NZ TRANSPORT AGENCY
WAKA KOTAHI

# Road Safety Reporting

# Help File

This document describes the workings of the Road Safety Reporting Tool.

This document is accessible directly through the Road Safety Reporting Tool, it is recommended to also save a copy to your computer as reference.

# Contents

# 1 Introduction

The Road Safety Reporting Tool generates reports containing tables and graphs based on selected crashes.

All relevant crash data over the last 5 years is available to create graphs and tables.

The tool is an Excel workbook. The workbook contains a macro that automatically runs when the workbook is opened.

# 2 Reporting on Crashes versus Persons

The tool settings allow you to select crashes. It does not allow you to select which persons are involved in the crash. The user needs to specify which crashes it wants to see and then run the report. **After running the report** it can be analysed in different ways (including which persons where involved).

Once the report has been run, the persons associated with your selected crashes will be reported on.

To allow the program to run properly it is necessary to **close all Excel applications.**

# 3 Starting up

The tool will start automatically after the link on the SmartMovez web site is selected.

## *a. Opening/Saving the Tool*

After clicking on the link the user has to decide of it wants to Save or Open the application.

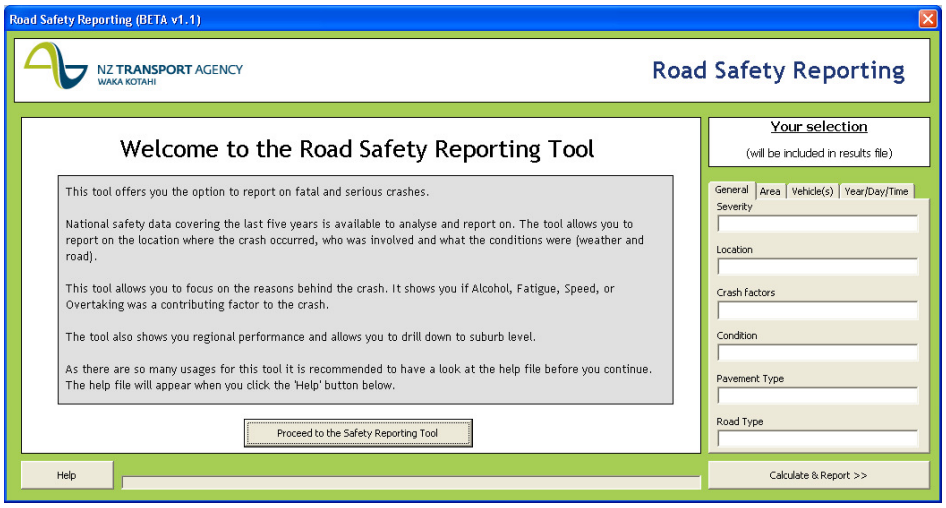
1. If the user chooses Open the tool will run on the internet and will extract data from the NZTA central server for each set of graphs and tables.
2. If the user chooses Save a copy of the tool will be downloaded on the user's personal computer. Although the tool will work fine, the data that is used for the graphs and tables is static and cannot be updated. There is a risk that outdated information is used as the information tends to change over time (at least once a year).

It is recommended to Open the application as this will ensure the latest data is used for all graphs and tables.

**Note:** After clicking 'Open' or 'Save' the user might be asked to 'enable Macros'. This is dependent on the settings of the security level of the user's computer. The tool will only function if the Macros are enabled.

