CRASHSTATS USER GUIDE

Road Crash Statistics: Victoria, 2013 Edition

vicroads

Part I

How to Use CrashStats

Table of Contents

1. PRODUCT INFORMATION

CRASHSTATS
Road Crash Statistics Victoria, 2013 Edition

VicRoads, Melbourne, Jun 2013
ISSN 1324-2563

1.1 Copyright

Copyright laws and international treaty provisions protect CrashStats. You acknowledge that all title and copyright in and to CrashStats (including, but not limited to images, photographs, animations, video, audio, text incorporated into CrashStats) are owned by VicRoads. You will not permit any act which infringes the copyright in CrashStats.

You may use, copy, reproduce, translate, vary, modify or make available to other persons information contained in CrashStats (except confidential information) provided that:
you only do so for a purpose that is reasonably related to the purpose for which CrashStats has been provided to you; and unless it is impracticable to do so, you acknowledge that the source of the information is CrashStats which is owned by VicRoads.

1.2 Trademarks

Windows, Microsoft Windows and Microsoft are trademarks of Microsoft Corporation.
VicRoads is Victoria's road traffic authority.

1.3 Disclaimer

Care has been taken to ensure the accuracy of the maps and data but these are provided on the terms and understanding VicRoads is not responsible for any actions and results of any actions taken on the basis of the information supplied, nor for any error in or omission of data.

1.4 Ownership and Maintenance

The ownership of application belongs solely to VicRoads. Data and application maintenance work performed by VicRoads in conjunction with HCL Technologies

2. INTRODUCTION

CrashStats provides access to a database containing Victorian Road Crash Statistics from 1987 onwards for crashes where at least 1 person was injured.

CrashStats may be accessed by using a web browser that can run a Java applet, with a connection to the Internet. The recommended browser is Internet Explorer version 6.0 or later, Mozilla Firefox version 19 or later. All queries to the CrashStats database are performed remotely and the results are sent to your computer.

Users can specify criteria by which to search for accidents ranging from locations to the type of vehicles involved and the characteristics of the people involved. The results of the queries can be displayed in a map or in table form and are generated in PDF format for saving or printing.

2.1 Explanatory Notes

The CrashStats database contains statistics of road traffic accidents which were reported to the police and which met the following conditions:

- That the accident occurred from the calendar year 1987 onwards.
- That the accident resulted in:
- The death of any person within thirty days of the accident.
- Personal injury as identified by the police officers completing the accident report.
- That the accident occurred on any road, street, thoroughfare, footpath, railway level crossing, or any place open to the public.
- That the accident involved one or more road vehicles which, at the time of the accident were in motion, including motor cars, station wagons, utilities, panel vans, motor cycles, trucks, buses, trams and railway vehicles, pedal cyclists and ridden animals.

2.2 Source

The statistics in the CrashStats database are compiled from data from the VicRoads Accident Database.

2.3 About this Guide

The conventions followed in this Guide are as follows:

Bold Italics Bold Italics font is usually a reference to a Button, Menu or Tab. Look on your screen for a Button, Menu or Tab with the same name.

The light globe symbol is used to indicate a very important note.

3. TECHNICAL REQUIREMENTS

3.1 Required Hardware

CrashStats requires a computer that is capable of running Internet Explorer 6.0 or higher, Mozilla Firefox version 19 or higher. Adobe Acrobat 6.0 or higher and must have a connection to the internet.

3.2 Software Requirements

- You must be running in a screen resolution of 800x600 pixels or higher.
- In-Browser Applet:
  - A Java 1.7 or JRE 7 compliant web browser. (Recommended browser is Microsoft Internet Explorer version 6.0 or higher, Mozilla Firefox version 19 or higher).
- Download of Reports:
  - Adobe Acrobat Reader 6.0 or newer is required for the viewing and printing of all reports, and for the printing of maps and summaries. Acrobat Reader may be downloaded from the Adobe web site at: http://www.adobe.com/products/acrobat/readstep.html .

3.3 Firewall Security

CrashStats communicates with a remote server listening port number 443(standard https). If you are behind a firewall then you must configure the firewall to allow connections to these port numbers.

4. ACCESSING CRASHSTATS

Go to the VicRoads web site home page at:
http://www.vicroads.vic.gov.au/

Under **Safety & Rules** tab, click on **About Road Safety** and follow the link to **Statistics and Research.** Click the **CrashStats** link given in Statistics and Research screen.

4.1 CrashStats Access

1. The "Terms of Access for CrashStats" information will appear. To proceed, click 'I accept the terms for use of PUBLIC CrashStats' to use the public version, or click 'I accept the terms for use of Restricted CrashStats' to use the restricted version.

NOTE: Restricted CrashStats contain cropped Police Images of crashes in addition the same data available from Public CrashStats. Restricted CrashStats can only be accessed by approved registered users, whose access was granted by the Road Safety Department of VicRoads (ex.: Municipal Council workers, etc).

2. If the public version of CrashStats was chosen, the application will load.

3. A login dialog will appear if the restricted version of CrashStats was chosen. If you have been supplied with a user id and password, enter these here to proceed.

NOTE: You may be prompted to accept a certificate before the login dialog appears. Click yes to accept the certificate when prompted.

You can now begin using CrashStats.

5. A GUIDED TOUR OF CRASHSTATS

5.1 Getting Started

Once CrashStats starts you will be presented with an initial menu. Select one of these options, which are described in the next section.

5.2 Getting Around CrashStats

5.2.1 Icon Buttons

CrashStats is driven by icon buttons. Click ONCE on an icon button to select it.

Note: Wait for a response from the computer. Some commands take longer to run than others (e.g. saving files, etc.).

5.2.2 Main Menu

Click on this button to return to the Main Menu and clear all query selections.

5.2.3 Back

Click on this button to move back to the previous screen.

5.2.4 Help

Click on this button to view context sensitive help.

The Main Menu, Back, and Help buttons are always grouped together at the bottom of a CrashStats screen

5.2.5 Status Bar

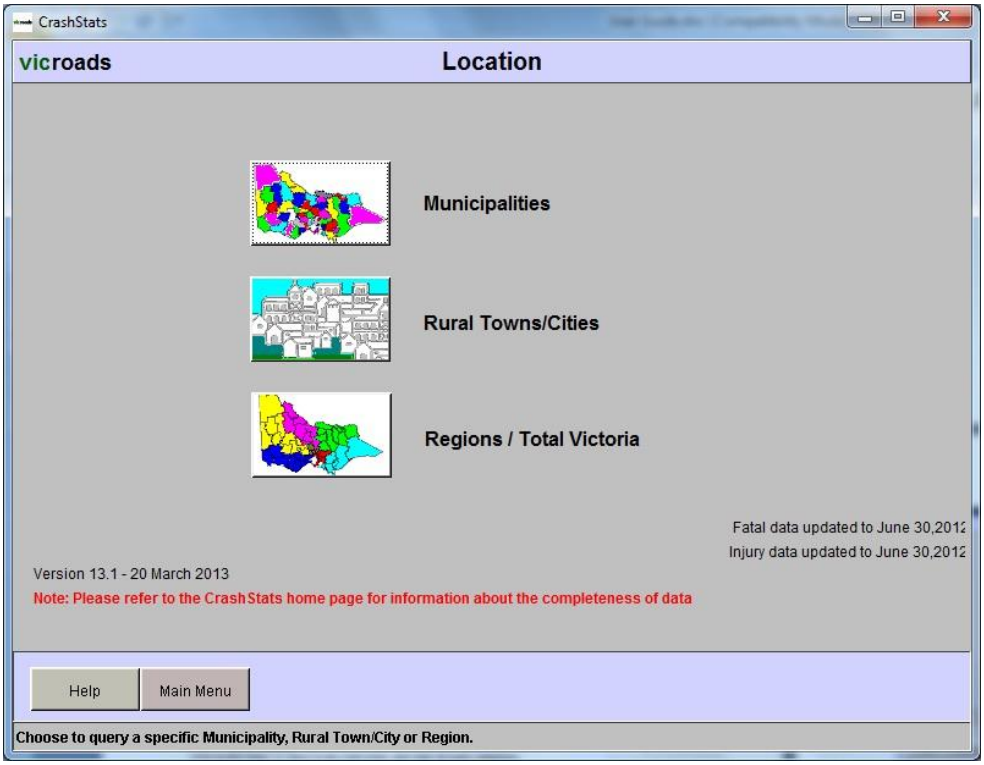
The status bar (at the bottom of a CrashStats window) displays a message outlining the available options that may be selected.

