



# A GUIDE TO USING THE CRASH ANALYSIS SYSTEM

5 March 2024

Version 3

--

## **Copyright information**

Copyright ©. This copyright work is licensed under the Creative Commons Attribution 4.0 International licence. In essence, you are free to copy, distribute and adapt the work, as long as you attribute the work to Waka Kotahi NZ Transport Agency and abide by the other licence terms. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## **Disclaimer**

Waka Kotahi has endeavoured to ensure material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. Waka Kotahi does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should refer directly to the relevant legislation and contact Waka Kotahi.

## **More information**

Waka Kotahi NZ Transport Agency  
[Published August 2023](#)

If you have further queries, call our contact centre on 0800 699 000 or write to us:

Waka Kotahi NZ Transport Agency  
Private Bag 6995  
Wellington 6141

This document is available on Waka Kotahi NZ Transport Agency's website at [www.nzta.govt.nz](http://www.nzta.govt.nz)

## Contents

Copyright information .....	2
Disclaimer .....	2
More information .....	2
<b>1. INTRODUCTION .....</b>	<b>5</b>
What is the Crash Analysis System .....	5
What this guide covers .....	5
How does the Crash Analysis System work?.....	5
<b>2. GETTING STARTED.....</b>	<b>6</b>
Screens in CAS reporting application .....	6
The landing page.....	6
The dashboard .....	6
The main screen – the query builder screen .....	7
The main steps in using the CAS reporting application .....	7
<b>3. CREATING AND USING QUERIES .....</b>	<b>8</b>
What this chapter covers .....	8
How to create and run a query.....	8
Viewing results .....	12
Find and edit a query.....	12
<b>4. USING THE MAP .....</b>	<b>13</b>
CAS map .....	13
Tooltips.....	14
Themes .....	15
Severity .....	15
Natural light.....	16
Primary surface condition (wet/dry).....	16
Crash type (simple/complex).....	17
Base maps.....	18
NZTA generic.....	18
Dark grey.....	18
NZTA imagery .....	19
NZTA grey base map .....	19
NZTA terrain.....	19
Map symbols.....	20
Clusters and crash pins.....	20
Clusters .....	20
Crash pin.....	20
Map crash pins and traffic crash report.....	22
CAS users Level 2 and above can access the Traffic Crash Report.....	22

<b>5. POLYGONS .....</b>	<b>24</b>
Create polygons to save as a site .....	24
Use CAS polygons .....	24
How to delete polygons .....	25
Save a site .....	26
<b>6. CAS REPORTS .....</b>	<b>27</b>
How to access CAS reports and an overview of reports available in CAS .....	27
Coded reports .....	29
Plain english report .....	34
Site summary .....	37
Site details report .....	38
Tabulations .....	39
<b>7. GROUPINGS .....</b>	<b>42</b>
Different ways you can group crashes .....	42
Grouping by intersection .....	43
Grouping by proximity .....	43
Grouping by selection .....	44
How to group crashes .....	44
Grouping control – by intersection .....	47
Grouping control – by proximity .....	48
Grouping method – by selection .....	49
<b>8. COLLISION DIAGRAMS .....</b>	<b>51</b>
Five steps to create a collision diagram .....	51
Collision diagrams - shows crashes grouped by movement code .....	51
Collision diagrams – use collision diagram tools .....	52
Collision diagrams – use the legend to turn icons on or off .....	53
<b>9. SYSTEM HINTS .....</b>	<b>54</b>
To clear results from the map or the reports before creating a new query .....	54
To navigate between the query builder and map or reports view on a smaller screen .....	54
To see the attributes, query builder and map on one screen .....	54
To zoom into a map or collision diagram .....	54

---

# 1. Introduction

---

## **What is the Crash Analysis System**

The Crash Analysis System (CAS) is a system for processing storing and presenting data about crashes that have been reported to New Zealand Police since 1 January 1980.

## **What this guide covers**

This guide shows you how to use the CAS Reporting Application, so it is only useful if you have access to the CAS Reporting Application.

## **How does the Crash Analysis System work?**

New Zealand Police send data relating to crashes to Waka Kotahi. This data is collected in two ways:

- On a handheld device by a Police officer attending a crash; or
- On a form (paper or electronic) filled in at the front counter of a Police station (watch house).

The data is stored in a database. Waka Kotahi staff members add codes to the data to aid analysis. The processed data is then stored in a data warehouse. The CAS Reporting Application sends queries to and receives data from the data warehouse and then presents crash information in the form of a map or various reports and extracts.

---

## 2. Getting Started

---

### Screens in CAS reporting application

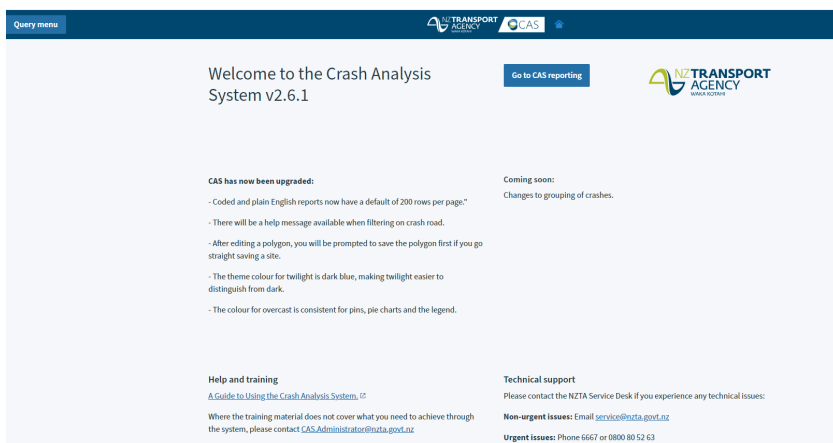
#### The landing page



This is the “login screen.” From time-to-time it will contain special messages such as notices of outages.

To log in, click on the ‘Go to login’ button. (Waka Kotahi staff may be logged in automatically). What is the Crash Analysis System

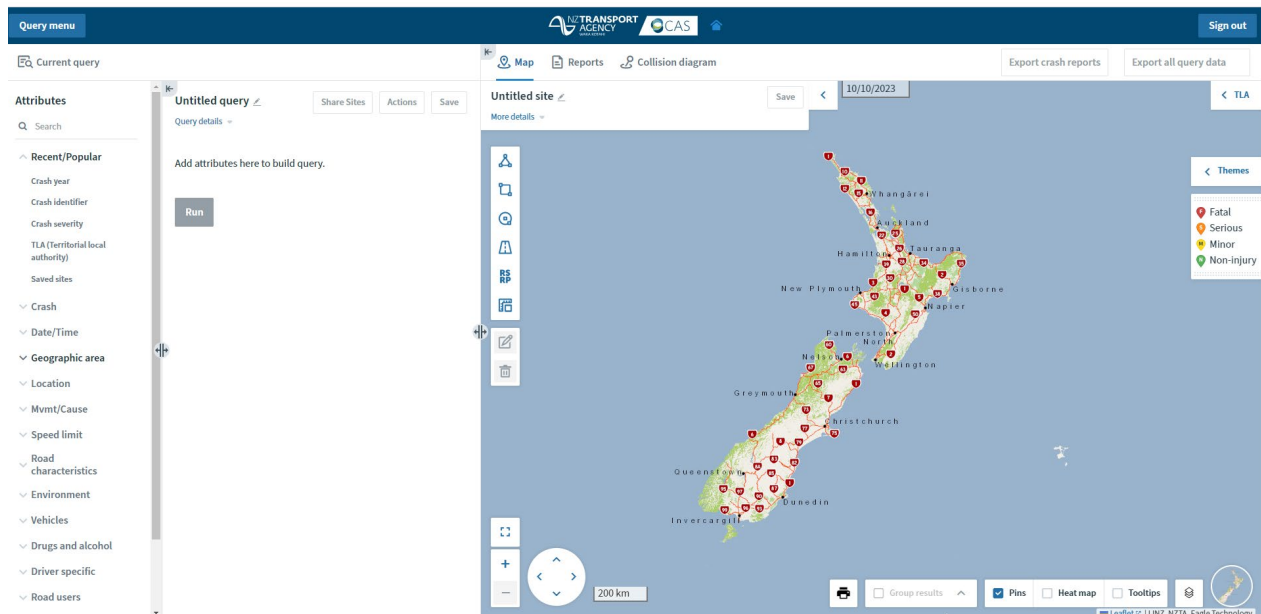
#### The dashboard



This is the “welcome screen”. It contains information about recently introduced changes and upcoming changes as well as where to get help. From time-to-time it will contain special messages such as notices of outages.

To start using the CAS Reporting Application, click ‘Go to CAS Reporting’.

## The main screen – the query builder screen



This screen is where the “action happens.” It is really four screens in one, each different screen being activated by clicking on the ‘Current query,’ ‘Map,’ ‘Reports’ or ‘Collision diagram’ tabs.

### The main steps in using the CAS reporting application.

1. Create a query. (This may involve creating a site on the map).
2. Run the query.
3. Look at the results using the map, reports and/or collision diagram.

---

## 3. Creating and Using Queries

---

### What this chapter covers

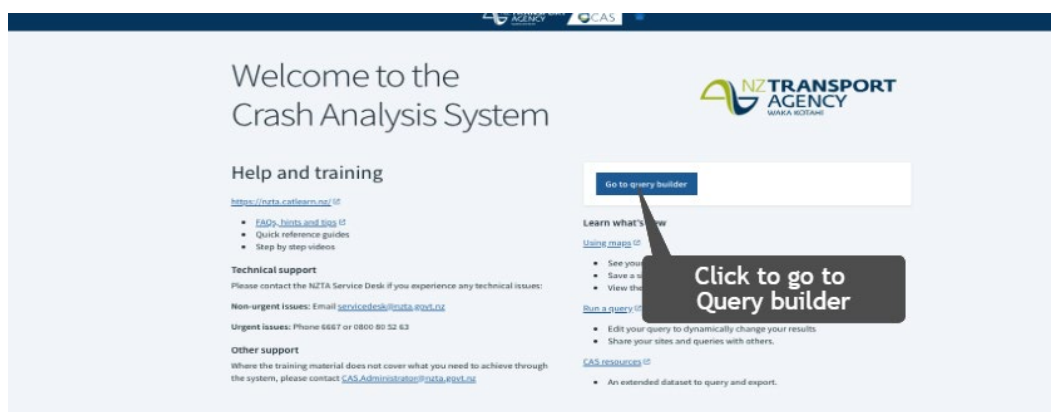
This chapter covers:

- How to create and run a query
- Viewing results
- Finding and changing existing queries

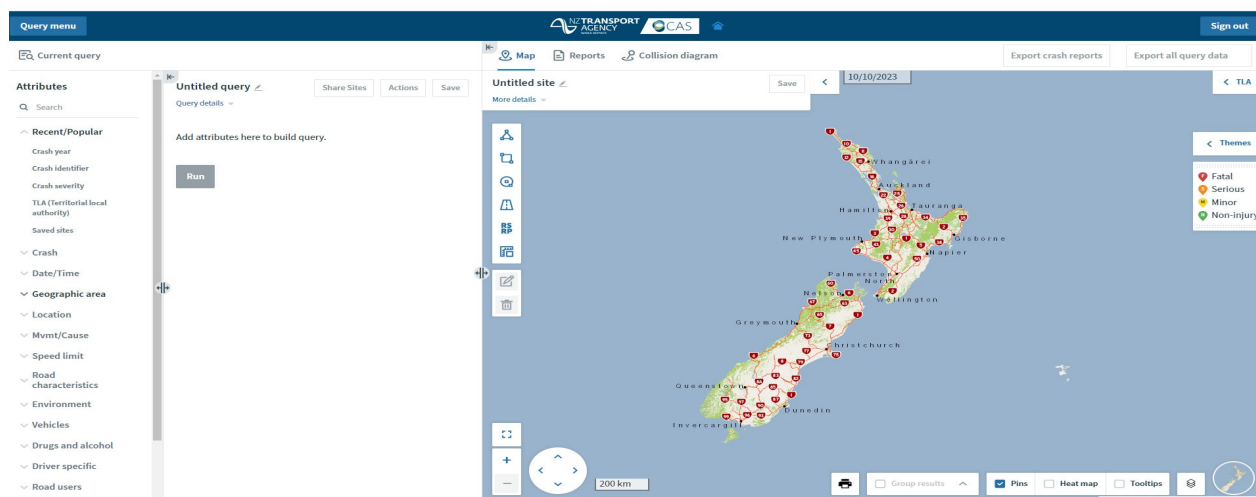
### How to create and run a query

What follows are the steps to create a query about serious crashes that happened in the dark during June 2017.

