



# User Guide

**RTSIMS v2.0**

**February 2017**



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# 1 Introduction

Developing an analytical tool for the purpose of performing crash data analyses was identified as a regional priority in the 2005 MAG Strategic Transportation Safety Plan. The development of the Regional Transportation Safety Information Management System (RTSIMS) software was launched by MAG to address this need, with funding support from the Arizona Department of Transportation (ADOT). The RTSIMS software enables the end user to perform various data queries on a region- or jurisdiction-specific (e.g. MAG or a local agency) crash database that only contains crash data pertinent to the study area. The region-specific crash database contains data obtained from the ADOT Accident Location Identification Surveillance System (ALISS) crash database. The RTSIMS software development effort is an on-going effort supported by the MAG Transportation Safety Committee. The software development task has been a joint effort between staff at Kimley-Horn and Associates who provided expertise in database management systems, MAG staff with expertise in crash data analysis and MAG staff with IT expertise. MAG has sole ownership of all program code associated with this software.

The RTSIMS software is not perfect, but is a very useful, analytical tool for performing crash data analyses. To assist MAG with refinements and enhancements to the software, users are encouraged to submit suggestions and issues encountered while using the software. Known issues, suggested work-arounds, and the process for submitting issues encountered are described in Section 5, System Messages.

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## 1.1 Purpose

The purpose of this comprehensive User's Manual for RTSIMS is to serve as a reference for current and new users at MAG member agencies that may be interested in performing crash data analysis for their jurisdiction by accessing the software via the internet. The first version of this User Guide was developed by Lee Engineering LLC.

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## 1.2 End Users, Authorization and Limitations

RTSIMS is a software tool developed by MAG for performing crash data analysis. Although MAG continues to check the software for errors, it is possible that the software may contain coding errors that may result in inaccurate results. MAG is not liable for any coding errors in RTSIMS. Local agencies are advised to periodically cross check results produced by RTSIMS on ALISS data with similar queries run independently on their own agency crash database.

### 1.2.1 End Users

It is recommended that the local agency staff person designated to utilize RTSIMS be a qualified civil engineer with a background in roadway design or traffic operations and at least two years of experience in crash data analysis. Incorrect use or interpretation of the results of crash data queries using RTSIMS may subject the agency to increased legal liability.

### 1.2.2 Authorization

An agency interested in becoming a user of RTSIMS would be required to fill out a MAG form, have it signed by the City Manager (or equivalent) and submit the form to MAG (RTSIMS@azmag.gov). Upon approval, MAG will provide secure online login access to RTSIMS for designated staff at any MAG member agency, provided the agency has a valid Data Access Agreement in place with ADOT at the time the login account is established. This is based on a requirement in the MAG-ADOT Data Access Agreement that provides MAG with access to the ALISS crash database. MAG assumes that member agencies that are provided with access to RTSIMS will promptly renew their Data Access Agreements with ADOT upon expiration. If an agency continues to access RTSIMS with an expired ADOT Data Access Agreement for an extended period, MAG may have to restrict access until the renewal is finalized.

### 1.2.3 Limitations

A local agency will be provided access to RTSIMS, ONLY for performing crash data analysis for crashes that occur on roads within the agency's boundary. If an agency wishes to obtain ALISS data, they must do so by contacting ADOT. MAG cannot release any raw crash data to local agencies.

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## 2 Motor Vehicle Crash Database

The RTSIMS crash database contains ALISS crash data, in XML format, downloaded from the ADOT Safety Data Mart. The crash database for the MAG region contains crash data from 1999 through 2014, for the current MAG planning area, which includes parts of Pinal County. Every summer, crash data for the previous year is uploaded to RTSIMS.

Effective on January 1, 2009, the Arizona Crash Report Form was updated and the ALISS database restructured. Additionally, ADOT developed the Safety Data Mart system that allows any local agency to retrieve their crash data, provided the local agency has executed a Data Access Agreement with ADOT. This agreement will also allow local enforcement agencies to electronically transfer crash data to ADOT to be entered in ALISS. RTSIMS users may notice that data may be low or absent in certain years (i.e., before 2009 or after 2008). Different query parameters may be necessary to obtain this data. Known queries with this issue are identified in Section 5, System Messages.

The Arizona Crash Report Form was last updated in 2014. RTSIMS Users may notice that data may be low or absent in years before 2014. Different query parameters may be necessary to obtain this data. The 10th edition of [Arizona Crash Report Forms Instruction Manual](#) has published the new form with the new data fields. Use of the 2014 Form is now resulting in new crash related data on: (1) whether the crash was a secondary crash, (2) roadway clearance time, (3) incident clearance time, and (4) wrong way driving.

The FHWA has recently established these three indicators for evaluating the performance of Traffic Incident Management (TIM). According to [FHWA-HOP-10-013](#) "Traffic Incident Management Handbook", these three indicators can be defined as follows:

- Secondary Crashes: The number of secondary crashes beginning with the time of detection of the primary incident where a collision occurs either a) within the incident

scene or b) within the queue, including the opposite direction, resulting from the original incident.

- Roadway Clearance Time: This interval is defined as the time between the first recordable awareness of an incident (detection, notification, or verification) by a responding agency and first confirmation that all lanes are available for traffic flow.
- Incident Clearance Time: This interval is defined as the time between the first recordable awareness of the incident and the time at which the last responder has left the scene.

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## 2.1 ALISS Database Structure

Users are strongly encouraged to reference the 10<sup>th</sup> edition of the [Arizona Crash Report Forms Instruction Manual](#) (2014) and the ALISS code tables in Appendix D – ALISS Code Book Data Dictionary when performing queries in RTSIMS. The ALISS code tables are a data dictionary of codes for all attributes of any crash collected, derived and stored in the ALISS database. The tables define codes at the Incident level, Person level, and Unit level, respectively. The previous year's crash data becomes available in the ALISS database around June of the following year. For example, 2016 crash data will become available in June 2017.

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## 3 Overview of the RTSIMS application

This section explains how to sign-on and connect to RTSIMS, what a user will see when constructing queries, and how to export or save a report. The software provides two options for a user to query the crash database: (1) Standard Reports, or (2) Custom Reports. Section 4 of this User's Manual, includes several examples to illustrate how to utilize either option to construct and run simple or complex queries.

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### 3.1 How to Connect

#### 3.1.1 Obtaining a RTSIMS secure login

To obtain a user secure login to access RTSIMS, complete the request form included in Appendix A – RTSIMS Access Request Form and email it to MAG at [RTSIMS@azmag.gov](mailto:RTSIMS@azmag.gov). It may take up to two weeks to process the request. The user will be notified via email once the user RTSIMS secure login is created. Sharing your user and password with others is strictly forbidden; each individual who needs access to the application must complete this process.

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**Warning:** Users can only access the RTSIMS website from a computer at the public IP Address provided to MAG. To obtain your public IP Address (i.e. 24.248.7.77) perform a Google search with the keywords "what is my IP". Your public IP Address will display at the top of the search results.

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#### 3.1.2 Login to RTSIMS

- Web Address: <https://rtsims.azmag.gov>
- UserName: First Name Initial, Last Name – i.e. sjoshua
- Password: initial password will be provided by MAG

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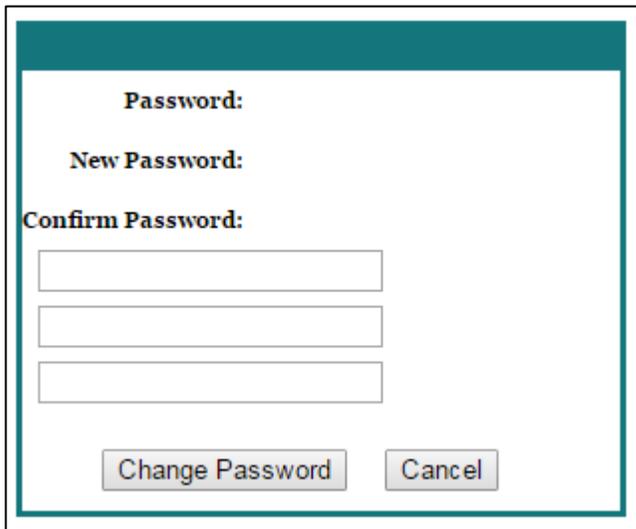
**Note:** Users connecting for the first time will be prompted to change their password. The password must be at least eight characters in length, contain one upper-case letter, one lower-case letter, one number, and one special character. Users must change their password at least once every 6 months.

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## 3.2 Homepage

All of the pages within the RTSIMS site can be accessed by the navigation pane located at the top of each webpage. The 'Home' link will navigate you to a page with an introduction of how to use the application and link to change password. The 'Standard Reports' link will navigate you to a page containing all of the standard reports. The 'Custom Reports' page will allow the user to create their own custom query and generate a report.

The Home screen is the default screen for the user once entering the site. This screen provides a brief overview of the site and gives the user an opportunity to change their password. To change the password, the user should select the “Change Password” hyperlink located at the bottom of the page. The user will need to enter their current password followed by a new password and a confirmation of the new password. The password must be at least eight characters in length, contain one upper-case letter, one lower-case letter, one number, and one special character. After selecting the “Change Password” hyperlink, the dialog box will appear as shown below.



The screenshot shows a dialog box with a teal header bar. Inside the dialog, there are three labels: "Password:", "New Password:", and "Confirm Password:". Below each label is a corresponding text input field. At the bottom of the dialog, there are two buttons: "Change Password" and "Cancel".

Users must change their password at least once every 6 months.

### 3.3 Standard Reports

The Standard Reports screen is comprised of several drop-down lists or menus to allow the user to create any combination of information included in standard reports. Each drop-down menu and their options are presented here.

**Note:** In accordance with the ADOT data agreement, local jurisdictions will be able to run queries ONLY on crash data pertinent to their own jurisdiction. However, MAG will have access to crash data for the entire region and will be able to run any query. If a local agency desires to run a query for crash data in another jurisdiction, please submit a request to MAG at [RTSIMS@azmag.gov](mailto:RTSIMS@azmag.gov).

#### 3.3.1 Standard Reports – Report Type



The screenshot shows the 'Standard Reports' interface with the following settings:

- Report Type: Crash Totals (dropdown menu)
- Graph: Crash Totals (dropdown menu)
- Display: High Crash Intersections (dropdown menu)
- Person Type: Freeway by Milepost by Direction (dropdown menu)
- Road Type: All (dropdown menu)
- Vehicle Type: All (dropdown menu)
- Year: 1999 - 2002 (range selector)

Buttons: Generate, Export Raw Data

There are five basic report types: *Crash Totals*, *Crash Severity*, *High Crash Intersections*, *Crashes by Year by Highway*, and *Freeway by Milepost by Direction*.

- The *Crash Totals* report will result in six columns: the year, the total number of crashes, the number of injury crashes, the number of fatal crashes, the number of injuries (persons injured), and the number of fatalities (persons). (Note: The crash totals generated identifies all crashes that have occurred within the boundary of the jurisdiction for the selected years – this includes both freeway and non-freeway crashes.)
- The *Crash Severity* report has eight columns which include the year, number of non-injury crashes (property damage only), possible injury crashes, non-incapacitating injury crashes, incapacitating injury crashes, fatal crashes, unknown crashes, and total crashes. (Note: The crash totals generated identifies all crashes by KABCO scale that

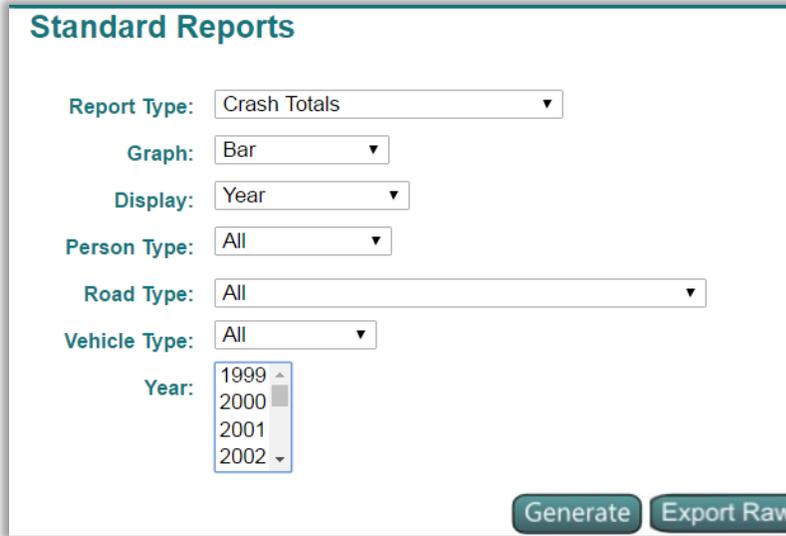
have occurred within the boundary of the jurisdiction for the selected years – this includes both freeway and non-freeway crashes.)

- The *High Crash Intersections* report will display a user-defined number of intersections with the most crashes within an agency (city, town or tribal area) by the National Crime Information Center (NCIC) code on the crash report that uniquely identifies each law enforcement agency. There are five options for identifying intersections by: All Crashes; Injury Crashes; Fatal Crashes; User Severity Index; Intersection Safety Score. There are five options for selecting person types involved in crashes.
- The *Crashes by Year by Highway* will display the number of crashes that occur on the selected freeway for each year within the jurisdictional boundary.
- The *Freeway by Milepost by Direction* report will display the number of crashes that occur at each milepost in a specific direction by the KABCO injury severity.

Drop-down menus may change depending on the report type that is chosen. For example, default drop-down menu options are used for the Crash Totals and Crash Severity report type queries, but the menus change if High Crash Intersections, Crashes by Year by Highway, or Freeway by Milepost by Direction are chosen. The following section explains these changes and provides referenced images.

### Default Drop-Down Menu: Crash Totals and Crash Severity

The default drop-down menus are shown below. These drop-down menus are consistent for the Crash Totals and Crash Severity report types.



**Standard Reports**

Report Type: Crash Totals

Graph: Bar

Display: Year

Person Type: All

Road Type: All

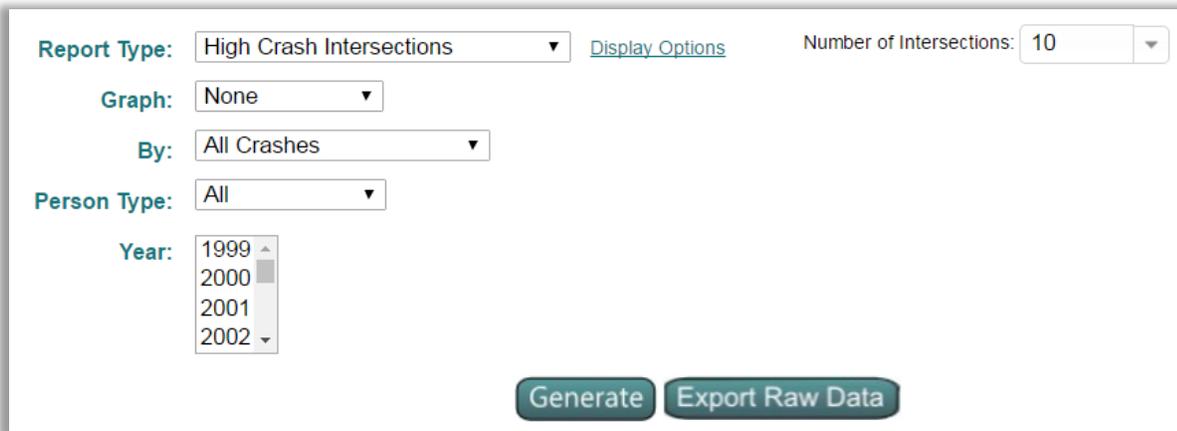
Vehicle Type: All

Year: 1999, 2000, 2001, 2002

Generate Export Raw

### Drop-Down Menu: High Crash Intersections

The following default drop-down menus are shown if the High Crash Intersections report type is selected:



Report Type: High Crash Intersections [Display Options](#) Number of Intersections: 10

Graph: None

By: All Crashes

Person Type: All

Year: 1999, 2000, 2001, 2002

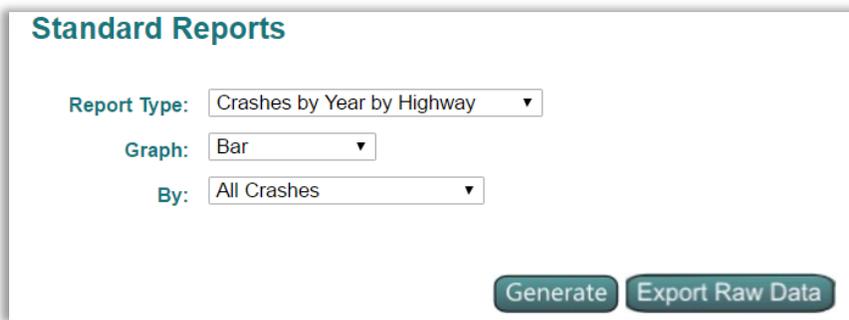
Generate Export Raw Data

The number of intersections that can be selected from the drop-down menu are 10, 25, 50, and 100. In addition to these values, the user can also input any integer greater than zero or enter the text “All”. If “All” is entered, any intersection (with reported crashes) that applies to the query will be displayed in the generated report. Please note that exact letter case is important, and RTSIMS will only accept “All”.

The graphing feature for this report type is disabled; the only drop-down option from the graph menu is “None”. In the By drop-down menu, the data can be filtered by All Crashes, Injury Crashes, Fatal Crashes, User Severity Index (See Note below), and the Intersection Safety Score. The Person Type and Year filters are typical of the other standard report queries. More information regarding the User Severity Index and the Intersection Safety Score can be found in Section 3.3.5.

### **Drop-Down Menu: Crashes by Year by Highway:**

The term “Highways” as used in RTSIMS refers to freeways within the MAG Planning Area. The following default menu is shown if the Crashes by Year by Highway report type is selected:



The screenshot shows a web interface titled "Standard Reports". It contains three dropdown menus: "Report Type" set to "Crashes by Year by Highway", "Graph" set to "Bar", and "By" set to "All Crashes". At the bottom right, there are two buttons: "Generate" and "Export Raw Data".

The options for the Graph drop-down menu are Bar, Trend, or None. The By drop-down menu can filter the data by All Crashes, Injury Crashes, Fatal Crashes, Total Injuries (person), Total Fatalities (person), and Total Injuries and Fatalities (person).

### **Drop-Down Menu: Freeway by Milepost by Direction**

The following default menu is shown if the Freeway by Milepost by Direction is shown below. The freeways available for analysis in the MAG Region are I-10, I-17, SR 101, SR 202, SR 303, SR 51, SR 143, I-8, SR 153, and US 60. The Year filter is typical of the other standard report queries. A query will produce results ONLY if the freeway is located within the jurisdictional boundary.

**Standard Reports**

Report Type: Freeway by Milepost by Direction ▼

Freeway: I-10 ▼

Year: 1999 ▲  
2000 ▲  
2001 ▲  
2002 ▼

Generate Export Ra

**Note:** SR 153 only has data from 1999 through 2008. Since then, the roadway is known as 44<sup>th</sup> Street. SR 303 includes data for several years although it opened as a limited access freeway in 2013. In addition, the query will return totals for crashes on Freeways in your jurisdiction ONLY, with “0” in the columns for the other freeways. Example: A query run by Chandler will have “0” throughout the SR 303 column.

### 3.3.2 Standard Reports – Graph

Graph: Bar ▼

Display: Trend

on Type: Pie

None

There are four Graph options a user can choose to incorporate into a report. The graph types include a bar chart, a trend (or line) graph, a pie chart, or a user can select to have no graph. Certain reports may remove a graph option if the graph would not display useful information or is too complex (e.g. the Freeway by Milepost by Direction report has no graph associated with it).

### 3.3.3 Standard Reports – Freeway

Freeway: I-10 ▼

Year: I-10 ▲  
I-17 ▲  
S-101 ▲  
S-202 ▲  
S-303 ▲  
S-51 ▲  
S-143 ▲  
I-08 ▲  
S-153 ▲  
US-60 ▲

This drop-down menu contains all the searchable freeways to choose from when using the Freeway by Milepost by Direction report. Use this drop-down to choose the freeway for this report.

### 3.3.4 Standard Reports – Display

|                      |                  |
|----------------------|------------------|
| <b>Display:</b>      | Month            |
| <b>Person Type:</b>  | Year             |
| <b>Road Type:</b>    | Month            |
| <b>Vehicle Type:</b> | Weekday          |
| <b>Year:</b>         | Hour             |
|                      | Collision Manner |
|                      | Age Group        |
|                      | Sex              |
|                      | Freeway          |
|                      | Injury Severity  |

This drop-down menu contains options to group or sort the crash data for the Crash Totals and Crash Severity reports. The options included in the drop-down menu include: Year, Month, Weekday (Day of Week), Hour, Collision Manner, Age group, Sex, Freeway, And Injury Severity.

### 3.3.5 Standard Reports – By

|              |                           |
|--------------|---------------------------|
| <b>By:</b>   | All Crashes               |
| <b>Type:</b> | All Crashes               |
| <b>Year:</b> | Injury Crashes            |
|              | Fatal Crashes             |
|              | User Severity Index       |
|              | Intersection Safety Score |

When the High Crash Intersection report is chosen, this drop-down menu gives the user control to select how the intersections are ranked. The intersections can be ranked by All Crashes, by Injury Crashes, Fatal Crashes, by User Severity Index, or by the Intersection Safety Score (ISS).

## User Severity Index

### Standard Reports

**Report Type:** High Crash Intersections [Display Options](#)
**Number of Intersections:** 10

**Graph:** None

**By:** User Severity Index

**Person Type:** All Crashes  
Injury Crashes  
Fatal Crashes

**Year:** User Severity Index  
Intersection Score  
2002

**User Severity Index**

| O | C  | B  | A   | K    |                      |
|---|----|----|-----|------|----------------------|
| 1 | 11 | 20 | 100 | 1450 | <a href="#">Edit</a> |

Generate Export Raw Data

The User Severity Index can be selected and customized as a method of ranking intersections within a jurisdiction for crash severity. The user has the option to view the 10, 25, 50, or 100 intersections ranked in descending order by the highest severity index. The user can also type in any integer greater than zero or type the word “All”. The intersections are weighted by the sum of the products of the number of crashes per severity by severity weight (as defined by the user). The crash severity categories are Fatal Crash (K), Incapacitating Injury (A), Non-Incapacitating Injury (B), Possible Injury (C), and Property Damage Only/No Injury (O). The severity index score (SC) is calculated as follows:

$$SC = (K * k_w) + (A * a_w) + (B * b_w) + (C * c_w) + (O * o_w)$$

The variables in lowercase indicate the user defined severity weight for that particular crash severity. The custom weighting factors for the desired analysis can be entered by selecting ‘Edit’ in the User Severity Index box. To weight all crash severity types equally, you could define 1.0 for each weight factor. To consider only fatal and incapacitating injury crashes, you would define zero for O, C, and B and 1.0 for A and K.

## Intersection Safety Score

**Standard Reports**

Report Type: High Crash Intersections [Display Options](#)      Number of Intersections: 10

Graph: None

By: Intersection Safety Score

Person Type: All Crashes

Year: 2015

[Intersection Safety Score](#)

[Generate](#) [Export Raw Data](#)

| User Severity Index |    |    |     |      |                      |
|---------------------|----|----|-----|------|----------------------|
| O                   | C  | B  | A   | K    |                      |
| 1                   | 11 | 20 | 100 | 1450 | <a href="#">Edit</a> |

The Intersection Safety Score (ISS) was developed as a part of the MAG Network Screening Methodology for Intersections (NSM-I). This approach includes several safety assessment techniques that are weighted and combined to determine the ISS. The intent of the composite ISS approach is to minimize known biases in the analysis procedure. The MAG NSM-I approach uses the following crash-related attributes in developing the Intersection Safety Score: Crash Frequency (CF), Crash Severity (CS), and Crash Type (CT). The ISS is then computed by assigning a 25%, 50%, 25% weighting of the CF, CS, and CT, respectively. The process for determining the User Crash Severity Index (CS) is explained in the previous section, and is calculated as a component of the ISS. The weighting factors of the crash severity types (e.g., O, C, B, A, K) can be customized in the User Severity Index box shown above by selecting 'Edit'. The [MAG NSM-I](#) recommends the following weighting factors, respectively for O, C, B, A and K: 1, 11, 20, 100, and 1450. These factors are based on the average comprehensive cost of crashes for the five severity categories as published by the [National Safety Council](#). (Verify if new costs have been published by NSC in 2014, or use the latest costs endorsed by ADOT for federally funded safety projects)

### Step-by-Step Guide for Using the Intersection Safety Score feature:

#### Step 1: Select High Crash Intersections

Select "High Crash Intersections" in the Report Type drop-down menu. When this is selected, an additional entry box entitled "Number of Intersections" will appear in the center of the screen.

#### Step 2: Select Intersection Safety Score

In the By drop-down menu, select “Intersection Safety Score”. When this is selected, the User Severity Index Box will appear in the upper right corner of the screen.

#### Step 3: Selection of Person Type

In the Person Type drop-down menu, select one of the following options: “All”, “Younger Driver”, “Older Driver”, “Pedestrian”, or “Bicyclist”.