5.3 How to Run a New Query

5.3.1 Limiting the search

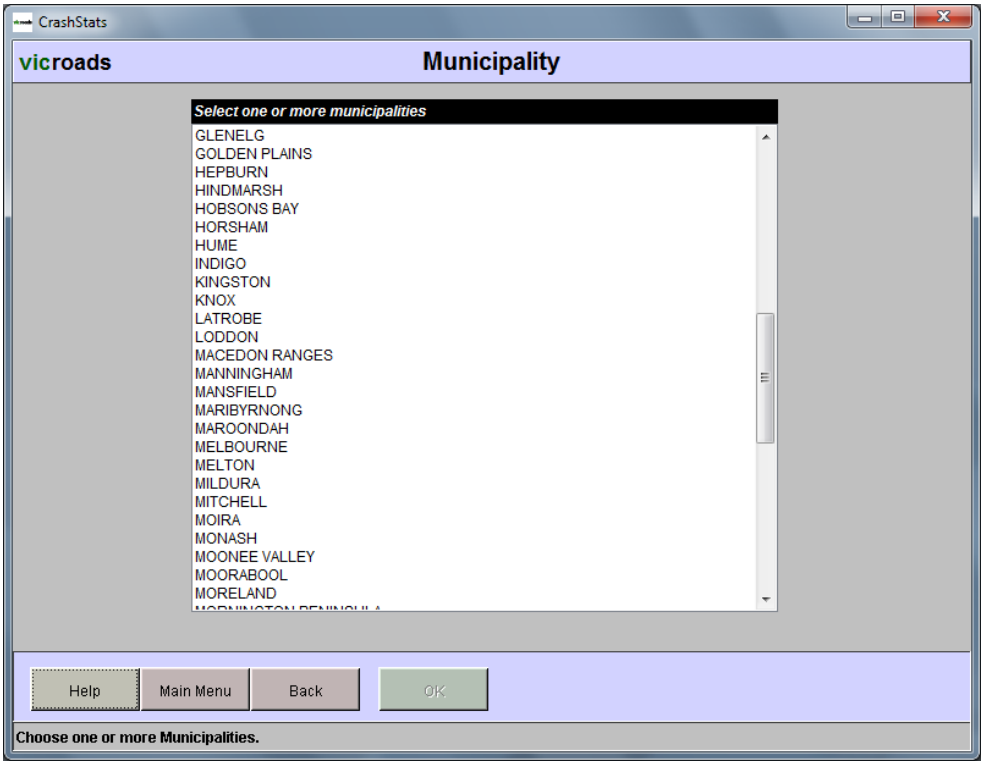
The first screen of CrashStats will present you with a location option. The scope of the search must be limited to particular geographic areas. Select single or multiple Municipalities, Rural Towns or Regions/Total Victoria, as the area to be searched. See the Location window below.

Municipalities, Rural Towns, or Regions/Total Victoria may be selected by clicking with the mouse.



Screen Capture 1: Location Menu

Once a geographic area is selected, a corresponding list will appear on the screen to select from. Multiple selections are possible by clicking on each item one at a time. Items can be deselected by clicking on them again.



Screen Capture 2: Municipality Selection

Once the desired selections have been made, click the **OK** button to continue with the query.

5.4 Selecting a Specific Site

5.4.1 Site Selection

Three options are available from the Site Selection menu. Select either:

 ***All Sites***
All sites in the given area are included in the query.

 ***Select Sites***

This screen is used to select multiple road lengths and intersections, **MIDBLOCKS**, and major routes (called **DECLARED ROADS** ie. freeways, highways, tourist roads etc).Entry of this query information is done via a map of the selected location. The map is initially displayed from a high viewpoint. That is, to obtain a more meaningful representation of the map, it may be zoomed in upon. The map can be moved about on the screen if it is too large to fit in the area (panning the map). This is done by clicking and dragging the mouse on the map area. Roads can be identified at the click of the mouse, and can easily be added to form part of a query.

For specific details on how to use the **Site Selection Map** feature of CrashStats, go to Section 6, titled '**Using the Mapping Features'**.

 ***Groupings of Crash Sites***

This screen allows selection either by "State Declared/Classified Roads" or "Council/ Local' Roads".

State Government Declared Roads

State Government Roads are those "Declared" as either a "Freeway" or "Arterial" as per the Road Management Act 2004. They include freeways, highways, specified forest and tourist roads and main roads. They are given an official description which may not be the commonly used name and a reference code. Eg.: Stud Road is officially called the Dandenong Valley Highway, the Hume highway has 2550 as its route number (these are clearly written on the VicRoads State Directory maps). In this category the city link toll road has been included though its not a state Declared road but it functions as a freeway.

Council 'Local' Roads

Council 'Local' roads ALSO INCLUDE major road that are not "Arterial" and collector roads as well as suburban residential and similar small roads.

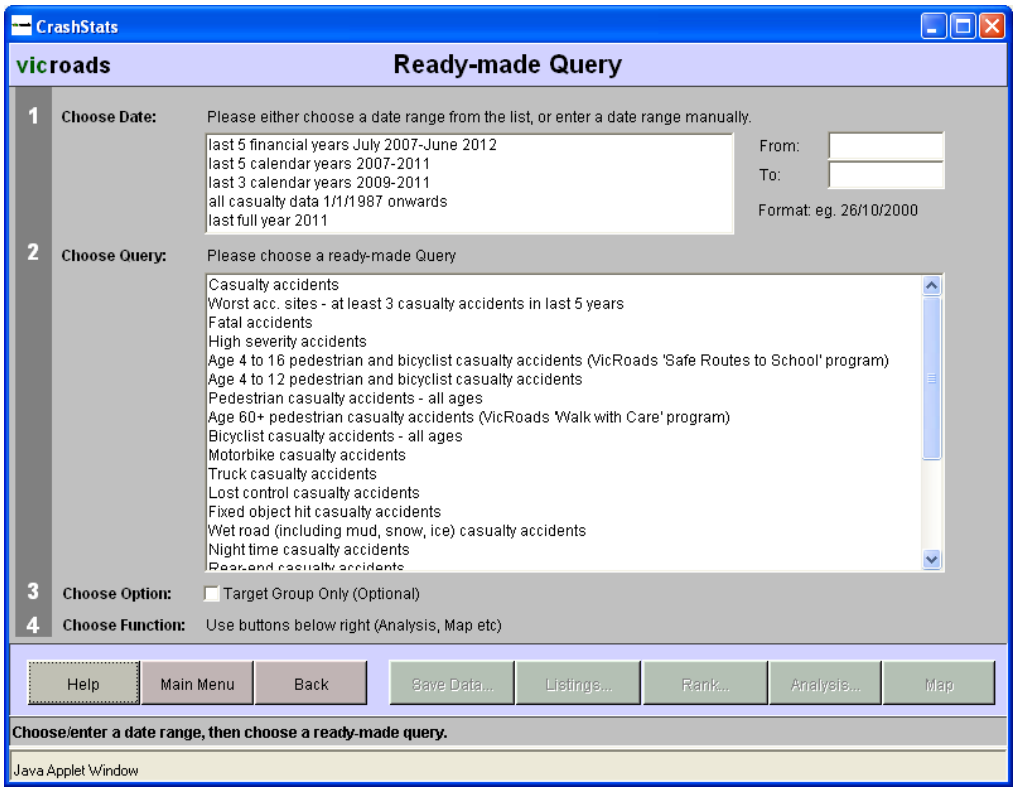
5.5 Selecting a Type of Query

5.5.1 Query Type

5.5.1.1 Ready made queries

This option will display a list of common queries. Select the date range you want. Click on the query that you wish to perform and then choose one of the available options for displaying the results of the query. (See "*Results"* section below for a description of the different outputs available).

This screen also includes an option to select target group only. If this check box is selected, the report will display results only for the road users and vehicle types specified in the query. Any other vehicles or road users involved will not be reflected in the query output.



Screen Capture 3: Ready-made Query Screen

5.5.1.2 Build your own query

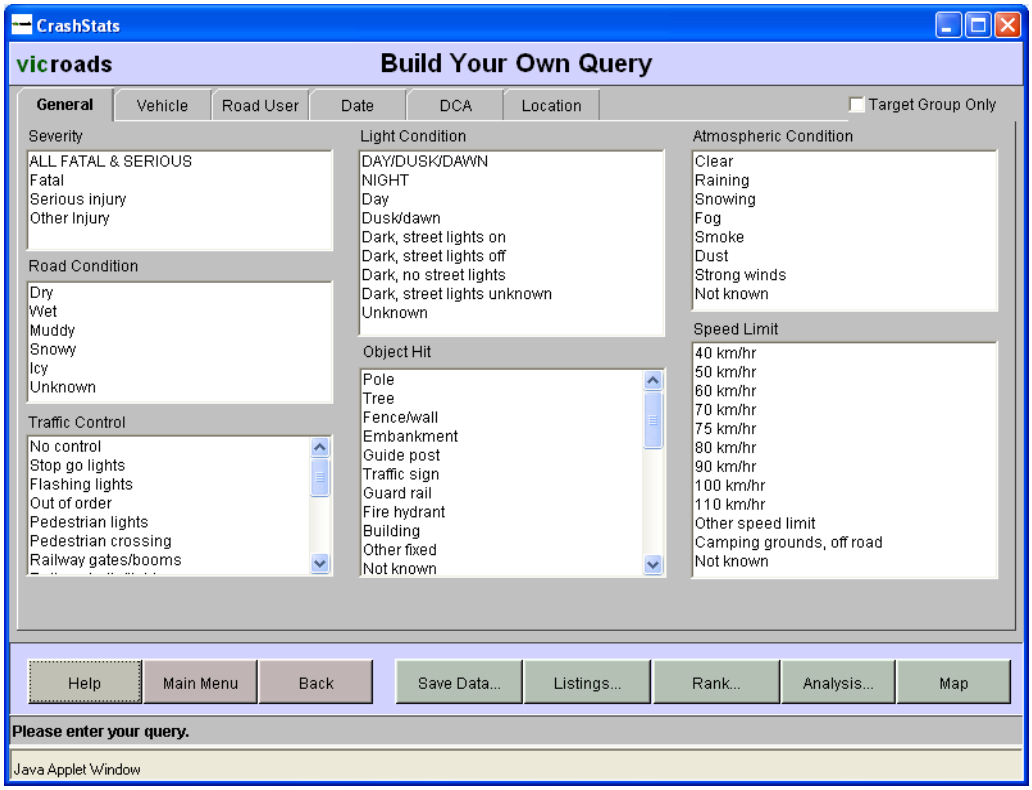
This option allows you to create your own query. The Build Query screen displays 21 variables spread over six tabs.

