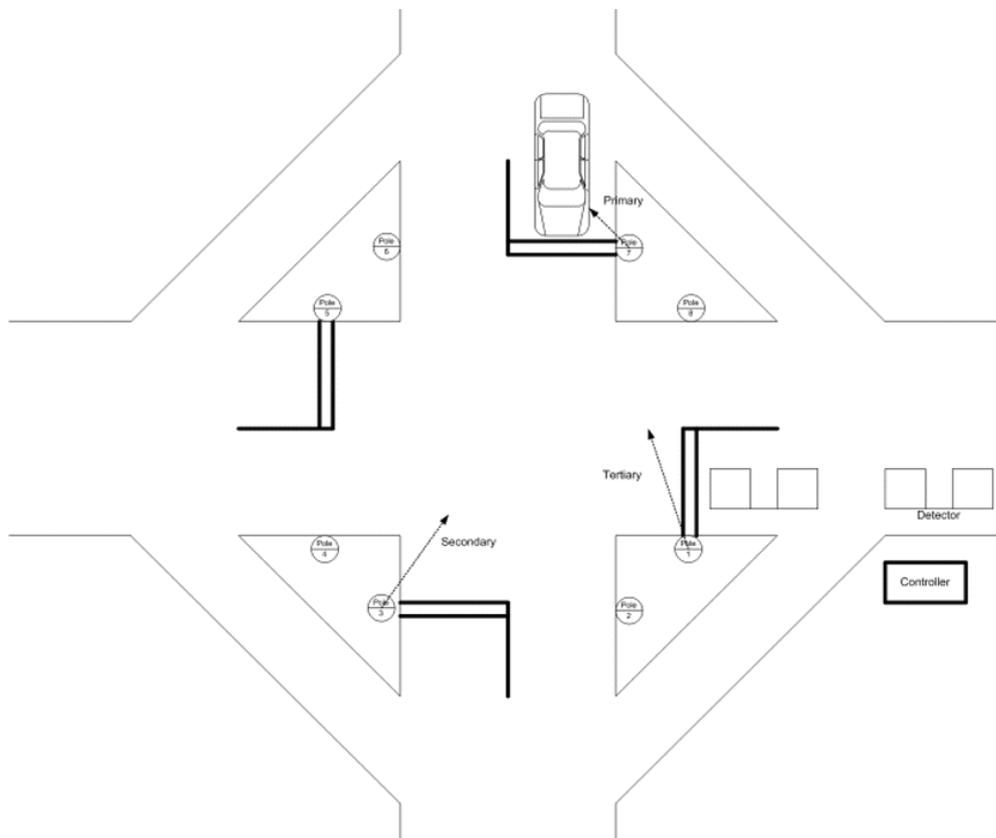




excellence in asset management



## Intersections

Release Version: 2nd February, 2012  
RAMM Software Ltd  
Auckland  
NEW ZEALAND



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## Document Release

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| Author          | Version              | Release Date      |
|-----------------|----------------------|-------------------|
| Grant Mackenzie | Release for web site | 2nd February 2012 |



# Contents

|  |           |
|--|-----------|
| <b>Chapter 1 Introduction to Intersections</b> .....     | <b>9</b>  |
| <b>Chapter 2 Intersection Generation</b> .....           | <b>11</b> |
| Intersection Generation Issues.....                      | 12        |
| Select a Map.....  | 12        |
| Regenerate the Map Index .....                           | 12        |
| Intersections within a Carriageway Section.....          | 13        |
| Generating Intersections from the Map .....              | 13        |
| Intersection Generation Errors .....                     | 16        |
| Intersection Error Repairs .....                         | 17        |
| Viewing Intersection Error Details .....                 | 17        |
| Adding an Intersection to the Map .....                  | 19        |
| Identifying the Intersection Errors on the Map .....     | 22        |
| <b>Chapter 3 Intersection Sanity Reports</b> .....       | <b>25</b> |
| Identify Roads without Intersections.....                | 25        |
| Identify Intersections with Invalid Location.....        | 27        |
| Other Intersection Sanity Reports .....                  | 28        |
| <b>Chapter 4 Controlled Intersections</b> .....          | <b>31</b> |
| Define an Intersection as Controlled.....                | 31        |
| SCATS Numbers.....                                       | 32        |
| Defining Controlled Intersections.....                   | 33        |
| <b>Chapter 5 Pedestrian Crossing Intersections</b> ..... | <b>35</b> |
| <b>Chapter 6 Intersection Screen</b> .....               | <b>37</b> |
| Intersection Screen in RAMM.....                         | 37        |
| Intersection Screen and Traffic Signals Screen .....     | 39        |
| Intersection Screen in RAMM Contractor.....              | 40        |
| <b>Chapter 7 Intersection Screen Details</b> .....       | <b>43</b> |
| General .....  | 44        |
| Location .....   | 46        |
| Navigation Restrictions .....                            | 47        |
| Miscellaneous .....                                      | 48        |

|   |           |
|---|-----------|
| Pedestrian Crossing.....                              | 49        |
| Pedestrian - General .....                            | 50        |
| Pedestrian - School.....                              | 51        |
| Pedestrian - Miscellaneous.....                       | 51        |
| Assessment.....                                       | 51        |
| Multimedia .....                                      | 52        |
| Audit .....   | 52        |
| <b>Chapter 8 Intersection Behaviour and Type.....</b> | <b>53</b> |
| Intersection Behaviour .....                          | 54        |
| Define Intersection Behaviour Codes.....              | 55        |
| Intersection Type.....                                | 55        |
| Define Intersection Type Codes .....                  | 56        |
| <b>Glossary.....</b>                                  | <b>59</b> |
| <b>Index.....</b>                                     | <b>77</b> |

## Introduction to Intersections

Intersections in **RAMM** exist to locate Traffic Signals and for the management of Speed Limits in Bylaws. Although other Assets such as Marking and Signs are often placed at Intersections, in **RAMM** the Location of the Marking or Sign is not associated with the Intersection.

Traffic Signals must be Located at and associated with a Controlled Intersection.

### Create Intersections

Intersections do not exist as a matter of course in **RAMM** databases. You need to generate them. You do this in **RAMM Manager**. See Intersection Generation (on page 11).

### Intersection Sanity Reports

When you have generated the Intersections from the **Map** there may be errors in some of them. To find the errors, you run a variety of sanity reports. You then address the errors. See Intersection Sanity Reports (on page 25).

### Controlled Intersections

The Intersections on which you locate Traffic Signals must be defined as Controlled. You do this at the **General** tab of the **Intersection** Detail screen. See Controlled Intersections (on page 31).

### Intersection Type and Behaviour

You also create Intersection Type code and Behaviour code Lookups if you are going to use them.

Intersection Behaviour codes are user-defined and can be associated with the Intersection Main Road to show the behaviour of the Main Road at the Intersection. See Intersection Behaviour (on page 54).

Intersection Type codes are commonly used to designate Intersections as T Junctions or Y Junctions and so on. See Intersection Type (on page 55).

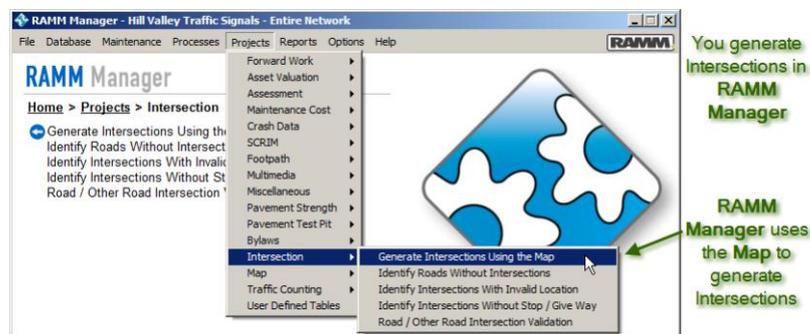
## Intersection Screen

The **Intersection** screen has unique features. In particular, it has a Clock Face to display Road directions. It has a section to describe **Navigation Restrictions**. It has another section for **Pedestrian Crossings** which you can use to keep very detailed records. See **Intersection** Screen Details (on page 43).

## Intersection Generation

You generate Intersections in **RAMM Manager**.

Intersections are generated from the **Map**. **RAMM** reads the Road information from the **Map**, finds the intersecting Roads and then adds the Intersections to the **RAMM** database.



### In This Chapter

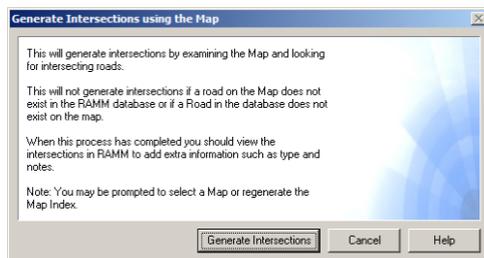
|   |    |
|---|----|
| Intersection Generation Issues.....             | 12 |
| Select a Map .....                              | 12 |
| Regenerate the Map Index .....                  | 12 |
| Intersections within a Carriageway Section..... | 13 |
| Generating Intersections from the Map .....     | 13 |
| Intersection Generation Errors .....            | 16 |
| Intersection Error Repairs.....                 | 17 |
| Viewing Intersection Error Details .....        | 17 |

Adding an Intersection to the Map..... 19  
Identifying the Intersection Errors on the Map ..... 22

---

## Intersection Generation Issues

When you follow the menu path to generate Intersections from the **Map**, the following screen will open.



It advises that, there are some occasions on which an Intersection will not be generated. This can be when a Road on the **Map** can not be matched to a Road in the database, or conversely, when there is a Road in the database which does not exist on the **Map**.

---

## Select a Map

**RAMM Manager** may ask you to select a **Map** from which the Intersections will be generated. You should select the **Map** you normally use.

  
**NOTE**

It is most unlikely that you will be asked to select a **Map**.  
This action was necessary before **Maps** were associated with a database.

---

## Regenerate the Map Index

**RAMM Manager** may ask you to Regenerate the Map Index.

The **Map** Address Index is a table of length information which is used when adding Jobs to the **Map** and when calculating GPS coordinates. It also enables search by Address.

Length data is not automatically associated with Addresses on the **Map**.

When you have added Roads to the database, the length of the Road may not exactly match the **Map** coordinates. This is caused by the fact that the **Map** is two-dimensional and Roads are three-dimensional. So a Road over a hill will have a greater length than the lines representing it on the **Map**.

Regenerating the **Map** Index deals with these anomalies. If, before generating Intersections, you are asked to **Regenerate the Map Index**, then when that process is complete, **RAMM Manager** will generate Intersections automatically without asking for confirmation to proceed.

---

## Intersections within a Carriageway Section

**RAMM Manager** determines an exact Intersection Location from where the intersecting Roads start or end where a Carriageway starts or ends.

However, if an Intersection occurs within a Carriageway Section instead of at its beginning or end, **RAMM** Mapping may not be able to determine its exact Location. It uses the available data to generate an Intersection record, but with no Location. **RAMM** puts this into the Notes field as Approximate Location ....m.

You can correct this later. See Intersection Error Repairs (on page 17).



Pedestrian Crossings usually occur within a Carriageway Section. However, they do not exist as a matter of course in **RAMM** databases. So you will have to add them manually later. See Pedestrian Crossing (on page 49).

---

## Generating Intersections from the Map

### Introduction

Each Traffic Signal set in **RAMM** must be Located at an Intersection. So before you can add Traffic Signals data to your database you must generate the Intersections from the **Map**. You do this in **RAMM Manager**.

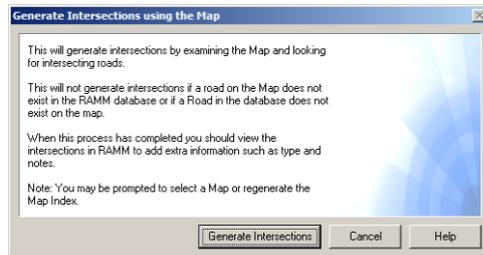
Before you do this you need to have:

- loaded the **Map** data into **RAMM**. See the Mapping chapter of the *Using RAMM* guide.
- logged in to **RAMM Manager**.

### Menu Path

Follow the menu path Projects > Intersection > Generate Intersections Using the Map to open the **Generate Intersections using the Map** information screen.

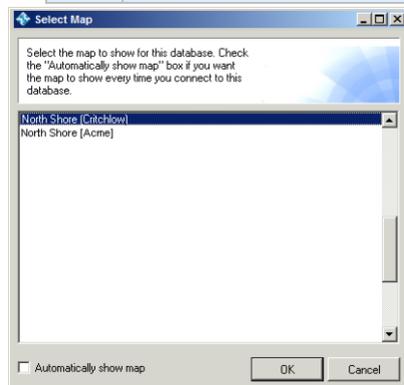
#### ► Generating Intersections from the Map



To do this you follow these steps:

- 1 Read the information on the **Generate Intersections using the Map** information screen.
- 2 Press .
- 3 Has the **Select Map** dialog opened?

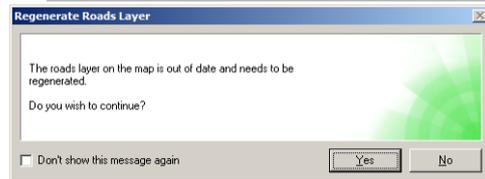
|            |                    |
|------------|--------------------|
| <b>Yes</b> | then go to step 4. |
| <b>No</b>  | then go to step 6. |



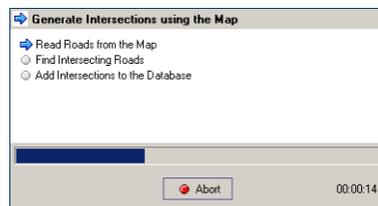
- 4 Select the **Map** from which you wish to generate Intersections.
  - 5 Press .
- The **Select Map** dialog will close.

