MRC GUIDELINES FOR CREATION AND SUBMISSION OF ADAC V5.0.1 XML FILES

ADAC XML Files to Accompany the “As-Constructed” Bundle of Information

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<th>DESCRIPTION AND DISTRIBUTION</th>
<th>DATE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017.03A</td>
<td>MRC ADAPTATION/MODIFICATION OF GUIDELINES</td>
<td>01/03/2017</td>
<td>DRAFT FOR DISCUSSION</td>
</tr>
<tr>
<td>2017.05A</td>
<td>ORIGINAL ISSUE</td>
<td>29/05/2017</td>
<td>-</td>
</tr>
<tr>
<td>2019.12A</td>
<td>V5.0.1 UPDATE</td>
<td>19/12/2019</td>
<td></td>
</tr>
</tbody>
</table>
1 PURPOSE

The purpose of this document is to provide practical guidelines and general assistance with respect to the creation and provision of compliant ADAC XML files. ADAC XML files are routinely required to accompany the usual bundle of “As-Constructed” plans, drawings, schedules and associated information reflecting new donated civil infrastructure and associated assets handed over to the Mackay Regional Council (MRC).

On completion of physical works and prior to asset handover, “As-Constructed” (also known as “As-Built”) information is collected. The “As-Constructed” data indicates the surveyed locations of infrastructure installed as part of the physical works to be taken over by the Receiving Entity.

The final “As-Constructed” data should accurately reflect material types, specifications and other asset-specific information. The digital ADAC XML file is a detailed digital record of “As-Constructed” Plan information and is used by the Receiving Entity to populate various information systems including GIS (MiMAPS) and Asset Systems.

Note: Specific details regarding the preparation and presentation of any required “As-Constructed” drawings and plans accompanying the ADAC XML file should be produced as per Mackay Regional Council’s Engineering Design Guidelines (D20), Drawings and Documentation Guidelines.

2 INTRODUCTION TO ADAC XML

ADAC XML files are an accompaniment to the “As-Constructed” bundle of information required by MRC and form a necessary part of the final approval and handover of associated civil assets and infrastructure donated or handed over via way of contractual arrangements.

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\(^1\) (XML generator) being used to generate the ADAC XML, compliant files are initially created during survey capture and then finalised in conjunction with the creation of the “As-Constructed” drawings (e.g. DWGs). 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 survey-accurate information to correctly identify the assets and the precise locations being represented in the ADAC XML file.

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

\(^1\) Various software tools (purpose-built ADAC XML generators) are available to capture necessary details and asset attributes required to produce a compliant ADAC XML file. Advice on the choice and application of the products available can be sought from providers of most software design suites and survey tools. MRC has produced and made readily available the relevant files for the creation of ADAC XML files within 12d Model.
On acceptance of the “As-Constructed” bundle of information, MRC 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 process.

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

**3 GENERAL REQUIREMENTS**

The ADAC XML file shall be based on **ADAC XML schema release 5.0.1** and should be “validated” for compliance before being submitted to council. Details on the data schema (attributes and mandatory status) noting asset classes and sub-classes to be addressed by the ADAC capture process can be found in Section 7 - “As-Constructed” Data Specification.

The ADAC XML files are to be provided to MRC in the format and naming convention as follows: ****50.xml i.e. 215050.xml, where 2150 is the survey file number.

The value of 50 represents that this is an ADAC survey and should increase by 01 for each amendment that is completed.

*Note: this naming convention is used for Capital Works Projects only.*

**4 DATUM INFORMATION**

Data contained in the ADAC XML file(s) must reflect the survey details of the assets as found in the real world and as accurately reflected in the “As-Constructed” drawings. Refer to Mackay Regional Council’s “As-Constructed” and ADAC Survey Pick-Up Guidelines for current Datum information.

**5 CREATION OF ADAC XML FILE(S)**

In producing compliant ADAC XML files, information on the following asset classes will need to be captured according to the approved ADAC data schema. Vendors of ADAC XML generators are routinely provided with updates to the ADAC schema free of charge and take steps to have these updates incorporated into their products for release to customers in a timely manner. Further information on the ADAC process, data schema, available tools and supporting agencies can be found on the ADAC website: [http://www.adac.com.au](http://www.adac.com.au)

While the ADAC XML files are created from the survey-accurate “As-Constructed” information, attention must be given to how MRC wishes to have elements captured and recorded for each individual asset class. The following details are provided to assist with the capture of ADAC data when using proprietary ADAC XML generators either during the “As-Constructed” or “As-Built” survey pick-up or when capturing the ADAC asset information as part of the creation of the “As-Constructed” plans and associated drawings in civil design (software) suites.

The physical nature of assets will determine where and how individual assets are captured within the ADAC XML file. For example, footpath or a pathway would usually be captured as individual and separate sections reflecting any physical changes such as width or material type.

*Note: It is not within the scope of this document to provide detailed advice on how to operate the various specialist products (ADAC XML generators) used in the creation and provision of the compliant ADAC XML files. Assistance and advice on the use of any particular software package should be sourced from*
the provider of the product who is necessarily familiar with general ADAC requirements, processes and the most current data model (ADAC XML schema version).

6 ASSET CAPTURE DETAILS

These guidelines have been designed from the perspective of being broad enough to suit all stakeholders yet specific enough to be of practical use. In preparing the guidelines it has been accepted that the lowest common capture of an asset is the physical nature of the asset. This approach underpins ADAC's primary goals and requirements of Asset Registration and Valuation, Maintenance Scheduling, Risk Management and Renewals Planning once the specific asset data is processed by the Receiving Entity.

The following section details the complete list of asset types in all asset classes within the ADAC schema 5.0.1. Software vendors will find these details helpful in configuring their various ADAC data capture tools while Users and Receiving Agencies will be able to consider the specifics of asset data capture by Service Class and Asset Type.

Details noted in the tables below include:

- allowable geometries;
- the particular spatial relationships with other asset types;
- whether an asset type is ADAC or MRC mandatory; and
- attribute descriptions and data types.

Note: The tables below include MRC specific elements and MRC specific attributes. Currently, these elements and attributes cannot be included in a valid, ADAC compliant XML file, but have been included in anticipation of updates to the ADAC schema. In the interim, ensure the MRC specific information is included on the “As-Constructed” drawings.
7 “AS-CONSTRUCTED” DATA SPECIFICATION

7.1 Transport Attributes

7.1.1 RAD-PAV: Road Surfacing and Pavement
Corresponding ADAC 5.0.1 Element = Transport Pavement

7.1.1.1 Asset Capture
These assets are multi-patch region/polygon features 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 hatch in Figure 1 and the solid green transparent hatch in Figure 2 for a typical representation of Pavement capture.

Figure 1: Pavement and Kerb

Figure 2: Pavement with Road Island
### 7.1.1.2 Spatial Relationship
Must be coincident to other regions representing pavement / parking where there is a common boundary (i.e. no slivers or overlaps).

### 7.1.1.3 Attributes
The following information is required for all road segments:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
<td>The gazetted, or proposed, road name.</td>
<td>String (254 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Surface</td>
<td>Data container for surface characteristics</td>
<td>-</td>
<td>Y</td>
<td>Refer Section 7.1.1.3.1 Surface (Pavement)</td>
</tr>
<tr>
<td></td>
<td>PavementStructure</td>
<td>Data container for pavement structure characteristics</td>
<td>-</td>
<td>Y</td>
<td>Refer Sections 7.1.1.3.2 Pavement Type (Pavement) 7.1.1.3.3 Base Layer (Pavement) 7.1.1.3.4 Sub-Base Layer (Pavement) 7.1.1.3.5 Lower Sub-Base Layer (Pavement)</td>
</tr>
<tr>
<td></td>
<td>PavementGeoTextile</td>
<td>Pavement geotextile type</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>transport_pavement_geotextile</td>
</tr>
<tr>
<td></td>
<td>SubGrade</td>
<td>Data container for subgrade characteristics</td>
<td>-</td>
<td>Y</td>
<td>Refer Section 7.1.1.3.6 Subgrade (Pavement)</td>
</tr>
<tr>
<td>Y</td>
<td>PavementSAMI</td>
<td>Is there a Stress Absorbing Membrane Interlayer (SAMI) present - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>RRPM_Number</td>
<td>Number of raised reflective pavement markers</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.1.3.1  **Surface (Pavement)**

The following information is required for the road surface:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SurfaceType</td>
<td>The surface type of the road or street</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_surface_type</td>
</tr>
<tr>
<td>Y</td>
<td>SurfaceMaterial</td>
<td>The material the road surface is constructed from</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_surface_material_type</td>
</tr>
<tr>
<td></td>
<td>SurfaceThickness_</td>
<td>The surface thickness in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SurfaceNomWidth_</td>
<td>The nominal width of the surface of the road or street as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
<tr>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to **RAD-PAV: Road Surfacing and Pavement**

7.1.1.3.2  **Pavement Type (Pavement)**

The following information is required for the pavement:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PavementType</td>
<td>Pavement construction type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_type</td>
</tr>
</tbody>
</table>

↑ Back to **RAD-PAV: Road Surfacing and Pavement**
### 7.1.1.3.3 Base Layer (Pavement)

The following information is required for the base layer:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LayerType</td>
<td>Construction type of the base layer.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_base</td>
</tr>
<tr>
<td></td>
<td>LayerDepth_mm</td>
<td>Base layer depth in millimetres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>If PavementType = ‘Rigid’ must be ‘CONC’, otherwise must not be ‘CONC’</td>
</tr>
<tr>
<td></td>
<td>BaseNomWidth_m</td>
<td>The nominal width of the base as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
<tr>
<td></td>
<td>Stabilisation</td>
<td>Base layer stabilisation method</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_stabilisation</td>
</tr>
</tbody>
</table>

↑ Back to RAD-PAV: Road Surfacing and Pavement

### 7.1.1.3.4 Sub-Base Layer (Pavement)

The following information is required for the sub-base layer (if applicable):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LayerType</td>
<td>Construction type of the sub-base layer.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_subbase</td>
</tr>
<tr>
<td></td>
<td>LayerDepth_mm</td>
<td>Sub-base layer depth in millimetres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
The following information is required for the lower sub-base layer (if applicable):

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LayerType</td>
<td>Construction type of the lower sub-base layer.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_lower_subbase</td>
</tr>
<tr>
<td>LayerDepth_mm</td>
<td>Lower sub-base layer depth in millimetres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>LowerSubBaseNomWidth_m</td>
<td>The nominal width of the lower sub-base as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
<tr>
<td>Stabilisation</td>
<td>Lower sub-base layer stabilisation method</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_stabilisation</td>
</tr>
</tbody>
</table>

↑ Back to RAD-PAV: Road Surfacing and Pavement
7.1.1.3.6 **Subgrade (Pavement)**

The following information is required for the subgrade (if applicable):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>CBR</td>
<td>California Bearing Ratio. An expression of the load bearing and shear properties of the material.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Subgrade Replacement</td>
<td>Text field to record notes on the subgrade (e.g., type of fill used – select or granular etc)</td>
<td>String (254 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stabilisation</td>
<td>Subgrade stabilisation method</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>transport_pavement_stabilisation</td>
</tr>
</tbody>
</table>

↑ Back to [RAD-PAV: Road Surfacing and Pavement](#)
7.1.2 **RAD-ISL: Road Islands**
Corresponding ADAC 5.0.1 Element = *Transport RoadIsland*

### 7.1.2.1 Asset Capture
These assets are multi-patch region/polygon features representing the area of Island/LATM 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. The solid red and purple transparent hatches in Figure 3 represent two (2) separate road island segments (the difference being the type of infill in each).

It should be noted that road islands can be comprised of a number of other asset types that need to be recorded separately. For the road edge treatments of the road island, refer to ‘RAD-KERB: Kerb and Channel’ and ‘RAD-RAMP: Kerb Ramps’.

If other elements are incorporated into the road island (e.g. a monument, barrier fencing, etc), refer to the relevant sections of this manual for the data requirements for each of these elements.

### 7.1.2.2 Spatial Relationship
Must be coincident to other regions representing road islands where there is a common boundary i.e. no slivers and/or overlaps.

*Figure 3: Road Island Segments*
### 7.1.2.3 Attributes

The following information is required for all road islands:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_island_type</td>
</tr>
<tr>
<td>Y</td>
<td>RoadIslandNomWidth_m</td>
<td>The nominal width of the road island as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>RoadIslandNomLength_m</td>
<td>The nominal length of the road island as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Area_sqm</td>
<td>The area, in square metres, of the infill.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>InfillType</td>
<td>The type of infill.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_island_infill_type</td>
</tr>
</tbody>
</table>
7.1.3 **RAD-KERB: Kerb and Channel**
Corresponding ADAC 5.0.1 Element = *Transport* RoadEdge

**7.1.3.1 Asset Capture:**
Kerbs (road edges) are complex linear features (i.e. polylines including curves but not bézier curves) representing the top of the kerb. In the case of dish drains, this is the edge of concrete furthest from road centreline (in Figure 4 this is represented by the solid red lines).

**7.1.3.2 Spatial Relationship:**
Must be coincident to other polylines representing road edge where there is a common boundary between kerb types / material change i.e. no slivers and/or overlaps.

*Figure 4: Kerb*
### Attributes

The following information is required for all sections of kerb and channelling:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>Road edge configuration.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_edge_type</td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>Material of Road Edge</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_edge_material</td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width in millimetres of the Edge feature.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>Length in metres of edge material.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Depth_mm</td>
<td>Depth in millimetres of edge material.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PavementExtension_mm</td>
<td>The pavement extension, in millimetres, behind the back of kerb.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.4  **RAD-RAMP: Kerb Ramps**  
Corresponding ADAC 5.0.1 Element = *Transport PramRamp*

### 7.1.4.1  **Asset Capture**

Kerb ramps are simple point features representing crossings between the kerb and the roadway, (e.g. pram ramps). Typically captured in the centre of Kerb Ramp where it transitions to a Kerb/Road.

Note: ADAC 5.0.1 allows for capture of a kerb ramp as a polygon (*Transport PramRamp_Polygon*); MRC does not currently accept kerb ramps captured in this manner.

### 7.1.4.2  **Spatial Relationship**

Must be coincident to Pathway, RoadPathway or PathStructure assets.

### 7.1.4.3  **Attributes**

The following information is required for all kerb ramps:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>KerbRampType</td>
<td>Type of kerb ramp</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_kerb_ramp_type</td>
</tr>
<tr>
<td>Y</td>
<td>KerbRampUse</td>
<td>Intended traffic use of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_kerb_ramp_use</td>
</tr>
<tr>
<td>Y</td>
<td>KerbRampSurfaceMaterial</td>
<td>Surface material of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_surface_material</td>
</tr>
<tr>
<td>Y</td>
<td>KerbRampLength_m</td>
<td>Nominal length of the kerb ramp in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>KerbRampWidth_m</td>
<td>Nominal width of the kerb ramp in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
7.1.5  RAD-TRAFCALM: Road Traffic Calming Measures
Corresponding ADAC 5.0.1 Element = N/A MRC Specific Element

7.1.5.1  Asset Capture
Traffic calming measures are multipatch region/polygon features representing the area of the base of the calming measure.

7.1.5.2  Spatial Relationship
Not applicable

7.1.5.3  Attributes
The following information is required for all traffic calming measures (e.g. speed cushions, chicanes, etc):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Type</td>
<td>The type of structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_traffic_calming_type</td>
</tr>
<tr>
<td>Y</td>
<td>Length_m</td>
<td>The nominal length of the road island as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Width_m</td>
<td>The nominal width of the road island as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Height_mm</td>
<td>Height in millimetres of the traffic calming measure</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.6 RAD-GRID: Animal Grids
Corresponding ADAC 5.0.1 Element = N/A MRC Specific Element

7.1.6.1 Asset Capture
Animal (Cattle) grids are simple area/polygon features representing the perimeter of the grid at road level.

7.1.6.2 Spatial Relationship
Will generally be coincident to other regions representing road pavement.

7.1.6.3 Attributes
The following information is required for all animal grids:

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y Grid_Length_m</td>
<td>Animal grid length in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y Grid_Width_m</td>
<td>Animal grid width in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y Drainage_Prosition?</td>
<td>A flag to indicate whether a drainage provision has been</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.7 **RAD-TACT: Road Tactile Fittings**
Corresponding ADAC 5.0.1 Element = N/A MRC Specific Element

### 7.1.7.1 Asset Capture
Road tactile fittings are simple area/polygon features representing the perimeter of a grouping of tactiles.

### 7.1.7.2 Spatial Relationship
Not applicable

### 7.1.7.3 Attributes
The following information is required for road tactile fittings:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Tactile_Type</td>
<td>Tactile type (e.g., stud, rib, button)</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_tactile_fittings</td>
</tr>
<tr>
<td>Y</td>
<td>Tactile_Pad_Area_m2</td>
<td>Polymeric tactile pad area in square metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Tactile_Area_m2</td>
<td>Tactile area in square metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Tactile_Colour</td>
<td>Colour of the tactiles</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### 7.1.8 RAD-SIGNAL: Traffic Signals

Corresponding ADAC 5.0.1 Element = N/A MRC Specific Element

#### 7.1.8.1 Asset Capture

Traffic signals are a single point representing the centre of the signal support post.

#### 7.1.8.2 Spatial Relationship

Not applicable

#### 7.1.8.3 Attributes

The following information is required for all road traffic signal assets:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>ControllerType</td>
<td>Controller details</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_signal_controller_type</td>
</tr>
<tr>
<td>Y</td>
<td>PostType</td>
<td>Post type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>openspace_sign_structure</td>
</tr>
<tr>
<td>Y</td>
<td>SignalLanternType</td>
<td>Signal Lantern type – number of aspects</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>PedestrianLanternType</td>
<td>Pedestrian lanterns – type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_signal_pedestrian_lantern_type</td>
</tr>
<tr>
<td>Y</td>
<td>TargetBoardHeight_mm</td>
<td>Target Board – height (in mm)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>TargetBoardWidth_mm</td>
<td>Target Board – size (in mm)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>TrafficSignalPedestrianButton</td>
<td>Traffic signal pedestrian push button</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_signal_pedestrian_button_type</td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------</td>
<td>--------------------------------</td>
<td>-----------------</td>
<td>------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Y</td>
<td>VehicleLoopDetectorType</td>
<td>Vehicle Loop Detector – Type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><a href="#">transport_signal_vehicle_loop_detector</a></td>
</tr>
<tr>
<td>Y</td>
<td>VehicleLoopDetectorNumber</td>
<td>Vehicle Loop Detector – number</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>PersonalityEPROM</td>
<td>Personality EPROM</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>StreamsWebConnection</td>
<td>Streams Web connection</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.9 **RAD-PARK: Road Parking Areas**
Corresponding ADAC 5.0.1 Element = *Transport Parking*

7.1.9.1 **Asset Capture**
Road Parking Areas are multi-patch region/polygon feature representing the area of Pavement used for car parking. Asset capture is based on physicality, therefore separate regions/polgons are required if any part of the pavement profile changes i.e. Surface, Base, Sub-Base, Lower Sub-Base and/or Subgrade. Road Parking Areas are subject to the same data pickup rules as Road Pavement.