## 4 Welcome Screen

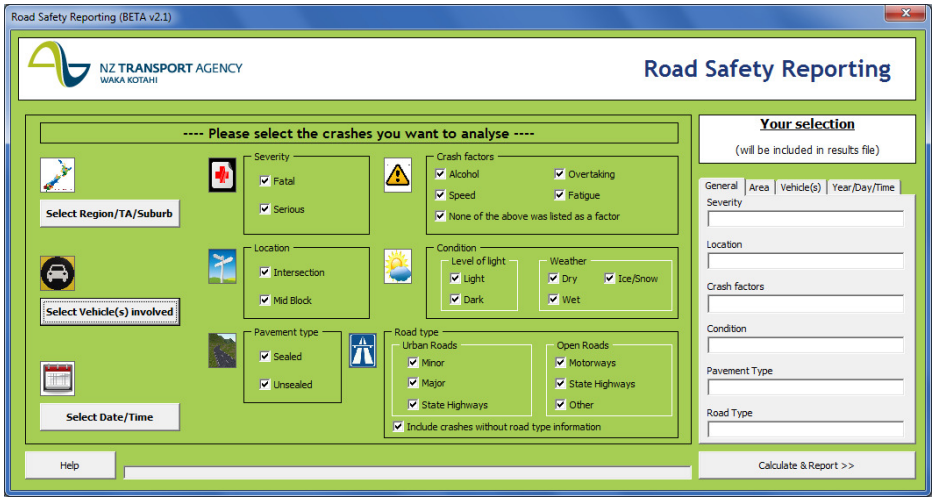
When the Tool is first opened the following screen will appear:




This is screen offers some basic information on the functionality of the tool. After reading the introductory text the user can proceed by clicking the centre button.

## 5 Selecting Crashes

The user can now set different parameters to specify which crashes should be included in its results file.




The left hand side of the screen can be used to set the different parameters.

The right hand side of the screen will show the selection made once the user is satisfied with its choice and has pushed the 'Calculate & Report button.

**Tip:** The 'Your Selection' section on the right will stay visible while the user analyses the data and is included in reports.

### *a. General Settings*

- **Severity**

  Filters crashes based on severity (Fatal and/or Serious).

  A crash with fatalities is considered a fatal crash and not as a serious crash (even if there were also persons seriously injured in the fatal crash).

  A crash with seriously injured casualties is considered a serious crash (that is, if there were no fatalities in the crash).

- **Crash factors**

  For each crash a record is held of the factors contributing to the crash (Alcohol, Overtaking, Speed, and Fatigue). The user can select crashes that comply with a certain factor.

  Including 'None of the above was listed as a factor' will include all crashes that had none of the four factors listed.

  **Tip:** Excluding a crash factor does not automatically mean no crashes with that factor will occur in the result as a crash often has multiple factors associated with it. Only crashes with the excluded factor and no other factor will be excluded.

  Example: Excluding 'Overtaking' (still including all other factors) will result in a list of crashes that have at least one of the other factors. An included alcohol related crash could **also** have 'Overtaking" as a factor.

- **Location**

  Filters crashes based on location of the crash (Intersection or Mid Block (non intersection)).

- **Condition**

  Filters crashes based on level of Light (Dark/Light) and weather condition (Dry, Wet, Snow/Ice, or Unknown).

- **Pavement Type**

  Filters crashes based on pavement type (sealed or an unsealed road).

- **Road Type**

  Filters crashes based on road type (urban roads (minor/major/state highway), open roads (motorway, state highway, other).