#### Step 4: Select Year(s)

In the Year selection box, select the year(s) that are of interest. Hold down the keyboard function “Ctrl” as you click on the years to make multiple selections.

#### Step 5: Select the Number of Intersections

Define the report required by identifying the number of highest ranked intersections to be listed in the report produced by the query. By clicking on the arrow in the Number of Intersections drop-down menu, the user has the opportunity to select from the following values: 10, 25, 50, and 100. The default setting in RTSIMS is 10 intersections. The user can also enter “All” to list all intersections ranked by ISS.

#### Step 6: Open the Display Options

Click on the text that is titled “Display Options”. When this is selected, an additional entry box, Offset (Feet), will appear in the center of the screen.

#### Step 7: Select the Offset Distance

Enter in the offset distance that will be considered for the query. The offset specifies the distance from the center of the intersection to the crash location, which is to be included in the query. Click in the Offset (Feet) box to modify the value. The default value used is 250 feet.

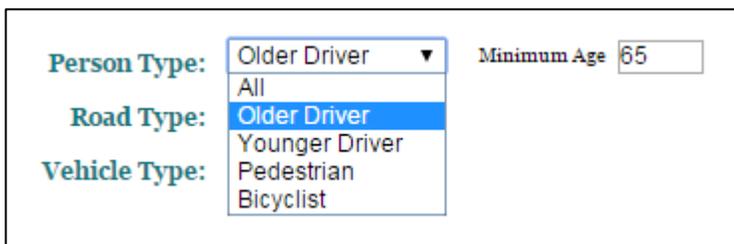
#### Step 8: Select the User Severity Index Values

In the User Severity Index box, select “Edit” to modify the values. The default values used for O, C, B, A, and K are 1, 11, 20, 100, and 1450, respectively. Select “Update” to save your changes.

**Step 9: Generate Report**

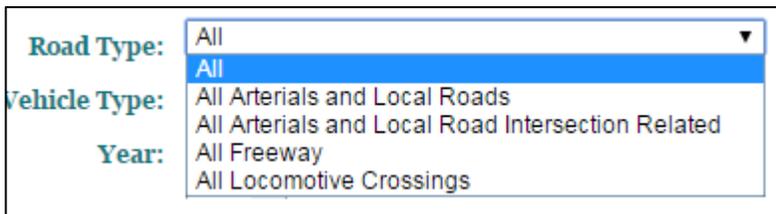
After all selections have been made, select “Generate” to create the analysis report.

### 3.3.6 Standard Reports – Person Type



The ‘Person Type’ drop-down menu allows the user to filter the report by characteristics of the persons involved in the crash. The user can filter by Older Driver (and additionally define the minimum age for this age category), Younger Driver (and similarly define the maximum age for this age category), Pedestrian, and Bicyclist. Typically, an Older Driver is defined as age 65 and above and a Younger Driver is defined as age 24 and below.

### 3.3.7 Standard Reports – Road Type



The ‘Road Type’ drop-down menu allows the user to filter the report by crashes that occurred on certain types of roads. The user can filter by crashes that occurred on arterials, collectors, and local roads, crashes that occurred on arterials, collectors, and local roads related to Intersections, crashes that occurred on freeways and crashes that occurred at locomotive

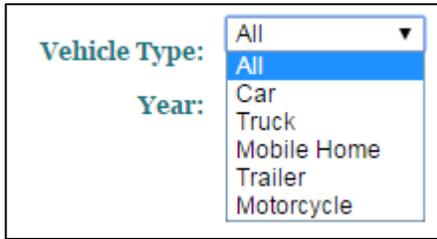
(heavy rail) crossings. In RTSIMS, the term “Arterial and Local Roads” includes all public surface streets including collector streets.

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**Note:** The ability to distinguish between urban roads and rural roads is not currently available in RTSIMS.

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### 3.3.8 Standard Reports – Vehicle Type



The ‘Vehicle Type’ drop-down menu allows the user to filter the report by vehicle types involved in the crash. These vehicle types include All, Car, Truck, Mobile Home, Trailer, and Motorcycle.

### 3.3.9 Standard Reports – Year



The ‘Year’ drop-down menu allows the user to filter the report by crashes that occurred during certain years. The years available to choose from will include all years that data is available, dating back to 1999. For areas recently added to the MAG Planning Area, the historical crash data has been obtained. A user can select multiple years for a standard report.

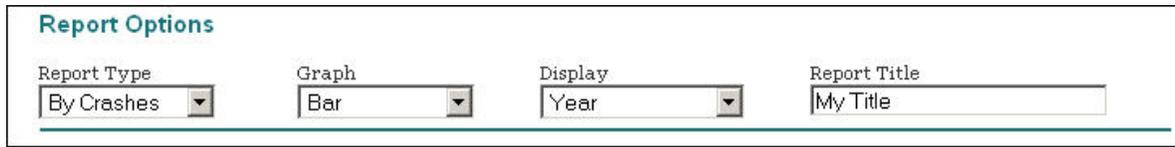
### 3.4 Custom Reports

When entering the Custom Reports screen, the user will initially see a list-box that contains previously saved reports by that particular user. If the user has a saved report and would like to view the report, all the user needs to do is select the report and click on the generate button. If however, the user does not have any saved reports or the user would like to create a new report, the user should select the 'display options' hyperlink. This will open a new display area below other main sections: Report Options and Filter Data.



## Custom Reports – Report Options

The report options section provides a simple user interface to define report options.

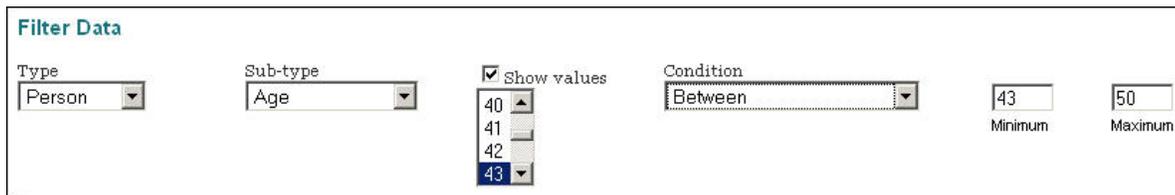


The screenshot shows a form titled "Report Options" with four input fields: "Report Type" (dropdown menu with "By Crashes" selected), "Graph" (dropdown menu with "Bar" selected), "Display" (dropdown menu with "Year" selected), and "Report Title" (text input field with "My Title" entered).

There are three Report Types: *By Crashes*, *By Persons*, and *By Intersections*.

- The resulting data in a report *By Crashes* will be the number of crashes applicable to the user query.
- The resulting data in a report *By Persons* will be the number of people involved in the queried crashes.
- The resulting data in a report *By Intersections* will be the number of crashes applicable to the user query listed by intersection (e.g., JEFFERSON ST & 12TH ST). The only graph option with this report type is “None”.

### 3.4.1 Custom Reports – Filter Data

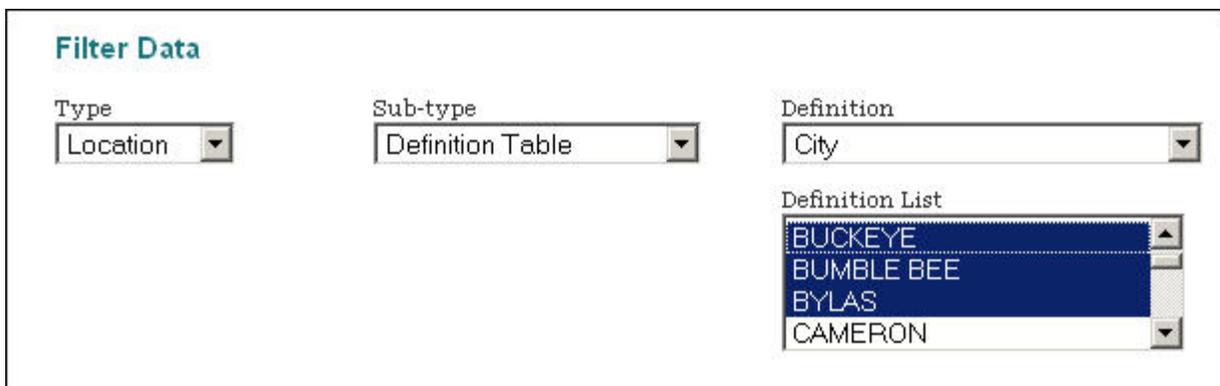


The screenshot shows a form titled "Filter Data" with several input fields: "Type" (dropdown menu with "Person" selected), "Sub-type" (dropdown menu with "Age" selected), a checked "Show values" checkbox, a "Condition" dropdown menu with "Between" selected, and two numeric input fields for "Minimum" (43) and "Maximum" (50). A small list of values (40, 41, 42, 43) is visible below the "Show values" checkbox, with 43 highlighted.

The Filter Data options allow the user to define filters to construct a desired data query using data fields available within the ALISS database. To help find the user’s preferred filter, the database tables are divided into different general categories or Types. The categories include incident-related fields (date, collision manner, etc.), location-related fields (road, city, etc.), person-related fields (injury status, age, etc.), traffic unit related fields (unit type, travel direction, etc.), vehicle-related fields (body style, make, etc.), and special fields (year and intersection). The Sub-Type drop-down values menu contains the fields related to each Type. For example, if the user selects ‘Person’, a sub-type is ‘Age’. When a Sub-Type is selected, the user can enter a Condition to filter the selected field such as greater than, less than, between, etc...

To view the values contained in the database for the combination of 'Type' and 'Sub-type' field, select the 'Show values' checkbox. The filter can then be applied in two ways. The first way is to enter the range of values in the Condition text box. Once the range is entered, the user should select the 'Add Filter' button to add the filter. The other option is to highlight the desired values in the 'Show Values' menu. Once the values are highlighted, select the 'Add Filter' button to add the filter.

Additionally, for each category in the Type drop-down menu is a 'Definition Table' option in the Sub-type drop-down menu. All variables in the database which have a description associated with a field code (for example, City has a code and name attached to it) are contained within this 'Definition Table' option. As the example below shows, when City is selected a list of cities in the database appears. Simply select the city or cities you want to search for crash data and select 'Add Filter' to guarantee that only crash data from these cities will be used.



**Filter Data**

Type: Location

Sub-type: Definition Table

Definition: City

Definition List

- BUCKEYE
- BUMBLE BEE
- BYLAS
- CAMERON

At any time, the user can also remove or update any existing filters by selecting the filter condition and then selecting the 'Remove Filter' or 'Update Filter'.

---

**Note:** In accordance with the ADOT data agreement, local jurisdictions will be able to run queries ONLY on crash data pertinent to their own jurisdiction. When 'City' is selected in the Definition drop-down box, only the relevant local agency name will appear. However, MAG will have access to crash data for the entire region and will be able to run any query. If a local agency desires to run a query for crash data in another jurisdiction, please submit a request to MAG at [RTSIMS@azmag.gov](mailto:RTSIMS@azmag.gov).

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## 3.5 Saving Custom Reports

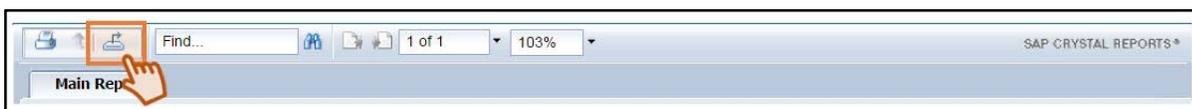
If the user is satisfied with the report, they will have the option to save the report by selecting the Save Report button located beneath the large query box that contains the filters used to create the report. When the Save button is clicked, the user will be prompted to enter a title for the report so that the report can be located at a later time. Once the title is entered, the user can select 'Save' to save the report. Once a report is saved, it can only be deleted by a MAG Administrator. Administrators can save a report to another user. In this manner, an administrator has the ability to share reports with other users.

---

## 3.6 Printing and Exporting Reports

Crystal Reports allows the user to print and export the report to various formats. In order to do this, the user should click the disk icon  at the top of a generated report. The user will then have the ability to export this report, with the query input details, to a variety of desktop applications. These applications include:

1. Crystal Reports
2. PDF
3. Microsoft Excel
4. Microsoft Word
5. Rich Text Format
6. XML



---

**Note:** To export the report to any of these formats, the user will need to have the respective application installed on their client machine (i.e., computer).

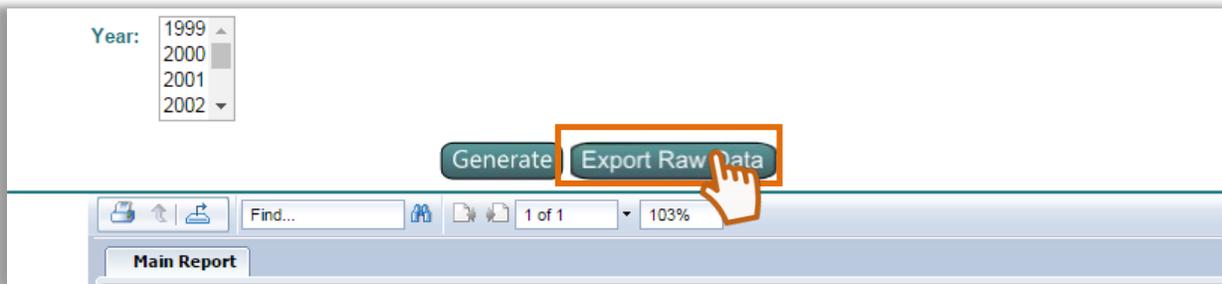
---

---

## 3.7 Raw Data Export

A new feature has been added to Version 2.0 to enable a raw data export from any query. This capability is provided for both Standard and Custom Reports. This capability provides the user another way to export raw data, in an Excel format, for sorting and filtering data fields beyond what is available in the query using the "Export this Report" utility described

above in 3.6. One of the most useful capabilities with the Export Raw Data is that of being able to export the Latitude and Longitude information that can then be plotted using various third party mapping programs. The Export Raw Data capability can be used to do a more in depth analysis of all crash data for a given analysis time period and location, City/Town, or the entire MAG region. The query will need to be generated, clicking on the Generate button, before clicking on the Export Raw Data button. Upon selection this option the user is prompted to identify the data fields to be exported.



---

**Note:** The number and types of data fields available for export depend on what the User has chosen for **Display:**, and **Road Type:**. Typically, only the “incident” fields are available for export. If any of the “person” related choices are selected under **Display:**, such as Sex or Age Group, additional fields will be available under the “persons” structure of the ALISS database, along with the “incident” fields. Only information coded on the crash report is available to be exported. Therefore, fields such as “citation” will not be available.

---

Example 1: Data Export Fields with no data filters chosen in a Standard Query, where all defaults are maintained, will produce 42 “incident” fields only that can be exported. These include; IncidentID, AccDateTime, CollisionManner, InjurySeverity, among others.

Default view of Data Export fields for Example 1.

Select Fields to Export

[Select All](#) [Unselect All](#)

|   |  |   |  |
|---|--|---|--|
| <input checked="" type="checkbox"/> IncidentID (Incident)               | <input checked="" type="checkbox"/> Microfilm (Incident)                   | <input checked="" type="checkbox"/> ADOTReceivedDate (Incident)       | <input checked="" type="checkbox"/> Status (Incident)                    |
| <input checked="" type="checkbox"/> DataConv2008Flag (Incident)         | <input checked="" type="checkbox"/> AccDateTime (Incident)                 | <input checked="" type="checkbox"/> OfficerNcic (Incident)            | <input checked="" type="checkbox"/> OfficerId (Incident)                 |
| <input checked="" type="checkbox"/> FileNumber (Incident)               | <input checked="" type="checkbox"/> ExtendedNcic (Incident)                | <input checked="" type="checkbox"/> DamageOverLimitFlag (Incident)    | <input checked="" type="checkbox"/> PhotosTakenFlag (Incident)           |
| <input checked="" type="checkbox"/> PhotographerName (Incident)         | <input checked="" type="checkbox"/> PhotographerID (Incident)              | <input checked="" type="checkbox"/> PhotographerAgency (Incident)     | <input checked="" type="checkbox"/> InvestigatedAtSceneFlag (Incident)   |
| <input checked="" type="checkbox"/> DateTimeInvestigated (Incident)     | <input checked="" type="checkbox"/> CollisionManner (Incident)             | <input checked="" type="checkbox"/> LightCondition (Incident)         | <input checked="" type="checkbox"/> FirstHarmfulEvent (Incident)         |
| <input checked="" type="checkbox"/> FirstHarmfulLocation (Incident)     | <input checked="" type="checkbox"/> TotalUnits (Incident)                  | <input checked="" type="checkbox"/> TotalMotorists (Incident)         | <input checked="" type="checkbox"/> TotalNonMotorists (Incident)         |
| <input checked="" type="checkbox"/> TotalInjuries (Incident)            | <input checked="" type="checkbox"/> TotalFatalities (Incident)             | <input checked="" type="checkbox"/> TotalMotoristsInjuries (Incident) | <input checked="" type="checkbox"/> TotalNonMotoristsInjuries (Incident) |
| <input checked="" type="checkbox"/> TotalMotoristsFatalities (Incident) | <input checked="" type="checkbox"/> TotalNonMotoristsFatalities (Incident) | <input checked="" type="checkbox"/> InjurySeverity (Incident)         | <input checked="" type="checkbox"/> MedicalTransportFlag (Incident)      |
| <input checked="" type="checkbox"/> FatalAccidentFlag (Incident)        | <input checked="" type="checkbox"/> TowAwayFlag (Incident)                 | <input checked="" type="checkbox"/> NscReportable (Incident)          | <input checked="" type="checkbox"/> SchoolBusRelatedFlag (Incident)      |
| <input checked="" type="checkbox"/> WorkZoneRelatedFlag (Incident)      | <input checked="" type="checkbox"/> WorkersPresentFlag (Incident)          | <input checked="" type="checkbox"/> AlcoholInvolvementFlag (Incident) | <input checked="" type="checkbox"/> DrugInvolvementFlag (Incident)       |
| <input checked="" type="checkbox"/> HazardousFlag (Incident)            | <input checked="" type="checkbox"/> HitAndRunFlag (Incident)               |   |  |

[Export](#) [Cancel](#)

Example 2: Data Export Fields with chosen filters for Display: 'Sex', and Road Type: 'All Arterials and Local Roads' in a Standard Query where all other defaults are maintained will produce 42 "incident", 23 "location", and 14 "person" fields that can be exported. These include; IncidentID, AccDateTime, CollisionManner, InjurySeverity, OnRoad, CrossingFeature, Offset, Latitude, Longitude, PersonType, SafetyDevice, and InjuryStatus, among others.

## Default view of Data Export fields for Example 2

Select Fields to Export

[Select All](#) [Unselect All](#)

|   |  |   |  |
|---|--|---|--|
| <input checked="" type="checkbox"/> IncidentID (Incident)               | <input checked="" type="checkbox"/> Microfilm (Incident)                   | <input checked="" type="checkbox"/> ADOTReceivedDate (Incident)       | <input checked="" type="checkbox"/> Status (Incident)                    |
| <input checked="" type="checkbox"/> DataConv2008Flag (Incident)         | <input checked="" type="checkbox"/> AccDateTime (Incident)                 | <input checked="" type="checkbox"/> OfficerNcic (Incident)            | <input checked="" type="checkbox"/> OfficerId (Incident)                 |
| <input checked="" type="checkbox"/> FileNumber (Incident)               | <input checked="" type="checkbox"/> ExtendedNcic (Incident)                | <input checked="" type="checkbox"/> DamageOverLimitFlag (Incident)    | <input checked="" type="checkbox"/> PhotosTakenFlag (Incident)           |
| <input checked="" type="checkbox"/> PhotographerName (Incident)         | <input checked="" type="checkbox"/> PhotographerID (Incident)              | <input checked="" type="checkbox"/> PhotographerAgency (Incident)     | <input checked="" type="checkbox"/> InvestigatedAtSceneFlag (Incident)   |
| <input checked="" type="checkbox"/> DateTimeInvestigated (Incident)     | <input checked="" type="checkbox"/> CollisionManner (Incident)             | <input checked="" type="checkbox"/> LightCondition (Incident)         | <input checked="" type="checkbox"/> FirstHarmfulEvent (Incident)         |
| <input checked="" type="checkbox"/> FirstHarmfulLocation (Incident)     | <input checked="" type="checkbox"/> TotalUnits (Incident)                  | <input checked="" type="checkbox"/> TotalMotorists (Incident)         | <input checked="" type="checkbox"/> TotalNonMotorists (Incident)         |
| <input checked="" type="checkbox"/> TotalInjuries (Incident)            | <input checked="" type="checkbox"/> TotalFatalities (Incident)             | <input checked="" type="checkbox"/> TotalMotoristsInjuries (Incident) | <input checked="" type="checkbox"/> TotalNonMotoristsInjuries (Incident) |
| <input checked="" type="checkbox"/> TotalMotoristsFatalities (Incident) | <input checked="" type="checkbox"/> TotalNonMotoristsFatalities (Incident) | <input checked="" type="checkbox"/> InjurySeverity (Incident)         | <input checked="" type="checkbox"/> MedicalTransportFlag (Incident)      |
| <input checked="" type="checkbox"/> FatalAccidentFlag (Incident)        | <input checked="" type="checkbox"/> TowAwayFlag (Incident)                 | <input checked="" type="checkbox"/> NscReportable (Incident)          | <input checked="" type="checkbox"/> SchoolBusRelatedFlag (Incident)      |
| <input checked="" type="checkbox"/> WorkZoneRelatedFlag (Incident)      | <input checked="" type="checkbox"/> WorkersPresentFlag (Incident)          | <input checked="" type="checkbox"/> AlcoholInvolvementFlag (Incident) | <input checked="" type="checkbox"/> DrugInvolvementFlag (Incident)       |
| <input checked="" type="checkbox"/> HazardousFlag (Incident)            | <input checked="" type="checkbox"/> HitAndRunFlag (Incident)               | <input checked="" type="checkbox"/> IncidentID (Location)             | <input checked="" type="checkbox"/> Onroad (Location)                    |
| <input checked="" type="checkbox"/> CrossingFeature (Location)          | <input checked="" type="checkbox"/> Offset (Location)                      | <input checked="" type="checkbox"/> OffsetMeasuredFlag (Location)     | <input checked="" type="checkbox"/> OffsetUnit (Location)                |
| <input checked="" type="checkbox"/> MPNum (Location)                    | <input checked="" type="checkbox"/> MPOffset (Location)                    | <input checked="" type="checkbox"/> CityId (Location)                 | <input checked="" type="checkbox"/> CountyId (Location)                  |
| <input checked="" type="checkbox"/> StateCode (Location)                | <input checked="" type="checkbox"/> CountryCode (Location)                 | <input checked="" type="checkbox"/> Latitude (Location)               | <input checked="" type="checkbox"/> Longitude (Location)                 |
| <input checked="" type="checkbox"/> ValidLocationFlag (Location)        | <input checked="" type="checkbox"/> LocationToolVersion (Location)         | <input checked="" type="checkbox"/> IntersectionFlag (Location)       | <input checked="" type="checkbox"/> HESIntersectionFlag (Location)       |
| <input checked="" type="checkbox"/> PropertyDamageDescCode (Location)   | <input checked="" type="checkbox"/> IncidentID (Person)                    | <input checked="" type="checkbox"/> UnitNumber (Person)               | <input checked="" type="checkbox"/> PersonNumber (Person)                |
| <input checked="" type="checkbox"/> PersonType (Person)                 | <input checked="" type="checkbox"/> ZipCode (Person)                       | <input checked="" type="checkbox"/> Age (Person)                      | <input checked="" type="checkbox"/> Sex (Person)                         |
| <input checked="" type="checkbox"/> SeatPosition (Person)               | <input checked="" type="checkbox"/> SafetyDevice (Person)                  | <input checked="" type="checkbox"/> Airbag (Person)                   | <input checked="" type="checkbox"/> InjuryStatus (Person)                |
| <input checked="" type="checkbox"/> Ejection (Person)                   | <input checked="" type="checkbox"/> Extraction (Person)                    | <input checked="" type="checkbox"/> NonMotoristLocation (Person)      |  |

[Export](#) [Cancel](#)

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## 4 Step by Step Instructions for using the system

This section includes several examples to illustrate how to utilize the Standard or Custom Report option to construct and run standard or complex queries. Any user, with sufficient knowledge of crash data variables (see Appendix D – ALISS Code Book Data Dictionary), should be able to become proficient in using RTSIMS software to perform crash analyses for their local jurisdiction.