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

7.1.9.3 **Attributes**
The following information is required for all road parking areas:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
<td>Parking area name</td>
<td>String (254 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NoOfCarparks</td>
<td>Number of individual vehicle spaces.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OnOffStreet</td>
<td>Value indicating whether the parking is an uninterrupted part of the road pavement, or a separate area with road access.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_parking_onoff</td>
</tr>
<tr>
<td></td>
<td>Surface</td>
<td>Data container for surface characteristics</td>
<td>-</td>
<td>Y</td>
<td>Refer Section 7.1.9.3.1 Surface (Parking)</td>
</tr>
<tr>
<td></td>
<td>PavementStructure</td>
<td>Data container for pavement structure characteristics</td>
<td>-</td>
<td>Y</td>
<td>Refer Sections 7.1.9.3.2 Pavement Type (Parking) 7.1.9.3.3 Base Layer (Parking) 7.1.9.3.4 Sub-Base Layer (Parking) 7.1.9.3.5 Lower Sub-Base Layer (Parking)</td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PavementGeoTextile</td>
<td>Pavement geotextile type.</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>transport_pavement_geotextile</td>
</tr>
<tr>
<td></td>
<td>SubGrade</td>
<td>Data container for subgrade characteristics</td>
<td>-</td>
<td>Y</td>
<td>Refer Section 7.1.9.3.6 Subgrade (Parking)</td>
</tr>
<tr>
<td>Y</td>
<td>PavementSAMI</td>
<td>Is there a Stress Absorbing Membrane Interlayer (SAMI) present - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.1.9.3.1 Surface (Parking)

The following information is required for the road parking area surface:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SurfaceType</td>
<td>The surface type of the parking area</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_surface_type</td>
</tr>
<tr>
<td>Y</td>
<td>SurfaceMaterial</td>
<td>The material the parking surface is constructed from</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_surface_material_type</td>
</tr>
<tr>
<td></td>
<td>SurfaceThickness_mm</td>
<td>The surface thickness in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SurfaceArea_sqm</td>
<td>The area of the parking surface as a decimal number in square metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
</tbody>
</table>

↑ Back to [RAD-PARK: Road Parking Areas](#)

#### 7.1.9.3.2 Pavement Type (Parking)

The following information is required for the pavement:
### 7.1.9.3.3 Base Layer (Parking)

The following information is required for the base layer of the road parking area (if applicable):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PavementType</td>
<td>Pavement construction type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_type</td>
</tr>
<tr>
<td></td>
<td>LayerType</td>
<td>Construction type of the base layer.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_base</td>
</tr>
<tr>
<td></td>
<td>LayerDepth_mm</td>
<td>Base layer depth in millimetres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>If PavementType = 'Rigid' must be 'CONC', otherwise must not be 'CONC'</td>
</tr>
<tr>
<td></td>
<td>BaseNomWidth_m</td>
<td>The nominal width of the base as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
<tr>
<td></td>
<td>Stabilisation</td>
<td>Base layer stabilisation method</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_stabilisation</td>
</tr>
</tbody>
</table>

† Back to RAD-PARK: Road Parking Areas
### 7.1.9.3.5 Lower Sub-Base Layer (Parking)

The following information is required for the lower sub-base layer of the road parking area (if applicable):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LayerType</td>
<td>Construction type of the lower sub-base layer.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_lower_subbase</td>
</tr>
<tr>
<td></td>
<td>LayerDepth_mm</td>
<td>Lower sub-base layer depth in millimetres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>LowerSubBaseNomWidth_m</td>
<td>The nominal width of the lower sub-base as a decimal number in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
<tr>
<td></td>
<td>Stabilisation</td>
<td>Lower sub-base layer stabilisation method</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pavement_stabilisation</td>
</tr>
</tbody>
</table>

↑ Back to [RAD-PARK: Road Parking Areas](#)

### 7.1.9.3.6 Subgrade (Parking)

The following information is required for the subgrade of the road parking area (if applicable):
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<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBR</td>
<td>California Bearing Ratio. An expression of the load bearing and shear properties of the material.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Subgrade Replacement</td>
<td>Text field to record notes on the subgrade (e.g., type of fill used – select or granular etc)</td>
<td>String (254 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Stabilisation</td>
<td>Subgrade stabilisation method</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>transport_pavement_stabilisation</td>
</tr>
</tbody>
</table>

↑ Back to RAD-PAV: Road Surfacing and Pavement
7.1.10 RAD-WLSTP: Car Parking Wheel Stops
Corresponding ADAC 5.0.1 Element = N/A MRC Specific Element

7.1.10.1 Asset Capture
Car parking wheel stops are single points representing the centre of the wheel stop.

7.1.10.2 Spatial Relationship
Not applicable

7.1.10.3 Attributes
The following information is required for all car parking wheel stops:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>WheelStop_Type</td>
<td>Material type of wheel stop</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_wheelstop_material</td>
</tr>
<tr>
<td>Y</td>
<td>WheelStop_Size_mm</td>
<td>Height of the wheel stop in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>WheelStop_Length_m</td>
<td>Length of wheel stop as a decimal number in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>Record to 2 decimal places</td>
</tr>
</tbody>
</table>
7.1.11 RAD-BRDG: Road Bridges

Corresponding ADAC 5.0.1 Elements = Transport BridgeExtent, Transport BridgeDeck, Transport BridgeSuperstructure, Transport BridgeAbutment, Transport BridgePier

7.1.11.1 Asset Capture

These assets are polygon features representing the area of a Road Bridge. Asset capture is based on physicality, therefore separate regions/polygons are required for the different aspects of the Bridge (i.e. Extent, Deck, Superstructure, Abutment and/or Pier).

7.1.11.2 Spatial Relationship

Must be coincident to other regions representing road bridges where there is a common boundary- no slivers/overlaps. See Figure 6 for components.

BridgeExtent – Describes the envelope or footprint for the whole structure and all of its parts. It holds properties that apply at the assembly level.

BridgeDeck – Represents a single deck unit between abutments or supports. There may be one or more BridgeDeck objects for any given bridge assembly.

BridgeSuperstructure – Represents a single superstructure between abutments or supports.

BridgeAbutment – Represents the extent of one abutment for a bridge assembly. A BridgeAbutment will be independently described at each end of the structure.

BridgePier – Represents a single supporting structure that supports deck spans between abutments.

7.1.11.3 Attributes

The following information is required for all bridge components:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BridgeID</td>
<td>Unique identifier, used to associate components of the same bridge assembly</td>
<td>String (64 Chars)</td>
<td>Y</td>
</tr>
</tbody>
</table>
Figure 5: Bridge Elements

7.111.3.1 BridgeExtent

The following information is required for bridge extent:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Road name or nearest road where bridge resides, or the recognised name of the bridge.</td>
<td>String (254 Chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>Predominant use of bridge.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_extent_use</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Type of bridge construction</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_extent_type</td>
<td></td>
</tr>
<tr>
<td>CrossingType</td>
<td>The layout and configuration of this structure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_extent_crossingtype</td>
<td></td>
</tr>
</tbody>
</table>
## MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
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<tr>
<td></td>
<td>Spans</td>
<td>Number of spans</td>
<td>Positive Integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MinimumClearance _m</td>
<td>Minimum clearance in metres</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PredominantMaterial</td>
<td>Predominant material of bridge</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_extent_material</td>
</tr>
<tr>
<td></td>
<td>DesignLoad</td>
<td>Design load of bridge as per AS5100</td>
<td>String (64 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ComponentInfo / Notes</td>
<td>Free text notes particular to this feature.</td>
<td>String (254 Chars)</td>
<td>Y</td>
<td>Populate Containment Class of Parapet/Railing as per AS5100 in this field</td>
</tr>
</tbody>
</table>

↑ Back to RAD-BRDG: Road Bridges

### 7.1.11.3.2 BridgeDeck

The following information is required for the bridge deck:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>Material types for bridge deck</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_deck_material</td>
</tr>
<tr>
<td></td>
<td>NomWidth_m</td>
<td>Nominal width of deck in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DeckLength_m</td>
<td>Length of bridge deck between joints at abutments in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.11.3.3 BridgeSuperstructure

The following information is required for the bridge superstructure:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>Material types for the Superstructure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_deck_material</td>
</tr>
</tbody>
</table>

7.1.11.3.4 BridgePier

The following information is required for the bridge piers:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>Predominant Pier material type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Transport_bridge_pier_material</td>
</tr>
</tbody>
</table>

7.1.11.3.5 BridgeAbutment

The following information is required for the bridge abutments:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>The predominant material of the abutment</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_bridge_abutment_material</td>
</tr>
</tbody>
</table>

7.1.11.3.6 ContainmentClass

The Containment Class of Parapet/Railing as per AS5100 does not need to be captured in ADAC format. Instead, record this information as a note in the BridgeExtent.
7.1.12 RAD-PATH: Pathways
Corresponding ADAC 5.0.1 Element = Transport Pathway

7.1.12.1 Asset Capture
Pathways are complex linear features (i.e. polylines including curves but not Bezier curves) representing the centre longitudinal axis of an on ground footpath or off-road cycleway. Please refer to the green and red dash/dot line in Figure 7. The green represents an existing pathway asset whereas the red denotes a newly constructed section of Pathway.

7.1.12.2 Spatial Relationship
May be coincident to a KerbRamp point feature or with a PathwayStructure (e.g. stairs or a ramp). A pathway that changes surface types or widths along its length must be represented as individual polylines, with the start and end point of each polyline corresponding to the start and end of the changes in the pathway segments.

Figure 7: Pathway Segments
### 7.1.12.3 Attributes

The following information is required for all pathways (excluding on-road bikeways):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>Intended traffic use of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_use</td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>Type of pathway structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>This field must be set to 'In Ground' for pathways.</td>
<td></td>
</tr>
<tr>
<td>SurfaceMaterial</td>
<td>Surface material of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_surface_material</td>
<td></td>
</tr>
<tr>
<td>Width_m</td>
<td>Nominal width of the pathway in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Length_m</td>
<td>Nominal length of the pathway in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Depth_mm</td>
<td>The nominal depth of the pathway material in millimetres.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.1.13 **RAD-PATHSTR: Pathway Structures**

Corresponding ADAC 5.0.1 Element = *Transport PathStructure*

### 7.1.13.1 Asset Capture

Pathway structures are complex linear features (i.e. polylines including curves but not Bezier curves) representing the centre longitudinal axis of a pathway related structure such as a set of stairs, a ramp, boardwalk or viewing platform.

### 7.1.13.2 Spatial Relationship

Will generally be coincident to a Pathway feature.

### 7.1.13.3 Attributes

The following information is required for all pathway structures (i.e., stairways, platforms, etc) that function as part of a pathway network:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Use</td>
<td>Intended traffic use of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_use</td>
</tr>
<tr>
<td></td>
<td>Structure</td>
<td>Type of pathway structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_structure</td>
</tr>
<tr>
<td></td>
<td>SurfaceMaterial</td>
<td>Surface material of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_surface_material</td>
</tr>
<tr>
<td></td>
<td>SubStructureMaterial</td>
<td>Material of the sub-structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_pathway_substructure_material</td>
</tr>
<tr>
<td></td>
<td>Width_m</td>
<td>Nominal width of the pathway in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Length_m</td>
<td>Nominal length of the pathway in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.14 RAD-BWAY: On-Road Bikeways

Corresponding ADAC 5.0.1 Element = Transport RoadPathway

7.1.14.1 Asset Capture

On-road Bikeways are complex linear features (i.e. polylines including curves but not Bezier curves) representing the centre longitudinal axis of an area of pavement designated for the sole use of cyclists.

7.1.14.2 Spatial Relationship

Must be part of a Pavement feature (i.e. a designated area of pavement).

7.1.14.3 Attributes

The following information is required for all on-road bikeways:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RoadPathway Use</td>
<td>Intended traffic use of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>This field must be set to ‘CycleWay’ for on-road bikeways</td>
</tr>
<tr>
<td></td>
<td>RoadPathway Structure</td>
<td>Type of pathway structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>This field must be set to ‘On Road’ for on-road bikeways</td>
</tr>
<tr>
<td></td>
<td>RoadPathway SurfaceMaterial</td>
<td>Surface material of the structure.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>This field must be set to ‘Road Pavement’ for on-road bikeways</td>
</tr>
<tr>
<td></td>
<td>RoadPathway Width_m</td>
<td>Nominal width of the marked pathway in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RoadPathway Length_m</td>
<td>Nominal length of the marked pathway in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.1.15  RAD-SSD: Sub-soil Drains
Corresponding ADAC 5.0.1 Element = Transport SubSoilDrain

7.1.15.1  Asset Capture
Sub-soil Drains are simple Linear features (i.e. straight lines) representing the centreline (at invert) of a circular sub-soil drain pipe asset. Pipes are typically broken where the Use and/or Type of drain changes.

7.1.15.2  Spatial Relationship
Must be coincident to Flush Points.

7.1.15.3  Attributes
The following information is required for all sub-soil drains:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>The use (orientation) of the drain.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_subsoil_drain_use</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>The type (configuration) of the drain.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_subsoil_drain_type</td>
<td></td>
</tr>
<tr>
<td>Length_m</td>
<td>The length in metres of the drain.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.1.16 RAD-FP: Flush Points
Corresponding ADAC 5.0.1 Element = Transport DrainFlushPoint

7.1.16.1 Asset Capture
Flush Points are a simple point feature representing the centre top of sub-soil drain flushing out points.

7.1.16.2 Spatial Relationship
Must be coincident to SubSoilDrain assets.

7.1.16.3 Attributes

The following information is required for all sub-soil drain flushing out points:

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>The function of the flushing out point</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_flushpoint_function</td>
</tr>
</tbody>
</table>
7.1.17 RAD-RDBARR: Road Barriers
Corresponding ADAC 5.0.1 Element = Transport RoadSafetyBarrier

7.1.17.1 Asset Capture
Road Safety Barriers are complex Linear features (i.e. polylines including curves but not Bezier curves) representing the centre longitudinal axis of a barrier dedicated to transport features.

It is recommended, but not mandatory, that each vertex represents an upright. This allows the geometry to be exploited to identify the individual features if necessary.

7.1.17.2 Spatial Relationship
Will generally be coincident to the Pavement area.

7.1.17.3 Attributes
The following information is required for all Road Safety Barriers.

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of road safety barrier employed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_type</td>
<td></td>
</tr>
<tr>
<td>LeadingEndTreatment</td>
<td>Type of leading end treatment</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_leadingendtreatment</td>
<td></td>
</tr>
<tr>
<td>TrailingEndTreatment</td>
<td>Type of trailing end treatment</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_trailingendtreatment</td>
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</tr>
<tr>
<td>StandardHeight</td>
<td>Is barrier height standard?</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height_m</td>
<td>Nominal height of the barrier in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length_m</td>
<td>Nominal length of the barrier in metres including terminals</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------</td>
<td>------------------------------------------------------------</td>
<td>------------------------------</td>
<td>------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
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<td>MotorcyclistProtectionType</td>
<td>The type of motorcyclist protection rail</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_motorcyclistprotectiontype</td>
</tr>
<tr>
<td></td>
<td>PedestrianProtectionSheeting</td>
<td>Has pedestrian protection sheeting been installed?</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BridgeTransition</td>
<td>Is this a bridge transition?</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>StandardPostSpacing</td>
<td>Is the post spacing standard?</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PostSpacing_m</td>
<td>Spacing of posts in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PostType</td>
<td>Type of post installed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_posttype</td>
</tr>
<tr>
<td></td>
<td>RailType</td>
<td>Type of rail installed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_posttype</td>
</tr>
<tr>
<td></td>
<td>HorizontalAlignment</td>
<td>Horizontal alignment of road safety barrier</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>transport_roadbarrier_horizontalalignment</td>
</tr>
<tr>
<td></td>
<td>NumberOfBollards</td>
<td>Number of bollards</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.2 Drainage Attributes

7.2.1 SWD-PIPE: Stormwater Pipes
Corresponding ADAC 45.0.1 Element = StormWater Pipe

7.2.1.1 Asset Capture
Stormwater Pipes are 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 structure. Enforced line direction from Gravity Upstream (read: higher AHD level) to Gravity Downstream (read: lower AHD level) due to gravitation flow. Pipe features are captured from the intersection of pipe material and chamber wall. Refer to Figure 8, Figure 9 and Figure 10.

Figure 8 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 8: Single Cell SWD Pipe
Figure 9 represents a triple-celled culvert asset from inlet to outlet. In this case there is a spatial relationship between each end of the pipe asset and the End Structure point feature.

Note: For multiple cell culverts, pick up the centreline of the culverts (which by coincidence could be the centre line of a cell should there be an odd amount) and nominate the number of culverts as an attribute (i.e. 3 cells). Should there be a height differential between the structures, then all cells would need to be picked up separately.

Figure 10 represents an irregular shaped pit with multiple multi-celled pipes entering the pit asset and a large single-celled asset exiting the pit and outletting through an End Structure.
### 7.2.1.2 Spatial Relationship
May be coincident to other StormWater point features.

### 7.2.1.3 Attributes
The following information is required for all stormwater pipes. This includes inter-allotment drainage pipes.

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PipeStructure</td>
<td>Container for a choice of pipe cross-sectional measures</td>
<td>-</td>
<td>Y</td>
<td>Refer Sections 7.2.1.3.1 Circular Pipe 7.2.1.3.2 Rectangular Pipe</td>
</tr>
<tr>
<td></td>
<td>Cells</td>
<td>The number of cells in the pipe course.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ConcreteCoverType</td>
<td>The pipe protection regime employed.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_conc_cover_type</td>
</tr>
<tr>
<td></td>
<td>Grade</td>
<td>Pipe gradient as a percentage. Derivable from invert levels and horizontal length.</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>Pipe material length in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>US_InvertLevel_m</td>
<td>Invert level of the pipe at the upstream end in metres against the vertical datum</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DS_InvertLevel_m</td>
<td>Invert level of the pipe at the downstream end in metres against the vertical datum</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>US_SurfaceLevel_m</td>
<td>Surface level (in metres against the vertical datum) vertically above the upstream pipe end</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DS_SurfaceLevel_m</td>
<td>Surface level (in metres against the vertical datum) vertically above the downstream pipe end</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.2.1.3.1 Circular Pipe

If the pipe cross-section is circular, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>The internal diameter of the pipe in millimetres.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The pipe wall material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>[stormwater_pipe_material]</td>
</tr>
<tr>
<td></td>
<td>Class</td>
<td>The pipe wall class</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>[stormwater_pipe_class_type]</td>
</tr>
<tr>
<td></td>
<td>JointType</td>
<td>The joint type of the pipe section</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>[stormwater_pipe_joint_type]</td>
</tr>
</tbody>
</table>

↑ Back to [SWD-PIPE: Stormwater Pipes](#)  

#### 7.2.1.3.2 Rectangular Pipe

If the pipe cross-section is rectangular, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Height_mm</td>
<td>Height in millimetres of the internal cross section</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width in millimetres of the internal cross section</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-----------------------</td>
<td>-------------------</td>
<td>------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>Wall material of the box section.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_box_material</td>
</tr>
<tr>
<td></td>
<td>Class</td>
<td>The pipe wall class</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_pipe_class_type</td>
</tr>
</tbody>
</table>

↑ Back to [SWD-PIPE: Stormwater Pipes](#)
7.2.2 SWD-PIT: Stormwater Pits
Corresponding ADAC 5.0.1 Element = StormWater Pit

7.2.2.1 Asset Capture
Stormwater inlets and outlets are simple point features representing the centre of chamber of a pit or manhole.

Note: InletConfig’s Left/Centre/Right is referenced from the lintel looking at the road crown.

7.2.2.2 Spatial Relationship
Not applicable

7.2.2.3 Attributes
The following information is required for all stormwater inlets and outlets, including inter-allotment drainage inlet pits.

Table 1 Matrix of common pit types and attribution required

<table>
<thead>
<tr>
<th>Type of Pit</th>
<th>Attribute</th>
<th>Mandatory?</th>
<th>Valid Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Hole</td>
<td>Use</td>
<td>Y</td>
<td>Maintenance Hole Roofwater Inspection Chamber Roofwater Outlet</td>
</tr>
<tr>
<td></td>
<td>Lid Type?</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inlet?</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lintel?</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Gully Pits</td>
<td>Use</td>
<td>Y</td>
<td>Kerb Inlet</td>
</tr>
<tr>
<td></td>
<td>Lid Type?</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inlet?</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lintel?</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Field Inlets</td>
<td>Use</td>
<td>Y</td>
<td>Field Inlet</td>
</tr>
<tr>
<td></td>
<td>Lid Type?</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inlet?</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lintel?</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>PitNumber</td>
<td>The pit identifier</td>
<td></td>
<td>String (32 Chars)</td>
</tr>
<tr>
<td>Use</td>
<td>Purpose of the feature in the network</td>
<td></td>
<td>String (32 Chars)</td>
</tr>
<tr>
<td>ChamberConstruction</td>
<td>Method of chamber construction</td>
<td></td>
<td>String (32 Chars)</td>
</tr>
<tr>
<td>ChamberSize</td>
<td>The essential dimensions of the chamber</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>LidType</td>
<td>The type of lid or grate covering the opening</td>
<td></td>
<td>String (32 Chars)</td>
</tr>
<tr>
<td>Depth_m</td>
<td>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.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
</tr>
<tr>
<td>Inlet</td>
<td>Represents a surface inlet to the pit. Set to nil if this pit does not have a surface inlet</td>
<td>-</td>
<td>Refer Table 1</td>
</tr>
<tr>
<td>Lintel</td>
<td>Represents the pit lintel. Set to nil if this pit does not have a lintel.</td>
<td>-</td>
<td>Refer Table 1</td>
</tr>
<tr>
<td>OutletType</td>
<td>The type of outlet for this pit.</td>
<td>String (32 Chars)</td>
<td>Y</td>
</tr>
<tr>
<td>FireRetardant</td>
<td>True of false value indicating whether fire retardant measures are incorporated.</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
</tr>
<tr>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
</tr>
</tbody>
</table>
### 7.2.2.3.1 Rectangular Chamber

If the pit has a rectangular chamber, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SurfaceLevel_m</td>
<td>Surface level of this feature (in metres against the vertical datum)</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>InvertLevel_m</td>
<td>Invert level of this feature (in metres against the vertical datum)</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

If the pit has a rectangular chamber, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length_mm</td>
<td>Length in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to [SWD-PIT: Stormwater Pits](#)

### 7.2.2.2 Circular Chamber

If the pit has a circular chamber, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>Diameter in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to [SWD-PIT: Stormwater Pits](#)

### 7.2.2.3 Extended Chamber

If the pit has an extended chamber (parallel sides and circular ends), the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Radius_mm</td>
<td>Radius, in millimetres of the circular ends</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files

**Version 2019.12A** (19 December 2019)

| MRC? | Attribute Name         | Attribute Description                                                                 | Data Type               | Mandatory? | Comments                        |
|------|------------------------|----------------------------------------------------------------------------------------|                        |            |                                |
|      | Extension_mm           | Distance, in millimetres, between the centre points of the circular ends                | Positive integer       | Y          |                                |

↑ Back to **SWD-PIT: Stormwater Pits**

#### 7.2.2.3.4 Inlet

If the pit has a surface inlet, the following additional values are required:

| MRC? | Attribute Name          | Attribute Description                                                                 | Data Type                   | Mandatory? | Comments                              |
|------|-------------------------|----------------------------------------------------------------------------------------|-----------------------------|            |                                      |
|      | InletConfig             | Positioning of the surface inlet against the pit                                      | String (32 Chars)           | Y          | stormwater_pit_inlet_config          |
|      | InletType               | The type of inlet employed                                                             | String (64 chars)           | Y          | stormwater_pit_inlet_type            |
|      | InletSize               | Dimensions of the inlet e.g. Diameter or Length × Width                                | String (32 Chars)           | Y          |                                      |

↑ Back to **SWD-PIT: Stormwater Pits**

#### 7.2.2.3.5Lintel

If the pit has a lintel, the following additional values are required:

| MRC? | Attribute Name            | Attribute Description                                                                 | Data Type                   | Mandatory? | Comments                            |
|------|---------------------------|----------------------------------------------------------------------------------------|-----------------------------|            |                                    |
|      | LintelConstruction        | Method of lintel construction.                                                        | String (32 Chars)           | Y          | construction_method                 |
|      | LintelLength_m            | Represents the length in metres of the lintel.                                         | Floating point, positive, non-zero decimal | Y          |                                     |
7.2.3 **SWD-STRUCT: Stormwater End Structures**
Corresponding ADAC 5.0.1 Element = *StormWater EndStructure*

7.2.3.1 **Asset Capture**
End Structures are simple point features representing the top of the headwall. Refer to Figure 11.