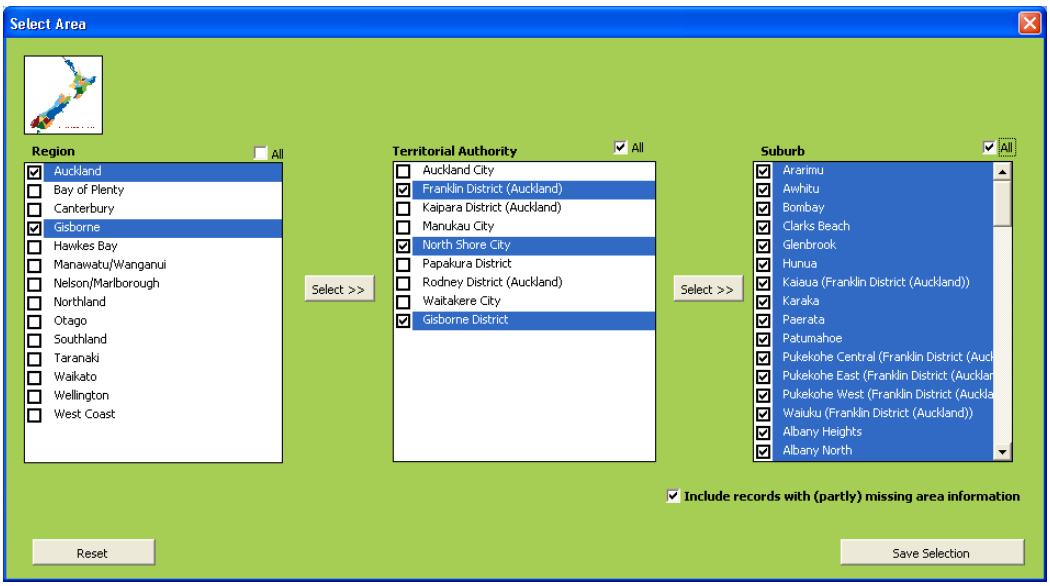
  **Tip:** Urban roads are defined as roads with a speed limit of 70 km/h or less. This can be in a rural environment (for example around a school).

  **Tip:** Other open roads are all roads with a speed limit of 80 km/h or higher (excluding state highways and motorways).

  **Tip:** There are a number of crashes without specified road type. If you want to include those please tick the "Include crashes without road type information" checkbox.

### *b. Select Region/TA/Suburb*

The user can specify which area it wants to include in its calculations. The output will only contain crashes that occurred in the specified Suburbs.




**Tip:** Default the whole of New Zealand is included.

The tool will ask you to first select one or more regions.

Based on the selected regions the Territorial Authority box is populated.

Based on the selected Territorial Authorities the suburb box is populated. Default all of the TAs are selected.

The next and last step is to select one or more suburbs. Default all of the suburbs are selected

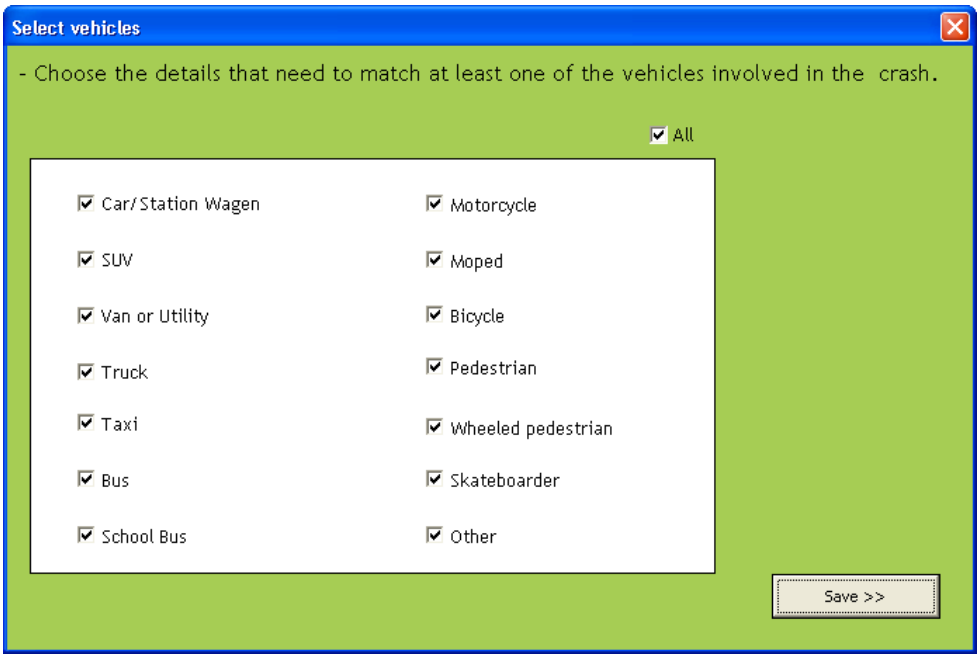
**Tip:** Some of the TA entries have their region in brackets included. The tool adds this information if the Territorial Authority appears in more than one region. For example Franklin District covers part of Auckland and the Waikato and the Bay of Plenty regions.

