Product Data Specification

Vicmap™ Hydro

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Version 6.3 April 2022

Applies to data model 3.0 December 2019

AS/NZS ISO 19131:2008 compliant

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# Document history

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| --- | --- | --- |
| Version | Date | Note |
| 5.4 | Feburary 2012 | Content update |
| 6.0 | July 2016 | New template and content reviewed |
| 6.1  | Feburary 2018 | New template |
| 6.2 | December 2020 | New table added & content reviewed |
| 6.3 | April 2022 | New feature type “reservoir” added to water area polygon  |

This document has been formatted and structured in compliance with AS/NZS ISO 19131:2008 Geographic Information – Data product specifications.

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# Overview

## Vicmap™

Vicmap™ is the foundation that underlies most spatial information in Victoria. This portfolio of spatial related authoritative data products, made up from individual datasets, is developed and managed by the Department of Environment, Land, Water & Planning. The information provides the foundation to Victoria’s primary mapping and spatial information systems, and is used for building business information and systems.

Vicmap is a registered trademark of the Victorian Government and is synonymous with authoritative statewide mapping since 1975.

The Vicmap portfolio includes:

|  |  |
| --- | --- |
| * + - Vicmap Address
		- Vicmap Admin
		- Vicmap Buildings & Settlements (proposed)
		- Vicmap Crown Land Tenure
		- Vicmap Elevation
		- Vicmap Features of Interest
		- Vicmap Hydro
		- Vicmap Imagery
		- Vicmap Index
 | * + - Vicmap Infrastructure (proposed)
		- Vicmap Lite
		- Vicmap Planning
		- Vicmap Position
		- Vicmap Property
		- Vicmap Topographic Mapping
		- Vicmap Transport
		- Vicmap Vegetation
 |

Vicmap data is supported by a collection of Reference Tables, Vicmap Reference Tables. A reference table may list the full name, description and other attributes associated with a feature code or identifier.

Further information can be found at <https://www.land.vic.gov.au/maps-and-spatial/spatial-data/vicmap-catalogue>

## Data product specification title

Vicmap™ Hydro

## Responsible party

Department of Environment, Land, Water and Planning

PO Box 527, Melbourne VIC 3001 Australia

vicmap.help@delwp.vic.gov.au

## Terms and definitions

For the purpose of this document, the following terms and definitions apply.

|  |  |
| --- | --- |
| **Term** | **Definition** |
| ANZLIC ID | A unique identifier enabling metadata records to be discovered and differentiated within a structured data library. |
| Attribute | A characteristic of a feature that may occur as a type or an instance. |
| Data type | Specification of a value domain with operations allowed on values in this domain Refer to AS/NZS ISO 19103 |
| Dataset | Identifiable collection of data. Maybe as small as a single feature or feature attribute contained within a larger dataset. A hardcopy map maybe considered a dataset. Refer to AS/NZS ISO 19115 |
| Dataset series  | Collection of datasets sharing the same product specification, also known as a product. |
| DataVic | The web service to discover and access Victorian government open data. |
| Domain | A well-defined set both necessary and sufficient, as everything that satisfies the definition in the set and everything that does not satisfy the definition is necessarily outside the set. Refer to ISO/TS 19103 |
| the Department | Meaning the Department of Environment, Land, Water & Planning (DELWP). |
| Entity | A unit of data that can be classified and have stated relationship with other entities. |
| Feature  | An abstraction of real-world phenomena. A feature may occur as a type or an instance. Feature type or instance shall be used when only one is meant. The feature structure of the feature based data model can be summarised as: feature instance = [spatial object + attribute object] |
| Metadata | Metadata is ‘data about data’ and provides a synopsis about the data lineage, accuracy and details about access permissions. Refer to ISO 19115 Geographic information ― Metadata |
| Parent metadata record | Parent metadata records act as a cover note for a product that contains a dataset series for search, discovery & delivery purposes.  |
| Persistent Feature Identifier (PFI) | The unique code provide at creation of the feature which remains until the feature is retired.  |
| Product | Dataset or dataset series that conforms to a data product specification. |
| Quality | Totality of characteristics of a product that bear on its ability to satisfy stated and implied needs. Refer to:ISO 19113 Geographic information ― Quality principlesISO 19114 Geographic information ― Quality evaluation procedures |
| the State | Victoria. |
| Unique Feature identifier (UFI) | Each feature is uniquely identified and renewed with each change. |
| Vicmap | The authoritative topological spatial data managed by the Department. |

## Acronyms

For the purpose of this document, the following acronyms may apply.

|  |  |
| --- | --- |
| **Acronym** | **Definition** |
| AHD | Australian Height Datum  |
| DALA | DELWP Data Access License Agreement |
| DELWP | Department of Environment, Land, Water & Planning |
| DSV | Data Search Victoria |
| CFA | Country Fire Authority |
| DALA | DELWP Data Access License Agreement |
| DELWP | Department of Environment, Land, Water & Planning |
| FIB | Forest Industry Brigade |
| FSDF | Foundation Spatial Data Framework |
| GDA | Geographic Datum Australia |
| GIS | Geographic Information System |
| GNR | Geographic Place Names Register |
| MoU | Memorandum of Understanding |
| PIQA | Property Information Quality Audit |
| RMSE | Root-Mean-Square Error |
| SDM | Spatial DataMart |
| SPOT | Satellite Pour l’Observation de la Terre (French) |
| VES | Vicmap Editing Service |
| VGDD | Victorian Government Data Directory |

## Informal description of the data product

Vicmap Hydro is a topologically structured digital data set depicting Victoria’s natural and man man-made water resources including selected water related structures and coastal navigational features. Vicmap Hydro can be used in a variety of applications including protection and conservation analyses for natural resources, impact assessment, monitoring and land analysis.

Vicmap Hydro is a framework product that forms an essential element to the map base for the State’s Topographic mapping program. Vicmap is integrated by Geoscience Australia to create national datasets in alignment with the [Foundation Spatial Data Framework (FSDF)](http://fsdf.org.au/). The development of the Vicmap portfolio aims to ensure continual alignment with the FSDF, Vicmap Hydro is related to the Water theme.

Product updates for the suite are made available weekly through the Vicmap maintenance life cycle. Data is sourced from authoritative Data Suppliers (Originators) via the *Vicmap Custodianship Program* and derived from foundational data, for example feature extraction from Vicmap Imagery.

# Specification scope

### Level

Dataset series

### Extent & coverage

Vicmap Hydro maintains a statewide respresentation of the theme across Victoria. Additional cross-border data for Vicmap Hydro is provided to DELWP under a cross-border arrangement with New South Wales and South Australia. The cross-border data extend up to 100 kilometres into New South Wales and a 1x1:100,000 tile into South Australia.

# Data product identification

### Title

Vicmap™ Hydro

### Abstract

Vicmap Hydro represents the natural and man-made water resources for Victoria and consists of point, line and polygon vector features in a seamless, networked and topologically structured dataset series. It comprises a basic framework of linear features supplemented by related point and polygon features to value add data for the water networks across the State. Attribute tables classify and describe the real-world features using code lists that can be used for search, discovery and analysis.

The following hydrographic features are contained within Vicmap Hydro:

* Watercourse (line)- watercourse, connector, channel, drain
* Water Area (polygon)- lake, flat, wetland, pondage, watercourse area
* Water Area Boundary (line)- shoreline, junction
* Water Point (point)- rapids, spring, waterfall, waterbody point
* Water Area Fuzzy (polygon) – bay, beach, bend, entrance, inlet, passage, reach, sea

In inland and coastal areas, point and line features are used to describe various waterline related structures:

* Water Structure Line (line)- wharf, marina, offshore platform, breakwater, launching ramp, dam wall, spillway, lock
* Water Structure Point (point)- lock, well
* Water Structure Area (polygon)- dam batter, spillway

Along our coastline various features exist which either aid or obstruct local navigation:

* Navigation Point (point)- buoy, beacon, rock, wreck
* Navigation line (line)- reef ledge

### Depiction of coastal environment

Features along our coastal environment are best depicted with Vicmap Index which contains Victoria’s state boarders and coastline.