1. Severity
2. Road Condition
3. Traffic Control
4. Light Condition
5. Object Hit

6. Atmospheric Condition
7. Speed Limit
8. Vehicle Type
9. Road User Type
10. Age
11. Sex
12. Distance From Home (km) ***Not Available***
13. Injury Level
14. Position in Vehicle
15. Restraint Use
16. Date
17. Time
18. Day of Week
19. Definitions for Classifying Accidents - in groups
20. Definitions for Classifying Accidents - individually
21. Urbanisation

Click on a tab to select groups of similar categories. You do not have to set criteria for all categories. You may also select or deselect multiple restrictions and/or categories from some lists by clicking on them with the mouse. If no selections are made, the query will be taken from accident data within the default date range for the specified sites.

This screen also includes an option to select target group only. If this check box is selected, the report will display results only for the road users and vehicle types specified in the query. Any other vehicles or road users involved will not be reflected in the query output.



Screen Capture 4: Build Your Own Query Screen

Go to the section **Viewing the Query Results** for detailed information on how to view the results of a query.

5.5.1.3 Multiple Queries

To perform multiple queries of the data you must return to the main menu before entering each new query.

5.6 Viewing the Query Result

5.6.1 Results

When querying with either a Ready–Made Query or a Build Your Own Query, several options are available once the query has been finalised:

5.6.2 Saving Results to File

Clicking on the ***Save To File*** button allows the user to save the results of the query locally, in comma delimited text files that can be opened with almost any word processing, spreadsheet, or database application.

5.6.3 Printing Query Results

Clicking on the Listings button and selecting the Individual Accident Details radio button will produce detailed information on individual accidents. A query report will be downloaded in PDF format, which will be displayed in a new browser window. The report can be printed or saved using the browser.


NOTE: Restricted Crashstats users will have the option to include Police Images. Select the checkbox to include these images.

Clicking on the ***Rank*** button and on selecting the Summary by Site radio button will download a query report in PDF format showing the results, grouped or summarized by site. The report can be printed or saved using the browser.

5.6.4 Sorting of Results

The results of both of these reports may be sorted by Location (Map Reference, Road Name etc), Site Ranking (number of accidents at each site) or Route No & Distance (Distance along route(s)).

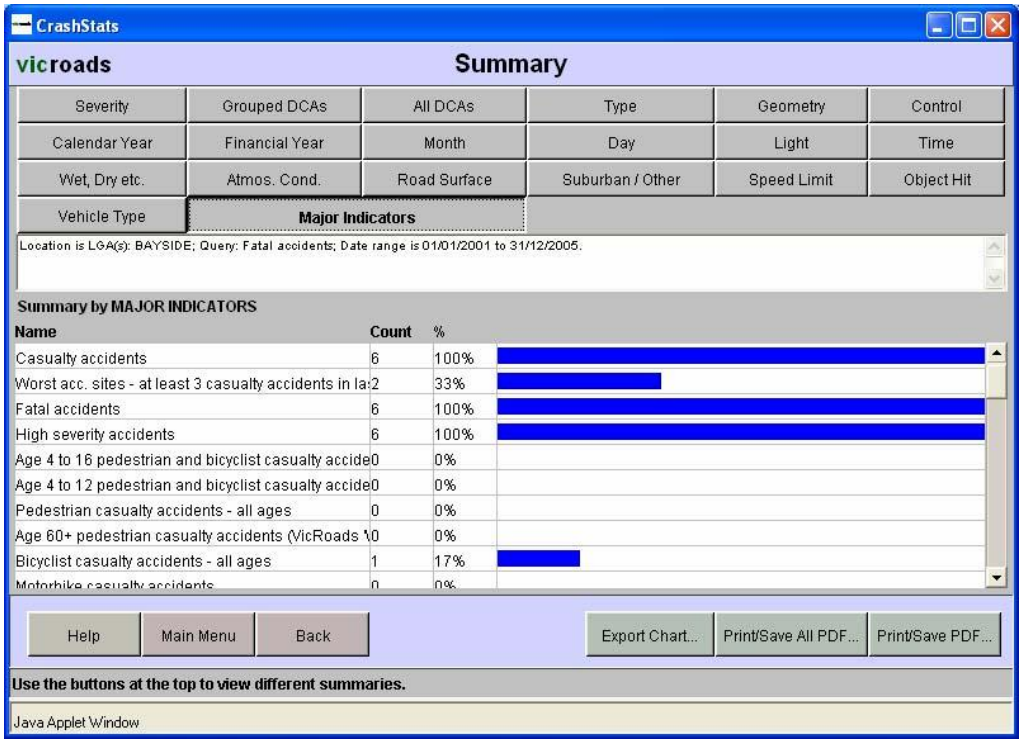
5.6.5 Statistics

5.6.5.1 Analysis

There are three analysis types provided by CrashStats:

5.6.5.2 Summary by Accident Attribute

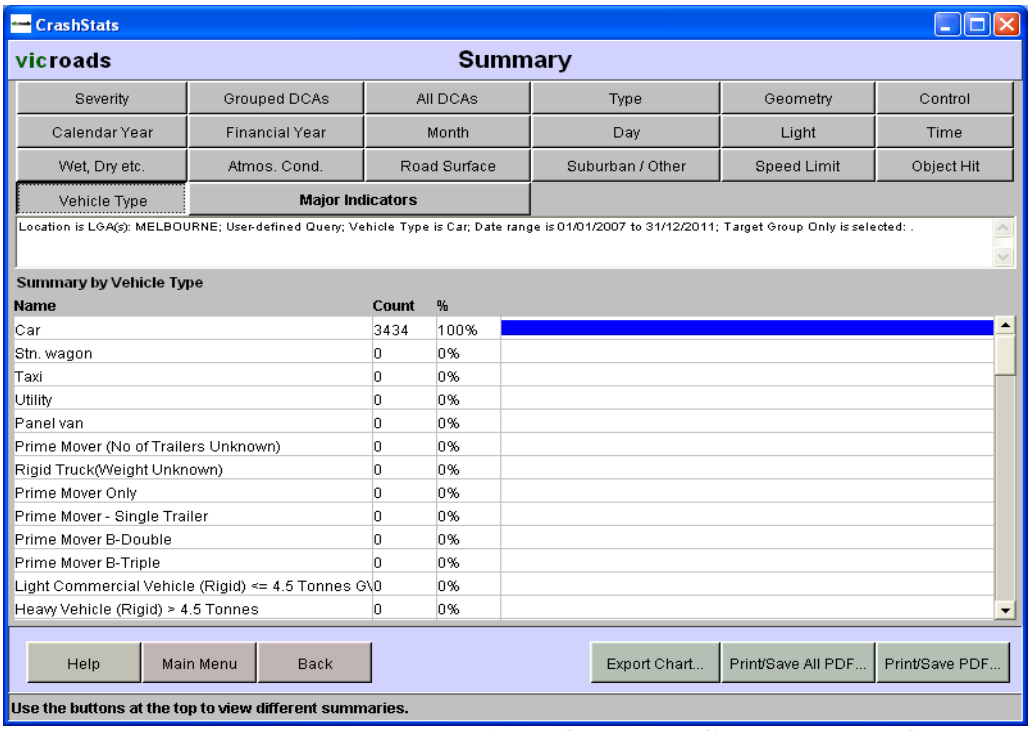
This displays accident-based summaries of a query. Each query attribute can be accessed by clicking on the appropriate corresponding button at the top of the screen.



Screen Capture 5: Summary of Results Screen

Target Group: If a specific vehicle type and/or road user type has been selected as a query parameter, the target group result will display values only for the specified vehicle type and/or road user.