A checkbox on the bottom right allows you to 'include records with (partly) missing area information'. Records with missing fields (either for Territorial Authority or Suburb as the Region information is always available) will be included. If only partial information is available it will only be included if the available parts of the data match the selected TA or Suburb.

**Tip:** The user needs to select suburbs to include before the selection can be saved

### *c. Select Vehicle*

The user can select crashes based on what vehicles were involved. The output will show all crashes that involved at least one of the selected vehicle types.

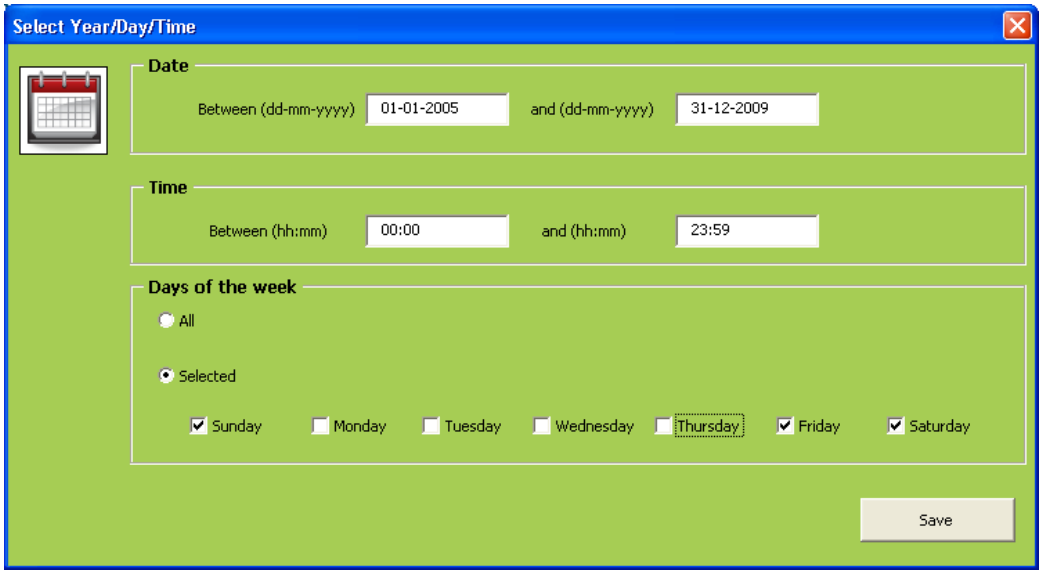



**Tip:** The user cannot exclude certain vehicles by not selecting the vehicle type. Unselecting the vehicle type will only exclude those crashes that did not involve that vehicle type or any of the selected ones.

Example: All vehicle types are selected except SUV. All crashes including **any** of the selected vehicles will be included. A crash involving a Taxi and a SUV will be included while a collision between SUVs only is excluded.

### d. Select Date/Time/Day

The user can select crashes based on what date and or time period the crash occurred. Furthermore the user can select specific days of the week it wants to include.




- The date needs to be in “dd-mm-yyyy” format.
- The time needs to be in “hh:mm” format, with 00:00 being start of the day and 23:59 being the end of the day.
- Days of the week will be shown only when ‘selected’ option is chosen.

