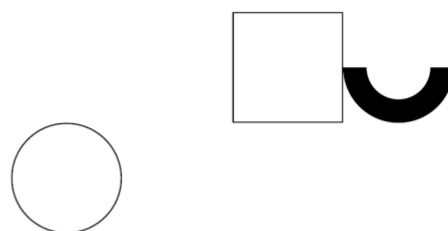# Postcode Boundaries
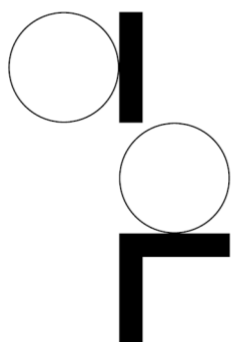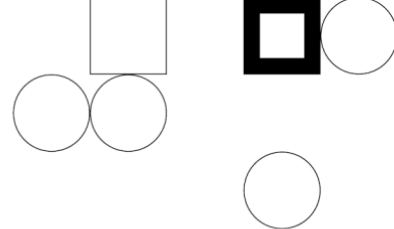
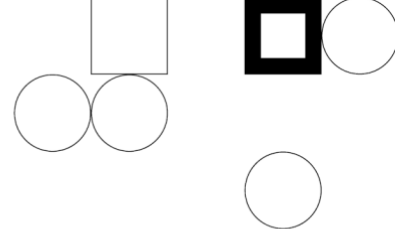**Data Product Description**
August 2021

Geoscape

Disclaimer

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Contents

1. Overview

1.1 Data product specification title

Postcode Boundaries Product Description

1.2 Reference date

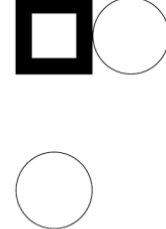August 2021

1.3 Responsible party

Geoscape Australia Limited
Unit 6, 113 Canberra Avenue, GRIFFITH ACT 2603 Australia
T: +61 2 62609000 | E: support@geoscape.com.au
URL: www.geoscape.com.au | ABN: 23 089 912 710

1.4 Language

English

1.5 Topic Category

Boundaries to facilitate the delivery of physical mail to customers.

1.6 Distribution Format

PDF

1.7 Glossary

Geoscape maintains a glossary of common terms with their definitions and also includes acronyms and abbreviations that are commonly used in relation to Geoscape products and services. The glossary is available at the Geoscape website at https://geoscape.com.au/documentation/glossary-and-terms/

1.8 Informal description of the data product

The Postcode Boundaries dataset is the definitive set of postcodes developed by Australia Post and Geoscape Australia. It includes two data layers, postcode boundaries (polygon data) and postcode centroids (point data).

Postcodes are allocated to geographic areas to facilitate the efficient processing and delivery of mail to customers. The current four-digit numeric postcode system was introduced in 1967 in association with the first mechanised mail processing centre in

Australia. The Postcode Boundaries in most cases are an aggregation of Geoscape's Localities product boundaries for each postcode. The postcodes of 3000 and 3004 are created from the single gazetted suburb of Melbourne.

The government land administration agencies in each State and Territory are responsible for gazetting locality names and boundary positions. Postcodes are commonly allocated to localities officially gazetted by land agencies. In the majority of circumstances, a postcode covers an area comprising of more than one locality. The decision as to whether a new postcode or an existing postcode is to be allocated to a locality is based on operational efficiency. Issues that underpin the decision are critically analysed; these include the configuration of the Australia Post network, transportation connections and delivery arrangements.

1.9 Copyright

Please see www.geoscape.com.au/legal/data-copyright-and-disclaimer/

1.10 Privacy

Geoscape products and services should not contain any personal names or other personal information. Geoscape undertakes reasonable data cleansing steps as part of its production processes to ensure that is the case. If you think that personal information may have inadvertently been included in Geoscape products or services, please contact support@geoscape.com.au.
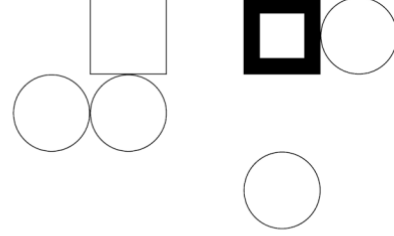
2. Specification Scope

This dataset has no themes.

