases will have a name (e.g. 'August 2021') and will reference a version of the product (e.g. '1.0').

Annex A - User Guide

Unpacking the Localities Product

The Localities product is supplied in the following structure:

Folder Structure

National/state product zip file

Structure	Example
<product>_<release>_AUSTRALIA_<projection>_<format>_<version>.zip	Wards_AUG21_AUSTRALIA_GDA94_SHP_100.zip
<product>_<release>_<state>_<projection>_<format>_<version>.zip	Wards_AUG21_ACT_GDA94_SHP_100.zip

Document folder structure

Folder Level	Structure	Example
1	<product>\	Wards\
	Contents.txt	Contents.txt
2	Documents\	Documents\
3	<product> Product Guide <version>.pdf	Wards Product Guide v1.0.pdf
	<product> Release Report - <release month>_<release year>.pdf	Wards Release Report – August 2021.pdf

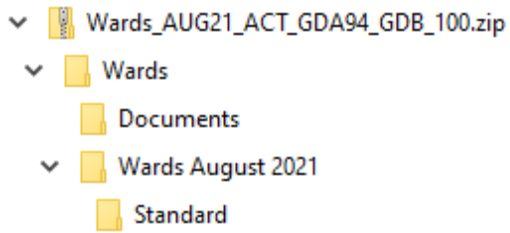
Layer folder structure

Folder Level	Structure	Example
1	<product>\	Wards\
	Contents.txt	Contents.txt
2	<product> <release month> <release year>\	Wards August 2021\
3	Standard\	Standard\
4	<file(s)>	*See File Names below*

Folder Structure example

National Coverage

State Coverage



File Names

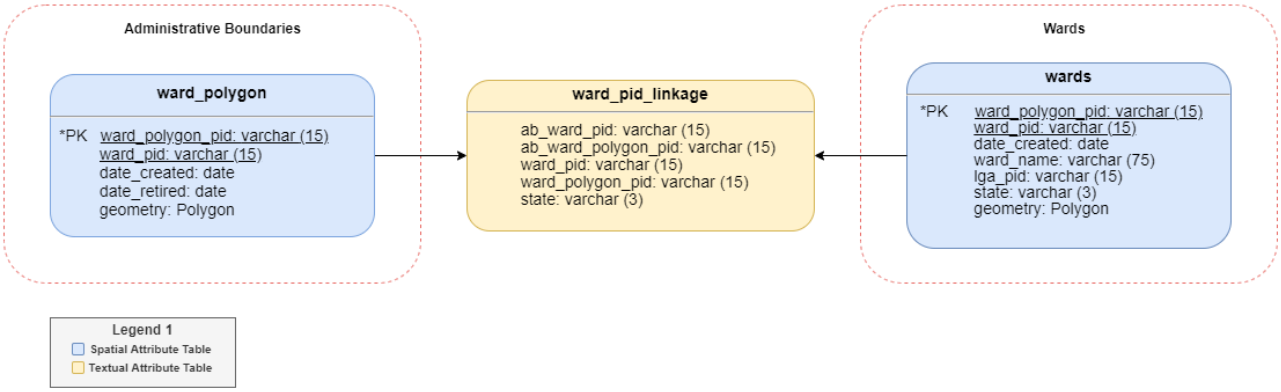
The data layer file names will have the following structure:

	File Name Structure	Example
National	<product>. extension(s)	wards.gdb
State	<state >_<product>.<extension(s)>	act_wards.dbf act_wards.prj act_wards.shp act_wards.shx

Linking Admin Boundaries to Wards

A linkage table has been included to facilitate the transition between the Administrative Boundaries Ward theme and the new Wards product. This table enables the link between the ward_polygon features in Administrative Boundaries to their corresponding Wards feature where possible.

The link was created through spatial intersection between Administrative Boundaries Ward polygons and Wards polygons, where only relationships with matching ward names and state are retained. In the ward_pid_linkage table, the 'ab_' prefixed values refer to the Administrative Boundaries identifiers, while the un-prefixed values of 'ward_pid' and 'ward_polygon_pid' relate to the new Wards product.



If a ward does not have a record in the linkage table, a link between Administrative Boundaries and Wards could not be created. This occurred where:

- There was no match between an intersecting Administrative Boundaries polygon and a Wards polygon with the same ward name. This may occur if:
    - A new ward polygon was created at the location with a different name
    - A polygon that existed in Administrative Boundaries no longer exists in Wards
    - A new polygon exists in Wards that does not intersect any Administrative Boundaries polygon (e.g. new island polygon)