Interpretation of features such as watercourses and sea depend on the following criteria:

* The limit between sea and land ie. coastline is represented by the mean highwater mark (1m below flotsam on the beach) except in areas covered by mangroves where the landward side is adopted. Note: The limit between the shoreline of internal water bodies and land is represented by the full supply level.
* The use of a connector feature ceases when a watercourse area runs into the sea delineated by a junction representing coastline.
* Coastal intertidal flats comprised of sand or mud, exposed at low tide form polygon areas which can extend seaward more than 100m or inland.
* Small inlets with a single line stream flowing into them are usually considered part of the sea.
* Islands are represented by polygons coded “Island” when they are fully surrounded by sea.



Diagram 1: Example of Coastal Environment.

### Topic Category

Environment

Geoscienfic information
Inland waters

Oceans

# Data content and structure

## Data content

The feature based datasets that comprises Vicmap Hydro at a scale of 1:25,000 are listed below:

|  |  |  |  |
| --- | --- | --- | --- |
| **ANZLIC ID** | **Dataset name** | **Description** | **Feature type** |
| ANZVI0803002489\* | [VICMAP HYDRO](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002489&extractionProviderId=1)  | Parent metadata record | N/A |
| ANZVI0803002490 | [HY\_WATERCOURSE](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002490&extractionProviderId=1) | Watercourse network  | Line |
| ANZVI0803002493 | [HY\_WATER\_POINT](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002493&extractionProviderId=1) | Rapids, springs, waterfalls | Point |
| ANZVI0803008626 | [HY\_WATER\_AREA\_FUZZY](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002491&extractionProviderId=1) | Water areas with fuzzy extents | Polygon |
| ANZVI0803002491 | [HY\_WATER\_AREA\_POLYGON](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002491&extractionProviderId=1) | Watercourse areas | Polygon |
| ANZVI0803002497 | [HY\_WATER\_STRUCT\_POINT](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002497&extractionProviderId=1) | Water Structure point | Point |
| ANZVI0803002496 | [HY\_WATER\_STRUCT\_LINE](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002496&extractionProviderId=1) | Water structure | Line |
| ANZVI0803002498 | [HY\_WATER\_STRUCT\_AREA\_POLYGON](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002498&extractionProviderId=1) | Dam Batters & Spillways | Polygon |
| ANZVI0803002494 | [HY\_NAVIGATION\_LINE](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002494&extractionProviderId=1) | Reefs and ledges | Line |
| ANZVI0803002495 | [HY\_NAVIGATION\_POINT](http://services.land.vic.gov.au/SpatialDatamart/dataSearchViewMetadata.html?anzlicId=ANZVI0803002495&extractionProviderId=1) | Buoys, beacons, rocks & wrecks | Point |

Table 1: Vicmap Hydro datasets.

*\*Parent metadata record for Vicmap Hydro. Parent metadata records act as a cover note for a product that contains a dataset series for search, discovery & delivery purposes.*

For further information please refer to the metadata records for each dataset at [**Data Search Victoria**](http://services.land.vic.gov.au/SpatialDatamart/).

The Vicmap Reference Tables associated with Vicmap Hydro are referred to in **Appendix D**.

## Feature based data

### Data model

Refer to **Appendix A.**

The majority of Vicmap product data models are published on the department’s website [www.delwp.vic.gov.au/vicmap](http://www.delwp.vic.gov.au/vicmap).

### Data dictionary

Refer to **Appendix B.**

## Data structure

Rules and/or characteristics that apply to Vicmap Hydro:

* Topologically structured with other Vicmap products
* Routing of all watercourses is uni-directional (downstream)
* Junctions provide closure for polygon areas that change attribution and for separating polygons to facilitate polygon analysis
* Continuity of drainage flow is maintained via connectors through area features to facilitate linear analysis
* All linear features within the same layer will be broken by a node at intersections or at the point where an attribute of the feature changes. A node will exist at these intersection points
* All polygon boundaries must be closed
* Every polygon feature will contain a para-centroid that may be used for the positioning of information about the feature
* Confirms to national data models, ICSM
* Temporal Data Management:
* A Persistent Feature Identifier (PFI) is generated once for each feature at the point of creation and remains constant until a feature is retired. A PFI is unique to, and cannot be reused within a particular table. However, you may have the same PFI number in different tables but does not relate to the same feature entity, and
* The Unique Feature Identifier (UFI) is generated for each feature at the point of creation and changes with each modification or version. This allows users to track the changes made to a feature over time.

### Polygon voids

Polygon features may contain an inner set of lines, holes or voids that cannot be assigned to any feature class within that layer. For example, a Lake in the Water Area layer may have in the middle of it an area of dry land. This would appear in the data as a polygon with no paracentroid.

### Coincident features

There will be no coincident polygons, lines (whole or in part) or points of the same feature type in the data (also frequently known as double digitising). Differing features may be coincident, as may be the case where a dam wall also forms part of a dam polygon, (in these cases, the common data repeats for each feature type, and is appropriately tagged and supplied as part of each feature type)

### Connector

Drainage patterns are made up of both linear (narrow streams) and polygon features (such as watercourse areas, lakes and swamps) and consequently do not constitute a rigorous linear network. To allow linear analysis of drainage networks an artificial feature called a "Connector" has been added to the data.

This Connector feature is used to connect linear watercourse features where they are separated by water areas such as lakes, swamps and watercourses depicted as area features. The points that make up this chain cannot be given any value for planimetric accuracy. The Connector will only be used if there is flow across a waterbody polygon feature. Thus, if there is only inflow to a lake and no outflow the Connector feature will not be used.

Tributary watercourses flowing into a polygon area will be linked to the areas with Connectors.

In the example below, the use of connectors ceases once the watercourse runs into a tidal area such as an estuary, bay or inlet of the sea. Connector devices carry the attributes of the watercourse they represent, not the waterbody through which they pass.



Diagram 2: Vicmap Hydro connector feature

Connectors are also used for drainage conveyed by pipelines (*Connector\_structure*). The diagram below demonstrates the relationship between underground pipelines and other drainage features for the situation where pipelines cross drainage features. In this situation the underground pipeline will form the connection with *connector* features in the watercourse layer and needs to be cloned in the watercourse layer as a connector. A node is to be created in the watercourse layer, on the connector, at the intersection of any drainage lines crossing pipeline connector.

Diagram 3: Relationship between underground features cross hydro features


### Junction

The Junction is a linear feature which is an artificial line used to separate adjacent polygon areas across which flow can occur. For example, a Junction feature will separate the confluence of two watercourses where both are depicted as polygons. A Junction also separates watercourse polygons from the Sea. The Junction feature is arbitrarily placed and cannot be given any value for planimetric accuracy.

Junction devices carry the attributes of the area entity they enclose.

Junction features will *not* be placed:

* separating 2 water bodies with identical attributes.
* separating polygons of different feature class except separating watercourse polygons, canal polygons, lakes, reservoirs and the sea from one another.

Junction features will be placed:

* separating double line watercourses from other water bodies such as lakes and reservoirs.
* separating waterbody polygons of the same class but with different attributes.
* closing the mouth of rivers (waterbodies).
* filling the coastal gaps in the framework layer.



Diagram 4: Junctions

Cross border data is not subject to the same data structures or accuracy as the content within Victoria. This is due to the differences in the data models between the States.

# Reference systems

Vicmap Hydro is mapped to the Geocentric Datum of Australia (GDA) and the Australian Height Datum (AHD). Data is held in geographic latitude and longitude computed in terms of the GDA at 01 January 1994 (GDA94).