Note: ADAC 5.0.1 allows for capture of a stormwater end structure as a polyline (StormWater EndStructure_Polyline); MRC does not currently accept end structures captured in this manner.

7.2.3.2 **Spatial Relationship**
Headwall “floats” adjacent to the end of a StormWater pipe feature.

*Figure 11: End Structure with Wing Wall*
### 7.2.3.3 Attributes

The following information is required for all stormwater end structures (with the exception of end caps):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>StructureID</td>
<td>The identifier for this end structure. Usually the textual identifier it would be labelled with on the face of a plan</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>StructureLevel_m</td>
<td>The surface level of the structure in metres against the vertical datum for the project</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EndWall</td>
<td>Data structure representing the end wall. Set to nil if the End Structure does not have an end wall</td>
<td>-</td>
<td>N</td>
<td>Refer Section 7.2.3.3.1 End Wall</td>
</tr>
<tr>
<td></td>
<td>WingWall</td>
<td>Data structure representing the wing wall. Set to nil if the End Structure does not have any wing walls</td>
<td>-</td>
<td>N</td>
<td>Refer Section 7.2.3.3.2 Wing Wall</td>
</tr>
<tr>
<td></td>
<td>Apron</td>
<td>Data structure representing the apron. Set to nil if the End Structure does not have an apron</td>
<td>-</td>
<td>N</td>
<td>Refer Section 7.2.3.3.3 Apron</td>
</tr>
<tr>
<td></td>
<td>GrateType</td>
<td>Type of grate used, if applicable</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_grate_type</td>
</tr>
<tr>
<td></td>
<td>TideGate</td>
<td>Type of tide or flood gate used, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>stormwater_tidegate_type</td>
</tr>
<tr>
<td>Y</td>
<td>TideGate_Size_m</td>
<td>Size (in metres) of the tide or flood gate used, if applicable</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
### 7.2.3.3.1 End Wall

If the end structure has an end wall, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of stormwater end wall structure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_endwall_type</td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td>Define the number of cells and sizes penetrating the End Structure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>Represents the length in metres of the end wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Height_m</td>
<td>Represents the height in metres of the end wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness_m</td>
<td>Represents the thickness in metres of the end wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The predominant construction material of the end wall structure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_predominant_material_type</td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>The method of construction the end wall structure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
</tbody>
</table>

If the end structure has a wing wall, the following additional values are required:

| Y | EndWallVolume | Volume of end wall material in m3 | Floating point, positive, decimal (zero allowed) | Y |

↑ Back to [SWD-STRUCT: Stormwater End Structures](#)
<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWW</td>
<td>Length_m</td>
<td>Represents the length in metres of the left wing wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>LWW</td>
<td>Height_m</td>
<td>Represents the height in metres of the left wing wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>LWW</td>
<td>Thickness_m</td>
<td>Represents the thickness in metres of the left wing wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>LWW</td>
<td>Material</td>
<td>The predominant construction material of the left wing wall</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_endstructure_material</td>
</tr>
<tr>
<td>LWW</td>
<td>Construction</td>
<td>The method of construction of the left wing wall</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td>RWW</td>
<td>Length_m</td>
<td>Represents the length in metres of the right wing wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>RWW</td>
<td>Height_m</td>
<td>Represents the height in metres of the right wing wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>RWW</td>
<td>Thickness_m</td>
<td>Represents the thickness in metres of the right wing wall</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>RWW</td>
<td>Material</td>
<td>The predominant construction material of the right wing wall</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_endstructure_material</td>
</tr>
<tr>
<td>RWW</td>
<td>Construction</td>
<td>The method of construction of the right wing wall</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td>Y</td>
<td>WingWallVolume</td>
<td>Volume of wing wall material in m3</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
If the end structure has an apron, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Apron_Width_m</td>
<td>Represents the width in metres of apron on the End Structure</td>
<td>Floating point, positive, decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apron_Thickness_m</td>
<td>Represents the thickness in metres of apron on the End Structure</td>
<td>Floating point, positive, decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apron_Area_m2</td>
<td>The area in square metres of apron on the End Structure</td>
<td>Floating point, positive, decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apron_Material</td>
<td>The predominant construction material of apron on the End structure</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_outlet_protection_type</td>
</tr>
<tr>
<td></td>
<td>Apron_Construction</td>
<td>The method of construction of the apron, if applicable.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td></td>
<td>ApronVolume</td>
<td>Volume of apron material in m3</td>
<td>Floating point, positive, decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.2.4 **SWD-FIT: Stormwater Fittings**
Corresponding ADAC 5.0.1 Element = *StormWater Fitting*

**7.2.4.1 Asset Capture**
Stormwater fittings are single point features representing the centre point of a fitting.

**7.2.4.2 Spatial Relationship**
Must be coincident to the end point of a StormWater pipe feature.

**7.2.4.3 Attributes**
If the stormwater pipe has an end cap, the following values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FittingType</td>
<td>The type of stormwater fitting.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_fitting_type</td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
7.2.5 **SWD-DRAIN: Stormwater Surface Drains**
Corresponding ADAC 5.0.1 Element = *StormWater SurfaceDrain*

### 7.2.5.1 Asset Capture
Open Drainage Channels are simple linear features representing the invert of the channel.

### 7.2.5.2 Spatial Relationship
May be coincident to EndStructures and WSUD regions/polygons.

### 7.2.5.3 Attributes
The following information is required for all open stormwater drainage channels:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of drain or channel</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_surface_drain_type</td>
</tr>
<tr>
<td></td>
<td>DrainShape</td>
<td>Cross-sectional shape of the drain</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_surface_drain_shape</td>
</tr>
<tr>
<td></td>
<td>LiningMaterial</td>
<td>The material that the channel is lined with</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_surface_drain_lining_material</td>
</tr>
<tr>
<td></td>
<td>LinedWidth_m</td>
<td>The width, in metres, of the lined portion of the channel.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BatterMaterial</td>
<td>The material that the drain batter is lined with. A null value may be supplied where the drain has no batter</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>stormwater_surface_drain_lining_material</td>
</tr>
<tr>
<td></td>
<td>BatterWidth_m</td>
<td>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</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US_InvertLevel_m</td>
<td>Invert level of the drain at the upstream end, in metres against the vertical datum</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DS_InvertLevel_m</td>
<td>Invert level of the drain at the downstream end, in metres against the vertical datum</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AverageGrade</td>
<td>The average gradient over the whole length of the feature, as a percentage.</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td>Derivable from the difference in invert levels and the horizontal length of the geometry.</td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>The material length, in metres, of the centreline of the channel.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.2.6  SWD-SQID: Water Sensitive Urban Design (WSUD) Points

7.2.6.1  Asset Capture
These are single point features 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.

Known as Gross Pollutant Traps (GPTs), these fall into (and are captured in) three primary categories:

- GPT Complex such as Commercial or Custom built device (e.g. Humes Interceptor);
- GPT Simple such as an “in pit” basket or “end of line” device; or
- GPT Non-Simple which represent basic and minor sand filtration storage.

7.2.6.2  Spatial Relationship
GPT Complex and NonGPTSimple assets must be coincident to pipe features as per Pits/Manhole features. However, GPTSimple 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.
## Simple Gross Pollutant Traps (GPTs)

**Corresponding ADAC 5.0.1 Element = StormWater GPTSimple**

The following information is required for all simple Gross Pollutant Traps:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sqid_Id</td>
<td>The string identifier of the device, as it would appear on a plan.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>The construction method</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TreatmentMeasure</td>
<td>The treatment measure employed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_wsud_GPTSimple_measure</td>
</tr>
<tr>
<td></td>
<td>Function1</td>
<td>The first function of the WSUD point.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_wsud_GPTComplex_function Has a fixed value because all GPTSimple points are Gross Pollutant Capture devices.</td>
</tr>
<tr>
<td></td>
<td>Length_mm</td>
<td>The length of the device</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>The width of the device</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>Predominant material of device</td>
<td>String (64 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MaintenanceCycle_mmths</td>
<td>The minimum maintenance cycle in months. This is the revisit interval for clearing captured rubbish.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### Simple Water Sensitive Urban Design Device (Non-GPTs)

Corresponding ADAC 5.0.1 Element = *StormWater* NonGPTSimple

The following information is required for all Non-Simple Gross Pollutant Traps water sensitive urban design features (other than detention / retention basins):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sqid_Id</td>
<td>The string identifier of the device, as it would appear on a plan.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>The construction method</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><a href="#">construction_method</a></td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TreatmentMeasure</td>
<td>The treatment measure employed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><a href="#">stormwater_wsud_NonGPTPoint_measure</a></td>
</tr>
<tr>
<td></td>
<td>Function1</td>
<td>The first function of the WSUD point</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><a href="#">stormwater_wsud_NonGPTPoint_function</a></td>
</tr>
<tr>
<td></td>
<td>Function2</td>
<td>The second function of the WSUD point, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td><a href="#">stormwater_wsud_NonGPTPoint_function</a></td>
</tr>
<tr>
<td></td>
<td>Function3</td>
<td>The third function of the device, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td><a href="#">stormwater_wsud_NonGPTPoint_function</a></td>
</tr>
<tr>
<td></td>
<td>Length_mm</td>
<td>The length of the device</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### Corresponding ADAC 5.0.1 Element = StormWater GPTComplex

The following information is required for all complex Gross Pollutant Traps:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Squid_Id</td>
<td>The string identifier of the device, as it would appear on a plan.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>Refer Sections 7.2.6.5.1 Commercial 7.2.6.5.2 Custom</td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>The construction method</td>
<td>-</td>
<td>Y</td>
<td>stormwater_wsud_GPTComplex_function</td>
</tr>
<tr>
<td></td>
<td>Function1</td>
<td>The first function of the WSUD point.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_wsud_GPTComplex_function</td>
</tr>
<tr>
<td></td>
<td>Function2</td>
<td>The second function of the WSUD point, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>stormwater_wsud_GPTComplex_function</td>
</tr>
<tr>
<td></td>
<td>Function3</td>
<td>The third function of the device, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>stormwater_wsud_GPTComplex_function</td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>US_PipeDiameter_mm</td>
<td>The upstream pipe diameter in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS_PipeDiameter_mm</td>
<td>The downstream pipe diameter in mm</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SurfaceLevel_m</td>
<td>The surface level at the top of the device</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US_InvertLevel_m</td>
<td>Invert level at the upstream end (in metres against the vertical datum).</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS_InvertLevel_m</td>
<td>Invert level at the downstream end (in metres against the vertical datum).</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CleanoutLevel_m</td>
<td>The level to which the device must be cleaned out, in metres against the vertical datum.</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth_m</td>
<td>The depth, in metres, of the device.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SumpDepth_m</td>
<td>The depth, in metres, of the sump, if applicable</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HasFilterMedia</td>
<td>True if the device has filtration media or a filter capsule installed.</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HasBasket</td>
<td>True if the device has a litter basket installed.</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HasBoards</td>
<td>True if the device has drop-boards or penstock installed.</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Design Flow (m³/s)
- **DesignFlow_m3s**: Design Flow in cubic metres per second
  - Data Type: Floating point, positive, non-zero decimal
  - Mandatory?: Y

## Maximum Contaminant Retention Volume (m³)
- **MaxContaminantVolume_m3**: Maximum contaminant retention volume in cubic metres.
  - Data Type: Floating point, positive, non-zero decimal
  - Mandatory?: Y

## Maximum Internal Volume (m³)
- **MaxInternalVolume_m3**: Maximum internal volume in cubic metres.
  - Data Type: Floating point, positive, non-zero decimal
  - Mandatory?: Y

## Minimum Maintenance Cycle (months)
- **MaintenanceCycle_mnths**: The minimum maintenance cycle in months (refer to specifications)
  - Data Type: Positive integer
  - Mandatory?: Y

## Rotation
- **Rotation**: Rotation angle (cartesian - anti-clockwise 0 degrees = East)
  - Data Type: Floating point decimal (directional)
  - Mandatory?: N

### Commercial

If the complex GPT is commercially manufactured the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The manufacturer of the unit</td>
<td>String (64 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Model</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td>The planimetric size of the device</td>
<td>-</td>
<td>Y</td>
<td>Refer Sections 7.2.6.5.1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="#">Commercial/Size/Rectangular</a></td>
</tr>
</tbody>
</table>

### Commercial/Size/Rectangular
- Refer Sections 7.2.6.5.1.1
- [Commercial/Size/Rectangular](#)
If the complex GPT is commercially available, prefabricated rectangular model, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length_mm</td>
<td>Length (in mm) of a commercially constructed, rectangular Gross Pollutant Trap (Complex)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width (in mm) of a commercially constructed, rectangular Gross Pollutant Trap (Complex)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

7.2.6.5.1.2 Commercial/Size/Circular

If the complex GPT is commercially available, prefabricated circular model, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>Diameter (in mm) of a commercially constructed, circular Gross Pollutant Trap (Complex)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to Complex Gross Pollutant Traps

7.2.6.5.2 Custom

If the complex GPT is a custom construction the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size</td>
<td>The planimetric size of the device</td>
<td>-</td>
<td>Y</td>
<td>Refer Sections 7.2.6.5.2.1 Custom/Rectangular 7.2.6.5.2.2 Custom/Circular</td>
</tr>
</tbody>
</table>

7.2.6.5.2.1 Custom/Rectangular

If the complex GPT is custom constructed rectangular model, the following additional values are required:
<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length_mm</td>
<td>Length (in mm) of a custom constructed, rectangular Gross Pollutant Trap (Complex)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width (in mm) of a custom constructed, rectangular Gross Pollutant Trap (Complex)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**7.2.6.5.2.2 Custom/Circular**

If the complex GPT is custom constructed circular model, the following additional values are required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>Diameter (in mm) of a custom constructed, circular Gross Pollutant Trap (Complex)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to [Complex Gross Pollutant Traps](#)
7.2.7 SWD-WSUD: Water Sensitive Urban Design (WSUD) Areas
Corresponding ADAC 5.0.1 Element = StormWater WSUD_ComplexArea

7.2.7.1 Asset Capture
Water Sensitive Urban Design areas such as kerbside bio-filtration beds or purpose built drainage swales should be captured individually as a region/polygon.

Individual areas are to be recorded within the data capture fields defining class type (e.g. swale, buffer strip, bio-retention basin).

7.2.7.2 Spatial Relationship
Not Applicable

7.2.7.2.1 Detention / Retention Basins
The following information is required for all water sensitive urban design areas that act as detention / retention basins:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sqid_Id</td>
<td>The string identifier of the device, as it would appear on the plan</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_wsud_area_measure</td>
</tr>
<tr>
<td></td>
<td>TreatmentMeasure</td>
<td>The treatment measure employed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_wsud_area_measure</td>
</tr>
<tr>
<td></td>
<td>Function1</td>
<td>The first function of the WSUD area</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>stormwater_wsud_area_function</td>
</tr>
<tr>
<td></td>
<td>Function2</td>
<td>The second function of the WSUD area, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>stormwater_wsud_area_function</td>
</tr>
<tr>
<td></td>
<td>Function3</td>
<td>The third function of the WSUD area, if applicable</td>
<td>String (32 Chars)</td>
<td>N</td>
<td>stormwater_wsud_area_function</td>
</tr>
<tr>
<td></td>
<td>PondingArea_m2</td>
<td>Area of Temporary Ponding or Extended Detention in square metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>PondingDepth_m</td>
<td>Average depth of Temporary Ponding or Extended Detention in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FilterArea_m2</td>
<td>Area of Bioretention filter media in square metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FilterDepth_m</td>
<td>Depth of Bioretention filter media in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TransitionDepth_m</td>
<td>Depth of the Bioretention Transition Layer in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DrainageDepth_m</td>
<td>Depth of the Bioretention Drainage Layer in metres.</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MacrophyteZoneArea_m2</td>
<td>The vegetated area in square metres (may be zero). Area of vegetated portion of constructed wetland (macrophyte zone)</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MacrophyteZoneDepth_m</td>
<td>Average depth of vegetated portion of constructed wetland (macrophyte zone).</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td>If vegetation is not present, record as 0.</td>
</tr>
<tr>
<td></td>
<td>CoarseSedimentArea_m2</td>
<td>Maximum area of ponding (for coarse sediment capture) before bypass.</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td>If vegetation is not present, record as 0.</td>
</tr>
<tr>
<td></td>
<td>SedimentVolume_m3</td>
<td>Volume of sediment capacity in cubic metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>MinSurfaceLevel_m</td>
<td>Minimum surface level within structure (above or below water surface level).</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PermanentPondLevel_m</td>
<td>Water surface level during normal dry weather.</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OutletLevel_m</td>
<td>The surface level in metres of the bypass, or spillway, or other overflow outlet structure.</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DesignFlow_m3s</td>
<td>The maximum design flow of the feature in cubic metres per second</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HasSpillway</td>
<td>Whether the feature has a spillway</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MaintenanceCycle_mnths</td>
<td>The minimum maintenance cycle in months (refer to specifications)</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.2.8 **SWD-WSUDPOLY: Water Sensitive Urban Design (WSUD) Polylines**

Corresponding ADAC 5.0.1 Element = *StormWater FlowManagementDevice*

7.2.8.1 **Asset Capture**

Water Sensitive Urban Design polylines such as levees, spillways and weirs.

7.2.8.2 **Spatial Relationship**

Not applicable

7.2.8.3 **Attributes**

The following information is required for all Stormwater Flow Management Devices:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sqid_Id</td>
<td>The string identifier of the device, as it would appear on the plan</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Stormwater Flow Management Device Type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td><em>stormwater_wsud_line_type</em></td>
</tr>
<tr>
<td>Material</td>
<td>The predominant material of the Stormwater Flow Management Device</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td><em>stormwater_wsud_line_material</em></td>
</tr>
<tr>
<td>Length_m</td>
<td>The material length, in metres, of the centreline of the feature</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CrestElevation_m</td>
<td>The RL of the highest point at the centre/mid point of feature</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.3 Water Supply Attributes

7.3.1 Mains

7.3.1.1 WAT-PIPE: Water Supply Pipe
Corresponding ADAC 5.0.1 Element = WaterSupply Pipe

7.3.1.1.1 Asset Capture
Pipes are simple Linear features (i.e. straight lines) representing the crown 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.

Please refer to the red and green polylines in Figure 12. The red lines represent reticulation pipes whereas the green line represents a service pipe.

Note:
The dash/dot polyline is not broken at the fittings as the physical specification of the pipe doesn't change.

7.3.1.1.2 Spatial Relationship
Pipes must be coincident to water valves and fittings that participate in a flow network.

Figure 12: Water Supply Pipe
# MRC Guidelines for the Creation and Lodgement of ADAC XML Files


## 7.3.1.1.3 Attributes

The following information is required for all water mains:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>The purpose of this feature in the network</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_use</td>
<td></td>
</tr>
<tr>
<td>WaterQuality</td>
<td>The quality of the water being carried in the pipe</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_supply_water_quality</td>
<td></td>
</tr>
<tr>
<td>Alignment_m</td>
<td>Offset from cadastral boundary to the main</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diameter_mm</td>
<td>Nominal diameter of the pipe in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td>water_pipe_material</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The pipe material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_material</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_class</td>
<td></td>
</tr>
<tr>
<td>Lining</td>
<td>The internal corrosion protection method employed on the pipe material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_lining</td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>The external corrosion protection method employed on the pipe material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_protection</td>
<td></td>
</tr>
<tr>
<td>JointType</td>
<td>Pipe jointing method employed</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_jointtype</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
<td>Depth_m</td>
<td>The average depth in metres that the pipe is buried. This measure is useful in most residential developments but will be less reliable in sharply changing terrain or where significant cuts and fills have been applied. Negative depths may be used to indicate exposed or suspended pipes above the surface.</td>
<td>Floating point decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Embedment</td>
<td>Embedment type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_pipe_embedment</td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>Material length of the pipe in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Detectable_Marker_Tape</td>
<td>Flag to show whether detectable marker tape has been put on the pipe</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### 7.3.1.2 WAT-MH: Water Supply Maintenance Hole

Corresponding ADAC 5.0.1 Element = *WaterSupply MaintenanceHole*

#### 7.3.1.2.1 Asset Capture

Maintenance Holes are single point features located on the centre of the valve pit.

#### 7.3.1.2.2 Spatial Relationship

No connectivity is enforced due to the size and shape of the object.

#### 7.3.1.2.3 Attributes

The following information is required for all water supply maintenance holes:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>Purpose of water maintenance hole</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td><em>water_mh_use</em></td>
</tr>
<tr>
<td>ChamberSize</td>
<td>Data structure describing the chamber configuration and dimensions</td>
<td>-</td>
<td>Y</td>
<td></td>
<td>Refer Sections 7.3.1.2.3.1 <em>Rectangular Chamber</em> 7.3.1.2.3.2 <em>Circular Chamber</em></td>
</tr>
<tr>
<td>SurfaceLevel_m</td>
<td>The height of the top surface of the lid, hatch, rim or roof. Surface level in metres against the vertical datum for this project.</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>InvertLevel_m</td>
<td>The height of the top surface of interior floor/bottom. Invert level in metres against the vertical datum for this project.</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FloorConstruction</td>
<td>Method of chamber floor construction.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td><em>construction_method</em></td>
</tr>
<tr>
<td>FloorMaterial</td>
<td>Material type for chamber floor construction.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td><em>water_mh_material</em></td>
</tr>
<tr>
<td>WallConstruction</td>
<td>Method of chamber wall construction.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td><em>construction_method</em></td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WallMaterial</td>
<td>Material type for chamber wall construction.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_mh_material</td>
</tr>
<tr>
<td></td>
<td>RoofMaterial</td>
<td>Material type for chamber roof construction.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_mh_roofmaterial</td>
</tr>
<tr>
<td></td>
<td>LidMaterial</td>
<td>Chamber lid configuration and material.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_mh_lidmaterial</td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.3.1.2.3.1 Rectangular Chamber

If the chamber is rectangular, the following additional information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length_mm</td>
<td>Length in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

#### 7.3.1.2.3.2 Circular Chamber

If the chamber is circular, the following additional information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>Diameter in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to WAT-MH: Water Supply Maintenance Hole
### 7.3.1.3 WAT-TANK: Water Supply Storage Tank

Corresponding ADAC 5.0.1 Element = WaterSupply StorageTank

#### 7.3.1.3.1 Asset Capture

Water tanks are single point features located on the centre of the tank.