1. Log in to CAS.
2. The dashboard appears:

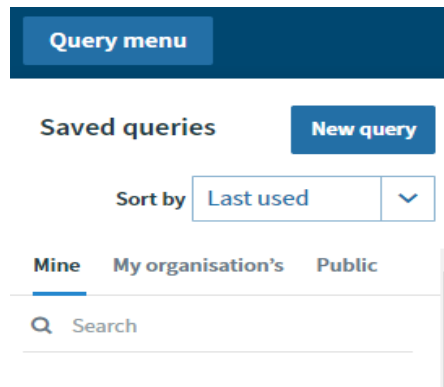


3. Click on 'Go to query builder.'
4. The main (query) screen appears:





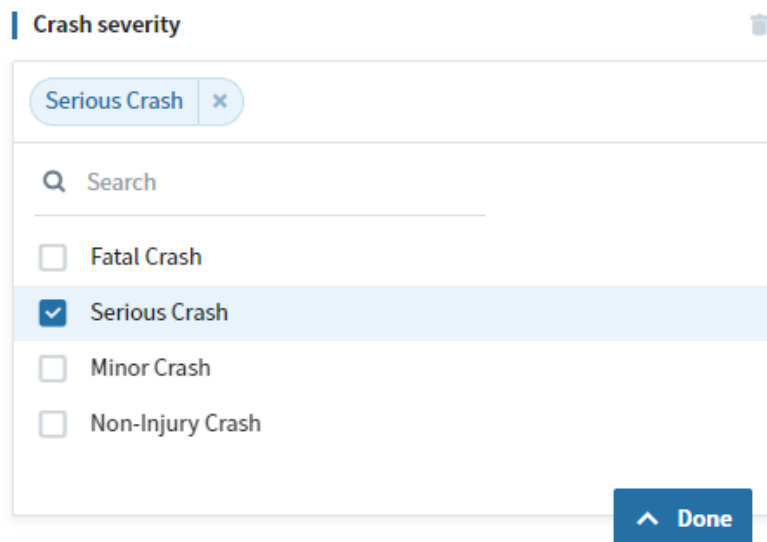
5. On the Left top corner, you have Query menu:



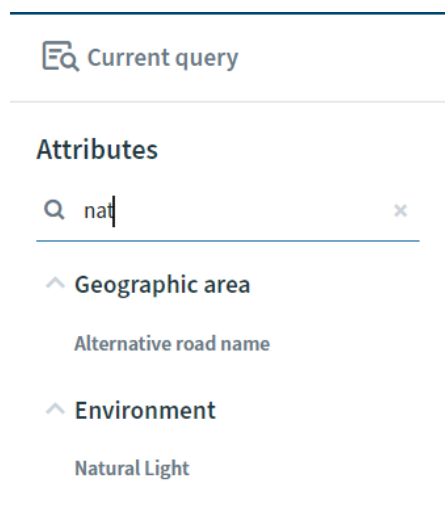
6. Click on 'New query' (if you don't already have a query you don't have to do this).
7. In the column under Current query click on Crash and then Crash severity. Note that some of the attributes that you use often may appear under the Recent/popular heading.
8. Crash severity now appears on the middle panel:



9. To specify the value(s) of severity you want, click on '+'.
10. Select the value you want (Serious crash):



11. Having selected Serious Crash and needing no other crash severity, click Done.
12. Under Environment, select Natural light. If you can't easily find it just start typing it in the search space under Attributes:

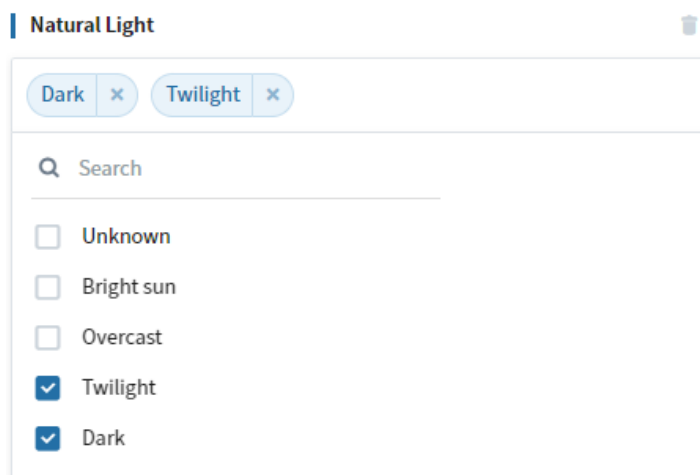


13. Click on Natural light. The attribute appears in the middle panel:



14. Click on '+'

15. Click on the values you want (Twilight and Dark):



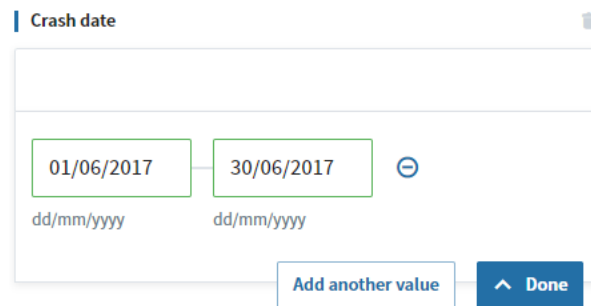
Click Done

16. Select the Crash date attribute under Date/Time or by searching for it. It will appear in the middle panel:



17. Click on '+'

18. Enter the time period you want:

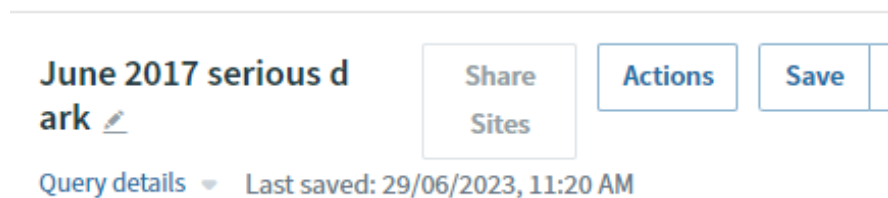


19. Click on Done.

**Note that:**

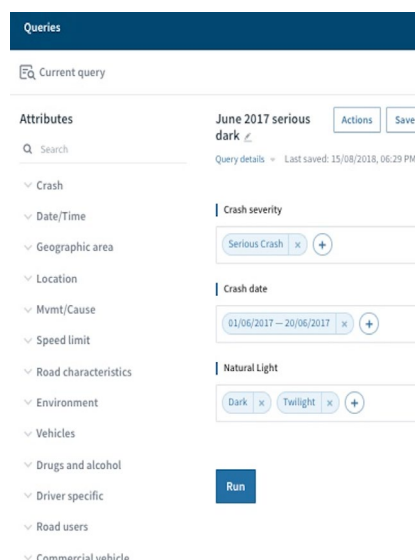
- you could also specify this period by picking Crash year and adding 2017 and then picking Crash month and adding June; and
- you can also select all the attributes you want first and then populate them with the values on which you want query.

20. You may wish to save your query. Suppose you want to call the query, 'June serious 2017'. Click on the pen icon above the query and type, 'June serious 2017':



21. Click on Save.

22. Your query is ready to run. Click Run:



## Viewing results

You may view results of your query by:

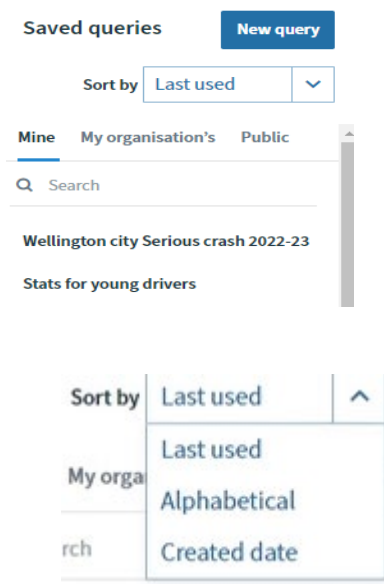
- Using the map (Chapter 4);
- Viewing reports (Chapter 6); or
- If your query complies with certain rules, view a collision diagram (Chapter 7).

## Find and edit a query

### Instructions to find a query and change or delete attributes.

- Find the list of your saved queries using the drop-down Queries menu at the top left.

Select the query you want to change from the list.



**Note** that you can sort your list of queries by Last used, alphabetical order or created date.

To change existing values, click '+' to add more values to an attribute in the middle column and then click on Done.

To delete a value from an attribute, click on 'X' next to the value and then click on Done.

To delete an existing attribute, click on the trash can icon to the right of the attribute.

Once you have changed your query click on Save to keep your changes.

### How to delete a saved query

- Open the query
- Click on Actions
- Click on Delete query
- Click on Permanently delete

## 4. Using the Map

### CAS map

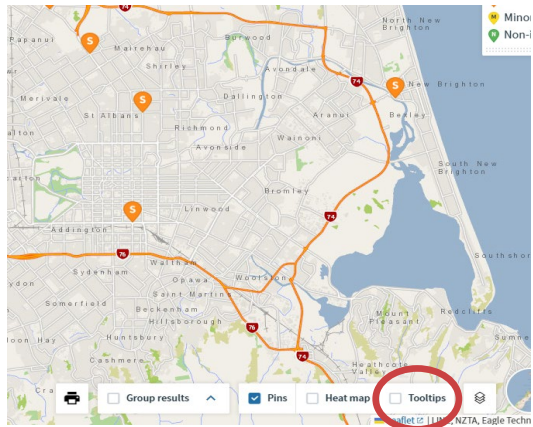
The screenshot shows the CAS map interface with various callout boxes explaining its features:

- Untitled site**  
Name & Save polygon/s that have been created. Collapse using <
- Polygon tools**  
Use different shapes to draw your site
- Edit or Delete**  
Functions to manage polygon drawing tools
- Group results**  
Group crashes within a user controlled radius
- Pan**  
Move the map view left/right/up/down
- Zoom**  
Zoom in + or out - of the map
- Hint:**  
Zoom in or out using your mouse scroll bar or keyboard CTL - + buttons
- Additional Resources**
  1. Quick Reference Guide Polygons
  2. Quick Reference Guide Collision Diagrams
- TLA**  
Search for a Territorial Local Authority. When you select a TLA the map zooms to that area
- Pins**  
Displays locations of crashes - both individual and clusters
- Heat map**  
A visual representation of crash density
- Layers**  
Select to view different geospatial boundaries
- Base map**  
Customise the base map

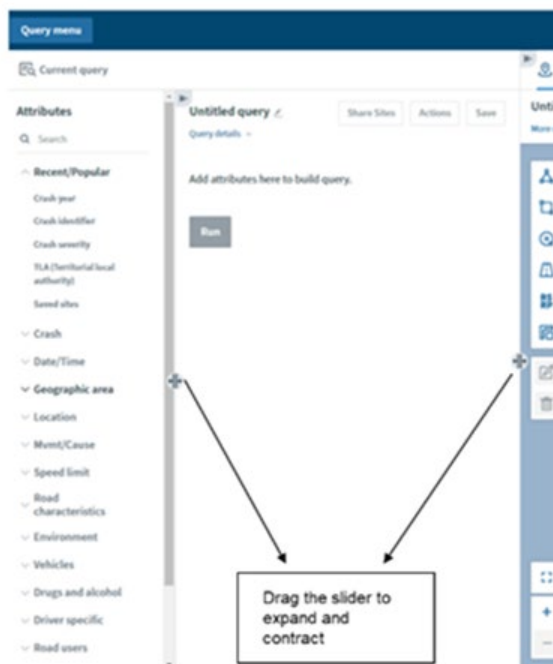
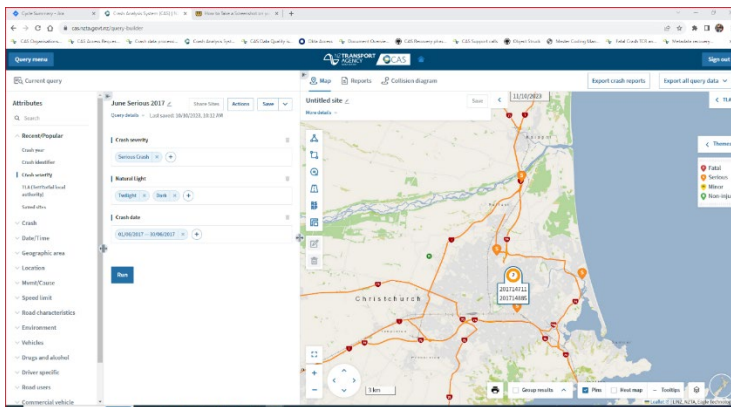
The interface includes a top navigation bar with 'Map', 'Reports', and 'Collision diagram' tabs, a 'Sign out' button, and 'Export crash reports' and 'Export all query data' links. The main map area shows New Zealand with crash locations marked by pins. A left sidebar contains map tools, and a right sidebar contains search and theme options. A bottom toolbar includes a printer icon, 'Group results', 'Pins', 'Heat map', 'Tooltips', and a base map selector.

## Tooltips

Crash ID's are visible on hover



When you click tooltips:

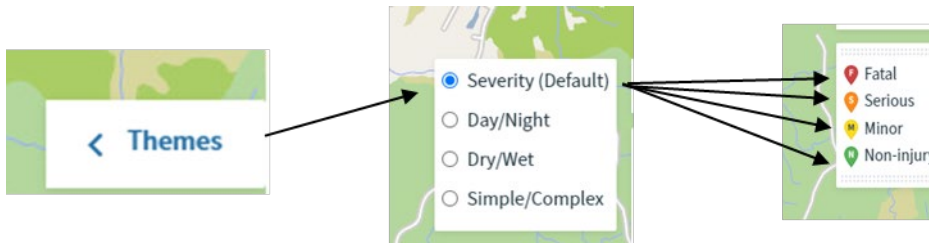


## Themes

The pins and pie charts are coloured to show one of four themes:

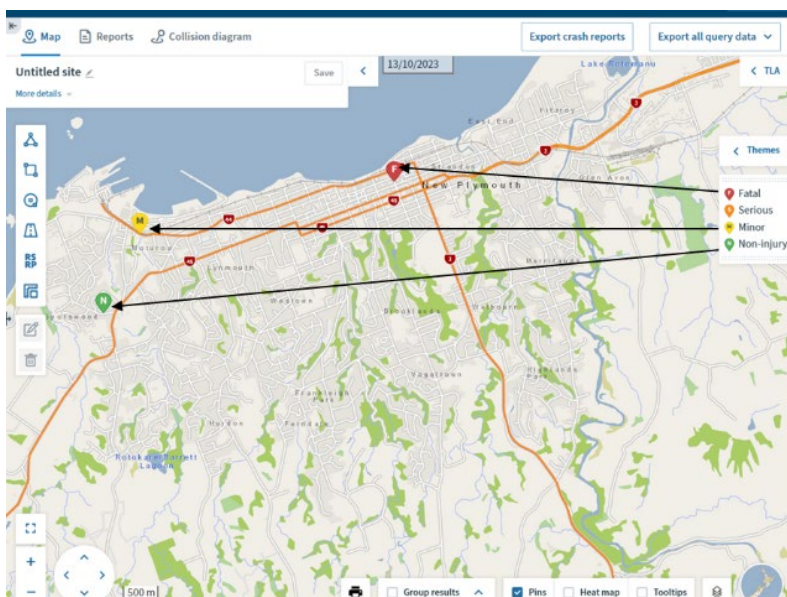
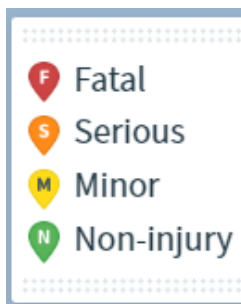
- Crash severity
- Natural light; (Day/Night)
- Primary surface condition (Dry/Wet)
- Crash type (Simple/Complex)

You can select the theme you want by clicking the Themes button on the right-hand side of the map.