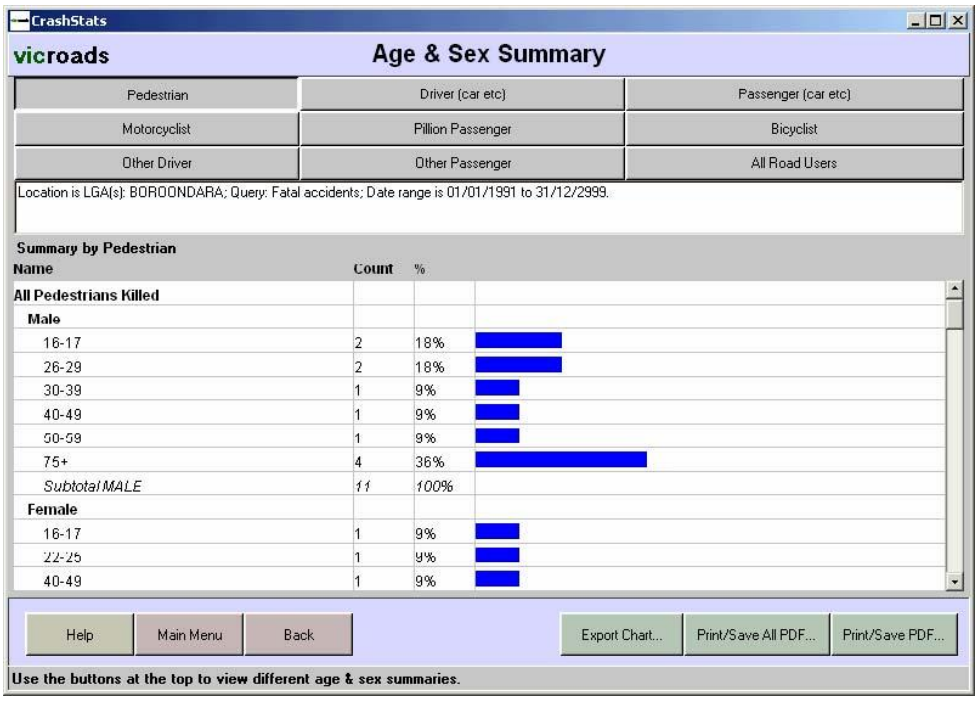
Ex: Query for 'Melbourne', Vehicle Type 'Car' will only display results for car accidents in Melbourne. Any other vehicle types involved in car accidents will not be displayed.



Screen Capture 6: Summary of Results Screen (for target group)

5.6.5.3 Summary by Person Attribute

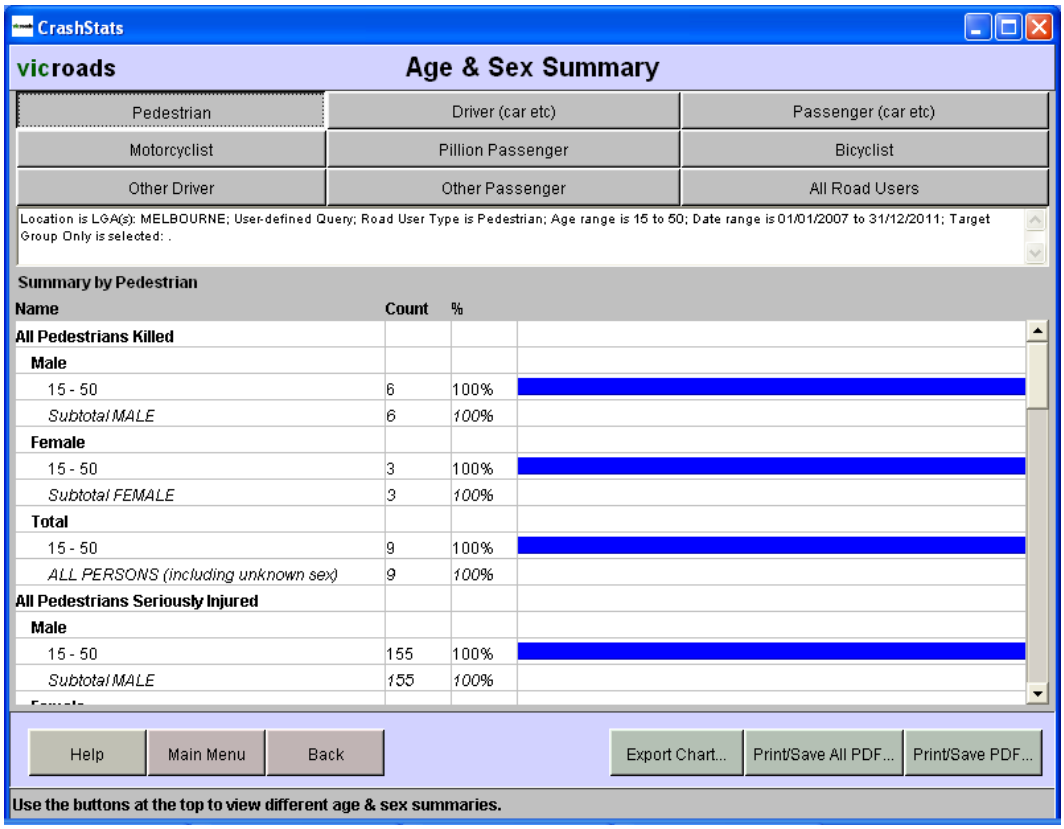
This displays the results of the query for each of the road user types based on age and sex. Each road user summary can be accessed by clicking on the appropriate button at the top of the Summary screen.



Screen Capture 7: Age & Sex Summary

Target Group: If a specific vehicle type and/or road user type has been selected as a query parameter, the target group result will display values only for the specified vehicle type and/or road user.

Ex: Query for ‘Melbourne’, Road User Type ‘Pedestrian’, Aged ’15-50’; will only display results for pedestrians aged 15-50 involved in accidents in Melbourne. Any other road user types involved in these accidents will not be displayed.



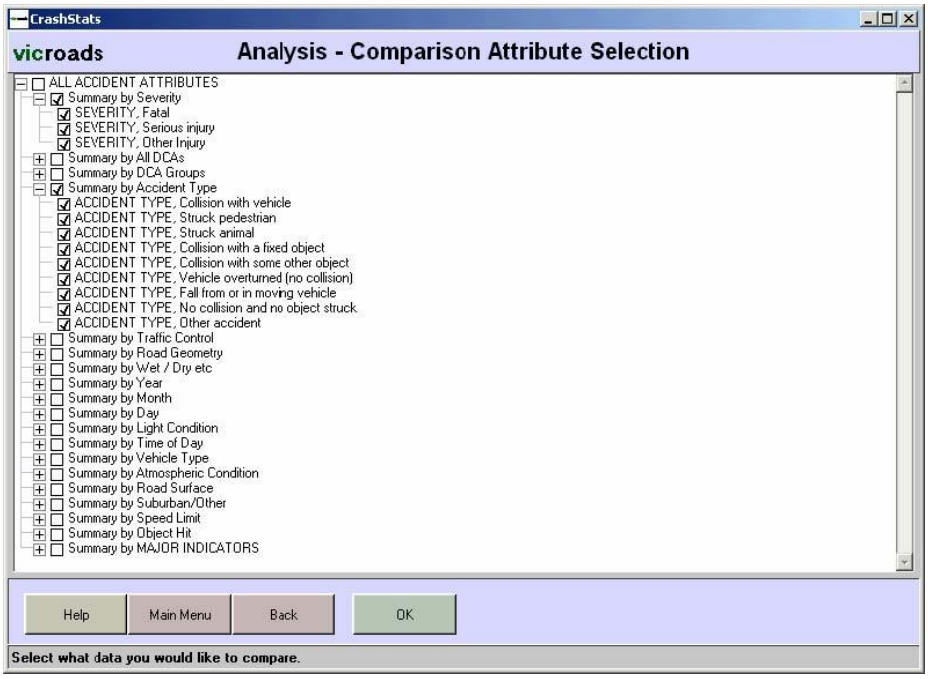
Screen Capture 8: Age &Sex Summary (for target group)

5.6.5.4 Comparison to Another Area

This allows statistical comparisons of selected attributes between two different locations, using the same search criteria. For example, you can compare Bendigo performance versus Ballarat; you can compare your local municipality with the average performance of the Melbourne Metropolitan area.