#### 7.3.1.3.2 Spatial Relationship

No connectivity is enforced due to the size and shape of the object.

#### 7.3.1.3.3 Attributes

The following information is required for all water supply storage tanks:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>The material that the storage tank is made from</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_storage_tank_material</td>
</tr>
<tr>
<td></td>
<td>Source</td>
<td>The source of water in the tank</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_storage_source</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume_m3</td>
<td>The effective volume in cubic metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
7.3.1.4 **WAT-SERV: Water Service Pipe**
Corresponding ADAC 5.0.1 Element = *WaterSupply Service*

### 7.3.1.4.1 Asset Capture
Pipes are simple Linear features (i.e. straight lines) representing the crown of a circular pipe asset. Pipe segments are to be captured based on the pipe attributes. Pipe diameter must not be smaller than 20mm or larger than 63mm

Please refer to the red and green polylines in Figure 12. The red lines represent reticulation pipes whereas the green line represents a service pipe.

### 7.3.1.4.2 Spatial Relationship
Pipes must be coincident to water valves, meters, service fitting and fittings that participate in a water service network.

### 7.3.1.4.3 Attributes
The following information is required for all water service pipes:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter_mm</td>
<td>Nominal diameter of the pipe in mm</td>
<td>Positive Integer</td>
<td>Y</td>
<td>Minimum Value: 20, Maximum Value: 63</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The service pipe material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td>water_servicepipe_material</td>
</tr>
<tr>
<td>Class</td>
<td>The service pipe class as specified by the manufacturer and relevant to the material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td>water_servicepipe_class</td>
</tr>
<tr>
<td>Protection</td>
<td>Provision of conduit or other protection</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td>water_servicepipe_protection</td>
</tr>
<tr>
<td>Termination</td>
<td>Fitting or valve at the customer end of the service</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td>water_servicepipe_termination</td>
</tr>
<tr>
<td>WaterQuality</td>
<td>Type of water supplied through water service</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
<td>water_service_use</td>
</tr>
</tbody>
</table>
### Fittings

#### WAT-FIT: Water Supply Fittings

Corresponding ADAC 5.0.1 Element = *WaterSupply* Fitting

1. **Asset Capture**
   
   All fittings are single point features representing the centre point of the fitting. Please refer to the yellow circles in Figure 13 for representations of a Tee and Tapping Band.

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

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length_m</td>
<td>Material length of the pipe in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 13: Water Fittings**
### 7.3.2.1.3 Attributes

The following information is required for all water supply fittings:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Type</strong></td>
<td>The fitting type</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><code>water_fittings_type</code></td>
</tr>
<tr>
<td></td>
<td><strong>Material</strong></td>
<td>The fitting material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><code>water_fittings_material</code></td>
</tr>
<tr>
<td></td>
<td><strong>Lining</strong></td>
<td>The internal corrosion protection method employed on the fitting material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><code>water_pipe_lining</code></td>
</tr>
<tr>
<td></td>
<td><strong>Protection</strong></td>
<td>The external corrosion protection method employed on the fitting material</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><code>water_pipe_protection</code></td>
</tr>
<tr>
<td></td>
<td><strong>BodySize_mm</strong></td>
<td>The nominal diameter of the largest pipe entering the fitting</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>BranchSize_mm</strong></td>
<td>The nominal diameter of the smallest pipe entering the fitting</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Rotation</strong></td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>WaterQuality</strong></td>
<td>The quality of the water being carried by the network to which the fitting is a part</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td><code>water_supply_water_quality</code></td>
</tr>
</tbody>
</table>

The following information is required for all water supply fittings:
### 7.3.2.2 WAT-VALVE: Water Supply Valves
Corresponding ADAC 5.0.1 Element = WaterSupply Valve

#### 7.3.2.2.1 Asset Capture
Valves are single point features representing the top of spindle.

#### 7.3.2.2.2 Spatial Relationship
Must be coincident to a Water Pipe asset.

#### 7.3.2.2.3 Attributes
The following information is required for all water supply valves:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>Use</td>
<td>The purpose of the valve in the network</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_valve_use Refer Table 2</td>
</tr>
<tr>
<td>Type</td>
<td>Type</td>
<td>The type of valve</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_valve_type Refer Table 2</td>
</tr>
<tr>
<td>Diameter_mm</td>
<td>Diameter_mm</td>
<td>The nominal bore diameter of the valve</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Manufacturer</td>
<td>The manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Rotation</td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>WaterQuality</td>
<td>WaterQuality</td>
<td>The quality of the water in the network the valve is part of</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_supply_water_quality</td>
</tr>
</tbody>
</table>
### Table 2 Relationship between valve use and type

<table>
<thead>
<tr>
<th>Use</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Return</td>
<td>Generic NR</td>
</tr>
<tr>
<td></td>
<td>Rubber Gate</td>
</tr>
<tr>
<td></td>
<td>Swing Check</td>
</tr>
<tr>
<td></td>
<td>Wafer</td>
</tr>
<tr>
<td></td>
<td>RPZ</td>
</tr>
<tr>
<td>Service Stop</td>
<td>Gate</td>
</tr>
<tr>
<td>Scour</td>
<td>Butterfly</td>
</tr>
<tr>
<td>Diversion</td>
<td>Knife Gate</td>
</tr>
<tr>
<td>Zone Boundary</td>
<td>Eccentric Plug</td>
</tr>
<tr>
<td>Flow Control</td>
<td>Globe</td>
</tr>
<tr>
<td></td>
<td>Ball Valve</td>
</tr>
<tr>
<td></td>
<td>Vee Ported Ball</td>
</tr>
<tr>
<td></td>
<td>Control</td>
</tr>
<tr>
<td>Pressure Control</td>
<td>Overflow</td>
</tr>
<tr>
<td></td>
<td>Pressure Relief</td>
</tr>
<tr>
<td></td>
<td>Pressure Sustaining</td>
</tr>
<tr>
<td></td>
<td>Altitude Valve</td>
</tr>
<tr>
<td></td>
<td>Vacuum Release</td>
</tr>
<tr>
<td>Gas Release</td>
<td>Air Valve</td>
</tr>
<tr>
<td>Other</td>
<td>Special</td>
</tr>
</tbody>
</table>
7.3.2.3 **WAT-HYDR: Water Supply Hydrants**
Corresponding ADAC 5.0.1 Element = WaterSupply Hydrant

### 7.3.2.3.1 Asset Capture
Hydrants are single point features representing the centre of the vertical hydrant branch.

### 7.3.2.3.2 Spatial Relationship
Must be coincident to a pipe asset.

### 7.3.2.3.3 Attributes
The following information is required for water supply hydrants:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use</td>
<td>The purpose of the hydrant in the network</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_hydrant_use</td>
</tr>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>The nominal bore size of the hydrant</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WaterQuality</td>
<td>The quality of the water being delivered through the hydrant</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_supply_water_quality</td>
</tr>
</tbody>
</table>
7.3.3  Services

7.3.3.1  WAT-METER: Water Supply Meter
Corresponding ADAC 5.0.1 Element = WaterSupply Meter

7.3.3.1.1  Asset Capture
Meters are single point features located at the centre point of the domestic meter itself.

7.3.3.1.2  Spatial Relationship
Must be coincident to a water pipe with a Use of “Fire Service”, “Service” or “Fire Service Thru Meter”.

7.3.3.1.3  Attributes
The following information is required for all water meters:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>SerialNumber</td>
<td>The manufacturers serial number, as stamped or fixed on the meter.</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Configuration of the meter.</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_meter_type</td>
<td></td>
</tr>
<tr>
<td>Diameter_mm</td>
<td>The nominal bore diameter of the meter.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dials</td>
<td>The number of dials on the reading face.</td>
<td>Positive integer</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>The manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>InitialReading</td>
<td>The reading on the meter face at the time of installation.</td>
<td>Positive integer</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-----------------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>PrivateBooster</td>
<td>True indicates that the meter is associated with a private pressure boosting system.</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OffsetSide</td>
<td>Is the offset from the left or the right side boundary when looking from the road</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>which_side</td>
</tr>
<tr>
<td></td>
<td>Offset_m</td>
<td>The distance in metres to measure along the frontage from the indicated side.</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>InstallationDate</td>
<td>Installation Date of the meter. ISO 8601 is the accepted format</td>
<td>Date (YYYY-MM-DD)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LotNo</td>
<td>The lot number as described on the originating survey plan</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PlanNo</td>
<td>The plan number as described on the originating survey plan</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WaterQuality</td>
<td>The quality of the water being metered</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_supply_water_quality</td>
</tr>
</tbody>
</table>
7.3.3.2 WAT-SVCFIT: Water Service Fitting
Corresponding ADAC 5.0.1 Element = WaterSupply ServiceFitting

7.3.3.2.1 Asset Capture
All fittings are single point features representing the centre point of the fitting.

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

7.3.3.2.3 Attributes
The following information is required for all water service fittings:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of service fitting</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_service_fitting_type</td>
</tr>
<tr>
<td></td>
<td>BelowGround</td>
<td>Is the fitting below ground</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WaterSaver</td>
<td>Does the fitting employ waste minimisation technology (other than auto shut-off)</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AutoShutOff</td>
<td>Does the fitting employ auto shut-off technology</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anticlockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WaterQuality</td>
<td>The quality/source of the water being supplied through the service fitting</td>
<td>String (32 Chars)</td>
<td>Y</td>
<td>water_supply_water_quality</td>
</tr>
</tbody>
</table>
7.4 Wastewater / Sewer Attributes

7.4.1 Mains

7.4.1.1 SEW-PIPE: Sewer Pipes (Pressurized)
Corresponding ADAC 5.0.1 Element = Sewerage Pipe_Permission

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

Pipes 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.

7.4.1.2 Spatial Relationship
Must be coincident to Pressure pipe point features in the pumped sewerage network.

7.4.1.3 Attributes
The following information is required for all pressurized sewer mains:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td></td>
<td>The function of this pipe in the network</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_use</td>
</tr>
<tr>
<td>Diameter_mm</td>
<td>Nominal pipe diameter in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td>sewer_pipe_pressure_material</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Pipe material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_class</td>
<td></td>
</tr>
<tr>
<td>Lining</td>
<td>The internal corrosion protection method employed on the pipe material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_lining</td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>The external protection the pipe</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_protection</td>
<td></td>
</tr>
<tr>
<td>JointType</td>
<td>Pipe to pipe join method</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_jointtype</td>
<td></td>
</tr>
<tr>
<td>Alignment_m</td>
<td>Average offset distance from cadastral boundary to the main</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth_m</td>
<td>Nominal depth in metres to the top of the pipe</td>
<td>Floating point decimal</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embedment</td>
<td>Embedment type</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_embedment</td>
<td></td>
</tr>
<tr>
<td>RockExcavated</td>
<td>Value indicating whether rock was excavated from the pipe channel</td>
<td>Boolean (Yes/No)</td>
<td>N</td>
<td>“Rock in Trench” will be classified as material that cannot be excavated at a rate greater than 10 m³/hr with a 30T excavator with rock hammer.</td>
<td></td>
</tr>
<tr>
<td>Length_m</td>
<td>Actual material length of the pipe. Not the horizontal length of the geometry</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.4.1.2  **SEW-PIPEP: Sewer Pipes (Non-Pressurized / Gravity)**

Corresponding ADAC 5.0.1 Element = *Sewerage Pipe_* NonPressure

---

### 7.4.1.2.1  Asset Capture

Complex linear feature (read: polylines including curves but not Bezier curves) representing the invert of the pipe asset.

Enforced line direction from Gravity Upstream (read: higher AHD level) to Gravity Downstream (read: 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.

Please refer to Figure 14 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 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.

---

### 7.4.1.2.2  Spatial Relationship

Not Applicable
7.4.1.2.3 Attributes

The following information is required for all non-pressurized sewer mains:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LineNumber</td>
<td>The sewer line identifier</td>
<td>String (32 chars)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use</td>
<td>The function of this pipe in the network</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_nonpressure_use</td>
</tr>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>Nominal pipe diameter in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>Pipe material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_nonpressure_material</td>
</tr>
<tr>
<td></td>
<td>Class</td>
<td>The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_nonpressure_class</td>
</tr>
<tr>
<td></td>
<td>Lining</td>
<td>The internal corrosion protection method employed on the pipe material</td>
<td>String (32 chars)</td>
<td>N</td>
<td>sewer_pipe_nonpressure_lining</td>
</tr>
<tr>
<td></td>
<td>Protection</td>
<td>The external corrosion protection method employed on the pipe material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_nonpressure_protection</td>
</tr>
<tr>
<td></td>
<td>JointType</td>
<td>Pipe to pipe join method</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_jointtype</td>
</tr>
<tr>
<td></td>
<td>US_InvertLevel_m</td>
<td>Invert level of the upstream pipe end in metres against the vertical datum</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>---------</td>
<td>------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>DS_InvertLevel_m</td>
<td>Invert level of the downstream pipe end in metres against the vertical datum</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>US_SurfaceLevel_m</td>
<td>Surface level (in metres against the vertical datum) vertically above the upstream pipe end</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DS_SurfaceLevel_m</td>
<td>Surface level (in metres against the vertical datum) vertically above the downstream pipe end</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alignment_m</td>
<td>Average offset distance in metres from casdastral boundary to the main</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depth_m</td>
<td>Nominal depth in metres to the invert of the pipe.</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Embedment</td>
<td>Embedment type</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_embedment</td>
</tr>
<tr>
<td></td>
<td>RockExcavated</td>
<td>Value indicating whether rock was excavated from the pipe channel</td>
<td>Boolean (Yes/No)</td>
<td>N</td>
<td>“Rock in Trench” will be classified as material that cannot be excavated at a rate greater than 10 m³/hr with a 30T excavator with rock hammer.</td>
</tr>
<tr>
<td></td>
<td>PipeGrade</td>
<td>Pipe grade as a percentage. Derivable as the difference in invert levels divided by the horizontal length (not the length of pipe) multiplied by 100</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>Actual material length of the pipe. Not the horizontal length of the geometry</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
7.4.1.3 SEW-MH: Sewer Maintenance Holes
Corresponding ADAC 5.0.1 Element = Sewerage MaintenanceHole

7.4.1.3.1 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.

7.4.1.3.2 Spatial Relationship
Not Applicable.

7.4.1.3.3 Attributes
The following information is required for all sewer main maintenance holes:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>Use</td>
<td>Use or purpose of this Maintenance Hole in the network</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_mh_use</td>
</tr>
<tr>
<td>ChamberSize</td>
<td>ChamberSize</td>
<td>Data structure describing the chamber configuration and dimensions</td>
<td>-</td>
<td>Y</td>
<td>Refer Sections</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.4.1.3.3.1 Rectangular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.4.1.3.3.2 Circular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.4.1.3.3.3 Custom</td>
</tr>
<tr>
<td>SurfaceLevel_m</td>
<td>SurfaceLevel_m</td>
<td>The height of the top surface of the lid, hatch, rim or roof. Surface level in metres against the vertical datum for this project</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>InvertLevel_m</td>
<td>InvertLevel_m</td>
<td>The height of the top surface of interior floor/bottom. Invert level in metres against the vertical datum for this project</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>FloorConstruction</td>
<td>FloorConstruction</td>
<td>Method of chamber floor construction</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------</td>
<td>--------------------</td>
<td>------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>FloorMaterial</td>
<td>Material type for chamber construction</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_mh_material</td>
</tr>
<tr>
<td></td>
<td>WallConstruction</td>
<td>Method of chamber wall construction</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td></td>
<td>WallMaterial</td>
<td>Material type for chamber wall construction</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_mh_material</td>
</tr>
<tr>
<td></td>
<td>RoofMaterial</td>
<td>Material type for chamber roof construction</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_mh_roofmaterial</td>
</tr>
<tr>
<td></td>
<td>Lining</td>
<td>Material type of chamber lining</td>
<td>String (32 chars)</td>
<td>N</td>
<td>sewer_mh_lining</td>
</tr>
<tr>
<td></td>
<td>LidMaterial</td>
<td>Chamber lid configuration and material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_mh_lidmaterial</td>
</tr>
<tr>
<td></td>
<td>DropType</td>
<td>Chamber drop type</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_mh_droptype</td>
</tr>
<tr>
<td></td>
<td>CatchmentPS</td>
<td>The identifier of the pumpstation that this node flows to</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LineNumber</td>
<td>The identifier of the line that this node connects to</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MH_Number</td>
<td>The identifier of this maintenance hole or pit</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chainage_m</td>
<td>The distance upstream from end of line.</td>
<td>Floating point,</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TieDistance_m</td>
<td>The tie distance in metres to a cadastral corner</td>
<td>Floating point,</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>positive, non-zero decimal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MRC Guidelines for the Creation and Lodgement of ADAC XML Files >

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Offset Distance_m</td>
<td>The offset distance in metres from a cadastral boundary</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

### 7.4.1.3.1 Rectangular

If the sewer maintenance hole / chamber is rectangular, the following additional information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length_mm</td>
<td>Length in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to **SEW-MH: Sewer Maintenance Holes**

### 7.4.1.3.2 Circular

If the sewer maintenance hole / chamber is circular, the following additional information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>Diameter in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to **SEW-MH: Sewer Maintenance Holes**

### 7.4.1.3.3 Custom

If the sewer maintenance hole / chamber is a custom design, it should be associated with a plan or document describing its layout and dimension. The following additional information is required:
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area_sqm</td>
<td>The area, in square metres, of the custom shaped chamber</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to [SEW-MH: Sewer Maintenance Holes](#)
7.4.2 Fittings

7.4.2.1 SEW-FIT: Sewerage Fittings
Corresponding ADAC 5.0.1 Element = Sewerage Fitting

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

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

7.4.2.1.3 Attributes
The following information is required for all sewer network fittings:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The physical configuration of the fitting</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_fitting_type</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Fitting material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_fitting_material</td>
<td></td>
</tr>
<tr>
<td>Lining</td>
<td>The internal corrosion protection material or method for the fitting</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_lining</td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>The external protection for the fitting</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_protection</td>
<td></td>
</tr>
<tr>
<td>BodySize_mm</td>
<td>The nominal diameter of the major connecting pipe.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BranchSize_mm</td>
<td>The nominal diameter of the minor connecting pipe.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.4.2.2 **SEW-VALVE : Sewerage Valves**
Corresponding ADAC 5.0.1 Element = Sewerage Valve

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

7.4.2.2.2 **Spatial Relationship**
Must be coincident anywhere along its length or at the end of Pressure Pipe assets.

7.4.2.2.3 **Attributes**
The following information is required for all sewer network valves:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>The function of this valve in the network</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_valve_use Refer Table 3</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>The physical configuration of the valve</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_valve_type Refer Table 3</td>
<td></td>
</tr>
<tr>
<td>Diameter_mm</td>
<td>The nominal bore diameter of the valve</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lining</td>
<td>The internal corrosion protection method employed on the pipe material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>sewer_pipe_pressure_lining</td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>The external protection for the valve</td>
<td>String (32 chars)</td>
<td>N</td>
<td>sewer_pipe_pressure_protection</td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>The manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-----------------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Rotation</td>
<td>Rotation angle (cartesian - anti-clockwise 0 degrees = East)</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3 Relationship between valve use and type**

<table>
<thead>
<tr>
<th>Use</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Return</td>
<td>Generic</td>
</tr>
<tr>
<td></td>
<td>Rubber Gate</td>
</tr>
<tr>
<td></td>
<td>Swing Check</td>
</tr>
<tr>
<td>Service</td>
<td>Gate</td>
</tr>
<tr>
<td>Stop</td>
<td>Butterfly</td>
</tr>
<tr>
<td>Scour</td>
<td>Knife Gate</td>
</tr>
<tr>
<td>Diversion</td>
<td>Eccentric Plug</td>
</tr>
<tr>
<td>Zone Boundary</td>
<td>Globe</td>
</tr>
<tr>
<td>Flow Control</td>
<td>Ball</td>
</tr>
<tr>
<td></td>
<td>Generic</td>
</tr>
<tr>
<td></td>
<td>Penstock</td>
</tr>
<tr>
<td>Pressure Control</td>
<td>Overflow</td>
</tr>
<tr>
<td></td>
<td>Pressure Release</td>
</tr>
<tr>
<td></td>
<td>Vacuum Release</td>
</tr>
<tr>
<td>Gas Release</td>
<td>Air Valve</td>
</tr>
<tr>
<td>Other</td>
<td>Special</td>
</tr>
</tbody>
</table>
7.4.3 Services

7.4.3.1 SEW-CONN: Sewerage Property Connections
Corresponding ADAC 5.0.1 Element = Sewerage Connection

7.4.3.1.1 Asset Capture
These are complex linear features (read: polylines including curves but not bézier curves) representing the invert of the pipe asset.

Enforced line direction from Inspection Opening to the Non Pressure Pipe/Maintenance Hole due to gravitational flow. Refer to Figure 15.

7.4.3.1.2 Spatial Relationship
Gravity downstream end point of the linear feature must be coincident to anywhere on a Non Pressure pipe linear feature or the point feature of a Maintenance Hole if the asset is a “Stub” connection.