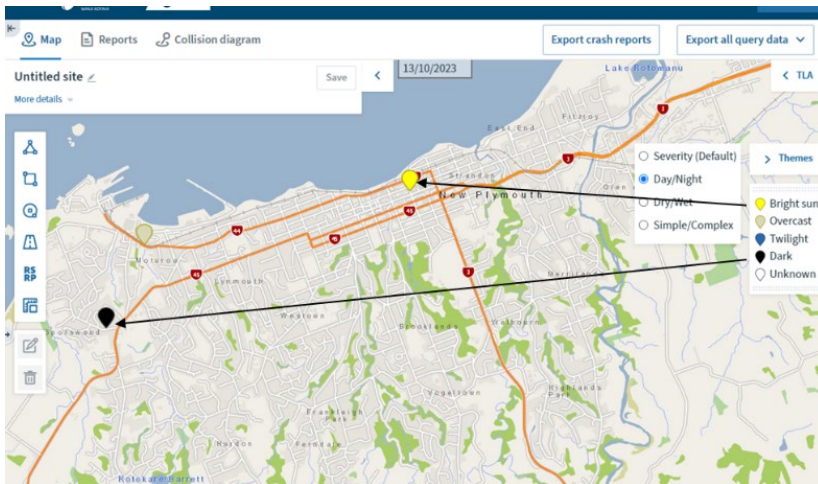
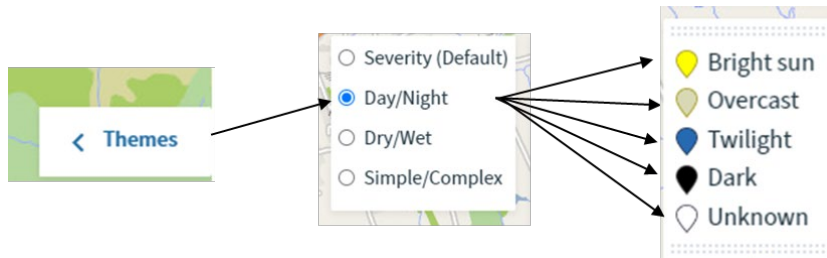
## Severity

The default theme is crash severity, which is indicated by colour and by label:



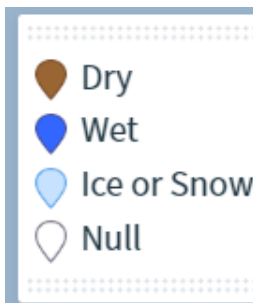
## Natural light

Natural light colours are:

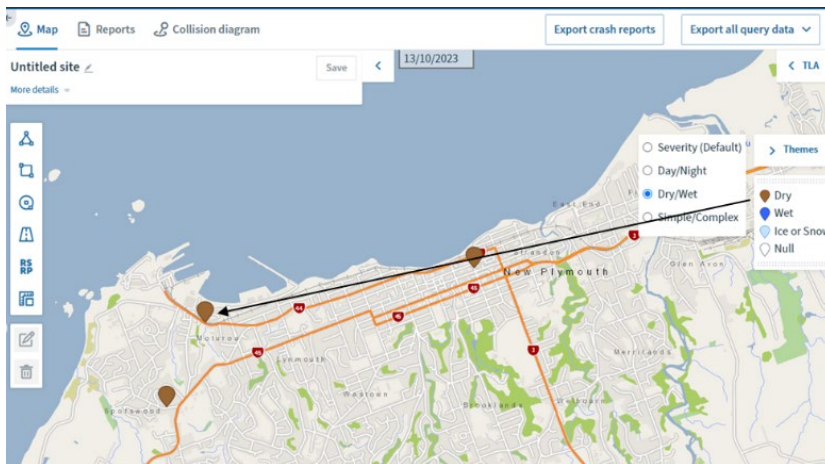


## Primary surface condition (wet/dry)

Primary surface condition colours are:

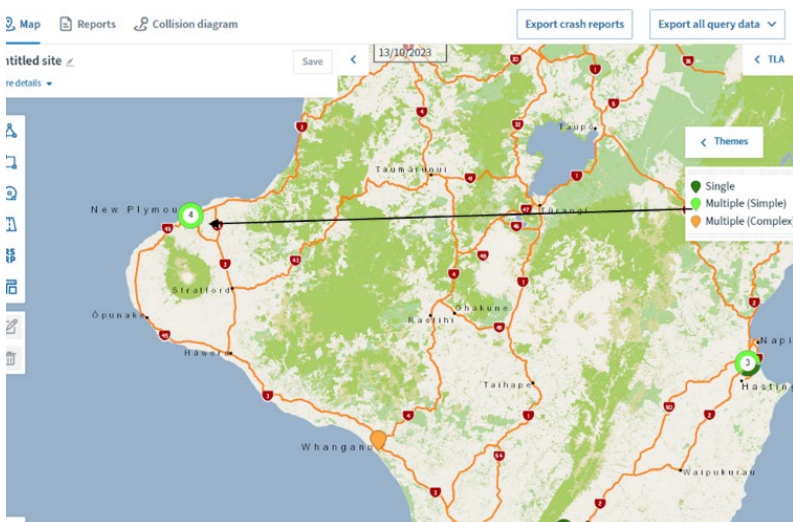
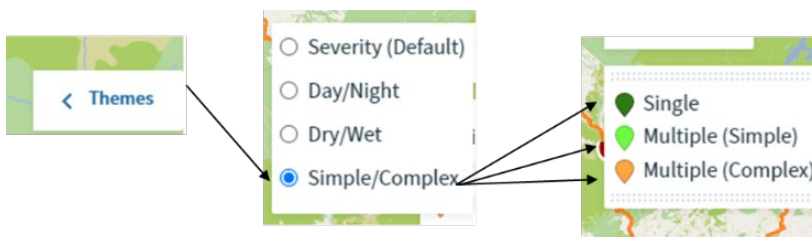






## Crash type (simple/complex)

Crash type colours are:



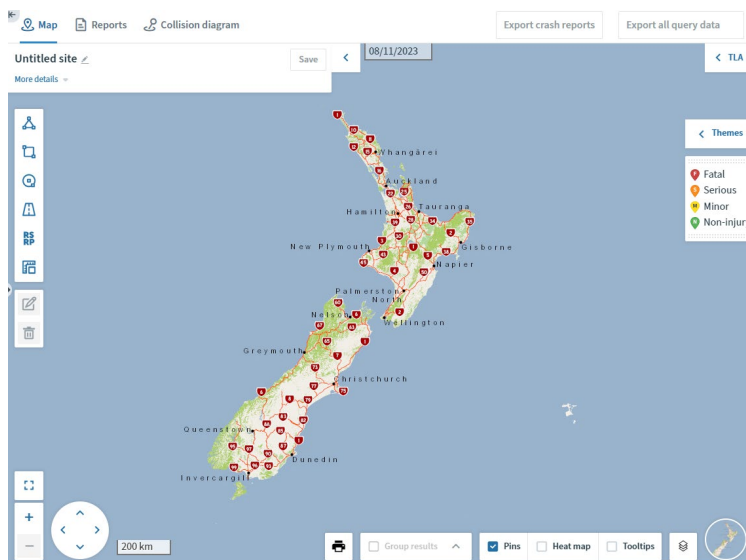
## Base maps

There are 5 Base Maps

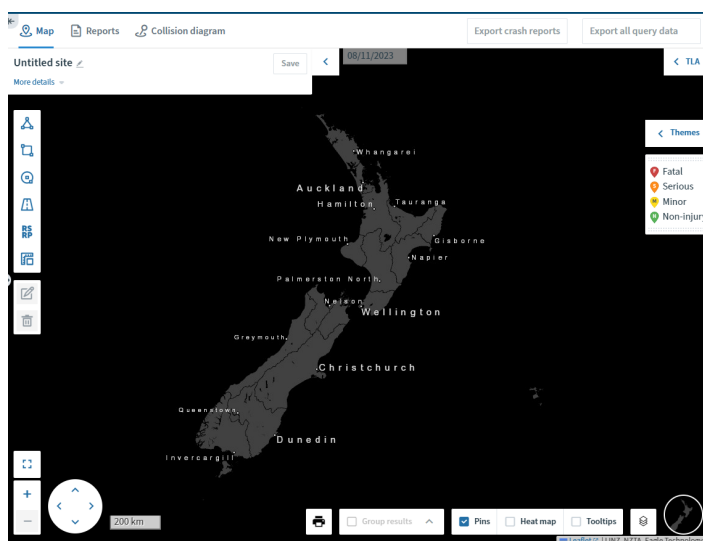
1. NZTA Generic
2. Dark Grey
3. NZTA Imagery
4. NZTA Grey Basemap
5. NZTA Terrain

Note: Default map is NZTA Generic

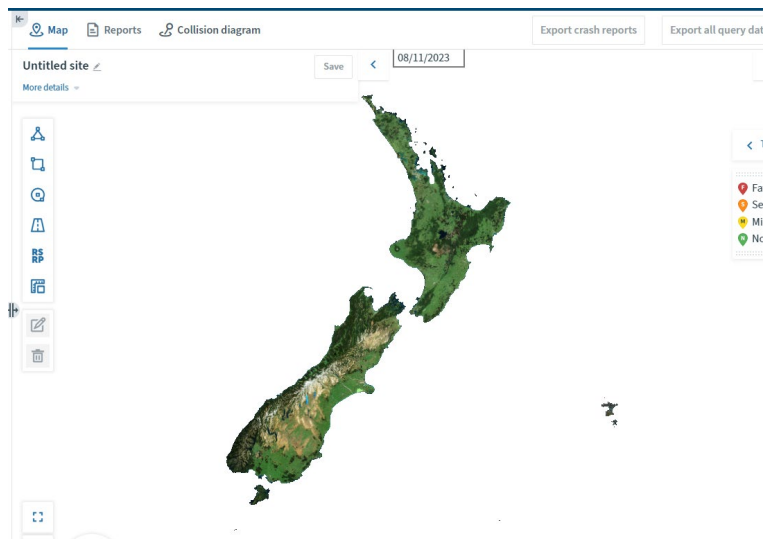
### NZTA generic



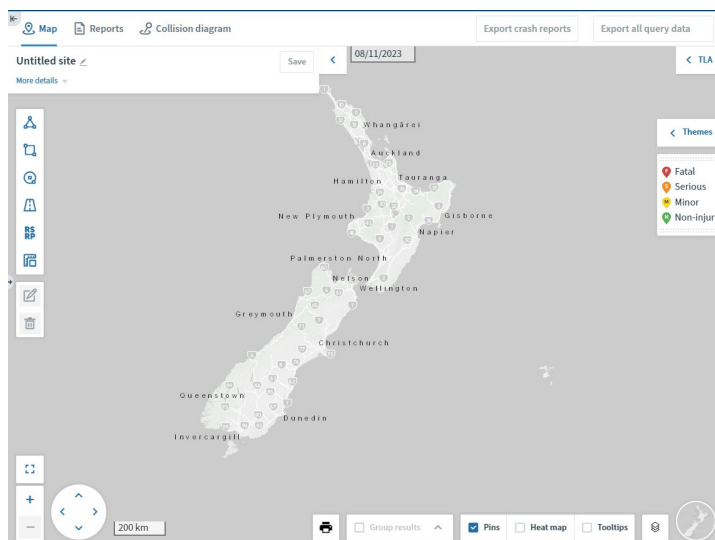
### Dark grey



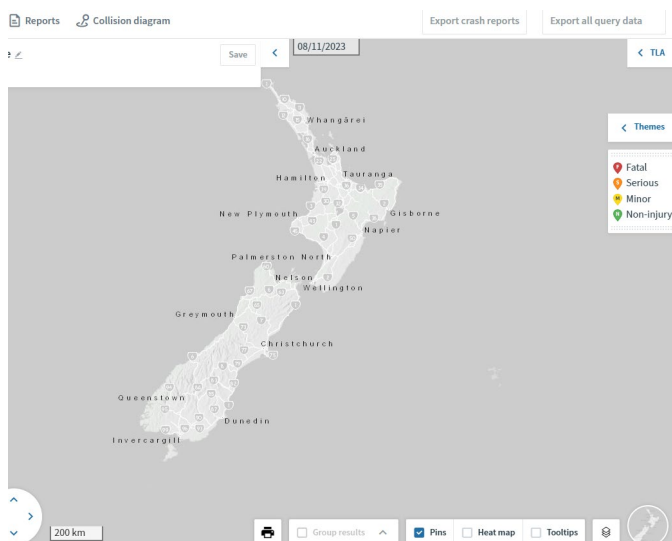
NZTA imagery



NZTA grey base map



NZTA terrain



## Map symbols

### Clusters and crash pins

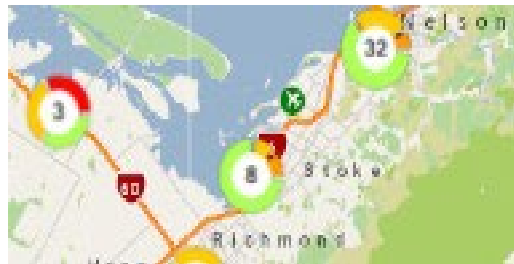
When a query is run results show on the map. Pins are selected by default.



Clusters and Crash pins show the crash locations on the map.

### Clusters

The circle with a number in the middle shows a cluster of crashes.



Number = number of crashes

Colours show severity % Fatal = Red

Serious = Orange

Minor = Yellow Non injury = Green

**Hint:** zoom in or click the cluster to see the individual pins that makeup a cluster of crashes.

### Crash pin

The single pin shows one crash. The map pin colour and letter indicate severity.



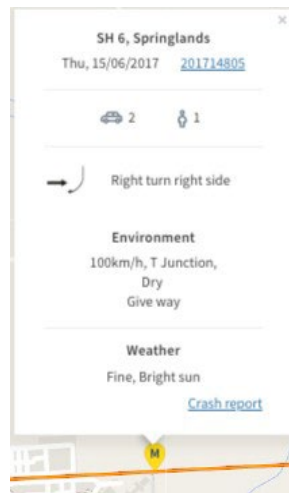
Fatal = (F) Red

Serious = (S) Orange Minor = (M) Yellow

Non injury = (N) Green

Select an individual pin to see a crash summary.