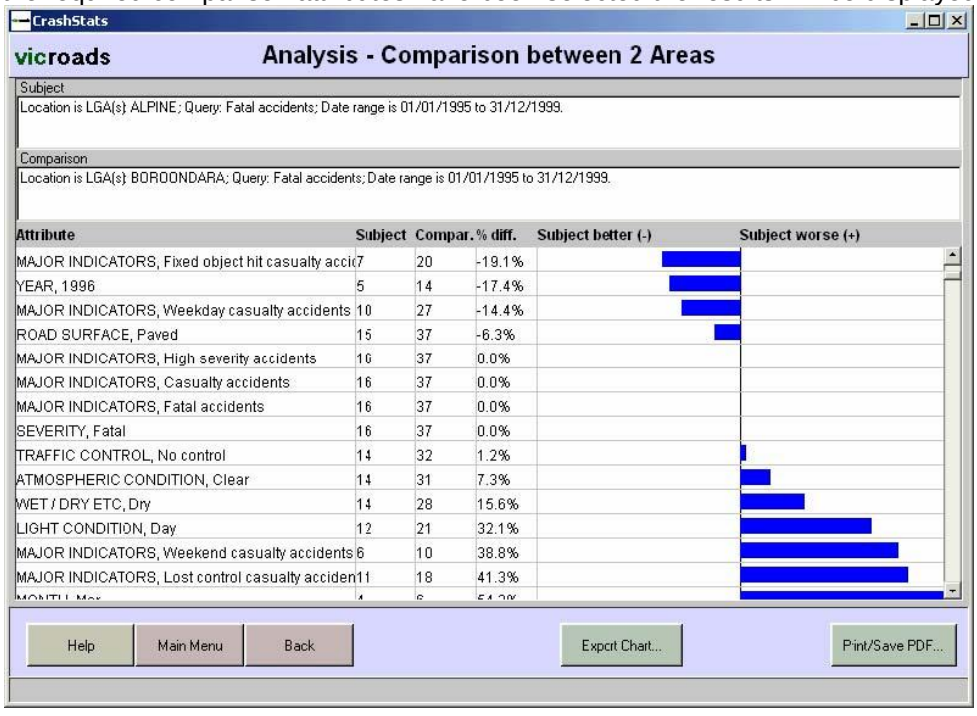
When the comparison tool is clicked the user is presented with the standard location selection screens. Select a location to compare the data with.

Once a comparison location is selected a list of all available comparison attributes is displayed. Tick /Un-tick those attributes that are to be included in the comparison and click the OK button.



Screen Capture 9: Comparison Attribute Selection

Once the required comparison attributes have been selected the results will be displayed:



Screen Capture 10: Comparison Between 2 Areas

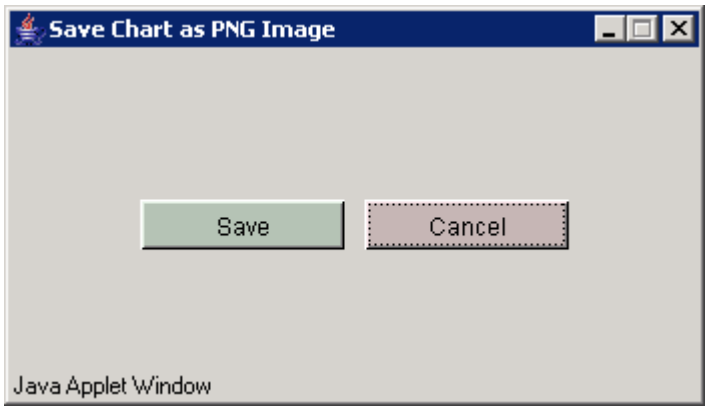
5.6.6 Printing Summaries

The user can print out the details displayed in a summary screen by clicking

on the ***Print/Save PDF*** button. The report will be downloaded in PDF format and loaded in a new browser window, which can be printed or saved.

5.6.7 Saving Query Summaries

The user can save the details displayed in a summary screen by clicking on the ***Export Chart*** button. This will display the following dialog -:

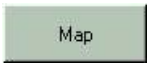


Screen Capture 11: Export Chart Dialog

Enter ***Save*** and the Chart will be downloaded in *Portable Network Graphics (PNG)* Image format from the server and displayed in a new browser window. Select save or print from your browser window.

Click ***Cancel*** to abort saving the summary.

5.6.8 Map



This displays the results of the query in a graphical format. The number of individual accidents on a certain area of road is displayed using yellow circles, while aggregate accident locations will be displayed using squares. This is similar to the symbols used in the site selection screen. If there has been more than 5 accidents in a given location, the number will be displayed using a larger symbol.

NOTE: See Section 6, '**Using the Map Features**', for information on changing the appearance of items in the map or adding text etc.

6. USING THE MAP FEATURES

The map interface can be displayed from two locations in CrashStats, which determines the context a map will be shown. It can be displayed to Select Sites for a specific query and to display the results of a query. Depending on the context a map is displayed, the allowed features on the map tool will vary. For information on map features for a particular context, go to one of the sections below:

Forming Queries with the Mapping Tool (Site Selection)

NOTE: You should read first to learn the basics of the map tool.

6.1 Basic Procedures: Zooming

6.1.1 Zoom In

Clicking on the Zoom In button increases the size of the central part of the map on the screen (that is, the map becomes bigger). To zoom in on a particular area, make sure that the displayed area is roughly in the middle of the Map Window before clicking the Zoom In button. This should be done each time prior to zooming in.

6.1.2 Zoom Out

Clicking on the ***Zoom Out*** button results in more of the map being shown in the **Map Window** (that is, the map appears smaller). If you have panned the map area since last zooming in, the map will not go back to the same state when the **Zoom In** was last performed.

6.1.3 Zoom Scale

The zoom scale determines how far in and out the ***Zoom In*** and ***Zoom Out*** buttons will zoom.

6.1.4 Full Map Display

Clicking on the ***Full Map Display*** button will zoom and pan the map back to its original viewing area.

6.1.5 Zoom into Area

This tool can be used to zoom in on a specific area of a map. Select this tool, then click & drag a rectangle around that part of the map to be zoomed into. Note that the rectangle maintains the same aspect ratio as the current viewing area to show exactly what will be visible when the operation is complete.

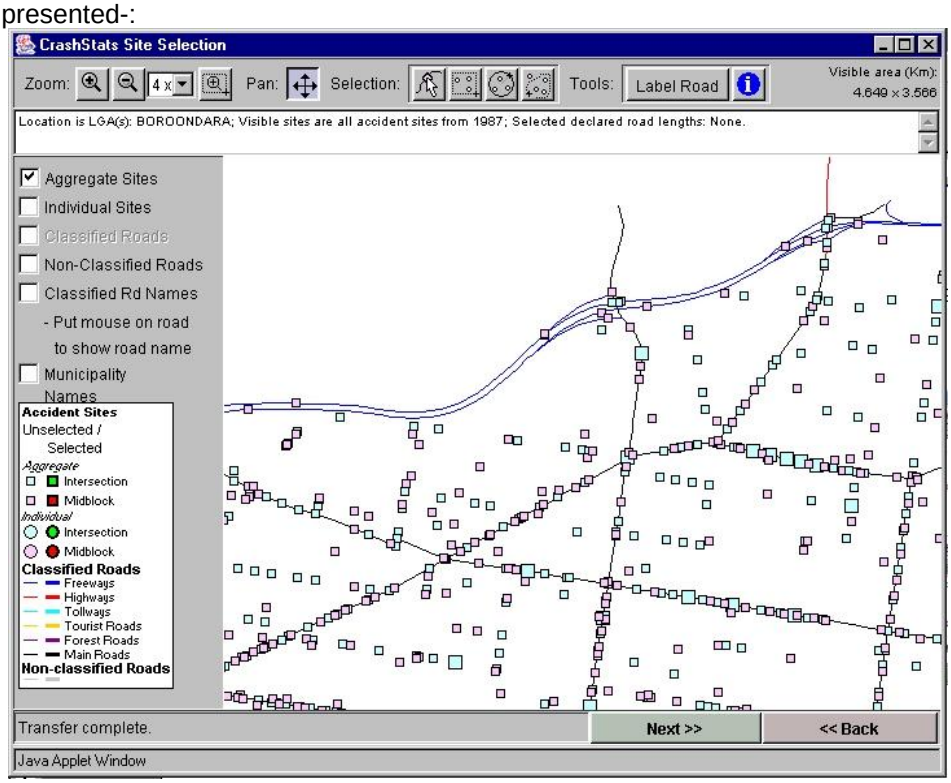
6.1.6 Panning

Panning refers to the action of moving a map around in the **Map Window**.
When viewing a map for Site Selection or Accident Summaries, the ***Pan*** button must be selected before the map can be dragged about on the **Map Window** with the mouse. The ***Pan*** button is selected by clicking on it.

Hint: To move an area into the centre of the **Map Window**, click on the area of interest and drag the mouse to the centre of the **Map Window**.

6.2 Forming Queries with The Mapping Tool (Site Selection)

To form queries using the Mapping Tool, the Site Selection map must be accessed from the Site Selection menu. This is done by clicking on the ***Select Sites*** button. The following screen will be presented-:



Screen Capture 12: Select Sites Map

This **Map Window** displays the map with data that is only relevant to the locations that were selected via the **Locations Menu.** Use the legend provided to the left of the **Map Window** to determine the meaning of the information provided on the map.

Use the Basic Features of the Mapping tool to navigate around the map.