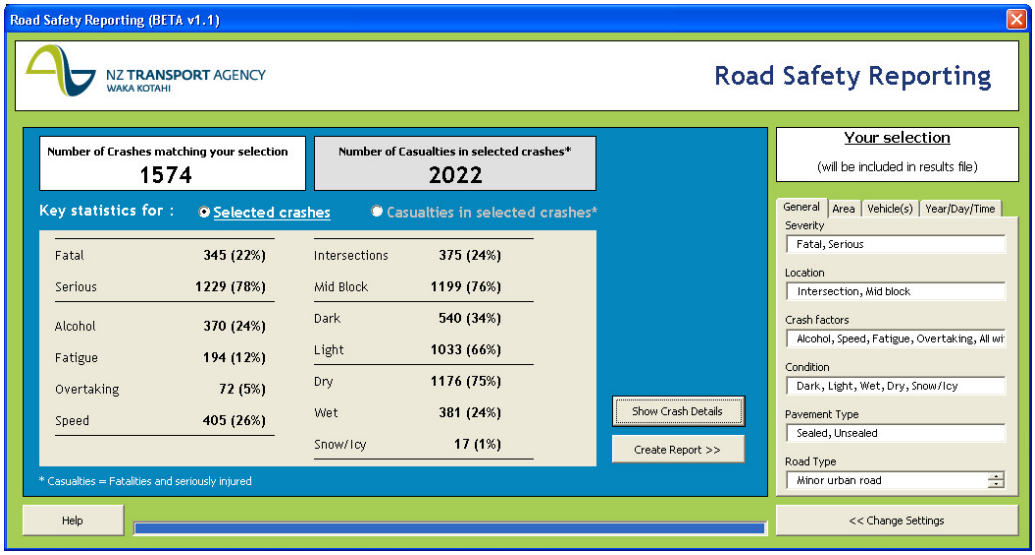
### e. Create Report

Once the user is satisfied with its selection the Calculate & Report button can be used to filter the required fields out of the database.

A progress bar on the bottom of the screen will show at what stage the process is.

# 6 Results Screen

After running the report the Result Screen will appear.




## a. Key statistics

The result screen shows key statistics for:

- Number of Crashes matching the selection

- Number of Casualties (fatalities and seriously injured) in selected crashes

Tip: It is important to note again that **casualties do not have to match the parameter settings for the crash.**

Example 1: Fatal crashes can have seriously injured casualties as well as fatalities.

Example 2: Assume only crashes involving motor cycles were selected. Fatalities/Casualties can be in any vehicle involved in a crash. The crash itself involves at least one motorcycle it does not imply any of the casualties was on the motorcycle.

**The key statistics for crashes** are actual values and percentages of:

- Fatal, Serious
- Alcohol, Fatigue, Overtaking, Speed

**Tip:** Percentages can add up to more than 100% as crashes can have multiple factors (for example: a crash has alcohol and speed as factors)

- Intersection, Midblock
- Dark, Light
- Dry, Wet, Snow/Icy

**The key statistics for casualties in selected crashes** are actual values and percentages of:

- Fatal, Serious
- Alcohol, Fatigue, Overtaking, Speed

**Tip:** These factors are only recorded for all drivers involved in the crash.

**Tip:** Percentages can add up to more than 100% as casualties can have multiple factors (for example alcohol and speed)

## b. Show crash details

A full table of all crashes complying with the user's selection is shown and can be saved.

The columns relating to injuries, type of vehicles involved in the crash and factors associated with the crash are in a format of data strings separated by '|'. This allows multiple injuries, vehicles, and drivers to be entered in singular columns. The order of the data is consistent over the different columns.

Example: If column injury shows 'Serious|Minor' it means that of the two recorded injuries one was serious and one was minor. It the column type shows 'Pedestrian|Car/Station Wagon' it means that one pedestrian was involved and one Car/Station Wagon. Looking at the order the information appears it means that the pedestrian was seriously injured, the driver of the car had minor injuries (the driver is always included even without injuries)

