Guidelines for Creation and Submission of ADAC

Version 5.0.2

Sunshine Coast COUNCIL

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Acknowledgements

Disclaimer

VERSION NO	DISCRIPTION & DISTRIBUTION	DATE	COMMENTS
1.0	ADAC FIRST RELEASE	2014	REVIEWED AND UPDATED
1.4	SUNSHINE COAST COUNCIL INITIAL RELEASE	03/10/2014	FOR DISTRIBUTION
2.0	SUNSHINE COAST COUNCIL DOCUMENT RESTRUCTURED AND UPDATED	03/12/2015	WEB PAGE UPDATE AND DISTRIBUTION
3.0	ASSET CAPTURE – PITS ROAD EDGE – PAVEMENT EXTENSION WSUD AREA – COMPLEX – SPILLWAYS OPEN DRAIN DIAGRAMS MANDATORY ATTRIBUTES UPDATED LANDSCAPE AREA GLOBAL ASSET ATTRIBUTION UPDATED	08/03/2017	FOR DISTRIBUTION
3.1	ROAD ISLAND / DEFINITION UPDATED	02/05/2017	
4.0	TREES – REVISED GENERAL FIXTURES - REVISED PATHWAY / CYCLEWAY – REVISED ROAD PATHWAYS - REVISED WATER SUPPLY – NEW ADDITION SEWERAGE- NEW ADDITION STORMWATER PITS - REVISED	21/08/2017	
4.1	HEADWALL / ENDWALL TYPE DEFINITION	05/10/2017	
4.2	PITS – PROFILE IMAGES WSUD COMPLEX AREA	10/10/2018	
5.0 (4.2.1)	TRAFFIC ISLANDS ACTIVITY POINT SEDIMENT FOREBAYS BARRIER CONTINUOUS SIGN	29/01/2019	FOR DISTRIBUTION
4.2.2	PROJECT ATTRIBUTION ASSET CAPTURE GUIDELINES – PARAGRAPH 3 INTRODUCTION TO ADAC XML – PARAGRAPH 7 SIGNS	31/10/2019	FOR DISTRIBUTION

	TREES			
	WATER PIPES			
	VALVES			
	STORMWATER PITS			
4.2.3	DATUM INFORMATION UPDATE TO GDA2020	07/01/2021	FOR DISTRIBUTION	
5.0.1	GLOBAL TYPES – ATTRIBUTION	13/05/2022	FOR DISTRIBUTION	
	OPEN SPACE AREA – POSITIONAL ACCURACY			
	ACTIVITY AREA – ATTRIBUTION, POSITIONAL ACCURACY			
	ARTWORK – ASSET CAPTURE			
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	BARRIER CONTINUOUS – ASSET CAPTURE, POSITIONAL ACCURACY			
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	ELECTRICAL CONDUIT – POSITIONAL ACCURACY			
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	STORMWATER PIT – ASSET CAPTURE, ATTRIBUTION, POSITIONAL ACCURACY, TABLE			
	SURFACE DRAIN - ATTRIBUTION			

|				
	WSUD COMPLEX AREA – ASSET CAPTURE, POSITIONAL ACCURACY PARKING – POSITIONAL ACCURACY PATH STRUCTURE – POSITIONAL ACCURACY PATHWAY / CYCLEWAY – ASSET CAPTURE, POSITIONAL ACCURACY PRAM RAMP - POSITIONAL ACCURACY PAVEMENT - POSITIONAL ACCURACY ROAD EDGE – ATTRIBUTION, POSITIONAL ACCURACY ROAD ISLAND - POSITIONAL ACCURACY ROAD PATHWAY - POSITIONAL ACCURACY SUB SOIL DRAIN - POSITIONAL ACCURACY ROAD SAFETY BARRIER BRIDGE EXTENT, BRIDGE DECK, BRIDGE SUPERSTRUCTURE WATER PIPE – ATTRIBUTION WATER METER – ATTRIBUTION WATER SERVICE FITTING – ATTRIBUTION WATER VALVE - ATTRIBUTION STORAGE TANK NON-PRESSURE PIPE – ATTRIBUTION PRESSURE PIPE – ATTRIBUTION			
5.0.2	MINOR UPDATE TO ELECTRICAL FITTING – ASSET CAPTURE AND MANDATORY ATTRIBUTION	19/06/2023	FOR DISTRIBUTION	

Contents

1.   Purpose

The purpose of this document is to provide practical guidelines and general assistance with respect to the creation and provision of compliant **A**sset **D**esign **A**s **C**onstructed (**ADAC**) E**X**tended **M**ark-up **L**anguage (**XML**) files which are to be provided in the latest version and approved by Sunshine Coast Council. The current version ADAC XML files are to accompany any associated bundle of "As-Constructed" plans, drawings, schedules, and associated information reflecting newly constructed infrastructure and associated assets handed over to the Sunshine Coast Council.

On completion of physical works and prior to asset being accepted on maintenance, a current version ADAC XML file of the "As Constructed" and a full set of the "Design Drawings" with the "Marked Up" As Constructed information is to be submitted for Council review and acceptance. The final "As-Constructed" data should accurately reflect material types, specifications and other asset-specific information. The digital ADAC XML file must be a complete and detailed digital record of what was constructed, as this information is used by the Council in the management of the Assets.

2.   Introduction to ADAC XML

ADAC XML files are an accompaniment to the "As-Constructed" bundle of information required by the Council as part of the final approval and handover of associated civil infrastructure and associated assets constructed.
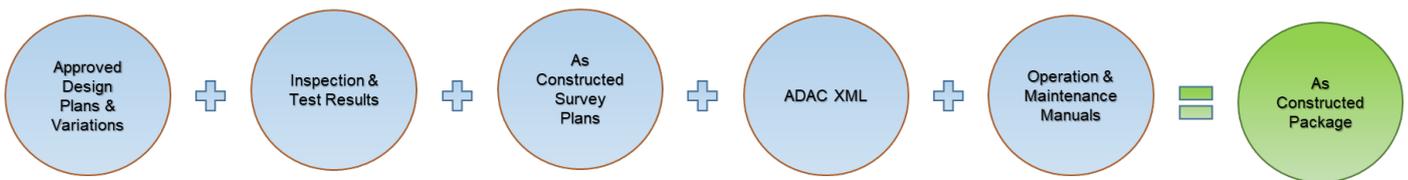
Compliant ADAC XML files contain a structured and precise digital record of the assets described in the "As-Constructed" plans and other associated engineering documentation. Details include survey-accurate cadastral and boundary references, geometries and relative levels as well as detailed records of the new assets including accompanying attribute information.

ADAC XML files may also be used as a cross-check on accuracy and completeness of the "As-Constructed" information provided. The digital files afford a further confirmation of compliance with development approval conditions as well as helping to verify engineering specifications and other design-related requirements.

Depending on the tools (XML generator) being used to generate the ADAC XML, compliant files may be initially created during survey capture and then finalised in conjunction with the creation of the "As-Constructed" drawings. Alternatively, the XML files may be generated after the electronic "As-Constructed" drawings have been finalised. It is essential that the "As-Constructed" drawings are created using complete and accurate information to correctly identify the assets and the locations being represented in the ADAC XML file.

On receipt of the "As-Constructed" bundle of information, the Council will undertake data format and conformance checks on the ADAC XML file to confirm the completeness and validity of the details.   Should significant anomalies, errors or missing information be identified during these checks, the ADAC XML file(s) may be returned to the provider for correction and resubmission in accordance with applicable conditions, potentially delaying the progress of the asset handover.

Once the ADAC XML file(s) are accepted by the Council, they are then uploaded to various internal systems and used to assist in the long-term management of the infrastructure. The detailed asset and location data is also available to external agencies in the future via various digital formats.

Please also note that some asset types are common to multiple asset classes (e.g. lighting fixtures designed and used for the purposes of either park or street lighting). In those cases, recording assets in a different asset class (Open Space vs Transport) is valid and appropriate when generating the ADAC XML file. This example would see streetlight fittings added to the ADAC XML file under the asset class of Open Space.

3. General Requirements

The ADAC XML file shall be produced using the most recent ADAC XML schema release (at the date of this document release Version 5.0.1) and should be "validated" for compliance before being submitted to Council. Details on the data schema (attributes and required status) describing the asset classes and sub-classes to be addressed by the ADAC capture process can be found throughout this document.

4. Datum Information

Data contained in the ADAC XML file(s) must reflect the survey details of the assets, exactly as found in the real world and as accurately reflected in the "As-Constructed" drawings. Unless otherwise specified, survey details must be derived from permanent survey marks (PSMs), with Map Grid of Australia (MGA Zone 56 – GDA2020) co-ordinates and AHD levels to be to fourth order standard as defined by ICSM Standard for the Australian Survey Control Network Special Publication 1 (SP1) Version 2.0 October 2013.

5. Asset Capture Guidelines

The following section is intended to provide guidance on the capture of assets within the ADAC XML in a manner which is acceptable to Sunshine Coast Council.

The physical nature of assets will determine where/if assets are captured separately within the ADAC XML file. For example, a pathway would be captured as individual and separate features to reflect any changes in physical properties, such as width or material type. Where possible, diagrams and images have been supplied in this document to assist in asset capture. The required attribution required by council is specified for each of the asset types below. The required element is the minimum data required however Council will accept the inclusion of Non required elements in the submission.

This guideline is structured in alignment with the ADAC asset group data structure. However, for the purpose of ADAC submission to Council, the asset group headings do not represent a location restriction. ie. Transportation pathway/cycle ways must be collected in road corridor and open space regardless of group heading.

5.1 Project Attribution

For ADAC XML files, the following attribution is included as header-level information within the schema.

Attribute	Notes
ExportDateTime	Should be auto populated from the xml generating software.
Name	Should be populated with the Project Name for Capital Works or Development Name and Stage for Development Approvals.
Owner	This is not required to be provided at the project level, as it is a mandatory attribute for each feature.
Receiver	To be recorded as **Sunshine Coast Council**

WorksApprovalID	Developer contributed project; this will be Council's reference number.
	Sunshine Coast Council Capital works projects, this will be the project number.
DrawingNumber	Drawing Number from the corresponding "As Constructed" drawings.
HorizontalCoordinateSystem	Records the particulars of the horizontal coordinate systems for the project. Must be **MGA56.**
HorizontalDatum	Records the particulars of the horizontal datum for the project. Must be **GDA2020.**
VerticalDatum	Records the particulars of the vertical datum for the project. Must be **AHD.**
Surveyor	Containing information from the certifying Surveyor.
Engineer	Containing information from the certifying Engineer.