- CAS users Level 2 and above can select the crash identifier or Crashreport to see the Traffic Crash Report
- Including traffic control and junction type under Environment



## Map crash pins and traffic crash report

### CAS users Level 2 and above can access the Traffic Crash Report

Select crash identifier or Crash report to see the Traffic Crash Report

The diagram illustrates the process of accessing a Traffic Crash Report from a map. On the left, a map view shows a crash pin at 'SH 6, Springlands' on 'Thu, 15/06/2017'. A callout box with an arrow pointing to the pin says 'Select crash identifier or Crash report to see the Traffic Crash Report'. Another callout box with an arrow pointing to the 'Crash report' link on the map says 'Select 'x' to close'. The main part of the diagram is a screenshot of the 'Traffic Crash Report' page. A callout box at the top right of the report page says 'Select 'x' to close'. The report page includes a header with the title 'Traffic Crash Report' and a sub-header 'A Traffic Crash Report is completed by the police. View the report to find details about individual crashes, including descriptions and narratives'. Below this, there is a section for 'Crash ID: 201715921' and 'Severity:'. The report details include 'Crash road: HENDERSONS ROAD', 'Side road (or feature): SH 75', 'TLA: Christchurch City', 'Placement: Intersection', 'Vehicles: 2', 'Other parties:', 'Police attended: Yes', and 'Officer number:'. The report is divided into tabs: 'What happened?', 'Location and environment', 'Vehicles', 'Pedestrians', and 'TCR legacy documents'. The 'What happened?' tab is selected, showing a narrative of the crash. A callout box with an arrow pointing to the tabs says 'Select tabs in the Traffic Crash Report to see information about:'. A note box on the right says 'Note: CAS users Level 2 and above can also access the Traffic Crash Report from crash identifiers in the: Coded report, Plain English report'. An aerial map view is shown on the right side of the report, with a callout box saying 'NOT TO SCALE'.

Select 'x' to close

Select crash identifier or Crash report to see the Traffic Crash Report

Select 'x' to close

**Traffic Crash Report**

This report contains private information

A Traffic Crash Report is completed by the police. View the report to find details about individual crashes, including descriptions and narratives

Crash ID: 201715921 | Severity:

Crash road: HENDERSONS ROAD  
Side road (or feature): SH 75  
TLA: Christchurch City

Placement: Intersection  
Vehicles: 2  
Other parties:

Police attended: Yes  
Officer number:

What happened? | Location and environment | Vehicles | Pedestrians | TCR legacy documents

What happened

was travelling south on his bike on the footpath. As he reached Hendersons Road he slowed but didnt stop. He looked to his right but not left. He pulled out into Hendersons Road to travel straight across but didnt see who was travelling on Hendersons Road. He was struck by the front of the car and knocked off his bike.

NOT TO SCALE

Select tabs in the Traffic Crash Report to see information about:

- What happened?
- Location and environment
- Vehicles
- Pedestrians
- TCR legacy documents (Level 3 and above)

**Note:** CAS users Level 2 and above can also access the Traffic Crash Report from crash identifiers in the:

- Coded report
- Plain English report

Select tabs in the Traffic Crash Report to see information about:

- What happened?
- Location and environment
- Vehicles
- Pedestrians
- TCR legacy documents (Level 3 and above)

**Note:** CAS users Level 2 and above can also access the Traffic Crash Report from crash identifiers in the:

- Coded Report
- Plain English Report

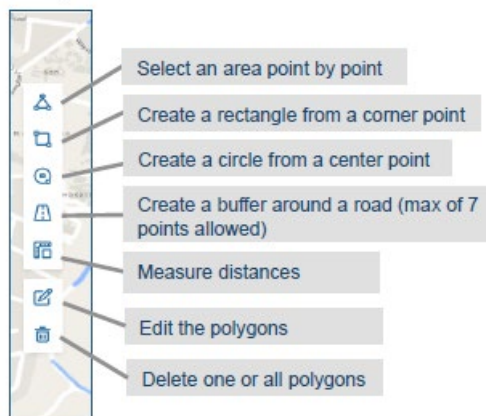


## 5. Polygons

### Create polygons to save as a site

#### Use CAS polygons

Use polygon drawing tools to create shapes to outline a site of interest on the map. Polygon tools provide hints on hover and mouse click.



#### Point by point polygon

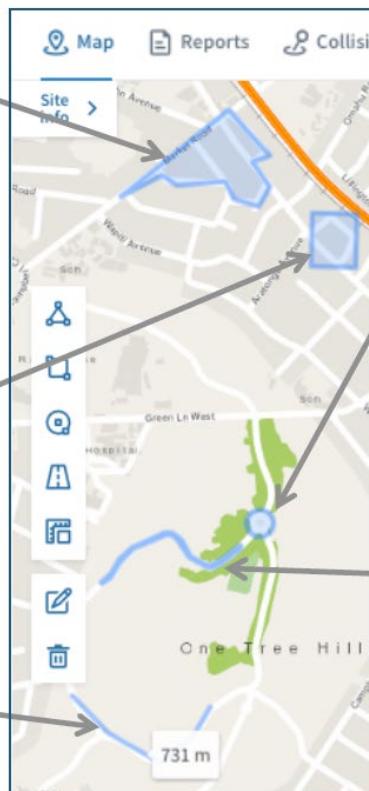
- Select the point by point polygon
- Click around the area you want to select
- Click the first point to close the shape

#### Rectangle

- Select the rectangle
- Click where you want a corner to be
- Drag to the size you want and release to finish the rectangle

#### Measurement

- Select the measurement tool
- Click where you want the first point to be
- Click one or many points along the route you want to measure
- Double click to finish
- Distance shows in the white box



#### Circle

- Select the circle
- Click where you want the center to be
- Drag to the size you want
- Release mouse to finish drawing

or

- Enter your radius in the pop up box – default is 30m
- Single click where you want the circle centre to be

#### Buffer

- Select the buffer
- Enter the buffer width you want in the pop up box – default is 5
- Click on first point of the route you want
- Max of 7 points can be used. Double click for the last point
- The points will snap to the road/s selected

**Hint:** zoom in to check your buffer is exactly where you want it to be



## How to delete polygons

To delete one or many polygon/s

- Select the delete icon

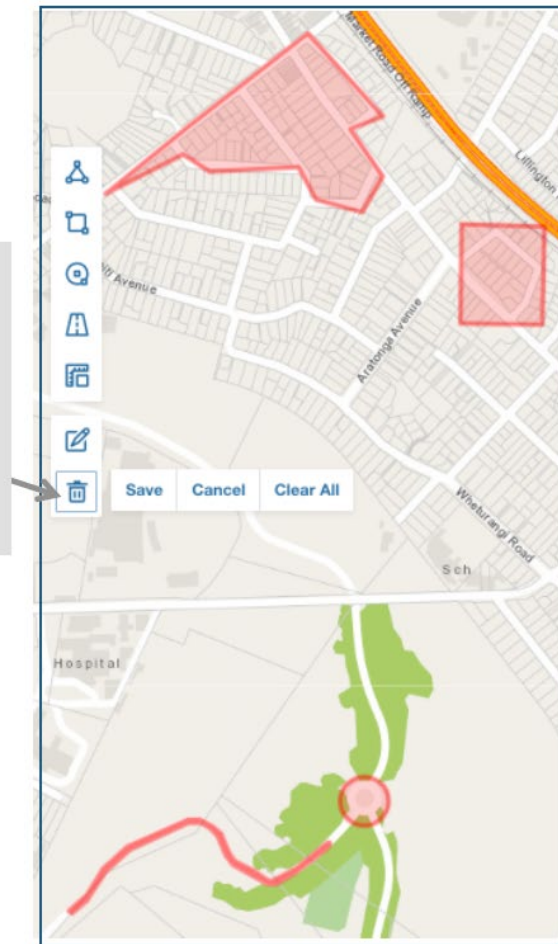
Visible polygon/s will show in red

- click on a polygon to delete
- click on one or many polygons
- Select 'save' to save deletions

**Hint:** zoom in to click on smaller polygons

### Additional Resources

1. Maps Guide
2. Using RSRP Map search tool to make a buffer on a State Highway



### Polygon hints:

Use combinations of polygon tools to outline a complex shaped site or use multiple of the same tool. e.g. use multiple buffers to outline a route. Overlap polygons if required.

It can take time to place polygons if you have a complex site. Use the pan tool on the map if you want to place a polygon point outside your map view.

After saving the deletions to the polygons you need to also save at the site level.

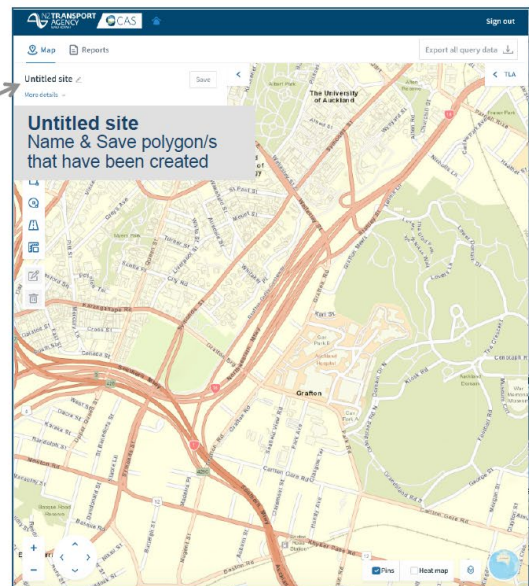
## Save a site

How to save a site & add to a query

Use polygon drawing tools to identify an area/s on the map that you can save as a site. Add a saved site to a query to see the crash results.

To save a site

- Define the area using a polygon/s
- Select Untitled site to add a name > type name
- Select More details to describe the site > type details
- Select Save - a 'pop up message' will confirm the saved site



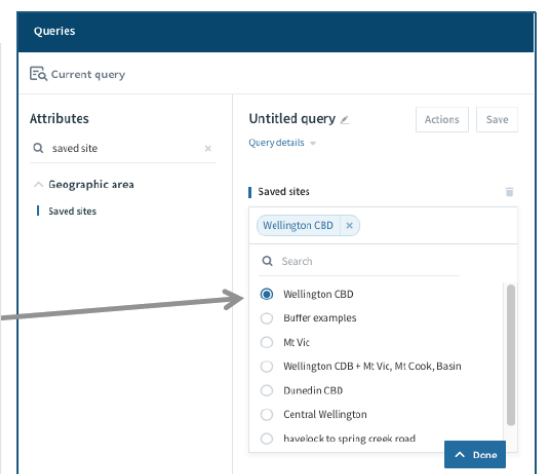
**Hint:** You can edit a saved site the same way as you edit a polygon. Remember to save the changes to your polygons before you save the changes to the site.

To add a saved site to a query

- Select [Go to query builder](#) on the CAS dashboard
- or**
- Select Queries > New
- Select Geographic area > Saved sites

The Saved sites will show in the query builder

- Expand the Saved site by clicking on the +
- Select a site
- Select Done
- Name and Save the Untitled query
- Select Run
- or**
- Add more attributes and Run the query



---

## 6. CAS Reports

---

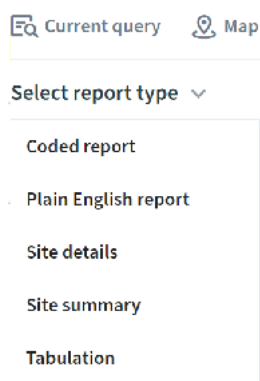
### How to access CAS reports and an overview of reports available in CAS

Log into CAS, select [Go to query builder](#) on the CAS dashboard.

- Select an existing query or create a new one
- Select 'Run'

**Hint:** To view a report you need to have run a query. Your query results automatically show on the map.

- Select Reports
- Select report type
- The menu of available reports will show



- Select a report
- Reports available under report type are:

#### Coded Report

View crash information in code format to understand details about the crash e.g. the location of the crash, the road and environmental conditions at the time of the crash, movement and the identified contributing factors. The codes represent the attribute values.

#### Plain English Report

View crash information in plain English to understand details about the crash e.g., the location of the crash, the road and environmental conditions at the time of the crash, movement and the identified contributing factors.

#### Site Details

View amalgamated data about your crash results.

### **Site Summary**

View a summary of crashes occurring within a group of crashes.

**Note:** You must group the crashes (See Chapter 7 Grouping) before running this report.

### **Tabulation**

View query results in a tabulated format. Allows the user to tabulate data to look for insights.

(See Using Tabulation Quick Reference Guide)

### **Traffic Crash Report**

View details about an individual crash: what happened information, location, environment, vehicles & people.

This report is available to CAS users with access Level 2 and above. To access select the crash identifier in a Coded Plain English or Tabulation report or a Collision diagram. It is also accessible from the Map using a Crash pin.

## Coded reports

Navigate, export and copy:

Results from a Coded report may show on more than one page. Scroll to move up and down or across the page.

Default is 200 results

Total number of results in the query

Back page of a result

More details on these features are found on the next page

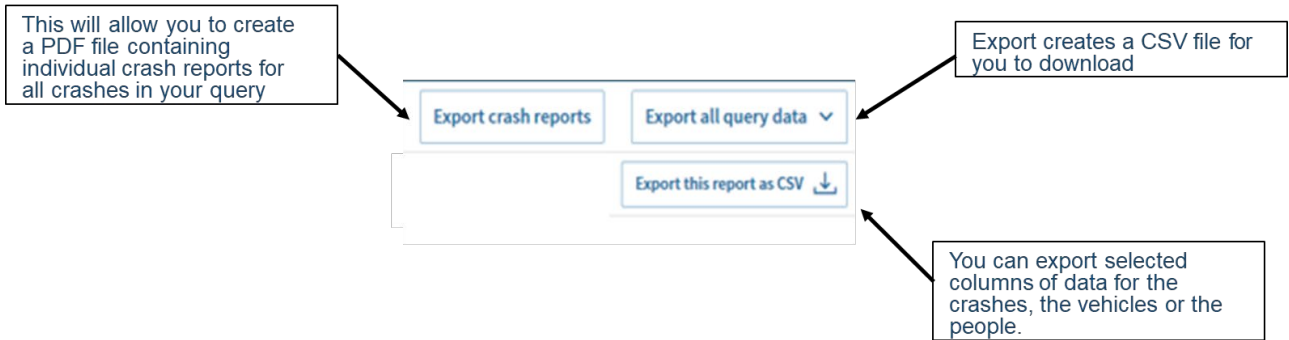
Next page of a result

Column headings of the Coded report.