---

### 4.1 Example Standard Report Queries

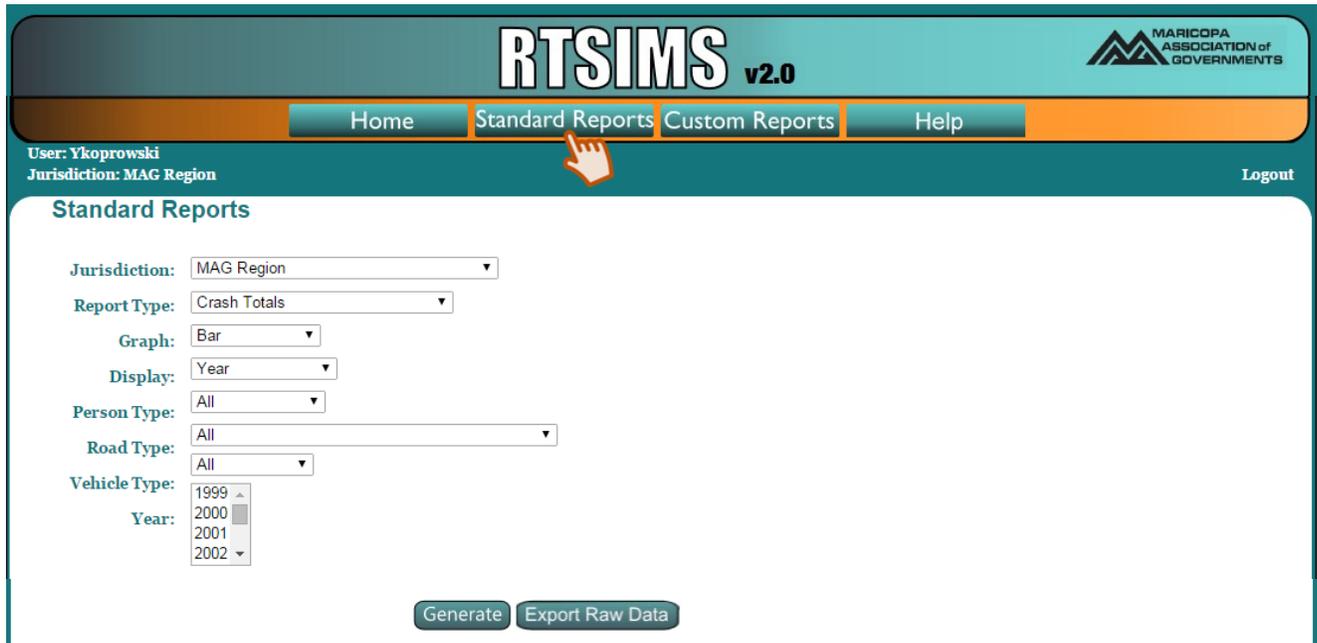
Standard Report Queries in this Section:

- *Standard Reports Example Query #1: Total Crashes by Month involving a Pedestrian on Arterials and Local Roads in Phoenix in 2013*
- *Standard Reports Example Query #2: Crashes involving a Bicyclist on Arterials and Local Roads in Chandler from 2009 to 2013 by Crash Severity*

A list of typical standard reports a local agency may want to create is listed in Appendix C – Suggested Local Agency Reports Based on City of Phoenix Annual Crash Report.

Each query will begin with Step 1: Navigate to the RTSIMS Standard Reports page to begin selecting data queries.

The default drop-down menu options are shown in the screen capture below.



**Note:** To reset the Standard Reports webpage to the default drop-down menu options, click on another webpage from the navigation pane located at the top of screen (e.g., 'Home'), then navigate back to 'Standard Reports'.

### 4.1.1 Standard Reports Example Query #1

*Total Crashes by Month involving a Pedestrian on Arterials and Local Roads in Phoenix in 2013*

- Step 1: Navigate to the RTSIMS Standard Reports page to begin selecting data queries.
- Step 2: Select **Report Type:** Crash Totals
- Step 3: Select **Graph:** Bar
- Step 4: Select **Display:** Month
- Step 5: Select **Person Type:** Pedestrian
- Step 6: Select **Road Type:** All Arterials and Local Roads
- Step 7: Select **Vehicle Type:** All
- Step 8: Select **Year:** 2013
- Step 9: **Generate** Report

The input options listed above are selected on the Standard Reports page using the drop-down menus in order to generate a report for this query.

Step 1: Navigate to the RTSIMS Standard Reports page to begin selecting data queries.



Step 2: Select **Report Type: Crash Totals**

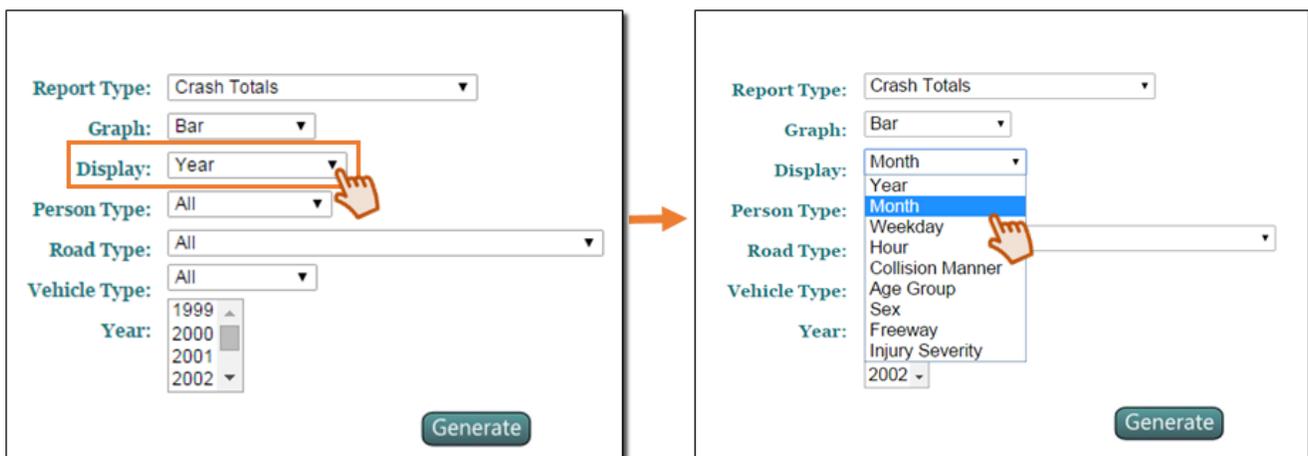
For this query, the “Report Type” will remain unchanged.

Step 3: Select **Graph: Bar**

For this query, the “Graph” will remain unchanged.

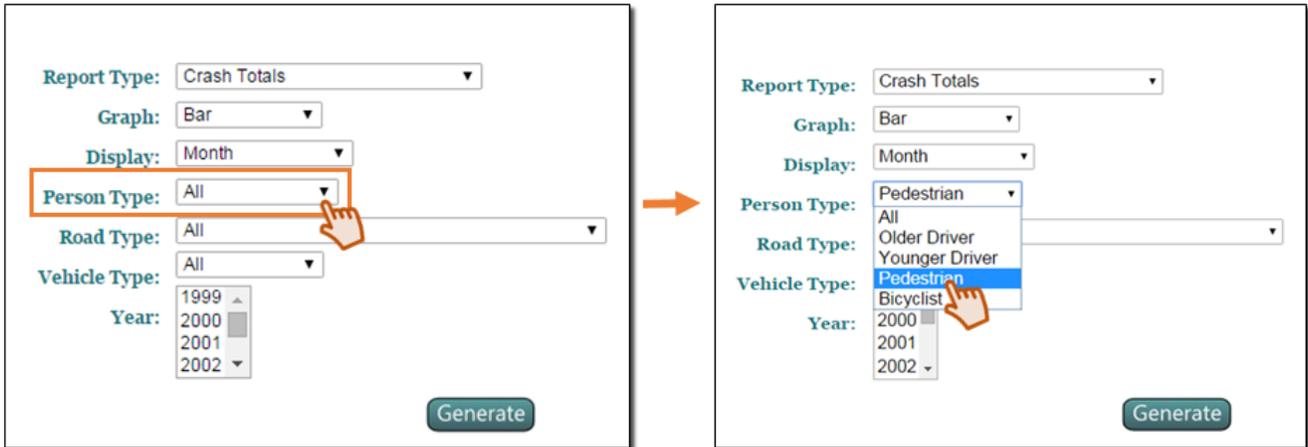
Step 4: Select **Display: Month**

To change the Display to “Month”, click the arrow in the Display drop-down menu.



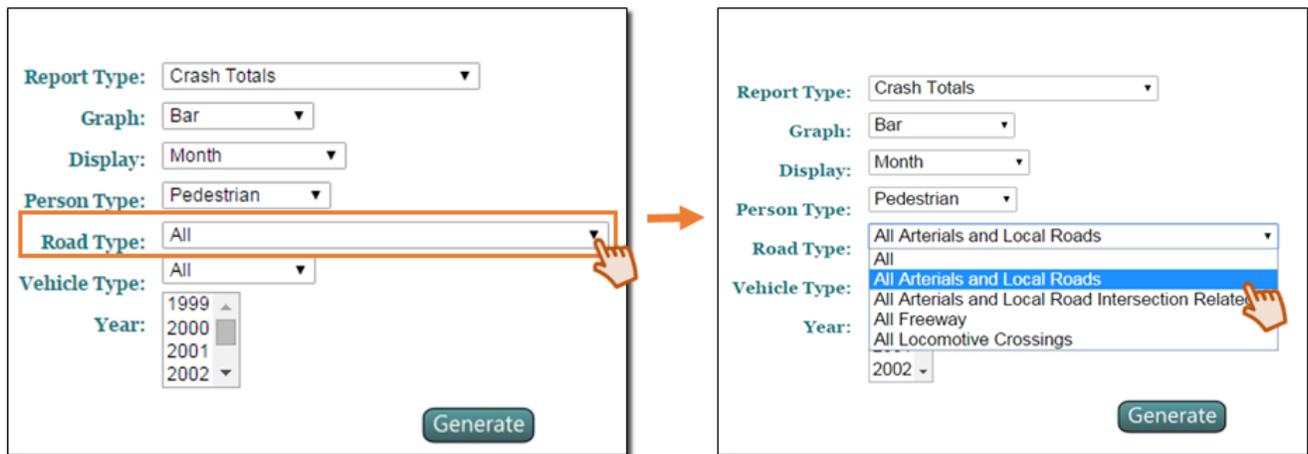
Step 5: Select **Person Type: Pedestrian**

To change the Person Type to “Pedestrian”, click the arrow in the Person Type drop-down menu.



### Step 6: Select **Road Type: All Arterials and Local Roads**

To change the Road Type to “All Arterials and Local Roads”, click the arrow in the Road Type drop-down menu.

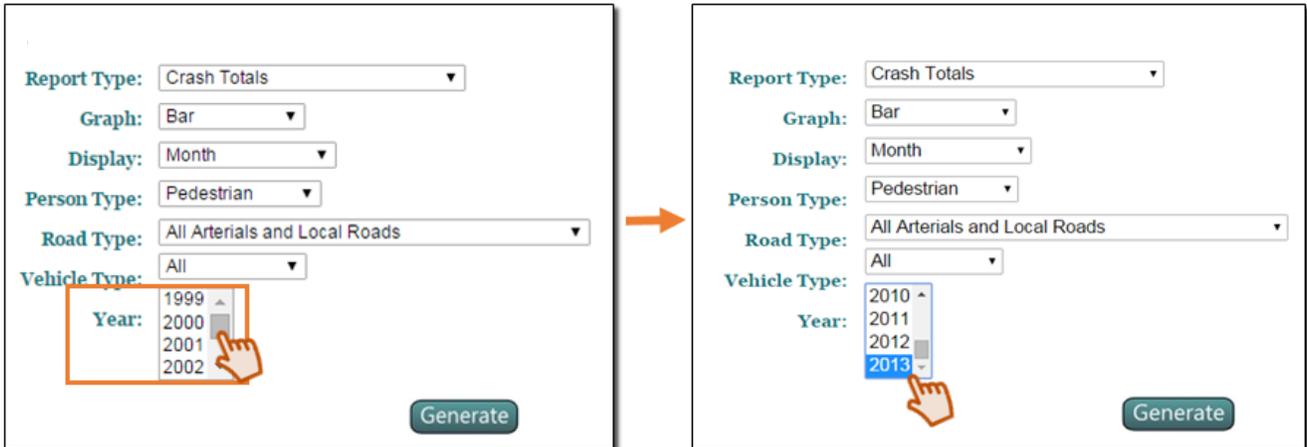


### Step 7: Select **Vehicle Type: All**

For this query, the “Vehicle Type” will remain unchanged.

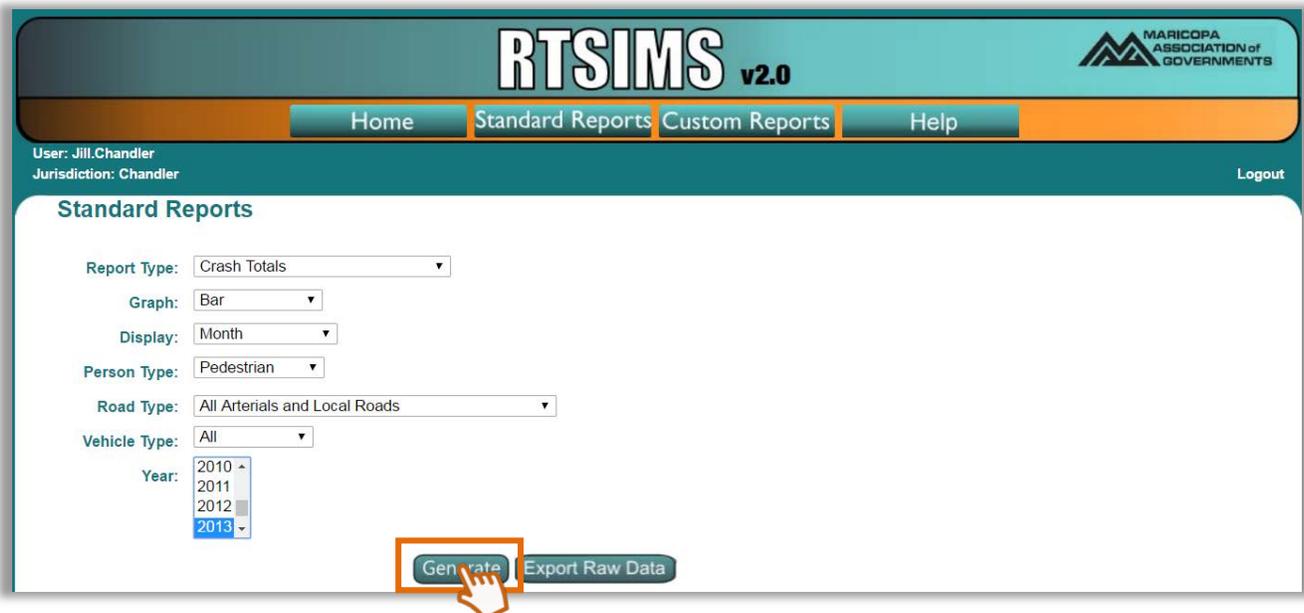
### Step 8: Select **Year: 2013**

To choose the year 2013, click the scroll down bar in the Year drop-down menu.



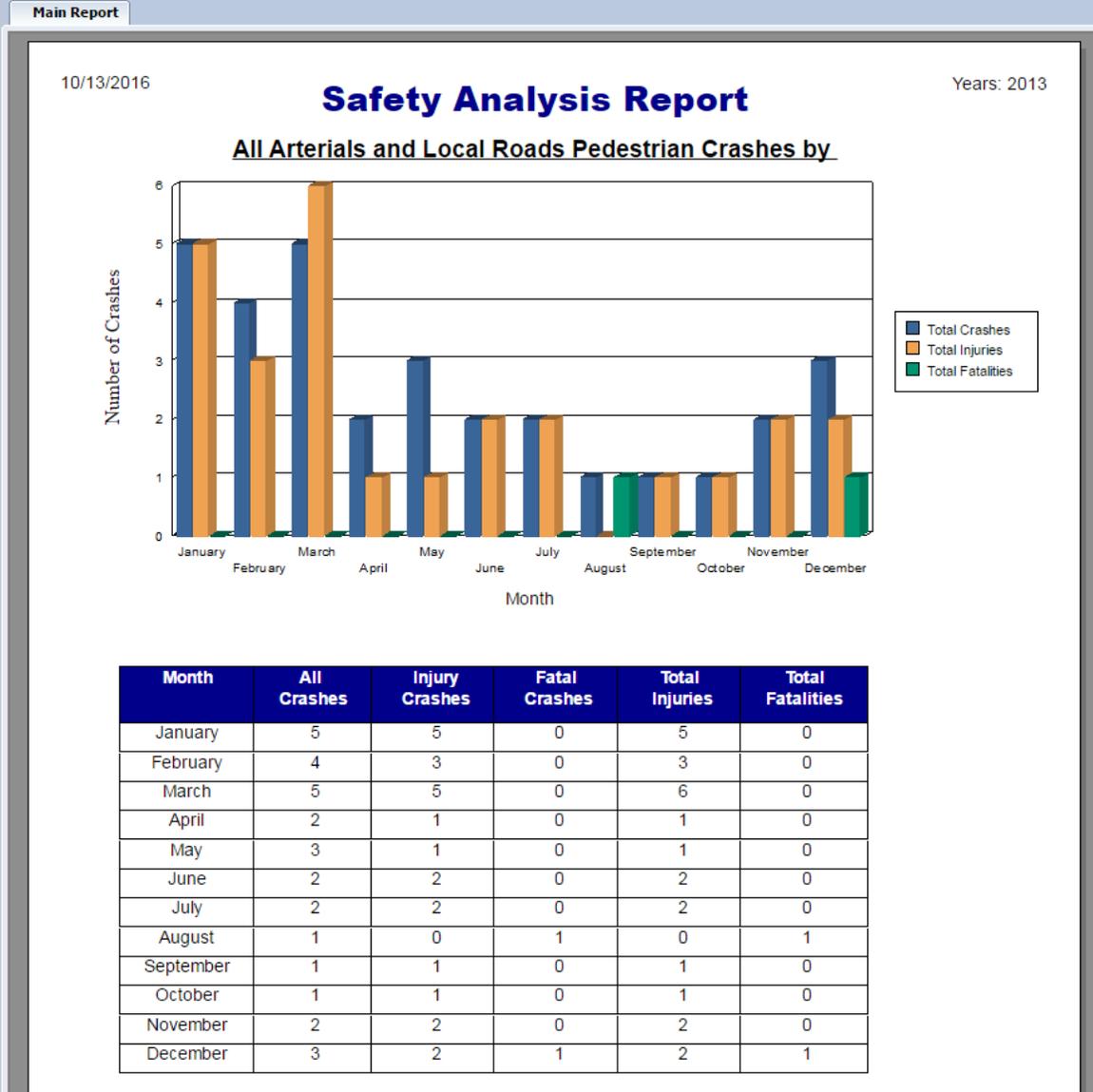
### Step 9: Generate Report

After all input selections have been made, click on “Generate”.



RTSIMS will display a report on the same screen with a chart and graph of the requested data. The display report is shown below.

**Warning:** The generated report will not indicate that the selected data in this query represents the jurisdiction the query was ran for (i.e. the jurisdiction name is not printed on the report). Solution A: When saving the exported file, include MAG Region name in the file name. Solution B: Print the webpage to PDF which will record the selected input options showing the report was for a specific jurisdiction.



**Note:** The generated report does not tabulate crash severity totals over the entire year. Solution A: Change the Display to 'Year' and generate the query again to produce subtotals by KABCO injury scale; Solution B: Export to Excel (xls) and add a row to calculate the sum of each column; Solution C: Calculate totals manually.

## 4.1.2 Standard Reports Example Query #2 by user at City of Chandler

*Crashes involving Bicyclists on Arterials and Local Roads in the City of Chandler for period 2009 to 2013 by reported by Crash Severity*

Step 1: Navigate to the RTSIMS Standard Reports page to begin selecting data queries.

Step 2: Select **Report Type:** Crash Severity

Step 3: Select **Graph:** Bar

Step 4: Select **Display:** Year

Step 5: Select **Person Type:** Bicyclist

Step 6: Select **Road Type:** All Arterials and Local Roads

Step 7: Select **Vehicle Type:** All

Step 8: Select **Year:** 2009-2013

Step 9: **Generate** Report

The input options listed above are selected on the Standard Reports page using the drop-down menus. The default options are shown on the following page.

Step 1: Navigate to the RTSIMS Standard Reports page to begin selecting data queries.



### Step 2: Select **Report Type: Crash Severity**

To change the Report Type to “Crash Severity”, click the arrow in the Report Type drop-down menu.



### Step 3: Select **Graph: Bar**

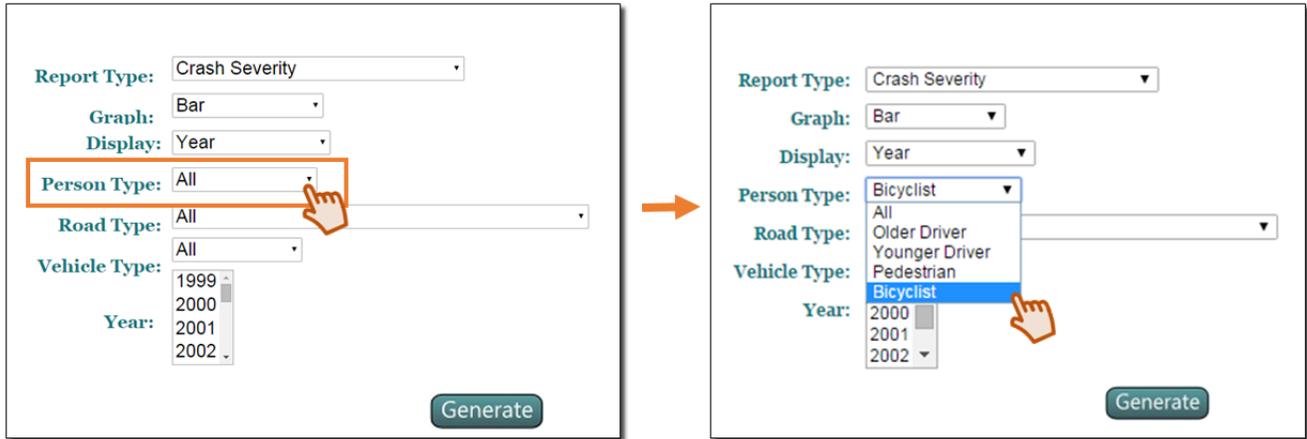
For this query, the “Graph” will remain unchanged.

### Step 4: Select **Display: Year**

For this query, the “Display” will remain unchanged.

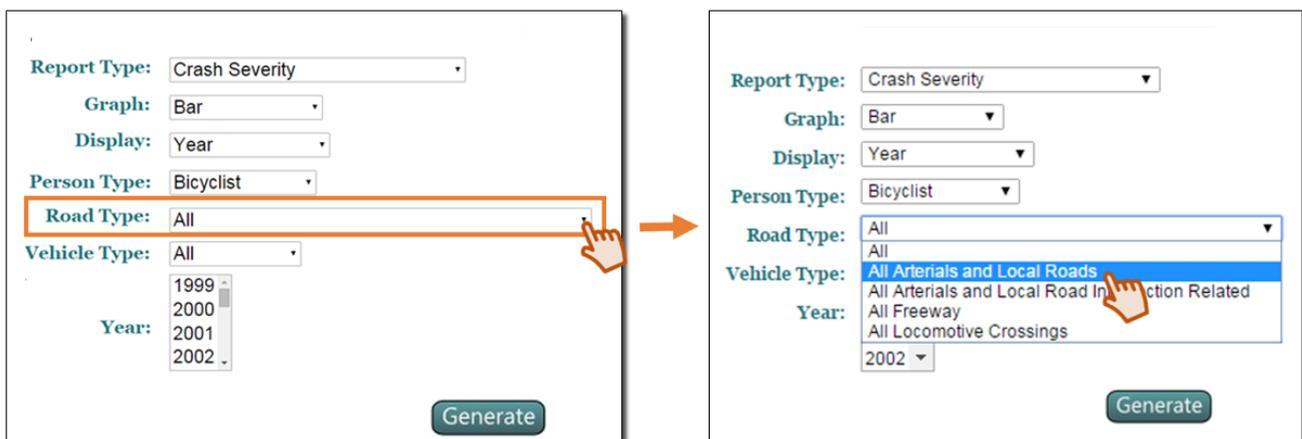
### Step 5: Select **Person Type: Bicyclist**

To change the Person Type to “Bicyclist”, click the arrow in the Person Type drop-down menu.



### Step 6: Select **Road Type: All Arterials and Local Roads**

To change the Road Type to “All Arterials and Local Road”, click the arrow in the Road Type drop-down menu.

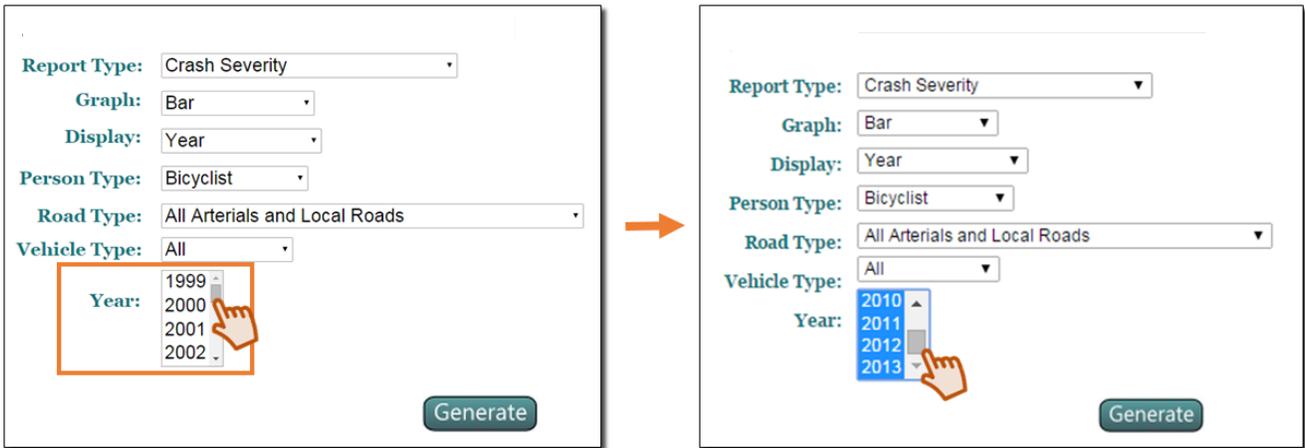


### Step 7: Select **Vehicle Type: All**

For this query, the “Vehicle Type” will remain unchanged.