5.2 Global Asset Attribution

<u>Mandatory Attribution:</u>   The following attribution covered under the Global Types section of ADAC is required for all assets:

Element Name	Attribute Description	Mandatory (Y/N)
Infrastructure Code	The code or number of an asset	Y
Owner	The entity that owns or is responsible for the asset. Used with the Department field to differentiate a sub-set of assets for an ADAC with multiple asset owners.	Y
DrawingNo	The drawing number of the as constructed plans	N
DrawingRevision	Date the drawing was revised. ISO 8601 is the accepted format.	N
ConstructionDate	The accepted date of construction for the whole project. Usually the project completion date. ISO 8601 is the accepted format. Date may be used to calculate remaining life in an asset management system.	Y
Department	Department is used to differentiate between assets with a common owner that need to go into separate GIS layers or asset registers	N
Surveyor	The name of the surveyor.	N
Engineer	The name of the consulting engineer	N
Status	The operational or existential status of the asset at the time the data was captured. A Project may contain a mix of planned and existing assets as well as operational and retired assets.	Y
DataQuality	Data Quality based on AS5488-2013. Classification of Subsurface Utility Information.	Y
Notes	Free text notes particular to this feature.	N
Supporting Files	Full path and filename of supporting information (e.g. drawing file, document file or image). It is recommended that the filename is relative to the URI of the ADAC XML document, E.g: ./images/image1.jpg	N

The **Infrastructure Code** element is mandatory, as it will be used to as part of Council's data validation process to identify features which are non-compliant / incomplete. There is no naming/numbering

convention defined for the Infrastructure Code, except that all features within the file should be uniquely identified.

The **Owner** is a critical element within the XML, as defines the responsibility of the asset. Please note the descriptions for each owner below:

Owner	Description
Council	Asset Management is the responsibility of Council
Private	Asset Management is the responsibility of Property Owner, Gated Community or other private entity.
State	Asset Management is the responsibility of a State Government Department

The **Status** is a critical element within the XML, as it is what the Council uses to load new and dispose existing assets into the asset register. Please note the descriptions for each status below:

Status	Description
Newly Constructed	Newly constructed asset described as constructed
Existing	Existing asset described as encountered
Designed	Future asset described as a design
Planned	Future asset prior to detailed design
Removed	Previously existing asset described as it was prior to removal
Retired	Pre-existing asset no longer in use but left in-situ.
Rehabilitated	Existing asset repaired, refitted or refurbished as part of works project.

The **Construction Date** is a critical element within the XML, as this date is used to identify when the asset is complete and accepted by Council. This date should represent when the following key components are meet:

- Construction of all works are complete
- All necessary inspections and tests have been carried out and passed
- Essential documents and information have been provided and accepted by Council

The **Notes** element should be used to record any additional information regarding the asset, or to record attribute information which isn't available within the defined enumerations in the schema.

5.3　Cadastre Assets

5.3.1　Cadastral Connection

Asset Capture:　　　　Simple linear feature capturing the cadastral connections as deduced from observations and the survey reference mark(s).

Spatial Relationship:　Must be coincident to the vertices that define the Cadastre Lot boundary features and relevant PSMs.

Mandatory Attribution:　The following attribution is required for *Cadastral Connections*:

Element Name	Attribute Description	Mandatory (Y/N)
Bearing	The bearing in decimal degrees clockwise from North in the coordinate system of this project.	Y
Distance_m	The distance in metres on the coordinate system of this project.	Y

5.3.2　Easement

Asset Capture:　　　　Multi-patched area feature representing a new or existing Easement.

Spatial Relationship:　May share boundaries with WaterCourseReserve, LotParcels or RoadReserve. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution:　The following attribution is required for *Easements*:

Element Name	Attribute Description	Mandatory (Y/N)
LotNo	The lot number as described on the originating survey plan	Y
PlanNo	The plan number of the originating survey plan.	Y

5.3.3　Lot Parcels

Asset Capture:　　　　Multi-patched area feature representing the boundary of a titled or proposed Cadastral Lot.

Spatial Relationship:　May share boundaries with RoadReserves, WaterCourses or Easements. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution:　The following attribution is required for *Lot Parcels*:

Element Name	Attribute Description	Mandatory (Y/N)
LotNo	The lot number as described on the originating survey plan.	Y
PlanNo	The plan number of the originating survey plan.	Y
CancelledLotPlan	The lot on plan cancelled by this boundary if applicable.	N
TitledArea_sqm	The area in square metres enclosed by the boundary, as described by the survey plan.	Y

5.3.4 Road Reserve

Asset Capture: Multi-patched area feature representing a gazetted or soon to be gazetted Road reserve boundary.

Spatial Relationship: May share boundaries with WaterCourseReserve, LotParcels, other RoadReserve or Easements. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution: The following attribution is required for *Road Reserves*:

Element Name	Attribute Description	Mandatory (Y/N)
Name	The name of the road reserve represented by this boundary	Y

5.3.5 Survey Mark

Asset Capture: Simple point feature representing a Permanent Survey Mark.

Spatial Relationship: May be used in a Cadastral Connection (as in lot parcels, noted above).

Mandatory Attribution: The following attribution is required for *Survey Marks*:

Element Name	Attribute Description	Mandatory (Y/N)
MarkName	The name by which the survey mark may be uniquely identified from control records.	Y

5.3.6 Water Course Reserve

Asset Capture: Multi-patched area feature representing the boundary of a Water Course reserve.

Spatial Relationship: May share boundaries with RoadReserves, LotParcels or Easements. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution: The following attribution is required for *Water Course Reserves*:

Element Name	Attribute Description	Mandatory (Y/N)
Name	The name of the watercourse reserve represented by this boundary	Y

5.3.7 Chainage Lines

Not required to be captured

5.4   Surface

5.4.1 Contour/Spot Height

Asset Capture: Contour is a linear feature capturing a single contour feature. Spot Height is a simple point feature representing a single elevation point.

Spatial Relationship: Not applicable

Non Mandatory Attribution: The following attribution is requested, but not mandatory, for *Contour/SpotHeights*:

Element Name	Mandatory (Y/N)
Status	N
Elevation_m	N

5.4.2 Breaklines

Not required to be captured

5.4.3 Profile Lines

Not required to be captured

5.5 Open Space Assets

5.5.1 Open Space Area

General Information: Open Space areas include Parks or Bushlands.

Asset Capture: Multi-patched area feature representing the complete "footprint" of the Open Space area and enclosing relevant Open Space assets. For example, parks will often align with the cadastral *Lot Parcels*, in which case the lot boundaries can be used to represent the Open Space feature. Please refer to the dashed red line in the example shown in Figure 1.

Spatial Relationship: Not applicable

Mandatory Attribution: The following attribution is required for *Open Space Areas*:

Element Name	Attribute Description	Mandatory (Y/N)
Name	The official name or description of the Open Space area (e.g.: Smith St Park, Stockland Park Sporting complex)	Y
Type	The type of Open Space area eg: Recreational, Bushland, Sporting Complex	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Open Space Areas* is **± 50mm.**

Figure 1

5.5.2   Activity Area

General Information: Examples include: Sports Fields, Courts, Playgrounds and Dog off Leash Areas.

Asset Capture: Multi-patched area feature representing different activity areas. For playgrounds, this will often align with the soft fall boundaries. For animal agility areas, this will often align with the fencing surrounding the area. For sports fields and courts, this will often align with the marked boundaries of the area, or the edge of the material. Please refer to the dashed yellow line in the example shown below in Figure 1 Representing activity areas for dedicated purposes.

Spatial Relationship: Feature must be totally within the Parent Open Space Activity Area feature.

Mandatory Attribution: The following attribution is required for *Activity Areas*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The type of use for the Activity Site eg: Animal, Fitness, Play, Sport	Y
Type	The type of Activity Site. Eg: Sports Field, Cycling Facility	Y
Material	The material type of Undersurfacing eg: Bark, Rubber, Grassed	Y
Thickness_mm	Thickness of material in millimetres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Activity Areas* is **± 50mm.**

5.5.3   Activity Point

General Information: Includes individual pieces of playground, fitness or sports equipment.

Asset Capture: Simple point feature representing individual activity assets that typically fall within an Activity Area. Playground modules should be represented as a single feature, located by its approximate centre point. Dimensions of asset are to be represented in the Notes area. Please refer to the yellow dots in the example shown in Figure 1.

Spatial Relationship: Should typically fall within a defined Activity Area feature.

Mandatory Attribution: The following attribution is required for *Activity Points*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The activity use category	Y
Type	The activity item type	Y
Material	The material type of Activity Item eg: Timber, Aluminium	Y
Theme	The theme of the Activity item. Eg: Kangaroo, Boat, Fort, Car	Y
Units	The number of units present eg: 1, 2, 3	N
Manufacturer	The Manufacturer of the unit	Y
ModelNumber	The standard code, model number or part number for the unit	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Activity Points* is **± 1m.**

5.5.4 Artwork

General Information: Includes Entry Statements, Memorials, Monuments, Plaques, and Sculptures & Statues.

Asset Capture: Simple point feature representing the centre of an asset. Please capture any dimensions into the 'Notes' field.

Given the unique design of artwork, photos should be included in the as-constructed package.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Artwork*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Artwork eg: Sculpture, Statue	Y
Material	The material type of Artwork eg: Timber, Aluminium	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Artwork* is **± 1m.**

5.5.5 Barbeque

General Information: None.

Asset Capture: Simple point feature representing the centre of the barbeque. Any hot water units, taps, lighting or shelters associated with the barbeque should be captured as separate features. The slab the barbeque is installed on is considered part of the asset and does not need to be separately captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Barbeques*:

Element Name	Attribute Description	Mandatory (Y/N)
EnergySource	The Source of energy for the BBQ. Ie: Mains, Bottled, Solar	Y
Plates	The number of plates fitted in the BBQ structure.	Y
SurroundingMaterial	The material type of the surround structure ie: brick, steel and Timber	Y
TopMaterial	The material type of the top structure ie: Tiled, marble, steel	Y
Manufacturer	The Manufacturer of the unit	Y
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Barbeques* is **± 1m.**

5.5.6 Barrier Point

Refer to Barrier Continuous

5.5.7 Barrier Continuous

General Information: Includes fences, walls, bollards, bollard runs, guardrails, pedestrian fall protection (rail) and gates.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a barrier type asset. Please refer to the dashed yellow line in the example shown below in Figure 2

A Bollard run is defined as 3 or more bollards, of the same type/material and equal spacing.

If less than 3 bollards, each bollard should be captured as a line of 0.1 metre in length.