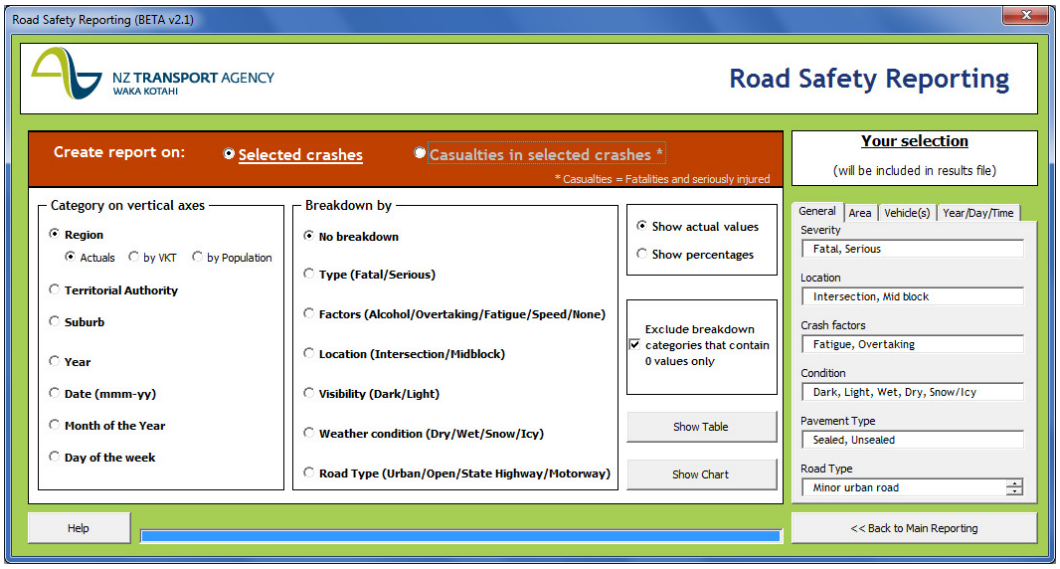
| Column header | Description |
|---|---|
| crash_id | Unique number of the crash |
| Region | Name of the region the crash occurred in |
| Tla | Name of the territorial authority the crash occurred in (might be blank) |
| Suburb | Name of the suburb the crash occurred in (might be blank) |
| int_mid | Either Mid block or Intersection |
| Light | Dark/Light |
| Condition | Wet/Dry or Snow/Icy |
| date_time | Date and time of the crash in format yyyymmdd hhmm |
| Injury | Injuries of all casualties (+ uninjured drivers) |
| Type | Type of vehicle each of the injured/non-injured person where in |
| Alcohol | Driver(s) responsible for association of alcohol as a factor to the crash |
| Overtaking | Driver(s) responsible for association of overtaking as a factor to the crash |
| Speed | Driver(s) responsible for association of speed as a factor to the crash |
| Fatigue | Driver(s) responsible for association of overtaking as a factor to the crash |

| | |
|---|---|
| Surface | Sealed/unsealed |
| road_class | Open road/Urban road (SH, Motorway, etc.) |

The button 'create report' brings the user to the third and final screen.

# 7 Create Report Screen

The third and final screen provides the user different options to interrogate its results. The selected crashes can be broken down and/or bundled in different ways to allow the user to create charts and tables it needs.




## a. Create Report on crashes or casualties

For reporting purposes the user can select to generate reports on number of crashes or number of casualties. As stated earlier the casualties are included that resulted from the selected crashes. Only fatalities and seriously injured are included.

## b. Category on vertical axes

The user can bundle its results based on the following settings (this will appear on the vertical-axes):

1. By Region
    a. Actuals (number of crashes/casualties)
    b. By VKT. Actuals are divided by regional Vehicle Kilometres Travelled to provide a better comparison between regions
    c. By Population. Actuals are divided by regional population to provide a better comparison between regions

**Tip:** To ensure a realistic comparison between regions the user needs to be aware it included the entire regions it wants to analyse. If only part of region **A** and the entire region B is included the by VKT and by Population charts will misrepresent the outcome.

2. By Territorial Authority (showing the Territorial Authority the crashes occurred)
3. By Suburb (showing the suburbs the crashes occurred)
4. By Year (showing the year the crashes occurred)
5. By Date (showing the month and the year the crashes occurred)
6. By Month of the Year (showing in which month of the year crashes occurred, all years aggregated by month)
7. By Day of the Week (showing on which weekday crashes occurred, all dates included in the analysis aggregated by day of the week)

### c. Breakdown by

The 'breakdown by' option will break down the results in the bar chart.