2.1 Scope identification

Postcode Boundaries Dataset

Level
Dataset

Level name
Postcode Boundaries

Extent
Spatial coverage of Australia's landmass including External Territories and offshore islands (Christmas Island, Cocos (Keeling) Islands, and Norfolk Island).

3. Data Product Identification

3.1 Titles

Postcode Boundaries

3.2 Alternate titles

Postcode Boundaries for Australia

3.3 Abstract

This Postcode Boundaries Product Description is an ISO 19131 compliant description.

3.4 Purpose

This dataset provides the definitive postcode dataset for the entire Australian extent – see Extent below. It has been developed jointly by Geoscape and Australia Post to support the spatial analysis and visualisation of postcode areas.

3.5 Topic category

Polygons defined by coordinate spatial data (latitude and longitude) with associated textual metadata.

3.6 Geographic description

The Postcode Boundaries dataset covers the addresses within the complete national geography of Australia (AUS). 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°

This area covers the land masses of Australia, including External Territories and offshore islands (Christmas Island, Cocos (Keeling) Islands, and Norfolk Island).

The spatial domain is described by the polygon:
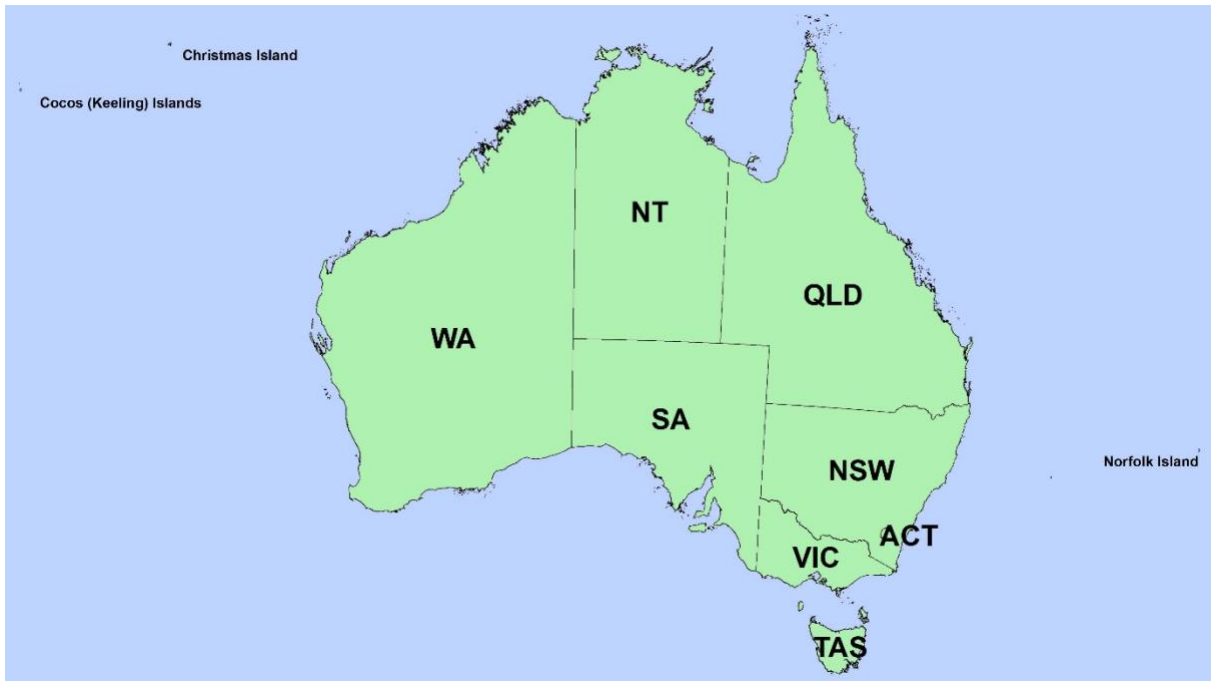
Geographic extent name