The temporal reference system for Vicmap is the Gregorian calendar.

# Data quality

## Accuracy

Vicmap relies heavily on Custodianship Agreements or MoUs to source its data from authoritative Data Suppliers (Originators).

The spatial accuracy of data within a Vicmap product is where possible better than 1:25,000 and retains vertical alignment with other Vicmap datasets. Cartographic generalisation of features to facilitate presentation has been employed based on a hierarchy as mentioned in “Generalisations within the Data.” It is believed that all generalisations fall within the remaining 10% at 1.0mm or less at plot scale.

The following procedures are undertaken as normal update/maintenance routines, to ensure conformity of the data to specification:

* Customised menus for data editing that provide on-the-fly logical consistency attribute checking as data are edited;
* Automated data QA processes to validate topological integrity, completeness and logical consistency. DELWP reviews road name content against authoritative Custodian sources through the annual Property Information Quality Audit (PIQA);
* Automated data loading routines, reflecting business rules for data population, to ensure data accuracy;
* Independent review of data upon loading including aspatial attributes, spatial extents and successful data load;
* Validation of accepted types according to approved reference tables;
* Adoption of ICSM guidelines for incremental updates - to assist in temporal data management (features are date-stamped); and
* Validation of entity PFI/UFI tags for uniqueness.

Approximately 5% of all maintenance advice notices processed are separately audited by DELWP to confirm accuracy, completeness and correctness in the capture process.

### Data quality pointer attribute

Every feature instance has a feature quality attribute (*feature\_quality\_id*) associated with it that is linked to a record in a Feature Quality Table.

### Data quality table

This table contains information relevant to specific features such as: mapping scale, data source and reliability dates of spatial or attribute objects (Data Model Appendix B).

* The source mapping scale that indirectly provides an estimate of the horizontal positional accuracy.
The source of the data, which indicates the data capture method.
* The reliability date of the spatial object (**feat\_reli\_date**) - the date of the latest original source material where the position of a particular feature was verified.
* The reliability date of the attribute object (**att\_reli\_date**) - the date of the latest material used to verify at least one attribute value for a feature. This date will be updated with the date of the most current attribute every time a part of that object is updated

The contents and structure of the Data Quality Table are specified in Appendix B.

## Positional accuracy

The positional accuracy of spatial data is a statistical estimate of the degree to which planimetric coordinates and elevations of features agree with their real-world values.

The minimum planimetric accuracy attainable will be the sum of errors from three sources:

* The positional accuracy of source material;
* Errors due to the conversion process; and,
* Errors due to the manipulation process.

It is expressed as the standard deviation of the horizontal position of the feature that is +/-17.5m for scanned 1:25,000 scale topographic data. It is generally estimated that 90% of well defines features are within 0.7mm at 1:25,000 map scale of their true position.

Vimcap Hydro now utilises imagery to verify and validate the true position of features increasing the positional accuracy of features.

## Generalisations with the data

Cartographic generalisation of features to facilitate presentation exist based on a hierarchy as mentioned below. Projects and ongoing maintenance of Vicmap have and will continue to improve the accuracy & presentation of features. Where features are generalised, they fall within the remaining 10% at 1.0mm or less at plot scale.

Data was historically captured to 1:25,000 scale topographic specifications from compilations or negative separations. Conversion and manipulation processes have contributed to the degradation of positional accuracy of the real world spatial data. Some features have been subjected to cartographic generalisation when located on the earth’s surface so that they can be separated at the scale of map publication. To ensure cartographic clarity, one feature has been held in correct position and the rest are displaced.

At capture stage, a hierarchy determined which features were held in correct position. This hierarchy (see below) has been used when one or more adjacent features would have resulted in over-printing at publication scale. Natural features are placed higher in the hierarchy:

1. Hydrographic lines (coastline, watercourses and water bodies)
2. Railways
3. Principal roads
4. Secondary roads
5. Minor roads, tracks
6. Buildings and other point symbols
7. Vegetation boundary

### Mapping data generalisation

* River and road coincide at the scale of compilation- the road is displaced.
* Where two or three features are close and adjacent, one may be displaced by up to 25m at 1:25,000 scale. Such displacement must maintain the correct alignment of one feature to the other.
* Point features such as buildings in close proximity to linear features are displaced in a way that retains their positional relationship relative to other features.

After displacement, these symbolised features will not remain within accuracy tolerances and therefore cannot be included in accuracy tests.

### Vector data generalisation:

Line string-vector specifications stipulate maximum distance between two points (0.25mm) and thinning

of arcs applied according to the degree of curvature of the line strings. For three successive points, if

the mid-point is less than 0.10mm off-line it should be discarded. Points diverging greater than 0.10mm

are stored.

* General rules associated with data capture determined whether features were to be drawn to scale to form polygons or were to be symbolised as a point eg. point symbols used for water areas less than 50m across in size (ground scale) otherwise drawn to scale at full supply level.
* Connectors arbitrarily applied to join streams through water areas eg. connector through a lake does not follow topography.
* Post capture amendments added to suit model criteria not positional accuracy eg. Stream connection to river in flat area.

## Completeness

Completeness is measured by carrying out a visual comparison of symbolised plots of the data over plots of the source material.

Various projects, selected area updates, undertaken over certain years have contributed to validation and update of data content bringing about a level of confidence in the completeness of various feature items. Reliability figures indicating completeness of content between the data set and real world.

Estimated completeness of content with respect to:

|  |  |  |
| --- | --- | --- |
| **Feature type** | **Feature** | **Completeness** |
| Polygon | Lake, flat, wetland, pondage | 95% |
| point | Waterhole, pond, natural pool, dam | 70% |
| point | Waterfall, rapid | 90% |
| Line | Stream, river, channel | 90% |
| Point | Buoy, beacon, rock, wreck | 80% |
| Polygon | Lock, marina, breakwater, wharf | 80% |

Table 2: Vicmap Hydro percentage of completeness by feature type.

## Logical consistency

The allowable error in logical consistency ranges between 1% (new data additions) to 5% (pre-maintenance contract data). Logical consistency is a measure of the degree to which data complies with the technical specification. The test procedures are a mixture of software scripts and on-screen, visual checks.

# Data capture

Created in 2000 the original line work and points for Vicmap Hydro were derived from the Department’s digital topographic map base at a capture scale of 1:25,000.

Vicmap relies on the agreements and MoU’s signed with authoritative Custodians, through the *Vicmap Custodianship Program*, for its data.

The Department may also use imagery to improve the accuracy and completeness of a dataset in absence of an authoritative Custodian.

Examples of Custodians and/or those that may supplement or verify Vicmap data are listed below:

* Federal, State and Local Government
* Aboriginal Victoria
* Government agencies and authorities (e.g. Parks Victoria, Melbourne Water, VicRoads)
* Registrar of Geographic Names – Department of Environment, Land, Water, and Planning
* Crown Land Management – Department of Environment, Land, Water, and Planning
* Fire Management - Department of Environment, Land, Water, and Planning
* Emergency & Essential Services, and
* Utility companies & Water boards.

# Data maintenance

Vicmap can change under one of the following two terms:

* *Vicmap maintenance -* The incorporation of new data to an existing dataset via an M1, spatial change requests or scheduled Custodial supply. No changes are made to the data or object model, therefore does not require change management processes. Additions can be seen in the weekly Vicmap update.
* *Vicmap improvements –* changes to a dataset that may see existing data over a large area replaced and/or may require the data model changed. Vicmap Improvement must be managed through the Vicmap Change Management Committee and are typically carried out as part of a project requiring additional funding. and may reinvolve a new Custodial data requiring change management.

DELWP obtains updates to data from authoritative Custodians at various intervals based on the agreed Custodianship arrangements (i.e. quarterly, yearly and ad hoc). Updates are incorporated into Vicmap daily and made available weekly: noting that Vicmap data are never deleted, only retired and archived for legal purposes. Data is date stamped to reflect the last time the record was verified.