When capturing gates, please specify the gate configuration in the **Notes** field. Gate configurations include:

- Single, Double, Boom Gate, Sliding / Roller etc.

Figure 2

Spatial Relationship: None.

Mandatory Attribution: The following attribution is required for *Barrier Continuous*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Barrier eg: General Fencing, Bollard Run, Gate	Y
UprightMaterial	The material type of Barrier Uprights eg: Timber, Steel	Y
LinkMaterial	The material type of Barrier Link Material eg: None, Chain, Wire	Y
TopMaterial	The material type of Barrier Topping Material eg: None, Timber Rail, Barbed Wire	Y
Length_m	The lineal length of the barrier in metres	Y
Height_m	The height of the barrier in metres	Y
UprightNumber	Total number of uprights in the run. For fencing, this will be the number of posts. For a bollard run, it will be the number of bollards.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Barrier Continuous* is **± 0.5m.**

5.5.8 Bicycle Fitting

General Information: None.

Asset Capture: Simple point feature representing the centre of a bicycle fitting. Any slab the bicycle fitting is installed on is considered part of the asset and does not need to be captured separately. When capturing a group of Bicycle Hopps, a single point at the centre of the group is to be captured and the quantity records in the notes.

Bicycle Hoop

Bicycle Chicane

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Bicycle Fittings*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Bicycle fitting eg: Bicycle Hoop, Bannana Rail	Y
Material	The material type of Bicycle fitting eg: Stainless Steel, Aluminium	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Bicycle Fitting* is **± 1m.**

5.5.9 Boating Facility

General Information: None.

Asset Capture: Area feature representing an individual boating facility such as ramp, pontoon or jetty.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Boating Facilities*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Boating Facility eg: Jetty, Pier	Y
Material	The material type of Boating Facility eg: Timber, Aluminium	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Boating Facilities* is **± 1m.**

5.5.10 Building

General Information: None.

Asset Capture: Area feature (closed polygon) representing the Building footprint for a structure other than a shelter.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Buildings*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Building eg: Toilet Block, Shed	Y
Material	The material type of Building eg: Timber, Brick	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Buildings* is **± 0.5m.**

5.5.11 Edging

Not required to be captured.

5.5.12 Electrical Conduit

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a conduit run.

Spatial Relationship: Conduit shown as a polyline starting and finishing at coincident points with each associated fitting.

Mandatory Attribution: The following attribution is required for *Electrical Conduits*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The conduit type eg: Medium Duty, Heavy Duty	Y
Material	The conduit material type	Y
Diameter_mm	The conduit diameter	Y
Length_m	The lineal length of the conduit in metres	Y
Protection	The type of conduit protection used eg: Concrete encased, rubber mat, tape only	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Electrical Conduits* is **± 50mm.**

5.5.13 Electrical Fitting

General Information: Includes Lights, Pits, Poles, Power Outlets and Switchboards.

Asset Capture: Simple point feature representing the centre point of the asset. The Council requires all <u>Rate 3</u> lighting installed to be included in the XML. For lights affixed to a pole, a separate Pole feature must also be captured. Bollard lighting does not require a separate Pole feature to be captured.

Rate 3 lighting poles must include the unique "W" identifier number in the notes field.

Spatial Relationship: Must be coincident to Electrical Conduit polylines. Lights with poles will have coincidence geometry.

Mandatory Attribution: The following attribution is required for *Electrical Fittings*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Electrical Component eg: Light, Switch Board, Power Outlet	Y
Base	The type of base (eg: Fixed or Slip)	Y
Material	The material type of the component eg: Aluminium, Steel	Y
EnergySource	The type of Power Source eg; Mains, Solar	Y
Manufacturer	The Manufacturer of the unit	Y
ModelNumber	The standard code, model number or part number for the unit	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Electrical Fittings* is **± 50mm.**

5.5.14 General Fixture

General Information: Includes Dog Bag Dispensers, Fish Cleaning Stations, Goal Posts, Planter Boxes, Flag Poles, Scoreboards and Landscape Features (see figure 3).

Asset Capture: Simple point feature representing the centre of an asset. Dog bag dispensers including a pole do not require the pole to be separately captured. Fish Cleaning Stations include any lighting, taps and slabs associated with it and these do not need to be captured separately. Refer to Service Fittings (5.7.3) to capture Dog Bowls.

Figure 3: Landscape Features (most common material = sandstone)

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Fixtures*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Fixture eg: Dog bag dispensers, Fish cleaning station	Y
Material	The material type of Fixture eg: Steel Powder Coated, Aluminium	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Fixtures* is **± 1m.**

5.5.15 Landscape Area

General Information: None.

Asset Capture: Multi-patched area feature representing the "footprint" of a landscaped area. Individual areas are required where the type of Landscaping changes (e.g. garden beds, grass). Only Gardens (eg. cluster of plants), Grass and Synthetic Grass are required to be included in the XML. The grassed area of the Road Reserve is not to be captured. The grassed area is considered to be part of the road verge.

To further understand the capture of these assets for SCC, the following type definitions are provided:

'Amenity Planting' = ADAC Type 'Garden'

'Rehabilitation' = ADAC Type 'Revegetation'

'Lawn' = ADAC Type 'Grass'

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Landscape Areas*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Garden/L'scape Area eg: Garden, Grass, Rem Vegetation	Y
RootBarrier	Is there a Root Barrier? Yes or No	Y
Irrigated	Is Landscaped Area irrigated? Yes or No	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Landscape Areas* is **± 0.5m.**

5.5.16 Retaining Wall

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a retaining wall. While recognised as a three-dimensional object, the retaining wall is typically captured as a linear course where the wall intersects the ground. Figure shows the capture location of a new retaining wall (red dash dot). Where the retaining wall gradually changes height over its length, the height is to be averaged over the length of the wall. Changes in retaining wall material must be represented as separate features. If the wall is a scour wall, please specify 'Scour wall' in the 'Notes' section.

Figure 4

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Retaining Walls*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	Context of use for this wall. i.e Terrestrial or Marine	Y
Material	The material/type of Retaining Wall eg: Rock, Conc. Block, Conc. Crib	Y
Construction	Construction principle of this wall (eg: Gravity, Piled, Cantilever)	Y
Length_m	The lineal length of the wall in metres	Y
Height_m	The height (or average height) of the wall in metres	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Retaining Walls* is **± 0.5m.**

5.5.17 Seat

General Information: None.

Asset Capture: Simple point feature representing the centre of a seat. Seating associated with a table are not to be captured separately. Any slab the seat is installed on is considered part of the asset and does not need to be captured separately.

Seat   Bench   Platform Seat

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Seats*:

Element Name	Attribute Description	Mandatory (Y/N)
SeatType	The configuration of the seating. Eg. Freestanding, Border	Y
Places	The number of individuals the seating is designed for. This attribute may be used to help determine the capacity of a recreational facility.	Y

Material	The material type of Table/Seat eg: Timber, Aluminium	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Seats* is **± 1m.**

5.5.18 Shelter

General Information: None.

Asset Capture: Area feature (closed polygon) representing the shelter footprint. Any lighting, tables, seats or barbeques located underneath the shelter are to be captured as separate assets. Shade sails which share a common pole should be treated as the one feature. Poles associated with shade sails / shelters do not need to be captured separately. Any slab the shelter is installed on is considered part of the asset and does not need to be captured separately.

NOTE: The ADAC Schema allows for an identical point feature capture for Shelters however that is not accepted by SCC.

Given the unique design of many shelters, photos should be included in the as-constructed package.

Gable Pitched Shelter

Skillion Shelter

Shade Sails

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Shelters*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of structure eg: Sail, Rigid	Y
ConstructionType	The type of shelter constructed eg: Prefab or Built insitu	Y
FloorMaterial	The material type of the Floor eg: Concrete, Timber	Y
WallMaterial	The material type of the Walls eg: Timber/cladding, Reinforced Block	Y
RoofMaterial	The material type of the Roof eg: Steel Sheeting, Masonary tiles	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Shelters* is **± 0.5m.**

5.5.19 Sign

General Information: None.

Asset Capture: Simple point feature representing the centre of a sign. All signs (regardless of location eg. in park or road corridor) are required to be captured. Poles associated with the sign do not need to be separately captured. (In the instance of a sign having no text, please record "NOT APPLICABLE")

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Signs*:

Element Name	Attribute Description	Mandatory (Y/N)

Type	The type of Sign eg: Regulatory, Naming, Information The purpose of a sign. Applied to individual sign blades as blades may have different purposes in a compound sign.	Y
Material	The material type of sign eg: Timber, Steel/Aluminium, Carved stone	Y
Structure	The type of structure this sign blade is fixed to.	Y
SignText	Sign Text	Y
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East) May be used to denote direction of facing.	N
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Signs* is **± 1m.**

5.5.20 Table

General Information: None.

Asset Capture: Simple point feature representing the centre of a table. Tables with associated seating do not require the seating to be captured separately. Any slab the table and/or associated seat are installed on, should be considered part of the asset and does not need to be captured separately.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Tables*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Unit eg: Table, Bench or Counter etc.	Y
SeatType	Seating details. Element should be nil if no seating is present.	Y
Places	The number of individuals the seating is designed for. This attribute may be used to help determine the capacity of a recreational facility.	Y
Material	The material type of Table/Seat eg: Timber, Aluminium	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Tables* is **± 1m.**

5.5.21 Tree

General Information: When capturing trees please refer to Sunshine Coast Council's Landscape Infrastructure Manual – Palettes – Planting – Planting Index for genus and species naming.

Where tree planting has a mulched area with timber edge it is considered a part of the tree planting and therefore not a separate asset (Refer figure 5)

Asset Capture: Simple point feature representing the centre of an asset. All trees (regardless of location eg. in park or road corridor) are required to be captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Trees*: Please note botanical name is recorded in the genus field only, starting with a capital letter, eg: Grevillea. The species is to be recorded in the species field only, starting with a lower-case letter eg: victoriae.

Element Name	Attribute Description	Mandatory (Y/N)
Genus – (eg) *Grevillea*	The Tree Genus	Y
Species – (eg) *victoriae*	The Tree Species	Y
RootBarrier	Does Root Barrier exist - Yes or No	Y
Grate	Does Tree Grate exist - Yes or No	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Trees* is **± 1m.**

Figure 5

5.5.22 Waste Collection Point

General Information: Includes any poles, stands or enclosures associated with a bin.