Each category (as chosen before on the y axes) will be broken down in a so called "stacked bar" based on the users input.

1. No breakdown, chart will show all crashes aggregated for chosen y-axes category
2. Type (fatal/serious), chart will separate crashes by type
3. Factors (alcohol/Overtaking/Fatigue/Speed/None), chart will separate crashes by factor
4. Location (Intersection/Midblock), chart will separate crashes by location
5. Visibility (Dark/Light), chart will separate crashes by visibility
6. Weather condition (Dry/Wet/Snow/Icy), chart will separate crashes by weather condition
7. Road Type (Urban/Open/State Highway/Motorway), chart will separate crashes by road type

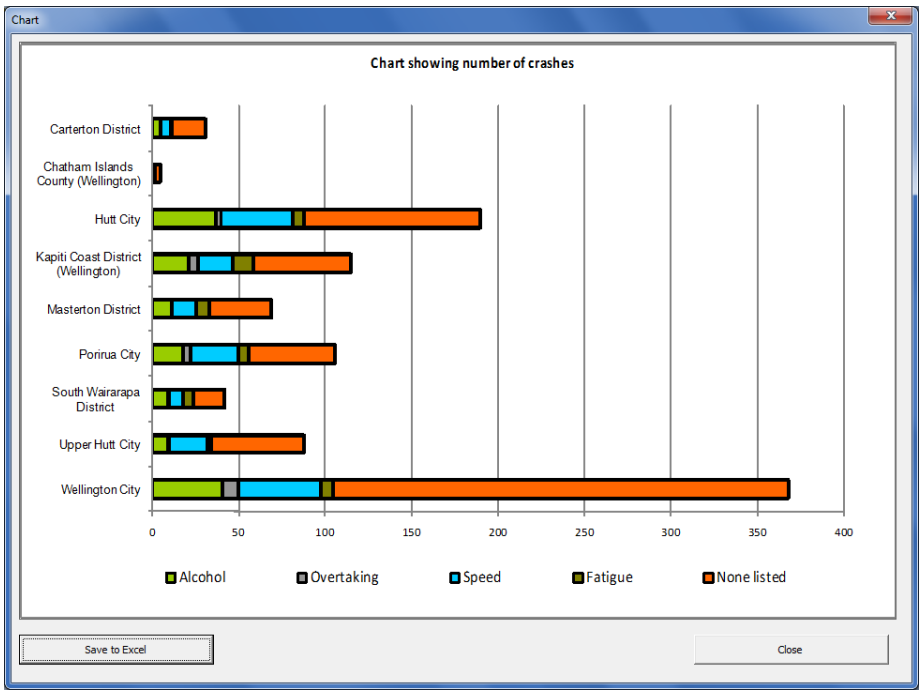
**Tip:** It is not possible to break down your results by two of the listed options at once. It is advised to run results for a subset and then apply the breakdown. For example if you want to see crashes by location and what the weather conditions on those locations where you'll need to run the tool including only Intersections and break down the results by weather condition **and then run the result again** for Midblock and breakdown that result by weather condition