AUSTRALIA INCLUDING EXTERNAL TERRITORIES – AUS – Australia – Australia

The States and Territories within Australia are represented by the following:

State or Territory Name	Abbreviation	Character Code
New South Wales	NSW	1 (or 01)
Victoria	VIC	2 (or 02)
Queensland	QLD	3 (or 03)
South Australia	SA	4 (or 04)
Western Australia	WA	5 (or 05)
Tasmania	TAS	6 (or 06)
Northern Territory	NT	7 (or 07)
Australian Capital Territory	ACT	8 (or 08)
Other Territories	OT	9 (or 09)

Note: Geoscape has aligned Other Territories (OT) with the Australian Bureau of Statistics (ABS). It includes the Territory of Christmas Island, Territory of Cocos (Keeling) Islands, Jervis Bay Territory and more recently the inclusion of Norfolk Island. OT does not include any other external Territory.

4. Data Content and Structure

A data model is included (Appendix A) with an associated data dictionary (Appendix B).

4.1 Feature-based data

The feature type is based on a spatial polygon for the various postcode areas. The table below outlines the features and their integration into the datasets.

Entity	Description	Integration	Rules
Postcode	A postcode may be represented either as an area or a point-type postcode. A postcode may have many polygons defining its boundary. Postcode boundaries do not have to match locality boundaries. A point-type postcode will have 1 active centroid defining its location.	A Postcode has: 0 to many related Localities records	Ideally, a postcode must be related to at least 1 locality, but this is not possible in all cases (eg. Northern Territory) so cannot be enforced as a hard-and-fast rule in the database.

4.2 Feature-based application schema (data model)

The data model is set out in Appendix A.

4.3 Data dictionary

The feature catalogue in support to the application schema is provided in Appendix B. Spatial attributes are added to the feature catalogue in the same manner as other attributes for completeness and conformance to the application schema.

The following table refers to all tables in the Feature Catalogue below.

Column	Abbreviation	Description
Name	Name	The name of the column in the Integrated Database
Data Type	Data type	The Oracle data type of the column. Mapinfo TAB files have similar data types.
Description	Description	A description of the column and what the expected contents are
Primary Key	Prim Key	If 'Y' then this column must always have a unique value. (has # entry in the data model tables)
Obligation	Man	Y = mandatory. If 'Y' (mandatory), this column must be populated with data. That is, all ACTIVE records must have values in this column.
Foreign Key Table	F K TABLE	Represents a column in the 'Foreign Key Table' that this column is referred to by another table. (has * entry in the data model tables)
Foreign Key Column	F K Col	Represents a table in the Integrated Database that this column is referred to.
10 Character Alias	10 Char Alias	An alias for this column name - up to 10 characters maximum. Used to define the name of the column when in ESRI Shapefile format.

For all tables the Persistent Identifier (_PID), DATE_CREATED and DATE_RETIRED fields are governed by the ICSM Policy and Guidelines for Incremental Update. This can be accessed by following the link below.

www.icsm.gov.au/icsm/harmonised_data_model/model1/incremental_up-date_guidelines.pdf
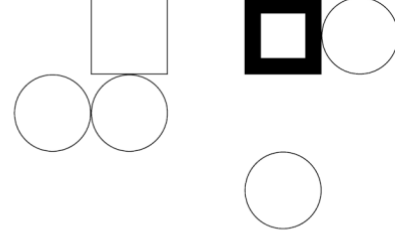
4.4 Feature-based content scope

Postcodes are allocated only to areas where Australia Post operates a delivery network and where gazetted suburbs/localities exist. Postcode boundaries generally do not capture areas outside gazetted suburbs/localities or other mailing addresses such as PO Boxes, Mail Centres or large volume recipients.
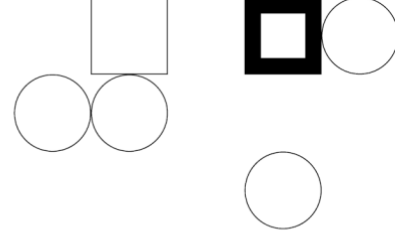
5. Reference System

5.1 Spatial reference system

GDA 94 or GDA 2020

5.2 Temporal reference system

Gregorian calendar

5.3 Reference system scope

The spatial objects and temporal collection periods for the Postcode Boundaries.