Reported errors or omissions are verified with the authoritative source before a change is made. Most notifications regarding anomalies are received via the Notification for Editing Service (NES) and once verified will be incorporated into Vicmap. Feedback from users and stakeholders, including emergency services dispatch providers, ensures that the highest standards are maintained.

Approximately 5% of all maintenance advice notices processed are separately audited by DELWP to confirm accuracy, completeness and correctness in the capture process.

Cross border data is maintained to a limited extent into New South Wales and South Australia to assist primarily emergency and essential service activities. A cross border agreement between the State Government departments manages the relationship and distribution of this data. Data is updated on an annual basis subject to funding being available. The data made available to DELWP is subject to the maintenance regime of the relevant jurisdiction and their respective quality, accuracy and completeness specifications which may differ from Vicmap.

# Data product delivery

## Access & licensing

**Data ava**i**lable under the DataVic policy** [www.data.vic.gov.au](http://www.data.vic.gov.au)

Vicmap Hydro is freely available through the Victorian Government Data Directory (VGDD) at [www.data.vic.gov.au](http://www.data.vic.gov.au) under a Creative Commons Attribution 4.0 Australia license.

The Victorian Government Data Directory also provides details such as:

* Timetable for release
* Usage and availability restrictions
* License restrictions and conditions
* Access constraints
* Exclusion of liability
* Supply and media formats
* Projections.

Cross boarder data is restricted to internal and emergency services use and therefore not openly available.

Vicmap is also available through a network of Data Service Providers listed at: <https://www.land.vic.gov.au/maps-and-spatial/spatial-data/how-to-access-spatial-data>

Historical versions of Vicmap data is only available under special and exceptional circumstances, such as a legal proceeding, and may incur an administration fee.

# Metadata

The metadata, abstract, and preview for the datasets within Vicmap products can be viewed at Spatial DataMart (SDM) located at [www.delwp.vic.gov.au/datasearch](http://www.delwp.vic.gov.au/datasearch) by searching for the ANZLIC ID.

# Appendix A: Data & object models

Vicmap data models can be located at [https://www.land.vic.gov.au/maps-and-spatial/spatial-data/vicmap-catalogue](https://www.land.vic.gov.au/maps-and-spatial/spatial-data/vicmap-catalogue%20)



# Appendix B: Data dictionary

This section sets out the layers, entities, attribute tables, and fields within these tables that comprise the Vicmap Hydro product.

## General reference classes

### Class: feature\_quality

**Definition**: Defines accuracy and other quality information pertaining to this spatial feature

**Features**: Aspatial

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Definition** | **Data Type** | **Code List** | **Key** | **Mandatory** |
| id | Identifier for the feature quality record | number |  | yes | yes |
| feat\_reli\_date | reliability date for spatial features | date |  |  | yes |
| attr\_reli\_date | reliability date attribute | date |  |  | yes |
| plan\_accuracy | plan accuracy | real |  |  | yes |
| elevation\_accuracy | elevation accuracy | real |  |  | yes |
| data\_sour\_code | Source Code | number |  |  | yes |
| scale | VICMAP Digital data scale indicating position accuracy | number |  |  | yes |
| create\_date | Date the record was created on | date |  |  | yes |

LOOK UP TABLE CODELISTS APPLICABLE:

### Data source code

|  |  |
| --- | --- |
| **Source** | **Source Description** |
| 1 | MMBW |
| 10 | MELWAYS/UBD  |
| 20 | VICROADS |
| 21 | VICROADS - DESIGN |
| 30 | DNRE |
| 31 | DNRE - TOPOGRAPHIC |
| 32 | DNRE - PROPERTY |
| 40 | LOCAL GOVERNMENT AUTHORITIES |
| 50 | EMERGENCY SERVICES/BEST |
| 60 | WATER AUTHORITIES |
| 70 | FIELD DATA CAPTURE |
| 80 | SATELLITE IMAGERY |
| 81 | AERIAL PHOTOGRAPHY |
| 90 | NSW – LAND INFORMATION CENTRE |
| 999 | UNKNOWN |

### Derivation of planimetric accuracy

Standard deviations proposed to be adopted as detailed below:

### Feature Quality Class Attributes

| **scale** | **source** | **theoretical plan\_acc** | **Formula Used** | **adopted plan\_acc** |
| --- | --- | --- | --- | --- |
| 40 | 1, 32 (cadas) | 0 | scale\*0.00063 | 0.5 |
| 480 | 1, 32 | 0.3 |  | 0.5 |
| 500 | 1, 32 | 0.3 |  | 0.5 |
| 1000 | 1, 32 | 0.6 |  | 1 |
| 2500 | 1, 32 | 1.6 |  | 2 |
| 5000 | 1, 32 | 3.2 |  | 4 |
| 7500 | 1, 32 | 4.7 |  | 5 |
| 10000 | 1, 32 | 6.3 |  | 10 |
| 20000 | 1, 32 | 12.6 |  | 15 |
| 25000 | 1, 32 | 15.8 |  | 20 |
| 50000 | 1, 32 | 31.5 |  | 35 |
| 40 | 31 (topo) | 0 | scale \* 0.00033 | 0.5 |
| 480 | 31 | 0.2 |  | 0.5 |
| 500 | 31 | 0.2 |  | 0.5 |
| 1000 | 31 | 0.3 |  | 0.5 |
| 2500 | 31 | 0.8 |  | 2 |
| 5000 | 31 | 1.7 |  | 3 |
| 7500 | 31 | 2.5 |  | 4 |
| 10000 | 31 | 3.3 |  | 6 |
| 20000 | 31 | 6.6 |  | 11 |
| 25000 | 31 | 8.3 |  | 14 |
| 50000 | 31 | 16.5 |  | 28 |
|  | All other sources | scale \* 0.00033 |  | Round up to appropriate whole metre |
| 9999999 |  | 9999 |  | 9999 |
|  |  |  |  |  |

### Data Source Class Attributes

**Class:** data\_source

**Definition:** The source of the data in this dataset

**Features**: Aspatial

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Definition** | **Data Type** | **Code List** | **Key** | **Mandatory** |
| code | Source code | number |  | yes | yes |
| name | Data source name | character |  |  | yes |
| description | Source description | character |  |  | no |

### Data Layer Class Attributes

Class: Layer

Definition: The layer to which the features belong

**Features**: Aspatial

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Definition** | **Data Type** | **Code List** | **Key** | **Mandatory** |
| Code | Layer code | number |  | yes | yes |
| Name | Layer name | character |  |  | yes |
| Description | Layer description | character |  |  | no |
| theme\_code | Theme code | character |  |  | yes |

### Data Theme Class Attributes

Class: Theme

**Definition**: The Theme to which the features belong

**Features**: Aspatial

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Definition** | **Data Type** | **Code List** | **Key** | **Mandatory** |
| Code | Theme code | number |  | yes | yes |
| Name | Theme name | character |  |  | yes |
| Description | Theme description | character |  |  | no |

### Named Feature Class Attributes

Class: named\_feature

**Definition**: The list of all names of features used within Victoria, with linkages to the official Place Names Register maintained by Land Victoria.

**Features**: Aspatial

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Definition** | **Data Type** | **Code List** | **Key** | **Mandatory** |
| Id | Unique name id within Vicmap Digital (Roads & Topographic) | number |  | yes | yes |
| Name | Name  | character |  |  | yes |
| Place\_name\_pid | Foreign key to Victorian Place Names Register | number |  |  | yes |
| create\_date | Date the record was created on | date |  |  | yes |

**Alternate Name Class Attribute**

Class: alternate\_name

**Definition**: The list of alternative names applicable to features. Names may or may not occur in the Place Names Register.