*Figure 15: Sewer Property Connection*
The following information is required for all sewer property connections:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>The function of the property connection in the network</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
<td>sewer_property_connection_use</td>
</tr>
<tr>
<td>Diameter_mm</td>
<td>The nominal diameter of the connection conduit</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The material of the connection conduit</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
<td>sewer_property_connection_material</td>
</tr>
<tr>
<td>Class</td>
<td>The pipe class as specified by the manufacture. Pipe class refers to the wall thickness and performance of the material</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
<td>sewer_property_connection_material_class</td>
</tr>
<tr>
<td>Length_m</td>
<td>The material length in metres of the house property connection branch conduit</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Physical configuration of connection</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
<td>sewer_property_connection_type</td>
</tr>
<tr>
<td>Chainage_m</td>
<td>The distance in metres from the centre of the downstream manhole to the point of connection of the offshoot branch</td>
<td>Floating point, positive, decimal (zero allowed)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offset_m</td>
<td>The distance measured square from the centre of the sewer main to the point of connection</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LineNumber</td>
<td>The line identifier of the sewer main</td>
<td>String (32 chars)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>DSMHID</td>
<td>Downstream manhole identifier</td>
<td>String (32 chars)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IO_Distance_m</td>
<td>Distance from a point perpendicular to the inspection opening to the centre of the downstream manhole along the axis of the sewer main</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO_Nearest_m</td>
<td>Perpendicular distance from the inspection opening to the nearest cadastral boundary</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SO_Other_m</td>
<td>Perpendicular distance from the inspection opening to the next nearest cadastral boundary</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sediment_Trap</td>
<td>True indicates that the connection includes an inline sediment trap</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SurfaceLevel_m</td>
<td>Surface level of this feature (in metres against the vertical datum)</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>InvertLevel_m</td>
<td>Invert level of this feature (in metres against the vertical datum)</td>
<td>Floating point decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5 Open Space Attributes

7.5.1 Open Space Areas (including Activity and Landscaping Areas)

7.5.1.1 OS-AREA : Open Space Areas
Corresponding ADAC 5.0.1 Element = OpenSpace OpenSpaceArea

7.5.1.1.1 Asset Capture
Open Space Areas are multi-patched area features representing the “footprint” of the Open Space area and enclosing all relevant Open Space assets. Refer to the dashed red line in the example shown in Figure 16.

7.5.1.1.2 Spatial Relationship
Open space assets are often ‘nested’ within each other. For example an entire park can be created as an Open Space Area. The park may have a number of Open Space Activity Areas or Open Space Landscaped Areas within it. In Figure 16 the yellow dotted lines indicate Activity Areas (e.g. a basketball court and a playground).

Individual trees (blue dots) and activity points (yellow dots) can exist within the Open Space Area, Activity Area or Landscape Area.

Figure 16: Open Space Areas and Other Assets
7.5.1.1.3 **Attributes**

The following information is required for all open space areas:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
<td>The official name or description of the Open Space area (e.g., John Breen Park, Nita Fleming Fields)</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>The type of Open Space area (e.g., Recreational, Bushland, Sporting Complex)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_area_type</td>
</tr>
<tr>
<td>Y</td>
<td>OSAreaCategory</td>
<td>Category of the open space area (e.g., regional park, district park, local park, environmental area, other).</td>
<td>String (32 chars)</td>
<td>N</td>
<td>openspace_area_category</td>
</tr>
</tbody>
</table>
7.5.1.2 **OS-ACTAREA : Open Space Activity Areas**

Corresponding ADAC 5.0.1 Element = *OpenSpace ActivityArea*

### 7.5.1.2.1 Asset Capture

Open space activity areas are multi-patched area features representing the “footprint” of different areas set aside for dedicated purposes within the parent area feature (the yellow dotted lines in Figure 16). Examples include sports fields and playgrounds.

### 7.5.1.2.2 Spatial Relationship

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

### 7.5.1.2.3 Attributes

The following information is required for all open space activity areas:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>The type of use for the Activity Site eg: Animal, Fitness, Play, Sport</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_activity_area_use</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>The type of Activity Site. Eg: Sports Field, Cycling Facility</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The material type of Undersurfacing eg: Bark, Rubber, Grassed</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_activity_area_material</td>
<td></td>
</tr>
<tr>
<td>Thickness_mm</td>
<td>Thickness of material in millimetres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.5.1.3 OS-LANDSCP: Open Space Landscape Areas

Corresponding ADAC 5.0.1 Element = OpenSpace LandscapeArea

7.5.1.3.1 Asset Capture

Multi-patched area features representing the “footprint” of a landscaped area. Individual areas are required where the type of Landscaping changes (e.g. garden beds, enclosed shrubs, physical protection around mature trees, etc).

7.5.1.3.2 Spatial Relationship

Must be within the Parent Open Space Area feature.

7.5.1.3.3 Attributes

The following information is required for all landscaped areas:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of landscape area (e.g.: Garden, Grass, Remnant Vegetation)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_landscapearea_type</td>
</tr>
<tr>
<td></td>
<td>RootBarrier</td>
<td>Does Root Barrier exist - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irrigated</td>
<td>Is Landscaped Area irrigated?</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Area_m</td>
<td>Area (in square metres) of landscaped area (e.g., turf area, garden bed area)</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.1.4 **OS-LANDSCPEDGE : Open Space Activity Landscape Edging**
Corresponding ADAC 5.0.1 Element = *OpenSpace Edging*

7.5.1.4.1 **Asset Capture**
These are complex linear features (i.e. polylines including curves but not bézier curves) representing the edging of an Activity Area or Landscaped Area.

7.5.1.4.2 **Spatial Relationship**
Must be spatially attached to the corresponding Activity Area or Landscaped Area inside the Parent Open Space Area feature.

7.5.1.4.3 **Attributes**
The following information is required for all activity landscape edging features:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
<td>The material type of edging</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_landscapedging_material</td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>Length of material in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width_mm</td>
<td>Width of material in millimetres</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.1.5 OS-TREE : Trees
Corresponding ADAC 5.0.1 Element = OpenSpace Tree

7.5.1.5.1 Asset Capture
Trees are simple point features representing the centre of a tree trunk (refer to the blue dots in Figure 16).

7.5.1.5.2 Spatial relationship
Tree must be within the Parent Open Space Area feature.

7.5.1.5.3 Attributes
The following information is required for all trees (including street trees):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Species</td>
<td>The Tree Species</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Genus</td>
<td>The Tree Genus</td>
<td>String (32 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RootBarrier</td>
<td>Does Root Barrier exist - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td>Refer Section 7.5.1.5.3.1 Tree Grates</td>
</tr>
<tr>
<td></td>
<td>Grate</td>
<td>Does Tree Grate exist - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TreeFunction</td>
<td>Tree Function (e.g. street trees, park trees)</td>
<td>String (32 chars)</td>
<td>N</td>
<td>Openspace_tree_function</td>
</tr>
</tbody>
</table>
### 7.5.1.5.3.1 Tree Grates

If the tree has a grate installed, the following additional information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>GrateType</td>
<td>The type of grate</td>
<td>String (32 chars)</td>
<td>N</td>
<td>Openspace_tree_grate_type</td>
</tr>
<tr>
<td>Y</td>
<td>GrateMaterial</td>
<td>Material the grate is constructed from</td>
<td>String (32 chars)</td>
<td>N</td>
<td>Openspace_tree_grate_material</td>
</tr>
</tbody>
</table>

### 7.5.1.5.3.2 Significant Trees

If the tree is a significant tree, the following additional information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>SignificanceType</td>
<td>What makes the tree significant (e.g. botanical specimen, historical, cultural)</td>
<td>String (32 chars)</td>
<td>N</td>
<td>Openspace_tree_significance_type</td>
</tr>
</tbody>
</table>
7.5.2 Activity Related Assets

7.5.2.1 OS-ACTPT : Open Space Activity Points
Corresponding ADAC 5.0.1 Element = OpenSpace ActivityPoint

7.5.2.1.1 Asset Capture
Open space activity points are simple point features representing the centre of an asset (refer to the yellow dots in Figure 16).

7.5.2.1.2 Spatial relationship
Point must be within the Parent Open Space Area feature.

7.5.2.1.3 Attributes
The following information is required for all open activity points:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>The activity use category</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_activity_item_use</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>The activity item type</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The material type of Activity Item (e.g.: Timber, Aluminium)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_activity_item_material</td>
<td></td>
</tr>
<tr>
<td>Theme</td>
<td>The theme of the Activity item. (e.g., Kangaroo, Boat, Fort, Pirate Ship)</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units</td>
<td>The number of units present eg: 1, 2, 3</td>
<td>Positive integer</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.5.2.2 **OS-BBQ : Barbeques**
Corresponding ADAC 5.0.1 Element = *OpenSpace* Barbeque

7.5.2.2.1 **Asset Capture**
Barbeques are simple point features representing the centre of a barbeque.

7.5.2.2.2 **Spatial relationship**
Barbeque must be within the Parent Open Space Area feature.

7.5.2.2.3 **Attributes**
The following information is required for all barbeques:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EnergySource</td>
<td>The Source of energy for the BBQ, i.e. Mains Gas, Bottled Gas, Solar</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bbq_EnergySource</td>
</tr>
<tr>
<td></td>
<td>Plates</td>
<td>The number of plates fitted in the BBQ structure.</td>
<td>Positive integer</td>
<td>Y</td>
<td>openspace_bbq_plates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minimum Value: 1 Maximum Value: 10</td>
</tr>
<tr>
<td></td>
<td>SurroundingMaterial</td>
<td>The material type of the surround structure i.e. brick, steel, timber</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bbq_SurroundingMaterial</td>
</tr>
<tr>
<td></td>
<td>TopMaterial</td>
<td>The material type of the top structure i.e.: Tiled, marble, steel</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bbq_TopMaterial</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.2.3   **OS-TABLE : Tables**  
Corresponding ADAC 5.0.1 Element = *OpenSpace Table*

7.5.2.3.1   **Asset Capture**  
Tables are simple point features representing the centre of a table with or without attached seating.

7.5.2.3.2   **Spatial relationship**  
Table must be within the Parent Open Space Area feature.

7.5.2.3.3   **Attributes**

The following information is required for all tables:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of Unit eg: Table, Bench or counter.</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_table_type</td>
</tr>
<tr>
<td></td>
<td>Seating</td>
<td>Seating details. Element should be nil if no seating is present.</td>
<td>-</td>
<td>N</td>
<td>Refer Section 7.5.2.3.3.1 Seating</td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The material type of Table/Seat eg: Timber, Aluminium</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_table_Material</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### 7.5.2.3.1 Seating

If the table has attached seating, the following information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SeatType</td>
<td>The configuration of the associated seating</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_table_seattype</td>
</tr>
<tr>
<td></td>
<td>Places</td>
<td>The number of individuals the seating is designed for. This attribute may be used to help determine the capacity of a recreational facility</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>

↑ Back to [OS-TABLE : Tables](#)

### 7.5.2.3.2 Dimensions

If the table is square or rectangular, the following information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>TableLength_m</td>
<td>Length of the table in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>TableWidth_m</td>
<td>Width of the table in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>TableHeight_m</td>
<td>Height of the table in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
If the table is circular, the following information is required:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>TableDiameter_m</td>
<td>Diameter of the table in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>TableHeight_m</td>
<td>Height of the table in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
### 7.5.2.4  OS-SEAT : Seats

**Corresponding ADAC 5.0.1 Element = OpenSpace Seat**

#### 7.5.2.4.1  Asset Capture

Seats are simple point features representing the centre of a seat.

#### 7.5.2.4.2  Spatial relationship

Seat must be within the Parent Open Space Area feature.

#### 7.5.2.4.3  Attributes

The following information is required for all seats (other than those attached to a table – these should be recorded with the table):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SeatType</td>
<td>The configuration of the seating</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_seat_seattype</td>
</tr>
<tr>
<td></td>
<td>Places</td>
<td>The number of individuals the seating is designed for. This attribute may be used to help determine the capacity of a recreational facility</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The primary material type of Seat eg: Timber, Aluminium</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_table_Material</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>SeatLength_m</td>
<td>Length of the seat in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>SeatWidth_m</td>
<td>Width of the seat in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-----------------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>Y</td>
<td>SeatHeight_m</td>
<td>Height of the seat in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
7.5.2.5  OS-SHLTR : Shelters
Corresponding ADAC 5.0.1 Element = OpenSpace Shelter

7.5.2.5.1  Asset Capture
Shelters are simple point features representing the centre of a shelter.

Note: ADAC 5.0.1 allows for capture of shelters as a polygon (OpenSpace Shelter_Polygon); MRC does not currently accept shelters captured in this manner.

7.5.2.5.2  Spatial relationship
Shelter must be within the Parent Open Space Area feature.

7.5.2.5.3  Attributes
The following information is required for all shelters (e.g. bus, park, shade and rain structures):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of structure (e.g. Sail, Rigid)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_shelter_type</td>
</tr>
<tr>
<td></td>
<td>ConstructionType</td>
<td>The type of shelter constructed (e.g. Prefab or Built insitu)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>construction_method</td>
</tr>
<tr>
<td></td>
<td>FloorMaterial</td>
<td>The material type of the Floor (e.g. Concrete, Timber)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_shelter_floor_material</td>
</tr>
<tr>
<td></td>
<td>WallMaterial</td>
<td>The material type of the Walls (e.g. Timber/cladding, Reinforced Block)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_shelter_wall_material</td>
</tr>
<tr>
<td></td>
<td>RoofMaterial</td>
<td>The material type of the Roof (e.g. Steel Sheeting, Masonary tiles)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_shelter_roof_material</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Use</td>
<td>Use for this shelter (e.g. bus shelter, park shelter, shade structure)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_shelter_use</td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>-------------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------------------</td>
<td>------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Y</td>
<td>ShelterLength_m</td>
<td>The lineal length of the shelter in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>ShelterWidth_m</td>
<td>The lineal width of the shelter in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>ShelterHeight_m</td>
<td>The height of the shelter in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.2.6 **OS-BLDG : Open Space Buildings**
Corresponding ADAC 5.0.1 Element = OpenSpace Building

7.5.2.6.1 **Asset Capture**
Open Space Buildings are area features (closed polygon) representing the Building footprint for a structure other than a shelter.

7.5.2.6.2 **Spatial Relationship**
Not applicable.

7.5.2.6.3 **Attributes**
The following information is required for all open space buildings (i.e. grandstands, sheds etc):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Type</td>
<td>The type of Building (e.g. Grandstand, Bandstand)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_building_type</td>
</tr>
<tr>
<td>Y</td>
<td>Material</td>
<td>The predominant material the building is constructed from (e.g.: Timber, Brick)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_building_material</td>
</tr>
<tr>
<td>Y</td>
<td>BuildingLength_m</td>
<td>The lineal length of the building in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>BuildingWidth_m</td>
<td>The lineal width of the building in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>BuildingHeight_m</td>
<td>The height of the building in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.2.7  OS-BOAT : Boating Facilities
Corresponding ADAC 5.0.1 Element = OpenSpace BoatingFacility

7.5.2.7.1  Asset Capture
Boating Facilities are area features representing an individual boating facility such as a pontoon, ramp or jetty.

7.5.2.7.2  Spatial Relationship
Not applicable.

7.5.2.7.3  Attributes
The following information is required for all boating facilities (e.g. boat ramps, pontoons, jetties, etc):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of Boating Facility (e.g. Jetty, Pier)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_boatingfacility_type</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The predominant material type the Boating Facility is constructed from (e.g. Timber, Aluminium)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_boatingfacility_material</td>
<td></td>
</tr>
</tbody>
</table>
7.5.3 Fittings and Fixtures

7.5.3.1 OS-WCP : Waste Collection Points
Corresponding ADAC 5.0.1 Element = *OpenSpace WasteCollectionPoint*

7.5.3.1.1 Asset Capture
Waste collection points are simple point features representing the centre of a bin.

7.5.3.1.2 Spatial relationship
Must be within the Parent Open Space Area feature.

7.5.3.1.3 Attributes
The following information is required for all waste collection points:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of Bin/Waste collection point e.g. Standard Litter Bin, Wheelie Bin Enclosure</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bin_type</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The material type of Bin/Waste collection point eg: Aluminium, Steel</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bin_Material</td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BinCapacity</td>
<td>The capacity (in litres) of bin (e.g.: 55L, 80L, 120L, 240L)</td>
<td>String (32 chars)</td>
<td>N</td>
<td>openspace_bin_capacity</td>
<td></td>
</tr>
</tbody>
</table>
Set to nil if the waste collection point does not contain an in-built bin |
7.5.3.2  **OS-BIKEFT : Bicycle Fittings**

Corresponding ADAC 5.0.1 Element = *OpenSpace BicycleFitting*

7.5.3.2.1  **Asset Capture**

Bicycle fittings are simple point features representing the centre of a fitting.

7.5.3.2.2  **Spatial relationship**

Must be within the Parent Open Space Area feature.

7.5.3.2.3  **Attributes**

The following information is required for all bicycle fittings:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
<td>The type of Bicycle fitting e.g. Bicycle Rack, Banana Rail</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bikefitting_type</td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td>The material type of Bicycle fitting e.g. Timber, Aluminium</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_bikefitting_Material</td>
</tr>
<tr>
<td>Manufacturer</td>
<td></td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td></td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>BicycleFittingLength</td>
<td>Length of bicycle fitting</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>BicycleFittingWidth</td>
<td>Width of bicycle fitting</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>BicycleFittingHeight</td>
<td>Height of bicycle fitting</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>BicycleSpaces</td>
<td>Number of bicycles that can be accommodated (if applicable)</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td>Set to nil if the fitting does not contain an in-built bicycle rack</td>
</tr>
</tbody>
</table>
7.5.3.3 **OS-GENFXT : General Fixtures**
Corresponding ADAC 5.0.1 Element = *OpenSpace Fixture*

7.5.3.3.1 **Asset Capture**
General fixtures are simple point features representing the centre of a fixture.

7.5.3.3.2 **Spatial relationship**
Must be within the Parent Open Space Area feature.

7.5.3.3.3 **Attributes**
The following information is required for all other general open space fixtures:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of Fixture (e.g., Dog bag dispensers, Fish cleaning station)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_fixture_type</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The predominant material the Fixture is constructed from (e.g., Timber, Aluminium)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_fixture_Material</td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.5.3.4 OS-RWALL: Retaining Walls

Corresponding ADAC 5.0.1 Element = OpenSpace RetainingWall

Retaining Wall data structures can be used within any Asset Class as required (e.g. Open Space, Roads, etc). This saves duplicating data structures within each Asset Class. They are used to represent terrestrial or marine retaining / revetment walls.

7.5.3.4.1 Asset Capture

These are complex linear features (i.e. 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. If the retaining wall changes height over its length, the average height of the wall is adopted.

7.5.3.4.2 Spatial Relationship

Not applicable.

7.5.3.4.3 Attributes

The following information is required for all marine or terrestrial retaining walls:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>Use</td>
<td>Context of use for this wall (e.g., Terrestrial or Marine)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_retainingwall_use</td>
</tr>
<tr>
<td>Material</td>
<td>Material</td>
<td>The material/type of Retaining Wall (e.g. Rock, Conc. Block, Conc. Crib)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_retainingwall_material</td>
</tr>
<tr>
<td>Construction</td>
<td>Construction</td>
<td>Construction principle of this wall (e.g. Gravity, Piled, Cantilever)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_retainingwall_construction</td>
</tr>
<tr>
<td>Length_m</td>
<td>Length_m</td>
<td>The lineal length of the wall in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Height_m</td>
<td>Height_m</td>
<td>The height (or average height) of the wall in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.4 **Barriers**

These continuous and individual barrier structures can be used within any Asset Class as required (e.g. Open Space, Roads, etc). This saves duplicating data structures within each Asset Class.

7.5.4.1 **OS-BARRCON : Barriers Continuous**

Corresponding ADAC 5.0.1 Element = OpenSpace BarrierContinuous

7.5.4.1.1 **Asset Capture**

These are complex linear features (i.e. polylines including curves but not bézier curves) representing a barrier type asset (e.g., fences, bollard runs, guardrails, pedestrian fall protection, etc).

It is recommended, but not mandatory, that each vertex represents an upright, particularly for bollard runs. This allows the geometry to be exploited to identify the individual features if necessary.

Refer to the dashed yellow line in the example shown in Figure 17.

7.5.4.1.2 **Spatial Relationship**

Not applicable.

*Figure 17: Continuous Barriers*
7.5.4.1.3 Attributes

The following information is required for all continuous barrier structures (e.g. fencing, bollard runs):

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of Barrier e.g. Safety Fencing, Bollard Run, Gate</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_barrier_type</td>
</tr>
<tr>
<td></td>
<td>UprightMaterial</td>
<td>The material type of Barrier Uprights e.g. Timber, Aluminium</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_barrier_upright_material</td>
</tr>
<tr>
<td></td>
<td>LinkMaterial</td>
<td>The material type of Barrier Link Material e.g. None, Chain, Wire</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_barrier_link_material</td>
</tr>
<tr>
<td></td>
<td>TopMaterial</td>
<td>The material type of Barrier Topping Material e.g. None, Chain, Barbed Wire</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_barrier_top_material</td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>The linear length of the barrier in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Height_m</td>
<td>The height of the barrier in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UprightNumber</td>
<td>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.</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
7.5.4.2  **OS-BARRPT : Barrier Points**
Corresponding ADAC 5.0.1 Element = *OpenSpace BarrierPoint*

7.5.4.2.1  **Asset Capture**
Barrier points are simple point features representing the centre of an isolated barrier.

7.5.4.2.2  **Spatial relationship**
Not applicable

7.5.4.2.3  **Attributes**
The following information is required for all single bollards / locking posts, boom gates, etc:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
<td>The type of Barrier Point e.g. Bollard, Locking Post</td>
<td>String (32 chars)</td>
<td>Y</td>
<td><strong>openspace_singlebarrier_type</strong></td>
</tr>
<tr>
<td>UprightMaterial</td>
<td>The material type of Barrier Uprights e.g. Timber, Aluminium</td>
<td>String (32 chars)</td>
<td>Y</td>
<td><strong>openspace_singlebarrier_upright_material</strong></td>
<td></td>
</tr>
</tbody>
</table>
7.5.5 Public Art

This artwork data structure can be used within any Asset Class as required (e.g. Open Space, Roads, etc). This saves duplicating data structures within each Asset Class.