6. Data Quality

6.1 Positional accuracy

Positional accuracy is an assessment of the closeness of the location of the spatial objects in relation to their true positions on the earth's surface.

The positional accuracy includes:

- a horizontal accuracy assessment
- a vertical accuracy assessment

The horizontal and vertical positional accuracy are the assessed accuracy after all transformations have been carried out.

Relative spatial accuracy of the Localities dataset used in the construction of postcodes reflects that of the source data.

6.2 Coordinates Referencing the GDA 2020 Datum

From the November 2019 publication, spatial features are available referencing the GDA 2020 datum. These coordinates are produced using a coordinate transformation from GDA 94 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

6.3 Attribute accuracy

Attribute accuracy is an assessment of the reliability of values assigned to features in the dataset in relation to their true 'real world' values.

Key attributes (postcode and the unique identifier) have a high degree of accuracy in the order of 99.09% and are reflective of the operational needs of Australia Post. Other attributes derived from the processing of supplied data may have a lower degree of accuracy but less than previously released data. The postcode allocated to an area may not be the same postcode as published by Australia Post through their website or other sources, as the postcode is some cases is based on the most commonly used postcode for addresses in a given area. All attribute accuracies are dependent on the data accuracy supplied to Geoscape Australia.

For this product, feature and attribute accuracy is a measure of the degree to which the features and attribute values of spatial objects agree with the information on the source material. The allowable error in attribute accuracy was previously up to 5%.

A precise attribute accuracy assessment may not always be possible. In these cases an intuitive estimate of the expected attribute accuracy or the likely maximum error based on previous experience is acceptable.
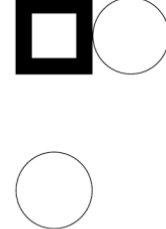
The postcode allocated to a gazetted suburb/locality is the most commonly used postcode, in a small number of cases the postcode is different to the postcode published by Australia Post on their website. These cases are due to changes to locality boundary or locality name, where the postcode remains the same for delivery purposes.

6.4 Logical consistency

Logical consistency is a measure of the degree to which data complies with the technical specification. The allowable error in logical consistency previously ranged from 3% to 5%. The test procedures are a mixture of software scripts and onscreen visual checks.

The data structure has been tested for conformance with the data model. The following have been tested and confirmed to conform:

- File names
- Attribute names
- Attribute lengths
- Attribute types
- Attribute domains
- Attribute order in file
- Object type
- Compulsory attributes populated

6.5 Topological consistency

Topological consistency is the measure of how features spatially relate to other features within and across themes. Topological inconsistencies are identified using a combination of automated rules, and visual analysis. Where topological inconsistencies are identified they are notified back to the supplier organisation for remediation at source. Some minor topological inconsistencies are corrected during product processing using automated rules. The level of topological consistency is dependent on the data supplied to Geoscape.

During product processing there is no attempt to enforce topological consistency across State and Territory borders. Cross border topological consistency is a complex issue and Geoscape continues to engage the Federal, State, and Territory governments of Australia to improve the topological consistency of spatial datasets across these borders.

6.6 Completeness

Completeness is an assessment of the extent and range of the dataset with regard to completeness of coverage, completeness of classification and completeness of verification.

Dataset, theme, and layer coverage

National (based on coverage of suburbs/localities from the Localities product).

Attribute completeness

All attributes for each object are populated.
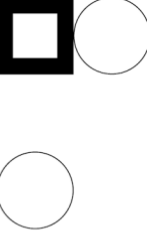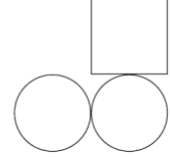
Temporal accuracy is applicable to most of the current release.