6.2.1 Label Road Button

This adds a road name on the map to help you work out where things are on the map. Select this tool and then click the mouse on the road you want named and the name is then displayed. Note that if you want “Classified Roads” and “local” arterial road names (“Non-Classified” Roads) you must first tick the appropriate checkbox on the left hand side of the screen to display these roads, and it is best to zoom in first.

6.2.2 Information Button

This tool provides extra information on accident sites (aggregate or individual sites).Again this helps to orient where you are on the map. The information contains road names, map references etc.

6.2.3 Displaying Major Roads

Classified Roads

The ***Classified Roads*** checkbox displays all state government classified roads on a specific area of the map that are not yet visible. If only one Local Government Area (Municipality) is selected, this button will be disabled. This is because all major roads are displayed by default when only one Local Government Area is selected.

Note: To display classified roads, the user must be zoomed in to an area of less than 30km from the top of the map to the bottom. This limitation is in place to ensure quick response times.

6.2.4 Displaying Local Roads

Non-Classified Roads

The *Non-Classified Roads* checkbox displays all roads in a Local Government Area (Municipality) that are not state government classified. These are mainly local residential roads, but also include collectors and minor arterials (mainly occurs in Melbourne and Geelong). If more than one Local Government Area is selected, this option is disabled, as there is too much data to retrieve from the CrashStats database within a reasonable time period.

6.3 Site and Road Length Selection

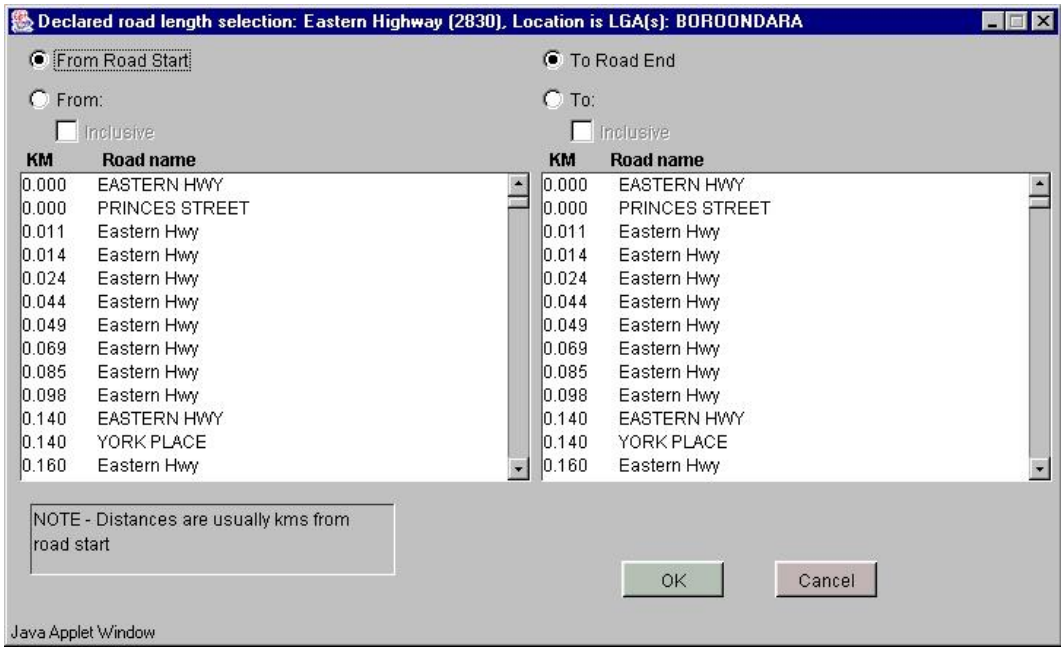
6.3.1 Individual Sites and Road Lengths

To select individual accident sites or a length of road to apply to a query, firstly select the ***Select Sites & Road Lengths*** button.

Note: More than one selection can be made for a query.

6.3.2 Selecting Road Lengths

To select a length of road to query, ensure the ***Select Sites & Road Lengths*** tool is selected and then click on the road to use in the query. The following dialog will appear:



Screen Capture 13: Example of Road Selection Dialog

The **Road Selection Dialog** contains a list of the accident sites along the selected road. Note that most sites will be along the road and not at intersections. Intersection names are in CAPITALS. There are several options available for selecting the length of the road that the query will be applied to:

- **From Start To End**: adds all sites along the entire stretch of road to the query.
- **From Start To a Specific Site**: adds all sites between the beginning of the road up to the selected site to the query.
- **From a Specific Intersection To End**: adds all sites from a selected site to the end of the road to the query.
- **From a Specific Site To a Specific Site**: adds all sites from a selected site up to the selected site to the query.
- **Inclusive**: selecting the 'Inclusive' check box at the bottom the From and To lists specifies that the selected site will also be added to the query. Otherwise, the specified site will not be included in the query

Each **SITE** has an associated distance along the road in kilometers. After the desired sites have been selected, click the ***OK*** button. The WHOLE section of the selected road being applied to the query will be highlighted.

6.3.3 Selecting Sites

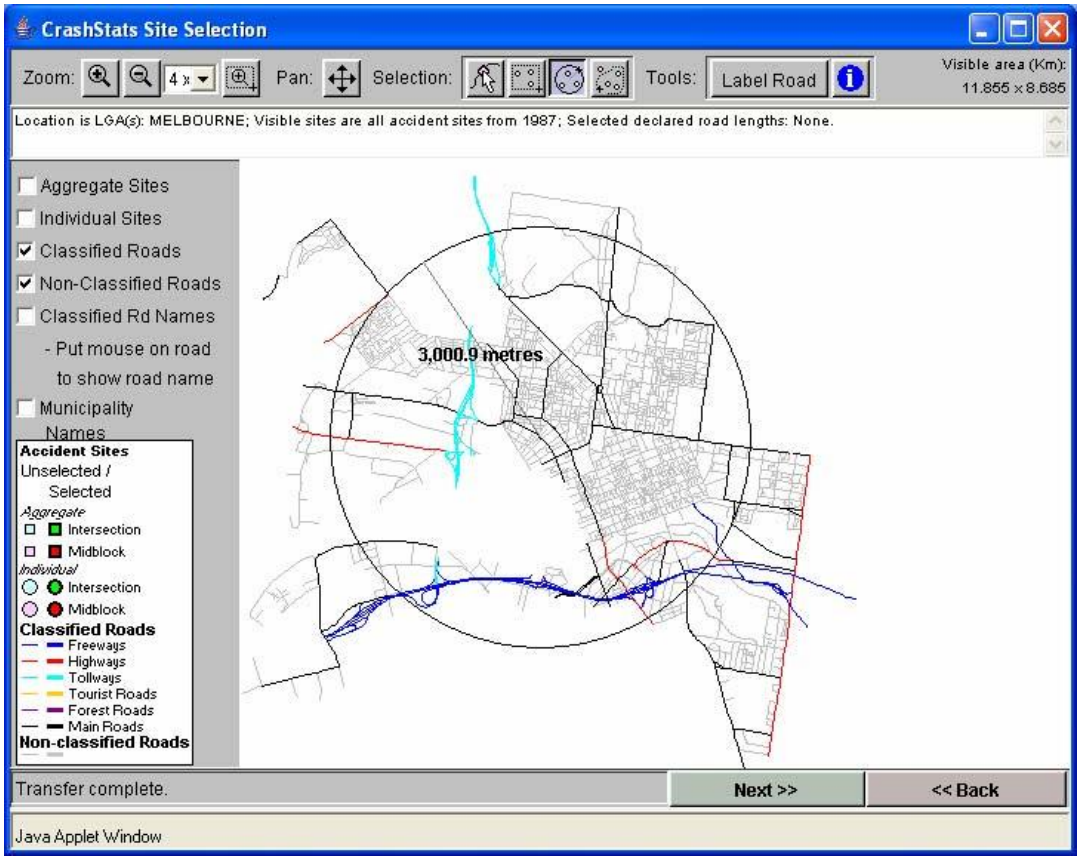
A collection of accident sites are displayed on the Site Selection map. Aggregate accident sites are displayed as (**Intersections**) and (**Midblocks**), using square symbols. Individual accident sites are displayed as (**Intersections**) and (**Midblocks**), using circle symbols.

The difference between aggregate and individual sites can be shown by the following example. 4 accidents have occurred on Abbott Street between the 2 adjoining intersections of Smith Street and Jones Road. These accidents are located respectively at 20m North of Jones, 30m, 40m and 50m. Choosing aggregate sites shows only 1 symbol and on the map

output window this has a “4” drawn inside it. Displaying / ticking the individual sites shows 4 symbols. On the map output window each has a 1 drawn inside it.

To select any accident site for a query, simply click the mouse on the site of interest.

When a site has been selected, it’s appearance changes. An **INTERSECTION**, when selected, appears as , and a selected **MIDBLOCK** appears as .



Screen Capture 14: Multiple Selections of Accident Sites and Road Lengths

Hint: To remove an individual site or road length selection from the map, simply click on the item again.