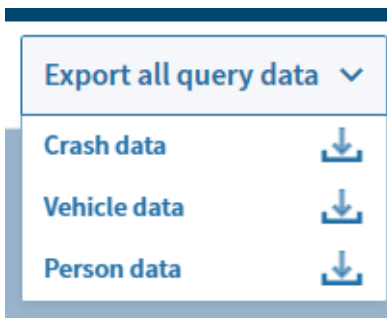
You can click on the arrows to sort the rows by the value of the column

The screenshot shows the 'Coded report' interface. At the top, there are tabs for 'Map', 'Reports', and 'Collision diagram'. Below the tabs, there are buttons for 'Export crash reports', 'Export all query data', and 'Export this report as CSV'. The main content area shows '4278 results from your query.' and 'Showing 200 500 1000 results at once.' Below this, there is a table with columns: Severity, Crash road, Side road, Feature, Distance from side road/feature, Direction, TLA, RS, RP, Easting, Northing, and Longitude. The first row of data shows: M, 007-0016, MCRAES ROAD, 1770, N, Hurunui District, 1576225, 5246070, 172.708603. Annotations with arrows point to various parts of the interface: 'Total number of results in the query' points to '4278 results from your query.'; 'Back page of a result' points to the '< Back' button; 'Default is 200 results' points to the '200' in the 'Showing' text; 'More details on these features are found on the next page' points to the 'Export' buttons; 'Next page of a result' points to the 'Next >' button; 'Column headings of the Coded report.' points to the column headers; and 'You can click on the arrows to sort the rows by the value of the column' points to the small arrows next to the column headers.

Severity	Crash road	Side road	Feature	Distance from side road/feature	Direction	TLA	RS	RP	Easting	Northing	Longitude
M	007-0016	MCRAES ROAD		1770	N	Hurunui District			1576225	5246070	172.708603

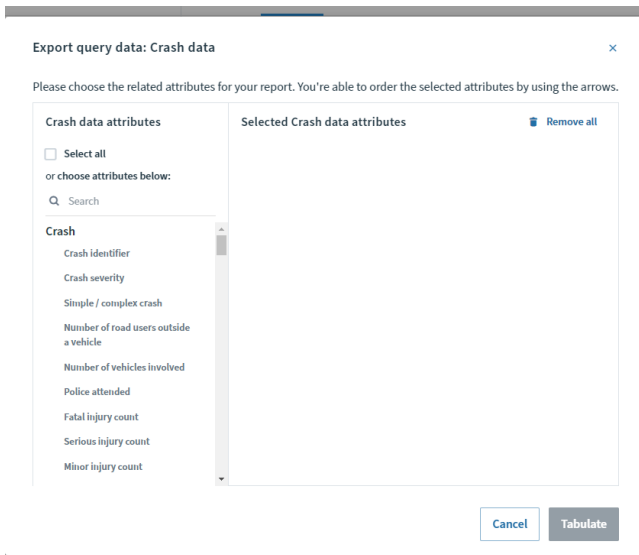


## Export all query data



## Crash data

We you click Crash data, the following page will display



In this page choose the attributes

Export query data: Crash data

Please choose the related attributes for your report. You're able to order the selected attributes by using the arrows.

Crash data attributes

☒ Select all  
or choose attributes below:

Q Search

Crash

- Crash identifier
- Crash severity
- Simple / complex crash
- Number of road users outside a vehicle
- Number of vehicles involved
- Police attended
- Fatal injury count
- Serious injury count
- Minor injury count

Selected Crash data attributes

Remove all

- Crash identifier
- Crash severity
- Simple / complex crash
- Number of road users outside a vehicle

Cancel Tabulate

Selects all the attributes in Crash data

Remove all the attributes

Delete the crash identifier only one attribute at a time

Click Tabulate, it downloads in excel spreadsheet.

Export query data : vehicle data

Export query data: Vehicle data

Please choose the related attributes for your report. You're able to order the selected attributes by using the arrows.

Vehicle data attributes

☐ Select all  
or choose attributes below:

Q Search

Crash

- Crash identifier
- Crash severity
- Simple / complex crash
- Number of road users outside a vehicle
- Number of vehicles involved
- Police attended
- Vehicles involved but not impacted
- Watch house
- Social Cost

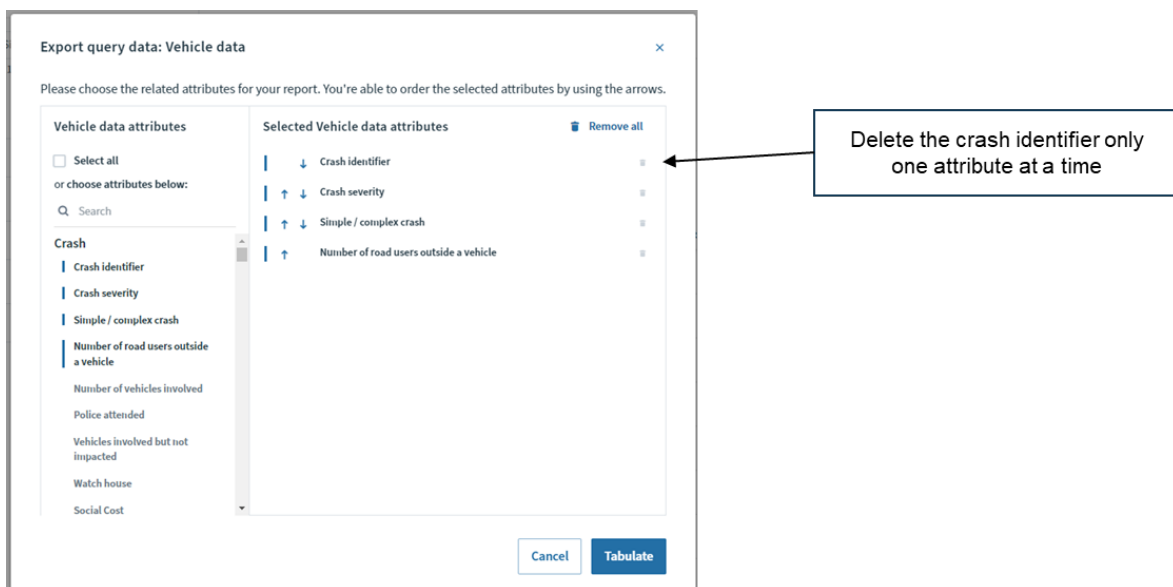
Selected Vehicle data attributes

Remove all

Cancel Tabulate

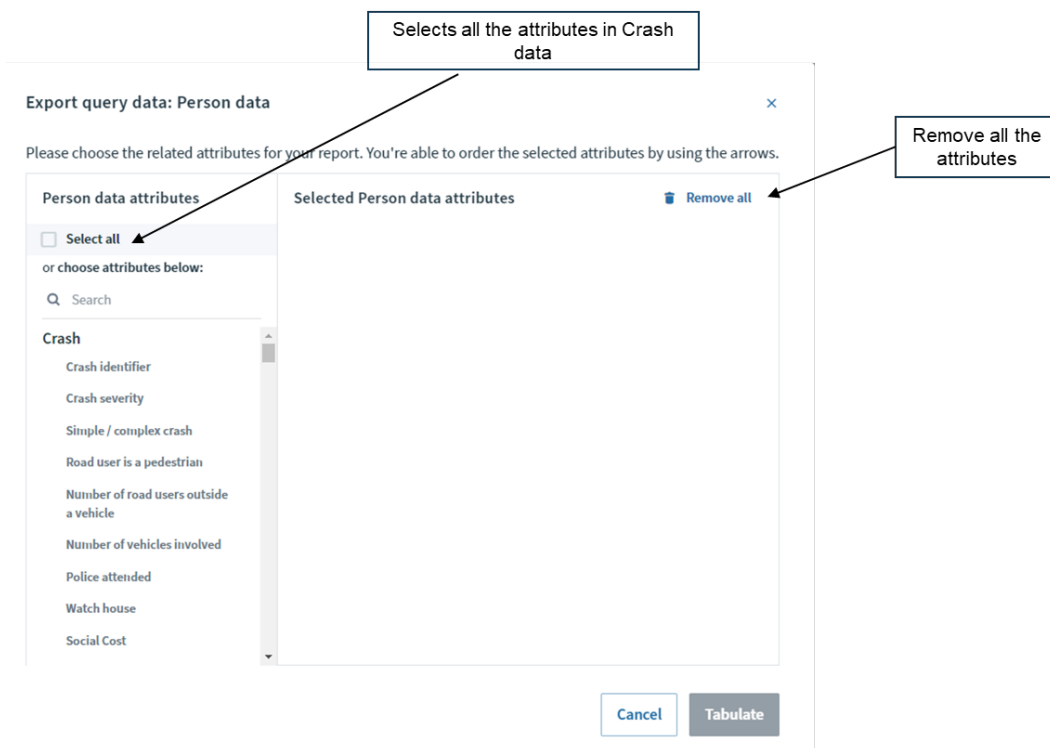
Selects all the attributes in Crash data

Remove all the attributes



Click Tabulate, it downloads in excel spreadsheet.

Export query data : Person data







## Plain English report

Navigate, export and copy:

Results from a Plain English report may show on more than one page.  
Scroll or use keyboard arrows to move up and down or across the page

Default is 200 results

More details on these features are found in the Coded Report section

Total number of results in the query

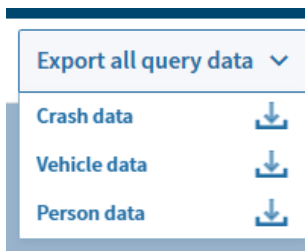
Back page of a result

Next page of a result

Column headings of the Plain English report.  
Scroll or click in the report and use keyboard arrows to move across the page

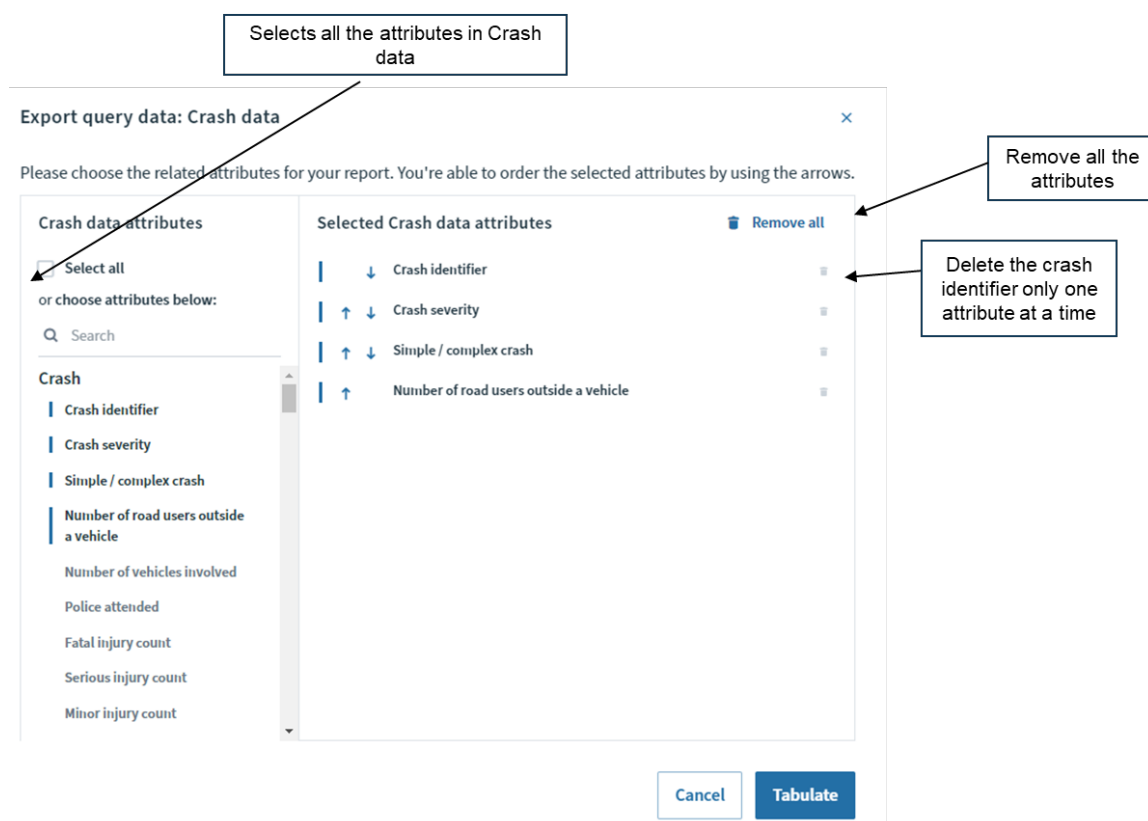
The screenshot shows the 'Plain English report' interface. At the top, there are tabs for 'Map', 'Reports', and 'Collision diagram'. Below the tabs, the report title 'Plain English report' is displayed with a dropdown arrow. To the right of the title, there are three export buttons: 'Export crash reports', 'Export all query data' (with a dropdown arrow), and 'Export this report as CSV' (with a download icon). Below the export buttons, it says 'Showing 200 500 1000 results at once.' with '200' selected. A 'Next >' button is to the right. Below the export buttons, it says '1-200 of 4278'. Below this, there is a table with the following columns: 'Crash road', 'Side road', 'Feature', 'Distance from side road/feature', 'Direction', 'Reference station', 'Route position', 'Easting', 'Northing', 'Longitude', 'Latitude', and 'ID'. The first row of data is: '007-0016', 'MCRAES ROAD', '1770m', 'N', '1576225', '5246070', '172.708603', '-42.937622', and '20'. There are navigation arrows on the left and right sides of the table.