Quality scope

Polygon and point geometry accuracy and attribute accuracy for all included areas.

7. Data Capture

All suburb/locality data used for the polygon geometry in postcodes is captured by the State and Territory governments through appropriate agencies. The digital suburb/locality boundaries and their legal identifiers have been derived from each Australian State and Territory jurisdiction.

The postcodes are provided by Australia Post and are required to facilitate the efficient processing and delivery of mail to customers. Any areas that do not have postcode boundaries (e.g. NW South Australia) are consistent with the coverage of gazetted suburbs/localities boundaries. None of the gazetted suburb/locality boundaries have been changed with the exception of the suburb of Melbourne, which is split into two separate areas for the allocation of different postcodes (3000 and 3004).

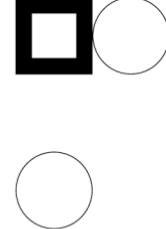A decision as to whether a new postcode or an existing postcode is to be allocated to a suburb/locality is based on operational efficiency. Issues that underpin the decision are critically analysed; these include the configuration of the Australia Post network, transportation connections and delivery arrangements. Australia Post will only allocate a postcode where there are deliveries within an area and where there is no conflict with the allocation of other postcodes by Australia Post. It is ultimately Australia Post's decision on whether an area is allocated a postcode. Australia Post will allocate 'NA' as a postcode where they are unable to resolve the allocation of a postcode to a gazetted suburb/locality boundary, even though they may have identified a postcode for the name (e.g. GALIWINKU, NT). The postcodes for Australia Post postal services that use specific suburbs/localities, such as Post Office Boxes (e.g. EAST PERTH, WA 6892) are not captured in the Postcode Boundaries product.

7.1 Data capture scope

Data for changed objects within the current release time period.
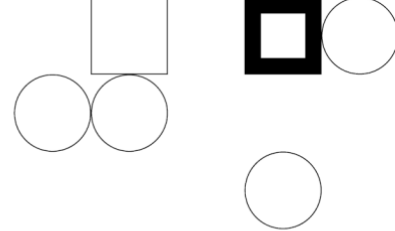
8. Data Maintenance

8.1 Update frequency

Geoscape Australia releases updates to all datasets every quarter in the months of February, May, August and November. The Postcode Boundaries dataset is updated as deemed necessary by Australia Post.

8.2 Maintenance Scope

Geoscape Australia's data maintenance occurs for existing objects with changed geometry and/or attributes, as well as data for new objects within the release time period.

9. Data Product Delivery

Geoscape Australia is the crucial link between the supply and demand sides of the market for the fundamental national spatial datasets that it offers under the banner of Geoscape Data. The organisation eliminates the difficulties of negotiating multiple license agreements with Australian governments and the problems of integrating the data into a seamless consistent national dataset. Furthermore, the existence of Geoscape Australia minimises the duplication of effort within the market for organisations wishing to access national data.

Access to Geoscape Data is enabled through a network of value-added resellers who are licensed by, and work closely with Geoscape Distribution, the wholly owned subsidiary of Geoscape Australia. Value-added resellers create many powerful and varied applications that use Geoscape Data. Geoscape Distribution provides strategic support to value-added resellers to ensure that both the public and private sectors obtain the maximum benefit from the use of Geoscape Data. Geoscape Australia's website www.geoscape.com.au provides a value-added reseller directory to assist those interested in accessing Geoscape Data.

Current users of Geoscape Data should contact their value-added reseller for clarification or guidance before contacting Geoscape Distribution.

For further information on accessing Geoscape Data, or becoming a value-added reseller contact:

Geoscape Distribution
Unit 6, 113 Canberra Avenue, Griffith ACT 2603
T: 02 6260 9000
E: sales@geoscape.com.au
W: www.geoscape.com.au

9.1 Delivery format information

MapInfo

Format Name:
TAB – MapInfo Professional™

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

TAB files support geospatial standards such as Open GIS, the OGC, ISO, W3C and others.