6 Has the **Regenerate Roads Layer** dialog opened?

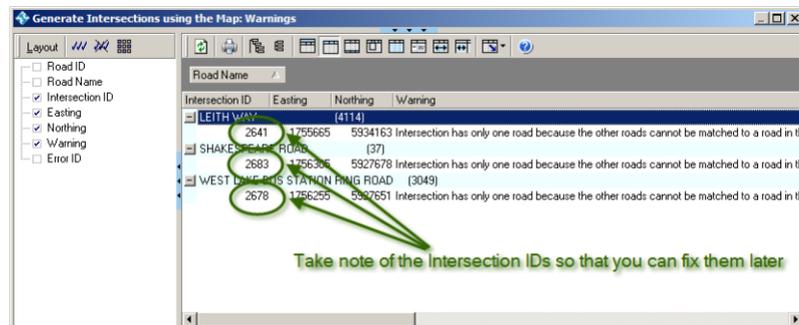
|            |                    |
|------------|--------------------|
| <b>Yes</b> | then go to step 7. |
| <b>No</b>  | then go to step 8. |



7 Press **Yes**.  
The **Regenerate Roads Layer** dialog will close.



8 The **Generate Intersections using the Map** progress screen will open showing the progress through the steps to create the Intersections.  
9 When the process is complete, the **Generate Intersections using the Map: Warnings** screen will open. The Intersections which were created but with which there were problems will display.



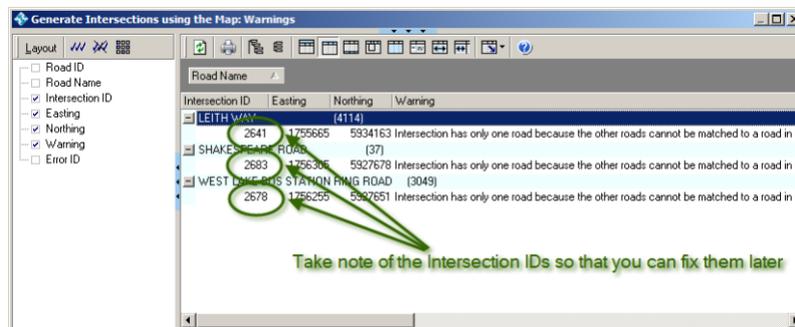
10 Take a note of the Intersection IDs or export the report into a format you can use so you can fix the problems later.  
11 Close the **Generate Intersections using the Map: Warnings** screen in the usual manner. You will be returned to the **Generate Intersections using the Map** progress screen.  
12 Press Close.  
The **Generate Intersections using the Map** progress screen will close.

- 13 You must now fix the errors in the Intersections you have created. See Intersection Generation Errors (on page 16).
- 14 When this process is finished you run a variety of sanity reports to check for errors which you then fix. See Intersection Sanity Reports (on page 25).

## Intersection Generation Errors

When you generate Intersections from the **Map** there may be errors. You need to identify these errors and remedy them. This process may include manually adding Intersections to the **Map**.

If there are errors in the Intersection generation process, the **Generate Intersections using the Map: Warnings** screen will open with the errors listed.



### What Are the Likely Errors

The Intersections are generated from the **Map**. **RAMM** assesses the meetings of Carriageways on the **Map** and then looks for equivalent records in the **RAMM** database to create the Intersections.

Where a Road exists on the **Map** but not in the Database, an Intersection record is created and an appropriate Error Message.

### Do You Need to Fix These Errors

You need to ask yourself whether the Intersections with errors need to be fixed.

Intersections are used for Bylaws, in particular, Speed Limits, and Traffic Signals. If there is no possibility that the Intersection will be required for Bylaws or Traffic Signals you may choose to ignore the errors.

If you choose not to fix the Intersection errors then, the possibility exists that at some time in the future there may be a requirement for Bylaws or Traffic Signals at the Intersection.

You may then waste a great deal of time and money trying to find and understand the error.



The future can not be predicted with certainty.

Best practice is to fix all Intersection errors when you are generating Intersections, whether or not there is a current need for Bylaws or Traffic Signals at the Intersection.

---

## Intersection Error Repairs

You investigate and analyse Intersection generation errors in **RAMM**.

### RAMM

First you check the Intersection details at the **Intersection** Detail screen. If the answer is not found at that screen you then look at the Intersection on the **Map** and analyse what is displayed.

### Network Manager

If a Carriageway Section or Road exists on the **Map** but not in the **RAMM** database, then you need to add the missing section to the database. You do this in **RAMM Network Manager**. See the RAMM Network Manager chapter of the *Working with RAMM* guide.

### Repair

When the missing link has been added in **RAMM Network Manager** you can return to the **Intersection** Detail screen to update the Intersection record. See Intersection Screen in **RAMM** (on page 37).

---

## Viewing Intersection Error Details

### Introduction

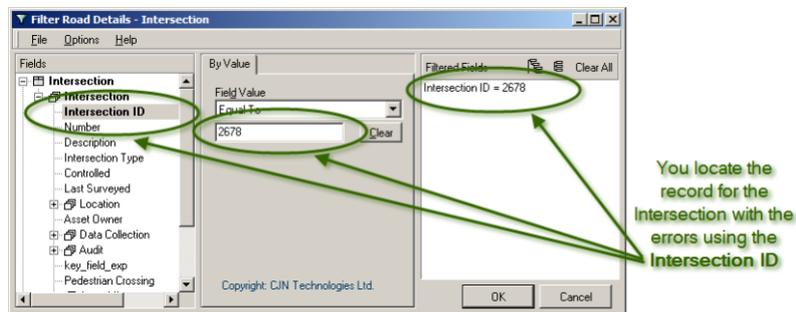
When you generate Intersections from the **Map** in **RAMM Manager**, you may be informed of errors in the Intersection generation process. You should then view the details of the Intersection to see whether the problem is obvious and readily addressed.

Before you do this you need to have:

- created the Intersections from the **Map**. See Generating Intersections from the **Map** (on page 13).
- a record of the Intersection IDs of the Intersections with errors
- logged in to **RAMM**.

Follow the menu path (Press Show Intersection ) > (press Filter ) to open the **Filter Road Details - Intersection** dialog.

### ► Viewing Intersection Error Details

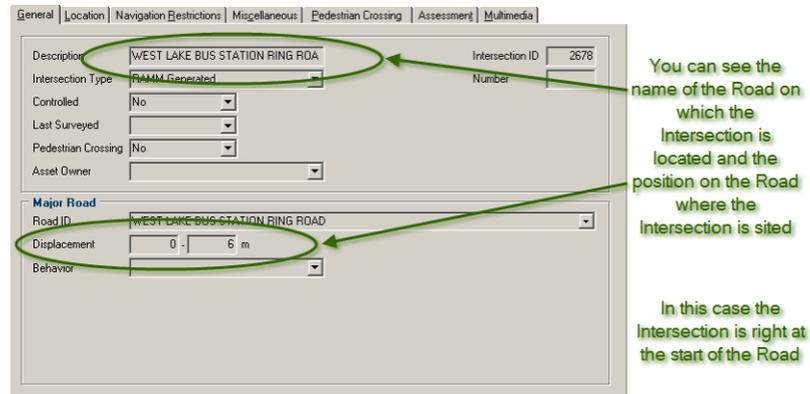


To do this you follow these steps:

- 1 Highlight Intersection ID in the Fields panel.
- 2 Type the Intersection ID in the Intersection ID field at the By Value tab.
- 3 Press .
 

The **Confirm Filter Option** dialog will open asking whether to apply the filter to the Road selected in the Roads list panel or to All roads in Entire Network.
- 4 Select the All roads in Entire Network option.
- 5 Press .
 

The details for the Intersection with errors will default into the **Intersection** Details screen and the Road will become selected in the adjacent Roads list panel.
- 6 Analyse the details. You can see in the example below that the Intersection is sited at the start (0-6 m) of the Westlake Bus Station Ring Road. Intersections are described by the Descriptions of the two Roads which intersect. Although it is not clear in the graphic below because the name of the first Road is too long, the other clear error is that the name of the second Road is not included in the Intersection Description. So one problem is with the other intersecting Road.



- 7 Sometimes Intersection generation errors become clearer when you can see the actual position of the Intersection on the **Map**. You should now add the Intersection to the **Map**. See Adding an Intersection to the **Map** (on page 19).

## Adding an Intersection to the Map

### Introduction

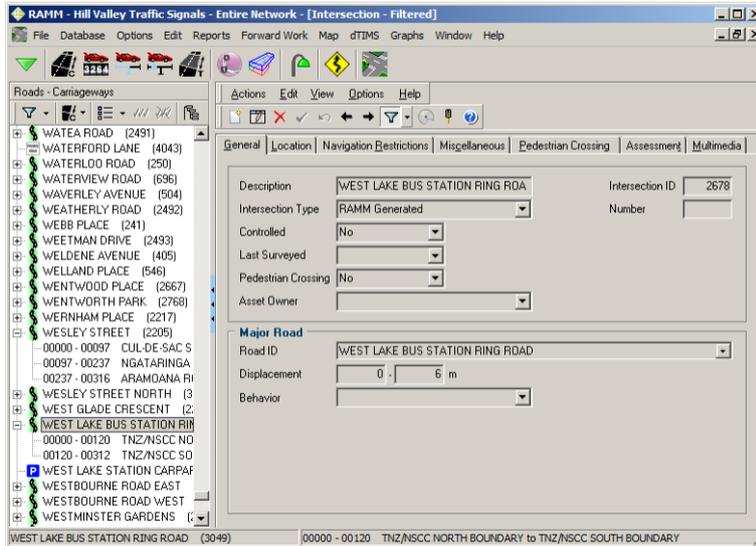
When you need to analyse Intersection errors at the **Map**, it may help to be able to see the Intersection on the **Map**. The generation error may then become obvious.

Before you do this you need to have:

- generated the Intersections from the **Map**. See Generating Intersections from the Map (on page 13).
- performed steps 1-7 of Viewing Intersection Error Details. See Viewing Intersection Error Details (on page 17).

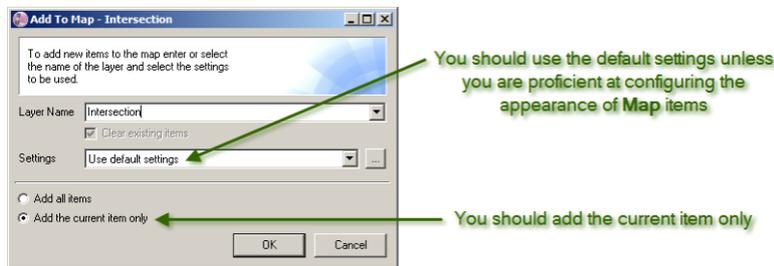
Follow the menu path (perform steps 1-7 of Viewing Intersection Error Details) to display the **Intersection** Details screen, which will contain the details of the Intersection you want to add to the **Map**.

► Adding an Intersection to the Map



To do this you follow these steps:

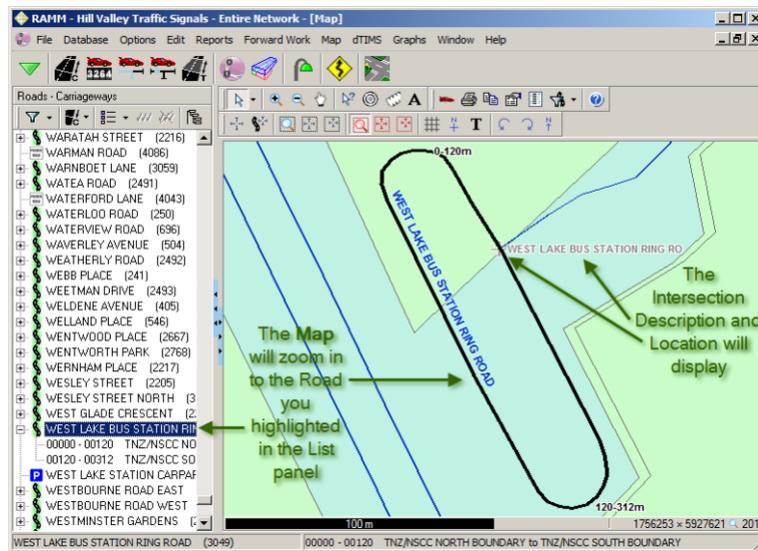
- 1 Press . The **Map** will open. The **Map** must be open for the **Add to Map** menu path become available at the Detail screen.
- 2 Follow the menu path **Window > Intersection - Filtered Detail**. The **Intersection** Details screen with the details of the Intersection you want to add to the **Map** will display.
- 3 Follow the menu path **Actions > Add to Map > Add to Map Now**. The **Add to Map - Intersection** screen will open.



- 4 Accept the defaults unless you are proficient at configuring the appearance of items on the **Map**. See the Mapping chapter of the *Using RAMM* guide.
- 5 Press . The screen will close. The **Map** will open.
- 6 Is the **Map** centred on the Intersection?

|            |                    |
|------------|--------------------|
| <b>Yes</b> | then go to step 9. |
| <b>No</b>  | then go to step 7. |

- 7 Press . Automatically Zoom to Selected Features will become available.
- 8 Select the Road or Carriageway Section in the Roads list panel for the Intersection with the generation errors.  
The **Map** will automatically zoom in to the Road. The Intersection will be positioned and labelled.



- 9 You now need to analyse what you see. Go to Identifying the Intersection Errors on the **Map** (on page 22).



When you add an Intersection to the **Map** you do so on a temporary basis. If you close the **Map**, the Intersection will not be there when you next open the **Map**.

If you want to see it again you will have to add it again.

## Identifying the Intersection Errors on the Map

### Introduction

When you need to analyse Intersection errors at the **Map**, it should be centred over the Intersection on the **Map** so that you can see the Roads which intersect and check the data for the **Map** items.

Before you do this you need to have:

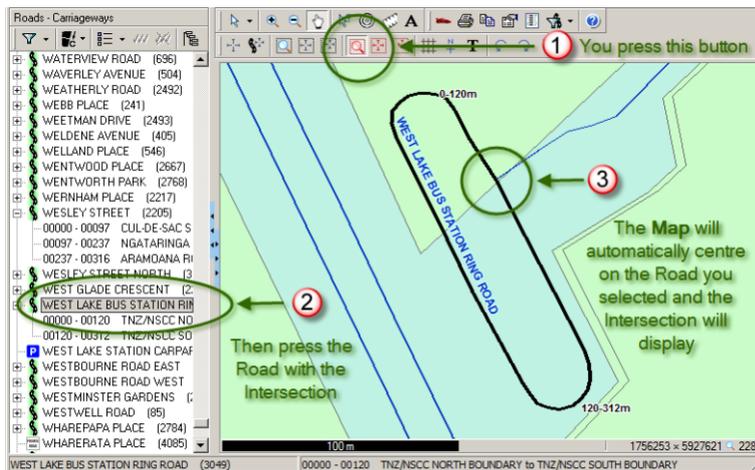
- created the Intersections from the **Map**. See Generating Intersections from the **Map** (on page 13).
- performed steps 1-7 of Viewing Intersection Error Details. See Viewing Intersection Error Details (on page 17).
- performed steps 1-9 of Adding an Intersection to the **Map** if you want to be able to see the actual Location of the Intersection on the **Map**. See Adding an Intersection to the **Map** (on page 19).