Asset Capture: Simple point feature representing the centre of the asset. Each bin or enclosure type is to be captures as separate assets

Wheelie bins attached to security post

Wheel bin enclosures

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is required for *Waste Collection Points*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of Bin/Waste collection point eg: Std Litter Bin, Wheelie Bin Enclosure	Y
Material	The material type of Bin/Waste collection point eg: Aluminium, Steel	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Waste Collection Points* is **± 1m.**

5.6   Stormwater

5.6.1   End Structure

General Information: Represents a stormwater headwall / end wall.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a representing the face of the headwall (refer Figure 6). Fences surrounding the end structure should be captured separately as *Barrier Continuous.*

Figure 6

Spatial Relationship: Should be coincident to the end of a stormwater pipe/culvert

Mandatory Attribution: The following attribution is required for *End Structures* where the element type is applicable:

Element Name	Attribute Description	Mandatory (Y/N)
StructureID	The identifier for this end structure. Usually, the textual identifier it would be labelled with on the face of a plan.	Y
StructureLevel_m	The surface level of the structure in metres against the vertical datum for the project.	Y
EndWallType	The type of stormwater end wall structure eg. Pipe Endwall, Box Endwall, Multi Cell Pipe Endwall etc	Y
EndWallSize	Define the number of cells and sizes penetrating the End Structure ie. 3/750 or 2/1200x900 or 2/900x600+1/600.	Y
EndWallLength_m	Represents the length in metres of the end wall.	Y
EndWallHeight_m	Represents the height in metres of the end wall.	Y
EndWallThickness_m	Represents the Thickness in metres of the end wall.	N
EndWallMaterial	The predominant construction material of the end wall structure.	Y
EndWallConstruction	The method of construction of the end wall structure.	Y
LWW_Length_m	Represents the length in metres of the left wing wall.	Y
LWW_Height_m	Represents the height in metres of the left wing wall.	Y
LWW_Thickness_m	Represents the thickness in metres of the left wing wall.	N
LWW_Material	The predominant construction material of the left wing wall.	Y
LWW_Construction	The method of construction of the left wing wall.	Y
RWW_Length_m	Represents the length in metres of the right wing wall.	Y
RWW_Height_m	Represents the height in metres of the right wing wall.	Y
RWW_Thickness_m	Represents the thickness in metres of the right wing wall.	N
RWW_Material	The predominant construction material of the right wing wall.	Y
RWW_Construction	The method of construction of the right wing wall.	Y
Apron_Width_m	Represents the width in metres of apron on the End Structure.	Y
Apron_Thickness_m	Represents the thickness in metres of apron on the End Structure.	N
Apron_Area_m2	Represents the area in square metres of apron on the End Structure.	Y
Apron_Material	The predominant construction material of apron on the End Structure.	Y
Apron_Construction	The method of construction of apron on the End Structure.	Y
GrateType	Type of grate used, if applicable.	Y (if Grate exists)
TideGate	Type of tide or flood gate used, if applicable.	Y (if Grate exists)

Positional Accuracy: The minimum accepted horizontal accuracy for *End Structures* is **± 50mm.**

5.6.2 Fitting

General Information: Represents a stormwater end cap.

Asset Capture: Single point feature representing the centre point of the fitting.

Spatial Relationship: Must be coincident to the end point a Stormwater pipe feature.

Mandatory Attribution: The following attribution is required for *Fittings*:

Element Name	Attribute Description	Mandatory (Y/N)
FittingType	The type of stormwater fitting. Eg EWnd Cap, Tide Gate, Frog Flap, Duckbill Valve	Y
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East)	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Fittings* is **± 50mm.**

5.6.3   Flow Management Device

General Information: Represents a Flow Management Device; Levee, Spillway or Weir.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves). If the Weir includes a 'Lock' structure as well please specify in 'Notes' section.

Element Name	Attribute Description	Mandatory (Y/N)
Sqid_Id	The string identifier of the device, as it would appear on a plan.	Y
Type	Stormwater Flow Management Device Type	Y
Material	The predominant material of the Stormwater Flow Management Device.	Y
Length_m	Length in metres	Y
CrestElevation_m	Crest level in AHD meters	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *flow management device* is **± 50mm.**

5.6.4 GPT Complex

General Information: None.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Gross Pollutant Trap (GPT) Complex assets are Commercial or Custom built devices (e.g. Humes Interceptor).

Spatial Relationship: GPT Complex assets must be coincident to pipe features as per Pits/Manhole features.

Mandatory Attribution: The following attribution is required for *GPT Complexes*:

Element Name	Attribute Description	Mandatory (Y/N)
Sqid_Id	The string identifier of the device, as it would appear on a plan.	N
Manufacturer	The manufacturer if applicable	Y
ModelNumber	The model if applicable	Y
Length_mm	Length in millimetres	Y *(if rectangular)*
Width_mm	Width in millimetres	Y *(if rectangular)*
Diameter_mm	Diameter in millimetres	Y *(if circular)*
Function1	The first function of the WSUD point. The device must have at least one function. Usually, Gross Pollutant Capture will be the most important function.	Y
Function2	The second function of the WSUD point, if applicable	N
Function3	The third function of the device, if applicable	N
US_PipeDiameter_mm	The upstream pipe diameter in millimetres	N
DS_PipeDiameter_mm	The downstream pipe diameter in millimetres	N
SurfaceLevel_m	The surface level at the top of the device	Y
CleanoutLevel_m	The level to which the device must be cleaned out, in metres against the vertical datum of the project.	Y
Depth_m	The depth, in metres, of the device.	Y
SumpDepth_m	The depth, in metres, of the sump, if applicable	N
HasFilterMedia	True if the device has filtration media or a filter capsule installed.	N
HasBasket	True if the device has a litter basket installed.	N
HasBoards	True if the device has drop-boards or penstock installed.	N
DesignFlow_m3s	Design Flow in cubic metres per second	N
MaxContaminantVolume_m3	Maximum contaminant retention volume in cubic metres.	N
MaxInternalVolume_m3	Maximum internal volume in cubic metres.	N
MaintenanceCycle_mnths	The minimum maintenance cycle in months (refer to specifications)	N
Rotation	The minimum maintenance cycle in months (refer to specifications)	N

Positional Accuracy: The minimum accepted horizontal accuracy for *GPT Complexes* is **± 50mm.**

5.6.5 GPT Simple

General Information: None.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Gross Pollutant Trap (GPT) Simple assets are "in pit" basket or "end of line" devices.

typical gully pit basket (open)

Spatial Relationship: A GPT Simple asset's spatial location must correlate with a Pit/Manhole asset as they are housed within those structures and can be removed for maintenance or relocation.

Mandatory Attribution: The following attribution is required for *GPT Simple*:

Element Name	Attribute Description	Mandatory (Y/N)
Sqid_Id	The string identifier of the device, as it would appear on a plan.	N
Construction	The construction method, Prefabricated, Insitu	Y
Manufacturer	The manufacturer if applicable	N
ModelNumber	The model if applicable	N
TreatmentMeasure	Simple treatment measures fitted to existing infrastructure to intercept solid litter being transported in stormwater.	Y
Function1	The first function of the WSUD point. Has a fixed value because all GPTSimple points are.	Y
Length_mm	The length of the device	Y
Width_mm	The width of the device	Y
Material	Predominant material of device	Y
MaintenanceCycle_mnths	The minimum maintenance cycle in months. This is the revisit interval for clearing captured rubbish.	N
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East)	N

Positional Accuracy: The minimum accepted horizontal accuracy for *GPT Simple* is **± 50mm.**

5.6.6 Non GPT Simple

General Information: None.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Non GPT Simple assets represent basic and minor sand filtration storage.

Spatial Relationship: Non GPT Simple assets must be coincident to pipe features as per Pits/Manhole features.

Mandatory Attribution: The following attribution is required for *Non GPT Simple*:

Element Name	Attribute Description	Mandatory (Y/N)
Sqid_Id	The string identifier of the device, as it would appear on a plan.	N
Construction	The construction method, Prefabricated, Insitu	**Y**
Manufacturer	The manufacturer if applicable	N
ModelNumber	The model if applicable	N
TreatmentMeasure	Treatment measures applicable to WSUD points that are neither simple nor complex Gross Pollutant Traps	Y
Function1	The first function of the WSUD point. Must be supplied.	Y
Function2	The second function of the WSUD point, if applicable	N
Function3	The third function of the device, if applicable	N
Length_mm	The length of the device	Y
Width_mm	The width of the device	Y
MaintenanceCycle_mnths	The minimum maintenance cycle in months. This is the revisit interval for maintenance or inspection, if applicable.	N
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East)	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Non GPT Simple* is **± 50mm.**

5.6.7 Pipe

General Information: Includes Stormwater drainage pipe between pits and pipe (ie culverts) between end structures.

Asset Capture: Simple linear feature representing the invert of the pipe or midpoint of a box asset. One feature represents multiple celled culverts/pipes; therefore, the number of cells is to be recorded in the "Cells" field of the table. The pipe/culvert is to be drawn in the direction from Gravity Upstream (read: higher AHD level) to Gravity Downstream (read: lower AHD level) to represent gravitation flow. Pipe features are captured from the intersection of pipe material and chamber wall. Refer to figures 7, 8 and 9 below.

Pipes are to be captured based on their physical and spatial properties and attributes. For example, if a pipe changes size, material, class, embedment, or direction etc. then it must be broken and captured separately.