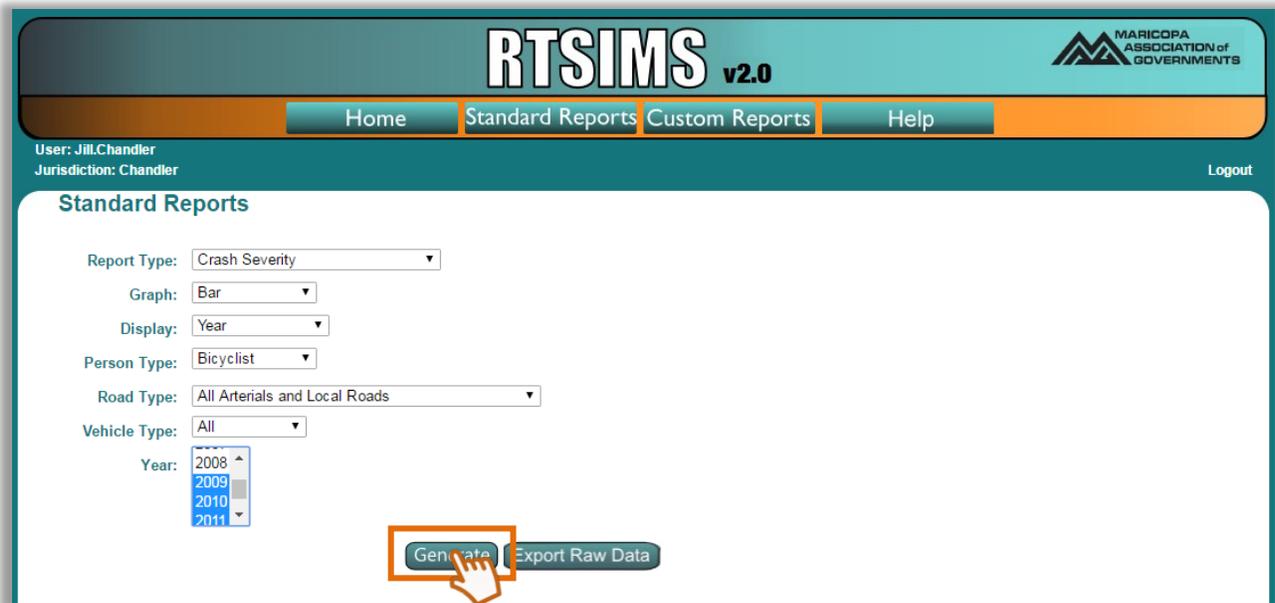
### Step 8: Select **Year: 2009-2013**

To select the years 2009-2013, click the scroll down bar in the Year drop-down menu. Hold down the keyboard function “Ctrl” as you click on the years to make multiple selections.

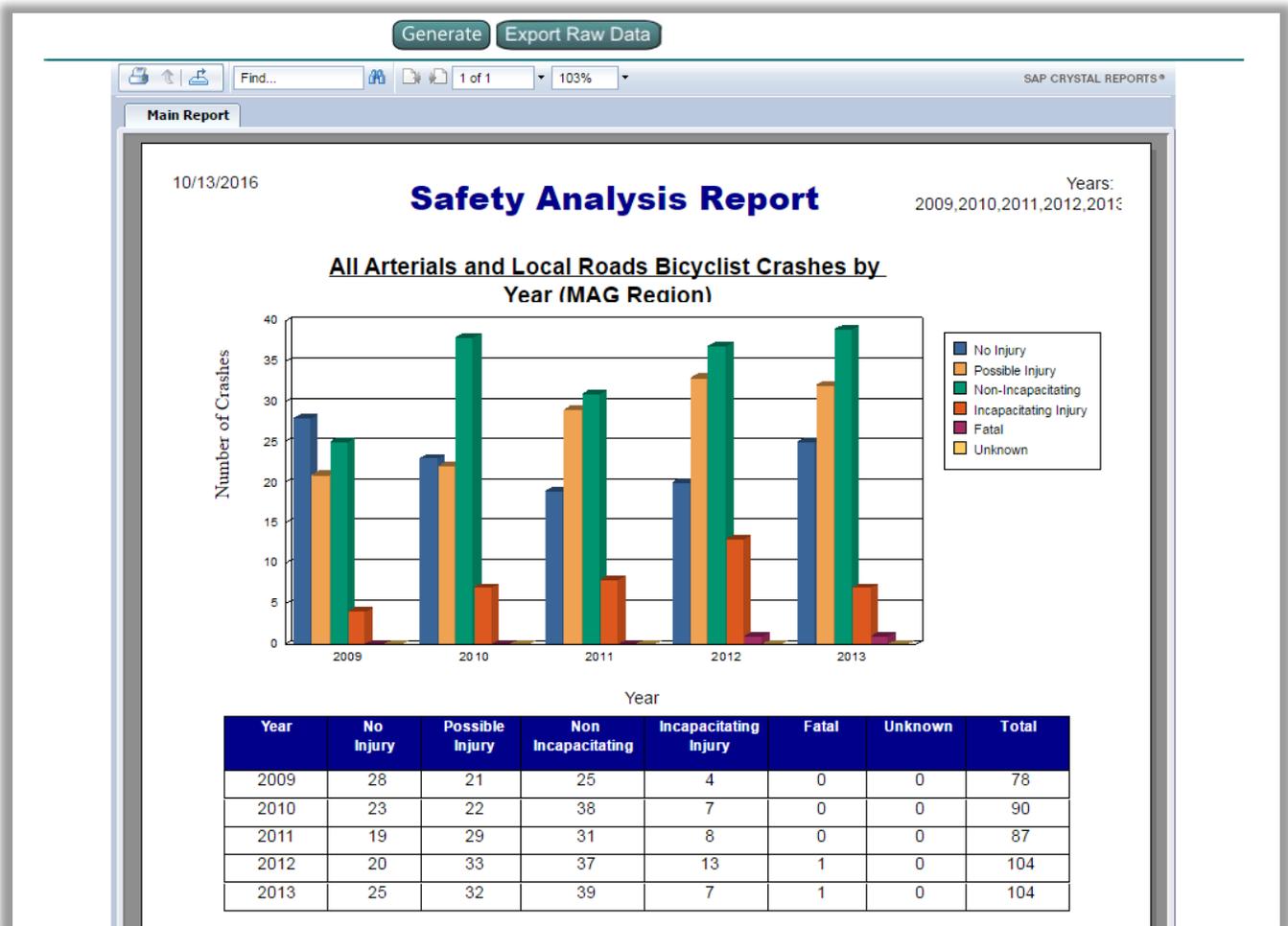


### Step 9: Generate Report

After all input selections have been made, click on “Generate”.



RTSIMS will display a report on the same screen with a chart and graph (if selected) of the requested data. The display report is shown on the following page.



**Warning:** The generated report will not indicate that the selected data in this query represents the Chandler jurisdiction only (i.e. the jurisdiction name is not printed on the report, instead is labelled “MAG Region”). Solution A: When saving the exported file, include the jurisdiction name in the file name; Solution B: Print the webpage to PDF which will record the selected input options showing the report was for a specific jurisdiction.

**Note:** Although the generated report does provide totals for each year, it does not tabulate crash severity totals. Solution A: Export to Excel (xls) and add a row to calculate the sum of each column; Solution B: Calculate totals manually.

## 4.2 Example Custom Report Queries

The **Custom Reports** section of RTSIMS allows a user to set specific or unique report parameters and create filters to establish a unique data search.

Custom Report Queries in this Section:

- *Standard Reports Example Query #1: Crashes involving Trucks in the City of Chandler*
- *Standard Reports Example Query #12: Crashes involving a Pedestrian at Signalized Intersections in the City of Chandler since 2007*

### 4.2.1 Custom Reports Example Query #1

#### *Crashes involving Trucks in the City of Chandler*

This example shows application of a single filter criterion. At times it may take several seconds for RTSIMS to load drop-down menus or to capture a filter into the query box. Be patient and do not proceed until RTSIMS has responded. If the Google Chrome browser is used, a status bar (i.e., percent loaded) will appear at the bottom left side of the screen.

#### **Procedure**

Step 1: Navigate to the RTSIMS **Custom Reports** page.

Step 2: Select **Display Options**

Step 3: Under Report Options, Select **Report Type:** By Crashes

Step 4: Select **Graph:** Bar

Step 5: Select **Display:** Year

Step 6: Write title in **Report Title:** “Crashes involving Trucks in the MAG region” (This title will be printed on the top of each report page you generate. If the report is saved, it may be saved under this name or under a different report name. It will not automatically use this name.) .

#### Create the Custom Search Filter

Step 7: Under Filter Data Select **Type:** Vehicle

Step 8: Select **Sub-type:** Definition Table

Step 9: Select **Definition:** Body Style

Step 10: Select **Definition List:**

- TRUCK\_1TPU\_PICKUP\_1\_TON,
- TRUCK\_1TVN\_VAN\_1\_TON,
- TRUCK\_AC\_AUTO\_CARRIER,
- TRUCK\_AR\_ARMORED\_TRUCK,

- TRUCK\_BR\_BEVERAGE\_RACK,
- TRUCK\_BS\_BUS,
- TRUCK\_CB\_CAB\_CHASSIS,
- TRUCK\_CM\_CONCRETE\_OR\_TRANSIT\_MIXER,
- TRUCK\_CR\_CRANE,
- TRUCK\_DP\_DUMP\_TRUCK,
- TRUCK\_DRTK\_DRILLING\_TRUCK,
- TRUCK\_FB\_FLATBED\_OR\_PLATFORM,
- TRUCK\_FT\_FIRE\_TRUCK,
- TRUCK\_GG\_GARBAGE\_OR\_REFUSE,
- TRUCK\_GN\_GRAIN,
- TRUCK\_GR\_GLASS\_RACK,
- TRUCK\_HO\_HOPPER,
- TRUCK\_LW\_LUNCH\_WAGON,
- TRUCK\_OS\_OPEN\_SEED\_TRUCK,
- TRUCK\_PN\_PANEL,
- TRUCK\_RF\_REFRIGERATED\_VAN,
- TRUCK\_RT\_ROAD\_TRACTOR,
- TRUCK\_SCBS\_SCHOOL\_BUS,
- TRUCK\_SPRT\_SPREADER\_TRUCK,
- TRUCK\_SR\_SERVICE\_BODY\_TRUCK,
- TRUCK\_ST\_STAKE\_OR\_RACK,
- TRUCK\_TK\_TRUCK,
- TRUCK\_TN\_TANK,
- TRUCK\_TRTK\_TRENCH\_TRUCK,
- TRUCK\_TT\_TRUCK\_TRACTOR,
- TRUCK\_VN\_VAN,
- TRUCK\_VT\_VANNETTE,
- TRUCK\_WR\_TOW\_TRUCK\_WRECKER,
- TRUCK\_WR\_WRECKER, and
- TRUCK\_WRTK\_WRENCHER.

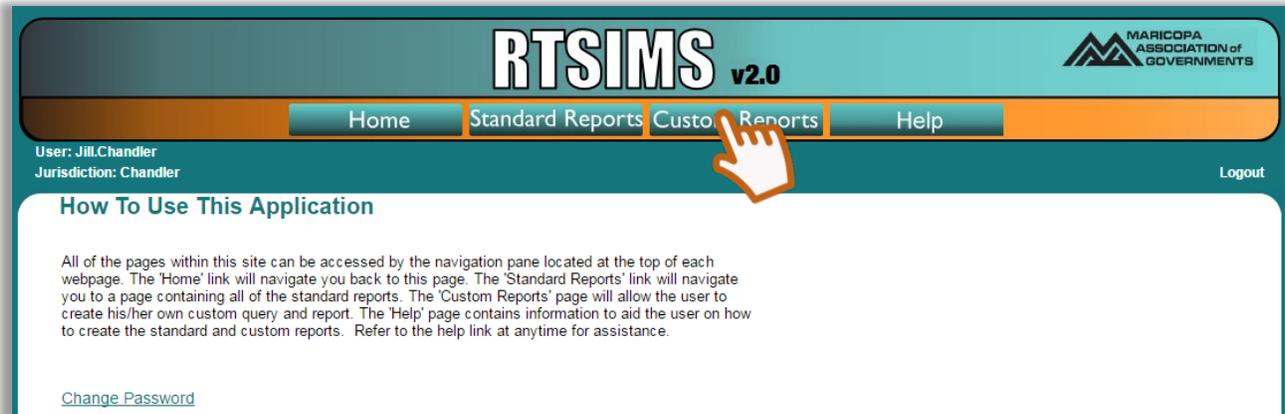
Step 11: Select **Add Filter** (the filter criteria shows in the query)

Step 12: **Generate** report

The input options listed above from the **Custom Reports** page use both drop-down menus and user defined values. The step-by-step procedure for producing the example report is shown in greater detail below with relevant screen captures.

### **Step-by-Step Procedure**

Step 1: Navigate to the RTSIMS “Custom Reports” page to begin selecting the parameters for the data query.



Step 2: Select **Display Options** which will show the reporting options and the filtering criteria. The User Reports listed in the example screen shot are those Reports that have been previously generated and saved by the user. If RTSIMS has not been used previously, or if no generated reports have been saved, the display box under “Reports” will be empty.



Report Options has four fields and Filter Data has five fields that can be customized. The fields in the “Report Options” are Report Type, Graph, Display, and Report Title. The fields in the “Filter Data” section are Type, Sub-type, Show values, Condition, and Values. The options in “Report Options” and “Filter Data” change based on the attributes selected along the way.

# RTSIMS v2.0

Home
Standard Reports
Custom Reports
Help

User: Jill.Chandler
Logout

## Custom Reports

**User Reports** [Display Options](#) [Delete Report](#)

Reports  
 LRT Crashes 2008-2012  
 Not Inters-Related 2008-2012  
 Stop Controlled Int Crashes 2009-2012  
 Stop Controlled Int Crashes 2008

**Report Options**  
 Report Type  
 By Crashes

Graph  
 Bar

Display  
 Year

Report Title

**Filter Data**  
 Type: Incident    Sub-type: Microfilm     Show values    Condition: Equals    Values:

[Add Filter](#)
[Update Filter](#)
[Remove Filter](#)
[Save Report](#)

Generate
Export Raw Data

STEPS

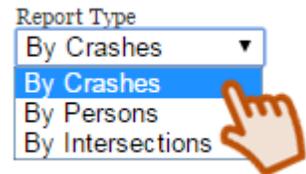
3

4

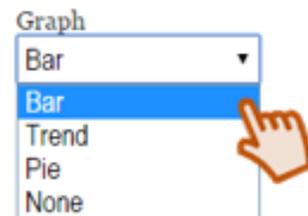
5

6

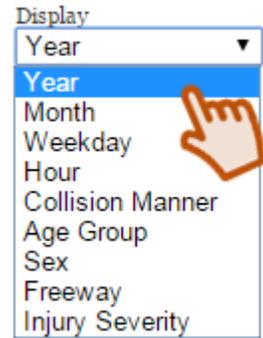
**Step 3:** Select "Report Type" from "Report Options". The drop down menu has three options: "By Crashes", "By Persons", and "By Intersections". Select "By Crashes".



**Step 4:** Select "Graph" type from the drop down menu. There are four options: Bar, Trend, Pie and None. Select the Graph type as "Bar".



Step 5: Select “Display” type from the drop down menu. There are nine options to select from: Year, Month, Weekday, Hour, Collision Manner, Age Group, Sex, Freeway, and Injury Severity. Select the Display type as “Year”.



Step 6: Write the title of the report in the “Report Title” box which is solely user defined. Write “Crashes involving Trucks in the City of Chandler”.

Report Title  
Crashes Involving Trucks in the

### Custom Reports

[User Reports](#) [Display Options](#) [Delete Report](#)

Reports  
User has no saved reports

---

#### Report Options

Report Type: By Crashes | Graph: Bar | Display: Year | Report Title: Crashes Involving Trucks in the

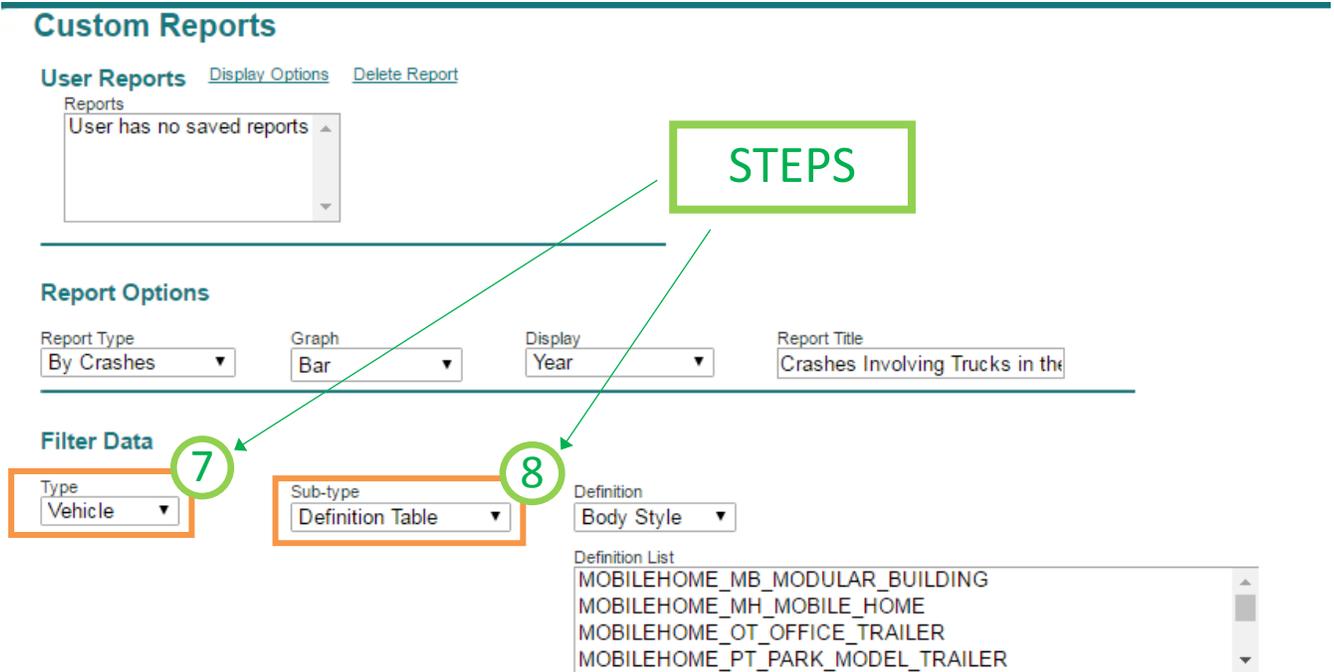
---

#### Filter Data

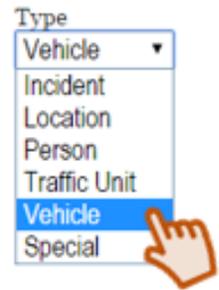
Type: Vehicle (7) | Sub-type: Definition Table (8) | Definition: Body Style

Definition List  
MOBILEHOME\_MB\_MODULAR\_BUILDING  
MOBILEHOME\_MH\_MOBILE\_HOME  
MOBILEHOME\_OT\_OFFICE\_TRAILER  
MOBILEHOME\_PT\_PARK\_MODEL\_TRAILER

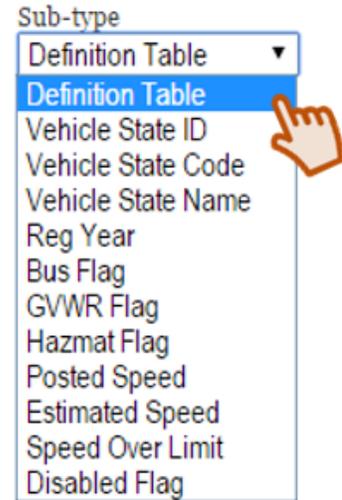
STEPS



Step 7: In the “Filter Data” section, select Type for the available options in the drop down menu. There are six options: Incident, Location, Person, Traffic Unit, Vehicle, and Special. Select “Vehicle” for this analysis.



Step 8: In “Sub-type” section has twelve options: Definition Table, Vehicle State ID, Vehicle State Code, Vehicle State Name, Reg Year, Bus Flag, GVWR Flag, Hazmat Flag, Posted Speed, Estimated Speed, Speed Over Limit, and Disabled Flag. Select “Definition Table” for this operation.



## Custom Reports

User Reports [Display Options](#) [Delete Report](#)

Reports  
User has no saved reports

### Report Options

Report Type: By Crashes | Graph: Bar | Display: Year | Report Title: Crashes Involving Trucks in the

### Filter Data

Type: Vehicle | Sub-type: Definition Table

Definition: Body Style

Definition List

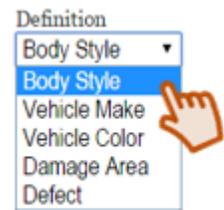
- MOBILEHOME\_MB\_MODULAR\_BUILDING
- MOBILEHOME\_MH\_MOBILE\_HOME
- MOBILEHOME\_OT\_OFFICE\_TRAILER
- MOBILEHOME\_PT\_PARK\_MODEL\_TRAILER

**STEPS**

9

10

Step 9: “Definition” section has five options: Body Style, Vehicle Make, Vehicle Color, Damaged Area, and Defect. Select “Body Style” for this operation.



Step 10: “Definition List” section has the different categories of vehicle body style. Select all styles related to truck by clicking the first TRUCK attribute, pressing and holding down the SHIFT key, then scrolling down the list and clicking the last TRUCK attribute.

---

**Note:** There are several ways to select multiple crash attributes. To select a consecutive group of attributes, click the first item, press and hold down the Shift key, and then click the last item. To select non-consecutive files or folders, press and hold down the Ctrl key, and then click each item that you want to select.

---

The following list shows the attribute categories related to truck traffic:

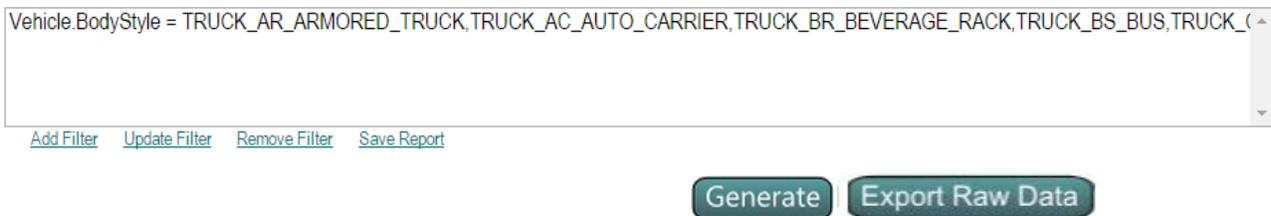
- TRUCK\_AR\_ARMORED\_TRUCK,
- TRUCK\_AC\_AUTO\_CARRIER,
- TRUCK\_BR\_BEVERAGE\_RACK,
- TRUCK\_BS\_BUS,
- TRUCK\_CB\_CAB\_CHASSIS,
- TRUCK\_CM\_CONCRETE\_OR\_TRANSIT\_MIXER,
- TRUCK\_CR\_CRANE,
- TRUCK\_DRTK\_DRILLING\_TRUCK,
- TRUCK\_DP\_DUMP\_TRUCK,
- TRUCK\_FT\_FIRE\_TRUCK,
- TRUCK\_FB\_FLATBED\_OR\_PLATFORM,
- TRUCK\_GG\_GARBAGE\_OR\_REFUSE,
- TRUCK\_GR\_GLASS\_RACK,
- TRUCK\_GN\_GRAIN,
- TRUCK\_HO\_HOPPERTRUCK\_LW\_LUNCH\_WAGON,
- TRUCK\_OS\_OPEN\_SEED\_TRUCK,TRUCK\_PN\_PANEL,
- TRUCK\_1TPU\_PICKUP\_1\_TON,
- TRUCK\_RF\_REFRIGERATED\_VAN,
- TRUCK\_RT\_ROAD\_TRACTOR,
- TRUCK\_SCBS\_SCHOOL\_BUS,
- TRUCK\_SR\_SERVICE\_BODY\_TRUCK,
- TRUCK\_SPRT\_SPREADER\_TRUCK,

- TRUCK\_ST\_STAKE\_OR\_RACK,
- TRUCK\_TN\_TANK,
- TRUCK\_WR\_TOW\_TRUCK\_WRECKER,
- TRUCK\_TRTK\_TRENCH\_TRUCK,
- TRUCK\_TK\_TRUCK,
- TRUCK\_TT\_TRUCK\_TRACTOR,
- TRUCK\_VN\_VAN,
- TRUCK\_1TVN\_VAN\_1\_TON,
- TRUCK\_VT\_VANNETTE,
- TRUCK\_WR\_WRECKER, and
- TRUCK\_WRTK\_WRENCHER.