Follow the menu path (perform steps 1-7 of Viewing Intersection Error Details) > (press



) to display the **Map**.

### ► Identifying the Intersection Errors on the Map



To do this you follow these steps:

- 1 Is the **Map** centred on the Intersection?

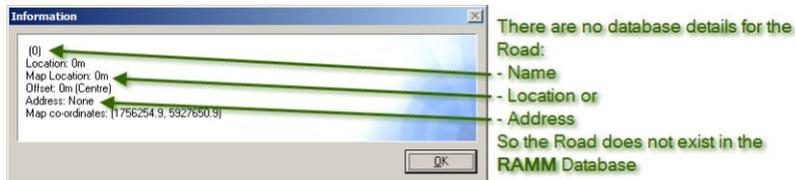
**Yes** then go to step 4.

**No** then go to step 2.

- 2 Press . Automatically Zoom to Selected Features will become available.
- 3 Select the Road or Carriageway Section in the Roads list panel for the Intersection with the generation errors. The **Map** will automatically zoom in to the Road.
- 4 Look at the **Map**. Look for obvious errors. In the graphic above you can see that the Westlake Bus Station Ring Road Intersects of with another (unnamed) Road. That Intersection is Located away from the centre of the unnamed Road. This will need to be addressed in **RAMM Network Manager**. See the RAMM Network Manager chapter of the *Working with RAMM* guide.
- 5 You should now look for data errors.
- 6 Press . The Zoom in to Map function will become available and the mouse pointer will become a magnifying glass.
- 7 Zoom right in to the Intersection.



- 8 Press . The Pick the Nearest Road and Display Details function will become available. The mouse pointer will become cross-hairs .
- 9 Press the mouse pointer on the Road which is incorrectly Located. An **Information** screen will open with database details for the Road.



- 10 In the example shown, the Information screen which should contain Description, Map Location and Address details, has none. So the Road does not exist in the **RAMM** database.
- 11 You should now add the Road to the **RAMM** database using **RAMM Network Manager**. See the RAMM Network Manager chapter of the *Working with RAMM* guide.
- 12 You should then update the Intersection details. You do this at the **Intersection** Details screen. See Intersection Screen in RAMM (on page 37).



## Intersection Sanity Reports

You need to be sure that your Intersection data is robust before you add your Traffic Signals. After you have created your Intersections and remedied any generation errors, you should run two of the Intersection sanity reports which relate to Traffic Signals.

### Identify Roads without Intersections

This report lists every Road in the Network which does not have at least one Intersection Location record.

### Identify Intersections with Invalid Location

Intersection Locations not within a Carriageway Section can not be used for navigating the Network. You will need to update either the Intersection Locations or the Carriageway Sections to ensure that they are consistent with each other.

### In This Chapter

|   |    |
|---|----|
| Identify Roads without Intersections.....         | 25 |
| Identify Intersections with Invalid Location..... | 27 |
| Other Intersection Sanity Reports .....           | 28 |

---

## Identify Roads without Intersections

This report lists every Road in the Network which does not have at least one Intersection Location record.

### Menu Path

From within **RAMM Manager** you follow the menu path Projects > Intersection > Identify Roads Without Intersections to open the **Roads Without Intersections Report** dialog.



If you press  you can look at the report before you print it.

C:\N Technologies Limited  
Hill Valley Regional Council

User: Grant Mackenzie Page: 1 of 2  
Printed: Wednesday, 25 February 2009 14:33

### Roads Without Intersections

| Road ID | Road Name                              | Road Type       | Suburb     | Town               |
|---------|--|-----------------|------------|--------------------|
| 6073    | ANZAC ROAD CARPARK DP10801             | Car Park        | BROWNS BAY | E.C.BAYS           |
| 6020    | ANZAC STREET CARPARK DP 53238          | Car Park        | TAKAPUNA   | TAKAPUNA           |
| 6035    | ANZAC STREET SMALL CARPARK             | Car Park        | TAKAPUNA   | TAKAPUNA           |
| 2556    | ARCHERS ROAD (LLA)                     | Local Authority | GLENFIELD  | TAKAPUNA/GLENFIELD |
| 6033    | BEACHFRONT CARPARK                     | Car Park        | TAKAPUNA   | TAKAPUNA           |
| 6090    | BIRKENHEAD WHARF CARPARK               | Car Park        |            |                    |
| 6045    | BIRKENHEAD AVE CARPARK DP38599+DP79651 | Car Park        | HIGHBURY   | ONEWA              |
| 6019    | BLOMFIELD SPA CARPARK DP95480          | Car Park        | TAKAPUNA   | TAKAPUNA           |
| 2913    | BROADWAGS PLACE- NEW ROAD              | Local Authority | ALBANY     | ALBANY             |
| 6080    | BROWNS BAY BOAT CLUB CARPARK           | Car Park        | BROWNS BAY | EAST COAST BAYS    |
| 6075    | BROWNS BAY CARPARK LOT 7 DP10801       | Car Park        | BROWNS BAY | E.C.BAYS           |
| 4038    | CADDEAN LANE                           | Private Road    |            |                    |

The results will mainly be Car Parks, Lanes and Private Roads

### Lanes, Car Parks and Private Roads

Usually in any database there are a large number of items such as Lanes, Car Parks and Private Roads which exist in the database as Roads but which do not have a Centre Line on the **Map**. So they will be listed in this report.

You can ignore them.

### Centre Lines, Road IDs, Intersections and the Map

Carriageway Section Centre Lines exist as items in their own right on the **Map**. When **RAMM** creates Intersections from the **Map** it searches for intersecting Centre Lines which have a valid Road IDs. Where these conditions are met, an Intersection is created in the database.

So if there is a discrepancy between your database and the **Map**, for instance if there is a Road whose Road ID in the database does not match the Road ID of the same Road on the **Map**, an Intersection will not be created even though the two Centre Lines intersect.

These Roads will be listed in the report. You will need to add the Intersections for the Roads manually. See **Intersection** Screen in **RAMM Contractor** (on page 40).

## State Highways

Where the Centre Lines intersect, but one of the Roads has a Road ID of zero (0), such as a State Highway, an Intersection is not created. So if you want to be able to site Traffic Lights at such an Intersection you will need to add it manually.



Interpreting why no Intersection was created from the **Map** can be quite tricky. So if you can not understand your results you should talk to us first. See [Contact RAMM Software Limited](#).

## Identify Intersections with Invalid Location

Intersection Locations not within a Carriageway Section can not be used for navigating the Network. You will need to update either the Intersection Locations or the Carriageway Sections to ensure that they are consistent with each other.

### Menu Path

From within **RAMM Manager** you follow the menu path **Projects > Intersection > Identify Intersections with Invalid Location** to open the **Intersections With Invalid Location** report screen. The report is a Grid, which can be exported or printed.

| Road ID  | Start | End | Notes                     | Carriageway Sections |
|--|-------|-----|---------------------------|----------------------|
| BAYSWATER AVENUE   | 2617  |     | 10m west of Opuia Street  | 0-2106m              |
| BAYSWATER AVENUE   | 2872  |     | 12m west of Lake Road     | 0-2106m              |
| CAHILL PLACE - THE OVAL  |       |     |                           |                      |
| THE OVAL   | 195   | 100 |                           | 0-100m               |
| CHIVALRY - CHARTWELL - DIANA                                   |       |     |                           |                      |
| DIANA DRIVE  | -6    | 6   |                           | 0-1332m              |
| COMMODORE PARRY ROAD - SEAVIEW ROAD - MILFORD - HEATHCOTE ROAD |       |     |                           |                      |
| HEATHCOTE ROAD   | -6    | 6   |                           | 0-562m               |
| CORONATION ROAD - VELMA ROAD                                   |       |     |                           |                      |
| VELMA ROAD   | -6    | 6   |                           | 0-796m               |
| Chivalry Road  |       |     |                           |                      |
| CABELLO PLACE  | 625   |     | 105m West of Chalwell Ave | 0-78m                |

### Invalid Locations

If an Intersection occurs at a Location on a Carriageway Section other than at its beginning or end, **RAMM** may not determine the Location from the **Map**. An Intersection record will still be generated, but it will not have a Location. **RAMM** will calculate the Location from the data available, and put this into the **Notes** field as above. When you have the opportunity, the correct Location should be entered.

### Invalid Data

There are many reasons why an Intersection would have an invalid Location. They are all because the **Map** data does not match the records in the database.

### Address Faults

You will need to look at your data and check whether it is the **Map** or your database which needs to be updated. You should then address the faults in the data.



Interpreting why an Intersection was created from the **Map** with an invalid Location can be quite tricky. So if you can not understand your results you should talk to us first. See [Contact RAMM Software Limited](#).

---

## Other Intersection Sanity Reports

The Identify Intersections without Stop/Give Way report and the Road/Other Road Validation report are available from the menu path **Projects > Intersection**.

### Identify Intersections without Stop/Give Way

This **RAMM** Bylaws report lists Intersections with no Stop or Give Way signs within a user-defined distance from the Intersection and other Signs matters.

So it is of no use to users setting up Traffic Signals.

### Road/Other Road Validation

This report looks at the Footpaths, Railings, Signs and Poles tables. These contain both a Road ID column and an Other Road ID column. If no corresponding Intersection record is located, both Roads are listed in the report.

So this report is of no use to users setting up Traffic Signals.





## Controlled Intersections

An Intersection which is associated with a Traffic Signal set in **RAMM** is defined as **Controlled**. The Intersections at which RCAs moderate or control traffic with Stop signs, Give Way signs or roundabouts are all, in a sense, controlled. However, in **RAMM**, Signs are Located on the Carriageway of the Road, not on the Intersection record itself. So these Intersections are not defined as **Controlled** in **RAMM**.

### In This Chapter

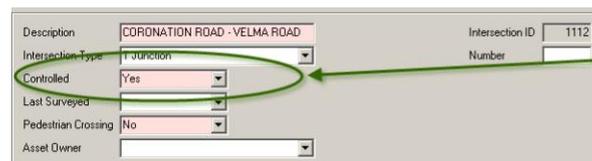
|   |    |
|---|----|
| Define an Intersection as Controlled..... | 31 |
| SCATS Numbers.....                        | 32 |
| Defining Controlled Intersections.....    | 33 |

---

## Define an Intersection as Controlled

You define Intersections as Controlled by selecting Yes from the Controlled drop-down list at the General tab of the **Intersection** Detail screen.

You would do this only for those Intersections on which you are going to place Traffic Signals.



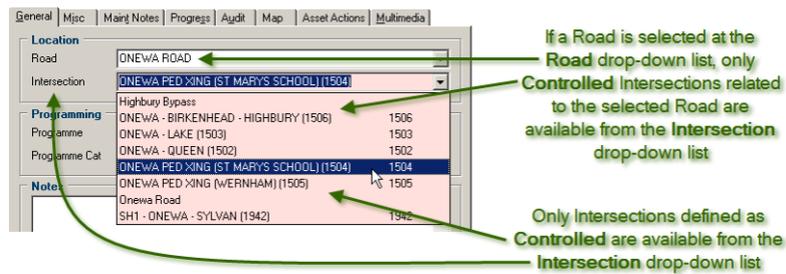
The screenshot shows the 'Intersection Detail' screen with the following fields:

|                     |                              |                 |      |
|---------------------|------------------------------|-----------------|------|
| Description         | CORONATION ROAD - VELMA ROAD | Intersection ID | 1112 |
| Intersection Type   | Junction                     | Number          |      |
| Controlled          | Yes                          |                 |      |
| Last Surveyed       |                              |                 |      |
| Pedestrian Crossing | No                           |                 |      |
| Asset Owner         |                              |                 |      |

You select Yes at the Controlled drop-down list to define an Intersection as Controlled

### Traffic Signals Dispatches

When you create a Dispatch with an Asset Type of Traffic Signals, the Location section of the General tab of the screen defaults with only two fields available. Only Intersections which have been defined as Controlled are available from the Intersection drop-down list.



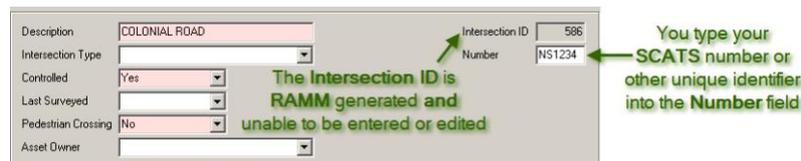
## SCATS Numbers

**RAMM** automatically generates its own Intersection IDs for each Intersection, whether Controlled or not. You view this unique ID at the Intersection ID field in the (unnamed) General section of the General tab of the **Intersection** Detail screen.

### User-defined IDs

You will probably want to identify each Controlled Intersection with your own unique identifier such as a SCATS number. You type this number in the Number field. This identifier is available in **Pocket RAMM** for your field crew.

It makes sense to add the unique user-defined identifier at the same time as you are defining Intersections as Controlled.



## Defining Controlled Intersections

### Introduction

Traffic Signals in **RAMM** can be Located only on Intersections which are defined as **Controlled**. When you have created Intersections in your database and addressed any resulting data issues, you need to define as **Controlled**, those Intersections on which you want to place Traffic Signals. If you use your own unique identifier such as a SCATS number to identify **Controlled** Intersections, it makes sense enter these details at the same time as you are defining Intersections as **Controlled**.