Language:
English
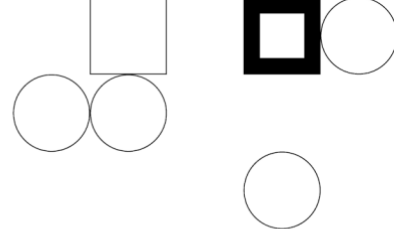
Shape

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

Appendix A – Postcode Boundaries Data Model

Appendix B - Data Dictionary

Table 1: LOCALITY_POSTCODE

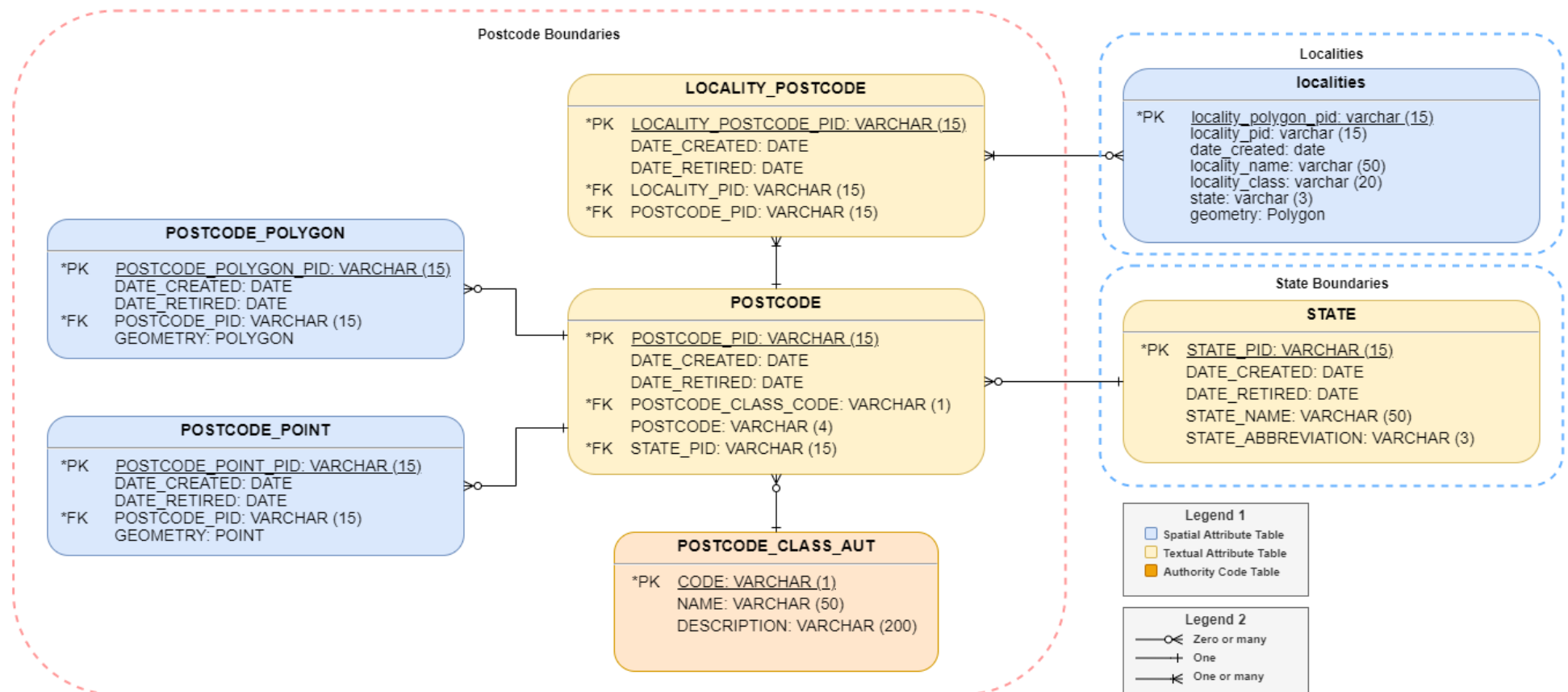| Name	Data Type	Description	Prim Key	Man	F K TABLE	F K Col	10 Char Alias
LOCALITY_ POSTCODE_PID	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents.	Y	Y	-	-	LOC_PO_PID
DATE_CREATED	date	Date this record was created.	N	Y	-	-	DT_CREATE
DATE_RETIRED	date	Date this record was retired.	N	N	-	-	DT_RETIRE
LOCALITY_PID	varchar2(15)	The locality or suburb persistent identifier from the Localities product.	N	Y	localities	locality_pid	LOC_PID
POSTCODE_PID	varchar2(15)	The postcode persistent identifier.	N	Y	POSTCODE	POSTCODE_PID	PC_PID