Step 11: Select “Add Filter” to show and/or check the filtering criteria in this analysis.



After clicking the ‘Add Filter’ button the query box will show the filter criterion as shown below.

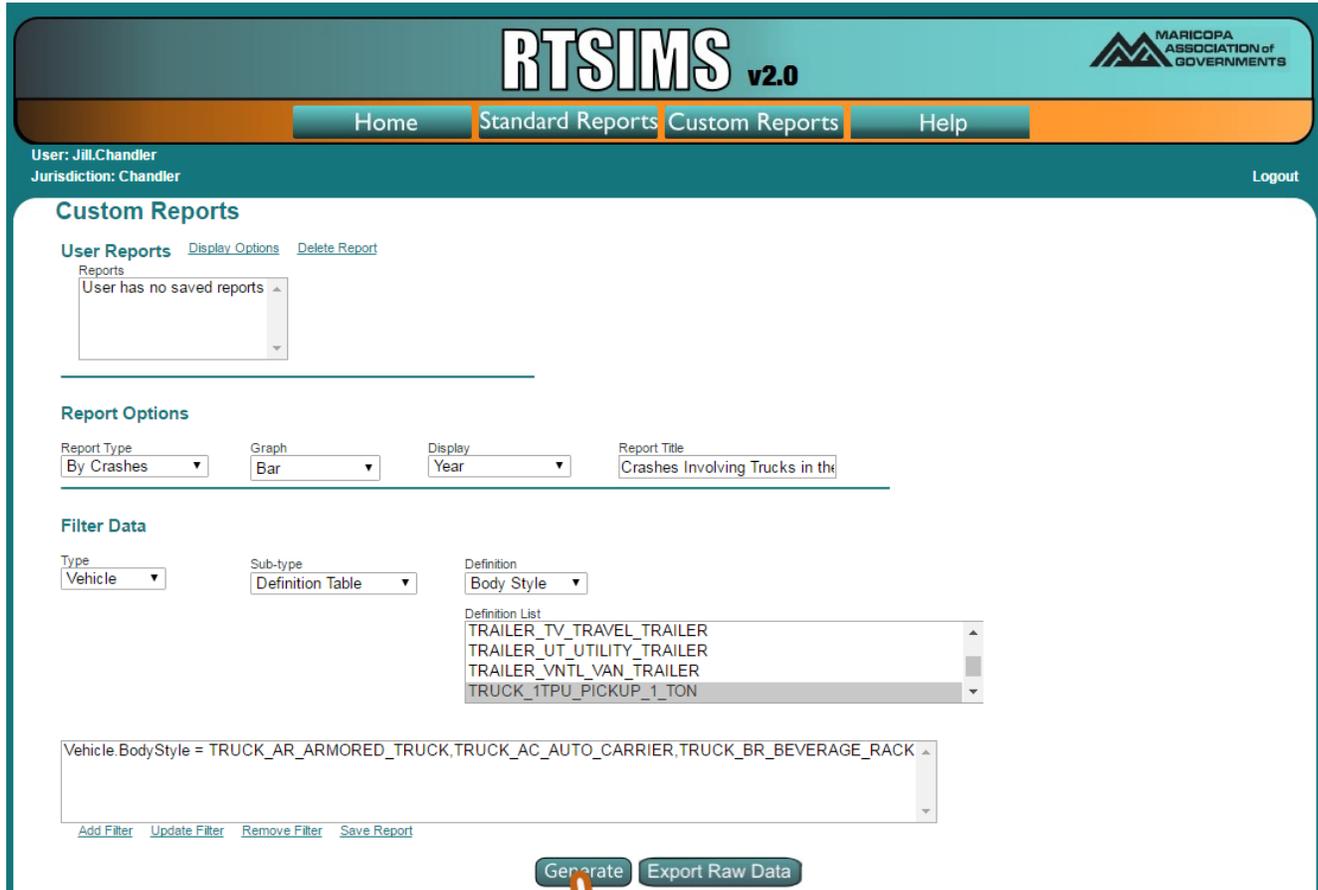



---

**Warning:** Pressing ENTER on your keyboard will not add the filter to the query box. You must use your mouse pointer to click “Add Filter”.

---

Step 12: Now that all of the filters have been defined and loaded into the query box, click on “Generate” to produce the report with the applied filtering criteria.



**RTSIMS v2.0**

Home Standard Reports Custom Reports Help

User: Jill.Chandler  
Jurisdiction: Chandler Logout

### Custom Reports

User Reports [Display Options](#) [Delete Report](#)

Reports  
User has no saved reports

---

#### Report Options

Report Type: By Crashes  
Graph: Bar  
Display: Year  
Report Title: Crashes Involving Trucks in the

---

#### Filter Data

Type: Vehicle  
Sub-type: Definition Table  
Definition: Body Style

Definition List  
TRAILER\_TV\_TRAVEL\_TRAILER  
TRAILER\_UT\_UTILITY\_TRAILER  
TRAILER\_VNTL\_VAN\_TRAILER  
TRUCK\_1TPU\_PICKUP\_1\_TON

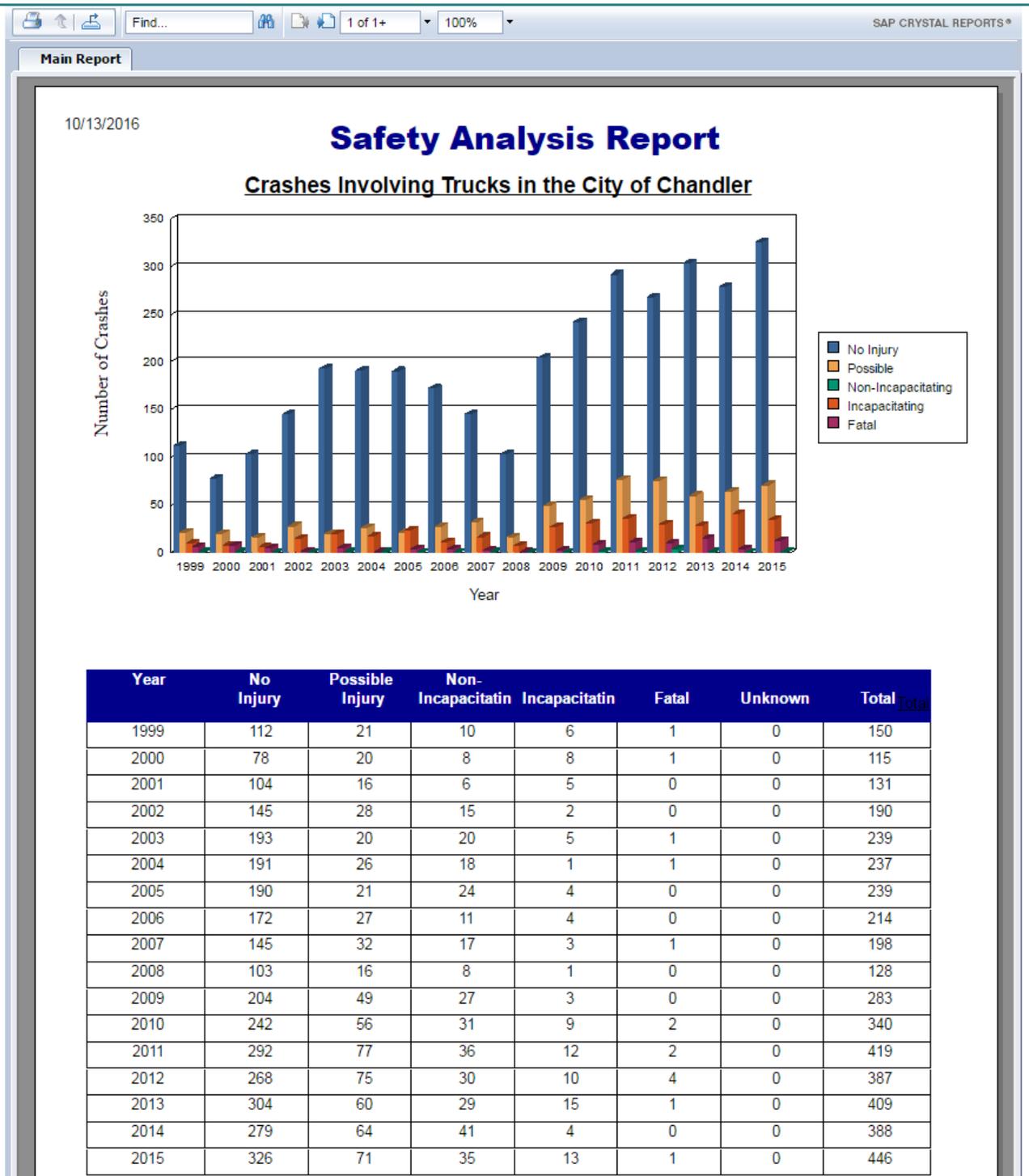
Vehicle.BodyStyle = TRUCK\_AR\_ARMORED\_TRUCK,TRUCK\_AC\_AUTO\_CARRIER,TRUCK\_BR\_BEVERAGE\_RACK

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

Generate Export Raw Data

Within a few of seconds, the following report will be generated. The processing time may vary based on the local internet speed and number of users accessing RTSIMS.

[Generate](#) [Export Raw Data](#)



## 4.2.2 Custom Reports Example Query #2

### *Crashes involving a Pedestrian at Signalized Intersections in the City of Chandler since 2007*

This example uses four filters to establish a unique data search. The resulting report assumes the query was ran by a User from the City of Chandler. At times it may take several seconds for RTSIMS to load drop-down menus or to capture a filter into the query box. Be patient and do not proceed until RTSIMS has responded. If the Google Chrome browser is used to access RTSIMS, a status bar (i.e., percent loaded) will appear at the bottom left side of the screen.

#### **Procedure**

Step 1: Navigate to the RTSIMS **Custom Reports**

Step 2: Select **Display Options**

Step 3: Under **Report Options**, Select **Report Type:** By Crashes

Step 4: Select **Graph:** None

Step 5: Select **Display:** Year

Step 6: Input title in **Report Title:** Pedestrian Crashes at Signalized Intersections 2008-2015

#### Create Filter #1 – Identify the type of traffic control: “Traffic Signals”

Step 7: Select **Type** from **Filter Data:** Traffic Unit

Step 8: Select **Sub-type:** Definition Table

Step 9: Select **Definition:** Control Type

Step 10: Select **Definition List:** TRAFFIC\_CONTROL\_SIGNAL and FLASHING\_TRAFFIC\_CONTROL\_SIGNAL

Step 11: Click on “**Add Filter**” and wait for the filtering criterion to appear in the query box.

---

**Note:** There are several ways to select multiple crash attributes. To select a consecutive group of attributes, click the first item, press and hold down the Shift key, and then click the last item. To select non-consecutive files or folders, press and hold down the Ctrl key, and then click each item that you want to select.

---

#### Create Filter #2 – Identify the appropriate location types of “intersections”

Step 12: Select **Type** from **Filter Data:** Location

Step 13: Select **Sub-type:** Definition Table

Step 14: Select **Definition:** Intersection Type

Step 15: Select **Definition List:** FOUR\_WAY\_INTERSECTION, T\_INTERSECTION, Y\_INTERSECTION and INTERSECTION\_AS\_PART\_OF\_INTERCHANGE

Step 16: Click on “**Add Filter**” and wait for the filtering criterion to appear in the query box.

### Create Filter #3 – Identify the study years: 2008 to 2015

Step 17: Select **Type** from **Filter Data**: Special

Step 18: Select **Sub-type**: Year

Step 19: Select **Condition**: Greater Than

Step 20: Input **Value**: 2007

Step 21: Click on “**Add Filter**” and wait for the filtering criterion to appear in the query box.

### Create Filter #4 – Identify Pedestrian-involved crashes

Step 22: Select **Type** from **Filter Data**: Traffic Unit

Step 23: Select **Sub-type**: Definition Table

Step 24: Select **Definition**: Unit Type

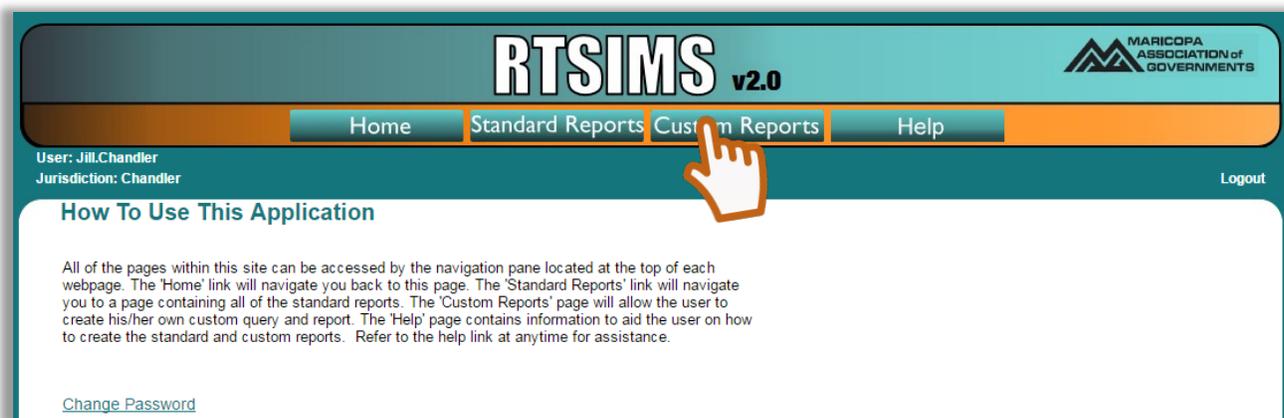
Step 25: Select **Definition List**: PEDESTRIAN

Step 26: Click on “**Add Filter**” and wait for the filtering criterion to appear in the query box.

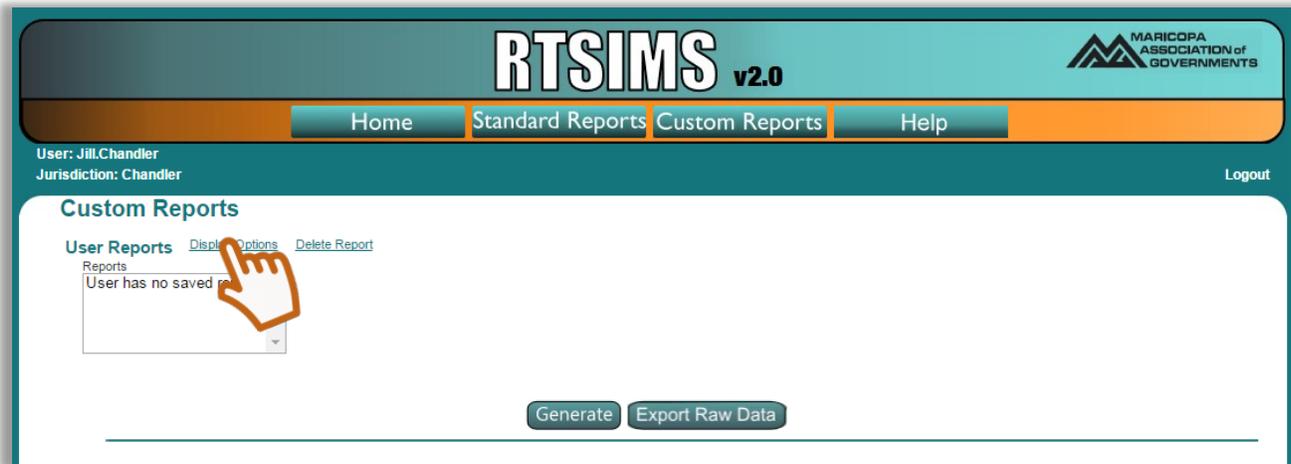
Step 27: **Generate Report**

The input options listed above in the Custom Reports page use both drop-down menus and user defined values. The step-by-step procedure for producing the example report is shown below in greater detail with relevant screen captures.

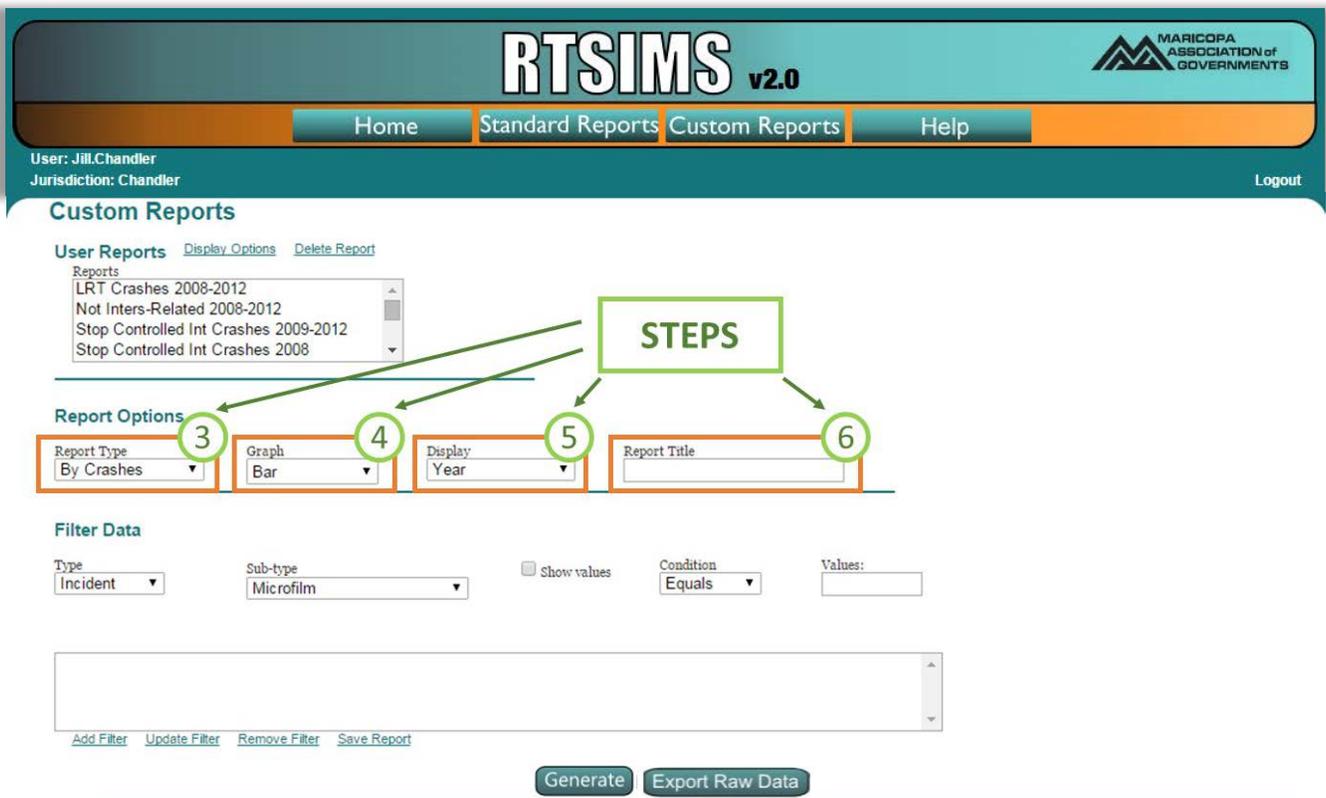
Step 1: Navigate to the RTSIMS “Custom Reports” page to begin selecting the parameters for the data query.



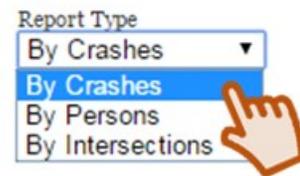
Step 2: Select **Display Options** which will show the reporting options and the filtering criteria. The User Reports listed in the example screen shot are those Reports that have been previously generated and saved by the user. If RTSIMS has not been used previously, or if no generated reports have been saved, the display box under “Reports” will be empty.



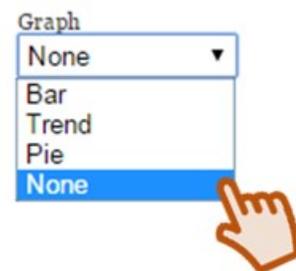
Report Options has four fields and Filter Data has five fields that can be customized. The fields in the “Report Options” are Report Type, Graph, Display, and Report Title. The fields in the “Filter Data” section are Type, Sub-type, Show values, Condition, and Values. The options in “Report Options” and “Filter Data” change based on the attributes selected along the way.



Step 3: Under “Report Options”, click on the drop-down menu for “Report Type”. The drop-down menu has three options: “By Crashes”, “By Persons”, and “By Intersections”. Select “By Crashes”.



Step 4: Click on the drop-down menu under “Graph”. There are four options: Bar, Trend, Pie and None. Select the Graph type of “None”.



Step 5: Click on the drop-down menu under “Display”. There are nine options to select from: Year, Month, Weekday, Hour, Collision Manner, Age Group, Sex, Freeway, and Injury Severity. Select the Display type of “Year”.



Step 6: Create the title of the report in the “Report Title” box, which is solely user-defined. (This field can also remain blank.) Input “Pedestrian Crashes at Signalized Intersections 2008-2015”. This title will be printed on the top of each report page you generate. If the report is saved, it may be saved under this name or under a different report name. RTSIMS will not automatically use this name when a file is saved. The file name must be specified by the user when saving a report.



Creating Filters will define your data search, and the filters can be created in any order. The sub-filter options may change based on the options you select from the prior drop-down menus.

## Custom Reports

### User Reports

[Display Options](#) [Delete Report](#)

#### Reports

LRT Crashes 2008-2012  
 Not Inters-Related 2008-2012  
 Stop Controlled Int Crashes 2009-2012  
 Stop Controlled Int Crashes 2008

**STEPS**

### Report Options

Report Type:  Graph:  Display:  Report Title:

### Filter Data

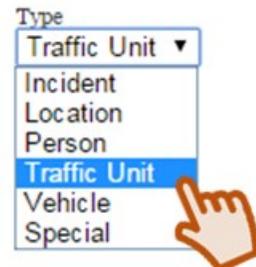
Type:  Sub-type:   Show values Condition:  Values:

7

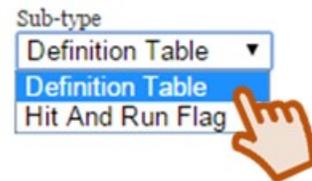
8

Create Filter #1 - Establish a data search on crashes at locations controlled by traffic signals

Step 7: In the “Filter Data” section, click on the drop-down menu under “Type”. There are six options: Incident, Location, Person, Traffic Unit, Vehicle, and Special. Select “Traffic Unit” for this analysis.



Step 8: Click on the drop down menu for “Sub-type”. There are two options: Definition Table and Hit And Run Flag. Select “Definition Table” for this operation.



## Custom Reports

**User Reports** [Display Options](#) [Delete Report](#)

Reports

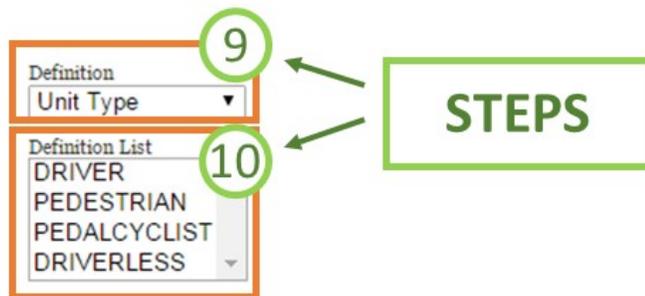
- LRT Crashes 2008-2012
- Not Inters-Related 2008-2012
- Stop Controlled Int Crashes 2009-2012
- Stop Controlled Int Crashes 2008

### Report Options

Report Type:     Graph:     Display:     Report Title:

### Filter Data

Type:     Sub-type:

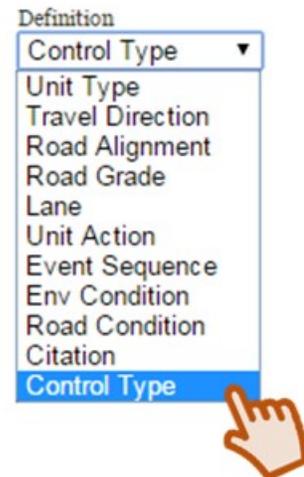


9

10

**STEPS**

**Step 9:** Click on the drop-down menu for “Definition”. There are eleven options: Unit Type, Travel Direction, Road Alignment, Road Grade, Lane, Unit Action, Event Sequence, Env Condition, Citation, and Control Type. Select “Control Type” for this analysis.