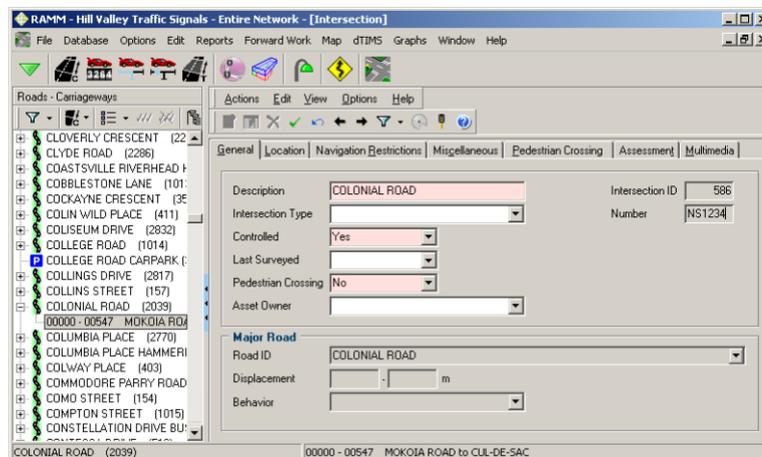
Before you do this you need to have:

- created the Intersections from the **Map**. You do this in **RAMM Manager**. See Generating Intersections from the **Map** (on page 13).
- addressed any Intersection data problems. See Viewing Intersection Error Details (on page 17).
- a list of the Intersections you need to define as **Controlled**
- a list of the unique identifiers for those Intersections if you intend to use your own **Controlled** Intersection identification system
- launched **RAMM**.

### Menu Path

Follow the menu path (press  Show Intersection) > View > Show Detail to open the **Intersection** Detail screen.

### ► Defining Controlled Intersections



The screenshot shows the RAMM software interface with the 'Intersection' detail screen open. The window title is 'RAMM - Hill Valley Traffic Signals - Entire Network - [Intersection]'. The menu bar includes File, Database, Options, Edit, Reports, Forward Work, Map, dTIMS, Graphs, Window, and Help. The toolbar contains various icons for navigation and editing. The left pane shows a tree view of roads, with 'COLONIAL ROAD (2039)' selected. The main pane displays the 'General' tab of the intersection details for 'COLONIAL ROAD'. The 'Description' field is 'COLONIAL ROAD' and the 'Intersection ID' is '586'. The 'Intersection Type' is a dropdown menu. The 'Controlled' field is set to 'Yes'. The 'Last Surveyed' field is empty. The 'Pedestrian Crossing' field is set to 'No'. The 'Asset Owner' field is empty. The 'Major Road' section shows 'Road ID' as 'COLONIAL ROAD', 'Displacement' as '0' meters, and 'Behavior' as a dropdown menu. The status bar at the bottom shows 'COLONIAL ROAD (2039)' and '00000 - 00547 MOKOIA ROAD to CUL-DE-SAC'.

To do this you follow these steps:

- 1 Use the mouse pointer to select any Road in the **Roads** list panel.
- 2 Start typing the name of the Major Road for the Intersection you want to define as **Controlled**.  
The Road will become selected when the combination of letters typed is unique in the list. The details of the first Intersection for the Road will default into the adjacent **Intersection** Detail screen.
- 3 Press  adjacent to the name of the Road.  
The Carriageway Sections will appear beneath.
- 4 Select the Carriageway Section whose Intersection you want to define as **Controlled**.  
The details will default into the adjacent **Intersection** Detail screen.
- 5 Press .  
The fields in the upper (unnamed) **General** section will become available.
- 6 Do you want to change the description of the Intersection?

|            |                    |
|------------|--------------------|
| <b>Yes</b> | then go to step 7. |
| <b>No</b>  | then go to step 8. |

- 7 Type a user-defined description for the Intersection into the **Description** field.
- 8 Do you want to add a user-defined identifier such as a SCATS number to this Intersection?

|            |                     |
|------------|---------------------|
| <b>Yes</b> | then go to step 9.  |
| <b>No</b>  | then go to step 10. |

- 9 Type in the **Number** field, the unique identifier for this Intersection.
- 10 Select **Yes** from the **Controlled** drop-down list.
- 11 Complete any other fields in line with your standard business practices.
- 12 Press .  
Your changes will be saved.
- 13 Do you want to define another Intersection as **Controlled**?

|            |                     |
|------------|---------------------|
| <b>Yes</b> | then go to step 1.  |
| <b>No</b>  | then go to step 14. |

- 14 Close the screen in the normal manner.

## Pedestrian Crossing Intersections

A Pedestrian Crossing is a specially marked area on a Road which gives legal rights to pedestrians wishing to cross the Road. They are common near schools or in other areas where there are a large number of children. The simplest crossings may just consist of some markings on the Road surface. These are often called Zebra crossings, referring to the alternate white and black stripes painted on the road surface. Pedestrian Crossing records in **RAMM** are Intersection records. See .

If a Pedestrian Crossing in your network has Traffic Signals, you need to define, as an Intersection, the Location of the Pedestrian Crossing. You add the Intersection in the normal manner at the **Intersection** screen in **RAMM Contractor**. See **Intersection** Screen in **RAMM Contractor** (on page 40).



## Intersection Screen

The **Intersection** screen is used to maintain and display records from the Intersection table. An Intersection is a Road Junction where two or more Roads meet or cross. In **RAMM**, Intersections are used for Traffic Signals and Bylaws. **RAMM** Intersections can be created on a single Road, to indicate a Pedestrian Crossing or the Traffic Signals at a Fire Station.

The screen can be accessed from **RAMM**. See **Intersection** Screen in **RAMM** (on page 37).

The screen can also be accessed from **RAMM Contractor**. Unusually, there are two versions of the screen in **RAMM Contractor**:

- The fuller version is available from the **Traffic Signals** screen. See **Intersection** Screen and **Traffic Signals** Screen (on page 39).
- The version optimised for adding Intersections is available from the menu path Inventory >  Intersections. See **Intersection** Screen in **RAMM Contractor** (on page 40).

### In This Chapter

|  |    |
|--|----|
| Intersection Screen in RAMM .....                    | 37 |
| Intersection Screen and Traffic Signals Screen ..... | 39 |
| Intersection Screen in RAMM Contractor .....         | 40 |

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## Intersection Screen in RAMM

The **Intersection** screens in **RAMM** are the standard Grid and Detail screens used for maintenance and viewing Intersection records.

## Mouse Pointer

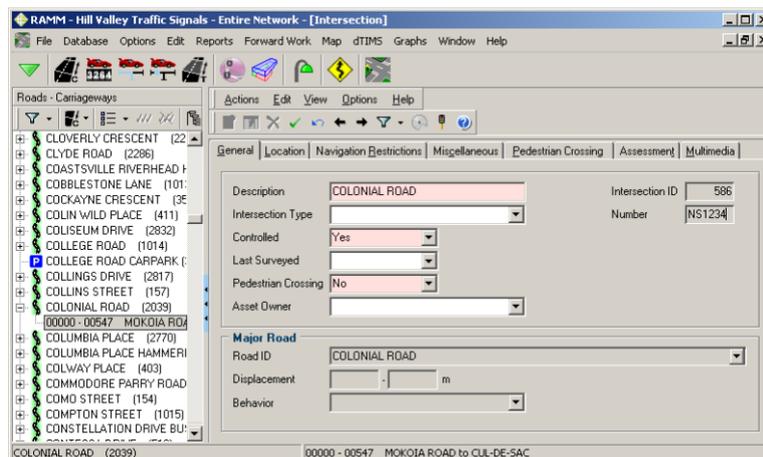
You access the screen by pressing Show Intersection  from the drop-down list which appears when you press Show Toolbar Menu . If you place Show Intersection on your Favourites tool bar you can access it directly.



If you are using the **Intersection** screen regularly, it may be more efficient to access it from your Favourites tool bar. To place it on your tool bar you follow the menu path Options > Edit Toolbar Favourites to open the **Edit Favourites** screen. See Customising the Main Tool Bar in the *Using RAMM* guide.

## Keyboard Shortcut

To open the **Intersection** screen press F2, I, N, T, ENTER. This opens the Grid screen. The screen displayed below is the Detail screen. To access the Detail screen from the Grid screen press ALT+V, ALT+S.



The **Intersection** screen behaves as a standard **RAMM** screen. See Common Actions.

## Traffic Signals Screen

You access the **Traffic Signals** screen from the **Intersection** screen in **RAMM**. You highlight the Intersection whose Traffic Signals details you wish to view or maintain. You then press Show Traffic Signals  to open the **Traffic Signals** screen to view details of the Traffic Signals at the selected Intersection.

## Intersection Screen and Traffic Signals Screen

When you open the **Traffic Signals** screen in **RAMM Contractor**, it opens at the **Intersection** Detail screen as all Traffic Signals must be Located at an Intersection. The Intersection record is for information only and can not be entered or edited. You can edit the associated Traffic Signals if you have the correct Staff Permissions. See Staff Permissions.

### Intersection Maintenance Permission

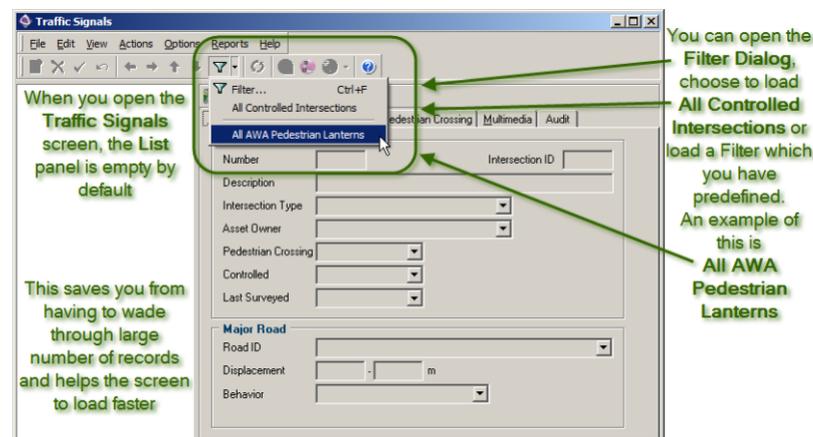
The **Intersection** screen, when accessed from the **Traffic Signals** screen can not be used for maintaining Intersection records. These are maintained in **RAMM Contractor** at the **Intersection** screen when it is accessed from the Inventory menu path. This is so that those users who perform Traffic Signals maintenance do not automatically have permission to maintain Intersections. See Staff Permissions.

### Mouse Pointer

You access the screen by pressing Traffic Signals  from the **RAMM Contractor** screen or by following the menu path Inventory > Traffic Signals.

### Keyboard Shortcut

To open the **Traffic Signals** screen in **RAMM Contractor** press ALT+I, ALT+T.



## Intersection Screen in RAMM Contractor

The **Intersection** screen is accessed in **RAMM Contractor** from the Inventory menu option. This is logical as, even though Intersections are not Inventory Assets, Traffic Signals, which are Inventory Assets, exist only on Controlled Intersections.

The **Intersection** screen in **RAMM Contractor** is optimised for Controlled Intersection maintenance. Do not press . The screen will be in Update mode.

There is an (unnamed) Controlled Intersections list panel to the left of the screen. This makes it easy to find any Controlled Intersection if you need to update it.

### Intersection Maintenance Permission

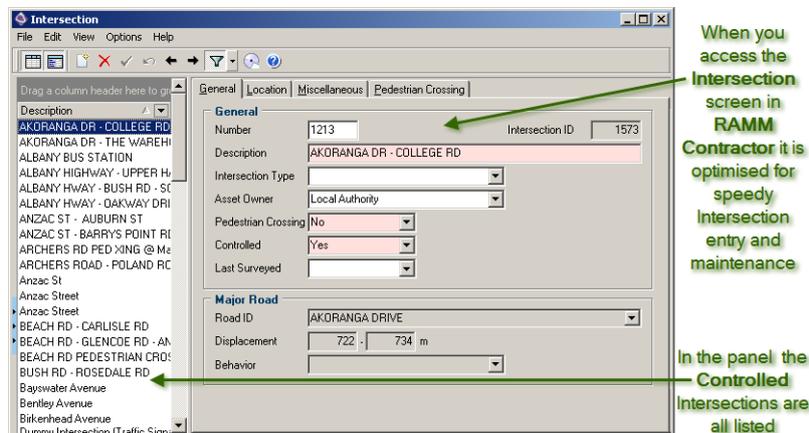
Intersection records can not be maintained from the **Traffic Signals** screen in **RAMM Contractor**. This is so that those users who perform Traffic Signals maintenance do not automatically have permission to maintain Intersections. See Staff Permissions.

### Mouse Pointer

You access the screen by following the menu path Inventory > Traffic Signals.

### Keyboard Shortcut

To open the **Intersection** screen in **RAMM Contractor** press ALT+I, ALT+I.



### Missing Navigation Restrictions, Assessment and Multimedia Tabs

There are aspects of the **Intersection** screen which are not used when adding an Intersection record. So they have been left off the screen.





## Intersection Screen Details

The **Intersection** screen is used to maintain and display records from the Intersection table. An Intersection is a Road Junction where two or more Roads meet or cross. In **RAMM**, Intersections are used for Traffic Signals and Bylaws. **RAMM** Intersections can be created on a single Road, to indicate a Pedestrian Crossing or the Traffic Signals at a Fire Station.

The screen has eight tabs:

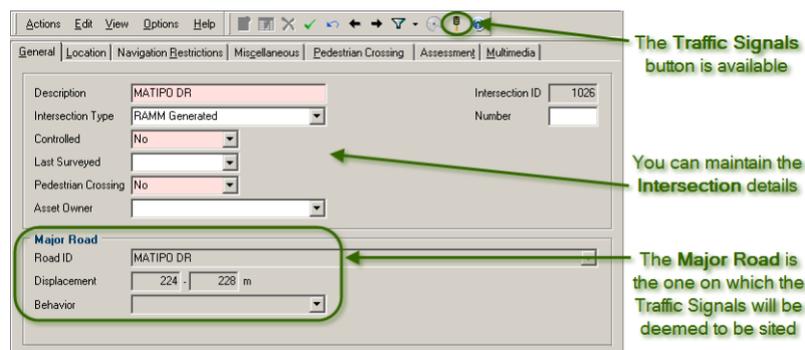
- **General**  
The **General** tab contains the main information needed to identify and classify the Intersection. The **RAMM**-generated **Description** names the Roads which intersect. If the Intersection is **Controlled** or is a **Pedestrian Crossing**, this is displayed. The **Major Road** for the Intersection is also named. See **General** (on page 44).
- **Location**  
A clock-style display on the **Location** tab shows a close-up of the Intersection, as might be seen on a **Map**. The direction in **RAMM** of each Road is shown. These can be edited if required. See **Location** (on page 46).
- **Navigation Restrictions**  
If it is useful for users to be able to see the restrictions on traffic flow for each of the Roads which intersect, you add this at the **Navigation Restrictions** tab. See **Navigation Restrictions** (on page 47).
- **Miscellaneous**  
The **Miscellaneous** tab contains **Map Coordinate**, **Asset Life**, **Condition**, **Risk Management** and **Data Collection** information for the Intersection. See **Miscellaneous** (on page 48).
- **Pedestrian Crossing**  
Pedestrian Crossing records in **RAMM** are added as Intersection records. This is so that if the Pedestrian Crossing is controlled by Traffic Signals, they can be defined for the Pedestrian Crossing. See **Pedestrian Crossing** (on page 49).
- **Assessment**  
The **Assessment** tab is used to view the present **Condition** of an Asset, the **Likelihood** of failure and the **Consequence** of failure. An overall **Risk** is estimated from these factors. See **Assessment** (on page 51).
- **Multimedia**  
The **Multimedia** tab is used to hold files relevant to the Intersection. This could be engineering diagrams of the Intersection or relevant photographs. See **Multimedia** (on page 52).
- **Audit**  
The **Audit** tab displays **RAMM**-generated audit data which you determined when you set up the Contract. See **Audit** (on page 52).