Crash road	Side road	Feature	Distance from side road/feature	Direction	Reference station	Route position	Easting	Northing	Longitude	Latitude	ID
007-0016	MCRAES ROAD	1770m	N	1576225	5246070	172.708603	-42.937622	20			

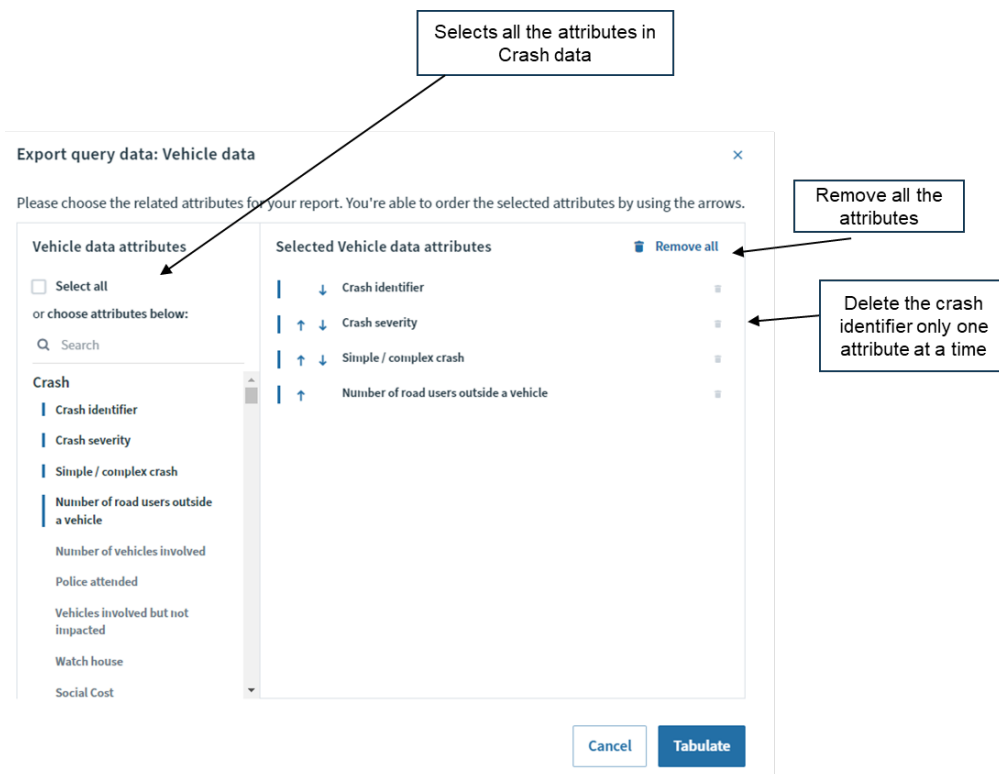


## Crash data

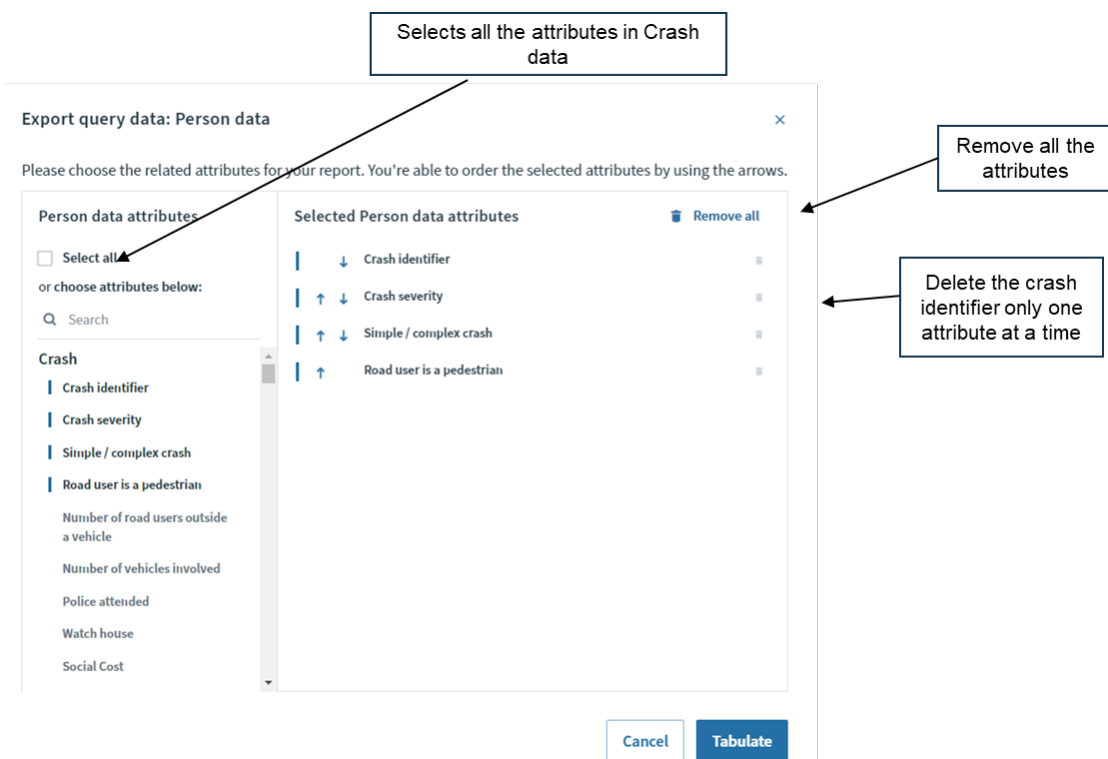
When you click Crash data, the following page will display



Click Tabulate, it downloads in excel spreadsheet.



Click Tabulate, it downloads in excel spreadsheet.



Click Tabulate, it downloads in excel spreadsheet

## Site summary

**Note:** You must group the crashes (See Chapter 7 Grouping) before running this report.

Navigate, export and copy:

The control features are similar to the plain English report:

Query menu

Sign out

Current query
 Map
 Reports
 Collision diagram

Export crash reports
Export all query data

Site summary report

Export this report as CSV

358 results from your query.

Showing 20 100 1000 results at once.

Back
1-20 of 358
Next

Site Centre: Midpoint	Road 1	Dir.	RS	RP	Road 2	2017	2018	2019	2020	2021	Total	Fatal cas	Ser cas	Min cas	Fatal	Serious	Minor	Non Inj	Social Cost \$(m)	Wet
1752699-5432758	002-0962/12.85-I	I			SH 2	7	5	8	8	7	35	0	3	10	0	4	5	26	4.95	8
1754147-5433893	002-0962/12.85-I	I			HOROKIWI ROAD	10	6	4	4	5	29	0	2	10	0	2	7	20	3.26	15
1748793-5426916	SH 1N	I			VIVIAN STREET	9	3	6	3	7	28	0	1	5	0	1	5	22	1.99	4
1753699-5439140	01N-1050/06.30-I	I			TAWA-GRENADA NORTH ON	5	3	6	7	6	27	0	0	11	0	0	9	18	1.67	9

## Site details report

Navigate, print, export and copy

Crash severity overview and Total number of results

Tables in the Site details report are grouped eg. Overall crash statistics and Overall casualty statistics.

Within each group there is one or more tables.

With tables headings eg. Crash severity, Crash numbers

Site details report

Fatal crashes: 0 | Injury crashes: 3 | Non-injury crashes: 0 | Total crashes: 3

Overall crash statistics

Crash severity

Crash severity	Number	%	Social cost \$(m)
Fatal	0	0	0
Serious	1	33.33	0.82
Minor-injury	2	66.67	0.21
Non-injury	0	0	0
TOTAL	3	100	1.02

Crash numbers

Year	Fatal	Serious	Minor	Non-injury
2012	0	0	1	0
2017	0	1	0	0
2018	0	0	1	0
TOTAL	0	1	2	0
Percent	0	33.33	66.66	0

Overall casualty statistics

Injury severity

Injury severity	Number	% all casualties
Fatal	0	0.00
Serious Injured	1	33.33
Minor Injured	2	66.67
TOTAL	3	100.00

Copy and paste one or many tables into your own spreadsheet

Year	Fatal	Serious	Minor	Non-injury
2012	0	0	1	0
2017	0	1	0	0
2018	0	0	1	0
TOTAL	0	1	2	0
Percent	0	33.33	66.66	0

More details on these features are found in the Coded Report section

Results from a Site details report show on one page.

Scroll or click on the report to use keyboard arrows to move up and down the page

# Tabulations

## Run a Query

Query menu

Current query

Attributes

Search

Recent/Popular

Crash

Date/Time

Geographic area

Location

Mvmt/Cause

Speed limit

Road characteristics

Environment

Vehicles

Drugs and alcohol

Driver specific

Road users

Commercial vehicle

Compliance

Personal info

Fatal crash 2023

Share Sites

Actions

Save

Query details

Last saved: 03/04/2023, 01:45 PM

Month of year

+

Crash year

2023

x

+

Crash date

+

Crash severity

Fatal Crash

x

+

Run

## Click RUN



Map

Reports

Tabulation

Coded report

Plain English report

Site details

Site summary

Tabulation

## Click tabulations.

Tabulate query: Fatal crash 2023

Tabulate query: Fatal crash 2023

Please choose the aspect to tabulate and then choose the related attributes

Crash

Vehicle

Person

Contributing factor

Objects hit

This query shows data counts relating to the crash.

Crash attributes

☐ Select all

or choose attributes below:

Q Search

Crash

Crash identifier

Crash severity

Number of vehicles involved

Police attended

Number of road users outside a vehicle

Simple / complex crash

Fatal injury count

Serious injury count

Minor injury count

Selected Crash attributes

Remove all

Crash identifier

Crash severity

Fatal injury count

Cancel

Tabulate

AZTRANSPORT

AGENCY

CAS

DATA SYSTEM

Sign out

Map

Reports

Collision diagram

Export crash reports

Export all query data

Tabulation

Print/Export report

Tabulate Crash Data

Please tabulate Crash data using the query - Fatal crash 2023

Change attributes

Table

Crash severity

Crash identifier

Fatal injury count

Count

Police attended

Police attended	No	Yes	Totals
Totals	3	228	231

Click crash data

Sign out

Export all query data

Crash data

Vehicle data

Person data

Change attributes



Click tabulate.

It downloads .csv files.

Export query data: Crash data ×

Please choose the related attributes for your report. You're able to order the selected attributes by using the arrows.

Crash data attributes	Selected Crash data attributes	<span>Remove all</span>
<input type="checkbox"/> Select all or choose attributes below: <input type="text" value="Search"/>	<div>↓ Crash identifier</div>	
<b>Crash</b>	<div>↑ ↓ Crash severity</div>	
Crash identifier	<div>↑ Simple / complex crash</div>	
Crash severity		
Simple / complex crash		
Number of road users outside a vehicle		
Number of vehicles involved		
Police attended		
Fatal injury count		
Serious injury count		
Minor injury count		

Cancel Tabulate

Click tabulate.

It downloads .csv files.

Export query data: Person data ×

Please choose the related attributes for your report. You're able to order the selected attributes by using the arrows.

Person data attributes	Selected Person data attributes	<span>Remove all</span>
<input type="checkbox"/> Select all or choose attributes below: <input type="text" value="Search"/>	<div>↓ Crash identifier</div>	
<b>Crash</b>	<div>↑ ↓ Crash severity</div>	
Crash identifier	<div>↑ Simple / complex crash</div>	
Crash severity		
Simple / complex crash		
Road user is a pedestrian		
Number of road users outside a vehicle		
Number of vehicles involved		
Police attended		
Watch house		
Social Cost		

Cancel Tabulate

---

## 7. Grouping

---

Grouping allows you to cluster crashes that are near each other. This allows you to identify geographical areas (or sites) where crashes may occur more frequently.

During the grouping procedure crashes within a grouping radius are clustered together.

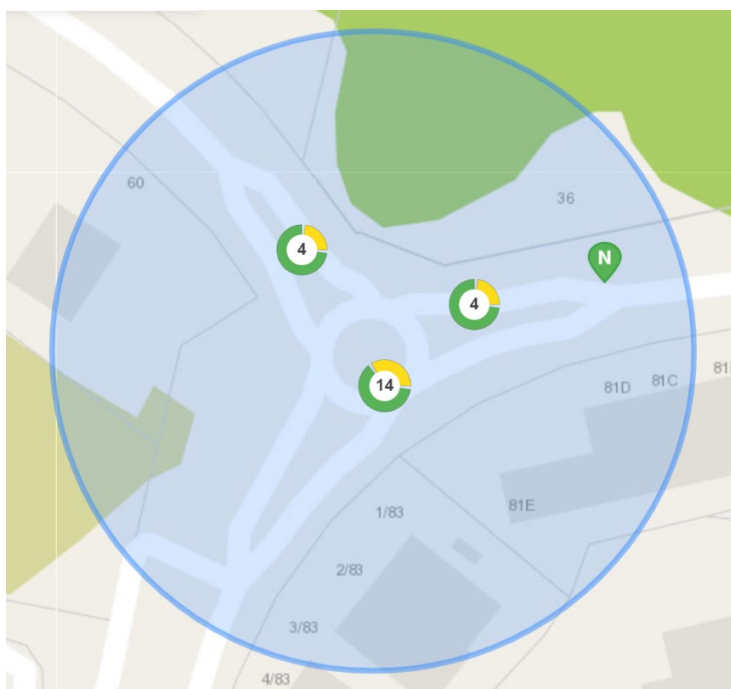
**Note:** If you want to make a collision diagram you must group the crashes first.

### Different ways you can group crashes

There are three methods of grouping:

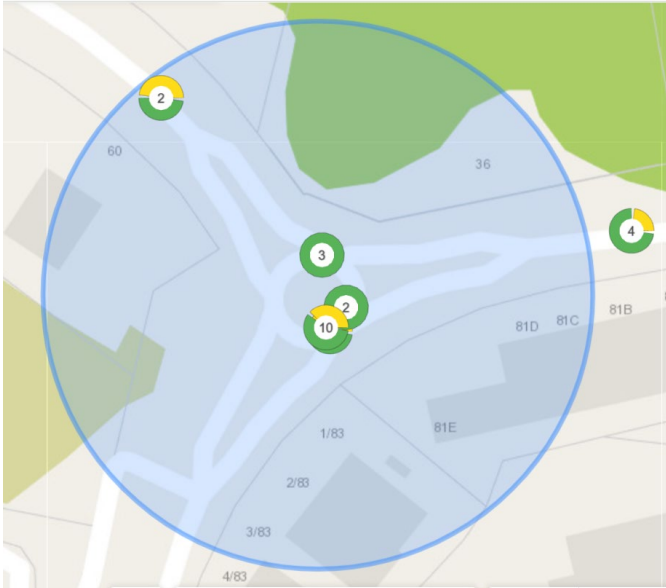
- by intersection;
- by proximity; or
- by selection.

In the explanation below we will use an example of crashes occurring around the junction of Kenepuru and Rahia Roads, Kenepuru from 2014 to 2023 inclusive (a roundabout was installed around 2020). The map of the crashes prior to grouping looks like this.