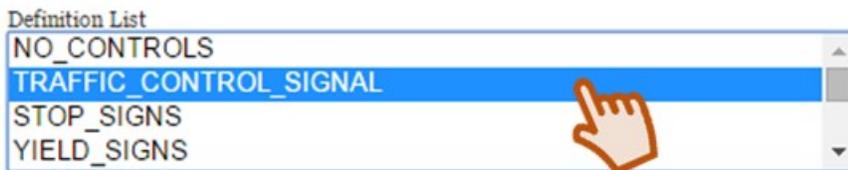
Definition

- Control Type
- Unit Type
- Travel Direction
- Road Alignment
- Road Grade
- Lane
- Unit Action
- Event Sequence
- Env Condition
- Road Condition
- Citation
- Control Type

Step 10: Click on the drop-down menu for “Definition List” which has ten options:

- FLASHING\_TRAFFIC\_CONTROL\_SIGNAL
- NO\_CONTROL
- OTHER
- PERSON\_FLAGGER\_LAW\_ENFORCEMENT\_XING\_GUARD\_ETC
- RAILROAD\_CROSSING\_DEVICE
- STOP\_SIGNS
- TRAFFIC\_CONTROL\_SIGNAL
- UNKNOWN
- WARNING SIGNS
- YIELD\_SIGNS

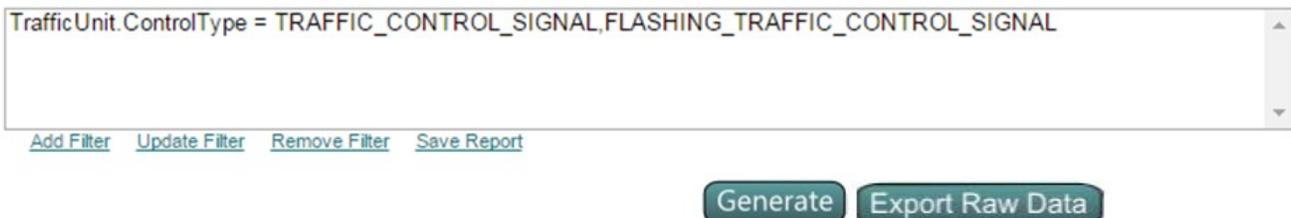
Select “TRAFFIC\_CONTROL\_SIGNAL” and “FLASHING\_TRAFFIC\_CONTROL\_SIGNAL”. Press “Ctrl” key for selecting multiple categories from any attributes.



Step 11: Click on “Add Filter” button to add this filtering criterion into the query box.



After clicking the “Add Filter” button, the filter will be added to the query box.



Create Filter #2 - Establish a data search on crashes that occur at “intersections”

### Custom Reports

**User Reports** [Display Options](#) [Delete Report](#)

Reports  
 LRT Crashes 2008-2012  
 Not Inters-Related 2008-2012  
 Stop Controlled Int Crashes 2009-2012  
 Stop Controlled Int Crashes 2008

---

**Report Options**

Report Type: By Crashes | Graph: None | Display: Year | Report Title: Pedestrian Crashes at Signaliz

---

**Filter Data**

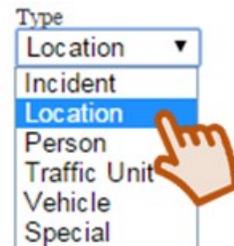
Type: Traffic Unit (12) | Sub-type: Definition Table (13) | Definition: Control Type (14)

Definition List (15):  
 NO\_CONTROLS  
 TRAFFIC\_CONTROL\_SIGNAL  
 STOP\_SIGNS  
 YIELD\_SIGNS

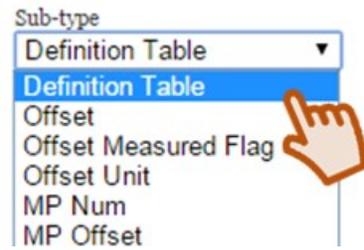
TrafficUnit.ControlType = TRAFFIC\_CONTROL\_SIGNAL,FLASHING\_TRAFFIC\_CONTROL\_SIGNAL

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

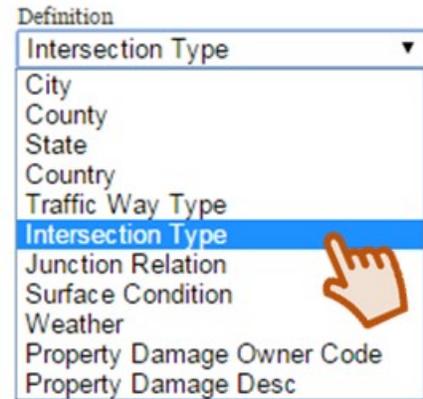
Step 12: In the “Filter Data” section, click on the drop-down menu under Type. There are six options: Incident, Location, Person, Traffic Unit, Vehicle, and Special. Select “Location”.



Step 13: Click on the drop-down menu under “Sub-type”.  
Select “Definition Table”.



Step 14: Click on the drop-down menu under “Definition”.  
Select “Intersection Type”.



Step 15: Click on the drop-down menu under “Definition List”. Select “FOUR\_WAY\_INTERSECTION, T\_INTERSECTION, Y\_INTERSECTION and INTERSECTION\_AS\_PART\_OF\_INTERCHANGE”. All relevant categories should be highlighted. These selections define all of the types of intersections where a traffic signal may exist.

---

**Note:** There are several ways to select multiple crash attributes. To select a consecutive group of attributes, click the first item, press and hold down the Shift key, and then click the last item. To select non-consecutive files or folders, press and hold down the Ctrl key, and then click each item that you want to select.

---



Step 16: Click on “Add Filter” button to add this filtering criterion into the query box.

TrafficUnit.ControlType = TRAFFIC\_CONTROL\_SIGNAL,FLASHING\_TRAFFIC\_CONTROL\_SIGNAL

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)



[Generate](#) [Export Raw Data](#)

After clicking on the “Add Filter” button the second filter will be added into the query box. It may take a few seconds for RTSIMS to add the second filter, so be patient.

TrafficUnit.ControlType = TRAFFIC\_CONTROL\_SIGNAL,FLASHING\_TRAFFIC\_CONTROL\_SIGNAL  
Location.IntersectionType = FOUR\_WAY\_INTERSECTION,T\_INTESECTION,Y\_INTERSECTION,INTERSECTION\_AS\_

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

[Generate](#) [Export Raw Data](#)

Create Filter #3 - Establish a data search on crashes that occur after 2007.

## Custom Reports

User Reports [Display Options](#) [Delete Report](#)

Reports

LRT Crashes 2008-2012  
Not Inters-Related 2008-2012  
Stop Controlled Int Crashes 2009-2012  
Stop Controlled Int Crashes 2008

### Report Options

Report Type: By Crashes | Graph: None | Display: Year | Report Title: Pedestrian Crashes at Signaliz

### Filter Data

Type: Location **17**

Sub-type: Definition Table **18**

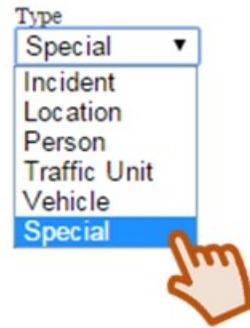
Definition: Intersection Type

Definition List

NOT\_AT\_INTERSECTION  
FOUR\_WAY\_INTERSECTION  
T\_INTESECTION  
Y\_INTERSECTION

**STEPS**

Step 17: In the “Filter Data” section, click on the drop-down menu under **Type**. There are six options: Incident, Location, Person, Traffic Unit, Vehicle, and Special. Select “Special” which will lead to defining a date range for crashes.



Step 18: Click on the drop-down menu under “Sub-type”. Select “Year”.



## Custom Reports

**User Reports** [Display Options](#) [Delete Report](#)

Reports

- LRT Crashes 2008-2012
- Not Inters-Related 2008-2012
- Stop Controlled Int Crashes 2009-2012
- Stop Controlled Int Crashes 2008

**STEPS**

### Report Options

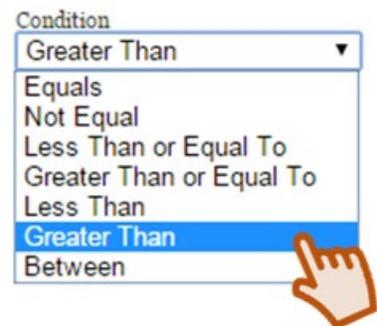
Report Type: **By Crashes** | Graph: **None** | Display: **Year** | Report Title: **Pedestrian Crashes at Signaliz**

### Filter Data

Type: **Special** | Sub-type: **Year**

Condition: **Equals** | **19** | **20**

Step 19: Click on the drop-down menu under “Condition”. Select “Greater Than”. Please note that there is more than one way to create a date range. Equivalent filters are “Greater Than or Equal To 2008” and “Between 2008 and 2015”.



Step 20: Type in “2007” in the value field.

Step 21: Click on the “Add Filter” button to add this filtering criterion into the query box.

```
TrafficUnit.ControlType = TRAFFIC_CONTROL_SIGNAL,FLASHING_TRAFFIC_CONTROL_SIGNAL  
Location.IntersectionType = FOUR_WAY_INTERSECTION,T_INTESECTION,Y_INTERSECTION,INTERSECTION_AS_
```

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)



Generate

Export Raw Data

After clicking on “Add Filter” the third criterion will be added into the query box. Once again, it may take a few seconds to load the filter into the query box.

```
TrafficUnit.ControlType = TRAFFIC_CONTROL_SIGNAL,FLASHING_TRAFFIC_CONTROL_SIGNAL  
Location.IntersectionType = FOUR_WAY_INTERSECTION,T_INTESECTION,Y_INTERSECTION,INTERSECTION_AS_  
Year > 2007
```

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

Generate

Export Raw Data

Create Filter #4 - Establish a data search to only select pedestrian crashes

### Custom Reports

User Reports [Display Options](#) [Delete Report](#)

Reports

- LRT Crashes 2008-2012
- Not Inters-Related 2008-2012
- Stop Controlled Int Crashes 2009-2012
- Stop Controlled Int Crashes 2008

STEPS

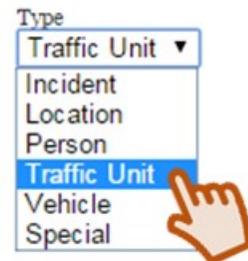
#### Report Options

Report Type:  | Graph:  | Display:  | Report Title:

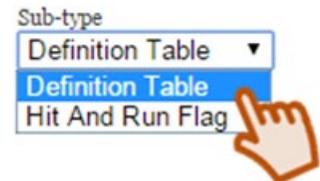
#### Filter Data

Type:  (22) | Sub-type:  (23) | Condition:  |

Step 22: In the “Filter Data” section, click on the drop-down menu under “Type”. There are six options: Incident, Location, Person, Traffic Unit, Vehicle, and Special. Select “Traffic Unit”.



Step 23: Click on the drop-down menu under “Sub-type”. Select “Definition Table”.



## Custom Reports

User Reports [Display Options](#) [Delete Report](#)

Reports

- LRT Crashes 2008-2012
- Not Inters-Related 2008-2012
- Stop Controlled Int Crashes 2009-2012
- Stop Controlled Int Crashes 2008

**STEPS**

### Report Options

Report Type: By Crashes | Graph: None | Display: Year | Report Title: Pedestrian Crashes at Signaliz

### Filter Data

Type: Traffic Unit | Sub-type: Definition Table

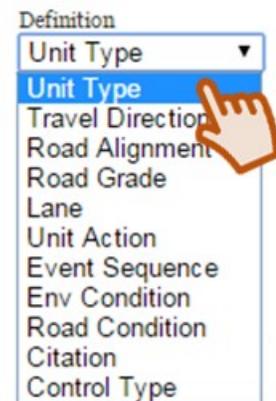
Definition: Unit Type

Definition List: DRIVER, PEDESTRIAN, PEDALCYCLIST, DRIVERLESS

24

25

Step 24: Click on the drop-down menu under “Definition”. Select “Unit Type”.



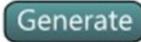
Step 25: Click on the drop-down menu under “Definition List”. Select “PEDESTRIAN”.



Step 26: Click on the “Add Filter” button to add this filtering criterion into the query box.

```
TrafficUnit.ControlType = TRAFFIC_CONTROL_SIGNAL,FLASHING_TRAFFIC_CONTROL_SIGNAL
Location.IntersectionType = FOUR_WAY_INTERSECTION,T_INTESECTION,Y_INTERSECTION,INTERSECTION_AS_
Year > 2007
```

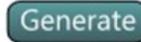
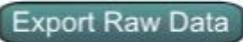
[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

After clicking on “Add Filter”, the fourth criterion will be added to the query box as shown below. It will once again take a few seconds to load the filter into the query box.

```
TrafficUnit.ControlType = TRAFFIC_CONTROL_SIGNAL,FLASHING_TRAFFIC_CONTROL_SIGNAL
Location.IntersectionType = FOUR_WAY_INTERSECTION,T_INTESECTION,Y_INTERSECTION,INTERSECTION_AS_
Year > 2007
TrafficUnit.UnitType = PEDESTRIAN
```

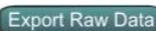
[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

Step 27: Now that all of the filters have been defined and loaded into the query box, click on “Generate” to produce the report with the applied filtering criteria.

```
TrafficUnit.ControlType = TRAFFIC_CONTROL_SIGNAL,FLASHING_TRAFFIC_CONTROL_SIGNAL
Location.IntersectionType = FOUR_WAY_INTERSECTION,T_INTESECTION,Y_INTERSECTION,INTERSECTION_AS_
Year > 2007
TrafficUnit.UnitType = PEDESTRIAN
```

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

After clicking on “Generate”, the “Loading” symbol will appear.



Within a few seconds the following custom report will be generated.

Generate Export Raw Data

---

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10/13/2016

## Safety Analysis Report

### Pedestrian Crashes at Signalized Intersections 2008-201

| Year | No Injury | Possible Injury | Non-Incapacitatin | Incapacitatin | Fatal | Unknown | Total |
|------|-----------|-----------------|-------------------|---------------|-------|---------|-------|
| 2009 | 6         | 8               | 10                | 0             | 0     | 0       | 24    |
| 2010 | 2         | 4               | 6                 | 5             | 0     | 0       | 17    |
| 2011 | 4         | 11              | 10                | 7             | 0     | 0       | 32    |
| 2012 | 11        | 2               | 6                 | 4             | 0     | 0       | 23    |
| 2013 | 0         | 8               | 8                 | 4             | 2     | 0       | 22    |
| 2014 | 6         | 12              | 4                 | 0             | 0     | 0       | 22    |
| 2015 | 2         | 12              | 4                 | 2             | 3     | 0       | 23    |

### Interpretation of Custom Report

The numbers in the table show the crashes that occurred from 2009 to 2015 at all signalized intersections in the City of Chandler where at least one pedestrian was involved. The results are summarized by level of severity (i.e., highest injury severity recorded in the crash). This report represents the number of crashes, including the total number of pedestrians involved in crashes for each year.

**Note:** The generated report will not be automatically saved on the local drive. The user needs to save/export the report in the desired format in a desired location on the user’s local machine/computer. The name of the saved file needs to be provided by the user and can be different than the title you provided on the report. Please refer to the Standard Reports section for report export and naming convention.

**Warning:** The analysis report does not reflect the year range that was queried. The years 2008 to 2015 were requested, and the output table only shows years 2009 to 2015. The ‘missing year’ is due to a change during that time of processing crash reports. If the queried data includes “Location.IntersectionType” data before 2009, the user must select “LEGACY\_INTERSECTION\_RELATED\_PRIOR\_2009”. This process is explained below.

### Corrective Step A:

In the list of query conditions, click and highlight the row titled “Location.IntersectionType”.



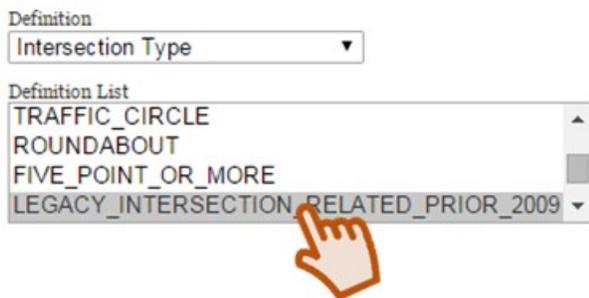
TrafficUnit.ControlType = TRAFFIC\_CONTROL\_SIGNAL,FLASHING\_TRAFFIC\_CONTROL\_SIGNAL  
 Location.IntersectionType = FOUR\_WAY\_INTERSECTION,T\_INTERSESECTION,Y\_INTERSECTION,INTERSECTION\_AS\_  
 Year > 2007  
 TrafficUnit.UnitType = PEDESTRIAN

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

[Generate](#) [Export Raw Data](#)

### Corrective Step B:

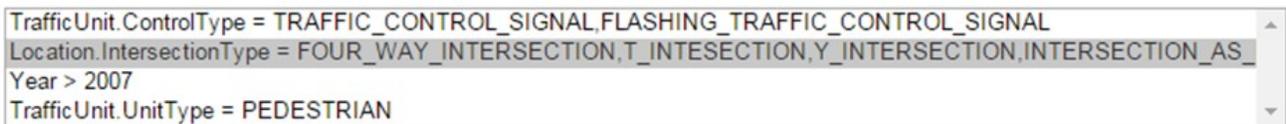
The “Type”, “Sub-Type”, and the “Definition” for this filter will automatically appear. In the “Definition List” drop down menu, press the CTRL key and select “LEGACY\_INTERSECTION\_RELATED\_PRIOR\_2009” in addition to the four items that are already selected.



Definition  
 Intersection Type

Definition List  
 TRAFFIC\_CIRCLE  
 ROUNDABOUT  
 FIVE\_POINT\_OR\_MORE  
 LEGACY\_INTERSECTION\_RELATED\_PRIOR\_2009

Once the five selections are highlighted, click “Update Filter”.



TrafficUnit.ControlType = TRAFFIC\_CONTROL\_SIGNAL,FLASHING\_TRAFFIC\_CONTROL\_SIGNAL  
 Location.IntersectionType = FOUR\_WAY\_INTERSECTION,T\_INTERSESECTION,Y\_INTERSECTION,INTERSECTION\_AS\_  
 Year > 2007  
 TrafficUnit.UnitType = PEDESTRIAN

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

[Generate](#) [Export Raw Data](#)

**Note:** Due to the text length of the ‘Intersection Type’ query, the query box will appear to be the same after it has been updated. Wait several seconds. The Definition List will refresh showing “NOT\_AT\_INTERSECTION” listed first. This indicates that the filter has been updated.

**Corrective Step C:**  
Click on “Generate”.

**Report Options**

Report Type: By Crashes | Graph: None | Display: Year | Report Title: Pedestrian Crashes at Signalize

---

**Filter Data**

Type: Location | Sub-type: Definition Table | Definition: Intersection Type

Definition List:  
 NOT\_AT\_INTERSECTION  
 FOUR\_WAY\_INTERSECTION  
 T\_INTERSECTION  
 Y\_INTERSECTION

TrafficUnit.ControlType = TRAFFIC\_CONTROL\_SIGNAL,FLASHING\_TRAFFIC\_CONTROL\_SIGNAL  
 Location.IntersectionType = FOUR\_WAY\_INTERSECTION,T\_INTERSECTION,Y\_INTERSECTION,INTERSECTION\_AS\_PART  
 Year > 2007  
 TrafficUnit.UnitType = PEDESTRIAN

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

**Generate** **Export Raw Data**

The resulting corrected report, which includes the year 2008, is shown below.

10/13/2016

**Safety Analysis Report**  
**Pedestrian Crashes at Signalized Intersections 2008-201**

| Year | No Injury | Possible Injury | Non-Incapacitatin | Incapacitatin | Fatal | Unknown | Total |
|------|-----------|-----------------|-------------------|---------------|-------|---------|-------|
| 2008 | 0         | 4               | 8                 | 2             | 0     | 0       | 14    |
| 2009 | 6         | 8               | 10                | 0             | 0     | 0       | 24    |
| 2010 | 2         | 4               | 6                 | 5             | 0     | 0       | 17    |
| 2011 | 4         | 11              | 10                | 7             | 0     | 0       | 32    |
| 2012 | 11        | 2               | 6                 | 4             | 0     | 0       | 23    |
| 2013 | 0         | 8               | 8                 | 4             | 2     | 0       | 22    |
| 2014 | 6         | 12              | 4                 | 0             | 0     | 0       | 22    |
| 2015 | 2         | 12              | 4                 | 2             | 3     | 0       | 23    |

---

## 4.3 More Custom Report Queries

Additional Custom Report Queries in this Section:

- *Custom Reports Example Query #3: Left-Turn Crashes at Intersections for the Last 3 Years*
- *Custom Reports Example Query #4: Intersection Related Crashes*
- *Custom Reports Example Query #5: Intersection Crash Analysis: Thomas Road and 67th Avenue over the Last 3 Years*
- *Custom Reports Example Query #6: Lane Departure Crashes*
- *Custom Reports Example Query #7: State Route 303 Crashes for 2011 and 2012*
- **Error! Reference source not found.: Error! Reference source not found.** between Milepost 171 and 172
- *Custom Reports Example Query #: Alcohol Impaired Drivers by Hour, 2008-2013*
- *: Wrong-Way Driving Related Crashes*
- *Custom Reports Example Query #1: Trend of Crossover Related Crashes*

### 4.3.1 Custom Reports Example Query #3

*Left-Turn Crashes at Intersections for the Last 3 Years*

#### Procedure

Step 1: Navigate to the RTSIMS **Custom Reports** page.

Step 2: Select **Display Options**

Step 3: Under Report Options, Select **Report Type: By Crashes**

Step 4: Select **Graph: Bar**

Step 5: Select **Display: Year**

Step 6: Write title in **Report Title: "Intersection Left-turn Crashes"**

---

**Note:** The Report Title entered will be printed on the top of each report page you generate. If the report is saved, it may be saved under this name or under a different report name. It will not automatically use this name.

