Network Model

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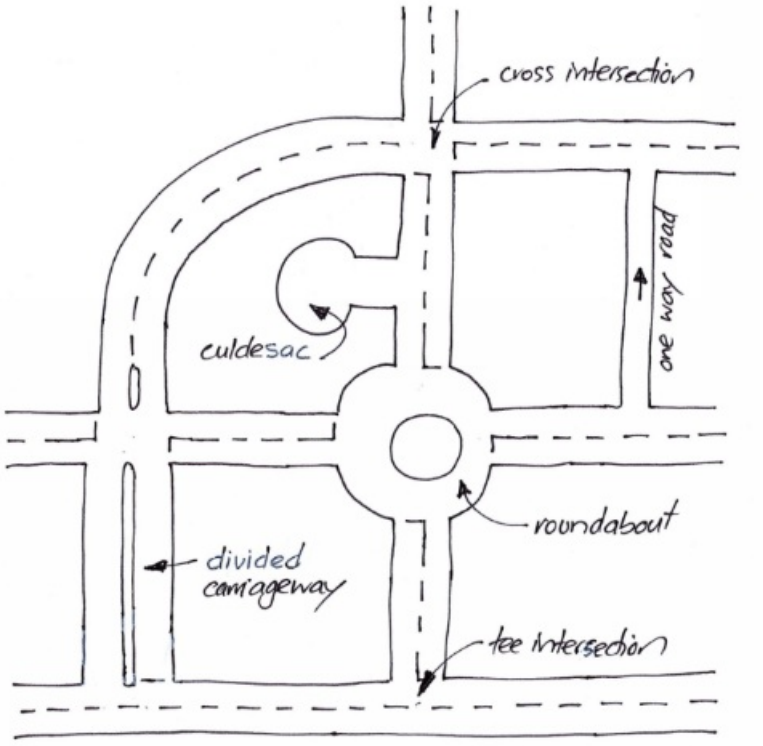
This article describes how the network model is defined and then created and managed in AWM.

Network Model Overview

Within a road and transport context, a network supports and enables the movement of vehicles, goods and people. The road network, for example, is a collection of many connected roads, with each road comprising one or more road segments.

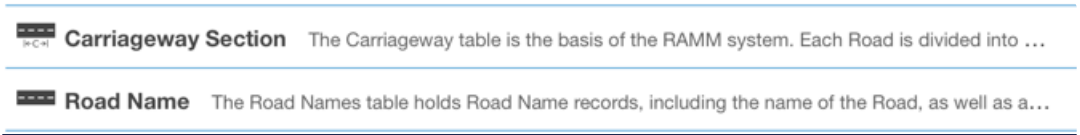


Road network definition model – example road configuration

In AWM, there can be different types of networks defined. Each network is characterised by a network type, which represents the network's primary function e.g. Road, Pathway, Carpark. Differentiation between these various network types is necessary for operational, management, funding and reporting requirements.

The AWM Network Model

Networks are defined in AWM, using a combination of the Road Name (*roadnames*) and Carriageway Section (*carr_way*) tables.



The Carriageway Section and Road Name tables in the AWM Menu.

The term *road* is a common base term in AWM, and it is referenced in multiple places within the Network Model. This includes core attributes such as the Road Name, Road ID and Road Type.

It is worth noting that all network types defined in AWM utilise the Road Name table. Therefore, even though the term "road" is used, it applies equally to other networks such as Path. For instance, a single pathway, while not being a road, will still be partially defined by a Road Name record and will have its own unique Road ID, Road Name, and Road Type.

The RAMM fields used to record each component of the network model are discussed further in the sections below.

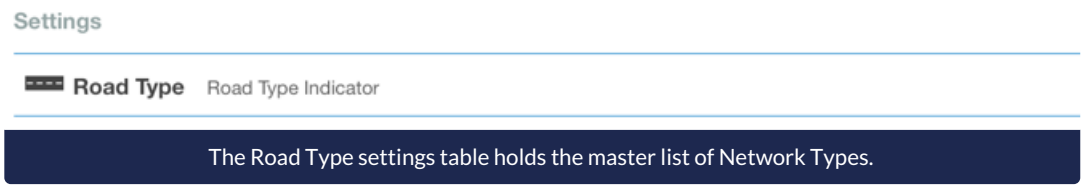
Network Types

The standard Network Types that have been set up for use in AWM include the following;

Code	Network Type
R	Road
A	Proposed Road
P	Path
C	Carpark
U	Public Space
W	Accessway
B	Bus Station

'Local Authority' (L) and 'State Highway' (S) are default Network Types in RAMM and should not be used.

These network types are defined for each road using the road_type field in the Road Name table. The master list of Network Types is managed in the Road Type settings table.



The Road Type settings table holds the master list of Network Types.

This model separates the concept of ownership away from the network type where possible. This is expanded on further below in the Network Ownership section.

Network Ownership

The following AWM Carriageway Section attributes are used to record different types of ownership:

Ownership Type	RAMM Table	RAMM Attribute
Asset	Carriageway	asset_owner
Land	Carriageway	controlled_by
Maintenance	Carriageway	maintained_by

These ownership types are explained further as follows;

- **Asset Ownership** - The owner of the primary asset that allows for the network to achieve its purpose (e.g: the owner of the pavement if the network (road) type = Road)
- **Land Ownership** - The owner of the land that the network uses to achieve its purpose (usually directly beneath the primary asset).
- **Maintenance Ownership** - The organisation that is responsible for the maintenance of the primary asset.

The Carriageway Section 'Owner_Type' attribute is a mandatory attribute in AWM. This needs to be related to the Asset Owner (*asset_owner*) attribute (this relationship can be automated).

Network Classifications

Breaking the road network down into different classifications underpins critical business reporting as well as supporting key network analysis.

The table below describes the classifications being used in the current AWM Network Model and where these are defined in the database:

Name	Description	RAMM Table	RAMM Attribute
Road Type	Defines the primary purpose of a network segment.	Road Name (*roadnames*)	Road Type (*road_type*)
Network Hierarchy	Hierarchy in AWM is used to manage the National Road Network Classification	Carriageway Section (*carr_way*)	Hierarchy (*cway_hierarchy*)
Region	Provides the PNG Region that the road sits in.	Carriageway Section (*carr_way*)	Area (*cway_area*)
Province	Provides the PNG Province that the road sits in.	Carriageway Section (*carr_way*)	Sub-Area (*cway_sub_area*)
Priority Corridor	Provides the PNG Priority Corridor that the road sits in. These are also called the Economic Corridors.	Carriageway Section (*carr_way*)	Priority Corridor *(cway_group_4)*
Road Priority	Provides whether the road is classified as; priority core, priority non-core or non-priority.	Carriageway Section (*carr_way*)	Road Priority (*cway_group_1*)
Network Type	Provides whether the road is classified as; Sealed Road, Unsealed Road, 4 Wheel Drive Track or Pathway	Carriageway Section (*carr_way*)	Network Type (*cway_group_2*)
Vehicle Access	Defineswhether the road is classified as; All vehicles, Limited 2 Wheel Drive or 4 Wheel Drive Only	Carriageway Section (*carr_way*)	Vehicle Access (*cway_group_3*)
Pavement Type	Defines the primary pavement type of the road. Thin surface flexible (sealed) or Unsealed. Supports the Network Type	Carriageway Section (*carr_way*)	Pavement Type *(pavement_type)*

National Network Road Classification

See this article Road Classifications, for more information on the Road Classification System to be followed.