## In This Chapter

|                                  |    |
|----------------------------------|----|
| General .....                    | 44 |
| Location .....                   | 46 |
| Navigation Restrictions .....    | 47 |
| Miscellaneous .....              | 48 |
| Pedestrian Crossing.....         | 49 |
| Pedestrian - General.....        | 50 |
| Pedestrian - School.....         | 51 |
| Pedestrian - Miscellaneous ..... | 51 |
| Assessment .....                 | 51 |
| Multimedia .....                 | 52 |
| Audit.....                       | 52 |

## General

The General tab contains the main information needed to identify and classify the Intersection. The **RAMM**-generated Description names the Roads which intersect. If the Intersection is Controlled or is a Pedestrian Crossing, this is displayed. The Major Road for the Intersection is also named.



The Traffic Signals button is available

You can maintain the Intersection details

The Major Road is the one on which the Traffic Signals will be deemed to be sited

### Description

When **RAMM** generates Intersections from the **Map** it creates a Description of each Intersection. This is a combination of the names of the Roads which intersect. The order of the Roads in the Intersection Description is random. You can edit Intersection Descriptions.

### Intersection ID

When **RAMM** generates Intersections from the **Map** it creates an Intersection ID for each Intersection. This can not be entered or edited.

### Number

You may have your own method of identifying Intersections such as SCATS IDs. If so, you type this in the Number field.

### Intersection Type

If you use Intersection Type codes you select these from the Intersection Type drop-down list. See Intersection Type (on page 55).

### Controlled

Traffic Signals can be Located only on Controlled Intersections. If you want to use an Intersection to Locate Traffic Signals you must select Yes from the Controlled drop-down list.

### Last Surveyed

If you hold Intersection survey data in **RAMM** you select the date for the most recent survey from the Last Surveyed drop-down calendar.

### Pedestrian Crossing

Pedestrian Crossing records in **RAMM** are added as Intersection records. This is so that if the Pedestrian Crossing is controlled by Traffic Signals, they can be defined for the Pedestrian Crossing. If the Intersection is a Pedestrian Crossing you need to select Yes from the Pedestrian Crossing drop-down list.

### Asset Owner

If you hold Intersection Ownership data in **RAMM**, or if the ownership of a particular Intersection is noteworthy, such as NZTA, you select the owner from the Asset Owner drop-down list. See Asset Owner.

### Road ID

When **RAMM** generates Intersections from the **Map** it decides which is the Major Road for the Intersection. It does this by comparing ADT, Width and the number of lanes for each Road. The Major Road is displayed at the **General** tab so you can see at glance which of the Roads which intersect is the Major Road. This field is unable to be entered or edited. If you need to change the Major Road you do so at the **Location** tab. See **Location** (on page 46).

### Displacement

When **RAMM** generates Intersections from the **Map** it calculates the Displacement Start and End values for each Road which intersects. This information for the Major Road is displayed at the **General** tab so you can see at a glance where on the Road the Intersection is Located. These fields are unable to be entered or edited. If you need to change the Displacement Start and End values you do so at the **Location** tab.

### Behaviour

If you use Intersection Behaviour codes, the code for the Major Road is displayed at the **General** tab so you can see at a glance the Behaviour of the Major Road. This field is unable to be entered or edited. If you need to change the Behaviour code you do so at the **Location** tab.

---

## Location

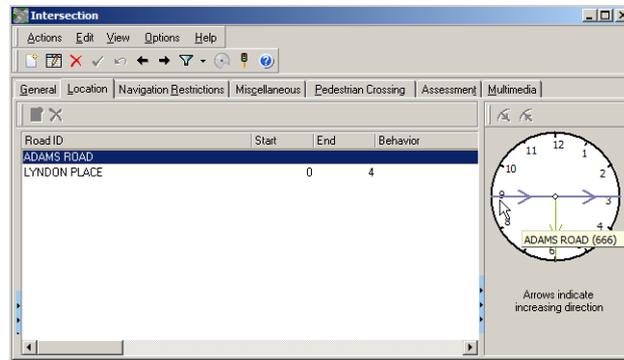
A clock-style display on the **Location** tab shows a close-up of the Intersection, as might be seen on a **Map**. The direction in **RAMM** of each Road is shown. These can be edited if required.

### North and South

The clock representation is a reflection of the orientation of the Roads to due North. A Road whose direction is towards 12 is facing due North. A Road whose direction is towards 6 is facing due South.

The arrows on each line represent the direction in of the Road as seen from the centre of the Intersection. In the example below, therefore, Adams Road is the only Road going through the Intersection. Lyndon Place increases in direction from the Intersection outwards, and is indicated by the vertical (green) line.

Hovering your mouse above the line representing the Road direction will pop up the Road Name and Road ID.



### Start, End, Behaviour, Major Road, Increasing Clock, Decreasing Clock and Notes

If you want to edit the details of the Intersection, such as the Road ID, Start and End Displacement, Behaviour code, the direction of the Road relative to due North and to leave notes to document why you did it, you do this at the Location tab



The Roads represented in the clock graphic are only indications of the direction in **RAMM**, and do not affect the Road and Carriageway tables.

When the Carriageway or Road is selected for updating, the Road direction can be changed with the Increasing Direction  and Decreasing Direction  buttons, and the Road lines can be dragged with your mouse to edit or correct their Location relative to the centre of the Intersection.

Intersections can be added to a relevant **Map**. See Adding an Intersection to the **Map** (on page 19).

## Navigation Restrictions



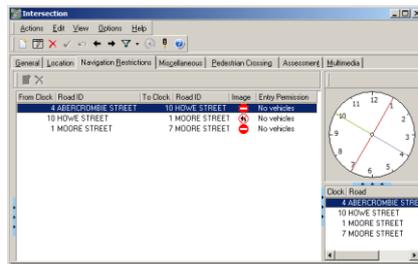
Navigation Restrictions are more useful for Bylaws but may be of interest to those managing Traffic Signals.

If it is useful for users to be able to see the restrictions on traffic flow for each of the Roads which intersect, you add this at the Navigation Restrictions tab.

You add your own Navigation Restrictions. You do this by pressing  to put the screen in Update mode. Then you double-click on the Road along which the traffic to be restricted is travelling. This defaults the From Clock and Road ID fields.

You then double-click on the Road into which the traffic flow is to be restricted. The To Clock and Road ID field values will then default. **RAMM** then default the correct image and No Vehicles into the Image and Entry Permission fields.

The icon indicating the type of Navigation Restriction, as in the Image column below has no connection with the Sign table. It is merely a visual confirmation of the Navigation Restriction.



### Change Navigation Restrictions

You can change the type of restriction by selecting it from the Entry Permission drop-down list.



### Change Roads

You can also change the From Clock and To Clock Roads by selecting the relevant Road ID in the main screen and then double-clicking a different Road in the Selection panel.

## Miscellaneous

The Miscellaneous tab contains Map Coordinate, Asset Life, Condition, Risk Management and Data Collection information for the Intersection.

## Map Coordinates

The Map Coordinates are recorded when the Intersection is generated from the **Map**. If the Intersection is a Pedestrian Crossing, you will likely have to add your own GPS data. If the coordinates do not match the actual position of the Intersection you can update them with your own GPS data.

You would do this using **Pocket RAMM**. See Locate Yourself.

## Assessment

If you keep Assessment data for your Intersections you would maintain it here. Otherwise, you can ignore this tab.

The screenshot shows the 'Assessment' tab selected in a software interface. The tab contains several sections with dropdown menus and text input fields:

- Map Coordinates:** Easting (1752166.1793), Northing (5325796.4787), and GPS Date (dropdown).
- Asset Life:** Constructed (dropdown).
- Condition:** Condition (Unknown dropdown) and Date Established (dropdown).
- Risk Management:** Likelihood (Unknown dropdown), Consequence (Unknown dropdown), Risk (Unknown dropdown), and Risk Date (dropdown).
- Data Collection:** Collected By (dropdown) and Date Collected (dropdown).

## Pedestrian Crossing

Pedestrian Crossing records in **RAMM** are added as Intersection records. This is so that if the Pedestrian Crossing is controlled by Traffic Signals, they can be defined for the Pedestrian Crossing. There are many options for you to maintain Pedestrian Crossing data. It is unlikely that you will want to maintain it all.

### General

You use this tab for Location, Dimension, Use and surface information. See Pedestrian - General (on page 50).

### School

If the Pedestrian Crossing has been Located near a school for the use of its pupils, parents and staff you can keep useful information at this tab. Otherwise you can ignore it. See Pedestrian - School (on page 51).

### Miscellaneous

If you keep Assessment data for your Pedestrian Crossings you would maintain it here. Otherwise, you can ignore this tab. See Pedestrian - Miscellaneous (on page 51).

---

## Pedestrian - General

The General tab holds the main information for the Pedestrian Crossing. These are the Location details.

### Location

You have the option of defining the position of the Pedestrian Crossing in metres from the beginning of the Road, by the adjacent house numbers or both.

### Dimension and Use

If your standard business practice is to record and use the Dimension and Use details, you have these options.

For instance, the Pedestrian Crossing may be part of or adjacent to a Cycleway.

You can also identify any special surfaces used on the crossing itself and its approaches.

The screenshot shows a software interface for a Pedestrian Crossing. It has three tabs: 'General', 'School', and 'Miscellaneous', with 'General' selected. The form contains the following fields:

- Description:** Mokoia Road
- Actual Location:**
  - Road Name: MOKOIA ROAD (dropdown menu)
  - Location: 157 m
- House Numbers:**
  - House 1: 84 (spin box)
  - House 2: 87 (spin box)
  - House 1 Alpha: (checkbox)
  - House 2 Alpha: (checkbox)
- Dimensions:**
  - Length: 5 m (spin box)
  - Area: 60.0 m<sup>2</sup> (spin box)
  - Width: 12.0 m (spin box)
  - Special Surface Area: 10.0 m<sup>2</sup> (spin box)
- Use:**
  - Pedestrian: High (dropdown menu)
  - Scooter: Low/medium (dropdown menu)
  - Bicycle: Medium/high (dropdown menu)
- Special Surface:** (dropdown menu)
- Ramp Type:** (dropdown menu)

## Pedestrian – School

If the Pedestrian Crossing has been Located near a school for the use of its pupils, parents and staff you can keep useful information at this tab. Otherwise you can ignore it.

| School            |                    |
|-------------------|--------------------|
| Name              | Birkenhead Primary |
| Contact           | Office 09 480 7365 |
| Patrolled?        | Yes                |
| Lollipop Location | N/A                |

## Pedestrian – Miscellaneous

If you keep Assessment data for your Pedestrian Crossings you would maintain it here. Otherwise, you can ignore this tab.

| Miscellaneous          |         |
|------------------------|---------|
| <b>Condition</b>       |         |
| Condition              | Unknown |
| Date Established       |         |
| <b>Asset Life</b>      |         |
| Constructed            |         |
| <b>Risk Management</b> |         |
| Likelihood             | Unknown |
| Consequence            | Unknown |
| Risk                   | Unknown |
| Risk Date              |         |

## Assessment

The Assessment tab is used to view the present Condition of an Asset, the Likelihood of failure and the Consequence of failure. An overall Risk is estimated from these factors.

Assessment information is normally maintained in **RAMM**, not **RAMM Contractor**. So the Assessment tab appears only when the Intersection screen is accessed from **RAMM** not from **RAMM Contractor**. The data in the fields are for information only and are not able to be entered or edited. So they will not be discussed here.

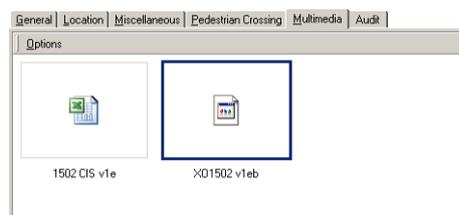
See the *RAMM Assessment* guide.

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## Multimedia

The **Multimedia** tab is used to hold files relevant to the Intersection. This could be engineering diagrams of the Intersection or relevant photographs.

See the Multimedia topics in the Working with Detail Screens section of the *Using RAMM* guide.



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## Audit

The **Audit** tab displays **RAMM**-generated audit data which you determined when you set up the Contract.

It appears only when the **Intersection** screen is accessed from the **Traffic Signals** screen within **RAMM Contractor**. It is a standard **Audit** tab and so will not be discussed here.

See the *RAMM Contractor* guide.

## Intersection Behaviour and Type

There are two user-defined Lookups for Intersections. They are **Behaviour** and **Type**.

### Behaviour

Behaviour codes were once used to define Intersections as **Controlled** or **Uncontrolled**. Now that the mandatory **Controlled** field has been added to the **Intersection** screen and this value is handled by a **RAMM** field by default, the use of Behaviour codes has decreased.

### Type

Type codes are used to group Intersections in any manner relevant to your business practices. For instance, Type codes can label your State Highway Interchanges, or can be used to distinguish between T and Y Intersections. They can also be used to identify those Intersections, such as Pedestrian Crossings which, although Intersections in **RAMM** are not real Intersections.

