

# Carriageway sections

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## INTRODUCTION

This overview document is intended to provide high level support and direction to better understand the criticality of defining carriageway sections and attributes, and how to maintain this dataset.

Any relevant current industry guidance and case studies have been referenced, where they provide more detailed assistance.

## WHAT ARE CARRIAGEWAY SECTIONS?

Carriageway sections are defined segments of each road on your network. Regarding Road Assessment and Maintenance Management (RAMM), they are sections of the 'roads' recorded in the RAMM road names table.

Each carriageway section should be correctly defined and should be of reasonably consistent dimensions, demands and pavement type (i.e. sealed/unsealed). Carriageway sections are a different segmentation of your roads than treatment lengths, and serve different purposes.

Carriageway section splits **must** occur when there is:

- A significant change in demand (traffic volume, heavy vehicles, etc.)
- Changes in pavement type/construction (thin surfaced flexible, structural asphaltic concrete, unsealed, bridge, etc.)
- Changes in width (for roads this is typically >2m for a length of 100m or more)
- Changes in the number of lanes
- Changes in travel direction
- Change from an undivided to divided road
- Change from urban to rural context

Carriageway section splits may occur where there is:

- An intersection with side road(s)
- Other feature, e.g. culvert, short span bridge, etc.

Carriageway sections should start and end at recognisable landmarks in the field. These are typically intersections with side roads, start/end of bridges, culverts, reference stations etc.

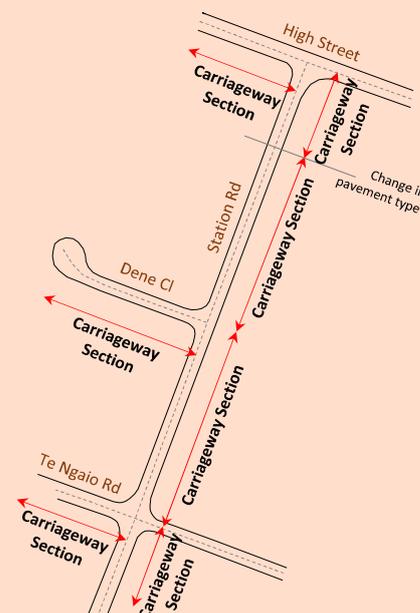
The adjacent figure shows an example where High St, Station Rd, Dene Cl and Te Ngaio Rd are the 'roads' as recorded in the RAMM Roadnames table and the subsequent segmentation into carriageways.

The length of carriageway sections should be considered. Overly long sections result in greater averaging of dimensional data and other values which may obscure outputs. Very short sections can be a nuisance.

## KEY POINTS

### Carriageway sections:

- ✓ Are defined sections of each 'road' on your network
- ✓ Are sections of reasonably consistent demand, dimensions, number of lanes and pavement type
- ✓ Are the level at which ONRC categories are assigned
- ✓ Form the basis for the linear referencing of other asset data
- ✓ Are used for summarisation of data for performance reporting and calculating critical statistics like network length, VKT, or STE
- ✓ Need to be maintained following changes to your network



**Carriageway sections are defined sections of each road of reasonably consistent demand, dimensions, number of lanes and pavement type.**

## WHY ARE THEY IMPORTANT TO ME?

Carriageway sections are fundamental in how we define and classify our network, including assigning One Network Road Classification (ONRC). They are used in many of our processes and analyses. Carriageway sections define the length of each 'road' and form the basis for the linear referencing of other asset data including inventory, condition and activity.

## NUMBER OF LANES

Each carriageway section needs the number of lanes correctly defined. The number of recorded lanes impacts:

- The network length in terms of lane kilometres
- Achieved ONRC Efficiency Performance Measure results

Roads less than 4m wide with no marked centreline should be considered one lane, even if traffic can travel in both directions. A carriageway section split because of a change in the number of lanes, including passing lanes, should be taken where the additional lane becomes full width. It should end where the lane line marking for this lane finishes.

## WHAT IS THE CONSEQUENCE OF POOR CARRIAGEWAY SECTION DATA?

The accuracy of carriageway data is considered critical as the accuracy of most other data in RAMM is dependent on this network definition.

There are significant issues associated with poor carriageway section data. Some examples include:

- Incorrect reporting of network length and other statistics (e.g. proportion sealed/unsealed)
- Poor understanding of network demand, including the calculation of vehicle kilometres travelled (VKT)
- Poor reporting of network condition, including smooth travel exposure (STE)
- Poor network classification, including ONRC
- Lack of understanding around policy/guideline consequences
- Incorrect traffic management levels

## HOW TO MAINTAIN CARRIAGEWAY SECTIONS

Carriageway section data maintenance is required as a result of changes to your network. These network changes could be because of capital projects (e.g. seal extensions), vested assets, revoked state highways or pavement renewal activity.

Carriageway section changes have the potential to affect your asset inventory data. They need to be considered prior to implementing regarding the impact on other inventory data. Changes to carriageway sectioning is currently managed through the RAMM network manager. Here existing sections are updated, including being split, where works undertaken on the network has resulted in the existing section no longer meeting the criteria previously mentioned.

When RAMM network manager is used to manage carriageway section changes, the impacts of changes on other data tables are handled by the system. However, care needs to be taken not to 'delete' asset records when reducing section lengths.

The Carriageway table in RAMM is populated with summarised data from other condition and traffic data tables. This is done through running the status check processes in RAMM Manager.

## CONCLUSION

Carriageway sections are defined segments of each road on your network. They are of reasonably consistent demand, dimensions, number of lanes and pavement type. They are used for the summarisation of data, which is used for performance reporting, calculating critical statistics like network length, VKT and STE.

Carriageway sections are what define our network length and need to be updated as a result of changes to your network as they form the basis for the linear referencing of other asset data.

## REFERENCES

- SM050 State Highway Database Operations Manual
- RAMM on line help
- Data Standard for Road Management and Investment in Australia and New Zealand

REG is a collaborative project between Local Government and the NZ Transport Agency.

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