---

### Create the Custom Search Filter

Step 7: Select **Type** from **Filter Data**: Location

Step 8: Select **Sub-type**: Definition Table

Step 9: Select **Definition**: Intersection Type

Step 10: Select **Definition List**:

- FIVE\_POINT\_OR\_MORE
- FOUR\_WAY\_INTERSECTION
- INTERSECTION\_AS\_PART\_OF\_INTERCHANGE
- LEGACY\_INTERSECTION\_RELATED\_PRIOR\_2009
- ROUNDABOUT
- T\_INTESECTION
- TRAFFIC\_CIRCLE
- Y\_INTERSECTION

Step 11: Select **Add Filter** (the filter criteria shows in the query)

Step 12: Select **Type** from **Filter Data**: Location

Step 13: Select **Sub-type**: Definition Table

Step 14: Select **Definition**: Junction Relation

Step 15: Select **Definition List**:

- INTERSECTION\_INTERCHANGE
- INTERSECTION\_NON\_INTERCHANGE
- INTERSECTION\_RELATED\_INTERCHANGE
- INTERSECTION\_RELATED\_NON\_INTERCHANGE

Step 16: Select **Add Filter** (the filter criteria shows in the query)

Step 17: Select **Type** from **Filter Data**: Special

Step 18: Select **Sub-type**: Year

Step 19: Select **Condition**: Between

Step 20: Write Starting Year in **Minimum**: 2011

Step 21: Write Ending Year in **Maximum**: 2013

Step 22: Select **Add Filter** (the filter criteria shows in the query)

Step 23: Select **Type** from **Filter Data**: Traffic Unit

Step 24: Select **Sub-type**: Definition Table

Step 25: Select **Definition**: Unit Action

Step 26: Select **Definition List**: MAKING\_LEFT\_TURN

Step 27: Select **Add Filter** (the filter criteria shows in the query)

Step 28: Click on **Generate** to create the report

**Report Options**

Report Type: **By Crashes** | Graph: **Bar** | Display: **Year** | Report Title: **Intersection Left-Turn Crashes**

**Filter Data**

Type: **Traffic Unit** | Sub-type: **Definition Table** | Definition: **Unit Action**

Definition List:  
 IMPROPERLY\_PARKED  
 LEAVING\_PARKING\_POSITION  
 LYING  
**MAKING\_LEFT\_TURN**

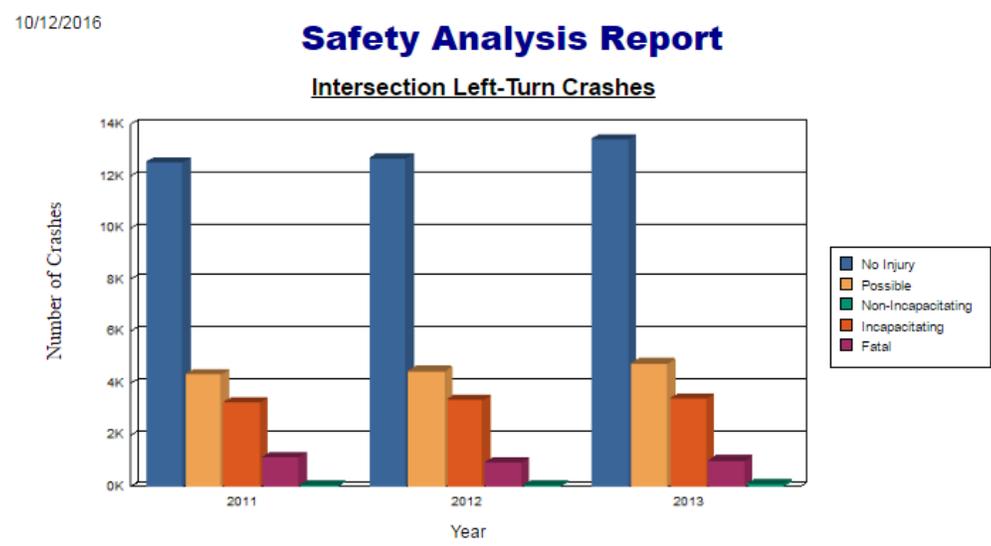
Location.IntersectionType = FOUR\_WAY\_INTERSECTION,T\_INTESECTION,Y\_INTERSECTION,INTERSECTION\_AS\_F  
 Location.JunctionRelation = INTERSECTION\_NON\_INTERCHANGE,INTERSECTION\_RELATED\_NON\_INTERCHANG  
 Year Between 2011 2013  
 TrafficUnit.UnitAction = MAKING\_LEFT\_TURN

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

**Generate** **Export Raw Data**

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**Main Report**



| Year | No Injury | Possible Injury | Non-Incapacitatin | Incapacitatin | Fatal | Unknown | Total  |
|------|-----------|-----------------|-------------------|---------------|-------|---------|--------|
| 2011 | 12,530    | 4,341           | 3,267             | 1,154         | 66    | 0       | 21,358 |
| 2012 | 12,665    | 4,459           | 3,356             | 940           | 82    | 0       | 21,502 |
| 2013 | 13,400    | 4,756           | 3,386             | 1,020         | 130   | 0       | 22,692 |

## 4.3.2 Custom Reports Example Query #4

### *Intersection Related Crashes*

- Step 1: Navigate to the RTSIMS **Custom Reports** page.
- Step 2: Select **Display Options**
- Step 3: Under Report Options, Select **Report Type:** By Crashes
- Step 4: Select **Graph:** Bar
- Step 5: Select **Display:** Year
- Step 6: Write title in **Report Title:** “Intersection Crashes”

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data:** Location
- Step 8: Select **Sub-type:** Definition Table
- Step 9: Select **Definition:** Intersection Type
- Step 10: Select **Definition List:**
  - FIVE\_POINT\_OR\_MORE
  - FOUR\_WAY\_INTERSECTION
  - INTERSECTION\_AS\_PART\_OF\_INTERCHANGE
  - LEGACY\_INTERSECTION\_RELATED\_PRIOR\_2009
  - ROUNDABOUT
  - T\_INTESECTION
  - TRAFFIC\_CIRCLE
  - Y\_INTERSECTION
- Step 11: Select **Add Filter** (the filter criteria shows in the query)
- Step 12: Select **Type** from **Filter Data:** Location
- Step 13: Select **Sub-type:** Definition Table
- Step 14: Select **Definition:** Junction Relation
- Step 15: Select **Definition List:**
  - INTERSECTION\_INTERCHANGE
  - INTERSECTION\_NON\_INTERCHANGE
  - INTERSECTION\_RELATED\_INTERCHANGE
  - INTERSECTION\_RELATED\_NON\_INTERCHANGE
- Step 16: Select **Add Filter** (the filter criteria shows in the query)
- Step 17: Click on **Generate** to create the report

### Report Options

Report Type:  Graph:  Display:  Report Title:

### Filter Data

Type:  Sub-type:  Definition:

Definition List

- INTERSECTION\_INTERCHANGE
- INTERSECTION\_NON\_INTERCHANGE
- INTERSECTION\_RELATED\_INTERCHANGE
- INTERSECTION\_RELATED\_NON\_INTERCHANGE

Location.IntersectionType = FOUR\_WAY\_INTERSECTION,T\_INTSESECTION,Y\_INTERSECTION,INTERSECTION\_AS\_F  
Location.JunctionRelation = INTERSECTION\_NON\_INTERCHANGE,INTERSECTION\_RELATED\_NON\_INTERCHANG

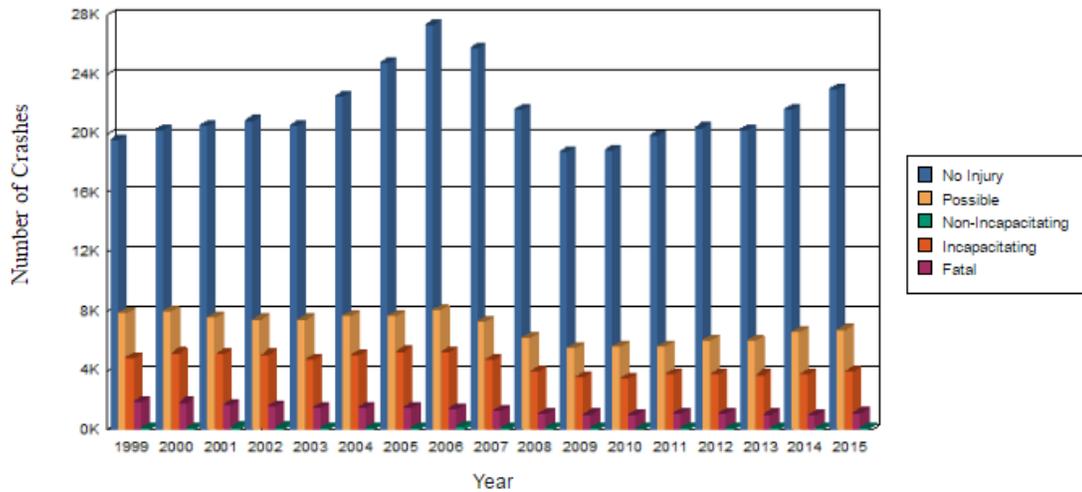
[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

Main Report

10/12/2016

## Safety Analysis Report

### Intersection Crashes



| Year | No Injury | Possible Injury | Non-Incapacitatin | Incapacitatin | Fatal | Unknown | Total <sup>Total</sup> |
|------|-----------|-----------------|-------------------|---------------|-------|---------|------------------------|
| 1999 | 19,600    | 7,857           | 4,856             | 1,928         | 168   | 0       | 34,409                 |
| 2000 | 20,279    | 7,974           | 5,192             | 1,846         | 157   | 0       | 35,448                 |
| 2001 | 20,588    | 7,618           | 5,133             | 1,741         | 184   | 0       | 35,264                 |
| 2002 | 20,903    | 7,452           | 5,087             | 1,618         | 178   | 0       | 35,238                 |
| 2003 | 20,519    | 7,444           | 4,719             | 1,517         | 147   | 0       | 34,346                 |
| 2004 | 22,563    | 7,709           | 5,080             | 1,514         | 147   | 0       | 37,013                 |
| 2005 | 24,747    | 7,665           | 5,282             | 1,522         | 171   | 0       | 39,387                 |
| 2006 | 27,363    | 8,091           | 5,253             | 1,401         | 188   | 0       | 42,296                 |
| 2007 | 25,733    | 7,308           | 4,777             | 1,328         | 153   | 0       | 39,299                 |
| 2008 | 21,599    | 6,254           | 3,990             | 1,089         | 128   | 0       | 33,060                 |
| 2009 | 18,762    | 5,492           | 3,528             | 1,067         | 104   | 0       | 28,953                 |
| 2010 | 18,914    | 5,657           | 3,486             | 1,001         | 87    | 0       | 29,145                 |
| 2011 | 19,904    | 5,668           | 3,727             | 1,124         | 116   | 0       | 30,539                 |
| 2012 | 20,416    | 6,060           | 3,786             | 1,074         | 113   | 0       | 31,449                 |
| 2013 | 20,279    | 5,989           | 3,718             | 1,061         | 153   | 0       | 31,200                 |
| 2014 | 21,649    | 6,572           | 3,783             | 1,021         | 127   | 0       | 33,152                 |
| 2015 | 23,008    | 6,761           | 3,939             | 1,157         | 142   | 0       | 35,007                 |

### 4.3.3 Custom Reports Example Query #5

*Intersection Crash Analysis: Thomas Road and 67<sup>th</sup> Avenue over the Last 3 Years*

#### Procedure

- Step 1: Navigate to the RTSIMS **Custom Reports** page.
- Step 2: Select **Display Options**
- Step 3: Under Report Options, Select **Report Type: By Crashes**
- Step 4: Select **Graph: Bar**
- Step 5: Select **Display: Year**
- Step 6: Write title in **Report Title: "Intersection Crashes: Thomas Rd / 67<sup>th</sup> Ave"**

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data: Special**
- Step 8: Select **Sub-type: Intersection**
- Step 9: Write each street name in the first or second box provided in **Street (With No Direction): Thomas, 67<sup>th</sup> Ave**
- Step 10: Select **Add Filter** (the filter criteria shows in the query)
- Step 15: Select **Type** from **Filter Data: Special**
- Step 16: Select **Sub-type: Year**
- Step 17: Select **Condition: Between**
- Step 18: Write starting year in **Minimum: 2011**
- Step 19: Write ending year in **Maximum: 2013**
- Step 20: Select **Add Filter** (the filter criteria shows in the query)
- Step 21: Click on **Generate** to create the report

#### Report Options

|                             |                |                   |  |
|-----------------------------|----------------|-------------------|--|
| Report Type<br>By Crashes ▼ | Graph<br>Bar ▼ | Display<br>Year ▼ | Report Title<br>Intersection Crashes: Thomas |
|-----------------------------|----------------|-------------------|--|

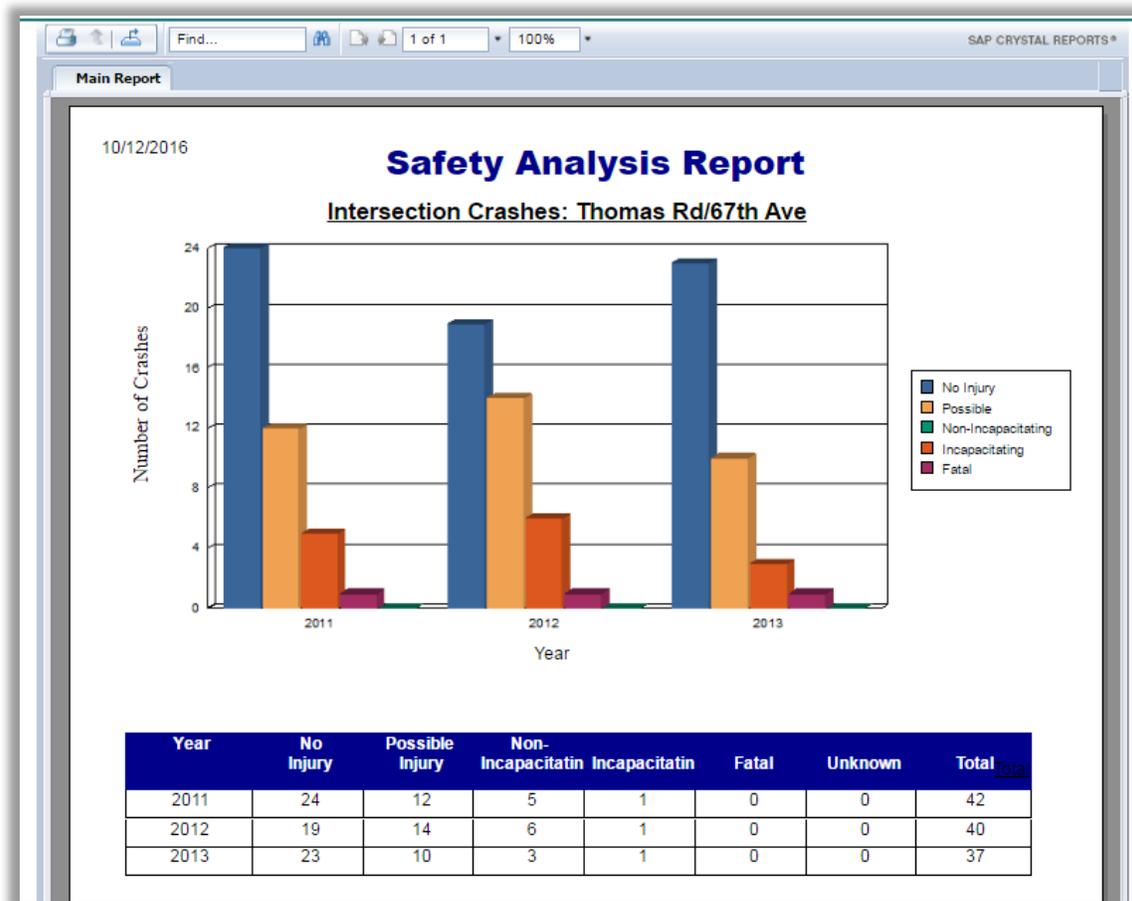
#### Filter Data

|                   |                    |                        |                            |                 |
|-------------------|--------------------|------------------------|----------------------------|-----------------|
| Type<br>Special ▼ | Sub-type<br>Year ▼ | Condition<br>Between ▼ | Values:<br>2011<br>Minimum | 2013<br>Maximum |
|-------------------|--------------------|------------------------|----------------------------|-----------------|

Intersection at Thomas and 67th Ave  
Year Between 2011 2013

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

**Generate** **Export Raw Data**



**Note:** This query will extract crash data for each of the four (4) approaches of the intersection. The data is automatically queried for an offset distance of 150 feet of each approach from the center of the intersection. Intersection crash data can also be queried in terms of one roadway (only 2 approaches). This can be completed by using the following filters:

**Type:** Special / **Sub-type:** Onroad / **Street (With No Direction):** Thomas

**Type:** Special / **Sub-type:** Crossing Feature / **Street (With No Direction):** 67<sup>th</sup> Ave (a second crossing street may be entered into the second box to include data of another intersection along the same road)

**Warning:** The crash data represents the crashes on Thomas (Onroad) within 150 feet from the center of the selected intersection/s. If two intersections are entered, the data represents crashes on Thomas Road only, within 150 feet of those two independent intersections. The query does not provide the crashes on the road segment *between* the two intersections. To analyse the crashes in between the two intersections, it is necessary to run a separate query using the Location/OnRoad query. Use of the Export Raw Data utility, selecting the same fields for each of the Special/OnRoad and Location/OnRoad queries, the data could be combined for a more complete analysis of a given segment. In addition, review of both query data exports may show distances further than 150 feet using the **Type:** Special / **Sub-type:**Onroad query and "0" feet offsets using the **Type:** Location / **Sub-type:**Onroad query. However, the combined data will have no duplicate IncidentId (i.e. data for one query is in addition to the other for a more complete segment analysis).

## 4.3.4 Custom Reports Example Query #6

### *Lane Departure Crashes*

#### **Procedure**

- Step 1: Navigate to the RTSIMS **Custom Reports** page.  
Step 2: Select **Display Options**  
Step 3: Under Report Options, Select **Report Type:** By Crashes  
Step 4: Select **Graph:** Bar  
Step 5: Select **Display:** Year  
Step 6: Write title in **Report Title:** “Lane Departure Crashes”

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data:** Incident  
Step 8: Select **Sub-type:** Definition Table  
Step 9: Select **Definition:** First Harmful  
Step 10: Select **Definition List:**
- BRIDGE\_OVERHEAD\_STRUCTURE
  - BRIDGE\_RAIL
  - BUILDING
  - CABLE\_TRAFFIC\_BARRIER
  - CONCRETE\_TRAFFIC\_BARRIER
  - CROSS\_CENTERLINE
  - CROSS\_MEDIAN
  - CULVERT
  - CURB
  - DITCH
  - EMBANKMENT
  - FENCE
  - GUARDRAIL\_END
  - GUARDRAIL\_FACE
  - IMPACT\_ATTENUATOR\_CRASH\_CUSHION
  - MAILBOX
  - OTHER\_FIXED\_OBJECT
  - OTHER\_POST\_POLE\_OR\_SUPPORT
  - OTHER\_TRAFFIC\_BARRIER
  - OVERTURN\_ROLLOVER
  - RAN\_OFF\_ROAD\_LEFT
  - RAN\_OFF\_ROAD\_RIGHT
  - TRAFFIC\_SIGN\_SUPPORT
  - TRAFFIC\_SIGNAL\_SUPPORT
  - TREE\_BUSH\_STUMP\_STANDING

- UTILITY\_POLE\_LIGHT\_SUPPORT

Step 11: Select **Add Filter** (the filter criteria shows in the query)  
 Step 12: Click on **Generate** to create the report

**Report Options**

Report Type: By Crashes | Graph: Bar | Display: Year | Report Title: Lane Departure Crashes

**Filter Data**

Type: Incident | Sub-type: Definition Table | Definition: First Harmful

Definition List:

- ANIMAL\_PET
- ANIMAL\_WILD\_GAME
- ANIMAL\_WILD\_NON\_GAME
- BRIDGE\_OVERHEAD\_STRUCTURE

Incident.FirstHarmful = OVERTURN\_ROLLOVER,RAN\_OFF\_ROAD\_RIGHT,RAN\_OFF\_ROAD\_LEFT,CROSS\_MEDI/A

[Add Filter](#) | [Update Filter](#) | [Remove Filter](#) | [Save Report](#)

Generate Export Raw Data

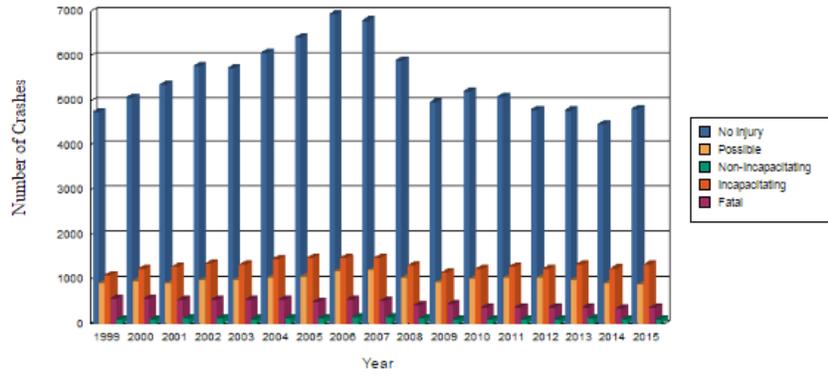
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**Main Report**

10/12/2016

## Safety Analysis Report

### Lane Departure Crashes



| Year | No Injury | Possible Injury | Non-Incapacitating | Incapacitating | Fatal | Unknown | Total  |
|------|-----------|-----------------|--------------------|----------------|-------|---------|--------|
| 1999 | 4,745     | 910             | 1,082              | 563            | 104   | 0       | 7,404  |
| 2000 | 5,063     | 957             | 1,242              | 575            | 117   | 0       | 7,954  |
| 2001 | 5,367     | 918             | 1,292              | 550            | 131   | 0       | 8,258  |
| 2002 | 5,786     | 988             | 1,363              | 551            | 133   | 0       | 8,821  |
| 2003 | 5,731     | 999             | 1,337              | 546            | 119   | 0       | 8,732  |
| 2004 | 6,069     | 1,031           | 1,448              | 540            | 130   | 0       | 9,218  |
| 2005 | 6,409     | 1,059           | 1,472              | 508            | 141   | 0       | 9,589  |
| 2006 | 6,922     | 1,190           | 1,492              | 552            | 162   | 0       | 10,318 |
| 2007 | 6,796     | 1,201           | 1,483              | 524            | 154   | 0       | 10,158 |
| 2008 | 5,906     | 1,052           | 1,300              | 419            | 131   | 0       | 8,808  |
| 2009 | 4,960     | 946             | 1,167              | 454            | 114   | 0       | 7,641  |
| 2010 | 5,220     | 1,007           | 1,233              | 386            | 97    | 0       | 7,943  |
| 2011 | 5,083     | 1,046           | 1,292              | 383            | 111   | 0       | 7,915  |
| 2012 | 4,795     | 1,033           | 1,235              | 387            | 111   | 0       | 7,561  |
| 2013 | 4,784     | 1,000           | 1,335              | 379            | 136   | 0       | 7,634  |
| 2014 | 4,481     | 925             | 1,247              | 360            | 102   | 0       | 7,115  |
| 2015 | 4,831     | 893             | 1,337              | 383            | 106   | 0       | 7,550  |

### 4.3.5 Custom Reports Example Query #7

#### *State Route 303 Crashes for 2011 and 2012*

#### **Procedure**

- Step 1: Navigate to the RTSIMS **Custom Reports** page.
- Step 2: Select **Display Options**
- Step 3: Under Report Options, Select **Report Type: By Crashes**
- Step 4: Select **Graph: Bar**
- Step 5: Select **Display: Year**
- Step 6: Write title in **Report Title: “Crashes on State Route 303 2011-2012”**

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data: Special**
- Step 8: Select **Sub-type: Onroad**
- Step 9: Select **Street (With No Direction): S 303**
- Step 10: Select **Add Filter** (the filter criteria shows in the query)
- Step 11: Select **Type** from **Filter Data: Special**
- Step 12: Select **Sub-type: Year**
- Step 13: Select **Condition: Between**
- Step 14: Write starting year in **Minimum: 2011**
- Step 15: Write ending year in **Maximum: 2012**
- Step 16: Select **Add Filter** (the filter criteria shows in the query)
- Step 17: Click on **Generate** to create the report

**Report Options**

Report Type:  Graph:  Display:  Report Title:

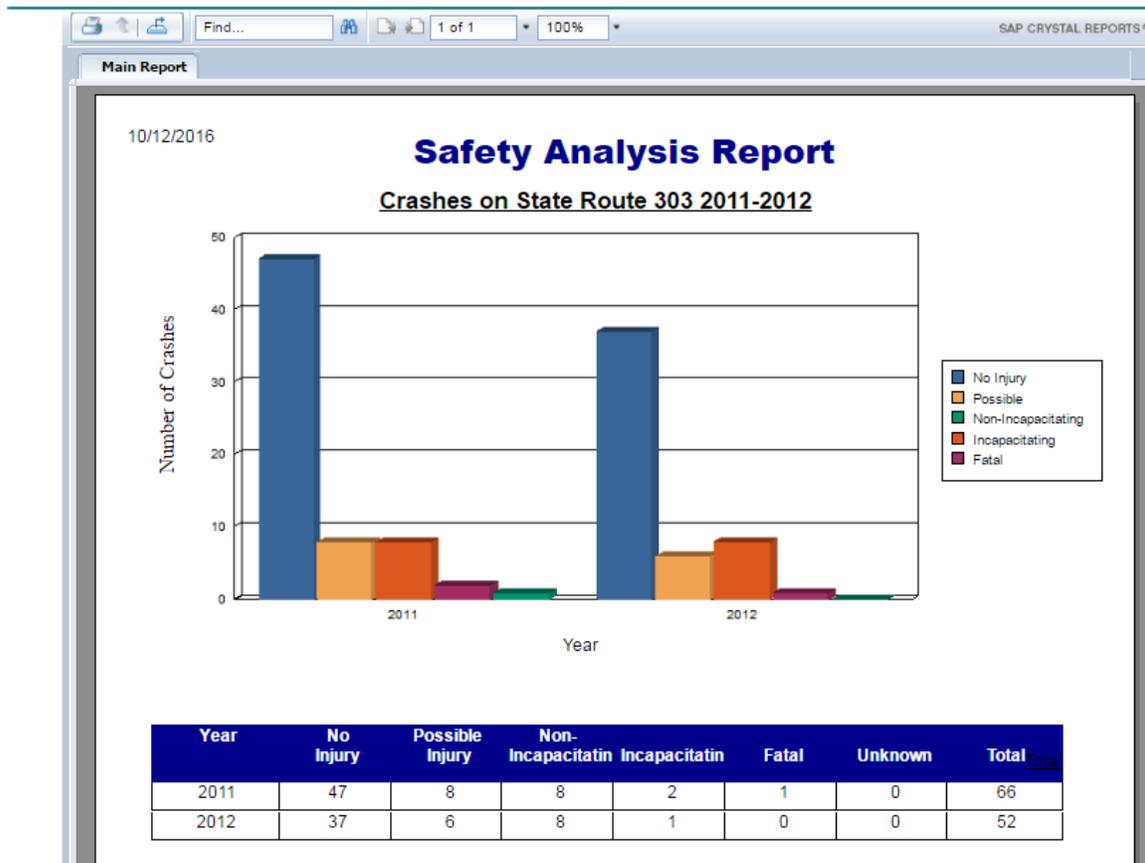
**Filter Data**

Type:  Sub-type:  Condition:  Values:    
 Minimum Maximum

Onroad at S 303  
 Year Between 2011 2012

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

[Generate](#) [Export Raw Data](#)



## 4.3.6 Custom Reports Example Query #8

### *Alcohol Impaired Drivers by Hour, 2008-2013*

#### **Procedure**

- Step 1: Navigate to the RTSIMS **Custom Reports** page.
- Step 2: Select **Display Options**
- Step 3: Under Report Options, Select **Report Type: By Crashes**
- Step 4: Select **Graph: Bar**
- Step 5: Select **Display: Hour**
- Step 6: Write title in **Report Title: “Alcohol Impaired Drivers, 2008-2013”**