### In This Chapter

|   |    |
|---|----|
| Intersection Behaviour .....              | 54 |
| Define Intersection Behaviour Codes ..... | 55 |
| Intersection Type .....                   | 55 |
| Define Intersection Type Codes.....       | 56 |

## Intersection Behaviour

User-defined Behaviour codes may be created to enable users to describe the behaviour of an Intersection as the Road user approaches it. They assist a **RAMM** user to understand what happens as a Road user approaches the Intersection along the Major Road.

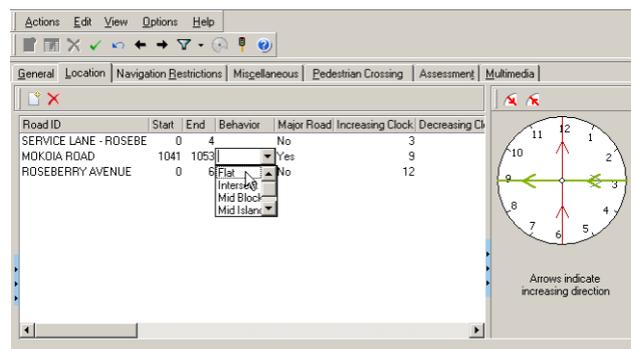
### View Behaviour Code for an Intersection

You view the Behaviour code for an Intersection at the Major Road section at the General tab of the **Intersection** screen.



### Update Behaviour Code for an Intersection

If you want to update the Behaviour value for an Intersection, you do this at the Location tab of the **Intersection** screen.



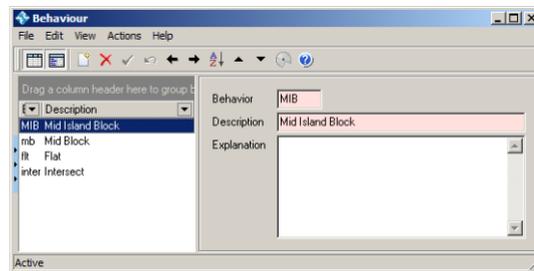
Most users do not define or use Intersection Behaviour codes.

## Define Intersection Behaviour Codes

You have the option to define your own Intersection Behaviour codes. You create Intersection Type codes to differentiate the various types of Intersection such as T Junctions and Y Junctions. You can also use them to highlight State Highway Interchanges or Intersections which are Not a Real Intersection such as a Pedestrian Crossing.

### Menu Path

In **RAMM Manager** you follow the menu path Maintenance > Lookups > Intersections > Behaviour to open the **Behaviour** screen. It is a standard **RAMM** maintenance screen. See Add a New Record.

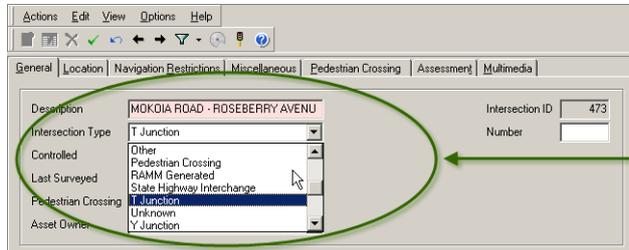


## Intersection Type

User-defined Intersection Type codes may be created to enable users to differentiate different types of Intersections. For instance you can use the codes to separate T Junctions from Y Junctions. You could also use them to highlight State Highway Interchanges or Intersections which are Not a Real Intersection such as a Pedestrian Crossing.

### View and Update Type Code for an Intersection

You view and select Intersection Type codes at the (unnamed) General section at the General tab of the **Intersection** screen.



You define your Intersection Type codes and select them from the Intersection Type drop-down list

### Examples

Common Intersections Type codes are:

- 4 way Junctions
- Pedestrian Crossings
- T Junctions
- Y Junctions
- State Highway Interchange
- Not a Real Intersection
- Pedestrian Crossing.

You create Intersections Type codes for your own user defined purposes.



Intersection Type codes are for your information only and serve no functional purpose in RAMM.

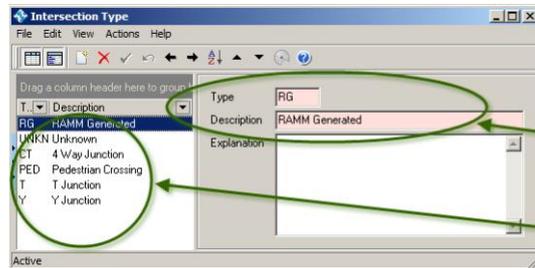
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## Define Intersection Type Codes

You have the option to define your own Intersection Type codes.

### Menu Path

In **RAMM Manager** you follow the menu path Maintenance > Lookups > Intersections > Type to open the **Intersection Type** screen. It is a standard **RAMM** maintenance screen. See Add a New Record.



After you have generated your Intersections using **RAMM Manager** there will be a default Intersection Type of **RAMM Generated**

You define the different Intersection Types such as **T Junction**



If you have Intersections generated by **RAMM**, you will see a **RG** **RAMM Generated** type in the list panel by default. Since there will be Intersections associated with this type, you can not delete it.



# Glossary

## As-built File

The As-built file is the document arising from surveys conducted when Traffic Signals are being constructed to verify that the work authorised was completed to the specifications set on the plans. When you are adding Traffic Signals records, you may need to use the As-built file. In you would use it for the Cabling specifications as the Cables are not readily visible.

## Aspect

An Aspect is the red, amber, green or white light source, on a Traffic Signal face. Aspects are used to display vehicle movement behaviours such as Stop, Prepare to Stop, Go, Right Turn and others.

## Assessment

An Assessment is the record of an inspection of an Asset. You use Assessments for a number of reasons including to record the Condition of an Asset or its associated Likelihood and Consequences of Failure (Risks).

## Asset

An Asset is an item in a Network which has a value. It could be a physical component of a Road, such as its Surface. It could be something

real such as a Bridge, a Footpath or a Street Light. Where no table exists in **RAMM** for one of your Asset Types, you set up a User Defined Table (UDT) to manage the Assets.

## Asset Owner

User defined Asset Owner codes describe the owner of a particular Asset such as a Traffic Signal set. They are used to differentiate the Network Assets which are to be maintained from those which are either not to be maintained or which are to be maintained, but on a different pricing structure.

## Asset Owner Type

Asset Owner Type codes are used to group Inventory Assets by Owner Type such as Airport, Crown, Local Authority, Private, Regional Authority or University. You would do this if you manage Traffic Signals for a variety of groups as well as your own Traffic Signals network.

## Audit

Audit records are sequential dated information lines which detail changes to Dispatches, Claim lines, Estimate lines, Claim Headers and to the Contract itself. They become an Audit trail. You use this to find out who took certain actions and when they occurred. You decide which Audit records to keep when you are setting up a Contract. Audit records can not be created retroactively.

### Auto Claiming

This is the automation the process of generating Claim and Estimate lines when a Job or Dispatch is Completed. This is particularly useful for field crews using **Pocket RAMM**. Once the work has been performed, the Job can be Completed and the Claim or Estimate lines generated automatically without the field crew needing to be familiar with the Claim and Estimation process.

Auto Claiming is different for Signs, Street Lights and Traffic Signals than for other Asset Types.

### Bylaw

This is a city or municipal law or ordinance, passed under the authority of a charter or law specifying what things may be regulated by the Municipality or Territorial Authority.

The main difference between a bylaw and a law passed by the State is that a bylaw is a regulation passed by a body which is not a sovereign body. It is one which derives its authority from another governing body. A city council is empowered to pass laws through a charter or a law of the government which specifies what things the city may regulate through bylaws.

Similarly, a business or corporate body also gets its ability to pass bylaws relevant to its operation from some law or act passed by some public body for the purpose of regulating corporate activities.

### Cabling

A Cable is an assembly of electrical conductors held together with an overall sheath used for transmission of electrical power. Cabling is laid underground to take power from the Controller to the Traffic Signals. The Cabling also carries the phasing instructions from the Controller to the Traffic Signals. Cabling records in **RAMM** may include the Cable size, the number of Cores, the types of Ducting and the End Boxes (terminal or junction boxes).

### Call Type

This is a **RAMM Contractor** item used to record the type of call made to report a Fault. This could be a call from the public, the council or a routine Patrol.

Each Dispatch must have a Call Type code to identify the source of Fault reports. This can assist with Dispatch priority. It also enables analysis of Fault reporting. Call Types are specific to each Asset Type as the range of sources of Fault reports is likely to vary by Asset Type.

### Carriageway

Roads in **RAMM** are divided into logical sections named Carriageways. These start and end at easily identifiable Locations such as Intersections and Bridges. You can define your Carriageway Sections to suit your own purposes. For instance you may define them to start and end when the number of Lanes in the Road changes or if the Road

changes between Sealed and Unsealed sections.

### Claim Groups

Claim Groups are **RAMM Contractor** items used to categorise or group Claim lines. There are Contract Claim Groups and Asset Type Claim Groups.

Contract Claim Groups are used to group Claims for analysis and reporting purposes for an individual Contract. You create them only if a standard **RAMM Contractor** function to group the Claim lines does not already exist.

Asset Type Claim Groups are used to group Claim lines for a particular Asset Type. They are generally Network Owner options as they are Contract-independent and can be used for a series of Contracts regardless of the Contractor.

### Claim Header

A Claim Header is a **RAMM Contractor** item used to group Claim lines for a fixed period within a Maintenance Contract. A Contractor uses the Claim Header to Claim payment from a Network Owner for work done in a defined Programme period. A Claim Header must exist for Claim lines to be entered during the Dispatch or Job Completion process.

### Claim Line

A Claim line is a record of the maintenance work done on a

particular Dispatch or Job. It includes the costs, the crew member name, the Maintenance Costs and other relevant information.

Each Claim line is for an individual CSI. Claim lines are added to Dispatches. A Claim line must always be linked to a Claim Header.

### Communication Device

Many Traffic Signal Controllers have a Communication Device such as a modem to enable an external agency such as a master controller to coordinate a series of Traffic Signals.

### Component

Components are specific elements which are physically or functionally independent and which make up an Asset. For instance a Traffic Signals set will include components such as a Controller, Detector Loops, Poles and Lanterns. Each component will have its own specific attributes, such as Total Useful Life. In **RAMM Contractor** components are sometimes referred to as Assets.

### Contract

The contract is the document which defines the responsibilities of the Contractor to maintain the Assets of the Network Owner. It specifies the performance standards as well as the remuneration.

Throughout this guide, the actual legal written agreement between the Network Owner and the Contractor is referred to as the *contract* and lower case is used. The item created in

**RAMM Contractor** to mirror the original document is referred to as the *Contract* and is capitalised as are all items specific to **RAMM Contractor**.

### Contract Manager

When a Contract is first set up in **RAMM Contractor**, two users are identified as the Contract Managers. These users, one for the Contractor and one for the Network Owner, define Staff Permissions to limit and control the actions of the users who run their Contracts. Opening the Contract formalises the restrictions which exclude each of the two Contract Managers from the Contract areas which are the prerogative of the other Contract Manager.

### Contractor

The Contractor is the person or organisation which, has won a contract to maintain the Road Assets of a Network Owner. The Contractor Estimates, Programmes, Completes and is paid for Programmed maintenance work on a Road Network.

### Controlled Intersection

An Intersection which is associated with a Traffic Signal set in **RAMM** is defined as Controlled. The Intersections at which RCAs moderate or control traffic with Stop signs, Give Way signs or roundabouts are all, in a sense, controlled. However, in **RAMM**, Signs are Located on the

Carriageway of the Road, not on the Intersection record itself. So these Intersections are not defined as Controlled in **RAMM**.

### Controller

The Controller is the unit which controls the duration and sequence (phasing) of the Traffic Signals displays. It is generally inside a cabinet on a concrete pad near one of the Poles. It contains the Logic Rack, Software, Detector Card, Communication Device and power panel to distribute power to the Traffic Signals.

### CSI Headers

CSI (Contract Schedule Item) Headers are **RAMM Contractor** items used by Network Owners to group CSIs. For instance, Pavement Maintenance could be a CSI Header under which Potholes, Digouts, Deformation Treatments, and Depression Treatments were grouped.

CSI Headers are used to categorise activities and analyse costs and associated activities over a period of years. They can be used over several contracts at once.

Normally, the Network Owner will set up or select CSIs and limit the available CSI Headers to those relevant only to the Contract. When a CSI Header is added, it becomes available to all Contracts in the database.

## CSIs

A Contract Schedule Item (CSI) is a **RAMM Contractor** item which specifies the charges for a particular maintenance Activity under the Contract. You create them to accurately reflect the contract provisions and use them in the Estimation and Claims process.

It is most important that you create your CSIs to exactly match your actual Contract provisions. For instance, the CSI Item Numbers and Descriptions should exactly match the Contract codes and descriptions. Otherwise reporting and analysis will be impaired.

## Custom Security Switch

Custom is one of the settings of the Global Security Switch. When you individualise the Permissions for a user, the Global Security Switch is automatically set to Custom.

You manage access to **RAMM Contractor** by setting Staff Permissions. You do this to limit the actions of users to those areas of **RAMM Contractor** to which they need access in order to be able to perform their normal work tasks.

Where the Global and preset Security Groups do not match the Staff Permission Set required for a particular staff member, you define an individual Security Profile for the user.

To do this you use a range of switches covering different aspects of the data and **RAMM Contractor**

functions. Each of these switches, such as the one used to enable a user to maintain Claim Headers, has a hierarchical series of preset levels defined. For instance, this allows you to give a user View Only access so they can see but not touch, or to give them View and Update access. The latter case would allow a user to make changes to the Claim Headers.

## Database

This is a structured collection of data that is stored in a computer so that an application can consult it to answer queries. In **RAMM**, this is a particular Road Network. It is possible that you will use more than one **RAMM** database, especially if you work with more than one Road Controlling Authority.

## Decision Cube

This is a context-sensitive **RAMM** pivot table that allows you to view your data in various ways. It also enables you to create reports.

## Detail Screen

Detail screens in **RAMM** are used for working with Road Inventory, Condition and other items one at a time. You use them to view and maintain details for one item only at a time.

## Detector Card

The Detector Card is an interface panel which connects to the Detector Loops. It receives information about vehicles detected

by the Detector Loops. It then transfers the information to the Logic Rack which can then make phasing decisions based on the programming of its Software.