Figure 7 represents a single-celled pipe asset where vertices one and four represent the maintenance hole capture and vertices two and three are the intersection of the Pipe material and the chamber wall.
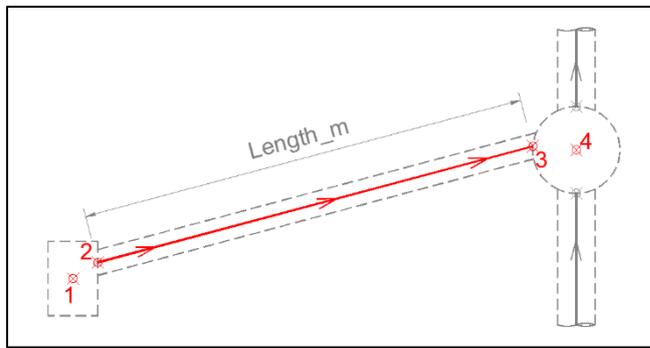
Figure 7

Figure 8 represents a multiple cell pipe/culvert arrangement. This arrangement is to be captured as a single linear feature from centre of end structure (vertex 1) to centre of end structure (vertex 2)
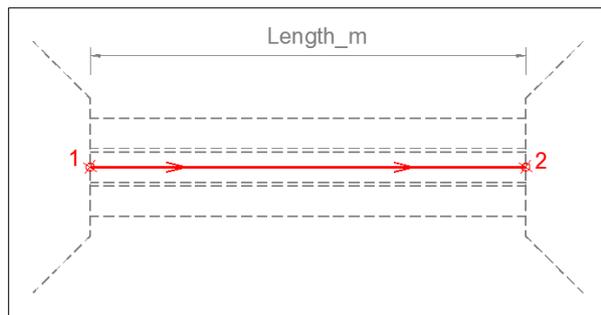
Figure 8

Figure 9 represents an irregular shaped pit with multiple multi-celled pipes entering the pit asset and a large single-celled asset exiting the pit with an outlet through an End Structure.
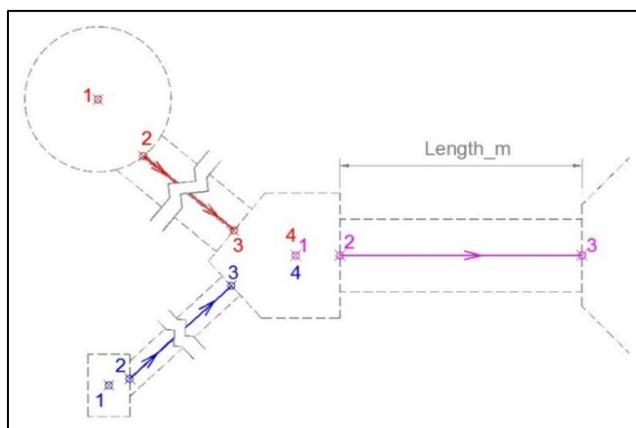
Figure 9

Spatial Relationship: May be coincident to Stormwater end structure features and snapped to the edge of the pit feature.

Mandatory Attribution: The following attribution is required for *Pipes*:

Element Name	Attribute Description	Mandatory (Y/N)
US_InvertLevel_m	Invert level of this piipe end (in metres against the vertical datum).	Y
DS_InvertLevel_m	Invert level of this pipe end (in metres against the vertical datum).	Y
US_SurfaceLevel_m	Surface level (in metres against the vertical datum) vertically above this pipe end.	Y

DS_SurfaceLevel_m	Surface level (in metres against the vertical datum) vertically above this pipe end.	Y
Diameter_mm	The internal diameter of the pipe in millimetres.	Y *(if circular)*
Height_mm	Height in millimetres of the internal cross section	Y *(if box)*
Width_mm	Width in millimetres of the internal cross section	Y *(if box)*
Material	The pipe wall material	Y
Class	The pipe wall class	Y *(if circular)*
JointType	The joint type of the pipe section	Y *(if circular)*
Cells	The number of cells in the pipe course.	Y
ConcreteCoverType	The pipe protection regime employed.	N
Grade	Pipe gradient as a percentage. Derivable from invert levels and horizontal length.	N
Length_m	Pipe material length in metres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Pipes* is **± 50mm.**

5.6.8 Pit

General Information: None.

Asset Capture: Simple point feature representing the centre of chamber of a pit or manhole.

The InletConfig's Left/Centre/Right is referenced from the road crown looking at the lintel. Measurements of the "Pit" length, width, diameter, radius and extension measurements refer to the chamber dimensions (See figure 10).

Spatial Relationship: Not Applicable.

Mandatory Attribution: The following attribution is required for *Pits*:

Element Name	Attribute Description	Mandatory (Y/N)
PitNumber	The pit identifier.	Y
Use	Purpose of the feature in the network.	Y
ChamberConstruction	Method of chamber construction.	N
Length_mm	Length in millimetres	Y *(if rectangular)*
Width_mm	Width in millimetres	Y *(if rectangular)*
Diameter_mm	Diameter in millimetres	Y *(if circular)*
Radius_mm	Radius, in millimetres, of the circular ends	Y *(if extended)*
Extension_mm	Distance, in millimetres, between the centre points of the circular ends	Y *(if extended)*
LidType	The type of lid or grate covering the opening.	Y *(see Table 1)*
SurfaceLevel_m	Surface level of this feature (in metres against the vertical datum).	Y
InvertLevel_m	Invert level of this feature (in metres against the vertical datum).	Y
Depth_m	The depth of the structure in metres. May be user-entered, or auto-calculated as the difference between the surface level and the invert level of the pit.	Y
InletConfig	Positioning of the inlet against the pit.	Y *(see Table 1)*
InletType	The type of inlet employed.	Y *(see Table 1)*
InletSize	Dimensions of the inlet e.g. Diameter or Length x Width.	Y *(see Table 1)*

LintelConstruction	Method of lintel construction.	*Y (see Table 1)*
LintelLength_m	Represents the length in metres of the lintel.	*Y (see Table 1)*
OutletType	The type of outlet for this pit.	Y
FireRetardant	True of false value indicating whether fire retardant measures are incorporated.	N
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East)	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Pits* is **± 50mm.**

Table 1: Stormwater Pit Variations

| Asset Type	Attributes	
Manhole	**Use**	Maintenance Hole, Roofwater Inspection Chamber
	LidType	required
	InletType	x
	InletSize	x
	InletConfig	x
	LintelConstruction	x
	LintelLength_m	x
Gully Pit / Catch Pit	**Use**	Kerb Inlet
	LidType	x
	InletType	required
	InletSize	required
	InletConfig	required for lip in line (LIL) or kerb in line (KIL)
	LintelConstruction	required
	LintelLength_m	required
Field Inlets	**Use**	Field Inlet
	LidType	x
	InletType	required
	InletSize	required
	InletConfig	x
	LintelConstruction	x
	LintelLength_m	x
All Others	**Use**	Pit, Roofwater Outlet
	LidType	x
	InletType	x
	InletSize	x
	InletConfig	x
	LintelConstruction	x
	LintelLength_m	x
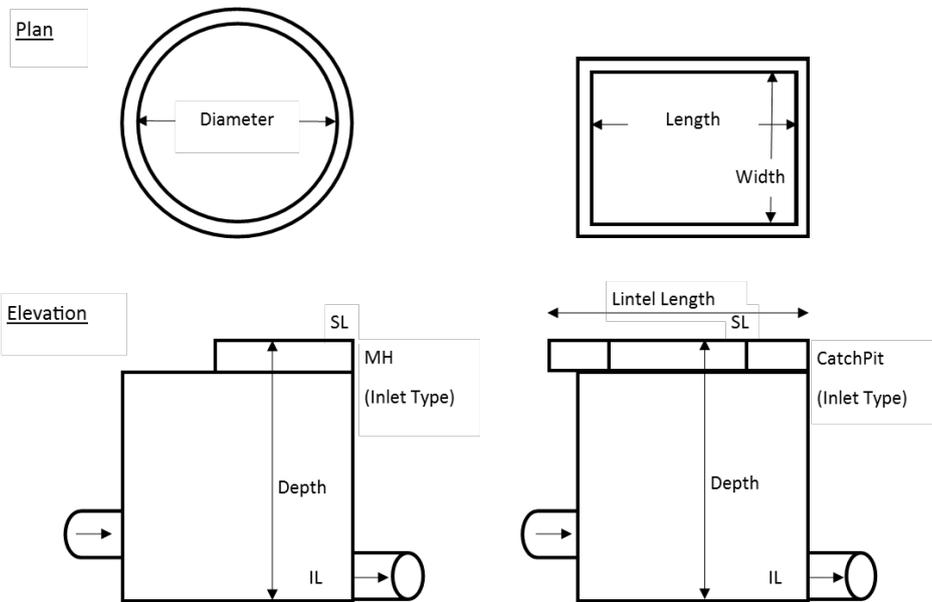
Figure 10: Stormwater Pit Dimensions

Asset Types

Maintenance hole – can be circular, square or rectangular with **no** surface inlet. The purpose of a maintenance hole is to change the direction of water flow.

Field Inlet

Field Inlet – Surcharge

Field Inlet - Flush

Catch Pit – Lip in Line
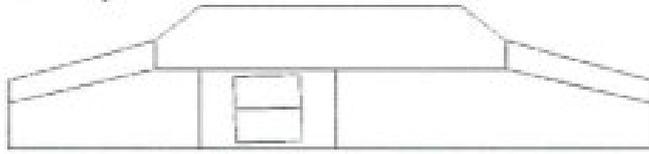
Catch Pit – Kerb in Line
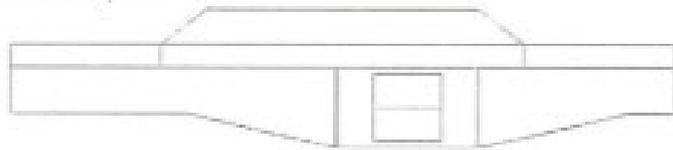
5.6.9   Surface Drain

General Information: None.

Asset Capture: Simple linear feature representing the invert of the channel. Surface Drains are to be captured based on their physical, spatial properties and attributes. For example, if a surface changes size, material, shape etc. then it must be captured separately.
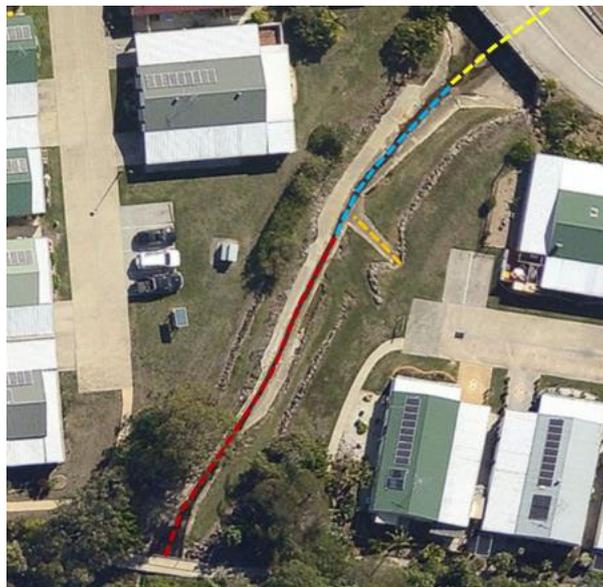
Figure 11

Figure 11 indicates the capture of a major surface drain as well as a smaller surface drain feeding into it. The main surface drain has been represented as a separate feature where the main change of width occurs (red and blue lines). The smaller surface drain ends at the intersection of the main surface drain's outer edge.
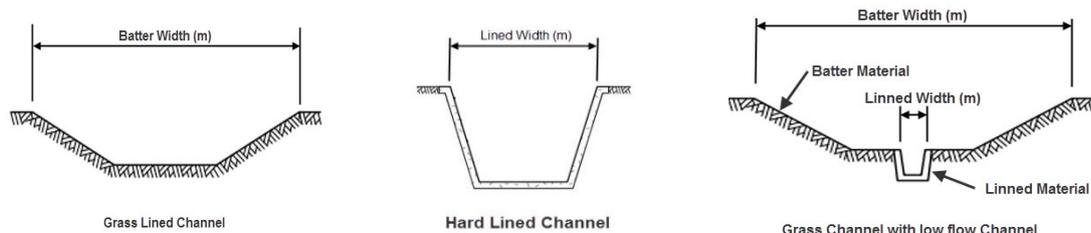
Figure 12

Figure 12 indicates where to collect the width of the channel for different Channel configurations and materials.