7.5.5.1 OS-ART: Open Space Artworks

Corresponding ADAC 5.0.1 Element = OpenSpace Artwork

7.5.5.1.1 Asset Capture

Artworks are simple point features representing the centre of an artwork.

7.5.5.1.2 Spatial relationship

Not applicable.

7.5.5.1.3 Attributes

The following information is required for all open space artworks:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of Artwork (e.g. Sculpture, Statue)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_artwork_type</td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The predominant material type of Artwork (e.g. Timber, Aluminium)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_artwork_material</td>
</tr>
<tr>
<td>Y</td>
<td>ArtWorkLength_m</td>
<td>The lineal length of the artwork in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>ArtWorkWidth_m</td>
<td>The lineal width of the artwork in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>ArtWorkHeight_m</td>
<td>The height of the artwork in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Illuminated</td>
<td>Is the art work illuminated - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>----------------------------------------</td>
<td>-------------------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>Y</td>
<td>Powered</td>
<td>Is the art work powered - Yes or No</td>
<td>Boolean (Yes/No)</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
7.5.6 Signage
This signage data structure can be used within any Asset Class as required (e.g. Open Space, Roads, etc). This saves duplicating data structures within each Asset Class.

7.5.6.1 OS-SIGN : Signs
Corresponding ADAC 5.0.1 Element = OpenSpace Sign

7.5.6.1.1 Asset Capture
Signs are simple point features representing the centre of a sign.

7.5.6.1.2 Spatial relationship
Not applicable

7.5.6.1.3 Attributes
The following information is required for all signage:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of Sign e.g. Regulatory, Naming, Information</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_sign_type</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>The material type of sign e.g. Timber, Steel/Aluminium, Carved stone</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_sign_material</td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>The type of structure this sign blade is fixed to.</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_sign_structure</td>
<td></td>
</tr>
<tr>
<td>SignText</td>
<td>Sign Text</td>
<td>String (No limit)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotation</td>
<td>Rotation angle (Cartesian - anti-clockwise 0 degrees = East). May be used to denote direction of</td>
<td>Floating point decimal (directional)</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
<td>Data Type</td>
<td>Mandatory?</td>
<td>Comments</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------</td>
<td>------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>Y</td>
<td>SignLength_m</td>
<td>The lineal length of the sign in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>SignWidth_m</td>
<td>The lineal width of the sign in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>SignHeight_m</td>
<td>The height of the sign in metres</td>
<td>Floating point, positive, non-zero decimal</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Illuminated</td>
<td>Sign illuminated? Yes / No</td>
<td>Boolean (Yes/No)</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>EnergySource</td>
<td>Sign energy source</td>
<td>String (32 chars)</td>
<td>N</td>
<td>lightspace_electrical_fitting_EnergySource Set to nil if the sign is not illuminated</td>
</tr>
</tbody>
</table>
7.6 Electrical Attributes

7.6.1 ELEC-FIT : Electrical Fittings
Corresponding ADAC 5.0.1 Element = OpenSpace ElectricalFitting

7.6.1.1 Asset Capture
These are simple point features representing the centre point of an electrical fitting such as lighting, switch board or power outlet.

7.6.1.2 Spatial Relationship
Must be coincident to Electrical Conduit polylines.

7.6.1.3 Attributes
The following information is required for all electrical fittings:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The type of Electrical Component (e.g. Light, Switch Board, Power Outlet)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_fitting_type</td>
</tr>
<tr>
<td>Y</td>
<td>Use</td>
<td>Use of the electrical fitting (e.g. Park, Street)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_fitting_use</td>
</tr>
<tr>
<td></td>
<td>Base</td>
<td>The type of base (e.g. Fixed or Slip)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_fitting_base</td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The material type of the component (e.g. Aluminium, Steel)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_fitting_material</td>
</tr>
<tr>
<td></td>
<td>EnergySource</td>
<td>The type of Power Source e.g. Mains, Solar</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_fitting_EnergySource</td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td>The Manufacturer of the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ModelNumber</td>
<td>The standard code, model number or part number for the unit</td>
<td>String (64 chars)</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
### 7.6.2 ELEC-COND : Electrical Conduits
Corresponding ADAC 5.0.1 Element = *OpenSpace ElectricalConduit*

#### 7.6.2.1 Asset Capture
These are complex linear features (i.e. polylines including curves but not bézier curves) representing a conduit run.

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

#### 7.6.2.3 Attributes
The following information is required for all electrical conduits:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type</td>
<td>The conduit type (e.g. Medium Duty, Heavy Duty)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_conduit_type</td>
</tr>
<tr>
<td></td>
<td>Material</td>
<td>The conduit material type</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_conduit_material</td>
</tr>
<tr>
<td></td>
<td>Diameter_mm</td>
<td>The conduit diameter</td>
<td>Positive integer</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length_m</td>
<td>The lineal length of the barrier (in metres)</td>
<td>Floating point, positive, non-zero decimal</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protection</td>
<td>The type of conduit protection used (e.g. Concrete encased, rubber mat, tape only)</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>openspace_electrical_conduit_protection</td>
</tr>
<tr>
<td>Y</td>
<td>GuardType</td>
<td>The type of guard fitted to the electrical conduit</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>Openspace_electrical_conduit_guard_type</td>
</tr>
</tbody>
</table>
7.7 Cadastre
The following ADAC 5.0.1 Elements do not need to be captured in ADAC format:

- Feature_Cadastre_ChainageLine
- Feature_Cadastre_Connection
- Feature_Cadastre_Easement
- Feature_Cadastre_Lot
- Feature_Cadastre_RoadReserve
- Feature_Cadastre_SurveyMark
- Feature_Cadastre_WaterCourseReserve

7.8 Supplementary
Corresponding ADAC 5.0.1 Element = Supplementary Point, Supplementary Polyline, Supplementary Polygon

Note: MRC have developed a comprehensive list of supplementary feature codes for Council’s standard survey codes and layers. It is coded in the 12d Model setup files available in the MRC Consultants Pack on MRC FileShare. Access may be requested through the Manager of Council’s Design Services Program.

7.8.1 Asset Capture
Simple Point, Complex Polyline or Multi-patch Area feature (depending on the feature type) representing objects or assets that add clarity or context to the strict ADAC features.

7.8.2 Spatial Relationship
Not Applicable.

7.8.3 Attributes
The following information is required for all supplementary features:

<table>
<thead>
<tr>
<th>MRC?</th>
<th>Attribute Name</th>
<th>Attribute Description</th>
<th>Data Type</th>
<th>Mandatory?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class</td>
<td>User specified class names may be encoded here to identify the feature type. As there is no enumeration,</td>
<td>String (32 chars)</td>
<td>Y</td>
<td>Not to be used for features that appear elsewhere in the ADAC Model.</td>
</tr>
<tr>
<td>MRC?</td>
<td>Attribute Name</td>
<td>Attribute Description</td>
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<td>the class codes must be by prior agreement.</td>
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<td>Note</td>
<td>General purpose descriptive note.</td>
<td>String (254 chars)</td>
<td>Y</td>
<td>Attributes of supported types may occur in any number and any order. It is recommended that supplementary features given the same class are also given the same list of named attributes in the same order, so as to facilitate easier passage into receiving systems. Attribute names should be chosen with the requirements of receiving systems in mind.</td>
</tr>
<tr>
<td>Attributes</td>
<td>A collection of named attributes. This element must be present but may be empty.</td>
<td></td>
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The following table sets out the acceptable values for each restricted field covered in this document.

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Back to Stormwater_Pit, Stormwater_EndStructure, WaterSupply_MH, Sewer_MH, OpenSpace_Shelter

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Back to Open Space Activity Area

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Back to Open Space Activity Area

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Back to OpenSpace Activity Point

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### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


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<td>Coated Rolled Steel</td>
<td>Rolled steel sheeting, with a primed and painted or baked finish (includes the product commercially known as Colorbond)</td>
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</table>
**MRC Guidelines for the Creation and Lodgement of ADAC XML Files**


<table>
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Back to **OpenSpace Barrier Continuous**

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Back to **OpenSpace Barrier Continuous**

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<td>Noise Barrier</td>
<td>An acoustic barrier fence, normally between road or rail and residential areas.</td>
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<td>Slide Rail</td>
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<td>Vehicle Barrier - Modified Eccentric Loader Terminal (MELT)</td>
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Back to **OpenSpace Barrier Continuous**

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Back to **OpenSpace BBQ**

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Back to **OpenSpace BBQ**

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Back to **OpenSpace BBQ**

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<th>These walls cantilever vertically from the concrete footing and typically resist overturning by the mass of the soil or material on the heel of the footing.</th>
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<td>These walls use the embedded depth of vertical posts and the strength of the posts to resist lateral soil forces.</td>
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Back to OpenSpace BarrierPoint

| openspace_singlebarrier_upright_material | Aluminium | Aluminium |
| openspace_singlebarrier_upright_material | Concrete | Concrete |
| openspace_singlebarrier_upright_material | Stainless Steel | Stainless Steel |
| openspace_singlebarrier_upright_material | Steel | Steel |
| openspace_singlebarrier_upright_material | Steel Galvanised | Steel Galvanised |
| openspace_singlebarrier_upright_material | Steel Powder Coated | Steel Powder Coated |
| openspace_singlebarrier_upright_material | Stone Boulder | Stone Boulder |
| openspace_singlebarrier_upright_material | Timber | Timber |

Back to OpenSpace BarrierPoint

| openspace_table_Material | Aluminium | Aluminium |
| openspace_table_Material | Concrete | Concrete |
| openspace_table_Material | Plastic | Plastic |
| openspace_table_Material | Stainless Steel | Stainless Steel |
| openspace_table_Material | Steel Galvanised | Steel Galvanised |
| openspace_table_Material | Steel Powder Coated | Steel Powder Coated |
| openspace_table_Material | Timber | Timber |
| openspace_table_Material | Timber and Steel | Timber and Steel |

Back to OpenSpace Table, OpenSpace Table

<p>| openspace_table_seattype | Bench | Bench seat |
| openspace_table_seattype | Post and Seat | Fixed post with non-swivelling seat |
| openspace_table_seattype | Post and Stool | Fixed post with stool top |
| openspace_table_seattype | Post and Swivel Seat | Fixed post with swivelling seat |</p>
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## MRC Guidelines for the Creation and Lodgement of ADAC XML Files


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Back to **Sewer_Fitting**

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Back to **Sewer_MH**

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<td>Aluminium</td>
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<td></td>
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</tr>
<tr>
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<td>Grid Mesh - Aluminium</td>
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<td>Grid Mesh - GRP</td>
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<tr>
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### MRC? ATTRIBUTE TABLE NAME VALID VALUE DESCRIPTION

<table>
<thead>
<tr>
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<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>sewer_mh_roofmaterial</td>
<td>SS</td>
<td>Stainless Steel</td>
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<td>Grid Mesh – SS</td>
<td>Grid Mesh – Stainless Steel</td>
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<tr>
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<td>M_1</td>
<td>A new material not yet in the Schema as agreed with the receiving entity</td>
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<tr>
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<td>A new material not yet in the Schema as agreed with the receiving entity</td>
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<td>Material is unknown at time of data submission</td>
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<tr>
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<td>Other</td>
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Back to **Sewer_MH**

<table>
<thead>
<tr>
<th>sewer_mh_use</th>
<th>Blank End</th>
<th>Blank End</th>
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<tbody>
<tr>
<td>sewer_mh_use</td>
<td>Grit Collector MH</td>
<td>Grit Collector Maintenance Hole</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Maintenance Hole</td>
<td>Maintenance Hole</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Maintenance Shaft</td>
<td>Maintenance Shaft</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Outlet</td>
<td>Outlet</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Overflow</td>
<td>Overflow Maintenance Hole</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Pump Station</td>
<td>Pit housing a sewer pump station</td>
</tr>
<tr>
<td>Y</td>
<td>sewer_mh_use</td>
<td>Receiving Maintenance Hole</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Rising Main Discharge MH</td>
<td>Rising Main Discharge Maintenance Hole</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Storage Tank</td>
<td>Storage Tank</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Vacuum Lift</td>
<td>Vacuum Lift</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Vacuum Sewerage MH</td>
<td>Vacuum Sewer Maintenance Hole</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Vacuum Sewerage Pump Station</td>
<td>Vacuum Sewerage Pump Station</td>
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<tr>
<td>sewer_mh_use</td>
<td>Valve Pit</td>
<td>Access Pit for a Sewer Valve</td>
</tr>
<tr>
<td>sewer_mh_use</td>
<td>Temporary Works</td>
<td>A shaft used during construction that is left in place but does not form part of the final infrastructure</td>
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<tr>
<td>sewer_mh_use</td>
<td>TEP</td>
<td>Terminal Entry Point type shaft</td>
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<td>Unknown</td>
<td>Chamber of unknown use at time of data submission</td>
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<tr>
<td>sewer_mh_use</td>
<td>Other</td>
<td>Type of maintenance structure other than those used as standard in the Schema</td>
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</table>

Back to **Sewer_MH**

<table>
<thead>
<tr>
<th>sewer_pipe_embedment</th>
<th>Natural</th>
<th>Pipe laid directly on natural in-situ material</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_pipe_embedment</td>
<td>GBH</td>
<td>Granular bed and haunch</td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>GBS</td>
<td>Granular bed and surround</td>
</tr>
</tbody>
</table>
## MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_pipe_embedment</td>
<td>GBSonConc</td>
<td>Granular bed and surround on concrete support</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>GBSonGTP</td>
<td>Granular bed and surround on geotextile pillow</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>GBSonCSS</td>
<td>Granular bed and surround on cement stabilised support</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>GBSonPiles</td>
<td>Granular bed and surround on piles</td>
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</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>CemStabBS</td>
<td>Cement stabilised bed and surround</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>ConcBS</td>
<td>Concrete bed and surround</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>ConcBsonPiles</td>
<td>Concrete bed and surround on piles</td>
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<tr>
<td>sewer_pipe_embedment</td>
<td>Enveloped</td>
<td>Within an enveloper pipe</td>
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</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>Above Ground</td>
<td>Pipe is above ground on piers or a bridge deck</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>None</td>
<td>Thrust bored or Trenchless method</td>
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</tr>
<tr>
<td>sewer_pipe_embedment</td>
<td>Unknown</td>
<td>Embedment Type unknown at time of data submission</td>
<td></td>
</tr>
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<td>sewer_pipe_embedment</td>
<td>Other</td>
<td>Another type of embedment type that is not already included in the standard types</td>
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<tr>
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<tr>
<td>sewer_pipe_embedment</td>
<td>EB_2</td>
<td>A non-standard or new type of embedment as agreed with the data receiving entity</td>
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Back to **Sewer_PipePressure, Sewer_PipeNonPressure**

<table>
<thead>
<tr>
<th>sewer_pipe_jointtype</th>
<th>BW</th>
<th>Butt Weld (PE pipe)</th>
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<tbody>
<tr>
<td>sewer_pipe_jointtype</td>
<td>EFW</td>
<td>Electrofusion Weld (PE pipe)</td>
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<tr>
<td>sewer_pipe_jointtype</td>
<td>FJ</td>
<td>Flanged Joint</td>
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<tr>
<td>sewer_pipe_jointtype</td>
<td>MCJ</td>
<td>Mechanical Compression Joint (PE pipe and Copper)</td>
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<tr>
<td>sewer_pipe_jointtype</td>
<td>RRJ</td>
<td>Rubber Ring</td>
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<tr>
<td>sewer_pipe_jointtype</td>
<td>RRRJ</td>
<td>Rubber Ring Restrainted Joint (Ductile Iron)</td>
</tr>
<tr>
<td>sewer_pipe_jointtype</td>
<td>SWJ</td>
<td>Solvent Welded Joint (PVC)</td>
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<tr>
<td>sewer_pipe_jointtype</td>
<td>WJ</td>
<td>Welded Joint (Mild Steel pipe)</td>
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<td>A joint type not already included in the above choices</td>
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Back to **Sewer_PipePressure, Sewer_PipeNonPressure**

<table>
<thead>
<tr>
<th>sewer_pipe_nonpressure_class</th>
<th>4</th>
<th>Class 4</th>
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<td>6</td>
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## MRC Guidelines for the Creation and Lodgement of ADAC XML Files


### ATTRIBUTE TABLE NAME

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<th>DESCRIPTION</th>
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<td>Class 16</td>
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<td>Class 20</td>
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<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>FLCL</td>
<td>Class FLCL (ductile iron flanged class)</td>
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<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>PN1</td>
<td>PN1</td>
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<td>PN12</td>
<td>PN12</td>
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<td>PN12.5</td>
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<td>PN20</td>
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<td>PN35</td>
<td>PN35 (Standard for ductile iron)</td>
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<td>SN12</td>
<td>Class SN12</td>
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<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>SN4</td>
<td>Class SN4, formerly Sewer Heavy</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>SN5000</td>
<td>SN5000</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>SN8</td>
<td>Class SN8, formerly Sewer Extra Heavy</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>SN8000</td>
<td>SN8000</td>
<td></td>
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<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>X</td>
<td>Class X (Reinforced Concrete)</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>Y</td>
<td>Class Y (Reinforced Concrete)</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>Z</td>
<td>Class Z (Reinforced Concrete)</td>
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</tr>
<tr>
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<td>Unknown at time of submission</td>
<td></td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_class</td>
<td>Other</td>
<td>A class other than provided above</td>
<td></td>
</tr>
</tbody>
</table>

### ATTRIBUTE TABLE NAME

| sewer_pipe_nonpressure_lining | CL                 | Cement Lined Normal. Centrifugally spun cement mortar (default for Ductile Iron and Mild Steel) |
| sewer_pipe_nonpressure_lining | CL_AC              | Cement Lined - Calcium Aluminate (DI and MS) |
| sewer_pipe_nonpressure_lining | CL_SR              | Cement Lined - Sulphate Resistant (DI and MS) |
| sewer_pipe_nonpressure_lining | FBE                | Fusion Bonded Epoxy |
| sewer_pipe_nonpressure_lining | PVC                | Plasticised PVC (includes Humes Plastiline) |
| sewer_pipe_nonpressure_lining | Unlined            | Unlined (Default for plastic pipes) |

Back to [Sewer_PipeNonPressure](#)
### MRC? Table

<table>
<thead>
<tr>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_pipe_nonpressure_lining</td>
<td>L_1</td>
<td>A new protection type not yet included in the Schema as agreed with the receiving entity.</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_lining</td>
<td>L_2</td>
<td>A new protection type not yet included in the Schema as agreed with the receiving entity.</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_lining</td>
<td>Rehab_NS</td>
<td>A non-structural rehabilitation liner.</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_lining</td>
<td>Rehab_ST</td>
<td>A structural rehabilitation liner.</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_lining</td>
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</tr>
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</table>

### Sewer Pipe NonPressure Material Table

<table>
<thead>
<tr>
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<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>ABS</td>
<td>Acrylonitrile Butadiene Styrene</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>DI</td>
<td>Ductile Iron</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>FRC</td>
<td>Fibre Reinforced Concrete</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>GRP</td>
<td>Glass Reinforced Plastic (includes the product known commercially as Hobas)</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>HDPE</td>
<td>High Density Polyethylene (includes the product known commercially as Haryes Black Brute)</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>MS</td>
<td>Mild Steel</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>PE-100</td>
<td>Medium Density Polyethylene</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>PRC</td>
<td>Polyester Resin Concrete jacking pipe e.g. Iplex Polycrete</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>PVC-U</td>
<td>Unplasticised PolyVinylChloride</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>RCP</td>
<td>Steel Reinforced Concrete Pipe</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>SWPP</td>
<td>Structural Wall Polypropylene Pipe (includes commercial brands SewerMax and SewerPro)</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>VC</td>
<td>Vitrified Clay</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>AC</td>
<td>Asbestos Cement (existing infrastructure)</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>M_1</td>
<td>A new material not yet in the Schema used by agreement with the receiving entity</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>M_2</td>
<td>A new material not yet in the Schema used by agreement with the receiving entity</td>
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<tr>
<td>sewer_pipe_nonpressure_material</td>
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<td>A pipe material that is unknown at the time of the submission</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_material</td>
<td>Other</td>
<td>A pipe material other than those provided above</td>
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</table>

### Sewer Pipe NonPressure Protection Table

<table>
<thead>
<tr>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_pipe_nonpressure_protection</td>
<td>Concrete Encased</td>
<td>Concrete Encased</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_protection</td>
<td>Epoxy Paint</td>
<td>Epoxy Paint</td>
</tr>
<tr>
<td>sewer_pipe_nonpressure_protection</td>
<td>FBE</td>
<td>Fusion Bonded Epoxy</td>
</tr>
</tbody>
</table>
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


#### Attribute Table Name: `sewer_pipe_nonpressure_protection`

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Value</th>
<th>Description</th>
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<tbody>
<tr>
<td>FBPE</td>
<td>Fusion Bonded Polyethelene (Includes the product known commercially as Sintakote)</td>
<td></td>
</tr>
<tr>
<td>Plastic Wrapped</td>
<td>Plastic Wrapped</td>
<td></td>
</tr>
<tr>
<td>Sheathed</td>
<td>Sheathed</td>
<td></td>
</tr>
<tr>
<td>Tape Wrapped</td>
<td>Tape Wrapped</td>
<td></td>
</tr>
<tr>
<td>Uncoated</td>
<td>Uncoated</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>Protection Type unknown at time of data submission</td>
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</tr>
<tr>
<td>Other</td>
<td>Another type of protection not covered in the schema choices above</td>
<td></td>
</tr>
<tr>
<td>P_1</td>
<td>A new protection type not yet included in the Schema as agreed with the receiving entity.</td>
<td></td>
</tr>
<tr>
<td>P_2</td>
<td>A new protection type not yet included in the Schema as agreed with the receiving entity.</td>
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</tbody>
</table>