### Detector Loop

A Detector Loop is an electromagnetic induction sensor buried beneath the Pavement to detect the presence of traffic waiting at, or passing through, an Intersection controlled by Traffic Signals. It sends information to the Detector Card which passes it to the Controller for processing. The intention is to enable the Controller to avoid giving the green light to an empty Road when motorists are stopped at a red light.

### Dispatch

A Dispatch is a defined activity generated from within **RAMM Contractor** so that Contractor field crew can repair a Network Fault. In **Pocket RAMM** it is referred to as a Job.

### Dispatch Groups

Dispatch Groups are used to categorise Dispatches. There are Contract Dispatch Groups and Asset Type Dispatch Groups.

Contract Dispatch Groups are used to group Dispatches for analysis and reporting purposes for an individual Contract. You create them only if a standard **RAMM Contractor** function to group the Dispatches does not already exist.

Asset Type Dispatch Groups are used to group Dispatches for a particular Asset Type. They are generally Network Owner options as they are Contract-independent and can be used for a series of Contracts regardless of the Contractor.

### Displacement

Displacement is the distance along a Road measured from the start of the first Carriageway Section of the Road. It is stated in metres.

### Display Type

Display Type codes define the purpose of the Lantern. They describe the type of display that the traffic will see. For instance, a Through Lantern will have only the three standard red, amber and green Lamps. However, a Through and Right Turn Lantern will have an extra Lamp to indicate when it is allowable to make a right turn. Examples of Display Type codes are Bicycle, Bus Only, Left Turn, Pedestrian and Right Turn.

### Ducting

A Duct is a pipe or tubular runway for carrying and protecting an electrical Cable. Underground Traffic Signals Cables are protected by Ducting. The Ducting is laid from one End Box to another. Ducting is a **RAMM** Traffic Signals component.

### End Box

The End Box is a terminal or junction box for Cable joins. It is a container for electrical junctions which protects the joins. End Boxes are **RAMM** Traffic Signals components.

### Estimate line

An Estimate line is an indication of the cost of maintenance work to be done for a particular Dispatch or Job. It includes the costs, the Maintenance Costs and other relevant information.

Once this is Accepted by the Network Owner, the Contractor can perform the Job. Each aspect of the Job is entered into **Pocket RAMM** or **RAMM Contractor** as a separately Estimated item or Estimate line.

Each Estimate line is for an individual CSI. Estimate lines are added to Dispatches.

### Export

When you have data in **RAMM** which you would like to use in another application, you export the data. To export data is to save the data from the **RAMM** database. This may involve converting the data into a particular file format. Once exported, the data can be used by an application that recognizes the exported format.

### External ID

An External ID is a reference from an external source. You record this when adding a Dispatch. It is the form of identification used by the person or organisation which reported the Fault. You type the External ID details into the fields on the Misc tab of the **Dispatch** maintenance screen for those Dispatches where you may want to refer to the records of an external organisation, or where they may need to enquire into your records.

### Fault

A Fault code is a **RAMM Contractor** item which identifies the weakness or defect in the Network Inventory item which gave rise to the need for maintenance. Fault codes assist the Network Owner with Network maintenance planning. They show what was repaired when the Activities were undertaken. Fault code data is gathered and grouped in **RAMM Contractor** to be transferred to **RAMM** Maintenance Costs. Fault codes are associated with CSIs, Dispatch Fault Categories or both. The actual Fault giving rise to the Dispatch (as opposed to the Maintenance Cost Fault) is referred to as a Fault Category.

### Fault Category

A Fault Category code is a **RAMM Contractor** item which is used in Dispatches to be a description of the weakness or defect in the Asset which gave rise to the need for maintenance. It describes an actual

Fault or problem which has occurred on the Road Network, or some work that needs to be done. This could be Flickering Lamp or Light Out for a Street Light contract, for example.

Every Dispatch must have an associated Fault Category.

The Fault Category code used in Dispatches is different from the Fault code used in Maintenance Costs.

### Filter (Database Filter, Grid Filter)

Filters are the screens which you use to sort the data in Detail or Grid screens according to selected criteria. You use these to streamline the information you see in **RAMM** such as in the Roads list panel.

### Full Control Security Switch

Full Control is one of the settings of the Global Security Switch. It allows the user Permission to access, add, update or delete any record and to run any process. You manage access to **RAMM** by setting Staff Permissions. You do this to limit the actions of users to those areas of **RAMM** to which they need access in order to be able to perform their normal work tasks. If you set a user to Full Control it means that all the individual Permission switches for that user are set to Full Control.

### Global Security Switch

**RAMM** Security uses a Global Switch to grant preset levels of database access. This sits on top of the individual switches and allows

you to set a specific range of values across all the individual switches in one go. This switch has four settings:

- No Access
- View Only
- Full Control
- Custom Settings.

You manage access to **RAMM** by setting Staff Permissions. You do this to limit the actions of users to those areas of **RAMM** to which they need access in order to be able to perform their normal work tasks.

### GPS

The Global Positioning System (GPS) is a global navigation satellite system. GPS technology uses the signals from multiple satellites to pinpoint the Location of a GPS receiver (device). **Pocket RAMM** users use GPS devices to positively Locate Assets in the **RAMM** database.

A GPS receiver calculates its position by precisely timing the signals sent by the GPS satellites. The receiver measures the transit time of each message and computes the distance to each satellite. Geometric trilateration is used to combine these distances with the satellites positions to obtain the Location of the GPS receiver.

### Grid Screen

The Grid screen in **RAMM** is a visual report writer. You use Grid screens to work with multiple Road Inventory, Condition and other items. You adjust the Grid Layout so

that is looks right and it suits your purposes. You can then view, export or print the displayed details.

### Guarantee Period

The Contract Guarantee Period is a specified time length for which a Contractor guarantees that work done will remain free of Faults. Work under a Street Light or Traffic Signals Contract may be subject to a Guarantee Period.

If there is a problem with, say, a Pole and where the Guarantee option is selected for a Contract, the comment This pole is still under guarantee will be printed on Job Sheets for Dispatches for any Poles still under Guarantee. The Guarantee Period is for one year.

This indicates to the Contractor that any Fault with this Pole is the responsibility of the company that installed it.

### Hosting

The [ROMAN II Hosting Service](#) is a service run by [ROMAN II](#). It enables you to run [RAMM](#) across the Internet. It hosts your database and the software on a server at a centralised location. You use your standard internet browser to access the software and work with your data, so you do not need any specialised software. It is very secure.

### ICP

The Installation and Connection Point (ICP) number is a unique number given to the electricity

connection point between a device such as a Traffic Signal Controller and the Network company power line.

### Intersection

An Intersection is a Road Junction where two or more Roads meet or cross. In [RAMM](#), Intersections are used for Traffic Signals and Bylaws. [RAMM](#) Intersections can be created on a single Road, to indicate a Pedestrian Crossing or the Traffic Signals at a Fire Station.

### Intersection Behaviour

User-defined Intersection Behaviour codes may be created to describe the behaviour of an Intersection as the Road user approaches it. They assist a [RAMM](#) user to understand what happens as a Road user approaches the Intersection along the Major Road.

### Intersection Type

User-defined Intersection Type codes may be created to enable users to differentiate different types of Intersections. For instance you can use the codes to separate T Junctions from Y Junctions. You could also use them to highlight State Highway Interchanges or Intersections which are Not a Real Intersection such as a Pedestrian Crossing.

### Job

A Job is a defined activity generated from within [Pocket RAMM](#) so that Contractor field crew can repair a

Network Fault. In **RAMM Contractor** it is referred to as a Dispatch.

### KPI

Key Performance Indicators (KPIs) are metrics used to help the Contractor and Network Owner define and measure progress toward organisational goals.

The Network Owner may have included KPIs in the provisions of the contract. If so, **Response Time** parameters can be set up so that Contractor performance can be measured against preset standards.

On the **Audit** tab of the **Dispatch** screen there is a **Response Time** section. If you enable **Response Times** and set up **Targets**, every **Dispatch** will have **Response Time** information stored against it. This information can be viewed at the **Response Time** section of the screen.

### Lamp

In **Street Lights**, the bulb, filament or tube that generates illumination from the **Light**.

### Lantern

A **Lantern** is a light source. This can be for signalling, as in **Traffic Signals** or for general light as in **Street Lights**. In **RAMM** the term **Lantern** includes the lens and the housing for the light source. **Traffic Signals** use incandescent bulbs or LEDs (light emitting diodes) as the light source. The **Lantern** is the unit that houses

**Traffic Signal Aspects** facing in one direction.

### Line Company

The **Line Company** is the company which owns and services the electricity wires which connect to a device such as a **Traffic Signals Controller**.

### Location

**Location** refers to the collection of details used to position an **Asset** or **Inventory** item within a database. The most basic **Location** information is a combination of **Road** and **Displacement**. **Location** information can also include helpful notes such as nearby landmarks. **Point Assets** such as **Signs** have a **Location** field whose value is the **Displacement** of the **Sign** from the start of the **Road**.

### Logic Rack

The **Logic Rack** is the central printed circuit board in the **Controller** which contains the logic circuitry. **Logic Racks** are sometimes referred to as motherboards.

### Lookup

A **Lookup** is a set of column values which is selectable from a drop-down list in **RAMM** screens. **Lookups** are defined either by **RAMM Software Limited** or by the user. For example, in **RAMM Contractor** you may enter a **Lookup** record on the **Priority** tab of the **Contract** Detail screen. This record then becomes

one of the items you can select in the drop-down list for the Priority field of the **Dispatch** maintenance screen.

### Lump Sum Item

These are fixed amount items for works such as Patrols or Pothole Repairs which are performed on a regular basis. So they are often monthly charges. When a Contractor creates, Prepares or Presents a Claim Header, there is the option to create Lump Sum Claim lines for the Claim Period if this has not already been done. When you set up your Schedule Items, you may define them as Lump Sum items.

### Maintenance Note Action

Maintenance Note Actions are user-defined notes which a **Pocket RAMM** or **RAMM Contractor** user can select to associate with a Dispatch or Job. The list of Maintenance Note Actions is then the list of the tasks undertaken to repair the Fault which gave rise to the Job.

You create Maintenance Note Actions to be specific to a particular combination of Asset Type and Fault Category. This way the Maintenance Note Actions available to the user are always only those relevant to the Job being performed.

For instance, if you created a Traffic Signals Fault Category of Preventive Maintenance 8 Months, you could then create a list of Maintenance Note

Actions to match the list of tasks to be performed on each Traffic Signals set every eight months.

Maintenance Note Actions are particularly useful in **Pocket RAMM**. It is much easier for an operator to select a few check boxes than to type free form notes.

### Maintenance Programme

This is the Programme of works to maintain a Road Network. The Network Owner normally engages a Contractor to locate and repair Network Faults. The Contractor gives regular Programme Estimates for the Network Owner to Approve prior to performing the maintenance work in the Programme period for which payment is Claimed.

### Manufacturer

User defined Manufacturer Make and Model codes are used for Assessment and Asset Valuation. They describe who made the component and which model of component it is. They are also useful to field staff who need to know what makes and models of spare parts they need to have on hand in the truck.

### Network

A Network is a collection of Roads managed by a particular Road Controlling Authority (RCA). Each **RAMM** database usually contains all the information for one Network.

### Network Owner

This is the Organisation that controls the Road Network. They devise and let the Maintenance Contract. They Approve, Hold or Reject the Estimated Programme of Road Maintenance works, audit the works once Completed and pay for the work once done.

### No Access Security Switch

No Access is one of the settings of the Global Security Switch. It denies a user any access at all to a **RAMM** database.

You manage access to **RAMM Contractor** by setting Staff Permissions. You do this to limit the actions of users to those areas of **RAMM Contractor** to which they need access in order to be able to perform their normal work tasks.

If you set a user to No Access it means that all the individual Permission switches for that user are set to No Access.

### Null

This means blank or having no value. Some **RAMM** fields must have a value. These fields are highlighted with a coloured background.

### NZTA

The New Zealand Transport Agency (NZTA) is the Crown Entity responsible for State Highways. These are the strategic Roads and motorways that are about

12% (10,894 km) of all New Zealand Roads, but account for about half of the 36 billion vehicle kilometres travelled every year. It promotes land transport sustainability and safety and allocates government funding for land transport.

### Offline

**Pocket RAMM** users will sometimes work Offline. This is where they work without being connected to the mobile broadband network.

Users work Offline when they are not in a mobile broadband coverage area. They might also do this when they are in an area of weak network coverage and are constantly being disconnected, or when the network speed is slow because of network reception problems.

### Patrol

A Patrol is a scheduled traverse of a specific geographical area of the Network. The Contractor performs Patrols at the direction of the Network Owner. The Contractor monitors and reports on the condition of the Road Network and associated Assets. There are also Road Sweeping and Drain Inspection Patrols.

### Pedestrian Call Box

A Pedestrian Call Box is a (usually metal) box attached to a Traffic Signal Pole at a height available to children and adults. It contains a

special-purpose direct line to the Controller so that when pedestrians alert the Controller to their presence, usually by pressing a button, the Controller can phase the lights to enable the pedestrian to cross the Intersection in safety.

### Pedestrian Crossing

A Pedestrian Crossing is a specially marked area on a Road which gives legal rights to pedestrians wishing to cross the Road. They are common near schools or in other areas where there are a large number of children. The simplest crossings may just consist of some markings on the Road surface. These are often called Zebra crossings, referring to the alternate white and black stripes painted on the road surface. Pedestrian Crossing records in **RAMM** are Intersection records.

### Permissions

Staff Permissions are access rights granted to specific users and groups of users. They are authorisations for users to view or make changes to the contents of aspects of **RAMM**.

You manage access to **RAMM** by setting Staff Permissions. You do this to limit the actions of users to those areas of **RAMM** to which they need access in order to be able to perform their normal work tasks.

### Pocket RAMM

**Pocket RAMM** is the module of the **RAMM** suite of products which enables a user to run **RAMM** on a

netbook, laptop, tablet or PDA, and to perform Contract, Inventory and Claim management while mobile, in the field. Virtually all of the everyday maintenance ability of **RAMM Contractor** is present in **Pocket RAMM**. Please note that the **Pocket RAMM** application has become so comprehensive that the use of PDAs with **Pocket RAMM** is no longer recommended. PDAs are no longer powerful enough to deliver a positive user experience.