Spatial Relationship: May be coincident to End Structures and WSUD regions/polygons.

Mandatory Attribution: The following attribution is required for *Surface Drains*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of drain or channel.	Y
DrainShape	Cross-sectional shape of the drain.	Y
LiningMaterial	The material that the channel is lined with.	Y
LinedWidth_m	The width, in metres, of the lined portion of the channel.	Y
BatterMaterial	The material that the drain batter is lined with. A null value may be supplied where the drain has no batter.	Y
BatterWidth_m	The total width, in metres, from lip of batter to opposite lip of batter. A null value may be supplied where the drain has no batter.	Y
US_InvertLevel_m	Upstream Invert level of the Surface Drain (in metres against the vertical datum).	Y
DS_InvertLevel_m	Downstream Invert level of the Surface Drain (in metres against the vertical datum).	Y
AverageGrade	The average gradient over the whole length of the feature, as a percentage. Derivable from the difference in invert levels and the horizontal length of the geometry.	N
Length_m	The material length, in metres, of the centreline of the channel.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Surface Drains* is **± 1m**.

5.6.10 WSUD Complex Area

General Information: None.

Asset Capture: Water Sensitive Urban Design (WSUD) areas such as kerbside bio-filtration beds, constructed water bodies or purpose-built drainage swales should be captured individually as a region/polygon. Individual areas are to be recorded within the ADAC data capture fields defining class type (e.g. swale, buffer strip, bio-retention basin, sedimentation forebay). Any associated infrastructure with the WSUD (e.g. vehicle accesses, fences, gates, etc.) should be captured separately. Spillways are to be recorded in the WSUD Area attributes.

Note: Constructed Waterbodies are to be captured as a WSUD Area and noted in the comments that the asset is a "Constructed waterbody".

Sedimentation Forebays are to be captured as an individual region/polygon under the WSUD Complex Area layer and noted in the comments that the asset is a "Sedimentation forebay". See figure 13.

Figure 13

Spatial Relationship: Not Applicable.

Mandatory Attribution: The following attribution is required for *WSUD Complex Areas*:

Element Name	Attribute Description	Mandatory (Y/N)
Sqid_Id	The string identifier of the device, as it would appear on a plan.	N
TreatmentMeasure	The treatment measure employed. Choose from a list relevant to complex area features.	Y
Function1	The first function of the WSUD area. At least one function must be supplied. Choose from a list relevant to complex area features.	Y
Function2	The second function of the WSUD area, if applicable.	N
Function3	The third function of the WSUD area, if applicable.	N
PondingArea_m2	Area of Temporary Ponding or Extended Detention in square metres.	Y
PondingDepth_m	Average depth of Temporary Ponding or Extended Detention in metres.	Y
FilterArea_m2	Area of Bioretention filter media in square metres.	Y
FilterDepth_m	Depth of Bioretention filter media in metres.	Y
TransitionDepth_m	Depth of the Bioretention Transition Layer in metres.	N
DrainageDepth_m	Depth of the Bioretention Drainage Layer in metres.	N
MacrophyteZoneArea_m2	The vegetated area in square metres (may be zero). Area of vegetated portion of constructed wetland (macrophyte zone)	N
MacrophyteZoneDepth_m	Average depth of vegetated portion of constructed wetland (macrophyte zone).	N
CoarseSedimentArea_m2	Maximum area of ponding (for coarse sediment capture) before bypass.	N

SedimentVolume_m3	Volume of sediment capacity in cubic metres	N
MinSurfaceLevel_m	Minimum surface level within structure (above or below water surface level).	N
PermanentPondLevel_m	Water surface level during normal dry weather.	N
OutletLevel_m	The surface level in metres of the bypass, or spillway, or other overflow outlet structure.	Y
DesignFlow_m3s	The maximum design flow of the feature in cubic metres per second	N
HasSpillway	Whether the feature has a spillway	Y
MaintenanceCycle_mnths	The minimum maintenance cycle in months (refer to specifications)	N

Positional Accuracy: The minimum accepted horizontal accuracy for *WSUD Complex Areas* is **± 0.5m.**

5.7   Transport

5.7.1 Flush Point

General Information: None.

Asset Capture: Simple point feature representing the outlet of sub-soil drains into drainage pits/maintenance holes.

Spatial Relationship: Must be coincident to Sub Soil Drain assets.

Mandatory Attribution: The following attribution is required for *Flush Points*:

Element Name	Attribute Description	Mandatory (Y/N)
Function	The function of the flushing out point. Eg Cleanout, Surface Outlet	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Flush Points* is **± 1m.**

5.7.2   Parking

General Information: None.

Asset Capture: Multi-patch region/polygon feature representing the area of Parking. Asset capture is based on physicality therefore separate regions/polygons are required if any part of the pavement profile changes i.e. Surface, Base, Sub-Base, Lower Sub-Base and/or Subgrade.

Spatial Relationship: Must be coincident to other regions representing pavement / parking where there is a common boundary (e.g. no slivers/overlaps).

Mandatory Attribution: The following attribution is required for *Parking*:

Element Name	Attribute Description	Mandatory (Y/N)
Name	Parking area name	Y
NoOfCarparks	Number of individual vehicle spaces.	N
OnOffStreet	Value indicating whether the parking is an uninterupted part of the road pavement, or a seperate area with road access.	Y
SurfaceType	The surface type of the parking area. Asphalt, Full Depth Asphalt etc.	Y

SurfaceThickness_mm	The surface thickness in millimetres	Y
SurfaceArea_sqm	The area of the parking surface as a decimal number in square metres.	Y
PavementType	Pavement construction type	Y
BaseLayerType	Construction type of the base layer. Must be Concrete if PavementType is Rigid, otherwise must not be Concrete	Y
BaseLayerDepth_mm	Base layer depth in millimetres	Y
BaseStabilisation	Base layer stabilisation method	Y (if Base stabilised)
SubBaseLayerType	Construction type of the sub-base layer.	Y (if SubBase exists)
SubBaseLayerDepth_mm	Sub-base layer depth in millimetres	Y (if SubBase exists)
SubBaseStabilisation	Sub-base layer stabilisation method	Y (if SubBase stabilised)
LowerSubBaseLayerType	Construction type of the lower sub-base layer.	Y (if Lower SubBase exists)
LowerSubBaseLayerDepth_mm	Lower sub-base layer depth in millimetres	Y (if Lower SubBase exists)
LowerSubBaseStabilisation	Lower sub-base layer stabilisation method	Y (if Lower SubBase stabilised)
PavementGeoTextile	Pavement geotextile type.	N
SubgradeCBR	California Bearing Ratio. An expression of the load bearing and shear properties of the material.	Y
SubgradeStabilisation	Subgrade stabilisation method	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Parking* is **± 50mm.**

5.7.3 Path Structure

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a path structure. Path Structures include boardwalks, footbridges, stairs, ramps & underpasses.

When capturing stairs, the number of treads should be recorded in the **Notes** field.

Spatial Relationship: Changes in surface types or widths must be represented as separate features.

Mandatory Attribution: The following attribution is required for *Path Structures*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	Intended path use of the structure. Eg. Shared, Cycleway, Pedestrian etc	Y
Structure	Type of pathway structure. Eg. Stairs, Ramp etc.	Y
SurfaceMaterial	Surface material of the structure.	Y
SubStructureMaterial	Material of the sub structure.	Y
Width_m	Nominal width of the pathway in metres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Path Structures* is **± 0.5m.**

5.7.4 Pathway / Cycleway

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a pathway. Changes in surface types or widths must be represented as separate features. If the pathway has a name please specify in the 'Notes' section.

Figure 13

Figure 14

Spatial Relationship: When capturing pathways, the 'Use' attribute defines the purpose of the asset.

Shared – Path is utilised by both Pedestrian and Cyclist (most common arrangement) – Refer Figure 13 & 14 Blue Dashed Line

Cycleway – Path defined for Cyclists - Refer Figure 15 Yellow Dashed Line

Pedestrian – Path defined for Pedestrian - Refer Figure 15 Pink Dashed Line

Figure 15

Mandatory Attribution: The following attribution is required for *Pathways*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	Intended path use of the structure. Eg. Shared, Cycleway, Pedestrian etc	Y
Structure	Type of pathway structure. A fixed value of In Ground is required for this sub type	Y
SurfaceMaterial	Surface material of the structure.	Y

Width_m	Nominal width of the pathway in metres.	Y
Depth_mm	The nominal depth of the pathway material in millimetres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Pathways* is **± 0.5m.**

5.7.5   Pram Ramp

General Information: None.

Asset Capture: Simple point feature representing a pram ramp. Typically captured in the centre of Pram Ramp where it transitions to a Kerb/Road. Refer to Figures 13 and 14 for the capture of Pram Ramps. The pram ramp (which is highlighted by the red polygon) is captured based on the red point.

Spatial Relationship: May be coincident with a Road Edge feature.

Mandatory Attribution: The following attribution is required for *Pram Ramps*:

Element Name	Attribute Description	Mandatory (Y/N)
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East)	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Pram Ramps* is **± 0.5m.**

5.7.6 Pavement

General Information: None.

Asset Capture: Multi-patch region/polygon feature representing the area of Pavement. Asset capture is based on physicality therefore separate regions/polygons are required if any part of the pavement profile changes i.e. Surface, Base, Sub-Base, Lower Sub-Base and/or Subgrade. Please refer to the solid blue transparent fill in figure 16 below for a typical representation of Pavement capture

Spatial Relationship: Must be coincident to other regions representing pavement / parking where there is a common boundary- no slivers/overlaps.