## Grouping by intersection

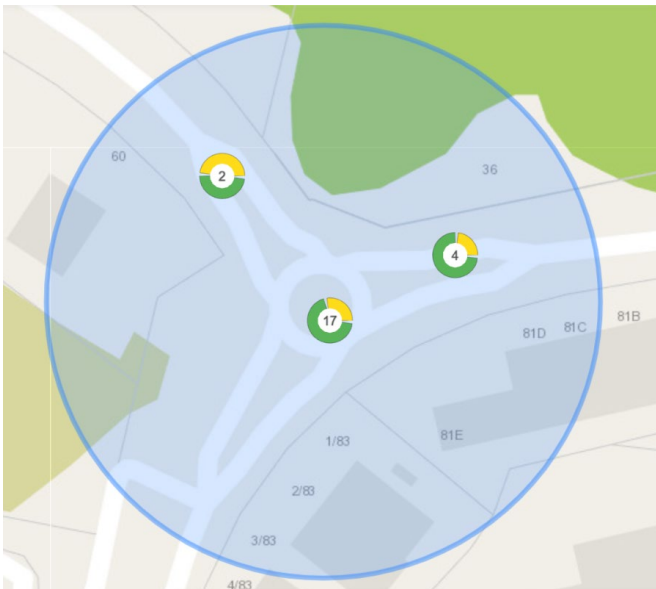
Firstly, crashes within the grouping radius of an intersection will be grouped around that intersection (an intersection is a point at which the centre lines of two or more sections of road meet). Any crashes not grouped around intersections but within the grouping radius of each other will be grouped together. In our example the grouping of crashes by intersection looks like this.



In this case all the groups are at intersection points.

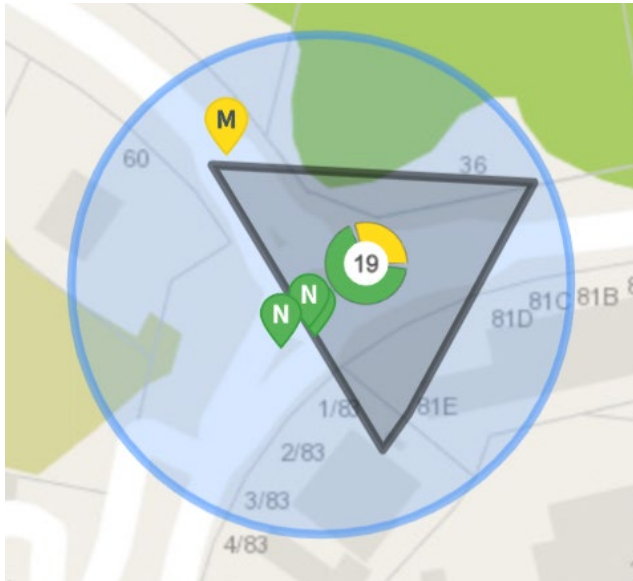
## Grouping by proximity

Crashes within the grouping radius are grouped together to the point corresponding to the centroid of the crashes in the group. In example grouping by proximity looks like this:



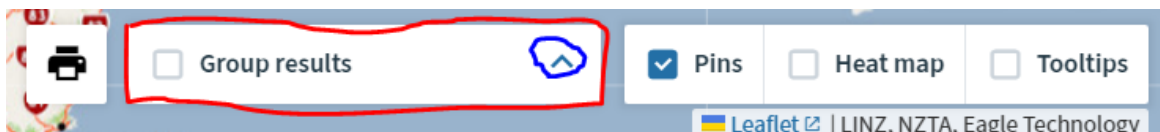
## Grouping by selection

Grouping by selection allows you to draw a polygon around crashes of interest and group those crashes to a point at the centroid of all the crashes in the selected polygon. The crashes outside the drawn polygon will be displayed but not grouped. In our example, if we draw a triangle around some of the crashes and group by selection we get this:



## How to group crashes

At the foot of the map screen there is a grouping dialogue.



To use this dialogue, click on the arrow circled in blue. When you open the dialogue, you will see:

1. Grouping method ⓘ  
By intersection ▼

2. Open size ⓘ  
250 m

3. Urban size ⓘ  
30 m

4. Threshold ⓘ  
1

Group

☐ Group results ▼

### Features of this dialogue are:

- If you click on the 'i' icon next to each item in the dialogue, you will find out what that item means.
- Grouping method is where you select the method of grouping (by intersection, by proximity or by selection).
- You can select the grouping radius you want to use for sections of road where the speed limit is above 70 km/hr by changing the number in the box under Open size.
- You can select the grouping radius you want to use for sections of road where the speed limit is less than or equal to 70 km/hr by changing the number in the box under Urban size.
- The threshold box allows you to set the minimum number of crashes in a group for that group to be displayed. Any groups with fewer crashes will not be displayed on the map and will not appear in a Site Summary Report.

Once you have made all the settings you can group the crashes by either clicking on the Group button or the Group results tick box.

**Note:** If you click on the Group results tick box without opening the dialogue, the crashes will be grouped using the default settings.

## Example

As an example, here is how to group speed-relating crashes reported in Matamata-Piako District from 2017 to 2021.

Run a Query:

Add required attributes.

Query menu

Current query

Attributes

Q sav

Recent/Popular

Saved sites

Geographic area

Saved sites

Speed Matamata-Piako 2017-2021

Share Sites Save as

Query details Last saved: 20/10/2022, 01:39 PM

Crash year

2017 — 2021

TLA (Territorial local authority)

Matamata-Piako District

On state highway

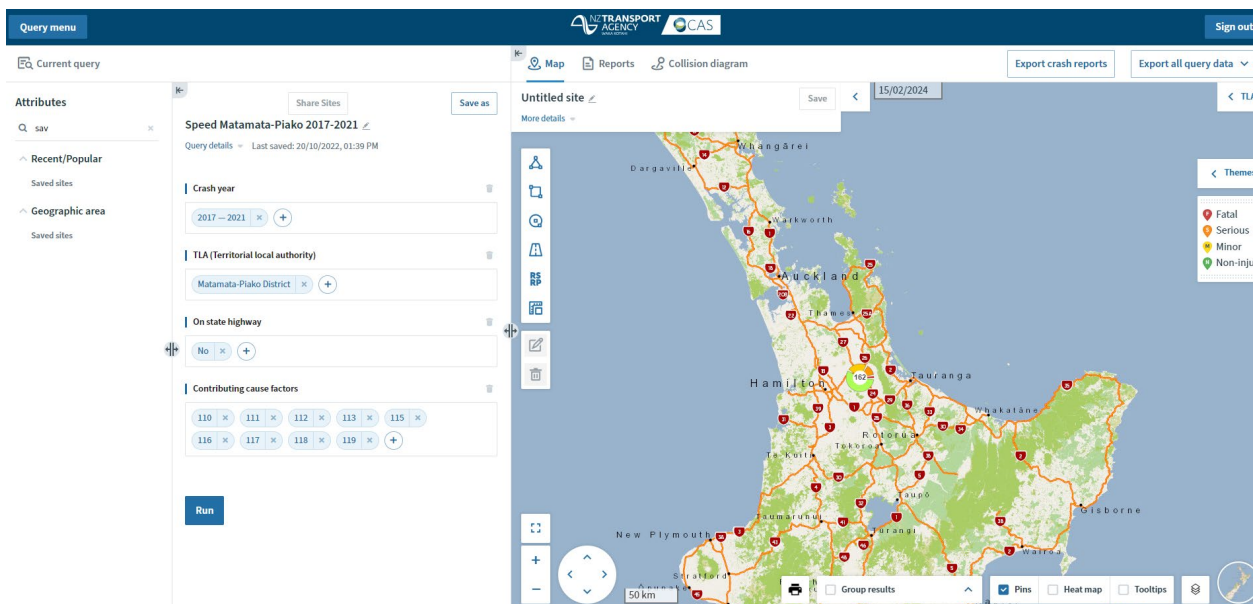
No

Contributing cause factors

110 111 112 113 115 116 117 118 119

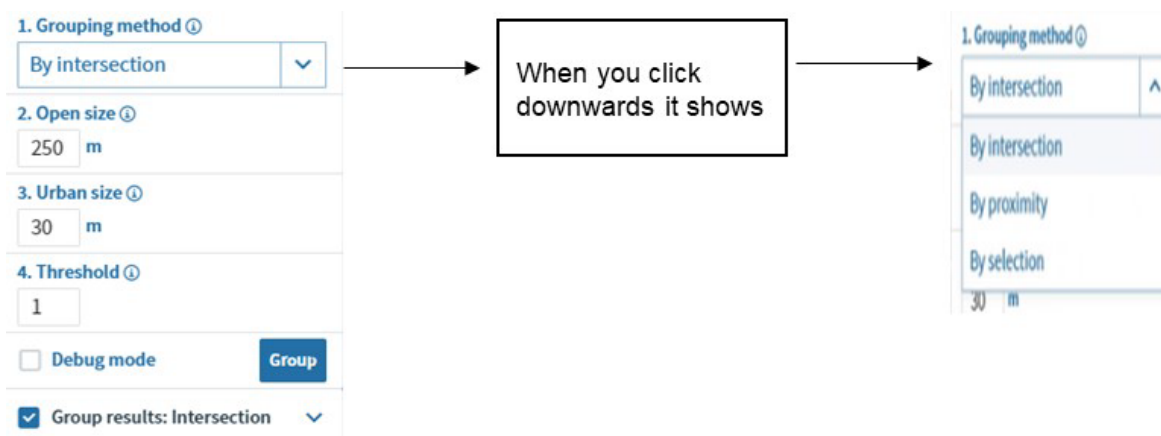
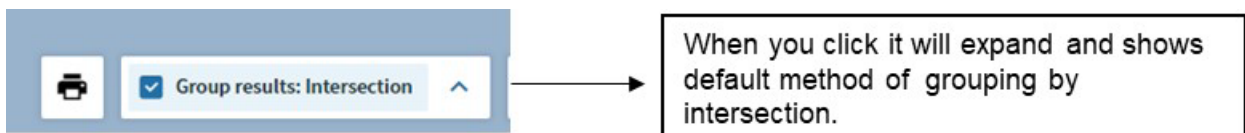
Run

Click Run



When you run the report, it shows 162 crashes.

Click the arrow next to Group results



## Grouping control – by intersection

**1. Grouping method** ⓘ

By intersection ▼

**2. Open size** ⓘ

250 m

**3. Urban size** ⓘ

30 m

**4. Threshold** ⓘ

1

**Group**

☒ Group results: Intersection ▼

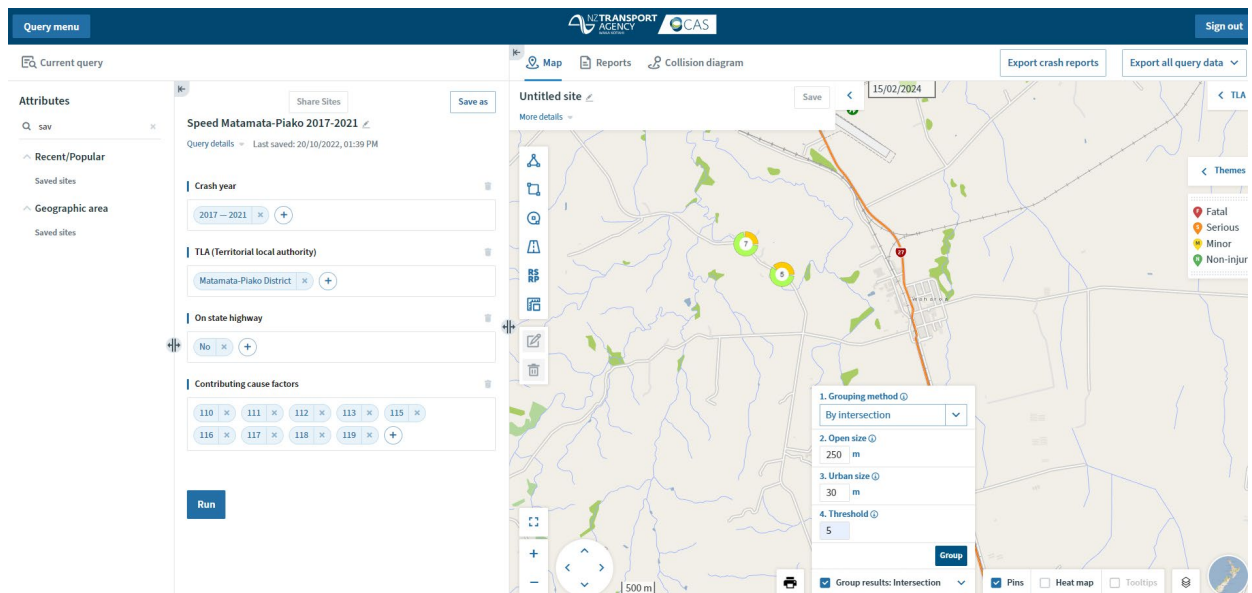
**Grouping method:** A set of tools to manage how crashes are combined to reflect different outcomes. Grouping is a required step to view results in a Collision Diagram, which then displays the crashes sorted by movement code. Please select the method you would like to apply.

**By intersection:** The standard method which will combine each of the crash results around the nearest intersection within the given distance. If an intersection is not within range, the crashes will be grouped with other crash results within the defined area.  
(Note: the Open or Urban size value will be applied depending on the speed limit at the crash location).

Open or rural roads where speed limit is greater than 70kmph. May include high speed roads in Urban areas, eg. motorways and expressways.

Urban roads where speed limit is 70kmph or less. May include reduced speed roads in rural areas.

Sets the minimum number of crashes per group. Limits the groups displayed to this number of crashes or higher.





## Grouping control – by proximity

**1. Grouping method** ⓘ

By proximity

**2. Open size** ⓘ

250 m

**3. Urban size** ⓘ

30 m

**4. Threshold** ⓘ

1

Group

☐ Group results

**Grouping method:** A set of tools to manage how crashes are combined to reflect different outcomes. Grouping is a required step to view results in a Collision Diagram, which then displays the crashes sorted by movement code. Please select the method you would like to apply.

**By proximity:** This method will combine each of the crashes with the nearest crash results within range. This method can be used when grouping by intersection is not required. (Note: the Open or Urban size value will be applied depending on the speed limit at the crash location).

Open or rural roads where speed limit is greater than 70kmph. May include high speed roads in Urban areas, eg. motorways and expressways.

Urban roads where speed limit is 70kmph or less. May include reduced speed roads in rural areas.