**Features:** Aspatial

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Definition** | **Data Type** | **Code List** | **Key** | **Mandatory** |
| id | Unique name id for features with a unique combination of primary and alternate names | number |  | yes | yes |
| name | Name | character |  |  | yes |
| create\_date | Date the record was created on | date |  |  | yes |

## Theme – Layer – Entity Relationship

The table below details the entities associated with the Hydrographic Theme/Layer.

| **Theme** | **Layer** | **Feature type** | Included Entities |
| --- | --- | --- | --- |
| HYDROGRAPHIC | Watercourse | Line | Watercourse |
|  |  |  | Connector |
|  |  |  |  |
|  | Water Area  | Polygon | Lake |
|  |  |  | Flat |
|  |  |  | Wetland |
|  |  |  | Pondage |
|  |  |  | Watercourse Area |
|  |  |  | Reservoir |
|  | Waterbody Area Line | Line | Shoreline |
|  |  |  | Junction |
|  |  |  |  |
|  | Water Point | Point | Rapids |
|  |  |  | Spring |
|  |  |  | Waterfall |
|  |  |  | Waterbody point |
|  |  |  |  |
|  | Navigation Point | Point | Buoy |
|  |  |  | Beacon |
|  |  |  | Rock |
|  |  |  | Wreck |
|  |  |  |  |
|  | Navigation Line | Line | Reef Ledge |
|  | Water Structure Line | Line | Wharf |
|  |  |  | Breakwater |
|  |  |  | Launching Ramp |
|  |  |  | Dam wall |
|  |  |  | Dam wall road |
|  |  |  | Causeway |
|  |  |  | Lock |
|  |  |  | Pipeline |
|  |  |  |  |
|  | Water Structure Area | Polygon | Dam Batter |
|  |  |  | Spillway |
|  |  |  | Marina |
|  |  |  |  |
|  | Water Structure Point | Point | Well |
|  |  |  | Tank |
|  | Water Area Fuzzy | Polygon | Bay |
|  |  |  | Beach |
|  |  |  | Bend |
|  |  |  | Entrance |
|  |  |  | Inlet |
|  |  |  | Passage |
|  |  |  | Reach |
|  |  |  | Sea |

### Spatial Feature Class Common Attributes

**Class: spatial\_feature**

Definition: A spatial feature within the dataset

Features: Spatial

| **Name** | **Definition** | **Data Type** | **Key** | **Mandatory** | **Unique** |
| --- | --- | --- | --- | --- | --- |
| PFI | VICMAP Digital unique identifier for a feature over time (common to all versions of a single feature) | number | yes | yes |  |
| UFI | VICMAP Digital unique identifier for a feature  | Number | yes | yes | yes |
| feature\_type\_code | feature code to identify feature type | Character |  | yes |  |
| named\_feature\_id | Feature Name Identifier for the feature | number |  |  |  |
| feature\_quality\_id | Identifier for the feature quality record | number |  | yes |  |
| create\_date\_pfi | Date the PFI was originally created  | date |  | yes |  |
| superseded\_pfi | PFI of feature before merge or split operation | number |  |  |  |
| create\_date\_ufi | Date the UFI was created on | date |  | yes |  |

### Feature Coding Conventions

Meaningful alphanumeric feature codes will be held directly on the spatial features to assist in data maintenance. In a number of instances, feature codes will be expanded to inherently hold some ‘type’ attributes, that are normalized in the Land Victoria Unified Data Store model. Type attributes in the Hydrographic Theme have been absorbed using this approach as per the following Table.

| **Aggregated Feature** | **Type Attribute** | **Entities** | **Feature Type Codes** |
| --- | --- | --- | --- |
| Water Area  | Waterbody\_type |  |  |
|  |  | Lake | wb\_lakewb\_lake\_saltreservoir |
|  |  | Flat | flat\_sti |
|  |  | Wetland\_type | wetlandwetland\_swamp |

Hydrography Feature Codes incorporating type

### Incremental Update Attributes:

The following Attributes for the new Incremental Update Model for VDRT are:

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Description** |
| PFI | Number | Persistent Feature Identifier |
| Create\_date\_PFI | Date | Date that PFI originally created |
| Retire\_date\_PFI | Date | Date that PFI retired as a result of merge, split, or feature discontinuance (deletion) |
| Superceded\_PFI | Number | PFI of feature before merge or split operation |
| Create\_Type\_code | Varchar | Type of action that caused creation of feature |
| UFI | Number | Unique Feature Identifier – assigned at every feature creation or edit |
| Create\_date\_UFI | Date | Date that UFI created |
| Retire\_date\_UFI | Date | Date that UFI retired |
| Superceded\_UFI | Number | Value of UFI on the feature prior to last edit |
| Change\_Type\_code | Varchar | Type of edit undertaken on feature at last edit |

Table 1: Proposed VDRT Incremental Update Attributes – Spatial Tables

In addition all **LINKAGE** tables will have the following items:

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Data Type** | **Description** |
| UFI | Number | Unique Feature Identifier – assigned at every feature creation or edit |
| Create\_date\_UFI | Date | Date that UFI created |
| Retire\_date\_UFI | Date | Date that UFI retired |

# Appendix C: Database tables

## Layer – Entity Relationships

This document sets out the layers, entities, attribute tables, and fields within these tables, that comprise the Vicmap Hydro. Those tables containing information are indicated below.

Table below details the feature types, entity types and attributes applicable to each of the layers within the Hydrography theme.

| **Layer** | **Geometric Type** | **Included Entities** | Class Specific Attributes |
| --- | --- | --- | --- |
| Watercourse | Line | WatercourseConnector | nameoriginconstructionusagehierarchy |
| Water Area | Polygon | Watercourse Area | nameoriginwater\_use\_functionwaterbody\_state |
|  |  | Lake |  |
|  |  | Flat |  |
|  |  | Wetland | Waterbody\_state |
|  |  | Pondage | pond function |
|  |  | Reservoir |  |
| Water Area Boundary  | Line | Shorelinejunction |  |
| Water Point | Point |  | rotationname |
|  |  | Spring | origin |
|  |  | Waterbody point | originfunctionwaterbody state |
|  |  | Rapids |  |
|  |  | Waterfall |  |
| Navigation Point | Point |  |  |
|  |  | Buoy | beacon\_presentlighted |
|  |  | Beacon | beacon\_typelighted |
|  |  | Rock | beacon\_presentsurface\_relationship |
|  |  | Wreck | Buoyedbeacon\_presentsurface\_relationship |
| Navigation Line | Line | Reef Ledge | namereef typesurface\_relationship |
| Water Structure Line | Line |  |  |
|  |  | Lock |  |
|  |  | Marina |  |
|  |  | Breakwater |  |
|  |  | Wharf | construction\_type |
|  |  | Launching Ramp | construction\_type |
|  |  | Dam Wall | related\_feature\_uficonstruction\_type |
|  |  | Pipe water underground | related\_feature\_uficonstruction\_type |
|  |  | Spillway | related\_feature\_ufistructure type |
| Water Structure Area | Poly | Tank water | construction\_type |
|  |  | Dam Batter | construction\_type |
|  |  | Spillway | structure type |
| Water Structure Point | Point | Lock |  |
|  |  | Well | substance\_extractedstructure\_type |
|  |  | Watering place | structure\_type |
|  |  | Tank water | structure\_type |
|  |  |  |  |

## Watercourse (LINE)

**Summary information**

|  |  |
| --- | --- |
| **Description** | A way or course through which water may or does flow. |
| **Entity** | Watercourse |
| **Included terms** | Anabranch, aqueduct, braided, stream, canal, channel, creek, culvert, ditch, drain, flume, gully, race, river, river bed, rivulet, stream, tributary |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Conforms |