NOTE: Very occasionally mid-block sites close together can appear as one crash until zoomed in to an area of about 0.5 x 0.5 km

6.3.4 Area Site Selection Tools

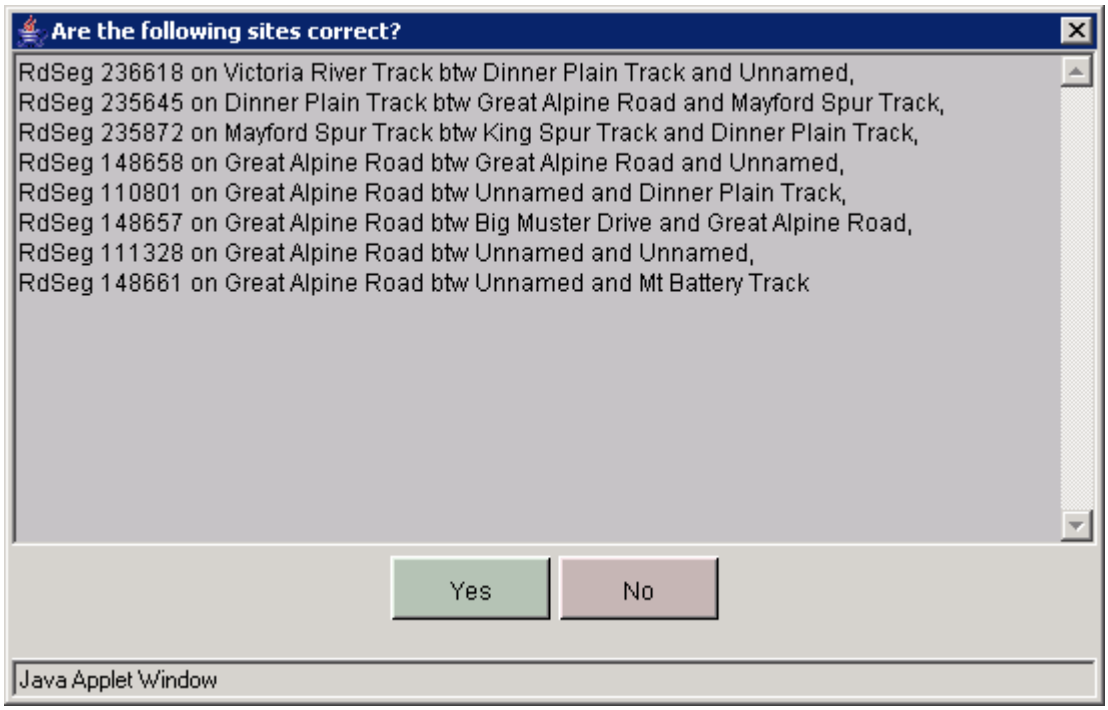
Click and drag a rectangle around an area of sites to select. Hold down **Ctrl** key to deselect sites within the rectangle.

Click and drag a circle around an area of sites to select. Hold down **Ctrl** key to deselect sites within the circle. See diagram above.

 Click and drag a freeform area surrounding a group of sites you wish to select. Hold down **Ctrl** key to deselect sites within the drawn area.

6.3.5 Exiting the Site Selection Map

Click the OK button after all selections have been made to go to the Query Menu. Before this occurs, a dialog will appear to confirm the selections.

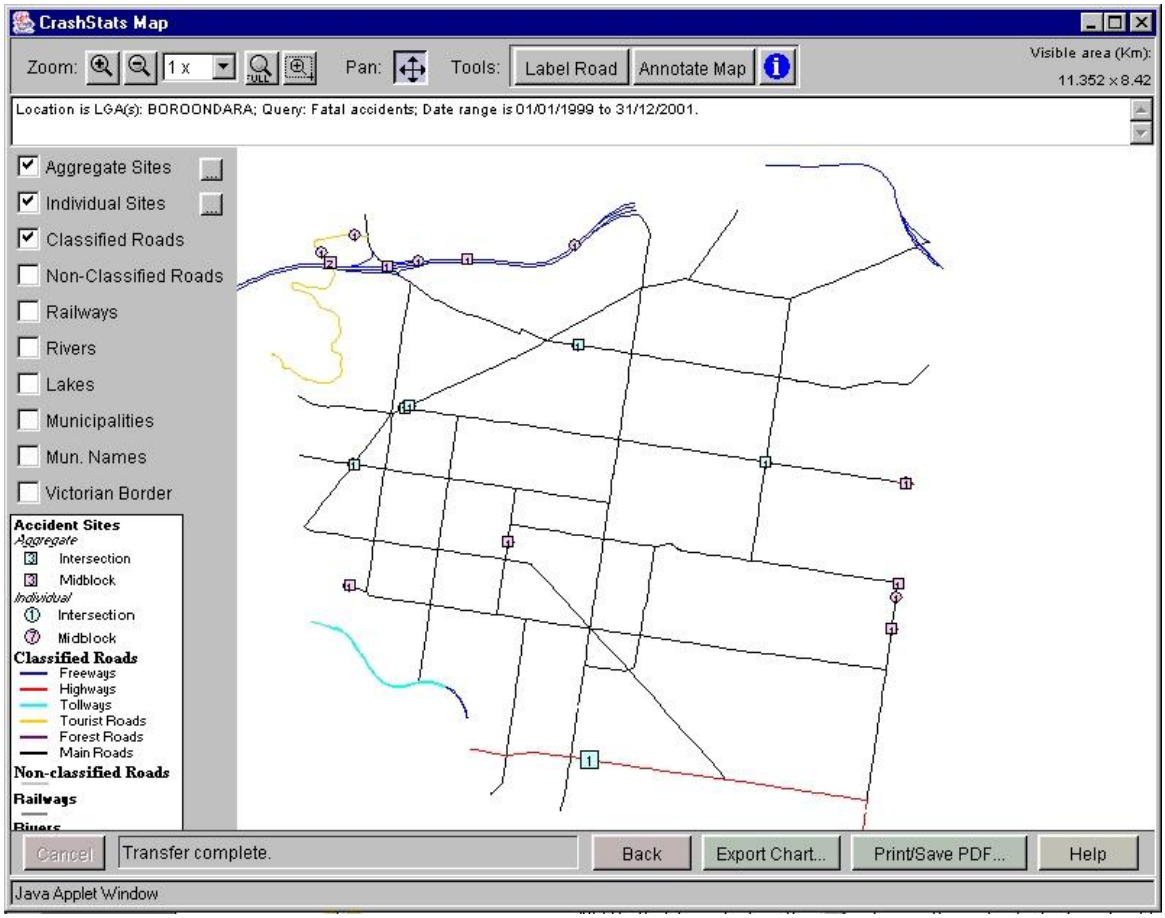


Screen Capture 15: Confirmation of Selections

Choose ***Yes*** to continue, or ***No*** if the selections are inadequate.

6.4 Viewing Query Results in a Map

After the ***Map*** Button has been pressed in the Query Result screen, a map will be displayed of the area in Victoria the query was performed on. The map may be navigated using the Basic Features (described earlier) to help identify specific data.



Screen Capture 16: Map of Query Results

6.4.1 Individual Accident Sites

Individual accident sites are represented on the map by a bubble containing a figure. The number of accidents is the figure that is displayed within the bubble.

NOTE: that by selecting the option in the individual sites checkbox you can alter the circle sizes to suit your presentation needs.

6.4.2 Aggregate Accident Sites

Accident sites are represented on the map by a square containing a figure. The accident site square is blue if it is an intersection or pink if it is a mid-block site. The size of the square is proportional to the number of accidents.

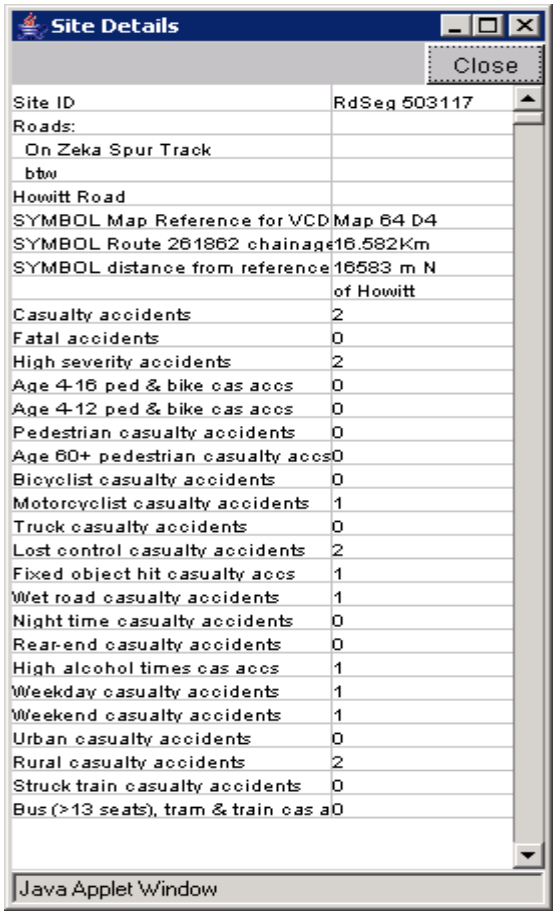
Again note by selecting the option in the aggregate sites checkbox, you can alter the circle sizes to suit your presentation needs.