Sets the minimum number of crashes per group. Limits the groups displayed to this number of crashes or higher.

Current query

Attributes

Q sav

Recent/Popular

Saved sites

Geographic area

Saved sites

Speed Matamata-Piako 2017-2021

Query details Last saved: 20/10/2022, 01:39 PM

Crash year

2017 — 2021

TLA (Territorial local authority)

Matamata-Piako District

On state highway

No

Contributing cause factors

110 111 112 113 115 116 117 118 119

Run

Map Reports Collision diagram

Untitled site

Save 15/02/2024

More details

1. Grouping method ⓘ

By proximity

2. Open size ⓘ

250 m

3. Urban size ⓘ

30 m

4. Threshold ⓘ

1

Group

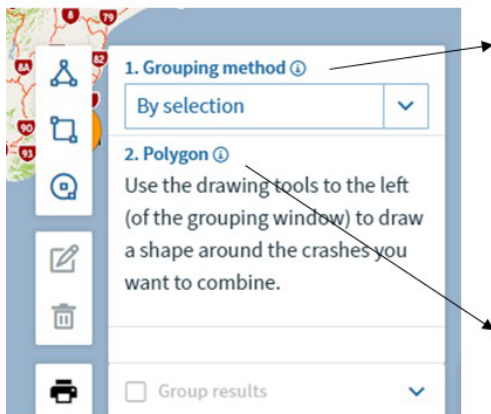
☒ Group results: Proximity

☒ Pins ☐ Heat map

Export crash reports



## Grouping method – by selection



**Grouping method:** A set of tools to manage how crashes are combined to reflect different outcomes. Grouping is a required step to view results in a Collision Diagram, which then displays the crashes sorted by movement code. Please select the method you would like to apply.

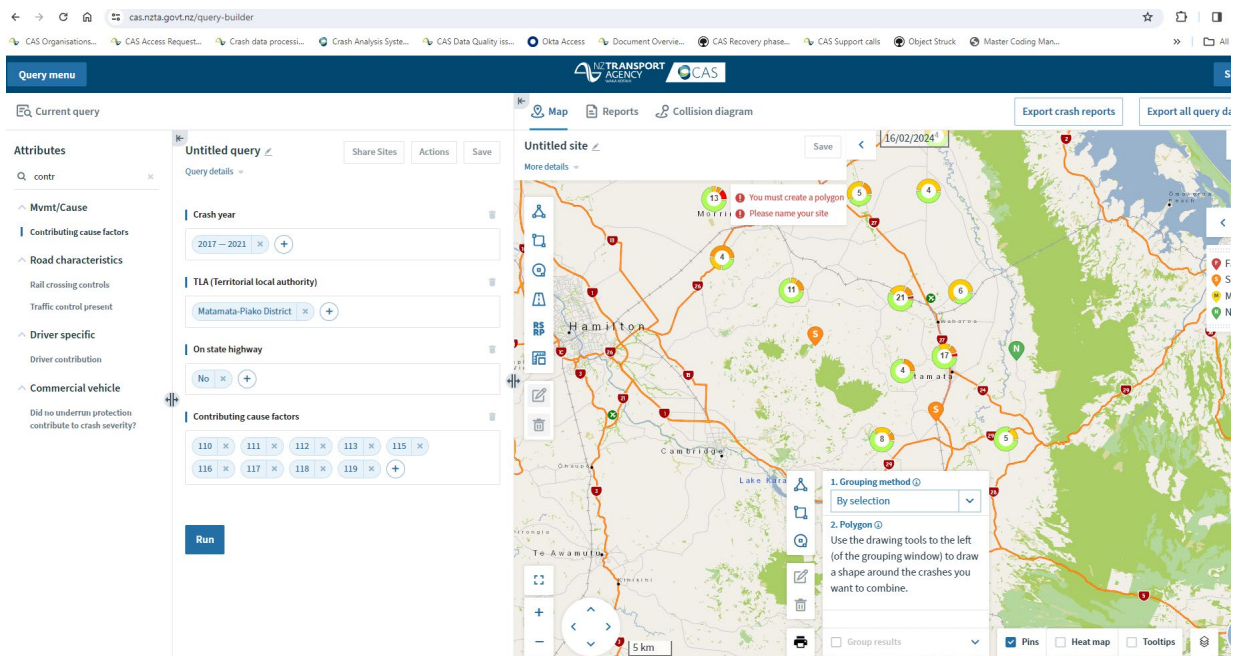
**By selection:** This method will combine each of the crashes within a shape drawn by the user (using the drawing tools next to the grouping window). All crashes within the shape will be gathered in a single cluster. This method can be used to include or exclude crashes from the group depending on the shape that has been drawn.

### Create:

Step 1 - Create a polygon using the shape tools.  
Step 2 - Repeat step 1 to add another polygon. Multiple polygons can be added and are automatically grouped together.

### Edit:

Step 1 - Select the polygon you want to edit.  
Step 2 - Select the Edit icon and reshape your selected polygon by moving the points.  
Step 3 - Select 'Save' from the slide-out tool to save the change.



Query menu

Current query

Attributes

Q: contr

Myself/Cause

Contributing cause factors

Road characteristics

Driver specific

Commercial vehicle

Untitled query

Crash year

2017 - 2023

TLA (territorial local authority)

Matamata-Piako District

On state highway

No

Contributing cause factors

110

111

112

113

115

116

117

118

119

Run

Map

Reports

Collision diagram

Export crash reports

Export all query data

Sign out

Untitled site

16/02/2024

Map

Reports

Collision diagram

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

1. Grouping method

By selection

2. Polygon

i. 8 crashes selected

ii. 21 crashes selected

Use this tool to draw polygon

---

## 8. Collision Diagrams

---

A collision diagram can only be created when **all** of the following criteria are met:

- The query involves the use of a saved site.
- The area of the saved site is less than or equal to 10 square kilometres.
- There are no more than 200 crashes in the query.
- There are no more than eight polygons in the saved site.

### Five steps to create a collision diagram

- Create a polygon
- Save the polygon as a site.
- Run a query using the saved site in the query.
- Group the crashes.
- Click on Collision Diagram.

**Collision diagrams - shows movement code and some environmental conditions for each crash**

#### STEP 1

Log into CAS, select [Go to query builder](#) on the CAS dashboard

- Select an existing query or create a new query with a saved site
- Select 'Run'

Your query results automatically show on the map

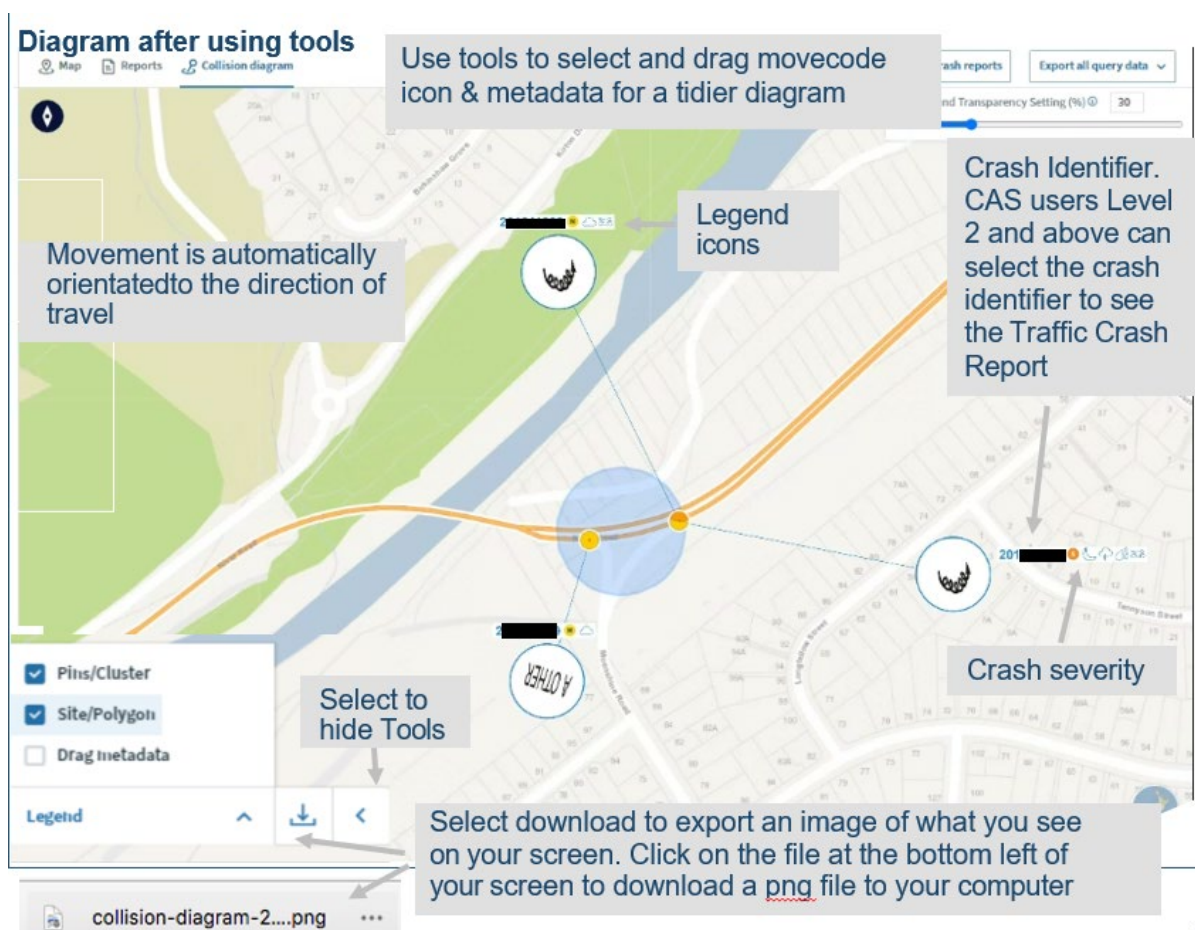
**STEP 2**  
Group crashes (see Chapter 7 Grouping)

**STEP 3**  
Select Collision diagram

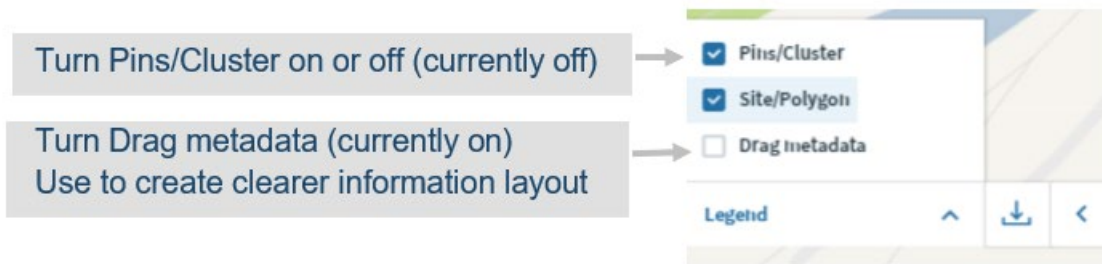
**Hint:** the saved site must be <10km<sup>2</sup> and have <200 crashes per polygon



## Collision diagrams – use collision diagram tools

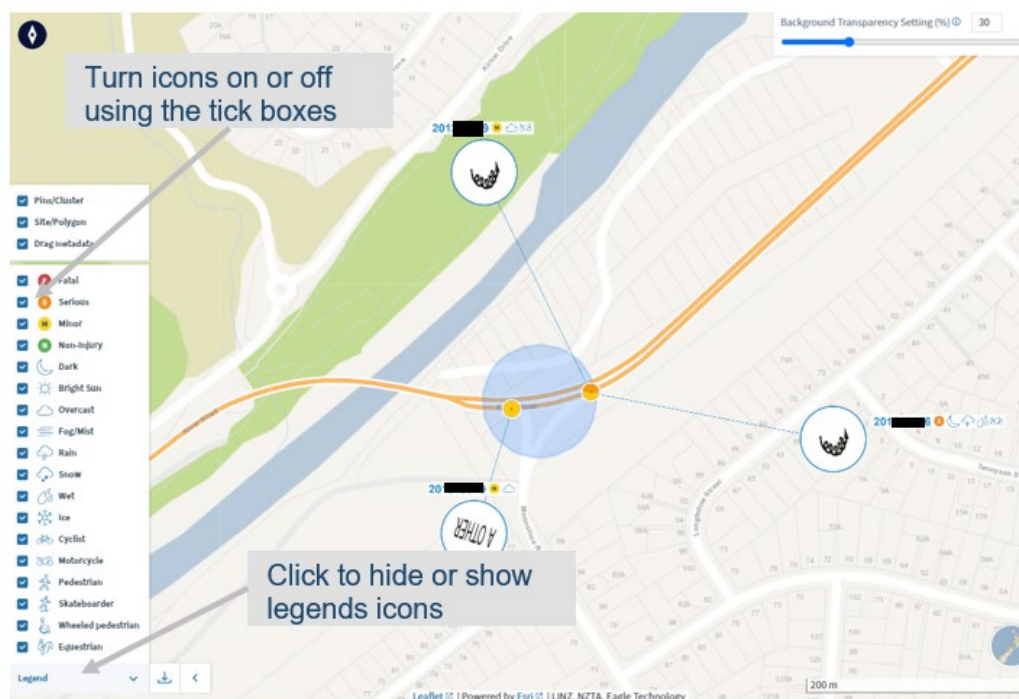






## Collision diagrams – use the legend to turn icons on or off

The legend gives an explanation of the icons



---

## 9. System Hints

---

### **To clear results from the map or the reports before creating a new query**

- Select the 'Home icon' in the top blue navigation bar (this will take you to the CAS Dashboard)
- Select 'Go to Query builder'
- This will take you results.

**Note:** if you run a new query, it will overwrite all previous results.

### **To navigate between the query builder and map or reports view on a smaller screen**

- Select the 'Current query', 'Map' or 'Reports' icons at the top left under the blue navigation bar.

**Note:** If your view of CAS is larger these icons will not all sit at the top left. Map and Reports will sit above the right-hand column which displays these items.

### **To see the attributes, query builder and map on one screen**

To make the view smaller

- select control - on your keyboard!

To make the view larger

- select control + on your keyboard.

### **To zoom into a map or collision diagram**

- Put two fingers on the laptop mouse pad and move apart or use the scroll wheel on your mouse.