TABLE: HY\_WATERCOURSE

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| ORIGIN | VARCHAR2 | 1 | Y | Code to indicate whether a watercourse is natural or man-made |
| CONSTRUCTION | VARCHAR2 | 1 | Y | Code to indicate whether a watercourse is a drain or channel |
| USAGE | VARCHAR2 | 1 | Y | Code to indicate the use made of the watercourse |
| HIERARCHY | VARCHAR2 | 1 | Y | Code to indicate the importance/size of a watercourse |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| watercourse\_river | RIVER |
| watercourse\_stream | STREAM |
| watercourse\_channel | CHANNEL/AQUEDUCT (Major) |
| watercourse\_channel\_drain | DRAIN/CHANNEL |
| watercourse\_drain | DRAIN |
| connector\_river | Connector through natural water (river) areas |
| connector\_stream | Connector through natural water (stream) areas |
| connector\_channel | Connector through man-made double-sided channels |
| connector\_drain | Connector through man-made double-sided drains |
| connector\_structure | Connector through water structures (pipes & spillways) |

LOOK UP TABLE CODELISTS APPLICABLE:

**Origin**

|  |  |
| --- | --- |
| Code | Description |
| 1 | natural |
| 2 | man-made |

Construction

|  |  |
| --- | --- |
| Code | Description |
| 1 | drain |
| 2 | channel |

**Usage**

|  |  |
| --- | --- |
| Code | Description |
| 1 | drainage |
| 2 | irrigation |
| 3 | water supply |

Hierarchy

|  |  |
| --- | --- |
| Code | Description |
| H | High or major importance feature  |
| M | Medium or moderate importance feature |
| L | Low or minor importance feature |

## Water Area (polygon)

**Summary information**

|  |  |
| --- | --- |
| Description | Watercourse entity with polygonised area. |
| Entity | Watercourse Area |
| Included terms | Double-sided stream |
| Entity Type | Aspatial - Polygon |
| ICSM Conformance | Unknown |

|  |  |
| --- | --- |
| Description | A inland area of standing water on a permanent basis, a lake bed containing water intermittently. |
| Entity | Lake |
| Included terms | billabong, clay pan, earth tank, intermittent lake, lake, dam, pool (natural), pond, reservoir, salt lake, waterhole, waterbody |
| Entity Type | Aspatial - Polygon |
| ICSM Conformance | New entity |

|  |  |
| --- | --- |
| Description | A level tract which may be subject to inundation on a regular or irregular basis. |
| Entity | Flat |
| Included terms | coastal flat, intertidal flat, land subject to inundation, saline coastal flat, salt marsh, salt pan, tidal flat |
| Entity Type | Aspatial - Polygon |
| ICSM Conformance | Conforms |

|  |  |
| --- | --- |
| Description | A vegetated area which is inundated or saturated with water. |
| Entity | Wetland |
| Included terms | lignum swamp, marsh, reed bed, swamp |
| Entity Type | Aspatial - Ploygon |
| ICSM Conformance | Conforms |

|  |  |
| --- | --- |
| Description | All areas of shallow water with walls or banks created for a specific purpose. |
| Entity | Pondage |
| Included terms | aeration beds, cooling pond, filtration beds, salt evaporation pool, settling pond, sewerage pond |
| Entity Type | Aspatial - Polygon |
| ICSM Conformance | Conforms |

|  |  |
| --- | --- |
| Description | An artificial or natural body of water for the storage, regulation, and control of water for domestic or other use |
| Entity | Reservoir |
| Included terms |  |
| Entity Type | Aspatial - Polygon |
| ICSM Conformance | New entity |

TABLE DESCRIPTIONS: HY\_WATER\_AREA\_POLYGON

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| ORIGIN | VARCHAR2 | 1 | Y | Code to indicate whether a watercourse is natural or man-made |
| WATER\_USE\_FUNCTION | VARCHAR2 | 1 | Y | Code to indicate the functional use of the waterbody |
| WATERBODY\_STATE | VARCHAR2 | 1 | Y | Code to indicate the perenniality of a waterbody |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

TABLE: HY\_WATER\_AREA\_CENTROID

TABLE DESCRIPTION:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| POLYGON\_UFI | NUMBER | (20,0 ) | Y | UFI of the Polygon to which the Centroid relates |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| wb\_lake | Lake/Dam  |
| wb\_lake\_salt | Salt Lake |
| reservoir | Reservoir |
| flat\_sti | Area subject to inundation |
| pondage | Pondage |
| pondage\_saltpan | Salt Pan / Evaporator |
| pondage\_sewerage | Sewage Filtration Beds |
| wetland\_swamp | Swamp |
| wetland\_mangrove | Mangroves |
| watercourse\_area\_river | Watercourse area (natural double sided stream) |
| watercourse\_area\_channel | Large man-made channel |
| watercourse\_area\_drain | Large man-made drain |
|  |  |

LOOK UP TABLE CODELISTS APPLICABLE:

**Origin**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | natural |
| 2 | man-made |

**Water\_use\_function**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Water Supply |
| 2 | Flood Control |
| 3 | Salt Evaporation |
| 4 | Sewerage |
| 5 | Tailing Dam |
| 6 | Cooling Ponds |
| 7 | Drainage |
| 8 | Irrigation |
| 9 | Recreation |

**Waterbody\_state**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Intermittent |
| 2 | Perennial |

## Water Area line (line)

**Summary information**

|  |  |
| --- | --- |
| **Description** | Water Area Boundary with shoreline datum at full supply level. |
| **Entity** | Water Area Line |
| **Included terms** | shoreline |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Extends ICSM definition |

|  |  |
| --- | --- |
| **Description** | A linear feature, which is an artificial line used to separate adjacent polygon areas across which flow can occur. |
| **Entity** | Junction |
| **Included terms** |  |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Extends ICSM definition |

TABLE: HY\_WATER\_AREA\_LINE

TABLE DESCRIPTION:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| UFI\_LEFT | NUMBER | (20,0 ) | Y | UFI of the Polygon object on the left side of the segment |
| UFI\_RIGHT | NUMBER | (20,0 ) | Y | UFI of the Polygon object on the right side of the segment |
| RELATED\_FEATURE\_UFI | NUMBER | (20,0 ) | Y | UFI of Related Feature |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| junction | Junction |
| shoreline | Shoreline |

## Water Point (point)

**Summary information**

|  |  |
| --- | --- |
| **Description** | Lake entity with point representation. |
| **Entity** | Waterbody Point |
| **Included terms** | Farm dam, pool (natural), pond |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Unknown |

|  |  |
| --- | --- |
| **Description** | The place where water issues from the ground naturally. |
| **Entity** | Spring |
| **Included terms** | hot spring, mineral spring, seep, soak |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | An area of broken, fast flowing water in a stream, where the slope of the bed increases (but without a prominent break of slope which might result in a cascade or waterfall), or where a gently dipping bar of harder rock outcrops. |
| **Entity** | Rapids |
| **Included terms** | cascade |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | The sudden descent of water over a step or ledge in the bed of a river. |
| **Entity** | Waterfall |
| **Included terms** | falls , cataract |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Unknown |

TABLE: HY\_WATER\_POINT

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| ORIGIN | VARCHAR2 | 1 | Y | Code to indicate whether a watercourse is natural or man-made |
| WATER\_USE\_FUNCTION | VARCHAR2 | 1 | Y | Code to indicate the functional use of the waterbody |
| WATERBODY\_STATE | VARCHAR2 | 1 | Y | Code to indicate the perenniality of a waterbody |
| ROTATION | NUMBER | (7,2 ) | Y | Rotation in degrees to indicate the symbol orientation for a feature |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| rapid | RAPIDS |
| spring | SPRING (natural) |
| waterfall | WATERFALLS |
| wb\_dam | WATERHOLE / DAM / POND / POOL (natural) |

LOOK UP TABLE CODELISTS APPLICABLE:

**Origin**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | natural |
| 2 | man-made |

**Water\_Use\_Function**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Water Supply |
| 2 | Flood Control |
| 3 | Salt Evaporation |
| 4 | Sewerage |
| 5 | Tailing Dam |
| 6 | Cooling Ponds |
| 7 | Drainage |
| 8 | Irrigation |
| 9 | Recreation |

**Waterbody\_state**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Intermittent |
| 2 | Perennial |

## Navigation Line (line)

Summary information

|  |  |
| --- | --- |
| **Description** | A ridge or shelf, usually of rock or coral, lying near the surface of the sea, which may be visible at low tide but is usually covered or awash at high tide |
| **Entity** | Reef Ledge |
| **Included terms** | ledge, reef, rock ledge, shore platform, shore reef, submerged reef, wave-cut platform |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | New entity |

TABLE: HY\_NAVIGATION\_LINE

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| REEF\_TYPE | VARCHAR2 | 1 | Y | Code for Type of Reef |
| SURFACE\_RELATIONSHIP | VARCHAR2 | 1 | Y | Code to indicate surface relationship of navigation hazard |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| reef | Reef/ledge |

LOOK UP TABLE CODELISTS APPLICABLE:

**Reef\_type**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Offshore Reef |
| 2 | Shore Platform |

**Surface\_relationship**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Submerged at low tide |
| 2 | Exposed at low tide |

## Navigation Point (POINT)

**Summary information**

|  |  |
| --- | --- |
| **Description** | A fixed signal, mark or light and associated facilities erected for the guidance of mariners or airplane pilots |
| **Entity** | Beacon |
| **Included terms** | Aeronautical beacon, Approach lights, Channel light, Channel marker, Leading light, Lighthouse, Navigation light, Pile beacon, VOR beacon (N) |
| **Entity Type** | Spatial- Point |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A float moored or anchored in water |
| **Entity** | Buoy |
| **Included terms** | Anchorage, buoy, bell buoy, cable buoy, channel buoy, dredging buoy, fairway buoy, fishnet buoy, mooring buoy, spoil ground buoy, wreck buoy |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | An isolated rock formation or monolith |
| **Entity** | Rock |
| **Included terms** | Awash rock, Bare rock, Boulder, Rock stack (N), Tor |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A wrecked vessel, either submerged or visible, which is attached to or foul of the bottom or cast up on the shore |
| **Entity** | Wreck |
| **Included terms** | Stranded wreck, Sunken wreck, Wreck site |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

TABLE: HY\_NAVIGATION\_POINT

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| BEACON\_PRESENT | VARCHAR2 | 1 | Y | Code to indicate presence of a beacon on a navigation feature |
| LIGHTED | VARCHAR2 | 1 | Y | Code to indicate whether a navigation feature is lighted |
| BEACON\_TYPE | VARCHAR2 | 1 | Y | Code for type of Beacon |
| SURFACE\_RELATIONSHIP | VARCHAR2 | 1 | Y | Code to indicate surface relationship of navigation hazard |
| BUOYED | VARCHAR2 | 1 | Y | Code to indicate the presence of a Buoy on a navigation feature |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| beacon | LIGHTHOUSE/BEACON |
| buoy | BUOY |
| rock\_bare | ROCK (bare & awash) |
| wreck | SHIPWRECK |

LOOK UP TABLE CODELISTS APPLICABLE:

**Beacon Present**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 0 | No Beacon Present |
| 1 | Beacon Present |

**Lighted**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Lighted |
| 2 | Unlighted |

**Beacon\_type**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 0 | no beacon |
| 1 | Aeronautical Beacon |
| 2 | Approach Lights |
| 3 | Channel Light |
| 4 | Channel Marker |
| 5 | Leading Light |
| 6 | Lighthouse |
| 7 | Navigation Light |
| 8 | Pile Beacon |
| 9 | VOR Beacon |

**Surface\_relationship**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Submerged at low tide |
| 2 | Exposed at low tide |

**Buoyed**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 0 | No Buoy Present |
| 1 | Buoy Present |

## Water Structure Area (POLYGON)

Summary information

|  |  |
| --- | --- |
| **Description** | Dam Batter  |
| **Entity** | Dam Batter |
| **Included terms** |  |
| **Entity Type** | Spatial - Polygon |
| **ICSM Conformance** | Unknown |

|  |  |
| --- | --- |
| **Description** | A constructed path or channel for excess water to pass over or beside a dam. |
| **Entity** | Spillway |
| **Included terms** | overflow, overflow channel |
| **Entity Type** | Spatial - Polygon |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A structure used for the storage of fluids. |
| **Entity** | Tank water |
| **Included terms** | Large elevated water tower, Large water storage tank, Large water intake tower |
| **Entity Type** | Spatial - Polygon |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A harbour facility for recreational craft where supplies, repairs and various services are available |
| **Entity** | Marina |
| **Included terms** |  |
| **Entity Type** | Spatial - Polygon |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | Facility for the treatment of water for domestic, agricultural or industrial purposes |
| **Entity** | Water Treatment Plant |
| **Included terms** |  |
| **Entity Type** | Spatial - Polygon |
| **ICSM Conformance** | Conforms |

TABLE: HY\_WATER\_STRUCT\_AREA\_POLYGON

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| CONSTRUCTION\_TYPE | VARCHAR2 | 2 | Y | Code to indicate the type of dam wall construction type |
| STRUCTURE\_TYPE | VARCHAR2 | 1 | Y | Code to indicate the type of structure used for a spillway |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

TABLE: HY\_WATER\_STRUCTURE\_AREA\_CENTROID

TABLE DESCRIPTION:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| POLYGON\_UFI | NUMBER | (20,0 ) | Y | UFI of the Polygon to which the Centroid relates |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| dam\_batter | DAM BATTER  |
| dam\_batter\_void | DAM BATTER (Void) |
| spillway | SPILLWAY |
| marina | MARINA AREA |
| tank\_water | TANK (to scale) |
| treatment\_plant | WATER TREATMENT PLANT (to scale) |

LOOK UP TABLE CODELISTS APPLICABLE:

**Construction\_type**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | barrage |
| 2 | gauging weir |
| 3 | reservoir well |
| 4 | weir |

**Structure\_type**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | overflow channel |
| 2 | wall spillway |

## Water Structure Line (LINE)

**Summary information**

|  |  |
| --- | --- |
| **Description** | A structure built to break the force of waves so as to protect a beach, harbour, or other water front facility. |
| **Entity** | Breakwater |
| **Included terms** | Boom, Quay, Seawall, Training wall, Groyne |
| **Entity Type** | Spatial \_ Line |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A barrier of earth and/or rock, concrete or masonry constructed to form a reservoir for water storage purposes or to raise the water level. |
| **Entity** | Dam Wall |
| **Included terms** | barrage, guaging weir, reservoir wall, weir |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A place for launching or retrieving boats from the water |
| **Entity** | Launching Ramp |
| **Included terms** | Launching ramp, Patent slip, Ramp, Slipway |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | An enclosure in a water body with gates at both ends to raise or lower the water level to enable vessels to pass from one level to another. |
| **Entity** | Lock |
| **Included terms** | boat lift, entrance lock, tide lock |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | Utility water pipeline |
| **Entity** | Pipeline |
| **Included terms** | siphon, water pipeline,  |
| **Entity Type** | Spatial - Line |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | Any structure on a waterfront, designed to make it possible for vessels to lie alongside and take or unload cargo, passengers etc. |
| **Entity** | Wharf |
| **Included terms** | Ferry terminal, Hovercraft landing, Jetty, Landing, Landing stage, Mole, Pens, Pier |
| **Entity Type** | Spatial \_ Line |
| **ICSM Conformance** | Conforms |