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data: Traffic Unit**
- Step 8: Select **Sub-type: Definition Table**
- Step 9: Select **Definition: Unit Type**
- Step 10: Select **Definition List: Driver**
- Step 11: Select **Add Filter** (the filter criteria shows in the query)
- Step 12: Select **Type** from **Filter Data: Person**
- Step 13: Select **Sub-type: Definition Table**
- Step 14: Select **Definition: Person Type**
- Step 15: Select **Definition List: Driver**
- Step 16: Select **Add Filter** (the filter criteria shows in the query)
- Step 17: Select **Type** from **Filter Data: Person**
- Step 18: Select **Sub-type: Definition Table**
- Step 19: Select **Definition: Physical**
- Step 20: Select **Definition List: Alcohol**
- Step 21: Select **Add Filter** (the filter criteria shows in the query)
- Step 22: Select **Type** from **Filter Data: Special**
- Step 23: Select **Sub-type: Year**
- Step 24: Select **Condition: Between**
- Step 25: Write starting year in **Minimum: 2008**
- Step 26: Write ending year in **Maximum: 2013**
- Step 27: Select **Add Filter** (the filter criteria shows in the query)
- Step 28: Click on **Generate** to create the report

Report Options

Report Type:  Graph:  Display:  Report Title:

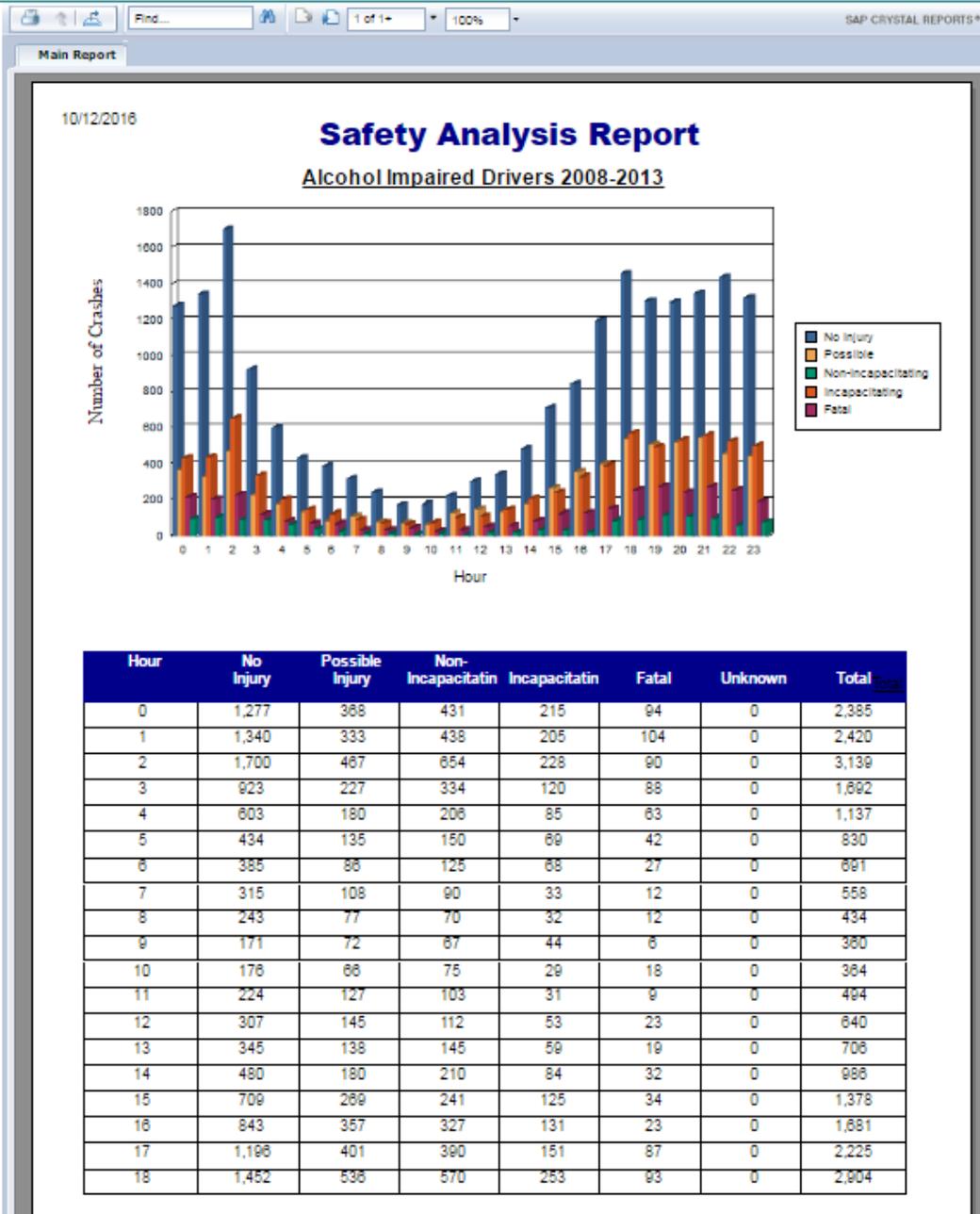
Filter Data

Type:  Sub-type:  Condition:     
Minimum Maximum

TrafficUnit.UnitType = DRIVER  
 Person.PersonType = DRIVER  
 Person.Physical = ALCOHOL  
 Year Between 2008 2013

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

[Generate](#) [Export Raw Data](#)



### 4.3.7 Custom Reports Example Query #9

#### *Wrong-Way Driving Related Crashes in the Past Five Years*

The 10th edition of [Arizona Crash Report Forms Instruction Manual](#) has published the 2014 Arizona Crash Report Form with new data fields for wrong way driving. Although “Wrong Way Driving” is attribute number 17 and 18 in “Relation to Junction”, the manual states that “This is not a Relation to Junction attribute. It is a Violations/Behavior attribute.” Crash data from the 2014 ALISS database indicate that the new data field on the crash form is not being used by reporting law enforcement. Instead, attribute number 8 for “Drove/Rode in opposing Traffic Lane” under “Violation” is being used to record wrong way driving.

#### **Procedure**

- Step 1: Navigate to the RTSIMS **Custom Reports** page.
- Step 2: Select **Display Options**
- Step 3: Under Report Options, Select **Report Type:** By Crashes
- Step 4: Select **Graph:** Bar
- Step 5: Select **Display:** Year
- Step 6: Write title in **Report Title:** “Wrong Way Driving Crashes”

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data:** Person
- Step 8: Select **Sub-type:** Definition Table
- Step 9: Select **Definition:** Violation
- Step 10: Select **Definition List:** DROVE\_RODE\_IN\_OPPOSING\_TRAFFIC\_LANE
- Step 11: Select **Add Filter** (the filter criteria shows in the query)
- Step 12: Select **Type** from **Filter Data:** Special
- Step 13: Select **Sub-type:** Year
- Step 14: Select **Condition:** Greater Than
- Step 15: Select **Values:** 2009
- Step 16: Select **Add Filter** (the filter criteria shows in the query)

Step 17: Click on **Generate** to create the report

**Report Options**

Report Type:  Graph:  Display:  Report Title:

---

**Filter Data**

Type:  Sub-type:  Condition:

Person.Violation = DROVE\_RODE\_IN\_OPPOSING\_TRAFFIC\_LANE  
Year > 2009

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

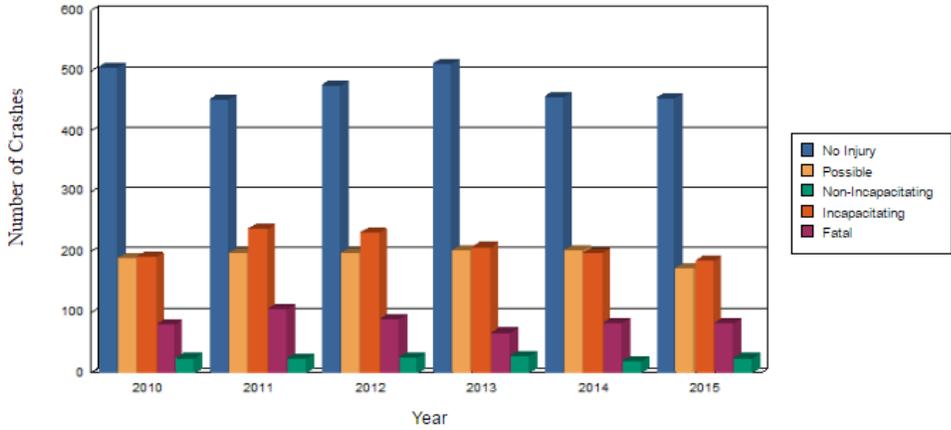
---

**Main Report**

10/12/2016

## Safety Analysis Report

### Wrong Way Driving Crashes



The bar chart displays the number of crashes from 2010 to 2015, categorized by injury type. The y-axis represents the 'Number of Crashes' (0 to 600), and the x-axis represents the 'Year'. The legend indicates five categories: No Injury (blue), Possible (orange), Non-Incapacitating (green), Incapacitating (red), and Fatal (purple). The 'No Injury' category consistently has the highest number of crashes, followed by 'Possible' and 'Incapacitating'.

| Year | No Injury | Possible Injury | Non-Incapacitatin | Incapacitatin | Fatal | Unknown | Total |
|------|-----------|-----------------|-------------------|---------------|-------|---------|-------|
| 2010 | 505       | 190             | 193               | 80            | 25    | 0       | 993   |
| 2011 | 453       | 198             | 239               | 105           | 24    | 0       | 1,019 |
| 2012 | 477       | 199             | 232               | 89            | 26    | 0       | 1,023 |
| 2013 | 512       | 202             | 208               | 67            | 28    | 0       | 1,017 |
| 2014 | 457       | 202             | 198               | 82            | 20    | 0       | 959   |
| 2015 | 455       | 173             | 185               | 82            | 25    | 0       | 920   |

### 4.3.8 Custom Reports Example Query #10

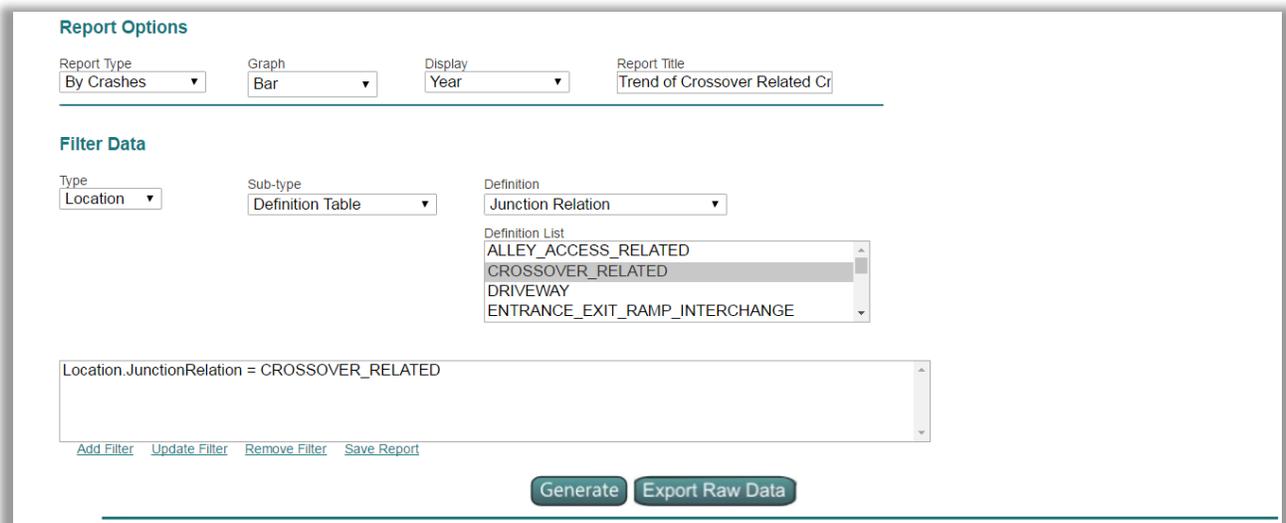
#### *Trend of Crossover Related Crashes*

#### Procedure

- Step 1: Navigate to the RTSIMS **Custom Reports** page.
- Step 2: Select **Display Options**
- Step 3: Under Report Options, Select **Report Type:** By Crashes
- Step 4: Select **Graph:** Bar
- Step 5: Select **Display:** Year
- Step 6: Write title in **Report Title:** “Trend of Crossover Related Crashes”

#### Create the Custom Search Filter

- Step 7: Select **Type** from **Filter Data:** Location
- Step 8: Select **Sub-type:** Definition Table
- Step 9: Select **Definition:** Junction Relation
- Step 10: Select **Definition List:** CROSSOVER\_RELATED
- Step 11: Select **Add Filter** (the filter criteria shows in the query)
- Step 12: Click on **Generate** to create the report



**Report Options**

Report Type: By Crashes | Graph: Bar | Display: Year | Report Title: Trend of Crossover Related Cr

---

**Filter Data**

Type: Location | Sub-type: Definition Table | Definition: Junction Relation

Definition List:

- ALLEY\_ACCESS\_RELATED
- CROSSOVER\_RELATED**
- DRIVEWAY
- ENTRANCE\_EXIT\_RAMP\_INTERCHANGE

Location.JunctionRelation = CROSSOVER\_RELATED

[Add Filter](#) [Update Filter](#) [Remove Filter](#) [Save Report](#)

**Generate** **Export Raw Data**



**Note:** To query *Median* Crossover Related Crashes, use the following filter parameters: Type: Incident; Sub-Type: Definition Table; Definition: First Harmful; Definition List: CROSS\_MEDIAN.

## 5 System Messages

This section contains Error, diagnostic, and information messages that may be presented to the users while using the software.

### ERROR #1: MAG Server is down or access is denied

**Server Error**

**404 - File or directory not found.**

The resource you are looking for might have been removed, had its name changed, or is temporarily unavailable.

### ERROR #2: Empty Data Displays

**Standard Reports**

Jurisdiction:

Report Type:

Graph:

Display:

Person Type:

Road Type:

Vehicle Type:

Year:

---

SAP CRYSTAL REPORTS®

1 of 1 | 103%

4/22/2015

**Safety Analysis Report**

Years: 1999,2000,2001,2002,2003

Crashes by Year

Number of Crashes

- Total Crashes
- Total Injuries
- Total Fatalities

### ERROR #3: Invalid Queries

This happens when you select a query that is not feasible. An example is “Buckeye”, “Freeway by Milepost by Direction”, and “S-143”. The query is invalid because the S-143 does not travel through the City of Buckeye.

### Standard Reports

Jurisdiction:

Report Type:

Freeway:

Year:

**Invalid query.**

### ERROR #4: Connection Problem

### Standard Reports

Jurisdiction:

Report Type:

Graph:

Display:

Person Type:

Road Type:

Vehicle Type:

Year:

**Unable to Load Year/County DropDownList. Check connection**

## 5.1 Known Problems Encountered – RTSIMS

- There is no “clear” or “reset” button for standard reports. In Custom Reports, the previously generated report is always shown unless the user completely logs out and logs back in.
  - Work around: navigate away from the page and come back to it.
- There is no “clear” or “reset” button for custom reports.
  - Work around: to reset the Report Options and Filter Data, navigate away from the page and come back to it. The previously generated report and graph will always show unless the user completely logs out and logs back in.
- A Standard Reports query with Report Type: Crash Totals outputs “injury crashes” and “fatal crashes”. A column for “serious injury crashes” (incapacitating crashes) is desired.
  - Work-around: A query for Report Type “Crash Severity” will produce the subtotals by KABCO injury scale.
- For the 2008-2012 Standard Reports queries for Serious Injury Crashes: Not Inter-Related minus Freeway equals 4,183 and All Arterial & Local Roads minus Inter-Related equals 4,193. These results should be equal; however, there may be a few coding errors which are tough to catch when looking at the massive amount of data.
- In Standard Reports, a query for trailer-involved freeway crashes in Chandler for 5 years resulted in numbers that did not make sense. There were ZERO Trailer-involved crashes in 2013, and in 2012, but in 2011, there were 142 resulting in 44 injuries. This large discrepancy suggests an error. Additionally, in 2010 there were 69 trailer-involved crashes in the MAG region resulting in 22 injuries.
- Querying by freeway, by milepost, and by direction is not possible. These analysis capabilities have been noted as desired within Custom Reports to be added during future software updates.

- There is a coding error in the generation of the graph types which produces legend colors that do not match the graph colors for the different injury severities. When applying a “trend” graph, the line colors match what is in the legend, but the line node colors do not. In the “bar” graph, the bar colors in the graph do not match the legend. The “pie” type graph colors are consistent with the corresponding legend. The user has the option to export the data and use some other graphing utility, such as excel, to produce graphics that are consistent for display.

---

## 5.2 Known Problems Encountered – ALISS Database

- The summation of queries for signalized intersections and STOP controlled intersections do not equal intersection related crashes. For some of the intersection related crashes, the control type is coded as unknown.
- Queries of STOP controlled intersections within Custom Reports are different for 1999 through 2008 and after 2008. This is due to coding changes for police reports beginning January 1, 2009.
  - Work-around: Perform two separate queries: (1) for 1999 through 2008 and (2) for 2009 to the present year.
- In “Age Group” under Standard Reports-Display, some crash data is grouped into unrealistic bins, including between 105-109 and 255-259 years old. This crash data is “other” or “unknown”.

---

## 5.3 Reporting an RTSIMS issue to MAG

To report new issues with RTSIMS or desired software functionality, email MAG at [RTSIMS@azmag.gov](mailto:RTSIMS@azmag.gov).

## 6 Appendix A – MAG RTSIMS Access Request Form

The MAG Regional Transportation Safety Information Management System (RTSIMS) is an analytical software tool developed for performing crash data analyses. The RTSIMS software can be accessed only from MAG approved Network IP Addresses at member agencies that have signed a Data Agreement with ADOT. Please check with the list of agencies with Data Agreements with ADOT posted under Resources at:

<http://azmag.gov/Projects/Project.asp?CMSID=1059&CMSID2=1155>

To request access to RTSIMS, email this completed form to [RTSIMS@azmag.gov](mailto:RTSIMS@azmag.gov). A local agency may request access for up to two staff members. It is recommended that designated staff should be familiar with crash data analysis and the ADOT crash database named ALISS.

*Note: In accordance with the ADOT Data Agreement, RTSIMS will allow local jurisdictions to run data queries ONLY on crash data pertinent to their own jurisdiction.*

### USER INFORMATION – PRIMARY USER

|                                    |                     |
|------------------------------------|---------------------|
|                                    | Date                |
| Name (First, Last)                 | Jurisdiction        |
| Street Address, City, ST, ZIP Code | Phone Number        |
| Email Address                      | Network IP Address* |

*\*Your public-facing Network IP Address can be obtained by contacting your agency's Information Technology (IT) department or by performing a Google search "What is my IP?" from the computer you wish to access the RTSIMS software.*

### USER INFORMATION – SECONDARY USER (OPTIONAL)

|                    |                     |
|--------------------|---------------------|
| Name (First, Last) | Phone Number        |
| Email Address      | Network IP Address* |

### AUTHORIZATION FROM JURISDICTION (City Manager or Equivalent)

|              |       |           |      |
|--------------|-------|-----------|------|
| Printed Name | Title | Signature | Date |
|--------------|-------|-----------|------|

### AUTHORIZATION FROM MARICOPA ASSOCIATION OF GOVERNMENTS

*(Leave this section blank)*

|                                      |              |                |                                |
|--------------------------------------|--------------|----------------|--------------------------------|
| User IDs:                            | Primary User | Secondary User | User ID & Initial PW Sent Date |
| MAG RTSIMS Administrator's Signature |              |                |                                |

## 7 Appendix B – Glossary of Terms

| Term   | Meaning  |
|--------|--|
| ADOT   | Arizona Department of Transportation   |
| ALISS  | ADOT Accident Location Identification Surveillance System  |
| CF     | Crash Frequency  |
| CS     | Crash Severity   |
| CT     | Crash Type   |
| FHWA   | Federal Highway Administration   |
| ISS    | Intersection Safety Score  |
| KABCO  | Crash Severity Scale;<br>K=Fatal, A=Incapacitating Injury, B=Non-Incapacitating Injury,<br>C=Possible Injury, O=Property Damage Only |
| MAG    | Maricopa Association of Governments  |
| NCIC   | National Crime Information Center  |
| NSM-I  | MAG Network Screening Methodology for Intersections  |
| RTSIMS | Regional Transportation Safety Information Management System   |
| TIM    | Traffic Incident Management  |

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## 8 Appendix C – Suggested Local Agency Reports Based on City of Phoenix Annual Crash Report

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**Note:** These reports should not include freeway crashes within the jurisdiction. They should only include all “Arterial and Local Streets”, which also includes collector streets.

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- 5-year annual summary of collisions
  - Total crashes by year
  - Injury crashes by year
    - Total injuries
    - Incapacitating Injuries
    - Incapacitating Injury crashes
  - Fatal crashes by year
    - Total fatalities
    - Total fatal crashes
  - Fatal collisions by mode of transport by year (Veh-Ped, Veh-Bike, Veh-Motorcycle, Veh-Veh)
  - Fatal and Incapacitating collisions by mode by year (Veh-Ped, Veh-Bike, Veh-Motorcycle, Veh-Veh)
  - Motorcycle-involved crashes by year
    - Total crashes
    - Injury crashes
    - Fatal crashes
  - LRT crashes by year (Phoenix, Tempe, and Mesa only)
    - Total crashes
    - Injury crashes
    - Fatal crashes
    - Manner of collision (angle, right turn, left turn, other)
  - Alcohol-related crashes by year
    - Total collisions
    - Injuries
    - Fatalities
  - Work Zone crashes
    - Total crashes
    - Injuries
    - Fatalities

- Run-red crashes
  - Total crashes
  - Injuries
  - Fatalities
- Run-STOP crashes
  - Total crashes
  - Injuries
  - Fatalities
- Pedestrian-involved crashes
  - Total collisions
  - Injuries
  - Fatalities
- Bicyclist-involved crashes
  - Total collisions
  - Injuries
  - Fatalities
- For the most recent year of crash data (calendar year)
  - Total collisions by month
  - Total Injuries by month
    - Total injuries
    - Incapacitating injuries
    - Incapacitating Injury crashes
  - Total fatalities by month
    - Total fatal crashes
    - Total fatalities
  - Collisions by day of week
    - Total crashes
    - Total Injuries
    - Total fatalities
  - Collisions by Time of Day (12AM-3AM, 3AM-6AM, 6AM-9AM, 9AM-12Noon, Noon-3PM, 3PM-6PM, 6PM-9PM, 9PM-12AM)
    - Total crashes
    - Total injuries
    - Total fatalities
  - Collisions by Light Conditions (Day, Night, Dawn/Dusk)
    - Total crashes
    - Total injuries
    - Total fatalities
  - Manner of Collision
    - Total crashes
    - Injury crashes
    - Fatal crashes

- Fatal Collisions by Mode of Transportation (Single-Vehicle, Veh-Pedestrian, Veh-Bicycle, Veh-Motorcycle, Single motorcycle, Veh-Veh)
- Collision type by age of driver (Sideswipe, rear-end, left turn, angle, other)(Based on age of Driver #1) (Exclude pedestrians, bicycle crashes)
  - <25
  - 25-64
  - >65
- Collisions by Primary Violation (Based on only the first violation of unit #1)
- Motorcycle-involved crashes:
  - Total crashes
  - Injury crashes
  - Fatal crashes
  - Crash Severity (PDO, Injury, Fatal) vs. helmet use (Helmet, No Helmet, Not Reported)
- LRT crashes (Phoenix, Tempe and Mesa only)
  - Crash severity
  - Crash location
  - Violation (Unit #1)
- Work zone crashes
  - Total crashes
  - Injuries
  - Fatalities
  - Month
- Pedestrian crashes
  - Severity (PDO, Injury, Fatal)
  - Total crashes by month
  - Total crashes by day of week
  - Total crashes by hour (grouped into three-hour time segments if possible)
  - Driver violation
  - Pedestrian violation
  - Physical condition of driver
  - Physical condition of pedestrian
  - Action of driver (turning left, turning right, going straight, backing, etc.)
  - Action of pedestrian (crossing road, walking with traffic, walking against traffic, standing, going straight, etc.)
  - Age of pedestrian (0-5, 6-11, 12-17, 18-25, 26-35, 36-45, 46-55, 56-65, 66+)
  - Gender of pedestrian

- Bicycle-involved crashes
  - Severity (PDO, Injury, Fatal)
  - Total crashes by month
  - Total crashes by day of week
  - Total crashes by hour (grouped into three-hour time segments if possible)
  - Driver violation
  - Bicyclist violation
  - Physical condition of driver
  - Physical condition of bicyclist
  - Action of driver (turning left, turning right, going straight, backing, etc.)
  - Action of bicyclist (crossing road, walking with traffic, walking against traffic, standing, going straight, etc.)
  - Age of Bicyclist (0-5, 6-11, 12-17, 18-25, 26-35, 36-45, 46-55, 56-65, 66+)
  - Gender of pedestrian
- Intersections with the highest number of crashes
  - Total crashes
  - Injury crashes
  - Fatal crashes
- Intersections with the highest number of run-red crashes
  - Total crashes
  - Injury crashes
  - Fatal crashes
- Intersections with the highest number of run-STOP sign crashes
  - Total crashes
  - Injury crashes
  - Fatal crashes
- Intersections with the highest number of pedestrian crashes
- Intersections with the highest number of bicyclist crashes

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## 9 Appendix D – ALISS Code Book Data Dictionary