Figure 16

Mandatory Attribution: The following attribution is required for *Pavements*:

Element Name	Attribute Description	Mandatory (Y/N)
Name	The gazetted, or proposed, road name.	Y
SurfaceType	The surface type of the parking area. Asphalt, Full Depth Asphalt etc.	Y
SurfaceThickness_mm	The surface thickness in millimetres	Y
SurfaceNomWidth_m	The nominal width of the surface of the road or street as a decimal number in metres.	Y
PavementType	Pavement construction type	Y
BaseLayerType	Construction type of the base layer. Must be Concrete if PavementType is Rigid, otherwise must not be Concrete	Y
BaseLayerDepth_mm	Base layer depth in millimetres	Y
BaseStabilisation	Base layer stabilisation method	Y *(if Base stabilised)*
SubBaseLayerType	Construction type of the sub-base layer.	Y *(if SubBase exists)*
SubBaseLayerDepth_mm	Sub-base layer depth in millimetres	Y *(if SubBase exists)*
SubBaseStabilisation	Sub-base layer stabilisation method	Y *(if SubBase stabilised)*

LowerSubBaseLayerType	Construction type of the lower sub-base layer.	Y (*if Lower SubBase exists*)
LowerSubBaseLayerDepth_mm	Lower sub-base layer depth in millimetres	Y (*if Lower SubBase exists*)
LowerSubBaseStabilisation	Lower sub-base layer stabilisation method	Y (*if Lower SubBase stabilised*)
PavementGeoTextile	Pavement geotextile type.	N
SubgradeCBR	California Bearing Ratio. An expression of the load bearing and shear properties of the material.	Y
SubgradeStabilisation	Subgrade stabilisation method	N

<u>Positional Accuracy:</u>   The minimum accepted horizontal accuracy for *Pavements* is **± 50mm.**

5.7.7 Road Edge

<u>General Information:</u>   None.

<u>Asset Capture:</u>   Complex linear feature (polylines including curves but not bézier curves) representing the lip/front edge of kerb, Refer yellow dashed line in figure 17


Figure 17
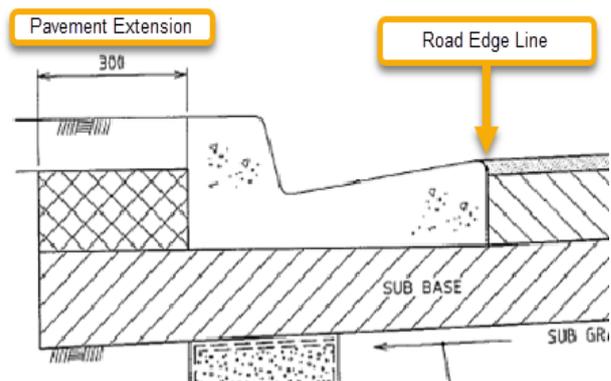
Figure 18:

<u>Spatial Relationship:</u>   Must be coincident to other polygons representing road pavement where there is a common boundary between kerb lines and the road pavement edges i.e. no slivers and/or overlaps. Segmentation of road edge is not required for driveway crossovers and pram ramps. If Pavement Extension is constructed, dimension should be captured in accordance with the Figure 18 above. Where no pavement extension exists, a value of 999 is to be recorded in the pavement extension value.

<u>Mandatory Attribution:</u>   The following attribution is required for *Road Edges*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	Road edge configuration. Eg. Barrier Kerb, Barrier Kerb and Channel etc.	Y
Material	Material of Road Edge.	Y
Width_mm	Width in millimetres of the Edge feature.	Y
Length_m	Length in metres of edge material.	Y

PavementExtension_mm	The pavement extension, in millimetres, behind the back of kerb.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Road Edge* is **± 50mm.**

5.7.8 Road Island

General Information: None.

Asset Capture: Multi-patch region/polygon feature representing the area of Island bounded by the back of Kerb features. Asset capture is based on physicality therefore separate regions/polygons are required if the Type of Island or Infill changes. Where the Road Island is landscaped, the asset is to be captured as a Road Island with landscaped infill and therefore there is no requirement to capture a Landscape Area as a separate Open Space asset. Refer to figure 19 for an example of asset capture. Road islands are to be cut from the Road Pavement polygon and offset by the width of kerb.

Figure 19

Spatial Relationship: Must be coincident to other regions representing road islands where changes of infill material changes share a common boundary i.e. no slivers and/or overlaps.

Mandatory Attribution: The following attribution is required for *Road Islands*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	Type of Road Island. Eg. Pedestrian Refuge, Roundabout, Centre median	Y
Area_sqm	The area, in square metres, of the infill.	Y
InfillType	Type of Road Island Infill. Eg. AC, Concrete, Grass, Landscape etc.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Road Islands* is **± 50mm.**

5.7.9 Road Pathway

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a road pathway (on-road cycleway) Refer Figure 20 – White and Green Dashed Lines. The structure and Surface Material are to be recorded for the different type of road pathways as defined below.

Structure = Bicycle Awareness Zone
Surface Material = Yellow Bicycle Symbol

Structure = Exclusive Bicycle Lane
Surface Material = White Bicycle Symbol

Structure = Exclusive Green Bicycle Lane
Surface Material = Green Lane

Spatial Relationship: Not applicable

Mandatory Attribution: The following attribution is required for *Road Pathways*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	Intended traffic use of the structure. Eg. Cycleway	Y
Structure	Type of pathway structure. A fixed value of On Road is required for this sub type	Y
SurfaceMaterial	Surface material of the structure. A fixed value of Road Pavement is applied to this sub type.	Y
Width_m	Nominal width of the marked pathway in metres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Road Pathways* is **± 0.5m.**

Figure 20

5.7.10 Sub Soil Drain

General Information: None.

Asset Capture: Simple Linear feature (i.e. straight lines) representing the Invert of a circular sub-soil drain pipe asset. Pipes are typically broken where the Use and/or Type of drain changes.

Spatial Relationship: Must be coincident to Flush Points.

Mandatory Attribution: The following attribution is required for *Sub Soil Drains*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The use (orientation) of the drain.	Y
Type	The type (configuration) of the drain.	Y
Length_m	The length in metres of the drain.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Sub Soil Drains* is **± 0.5m**.

5.7.11 Road Safety Barrier

General Information   None.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a road safety barrier asset (guardrail).
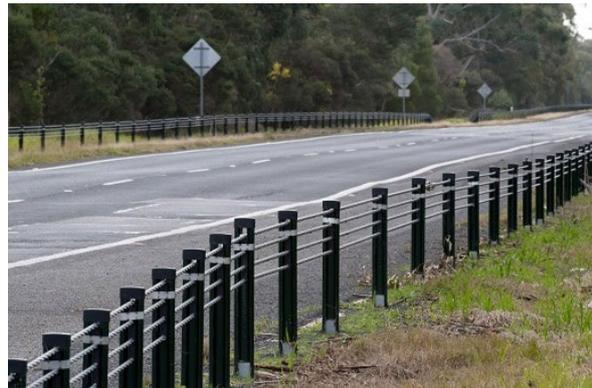
Spatial Relationship: None.

Mandatory Attribution: *The following attribution is mandatory for Road Safety Barrier:*

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of road safety barrier employed.	Y**
LeadingEndTreatment	The type of Leading End treatment.	Y
TrailingEndTreatmentl	The type of Trailing End treatment.	Y
StandardHeight	Is barrier height standard?	N
Height_m	Nominal height of the barrier in metres.	Y
Length_m	Nominal length of the barrier in metres including terminals.	Y
MotorcyclistProtectionType	The type of motorcyclist protection rail.	N
PedestrianProtectionSheeting	as pedestrian protection sheeting been installed?	N

BridgeTransition	Is this a bridge transition?	Y
StandardPostSpacing	Is the post spacing standard?	N
PostSpacing_m	Spacing of posts in metres.	Y
PostType	The material type of post installed with road safety barrier.	Y
RailType	The material type of rail installed with road safety barrier.	Y
HorizontalAlignment	Horizontal alignment of road safety barrier.	N
NumberOfBollards	Number of bollards.	Y

* 'Rigid/Semi-rigid Combination', 'Flexible/Rigid Combination' and 'Flexible/Semi-rigid Combination' types will not be accepted by SCC.

* If Type is a 'Thrie Beam' please specify in the Notes field, otherwise all Semi-rigid types assumed 'W Beam'.

<u>Positional Accuracy:</u>   The minimum accepted horizontal accuracy for *Road Safety Barrier* is **± 0.5m**.

5.7.12 Bridge Extent

<u>General Information:</u>   Bridge Extent describes the envelope or footprint for the whole structure and all its parts.

<u>Asset Capture:</u>   Multi-patch region/polygon feature representing the bridge extent.
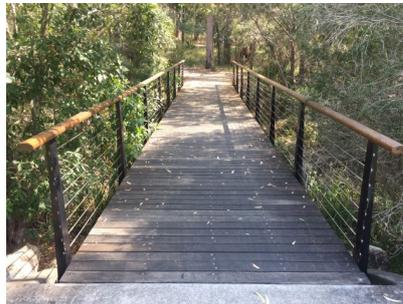
<u>Spatial Relationship:</u>   Must be coincident to other regions representing bridge components where there is a common boundary i.e. no slivers and/or overlaps.

<u>Mandatory Attribution:</u>   The following attribution is mandatory for *Bridge Extent*

Element Name	Attribute Description	Mandatory (Y/N)
BridgeID	Unique identifier, used to associate components of the same bridge assembly.	Y
Name	Road name or nearest road where bridge resides, or the recognised name of the bridge.	Y
Use	Predominant use of bridge.	Y
Type	Type of bridge construction.	Y
CrossingType	The layout and configuration of this structure.	Y
Spans	Number of spans.	Y
MinimumClearance_m	Minimum clearance in metres.	Y

PredominantMaterial	Predominant Material of bridge.	Y
DesignLoad	Design load of bridge as per AS5100.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Bridge Extent* is **± 50mm**.

5.7.13 Bridge Deck

General Information: A single deck unit between abutments or supports.

Asset Capture: Multi-patch region/polygon feature representing the bridge deck.

Spatial Relationship: Must be coincident to other regions representing bridge components where there is a common boundary i.e. no slivers and/or overlaps.

Mandatory Attribution: The following attribution is mandatory for *Bridge Deck*

Element Name	Attribute Description	Mandatory (Y/N)
BridgeID	Unique identifier, used to associate components of the same bridge assembly.	Y
Material	Material types for Bridge deck.	Y
NomWidth_m	Nominal Width of deck in metres.	Y
DeckLength_m	Length of Bridge deck between joints at abutments in metres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Bridge Deck* is **± 50mm**.

5.7.14 Bridge Superstructure

General Information: A single superstructure between abutments or supports.
Asset Capture: Multi-patch region/polygon feature representing the bridge superstructure.
Spatial Relationship: Must be coincident to other regions representing bridge components where there is a common boundary i.e. no slivers and/or overlaps.