TABLE: HY\_WATER\_STRUCTURE\_LINE

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| CONSTRUCTION\_TYPE | VARCHAR2 | 2 | Y | Code to indicate the type of dam wall or coastal structure construction type |
| STRUCTURE\_TYPE | VARCHAR2 | 1 | Y | Code to indicate the type of structure used for a spillway |
| PIPELINE\_FUNCTION | VARCHAR2 | 1 | Y | Code to indicate the function of the water pipeline |
| GROUND\_RELATIONSHIP | VARCHAR2 | 1 | Y | Code to indicate the ground relationship of a pipeline |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| breakwater | BREAKWATER |
| causeway | CAUSEWAY |
| dam\_wall | Dam wall |
| dam\_wall\_road | DAM WALL WITH ROAD |
| launching\_ramp | Launching Ramp |
| lock | LOCK |
| wharf | PIER/JETTY/WHARF |
| pipe\_water | Pipeline -water |
| pipe\_water\_uground | U/G PIPELINE (Water) |

LOOK UP TABLE CODELISTS APPLICABLE:

**Construction\_type**

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | barrage |
| 2 | gauging weir |
| 3 | reservoir well |
| 4 | Weir |

Structure\_type

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Overflow Channel |
| 2 | Wall Spillway |

Pipeline\_function

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Siphon |
| 2 | Penstock |

Ground\_relationship

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | Above Ground Surface |
| 2 | Underground |

## Water Structure Point (POINT)

**Summary information**

|  |  |
| --- | --- |
| **Description** | A structure used for the storage of fluids. |
| **Entity** | Tank water |
| **Included terms** | Elevated water tank, Water storage tank,  |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

|  |  |
| --- | --- |
| **Description** | A pit or hole dug or bored into the earth for the extraction of water  |
| **Entity** | Well |
| **Included terms** | artesian bore, bore,, native well, water well |
| **Entity Type** | Spatial - Point |
| **ICSM Conformance** | Conforms |

TABLE: HY\_WATER\_STUCTURE\_POINT

TABLE DESCRIPTION:

| **COLUMN NAME** | **DATA TYPE** | **FIELD SIZE** | **NULL** | **COLUMN DESCRIPTION** |
| --- | --- | --- | --- | --- |
| PFI | NUMBER | (20,0 ) | Y | Persistent Feature Identifier |
| UFI | NUMBER | (20,0 ) | Y | Unique Feature Identifier |
| FEATURE\_TYPE\_CODE | VARCHAR2 | 30 | Y | Feature Code |
| NAME | VARCHAR2 | 50 | Y | name of a feature |
| NAMED\_FEATURE\_ID | NUMBER | (9,0 ) | Y | Unique identifier for feature name |
| STRUCTURE\_TYPE | VARCHAR2 | 1 | Y | Code to indicate the type of well, bore or watering place structure |
| PUBLIC | NUMBER | (1,0) | Y | Used for identifying water tanks (tank\_water) on public land |
| ROTATION | NUMBER | (7,2 ) | Y | Rotation in degrees to indicate the symbol orientation for a feature |
| FEATURE\_QUALITY\_ID | NUMBER | (9,0 ) | Y | Identifier for the feature quality record |
| CREATE\_DATE\_PFI | DATE | 7 | Y | Date of original Creation of Feature |
| SUPERCEDED\_PFI | NUMBER | (20,0 ) | Y | PFI of feature prior to merge or split operation |
| CREATE\_DATE\_UFI | DATE | 7 | Y | Date of Creation of Feature |

FEATURE CODES RANGES:

|  |  |
| --- | --- |
| **Feature\_Type\_Code** | **Description** |
| tank\_water | TANK (water) |
| watering\_place | WATER POINT |
| well\_water | BORE/WATER WELL |

LOOK UP TABLE CODELISTS APPLICABLE:

structure\_type

|  |  |
| --- | --- |
| **Code** | **Description** |
| 1 | artesian bore |
| 2 | brick-lined well |
| 3 | Dam |
| 4 | Stand Pipe |
| 5 | Watercourse Access |

## Water Area Fuzzy (POLYGON)

Summary information

FEATURE TYPES AND FEATURE SUBTYPES

|  |  |  |  |
| --- | --- | --- | --- |
| FEATURE TYPE | FEATURE SUBTYPE | *FEATUREdefinition* | included terms |
| marine \_place | bay | A sloping shore along water that is periodically washed by waves or tides and is usually covered in sand or gravel | cove |
| marine \_place | beach |  | shore |
| watercourse | bend | A curve in the course of a STREAM | Meander, Loop |
| marine \_place | entrance | A passageway into enclosed waters |   |
| watercourse | inlet | A small indentation in a waterline usually tapering towards its head | Arm |
| marine \_place | passage | A navigable route, specifically one through REEFS, ISLANDS, LANDS or shallow waters  | Strait, Rip, Narrows |
| watercourse | reach | A straight portion of WATERCOURSE from one BEND to another |   |
| marine \_place | sea | One of the smaller divisions of the OCEANS, especially if partly enclosed by land |  |

TABLE: HY\_WATER\_AREA\_FUZZY – FIELDS, DATA TYPES AND DESCRIPTIONS

|  |  |  |  |
| --- | --- | --- | --- |
| **Column Name** | **Data type** | **Mandatory** | **Column Description** |
| UFI | NUMBER (9) | Y |  |
| PFI | NUMBER (9) | Y |  |
| FEATURE\_ID | NUMBER (9) | Y |

|  |
| --- |
| Unique Vicmap feature identifier - intention that it be across the Vicmap themes  |

 |
| PARENT\_FEATURE\_ID | NUMBER (9) | N | PFI of the feature that represents the Parent feature  |
| FEATURE\_TYPE | VARCHAR2 (30) | Y | Feature\_Type populated as specified in the Vicmap features Catalogue  |
| FEATURE\_SUBTYPE | VARCHAR2 (30) | Y | Subtype of the Feature\_type. Feature\_subtype populated as specified in the Vicmap features Catalogue |
| NAME | VARCHAR2 (100) | N |

|  |
| --- |
| Official name as designated by Authoritative Organisation. Where the Vicnames\_ID is populated the name has been registered by Geonames  |

 |
| NAME\_LABEL | VARCHAR2 (100) | N | May just be upper and lower case  |
| PARENT\_NAME | VARCHAR2 (100) | N | Name from the Parent feature - where a parent feature exists and has a name  |
| AUTH\_ORG\_CODE | VARCHAR2 (4) | N | The code of the Authoritative Organisation where record sourced  |
| AUTH\_ORG\_ID | VARCHAR2 (30) | N | The identifier of the Authoritative Organisation's record  |
| AUTH\_ORG\_VERIFIED | DATE | N | Date field pertaining to the last verification by the Authoritative Organisation  |
| VICNAMES\_ID | NUMBER (9) | N | Geonames identifier - Geographic Names Register has a corresponding record  |
| VICNAMES\_STATUS\_CODE | VARCHAR2 (2) | N |  |
| STATE | VARCHAR2 (3) | Y |  |
| SCALE\_USE\_CODE | VARCHAR2 (1) | N |  |
| CREATE\_DATE\_PFI | DATE | Y |  |
| SUPERCEDED\_PFI | NUMBER (9) | Y |  |
| CREATE\_DATE\_UFI | DATE | Y |  |

# Appendix D: Reference tables

Vicmap Hydro should be used in conjunction with Vicmap Reference Tables to fully utilise the information it contains. Relevant reference tables include:

VMREFTAB.SCALE\_USE

Reference tables used for Hydro\_area\_fuzzy

VMREFTAB.FT\_FEATURE\_CATALOGUE

For a current version of the Vicmap Feature Catalogue (the ‘Catalogue’) click here. Search FEATURE\_CATALOGUE under **Reference Table Report** heading.

The features and sub-features types in Hydro\_area\_fuzzy are detailed in the Vicmap feature catalogue (the ‘Catalogue’)

delwp.vic.gov.au