6.4.3 Label Road

The ***Label Road*** mode allows the user to click on roads to label them. Click again on the dot of existing road name labels to remove them.

6.4.4 Information on Accident Site


To get detailed location and accident type details for an accident site on the map, the  button must first be selected. The user can then click on the accident site of interest and a dialog will be displayed containing a summary of the accidents that have occurred at the site. The accident site is represented by a bubble containing a value (number of accidents for the site).



Screen Capture 17: Site Details

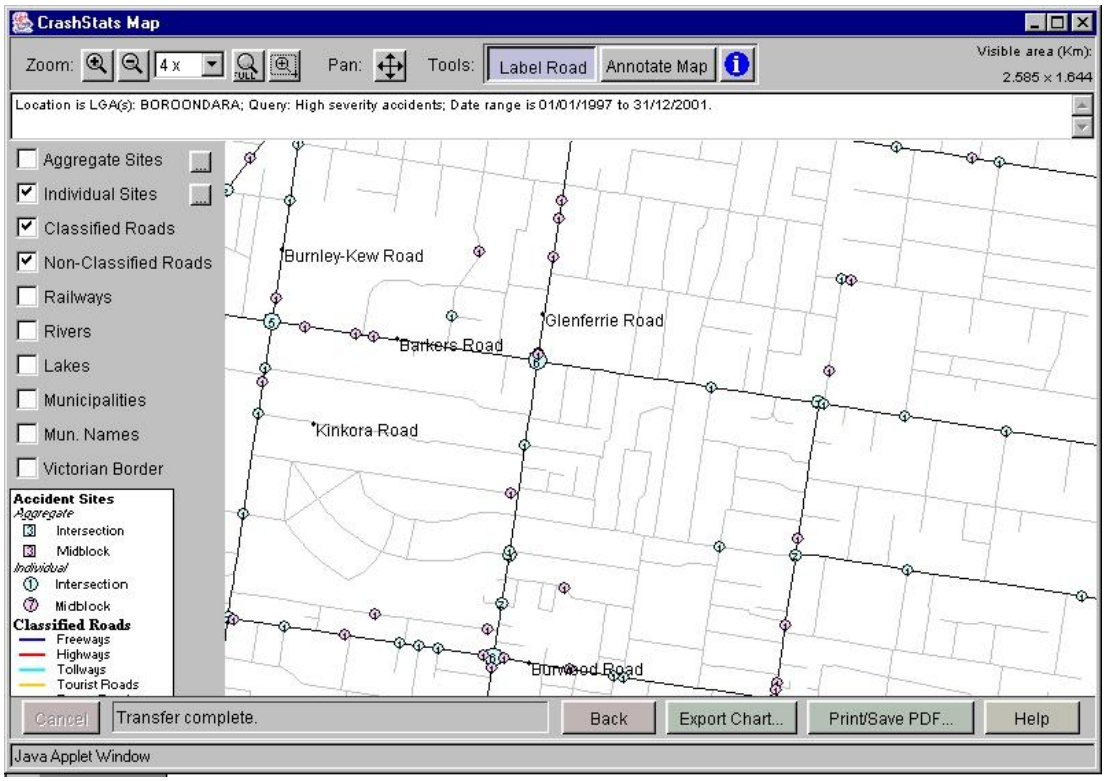
Once finished with the Site Details, click the ***Close*** button.

6.4.5 Annotating a Map

The Map of Query Results allows the user to provide his or her own comments, extra titles etc., to the data displayed on a map. To do this, first click on the ***Annotate Map*** button, and then click on the position of the map to display the annotation.

After clicking on the desired position of the map for the annotation, a small dialog will appear with space for entering your text. Type in some text and then press the ***OK*** button, or press ***Cancel*** to quit the operation.

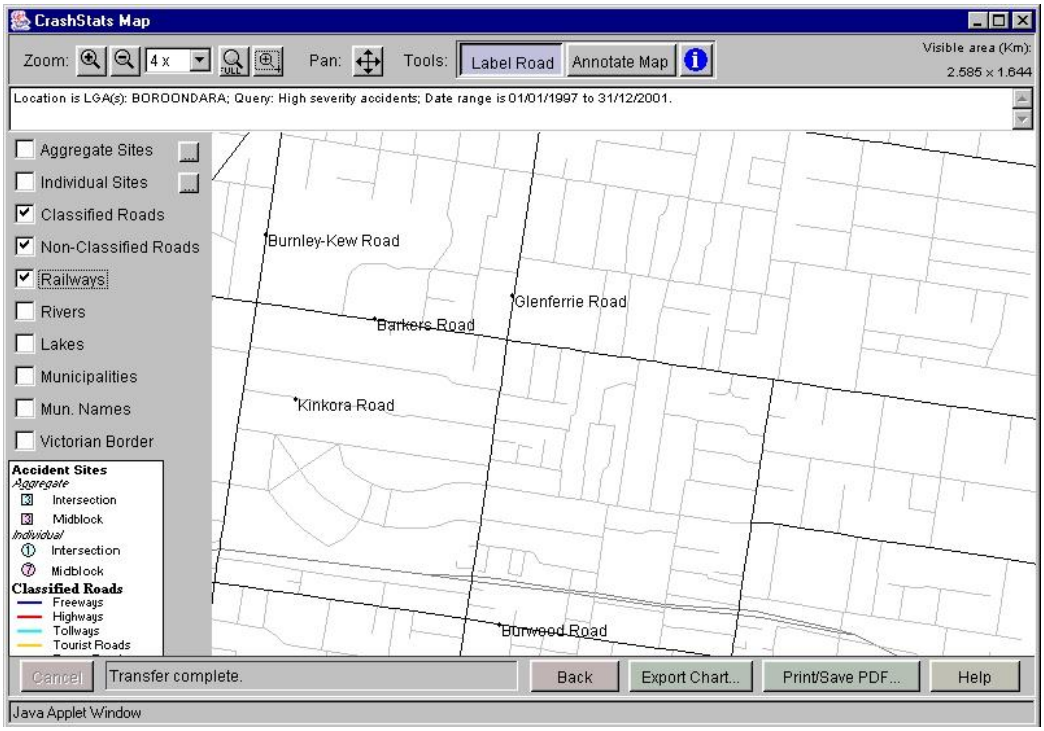
NOTE: 3 font options are available here. If the ***OK*** button was clicked, the new annotation will appear on the map in the selected location.



Screen Capture 18: Query Results with Annotation (centre of map) and labeled Roads

6.4.6 Manipulating the Query Results Map

To the left of the results map is a list of checkboxes that can be used to show or hide map-related data. The user can choose to display Railways, Rivers, Lakes, Municipalities and the Victorian Border on the map, as well as the default Accident Sites and Classified Roads. This provides a useful way of managing the data and the sort of presentation that is displayed on a printed copy of a map, as well as providing the user with extra information about the area that they are viewing.



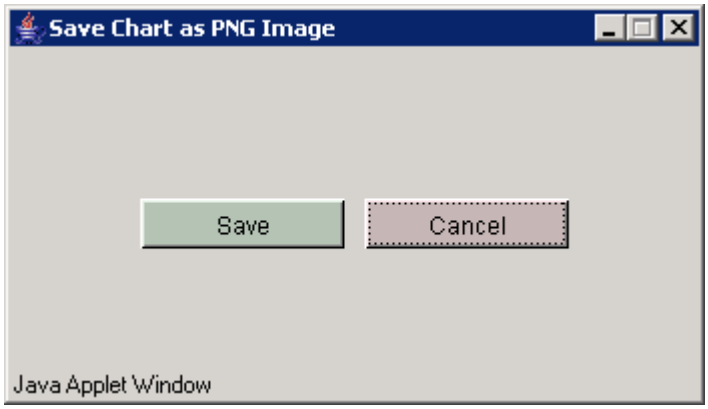
Screen Capture 19: Map of Query Results with only roads and railways showing

6.4.7 Printing a Map of Query Results

To print the current information displayed in the **Map Window**, simply click on the ***Print/Save PDF*** button. A PDF format of the map will be generated at the server and sent to the client in a new browser window. Select print from the browser window's file menu to print the results.

6.4.8 Saving a Map of Query Results

CrashStats allows the saving of maps as Portable Network Graphics (PNG) images. Most popular paint packages and Microsoft products can load PNG images.
To save the current map, click on the ***Export Chart*** button. This will display the following dialog:



Screen Capture 20: Save As Dialog

Click ***Save*** to open the map will appear in a new browser window and then right click on the image from inside the browser and select "*Save Picture as..*". Click ***Cancel*** to abort saving the map.