### Pole

A Pole is a long slender, often cylindrical object. Signs, Street Lights and Traffic Signals all use Poles to elevate the Assets. Poles can be constructed from wood, reinforced concrete and metal.

### Pole Attachment

Poles can hold objects other than the Assets which are their primary purpose. For instance, a Traffic Signal Pole could also have an attached speed camera or an attached red light camera. These objects are referred to as Pole Attachments.

### Pole Mount

The **Pole Mount** code identifies the method of securing the Pole on which the Target Boards are attached. The Pole is usually secured to the ground but may be secured to the side of a building or a Bridge. Some Poles are secured with a fixture designed to shear on impact when hit by a vehicle.

## Pole Type

The Pole Type code identifies the type of Pole used to elevate and secure the Traffic Signals Target Boards. Pole Types usually also identify Pole components such as Mast Arms and other Pole extensions.

## Power Supply Company

The Power Supply Company is the company which sells the electricity which is transmitted through the wires connected to a device such as a Traffic Signals Controller. These wires are owned by the Line Company.

## Preemption

Traffic Signal preemption is a system to preempt the normal Traffic Signal operation to assist emergency and public transport vehicles. These vehicles are given priority by changing Traffic Signals in their path to green and stopping conflicting traffic.

## Priority

Priority codes are **RAMM Contractor** items associated with Dispatches. Priority codes help **RAMM Contractor** Staff who Programme and assign Dispatches and **Pocket RAMM** users who self-assign Jobs to tell which should be performed first. You can also use Priority codes to ensure emergencies stand out from all other Dispatches regardless of Priority. Each Dispatch or Job must have an associated Priority code.

## Programme

A maintenance Programme is the agreed maintenance works to be carried out by a Contractor during the Programme period. This is usually one month.

## Progress Note

A Progress Note is a record of a change which has occurred to a Dispatch. These are manually entered by a user. You would do this to record long term work progress on a particular Dispatch. You would use them for complex situations where, for example, you are unable to progress with the Dispatch because you are waiting for supplies.

These notes are added in the normal manner and are not Audit records which are automatically generated by **RAMM Contractor** if the Contract has been set up for this.

## RAMM

Road Assessment and Maintenance Management (**RAMM**) is software developed and supported by **RAMM Software Limited**. This software is used by Road Controlling Authorities (RCAs) to manage Road Inventory Assets and Condition for their Network.

## RAMM Assessment

**RAMM Assessment** is a feature to used to manage and record Inspections of Roding Assets. You use **RAMM Assessment** to manage

the overall Condition of your Network.

### **RAMM Contractor**

**RAMM Contractor** is the module of the **RAMM** suite of products which enables Contractors, Network Owners and Consultants to manage Road Asset Maintenance Contracts. In particular, it has been optimised to facilitate the Programming of Network maintenance and the Estimation and Claims process which is integral to Programmed Maintenance Contracts. It also includes the special features for the managing of Contracts for Signs, Street Lights and Traffic Signals maintenance.

### **RAMM Hosting Service**

The **RAMM Hosting Service** is a service run by **RAMM Software Limited**. It enables you to run **RAMM** across the Internet. It hosts your database and the software on a server at a centralised location. You use your standard internet browser to access the software and work with your data, so you do not need any specialised software. It is very secure.

### **RAMM Manager**

**RAMM Manager** is the module in the **RAMM** suite of products which you use to set up Lookups, to maintain Staff Permissions, to run processes such as Status Check, and to run reports.

### **RAMM Network Manager**

**RAMM Network Manager** is the module in the **RAMM** suite of products which you use to manage the details of your Network and in particular, the Road centre lines. **RAMM Network Manager** is a powerful, flexible and comprehensive Road Network maintenance tool that helps you automate tasks and perform complex Network management actions. For example, you can reverse a Road with a single press of your mouse. When you apply this change **RAMM Network Manager** will update all relevant tables within the database. It also has a graphical display which displays current and historical views of the changes you are making.

### **RAMM Software Ltd**

This is the company which specialises in the development of software for the roading industry. Its core product, **RAMM** (Road Assessment and Maintenance Management) has been the benchmark in road asset management software in New Zealand for over 20 years. **RAMM** is now a suite of software products including **RAMM Contractor**, **Pocket RAMM**, **RAMM SQL**, **RAMM Manager**, **RAMM Network Manager** and the **RAMM CAR Manager**.

### **RCA**

A Road Controlling Authority (RCA) is the organisation

responsible for a particular Road Network. An example of an RCA could be the New Zealand Transport Agency (NZTA) or a TLA (Territorial Local Authority).

### Record

This is a collection of information about a single object. In **RAMM** it is a grouping of all the details about a particular item such as a Berm or Street Light. You maintain single record details in a Detail screen.

### Replacement Reason

The Replacement Reason codes are used to specify the reason for replacing a Traffic Signal component. They are fully user-configurable. You can use them for statistical, financial and warranty reporting purposes.

### Response Time

The Contractor and the Network Owner both have an interest in the time it takes from when a Dispatch is added to **RAMM Contractor** to when it is Assigned and Completed. If the contract with the Network Owner requires performance to certain Response Times, these are set up in the Contract.

This enables Contractor performance to be measured against preset standards.

On the Audit tab of the **Dispatch** screen there is a Response Time section. If you enable Response Times and set up Targets, every Dispatch will have Response Time

information stored against it. This information can be viewed at the **Response Time** section of the screen.

### Road

For Local Authorities, a Road denotes a single named Road that is part of their Network. For State Highways, a Road is a segment of the State Highway.

### SCATS

The Sydney Coordinated Adaptive Traffic System (SCATS) software package is an area-based traffic management and Intersection control system that responds to changes in traffic flow and conditions by adjusting the phasing at each traffic light cycle in real-time. Across New Zealand, more than 500 traffic signals are coordinated and managed with SCATS.

### Security Group

These are predefined Staff Permission groups. Security Groups are an efficient method of granting preset levels of access for Contractor and Network Owner staff in standard roles. Assigning a user to a Security Group sets the database access level for the user. Security Groups are preset and you can not change them.

### Security Role

A Security Role is an item you create with Staff Permissions, as if it were a User Profile. Then, where there is a

group of users who perform the same tasks as each other, rather than define individual Staff Permissions for each User Profile, you associate the User Profiles with one Security Role. This makes it faster grant a new user the appropriate Staff Permissions. You can also change the Staff Permissions for a whole group of people by changing the Permissions associated with their Security Role.

### Software

Traffic Signals Software exists in the Controller and is recorded as part of the Logic Rack. It is the Software which specifies how the Traffic Signals will behave and what the light sequence will be. It prescribes the personality of the Traffic Signals.

### Staff Permissions

Staff Permissions are access rights granted to specific users and groups of users. They are authorisations for users to view or maintain specific aspects of **RAMM**. You set Staff Permissions for users, firstly, to manage their access to **RAMM** and, secondly, once they have accessed **RAMM**, to limit their actions to those which they need in order to perform their normal work activities.

### Stock Asset Types

In **RAMM** the three Asset Types, Signs, Street Lights and Traffic Signals are referred to as Stock Asset Types. This is because, unlike the other Asset Types, when Signs,

Street Lights and Traffic Signals Assets or components are replaced, a detailed record is kept of the replacements including the **Replacement Reason**. So you have an itemised list of the current and past Assets. You create Stock UDTs to manage those of your Assets (if any) which do not already exist in **RAMM** and for which you need to keep replacement records.

### Table

This is a container in the **RAMM** database that holds all the records about an aspect of all Roads in the database. This could be their Berm or Shoulder details for example. Each table holds all the information about only one aspect of all the Roads.

### Target Board

A Target Board is the flat back panel into which Traffic Signals Lanterns are secured. It mostly includes Visors to shade the Lanterns and to obscure them from traffic which the Lantern is not intended to control. Target Boards are attached to Poles.

### TNZ

Transit New Zealand (TNZ) was the Crown Entity responsible for State Highways. Its functions have now been taken over by the NZTA.

### Traffic Signal

The Traffic Signal is also known as a traffic light. It is a signaling device to control vehicle and pedestrian traffic

at an Intersection or Road. It does this using the green - amber - red series of colours to indicate the correct moment to stop, drive, ride or walk. It also uses a precise sequence for those who are colour blind. In **RAMM** Traffic Signals are positioned at Controlled Intersections.

### View Only Security Switch

View Only is one of the settings of the Global Security Switch. It allows the user Permission only to view records and not to run any processes or to add, update or delete any records.

You manage access to **RAMM** by setting Staff Permissions. You do this to limit the actions of users to those areas of **RAMM** to which they need access in order to be able to perform their normal work tasks.

If you set a user to View Only it means that all the individual Permission switches for that user are set to View Only.

### Visor

This is an attachment to the face of a Traffic Signal aspect to minimise the effect of sunlight on the display and to reduce the possibility of the signal being seen by traffic for which it was not intended.

### Warranty Period

The Contract warranty period is a specified time length for which a manufacturer warrants that Assets replaced will remain free of Faults. Assets under a Street Light or Traffic

Signals Contract may be subject to a manufacturer's warranty period.

If, when setting up a Contract, you choose the Warranty Period option for Street Lights, then the option to add Light, Gear and Lamp Warranty Period information at the **Light, Gear and Lamp Make-Model** screens becomes available. The resulting information is used in the Warranty Failure report.

If, when setting up a Contract, you choose the Warranty Period option for Traffic Signals, then the option to add Attachment, Detector Card, Duct, End Box, Logic Rack, Loop and Pedestrian Call Box Warranty Period information at the **Attachment, Detector Card, Duct, End Box, Logic Rack, Loop and Pedestrian Call Box Make-Model** screens becomes available. The resulting information is used in the Warranty Failure report.

# Index

## A

Adding an Intersection to the Map • 19, 22, 47  
As-built File • 59  
Aspect • 59  
Assessment • 43, 51, 59  
Asset • 59  
Asset Owner • 59  
Asset Owner Type • 59  
Audit • 43, 52, 59  
Auto Claiming • 60

## B

Bylaw • 60

## C

Cabling • 60  
Call Type • 60  
Carriageway • 60  
Claim Groups • 61  
Claim Header • 61  
Claim Line • 61  
Communication Device • 61  
Component • 61  
Contract • 61  
Contract Manager • 62

Contractor • 62  
Controlled Intersection • 62  
Controlled Intersections • 9, 31  
Controller • 62  
CSI Headers • 62  
CSIs • 63  
Custom Security Switch • 63

## D

Database • 63  
Decision Cube • 63  
Define an Intersection as Controlled • 31  
Define Intersection Behaviour Codes • 55  
Define Intersection Type Codes • 56  
Defining Controlled Intersections • 33  
Detail Screen • 63  
Detector Card • 63  
Detector Loop • 64  
Dispatch • 64  
Dispatch Groups • 64  
Displacement • 64  
Display Type • 64  
Document Release • 5  
Ducting • 64

## E

End Box • 65  
Estimate line • 65

Export • 65

External ID • 65

## **F**

Fault • 65

Fault Category • 65

Filter (Database Filter, Grid Filter) • 66

Full Control Security Switch • 66

## **G**

General • 43, 44

Generating Intersections from the Map  
• 13, 18, 19, 22, 33

Global Security Switch • 66

GPS • 66

Grid Screen • 66

Guarantee Period • 67

## **H**

Hosting • 67

## **I**

ICP • 67

Identify Intersections with Invalid  
Location • 27

Identify Roads without Intersections •  
25

Identifying the Intersection Errors on  
the Map • 21, 22

Intersection • 67

Intersection Behaviour • 9, 54, 67

Intersection Behaviour and Type • 53

Intersection Error Repairs • 13, 17

Intersection Generation • 9, 11

Intersection Generation Errors • 16

Intersection Generation Issues • 12

Intersection Sanity Reports • 9, 16, 25

Intersection Screen • 37

Intersection Screen and Traffic Signals  
Screen • 37, 39

Intersection Screen Details • 10, 43

Intersection Screen in RAMM • 17, 23,  
37

Intersection Screen in RAMM  
Contractor • 26, 35, 37, 40

Intersection Type • 9, 45, 55, 67

Intersections within a Carriageway  
Section • 13

Introduction to Intersections • 9

## **J**

Job • 67

## **K**

KPI • 68

## **L**

Lamp • 68

Lantern • 68

Line Company • 68

Location • 43, 46, 68

Logic Rack • 68

Lookup • 68

Lump Sum Item • 69

## **M**

Maintenance Note Action • 69

Maintenance Programme • 69

Manufacturer • 69

Miscellaneous • 43, 48

Multimedia • 43, 52

## **N**

Navigation Restrictions • 43, 47

Network • 69

Network Owner • 70

No Access Security Switch • 70

Null • 70

NZTA • 70

## **O**

Offline • 70

Other Intersection Sanity Reports • 28

## **P**

Patrol • 70

Pedestrian - General • 49, 50

Pedestrian - Miscellaneous • 50, 51

Pedestrian - School • 49, 51

Pedestrian Call Box • 70

Pedestrian Crossing • 13, 43, 49, 71

Pedestrian Crossing Intersections • 35

Permissions • 71

Pocket RAMM • 71

Pole • 71

Pole Attachment • 71

Pole Mount • 71

Pole Type • 72

Power Supply Company • 72

Preemption • 72

Priority • 72

Programme • 72

Progress Note • 72

## **R**

RAMM • 72

RAMM Assessment • 72

RAMM Contractor • 73

RAMM Hosting Service • 73

RAMM Manager • 73

RAMM Network Manager • 73

RAMM Software Ltd • 73

RCA • 73

Record • 74

Regenerate the Map Index • 12

Replacement Reason • 74

Response Time • 74

Road • 74

## **S**

SCATS • 74

SCATS Numbers • 32

Security Group • 74

Security Role • 74

Select a Map • 12

Software • 75

Staff Permissions • 75

Stock Asset Types • 75

## **T**

Table • 75

Target Board • 75

TNZ • 75

Traffic Signal • 75

## **V**

View Only Security Switch • 76

Viewing Intersection Error Details • 17,  
19, 22, 33

Visor • 76

## **W**

Warranty Period • 76