Mandatory Attribution: The following attribution is mandatory for *Bridge Superstructure*

Element Name	Attribute Description	Mandatory (Y/N)
BridgeID	Unique identifier, used to associate components of the same bridge assembly.	Y
Material	Material types for the Superstructure.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Bridge Superstructure* is **± 50mm**.

5.7.15 Bridge Abutment

Not required to be captured

5.7.16 Bridge Pier

Not required to be captured

5.7.17 Containment Class

Not required to be captured

5.8 Water Supply

5.8.1 Pipe

General Information: None.

Asset Capture: Simple Linear feature (i.e. straight lines) representing the Invert of a circular pipe asset. Pipe segments are to be captured based on the pipe attributes. If any physical element of a pipe changes (e.g. size, material, class etc.) then the pipe asset must be broken and captured separately.   Council owned pipe on customer side of the meter distributing water from mains to internal fixtures is to be captured and recorded as use = internal. Water pipe for Council irrigation purposes are to be captured and recorded as use = irrigation.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Pipes*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The purpose of this feature in the network. Eg Service, Irrigation etc.	Y
WaterQuality	The quality of the water being carried by the pipe. Eg. Rainwater, Drinking Water, Recycled A etc.	Y
Alignment_m	Offset from casdastral boundary to the main.	N
Diameter_mm	Nominal diameter of the pipe in millimetres.	Y
Material	The pipe material.	Y
Class	The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material.	N
Lining	The internal corrosion protection method employed on the pipe material.	N

Protection	The external corrosion protection method employed on the pipe material.	N
JointType	Pipe jointing method employed.	N
Depth_m	The average depth in metres that the pipe is buried.	N
Embedment	Embedment types.	N
Length_m	Material length of the pipe in metres.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Pipes* is **± 0.1m**.

5.8.1 Meter

General Information: None.

Asset Capture: Single point feature located at the centre point of the domestic meter.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Meters*:

Element Name	Attribute Description	Mandatory (Y/N)
Serial Number	The manufacturers serial number, as stamped or fixed on the meter.	Y
Type	Configuration of the meter.	Y
Diameter_mm	The nominal bore diameter of the meter.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Meters* is **± 0.1m**.

5.8.1 Service Fitting

General Information: Includes Dog Bowls, Drinking Fountains, Fountain Decorative, Filling Station, Showers, Taps, etc.

Asset Capture: Single point feature representing the centre point of the fitting.

Drinking Fountain with Dog Bowl

Shower
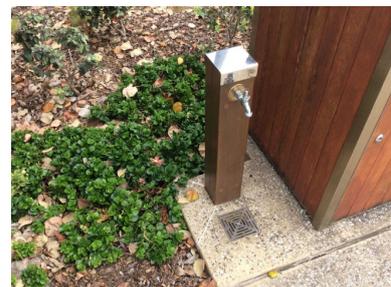
Tap

Spatial Relationship: Must be coincident to a pipe asset in the water reticulation network.

Mandatory Attribution: The following attribution is mandatory for *Service Fittings*:

Element Name	Attribute Description	Mandatory (Y/N)
Type	The type of service fitting	Y
BelowGround	Is the fitting below ground	Y

WaterSaver	Does the fitting employ waste minimisation technology (other than auto shut-off)	N
AutoShutOff	Does the fitting employ auto shut-off technology	Y
Rotation	Rotation angle (cartesian - anti-clockwise 0 degrees = East)	N
WaterQuality	The quality/source of the water being supplied through the service fitting.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Service Fittings* is **± 0.1m**.

5.8.1 Valve

General Information: None.

Asset Capture: Single point feature representing the centre of a valve body, typically the spindle.

Spatial Relationship: Must be coincident to a Water Pipe asset.

Mandatory Attribution: The following attribution is mandatory for *Valves*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The purpose of the valve in the network.	N
Type	The type of valve.	Y
Diameter_mm	The nominal bore diameter of the valve.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Valves* is **± 0.1m**.

5.8.1   Storage Tank

General Information: None.

Asset Capture: Single point feature located on the centre of the chamber.

Spatial Relationship: None.

Mandatory Attribution: The following attribution is mandatory for Storage Tanks:

Element Name	Attribute Description	Mandatory (Y/N)
Material	The material that the storage tank is made from.	Y*
Source	The source of water in the tank. Eg. Rainwater, Groundwater, Mains Service etc.	Y
Manufacturer	The Manufacturer of the unit	Y
ModelNumber	The standard code, model number or part number for the unit	N
Volume_m3	The effective volume in cubic metres.	Y

*Please specify in Notes what type of steel, eg. Galvanised Steel, etc.

Positional Accuracy: The minimum accepted horizontal accuracy for *Storage Tanks* is **± 1m**.

5.9   Sewerage

5.9.1 Maintenance Hole

General Information: None.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Note: Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Spatial Relationship: Must be coincident to the end of pipe assets or a pipe asset anywhere along its length.

Mandatory Attribution: The following attribution is mandatory for *Maintenance Holes*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	Use or purpose of this MaintenanceHole in the network	Y
ChamberSize	Data structure describing the chamber configuration and dimensions.	Y
SurfaceLevel_m	The height of the top surface of the lid, hatch, rim or roof. Surface level in metres against the vertical datum for this project.	Y
InvertLevel_m	The height of the top surface of interior floor/bottom. Invert level in metres against the vertical datum for this project.	Y
LidMaterial	Chamber lid configuration and material	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Maintenance Holes* is **± 0.1m**.

5.9.2 Non Pressure Pipe

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the invert of the pipe asset. Line direction should be enforced from Gravity Upstream (higher AHD level) to Gravity Downstream (lower AHD level) due to gravitation flow in each individual pipe.

The gravity upstream and downstream ends of an individual pipe are captured at the intersection between the pipe material and the wall of the chamber. Refer to Figure 21 for a detailed diagram. Points 2 and 3 represent the intersection of pipe material and chamber wall whereas points 1 and 4 represent the Maintenance Holes capture.

Pipes are to be captured based on their physical and spatial properties and attributes. For example, if a pipe changes size, material, class, embedment or direction etc. then it must be broken and captured separately.

Spatial Relationship: Not Applicable
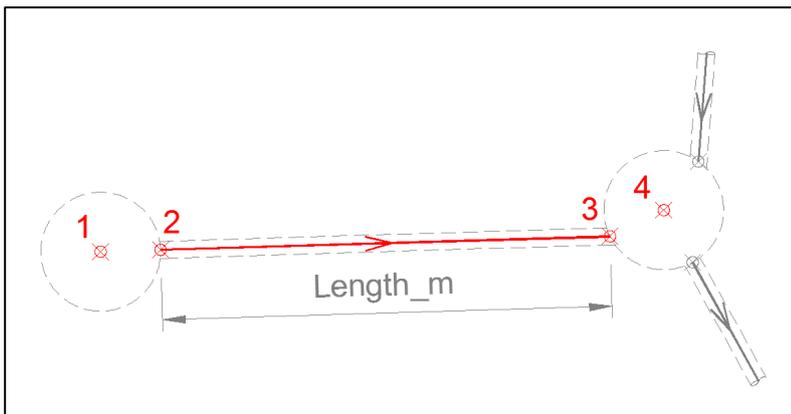
Figure 21

Mandatory Attribution: The following attribution is mandatory for *Non Pressure Pipes*:

Element Name	Attribute Description	Mandatory (Y/N)
LineNumber	The sewer line identifier	N
Use	The function of this pipe in the network.	Y
Diameter_mm	Nominal pipe diameter in millimetres.	Y
Material	Pipe material	Y
Class	The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material.	Y
Lining	The internal corrosion protection method employed on the pipe material.	Y
Protection	The external corrosion protection method employed on the pipe material.	Y
US_InvertLevel_m	UpStream Invert level of this pipe end (in metres against the vertical datum).	Y
DS_InvertLevel_m	DownStream Invert level of this pipe end (in metres against the vertical datum).	Y
US_SurfaceLevel_m	UpStream Surface level (in metres against the vertical datum) vertically above this pipe end.	Y
DS_SurfaceLevel_m	DownStream Surface level (in metres against the vertical datum) vertically above this pipe end.	Y
Alignment_m	Average offset distance in metres from casdastral boundary to the main.	N
Depth_m	Nominal depth in metres to the top of the pipe.	Y
Length_m	Actual material length of the pipe. Not the horizontal length of the geometry.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Non-Pressure Pipes* is **± 0.1m**.

5.9.3 Pressure Pipe

General Information: None.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the invert of the pipe asset. Line direction should be enforced from Pump active asset to Discharge Maintenance Hole due to pumped flow.

Pipes are to be captured based on their physical and spatial properties and attributes. For example, if a pipe changes size, material, class, embedment or direction etc. then it must be broken and captured separately.

Spatial Relationship: Not Applicable

Mandatory Attribution: The following attribution is mandatory for *Pressure Pipes*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The function of this pipe in the network.	Y
Diameter_mm	Nominal pipe diameter in millimetres.	Y
Material	Pipe material	Y
Class	The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material.	Y
Lining	The internal corrosion protection method employed on the pipe material.	Y
Protection	The external protection for the pipe.	Y
Depth_m	Nominal depth in metres to the top of the pipe.	Y
Length_m	Actual material length of the pipe. Not the horizontal length of the geometry.	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Pressure Pipes* is **± 0.1m**.

5.9.4 Valve

General Information: None.

Asset Capture: Single point feature representing the centre of a valve body, typically the spindle.

Spatial Relationship: Must be coincident to the end of pipe assets or a pipe asset anywhere along its length.

Mandatory Attribution: The following attribution is mandatory for *Valves*:

Element Name	Attribute Description	Mandatory (Y/N)
Use	The function of this valve in the network.	Y
Type	The physical configuration of the valve	Y
Diameter_mm	The nominal bore diameter of the valve	Y
Manufacturer	The Manufacturer of the unit	N
ModelNumber	The standard code, model number or part number for the unit	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Valves* is **± 0.1m**.

Reference Document   ADAC Asset Data Dictionary

To further assist in the creation on ADAC Assset Data reference should be made to the ADAC Asset Data Dictionary. The tables in this reference document, define the data structure and attribute values that make up the asset data schema.

The asset data schema tables are grouped based on the Asset Group Categories. These groups are defined to assist in locating asset types within schema and do not limit the capturing of asset information to the asset's physical location (ie Water Service Pipe in a Park will have it's asset schema defined in Water Supply, not OpenSpace)

Project Details

Transport

Stormwater

OpenSpace

Water Supply

Sewerage

Cadastre