Back to [Sewer_PipeNonPressure](#)

#### Attribute Table Name: `sewer_pipe_nonpressure_use`

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduit Pipe</td>
<td>Conduit Pipe (enveloper)</td>
<td></td>
</tr>
<tr>
<td>Disused</td>
<td>Disused Non-Pressure Pipe</td>
<td></td>
</tr>
<tr>
<td>Effluent</td>
<td>Treated Wastewater Pipe</td>
<td></td>
</tr>
<tr>
<td>Overflow</td>
<td>Directors excessive wastewater to another location</td>
<td></td>
</tr>
<tr>
<td>Reticulation</td>
<td>Reticulation Sewer</td>
<td></td>
</tr>
<tr>
<td>Reuse</td>
<td>Treated Wastewater Reuse Pipe</td>
<td></td>
</tr>
<tr>
<td>Stub</td>
<td>Stub Pipe</td>
<td></td>
</tr>
<tr>
<td>Syphon</td>
<td>Syphon Main</td>
<td></td>
</tr>
<tr>
<td>Trunk</td>
<td>Trunk Sewer</td>
<td></td>
</tr>
<tr>
<td>Vacuum</td>
<td>Vacuum Main</td>
<td></td>
</tr>
<tr>
<td>Vent</td>
<td>Ventilation Main</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>Use unknown at time of submission</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>A use other than those specified above</td>
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Back to [Sewer_PipeNonPressure](#)

#### Attribute Table Name: `sewer_pipe_pressure_class`

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mm</td>
<td>10mm wall thickness Class (Mild Steel)</td>
<td></td>
</tr>
<tr>
<td>11mm</td>
<td>11mm wall thickness Class (Mild Steel)</td>
<td></td>
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<tr>
<td>12mm</td>
<td>12mm wall thickness Class (Mild Steel)</td>
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<tr>
<td>16mm</td>
<td>16mm wall thickness Class (Mild Steel)</td>
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<tr>
<td>4.8mm</td>
<td>4.8mm wall thickness Class (Mild Steel)</td>
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<tr>
<td>5mm</td>
<td>5mm wall thickness Class (Mild Steel)</td>
<td></td>
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<tr>
<td>6mm</td>
<td>6mm wall thickness Class (Mild Steel)</td>
<td></td>
</tr>
<tr>
<td>7mm</td>
<td>7mm wall thickness Class (Mild Steel)</td>
<td></td>
</tr>
<tr>
<td>8mm</td>
<td>8mm wall thickness Class (Mild Steel)</td>
<td></td>
</tr>
<tr>
<td>9mm</td>
<td>9mm wall thickness Class (Mild Steel)</td>
<td></td>
</tr>
<tr>
<td>FLCL</td>
<td>Class FLCL (ductile iron flanged class)</td>
<td></td>
</tr>
<tr>
<td>PN1</td>
<td>Class PN1</td>
<td></td>
</tr>
<tr>
<td>MRC?</td>
<td>ATTRIBUTE TABLE NAME</td>
<td>VALID VALUE</td>
</tr>
<tr>
<td>------</td>
<td>----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN10</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN12</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN12.5</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN16</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN18</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN20</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN35</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN6</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN6.3</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN8</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>PN9</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>SN10000</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>SN5000</td>
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<tr>
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<td>sewer_pipe_pressure_class</td>
<td>SN8000</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>X</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>Y</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>Z</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>Unknown</td>
</tr>
<tr>
<td>sewer_pipe_pressure_class</td>
<td>sewer_pipe_pressure_class</td>
<td>Other</td>
</tr>
</tbody>
</table>

Back to **Sewer_PipePressure**

| sewer_pipe_pressure_lining | CL | Cement Lined Normal. Centrifugally spun cement mortar (default for Ductile Iron and Mild Steel) |
| sewer_pipe_pressure_lining | CL_AC | Cement Lined - Calcium Aluminate (DI and MS) |
| sewer_pipe_pressure_lining | CL_SR | Cement Lined - Sulphate Resistant (DI and MS) |
| sewer_pipe_pressure_lining | FBE | Fusion Bonded Epoxy |
| sewer_pipe_pressure_lining | PVC | Plasticised PVC (includes Humes Plastiliner) |
| sewer_pipe_pressure_lining | Unlined | Unlined (Default for plastic pipes) |
| sewer_pipe_pressure_lining | Unknown | Lining type unknown at time of data submission |
| sewer_pipe_pressure_lining | Other | Another type of liner that is not currently in the Schema |

Back to **Sewer_PipePressure, Sewer_Fitting, Sewer_Valve**

<p>| sewer_pipe_pressure_material | ABS | Acrylonitrile Butadiene Styrene |
| sewer_pipe_pressure_material | DI | Ductile Iron |
| sewer_pipe_pressure_material | GRP | Glass Reinforced Plastic (includes the product known commercially as Hobas) |
| sewer_pipe_pressure_material | MS | Mild Steel |
| sewer_pipe_pressure_material | PE-100 | Polyethylene (100) |
| sewer_pipe_pressure_material | PE-80B | Polyethylene (80B) |
| sewer_pipe_pressure_material | PVC-M | Polyvinyl Chloride (Modified) |</p>
<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>PVC-O</td>
<td>Polyvinyl Chloride (Oriented)</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>PVC-U</td>
<td>Polyvinyl Chloride (Unplasticised)</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>AC</td>
<td>Asbestos Cement (not for new works)</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>FRC</td>
<td>Fibre reinforced concrete</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>M_1</td>
<td>New material not included in the schema as agreed with data receiving entity</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe-pressure-material</td>
<td>M_2</td>
<td>New material not included in the schema as agreed with data receiving entity</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>Unknown</td>
<td>Material type unknown at time of data submission</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_material</td>
<td>Other</td>
<td>A material not included in the above choices</td>
</tr>
</tbody>
</table>

Back to Sewer_PipePressure

<table>
<thead>
<tr>
<th></th>
<th>sewer_pipe_pressure_protection</th>
<th>Concrete Encased</th>
<th>Concrete Encased</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Epoxy Paint</td>
<td>Epoxy Paint</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>FBE</td>
<td>Fusion Bonded Epoxy</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>FBPE</td>
<td>Fusion Bonded Polyethelene (Includes the product known commercially as Sintakote)</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Plastic Wrapped</td>
<td>Plastic Wrapped</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Sheathed</td>
<td>Sheathed</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Tape Wrapped</td>
<td>Tape Wrapped</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Uncoated</td>
<td>Uncoated</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>P_1</td>
<td>A new protection type not yet in the schema as agreed with the data receiving entity</td>
</tr>
<tr>
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<td>sewer_pipe_pressure_protection</td>
<td>P_2</td>
<td>A new protection type not yet in the schema as agreed with the data receiving entity</td>
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<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Zinc</td>
<td>Galvanized or zinc painted</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Zinc-Aluminium Alloy</td>
<td>Zinc Aluminium alloy coating (Petair Saint-Gobain)</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Unknown</td>
<td>Protection type unknown at time of data submission</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_protection</td>
<td>Other</td>
<td>A joint type not already included in the above choices</td>
</tr>
</tbody>
</table>

Back to Sewer_PipePressure, Sewer_Fitting, Sewer_Valve

<table>
<thead>
<tr>
<th></th>
<th>sewer_pipe_pressure_use</th>
<th>Disused</th>
<th>Disused Pressure Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Effluent</td>
<td>Treated Wastewater Pipe</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Pressure Sewer Collection</td>
<td>Pressure Sewer Collection system</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Reuse</td>
<td>Treated Wastewater Reuse Pipe</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Rising</td>
<td>Rising or Pressure Main</td>
</tr>
<tr>
<td>MRC?</td>
<td>ATTRIBUTE TABLE NAME</td>
<td>VALID VALUE</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>------</td>
<td>----------------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Scour</td>
<td>Scour Main</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Vacuum</td>
<td>Vacuum Main</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Unknown</td>
<td>Use unknown at time of data submission</td>
</tr>
<tr>
<td></td>
<td>sewer_pipe_pressure_use</td>
<td>Other</td>
<td>A use other than those provided above in the schema</td>
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</table>

Back to Sewer_PipePressure

<table>
<thead>
<tr>
<th>Y</th>
<th>sewer_property_connection_material</th>
<th>Cast Iron</th>
<th>Cast Iron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>sewer_property_connection_material</td>
<td>DI</td>
<td>Ductile Iron</td>
</tr>
<tr>
<td>Y</td>
<td>sewer_property_connection_material</td>
<td>FRC</td>
<td>Fibre Reinforced Concrete</td>
</tr>
<tr>
<td>Y</td>
<td>sewer_property_connection_material</td>
<td>FRP</td>
<td>Fibre Reinforced Plastic</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>PE</td>
<td>Polyethylene</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>PVC-M</td>
<td>PolyVinylChloride Modified</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>PVC-O</td>
<td>PolyVinylChloride Orientated</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>PVC-U</td>
<td>PolyVinylChloride Unplasticised</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>RCP</td>
<td>Steel Reinforced Concrete Pipe</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>VC</td>
<td>Vitrified Clay</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>M_1</td>
<td>A new material not yet in the Schema as agreed with the receiving entity</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>M_2</td>
<td>A new material not yet in the Schema as agreed with the receiving entity</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>Unknown</td>
<td>Lid Material is unknown at time of data submission</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_material</td>
<td>Other</td>
<td>Some other class not included in the standard Schema</td>
</tr>
</tbody>
</table>

Back to Sewer_Connection

<table>
<thead>
<tr>
<th>sewer_property_connection_material_class</th>
<th>SDR21</th>
<th>SDR21</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SEH</td>
<td>Sewer Extra Heavy</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SH</td>
<td>Sewer Heavy</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SN4</td>
<td>SN4</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SN6</td>
<td>SN6</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SN8</td>
<td>SN8</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SN10</td>
<td>SN10</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>SN12</td>
<td>SN12</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>Unknown</td>
<td>Material class unknown at time of data submission</td>
</tr>
<tr>
<td>sewer_property_connection_material_class</td>
<td>Other</td>
<td>Some other class not included in the standard Schema</td>
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</tbody>
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Back to Sewer_Connection
<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sewer_property_connection_type</td>
<td>Jump Up</td>
<td>WSAA - Jump Up connection</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_type</td>
<td>Ramp Riser</td>
<td>WSAA - Ramp Riser connection</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_type</td>
<td>Sloped Branch</td>
<td>WSAA - Sloped Branch connection</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_type</td>
<td>Stub</td>
<td>WSAA - Connection straight into Maintenance Hole</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_type</td>
<td>Twin Jump Up</td>
<td>WSAA - Twin Jump Up connection</td>
</tr>
<tr>
<td></td>
<td>sewer_property_connection_type</td>
<td>Twin Ramp Riser</td>
<td>WSAA - Twin Ramp Riser connection</td>
</tr>
</tbody>
</table>

Back to **Sewer_Connection**

<table>
<thead>
<tr>
<th>sewer_property_connection_use</th>
<th>Combined</th>
<th>Combined House Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_property_connection_use</td>
<td>Commercial</td>
<td>Commercial Drain</td>
</tr>
<tr>
<td>sewer_property_connection_use</td>
<td>House</td>
<td>House Drain</td>
</tr>
</tbody>
</table>

Back to **Sewer_Connection**

<table>
<thead>
<tr>
<th>sewer_valve_type</th>
<th>Generic</th>
<th>Non-return valve of an unknown or generic type. Also control or stop valve of a generic type</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_valve_type</td>
<td>Rubber Gate</td>
<td>Non-return valve of the rubber gate type</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Swing Check</td>
<td>Non-return valve of the swing check type</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Gate</td>
<td>Gate Valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Butterfly</td>
<td>Butterfly Valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Knife Gate</td>
<td>Knife Gate Valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Eccentric Plug</td>
<td>Eccentric Plug Valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Globe</td>
<td>Globe Valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Ball</td>
<td>Ball Valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Penstock</td>
<td>A Penstock formally known as Penstock Gate</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Overflow</td>
<td>An overflow valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Pressure Release</td>
<td>A pressure release valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Vacuum Release</td>
<td>A vacuum release valve</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Air Valve</td>
<td>A proprietary valve for releasing gas or air</td>
</tr>
<tr>
<td>sewer_valve_type</td>
<td>Special</td>
<td>A Specialist type of valve not covered in the Schema</td>
</tr>
</tbody>
</table>

Back to **Sewer_Valve**

<table>
<thead>
<tr>
<th>sewer_valve_use</th>
<th>Non-Return</th>
<th>Used to prevent backlow can be of type Generic, Rubber Gate or Swing Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>sewer_valve_use</td>
<td>Service</td>
<td>Used to isolate a service on a pressure sewer or vacuum sewerage system</td>
</tr>
<tr>
<td>sewer_valve_use</td>
<td>Stop</td>
<td>Used to stop flow in a pipeline</td>
</tr>
<tr>
<td>sewer_valve_use</td>
<td>Scour</td>
<td>Used to open and close access to a scour pipe</td>
</tr>
<tr>
<td>sewer_valve_use</td>
<td>Diversion</td>
<td>Used to divert flow along another route</td>
</tr>
<tr>
<td>sewer_valve_use</td>
<td>Zone</td>
<td>Used to isolate sewer catchments or</td>
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## MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
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<td></td>
<td>Boundary</td>
<td>service zones</td>
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<td></td>
<td>sewer_valve_use</td>
<td>Flow Control</td>
<td>Used to control the rate of flow in a pipe</td>
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<tr>
<td></td>
<td>sewer_valve_use</td>
<td>Pressure Control</td>
<td>Used to control or maintain the pressure in a pipeline; can be of the type Overflow, Pressure Relief or Vacuum Release.</td>
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<td>Gas Release</td>
<td>Used to release gas or air from a pipeline and should be of type Air Valve</td>
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<tr>
<td></td>
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<td>Other</td>
<td>Used to for some other purpose not provided for in the Schema and can be of Type Special</td>
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Back to **Sewer_Valve**

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<th>RCBC</th>
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<td>RUBBLE</td>
<td>Rubble Infiltration Drain</td>
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<td>stormwater_box_material</td>
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<td>Slab Link Box Culvert</td>
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Back to **Stormwater_Pipe**

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Back to **Stormwater_Pipe**

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<td>Multi Cell Pipe Endwall</td>
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<td>Multi Cell Pipe and Box Endwall</td>
<td>Multi Cell Pipe and Box Endwall</td>
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Back to **Stormwater_EndStructure**

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Back to **Stormwater_Fitting**

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<td>No grate fitted</td>
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Back to **Stormwater_EndStructure**

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Back to Stormwater_Pipe

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<td>FJ</td>
<td>Flush Joint</td>
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<td>RRJ</td>
<td>Rubber Ring Joint</td>
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<td>SWJ</td>
<td>Solvent Welded Joint</td>
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Back to Stormwater_Pipe

<table>
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<td></td>
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<td>CAP</td>
<td>Helically Corrugated Aluminium Pipe</td>
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<td>stormwater_pipe_material</td>
<td>CSP</td>
<td>Helically Corrugated Galvanised Steel Pipe</td>
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<td></td>
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<td>FRC</td>
<td>Fibre Reinforced Concrete Pipe</td>
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<td>GRP</td>
<td>Glass Reinforced Plastic (includes the product known commercially as Hobas)</td>
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<td>HDPE</td>
<td>High Density Polyethylene (includes the product known commercially as Haries Black Brute)</td>
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<td>PP</td>
<td>Polypropylene Pipe (also known as Black Max)</td>
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<td>stormwater_pipe_material</td>
<td>PVC-U</td>
<td>PolyVinylChloride Unplasticised</td>
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<td>RCP</td>
<td>Steel Reinforced Concrete Pipe</td>
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<tr>
<td></td>
<td>stormwater_pipe_material</td>
<td>RPP</td>
<td>Ribbed Polypropylene Pipe (also known as RibStruct)</td>
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<td>stormwater_pipe_material</td>
<td>SFRC</td>
<td>Slotted fibre reinforced concrete</td>
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Back to Stormwater_Pipe

<table>
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Back to Stormwater_Pit

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<td>Hydroflow Grate</td>
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<td>Cast Iron Bike/Ped Safe Grate</td>
<td>Cast Iron Bicycle and Pedestrian Safe Grate</td>
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<td>Field Inlet Dome Top Grade</td>
<td>Galvanised, raised dome top grade for a field inlet</td>
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<td>Field Inlet Surcharge Grate</td>
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<td>Kerb Inline Gully Pit</td>
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<td>Lip Inline Gully Pit</td>
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<td>Anti-Ponding Gully</td>
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<td>Council Specific Kerb Inline Gully Pit</td>
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<td>Circular Cast Iron Lid</td>
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<td>Precast Cover Slabs</td>
<td>Long Rectangular Concrete Cover Slabs (usually 2 per pit)</td>
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<td>stormwater_surface_drain_lining_material</td>
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<td>stormwater_surface_drain_shape</td>
<td>Vee Drain</td>
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Back to **Stormwater_SurfaceDrain**

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<tr>
<td>stormwater_surface_drain_type</td>
<td>Batter Chute</td>
<td>Structure to convey runoff down a cut or fill batter and discharge at either non-corrosive velocities or onto a non-erodable surface.</td>
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<tr>
<td>stormwater_surface_drain_type</td>
<td>Canal</td>
<td>Canal</td>
</tr>
<tr>
<td>stormwater_surface_drain_type</td>
<td>Diversion Drain</td>
<td>Diversion Drain. Also called 'Whoa Boy', check, cross or roll over banks. Constructed to divert water off a track without causing erosion.</td>
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<tr>
<td>stormwater_surface_drain_type</td>
<td>Flat Open Surface</td>
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<td>Infiltration Trench</td>
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<tr>
<td>stormwater_surface_drain_type</td>
<td>Natural Waterway</td>
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<td>stormwater_surface_drain_type</td>
<td>Open Drain</td>
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<td>stormwater_surface_drain_type</td>
<td>Overland Flow Path</td>
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Back to **Stormwater_SurfaceDrain**

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<td>stormwater_tidegate_type</td>
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<td>stormwater_tidegate_type</td>
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<td>No tide gate fitted</td>
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<td>Rubber</td>
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Back to **Stormwater_EndStructure**

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<tr>
<td>stormwater_wsud_area_function</td>
<td>Gross Pollutant Capture</td>
<td>Gross Pollutant Capture is the function of removing coarse particulate matter from stormwater.</td>
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<td>stormwater_wsud_area_function</td>
<td>Oil / Grit Separation</td>
<td>Oil / Grit Separation</td>
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<tr>
<td>stormwater_wsud_area_function</td>
<td>Permeation</td>
<td>Permeation allows water to penetrate the surface and join subterranean flows</td>
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<td>stormwater_wsud_area_function</td>
<td>Sand Filtration</td>
<td>Sand Filtration occurs in a sand layer designed to filter fine particulates from stormwater before discharging to a downstream drainage system.</td>
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<tr>
<td>stormwater_wsud_area_function</td>
<td>Sediment Capture</td>
<td>Sediment Capture is the function of capturing coarse to medium sediment from urban catchments. Treatment is provided primarily through settling of suspended particles.</td>
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<td>Vegetated Filtration</td>
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Back to Stormwater_WSUDArea

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<td>Filtration</td>
<td>Filtration of fine particulates from stormwater before discharging to a downstream drainage system.</td>
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Back to Stormwater_GPTComplex

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<td>Basket</td>
<td>A simple basket fitted to existing infrastructure to intercept solid litter</td>
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<tr>
<td></td>
<td>stormwater_wsud_GPTSimple_measure</td>
<td><strong>Horizontal Grate</strong></td>
<td>A horizontal grate across an inlet to intercept solid litter being transported in stormwater.</td>
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<tr>
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<td>stormwater_wsud_GPTSimple_measure</td>
<td><strong>Net</strong></td>
<td>A simple net fitted to existing infrastructure to intercept solid litter being transported in stormwater.</td>
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<tr>
<td></td>
<td>stormwater_wsud_GPTSimple_measure</td>
<td><strong>Vertical Grate</strong></td>
<td>A vertical grate across a drainage line or end structure to intercept solid litter being transported in stormwater.</td>
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Back to **Stormwater_GPTSimple**

<table>
<thead>
<tr>
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<tr>
<td>stormwater_wsud_GPTPoint_function</td>
<td>Energy Dissipation</td>
<td>The dissipation of kinetic energy from flowing stormwater to reduce its potential for erosion and damage.</td>
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<tr>
<td>stormwater_wsud_GPTPoint_function</td>
<td>Infiltration</td>
<td>Infiltration measures typically consist of holding pond or tank designed to promote infiltration of appropriately treated water to surrounding soils. The primary function of these devices is runoff volume control rather than pollutant removal.</td>
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<tr>
<td>stormwater_wsud_GPTPoint_function</td>
<td>Sand Filtration</td>
<td>Sand Filtration occurs in a sand layer designed to filter fine particulates from stormwater before discharging to a downstream drainage system.</td>
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Back to **Stormwater_NonGPTSimple**