Table 2: POSTCODE

Name	Data Type	Description	Prim Key	Man	F K TABLE	F K Col	10 Char Alias
POSTCODE_PID	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents.	Y	Y	-	-	PC_PID
DATE_CREATED	date	Date this record was created.	N	Y	-	-	DT_CREATE
DATE_RETIRED	date	Date this record was retired.	N	N	-	-	DT_RETIRE
POSTCODE_CLASS_CODE	char(1)	Defines the postcode class code. Currently there is only one class code - 1 (DELIVERY AREA).	N	Y	POSTCODE_CLASS_AUT	CODE	PC_CS_CODE
POSTCODE	varchar2(4)	Postcode.	N	Y	-	-	POSTCODE
STATE_PID	varchar2(15)	State or Territory persistent identifier.	N	Y	-	-	STATE_PID

Table 3: POSTCODE_POINT

Name	Data Type	Description	Prim Key	Man	F K TABLE	F K Col	10 Char Alias
POSTCODE_POINT_PID	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents.	Y	Y	-	-	PC_PNT_PID

Name	Data Type	Description	Prim Key	Man	F K TABLE	F K Col	10 Char Alias
DATE_CREATED	date	Date this record was created.	N	Y	-	-	DT_CREATE
DATE_RETIRED	date	Date this record was retired.	N	N	-	-	DT_RETIRE
POSTCODE_PID	varchar2(15)	The postcode persistent identifier.	N	Y	POSTCODE	POSTCODE_PID	PC_PID
GEOMETRY	point	Point geometry.	N	Y	-	-	GEOMETRY

Table 4: POSTCODE_POLYGON

Name	Data Type	Description	Prim Key	Man	F K TABLE	F K Col	10 Char Alias
POSTCODE_POLYGON_PID	varchar2(15)	The Persistent Identifier is unique to the real world feature this record represents.	Y	Y	-	-	PC_PLY_PID
DATE_CREATED	date	Date this record was created.	N	Y	-	-	DT_CREATE
DATE_RETIRED	date	Date this record was retired.	N	N	-	-	DT_RETIRE
POSTCODE_PID	varchar2(15)	The postcode persistent identifier.	N	Y	POSTCODE	POSTCODE_PID	PC_PID
GEOMETRY	polygon	Polygon geometry.	N	Y	-	-	GEOMETRY

Table 5:POSTCODE_CLASS_AUT

Name	Data Type	Description	Prim Key	Man	F K TABLE	F K Col	10 Char Alias
CODE	char(1)	Postcode class code. This is the persistent identifier of the record.	Y	Y	-	-	CODE_AUT
NAME	varchar2(50)	Name of the postcode class code (e.g. DELIVERY AREA).	N	Y	-	-	NAME_AUT
DESCRIPTION	varchar2(200)	Description of what the postcode class code represents (e.g. DELIVERY AREA FOR MAIL).	N	N	-	-	DSCPN_AUT

Table 6: POSTCODE_CLASS_AUT codes

CODE	Description	NAME
1	DELIVERY AREA FOR MAIL	DELIVERY AREA