## d. Actuals or percentages

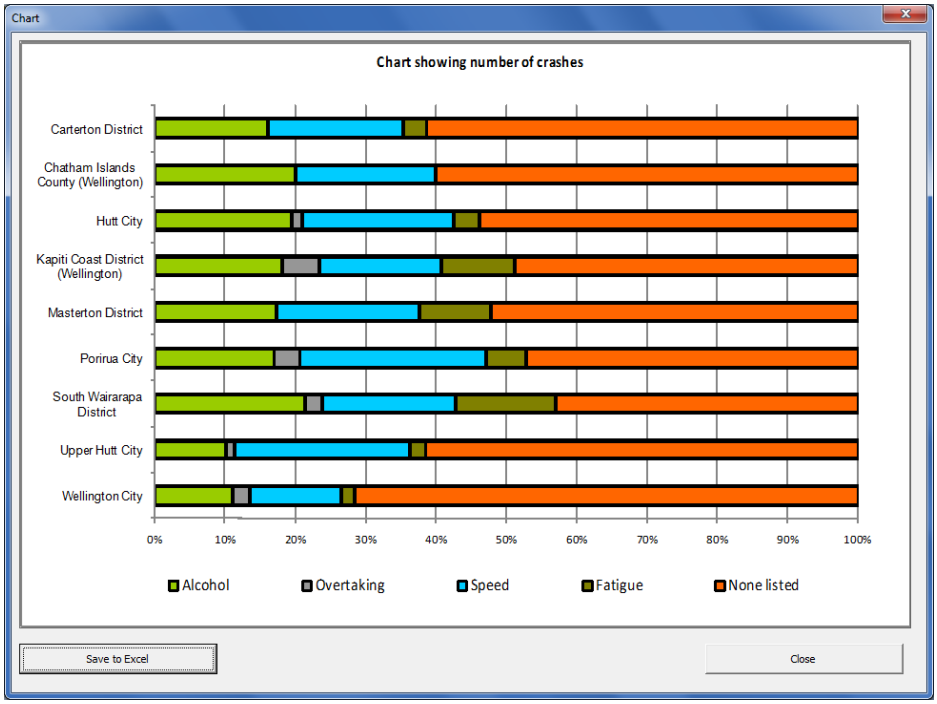
The user can choose to represent the outcomes as actual values or as a percentage.

The percentage relates to the breakdown. The stacked bars will always add up to 100% when the percentage option is chosen.

Below is an example of a chart based on **actual numbers**:




Below is an example of a chart based on **percentages** (based on the same data):



### e. Exclude 0 values

If the user ticks the box 'Exclude breakdown categories that contain 0 values only' the output will no longer contain any breakdown categories that have only 0 values.

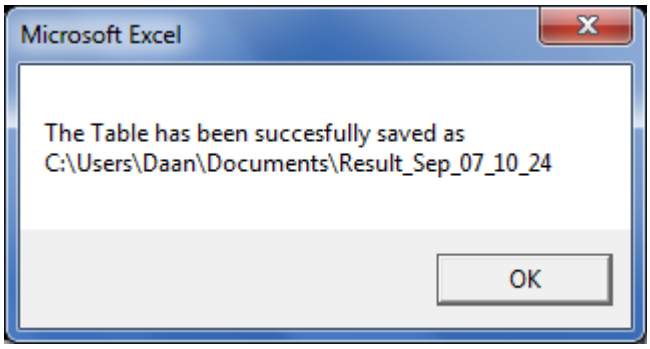
### f. Show Table/Chart

The user can select if it wants to see the data in tabular form or as a chart. The user can preview the information by clicking on the show table or show chart button. The chart or table will then be shown in a separate window and can be saved to Excel.

**Saving to Excel**

The table and/or chart will be saved in your default document directory. You do not need to specify the path, the tool will look for it itself.

After saving a message will appear showing you the location of the saved file.




**Tip:** While the tool is running you cannot open any other Excel documents. If you want to open your result file make sure you close the Safety tool first.

The newly created Excel document will contain a table or a graph and will also have a sheet with the selection the user used for running the results.

## 8 After Closing the Application

When the user is finished using the application it can be terminated by clicking the 'Close' button or the cross in the right top corner.

Dependant on the settings on the computer the user will be asked to save any changes in the workbook. The No button should be selected as the workbook should not be altered.

Note: **Make sure you close Excel before you run the application again**.

# 9 Data Sources Used

The most up-to-date information from CAS database is used for all calculations. Each quarter the data in the tool is automatically updated. The created graphs/tables are therefore always based on the most recent data.

The population used for the Regional scaling is directly extracted from the Statistics New Zealand Web Site (2009 numbers).

The VKT used for the Regional scaling is directly extracted from the RAMM database (2009 numbers).

# 10 Author

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