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<td>stormwater_wsud_NonGPTPoint_measure</td>
<td>Energy Dissipater</td>
<td>An installation in a drainage line, usually of concrete or stone, designed to dissipate the kinetic energy of flowing stormwater, to minimise its potential for erosion and damage. Often placed immediately downstream of an end structure, but may conceivably be anywhere needed in a drainage line.</td>
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<td>stormwater_wsud_NonGPTPoint_measure</td>
<td>Infiltration Pond</td>
<td>Infiltration measure designed to promote infiltration of appropriately treated water to surrounding soils. The primary function of these devices is run-off volume control rather than pollutant removal.</td>
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<tr>
<td>stormwater_wsud_NonGPTPoint_measure</td>
<td>Infiltration Tank</td>
<td>Infiltration measure designed to promote infiltration of appropriately treated water to surrounding soils. The primary function of these devices is run-off volume control rather than pollutant removal.</td>
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<tr>
<td>stormwater_wsud_NonGPTPoint_measure</td>
<td>Rubble Pit</td>
<td>A rubble pit designed to promote infiltration of untreated runoff to surrounding soils.</td>
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<tr>
<td>stormwater_wsud_NonGPTPoint_measure</td>
<td>Sand Filter</td>
<td>A sand filter is a sand layer designed to filter fine particulates from stormwater before discharging to a downstream drainage system.</td>
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<tr>
<td>stormwater_wsud_NonGPTPoint_measure</td>
<td>Sediment Forebay</td>
<td>A Sediment Forebay, usually associated with a WSUD area to intercept coarse sediment.</td>
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<td>Floating Boom</td>
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### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


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**Back to Transport_Road_Edge**

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<td>transport_flushpoint_function</td>
<td>Cleanout</td>
<td>A cleanout flushpoint inlet generally protected by a sunken valve box. May have a removable cap on the pipe mouth.</td>
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<td>transport_flushpoint_function</td>
<td>Surface Outlet</td>
<td>A subsoil drain outlet point discharging to the surface, rather than into a gully pit or manhole etc.</td>
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**Back to Transport_FlushPoint**

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<td>Energy-absorbing Bollard</td>
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<td>Energy-absorbing Terminal</td>
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<td>transport_roadbarrier_type</td>
<td>Flexible</td>
<td>Wire Rope</td>
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<tr>
<td></td>
<td>transport_roadbarrier_type</td>
<td>Flexible/Rigid Combination</td>
<td>Combination of wire rope and concrete or similar barrier</td>
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<td>Flexible/Semi-rigid Combination</td>
<td>Flexible/Semi-rigid Combination</td>
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<td>Rigid</td>
<td>Concrete barrier or similar with very little deflection</td>
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<td>transport_roadbarrier_type</td>
<td>Rigid/Semi-rigid Combination</td>
<td>Combination of concrete or similar barrier and W or Thrie beam</td>
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**Back to Transport_Road_Barrier**

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Back to Transport_Road_Barrier

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| transport_roadbarrier_trailingend treatment | DOT | DOT |
| transport_roadbarrier_trailingend treatment | Omnistop | Omnistop |
| transport_roadbarrier_trailingend treatment | QuadGuard | QuadGuard |
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Back to Transport_Road_BARRIER

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|      | transport_roadbarrier_motorcyclistprotectiontype | Hiasa Rail | Hiasa Rail |
|      | transport_roadbarrier_motorcyclistprotectiontype | None | None |

Back to Transport_Road_BARRIER

|      | transport_roadbarrier_posttype | Steel | Steel |
|      | transport_roadbarrier_posttype | Timber | Timber |

Back to Transport_Road_BARRIER

|      | transport_roadbarrier_horizontalalignment | Straight | Straight |
|      | transport_roadbarrier_horizontalalignment | Convex | Convex |
|      | transport_roadbarrier_horizontalalignment | Concave | Concave |

Back to Transport_Road_BARRIER

|      | transport_island_infill_type | AC | Asphalt |
|      | transport_island_infill_type | Concrete | Concrete |
|      | transport_island_infill_type | Pavers | Pavers |
|      | transport_island_infill_type | Grass | Grass |
|      | transport_island_infill_type | Landscape | Landscape |
|      | transport_island_infill_type | Gravel | Gravel |
|      | transport_island_infill_type | Synthetic Grass | Synthetic Grass |
|      | transport_island_infill_type | Rubber | Rubber |
|      | transport_island_infill_type | Other Material | Other Material |

Back to Transport_Road_Island

|      | transport_island_type | Chicane | Chicane - often constricting passage to a single lane |
|      | transport_island_type | LATM | Local Area Traffic Management feature |
|      | transport_island_type | Center Median | Center Median |
|      | transport_island_type | Pedestrian Refuge | Pedestrian Refuge |
|      | transport_island_type | Raised | Road Hump – speed management and |

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Back to Transport_Kerb_Ramp, Transport_Pathway, Transport_PathStructure

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Back to Transport_Base_Layer, Transport_Road_Parking_Base

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Back to Transport General, Transport Road Parking

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Back to Transport Base, Transport Sub-Base, Transport Lower Sub-Base, Transport Sub-Grade, Transport Road Parking Base, Transport Road Parking Sub-Base, Transport Road Parking Lower Sub-Base, Transport Road Parking Sub-Grade
### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


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Back to Transport_Sub-Base, Transport_Road_Parking_Sub-Base

| Y    | transport_pavement_type         | Flexible    | Flexible pavement                               |
| Y    | transport_pavement_type         | Rigid       | Rigid pavement                                  |
| Y    | transport_pavement_type         | Floodway    | Pavement hardened for flood passage            |

Back to Transport_General, Transport_Road_Parking

| Y    | transport_signal_controller_type| FTC          | Fixed time control                              |
| Y    | transport_signal_controller_type| SAC          | Semi actuated control                           |
| Y    | transport_signal_controller_type| SMIC         | Streams master isolated control                 |
| Y    | transport_signal_controller_type| TA           | Traffic Actuated                                |

Back to Transport_Traffic_Signal

| Y    | transport_signal_ped_lantern_type| LED          | LED                                              |
| Y    | transport_signal_ped_lantern_type| Quartz       | Quartz Halide                                   |

Back to Transport_Traffic_Signal

| Y    | transport_signal_pedestrian_button_type| AudioTactile | Audio/Tactile                                   |
| Y    | transport_signal_pedestrian_button_type| Standard     | Standard                                         |

Back to Transport_Traffic_Signal

| Y    | transport_signal_vehicle_loop_detector| IL          | Inductive Loop                                  |
| Y    | transport_signal_vehicle_loop_detector| Infrared    | Infrared                                        |
| Y    | transport_signal_vehicle_loop_detector| Magnetic    | Magnetic                                        |
| Y    | transport_signal_vehicle_loop_detector| MWR         | Microwave/Radar                                  |
| Y    | transport_signal_vehicle_loop_detector| Pressure    | Pressure                                        |
| Y    | transport_signal_vehicle_loop_detector| Sonic       | Sonic                                           |

Back to Transport_Traffic_Signal

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| transport_subsoil_drain_type | Sheet / Filter Drain | Sheet / Filter Drain |

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### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


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Back to Transport_SubsolDrain

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Back to Transport_SubsolDrain

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<th>C170 BITUMEN - 14MM/10MM AGG</th>
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Back to Transport_Surface, Transport_Road_Parking

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Back to Transport_Tactile_Fitting

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Back to Transport_Traffic_Calming

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Back to Transport_Wheelstop

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<td>Meter with built-in valve</td>
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### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


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Back to **WaterSupply MH**

| water_mh_material | Concrete | Concrete | |
| water_mh_material | GRP | Glass Reinforced Plastic | |
| water_mh_material | PE | Polyethylene | |
| water_mh_material | PP | Polypropylene | |
| water_mh_material | PVC | PolyVinylChloride | |
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| water_mh_material | M_2 | A new material not in the schema as agreed with the receiving entity | |
| water_mh_material | Other | Another material not included in the schema | |
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Back to **WaterSupply MH**

<p>| water_mh_roofmaterial | Aluminium | Aluminium | |
| water_mh_roofmaterial | Cast Iron Frame | Cast Iron Frame | |
| water_mh_roofmaterial | Concrete | Concrete | |
| water_mh_roofmaterial | Grid Mesh - Aluminium | Grid Mesh - Aluminium | |
| water_mh_roofmaterial | Grid Mesh - GRP | Grid Mesh - GRP | |
| water_mh_roofmaterial | Grid Mesh-SS | Grid Mesh – Stainless Steel | |
| water_mh_roofmaterial | MS | Mild Steel | |
| water_mh_roofmaterial | No Roof | No Roof | |
| water_mh_roofmaterial | PE | Polyethylene | |
| water_mh_roofmaterial | PP | Polypropylene | |
| water_mh_roofmaterial | PVC | PolyVinylChloride | |</p>
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Back to WaterSupply_MH

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<td>Granular bed and surround</td>
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Back to [WaterSupply_Pipe](#)

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<tr>
<td></td>
<td>water_pipe_lining</td>
<td>CL</td>
<td>Cement Lined Normal (default for Ductile Iron and Mild Steel)</td>
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<tr>
<td></td>
<td>water_pipe_lining</td>
<td>CL_AC</td>
<td>Cement Lined - Calcium Aluminate (DI and MS)</td>
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<td>water_pipe_lining</td>
<td>CL_SR</td>
<td>Cement Lined - Sulphate Resistant (DI and MS)</td>
</tr>
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<td>water_pipe_lining</td>
<td>FBE</td>
<td>Fusion Bonded Epoxy</td>
</tr>
<tr>
<td></td>
<td>water_pipe_lining</td>
<td>PVC</td>
<td>Plasticised PVC (includes Humes Plastiline)</td>
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<tr>
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<td>Unlined</td>
<td>Unlined</td>
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<td>Other</td>
<td>Another type of liner that is not currently in the schema</td>
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<table>
<thead>
<tr>
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<th>DESCRIPTION</th>
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<tr>
<td></td>
<td>water_pipe_material</td>
<td>ABS</td>
<td>Acrylonitrile Butadiene Styrene</td>
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<tr>
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<td>water_pipe_material</td>
<td>Copper</td>
<td>Copper</td>
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<td></td>
<td>water_pipe_material</td>
<td>DI</td>
<td>Ductile Iron</td>
</tr>
<tr>
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<td>water_pipe_material</td>
<td>GRP</td>
<td>Glass Reinforced Plastic (includes the product known commercially as Hobas)</td>
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<td>water_pipe_material</td>
<td>MS</td>
<td>Mild Steel</td>
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<tr>
<td></td>
<td>water_pipe_material</td>
<td>PE-100</td>
<td>Polyethylene 100</td>
</tr>
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<td>water_pipe_material</td>
<td>PE-80B</td>
<td>Polyethylene 80B</td>
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<td>water_pipe_material</td>
<td>PVC-M</td>
<td>PolyVinylChloride Modified</td>
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<td>PVC-O</td>
<td>PolyVinylChloride Oriented</td>
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<tr>
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<td>water_pipe_material</td>
<td>PVC-U</td>
<td>PolyVinylChloride Unplasticised</td>
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<td>RCP</td>
<td>Reinforced Concrete Pipe</td>
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<td>water_pipe_material</td>
<td>SS</td>
<td>Stainless Steel</td>
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<td></td>
<td>water_pipe_material</td>
<td>AC</td>
<td>Asbestos Cement (Existing Only)</td>
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<td>water_pipe_material</td>
<td>M_1</td>
<td>A new material not in the schema as agreed with the receiving entity</td>
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<tr>
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<td>M_2</td>
<td>A new material not in the schema as agreed with the receiving entity</td>
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<td>Other</td>
<td>Material not currently in the schema</td>
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<tr>
<td></td>
<td>water_pipe_material</td>
<td>Unknown</td>
<td>Material unknown at time of data submission</td>
</tr>
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### MRC Guidelines for the Creation and Lodgement of ADAC XML Files


<table>
<thead>
<tr>
<th>MRC?</th>
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<th>VALID VALUE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>Concrete Encased</td>
<td>Concrete Encased</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>FBE</td>
<td>Fusion Bonded Epoxy</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>FBPE</td>
<td>Fusion Bonded Polyethylene (Includes the product known commercially as Sintakote)</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>Plastic Wrapped</td>
<td>Plastic Wrapped</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>Epoxy</td>
<td>Epoxy paint or coating</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>Uncoated</td>
<td>Uncoated</td>
</tr>
<tr>
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<td>P_1</td>
<td>A new protection type not yet in the schema as agreed with the data receiving entity</td>
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<td>P_2</td>
<td>A new protection type not yet in the schema as agreed with the data receiving entity</td>
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<td>water_pipe_protection</td>
<td>Zinc</td>
<td>Galvanised or zinc painted</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>Zinc-Aluminium Alloy</td>
<td>Zinc aluminium alloy coating (Petair Saint-Gobain)</td>
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<td>water_pipe_protection</td>
<td>Unknown</td>
<td>Protection type unknown at time of data submission</td>
</tr>
<tr>
<td></td>
<td>water_pipe_protection</td>
<td>Other</td>
<td>Another type of protection</td>
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<table>
<thead>
<tr>
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<th>VALID VALUE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Conduit</td>
<td>Pipe protecting a water pipe running inside it. Not hydraulically connected to the network</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Disused</td>
<td>Disused Main</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Commercial Service</td>
<td>Commercial Service pipes</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Fire Domestic</td>
<td>Domestic Fire Service</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Fire Service</td>
<td>Fire Service</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Fire Service Thru Meter</td>
<td>Metered fire service</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Intake</td>
<td>Intake pipe feeding a water treatment plant or irrigation system</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Internal</td>
<td>Customer owned pipe on customer side of the meter distributing water from mains to internal fixtures</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Fire Sprinkler</td>
<td>Dedicated un-metered fire sprinkler service</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Irrigation</td>
<td>Irrigation Pipe</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Raw Water</td>
<td>Raw Water Pipe</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Reticulation</td>
<td>Normal mains water distribution pipe</td>
</tr>
<tr>
<td>MRC?</td>
<td>ATTRIBUTE TABLE NAME</td>
<td>VALID VALUE</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>------</td>
<td>----------------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Scour</td>
<td>Scour Main from reticulation to an outlet</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Service</td>
<td>Used for service connections &gt;DN63 from main to meter</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Trunk</td>
<td>Trunk Water Main being a reticulation main above the size as defined by the receiving entity</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Waste</td>
<td>Waste Pipe from a reservoir or tank</td>
</tr>
<tr>
<td></td>
<td>water_pipe_use</td>
<td>Other</td>
<td>Another use not specified in the schema</td>
</tr>
</tbody>
</table>

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|      | water_servicepipe_material | DI          | Ductile Iron |
|      | water_servicepipe_material | Copper      | Copper       |
|      | water_servicepipe_material | PE          | Polyethylene |
|      | water_servicepipe_material | M_1         | A new material not in the schema as agreed with the receiving entity |
|      | water_servicepipe_material | Other       | Material not currently in the schema |
|      | water_servicepipe_material | Unknown     | Material unknown at time of data submission |

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|      | water_servicepipe_class | PN6         | Class PN6 for poly services |
|      | water_servicepipe_class | PN6.3       | Class PN6.3 for poly services |
|      | water_servicepipe_class | PN8         | Class PN8 for poly services |
|      | water_servicepipe_class | PN9         | Class PN9 for poly services |
|      | water_servicepipe_class | PN10        | Class PN10 for poly services |
|      | water_servicepipe_class | PN12        | Class PN12 for poly services |
|      | water_servicepipe_class | PN12.5      | Class PN12.5 for poly services |
|      | water_servicepipe_class | PN16        | Class PN16 - default for PE-100, PVS-O and PVC-M |
|      | water_servicepipe_class | PN18        | Class PN18 for poly services |
|      | water_servicepipe_class | PN20        | Class PN20 for poly services |
|      | water_servicepipe_class | PN35        | Class PN35 (Standard for DI) |
|      | water_servicepipe_class | Type A      | Type A for copper service |
|      | water_servicepipe_class | Other       | Some other service pipe class not included in the schema |
|      | water_servicepipe_class | Unknown     | Service class unknown at time of data submission |

Back to WaterSupply_ServicePipe

|      | water_servicepipe_protection | Conduit   | The water service in laid in a protective conduit |
|      | water_servicepipe_protection | No Conduit| The water service in no in a protective conduit |
|      | water_servicepipe_protection | Other     | Some other type of protection |
|      | water_servicepipe_protection | Unknown   | Service protection type unknown at time of data submission |

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|      | water_servicepipe_termination | Ball Valve | Service ends in a Ball Valve |
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<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>water_servicepipe_termination</td>
<td>No Valve</td>
<td>Service end in an open pipe or blank end</td>
</tr>
<tr>
<td></td>
<td>water_servicepipe_termination</td>
<td>Other</td>
<td>Service end in some other way</td>
</tr>
<tr>
<td></td>
<td>water_servicepipe_termination</td>
<td>Unknown</td>
<td>Service termination unknown at time of data submission</td>
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<table>
<thead>
<tr>
<th>water_service_use</th>
<th>Drinking Water</th>
<th>Service supplying drinking quality water to a premises</th>
</tr>
</thead>
<tbody>
<tr>
<td>water_service_use</td>
<td>Recycled Aplus</td>
<td>Service providing class A+ or better recycled water to a premises served by dual reticulation for toilet flushing, laundry and external use</td>
</tr>
<tr>
<td>water_service_use</td>
<td>Recycled A</td>
<td>Service providing class A recycled water to a premises via dual reticulation for outdoor uses only</td>
</tr>
<tr>
<td>water_service_use</td>
<td>Other</td>
<td>Another use not specified in the schema</td>
</tr>
<tr>
<td>water_service_use</td>
<td>Disused</td>
<td>A disused water service</td>
</tr>
<tr>
<td>water_service_use</td>
<td>Unknown</td>
<td>Water service providing a type of water unknown at time of data submission</td>
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<table>
<thead>
<tr>
<th>water_service_fitting_type</th>
<th>Drinking Fountain</th>
<th>Drinking Fountain</th>
</tr>
</thead>
<tbody>
<tr>
<td>water_service_fitting_type</td>
<td>Fountain Decorative</td>
<td>A decorative fountain</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Hot Water System</td>
<td>Hot Water System. Normally attached to a structure.</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Control Panel</td>
<td>Irrigation control panel which may or may not be hydraulically connected</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Shower</td>
<td>Open air public shower point, such as may be found at beachside parks</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Tap</td>
<td>Water delivery tap. Not to be used in place of irrigation stopcock</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Dog bowl</td>
<td>Fixed animal drinking bowl attached to customer owned water connection</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Drip Line</td>
<td>Fixed perforated pipe for drip irrigation</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Filling Station</td>
<td>Card-accessed water delivery point for commercial access</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Goose Neck</td>
<td>Downward pointing outlet on a vertical riser</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Nipple</td>
<td>Simple riser or short length of small bore pipe providing a point of discharge</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Other</td>
<td>Some other irrigation fitting – do not use for pipe fitting, valves, pumps etc. as these exist in other feature classes</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Pop Up Sprinkler</td>
<td>Pop-up type sprinkler head</td>
</tr>
<tr>
<td>water_service_fitting_type</td>
<td>Spray Nozzle</td>
<td>Fixed irrigation sprayer, sprinkler, bubbler or drip nozzle</td>
</tr>
<tr>
<td>MRC?</td>
<td>ATTRIBUTE TABLE NAME</td>
<td>VALID VALUE</td>
</tr>
<tr>
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<tr>
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<td>water_storage_source</td>
<td>Ground Water</td>
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<td>Mains Service</td>
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<td>water_storage_source</td>
<td>Ponded Water</td>
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<td>water_storage_source</td>
<td>Rain Water</td>
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<td>water_storage_tank_material</td>
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<td>back to <strong>WaterSupply_Tank</strong></td>
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<td>water_valve_type</td>
<td>Air Valve</td>
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<td>Ball Valve</td>
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<td>Generic NR</td>
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<td>water_valve_type</td>
<td>Ball Valve - Vee Ported</td>
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<td>water_valve_type</td>
<td>Butterfly Valve</td>
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<td>water_valve_type</td>
<td>Eccentric Plug</td>
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<td>Gate</td>
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<td>water_valve_type</td>
<td>Globe</td>
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<td>water_valve_type</td>
<td>Pressure Relief</td>
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<tr>
<td></td>
<td>water_valve_type</td>
<td>Rubber Gate</td>
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<td>water_valve_type</td>
<td>Wafer</td>
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<td>water_valve_type</td>
<td>Knife Gate</td>
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<td>Pressure Sustaining</td>
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<td>water_valve_type</td>
<td>Altitude Valve</td>
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<td>water_valve_type</td>
<td>Special</td>
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<td>water_valve_type</td>
<td>RPZ</td>
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<td>water_valve_type</td>
<td>Solenoid</td>
</tr>
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<td></td>
<td>water_valve_type</td>
<td>Swing Check</td>
</tr>
<tr>
<td></td>
<td>water_valve_type</td>
<td>Vacuum Release</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Non-Return</td>
<td>A valve allowing flow in only one direction of types Generic, Rubber Gate, Swing Check Wafer of RPZ</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Scour</td>
<td>Scour Valve. Used to scour dirty water from a section of pipeline</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Diversion</td>
<td>A valve the main function of which is to select an alternative flow path</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Service</td>
<td>Service Valve</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Stop</td>
<td>Stop Valve. Used for the isolation of sections and branches in pipelines</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Flow Control</td>
<td>A valve used to control or stop the rate of flow</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Pressure Control</td>
<td>A valve designed to control the pressure in a water supply system of types Overfloe, Pressure Relief, Altitude Valve, or Vacuum Release</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Gas Release</td>
<td>A valve used to purge air or gas from the high points of a water pipeline</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Other</td>
<td>A valve use for a use not provided for in the schema</td>
</tr>
<tr>
<td></td>
<td>water_valve_use</td>
<td>Zone Boundary</td>
<td>Zone Boundary Valve. Defines the boundary of a pressure zone or distribution maintenance area.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>MRC?</th>
<th>ATTRIBUTE TABLE NAME</th>
<th>VALID VALUE</th>
<th>DESCRIPTION</th>
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<tr>
<td></td>
<td>which_side</td>
<td>Left</td>
<td>Offset from the left side boundary when looking from the road.</td>
</tr>
<tr>
<td></td>
<td>which_side</td>
<td>Right</td>
<td>Offset from the Right side boundary when looking from the road.</td>
</tr>
</tbody>
</table>

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