



California SHSP Crash Data Dashboard
How To Guide



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1. OVERVIEW

The California Strategic Highway Safety Plan (SHSP) Crash Data Dashboard is a tool developed to provide implementers with direct access to crash data to support data-driven implementation of the SHSP. The Crash Data Dashboard provides traffic safety professionals and partners with direct access to statewide crash data to support the data-driven implementation of the SHSP and coordinated safety programs. The Crash Data Dashboard currently incorporates finalized crash data from the most recent 10 years and is updated on a regular basis to include the most recent finalized crash data.

The Crash Data Dashboard is composed of 10 filterable worksheets grouped by overarching data characteristics. These worksheets include:

- Fataals
- Serious Injuries
- Challenge Area
- Location
- Counties
- Cause
- Crash Conditions
- Party Level
- Victim Level
- Fataals (FARS)

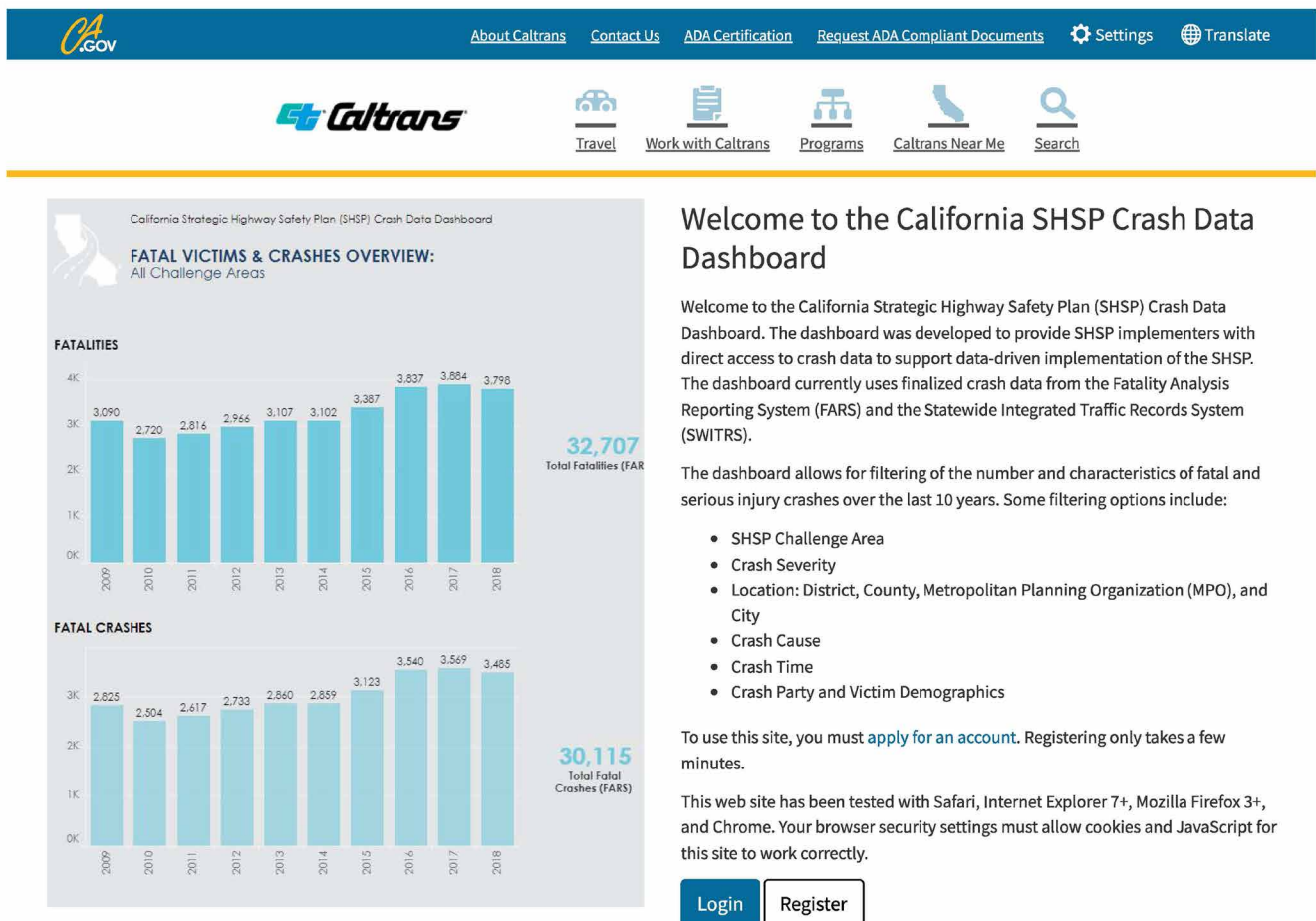
Additionally, there are two information worksheets that provide background information on data sources, Challenge Area queries, and filter information.

The Crash Data Dashboard has several multi-select drop down filters that users can choose to query each page and better understand crash data throughout the state. Users may also hover over graphs, charts, and data cards for summary of the data, levels, and the data source used in the analysis.

- a. When a user opens the Crash Data Dashboard, the filters are set to "All". A user can filter the serious injuries and serious injury crashes by several choices including:
 - i. Challenge Areas
 - ii. Year
 - iii. Caltrans District
 - iv. MPO
 - v. County
 - vi. City
 - vii. Tribal
 - viii. State Highway System
 - ix. Party Race

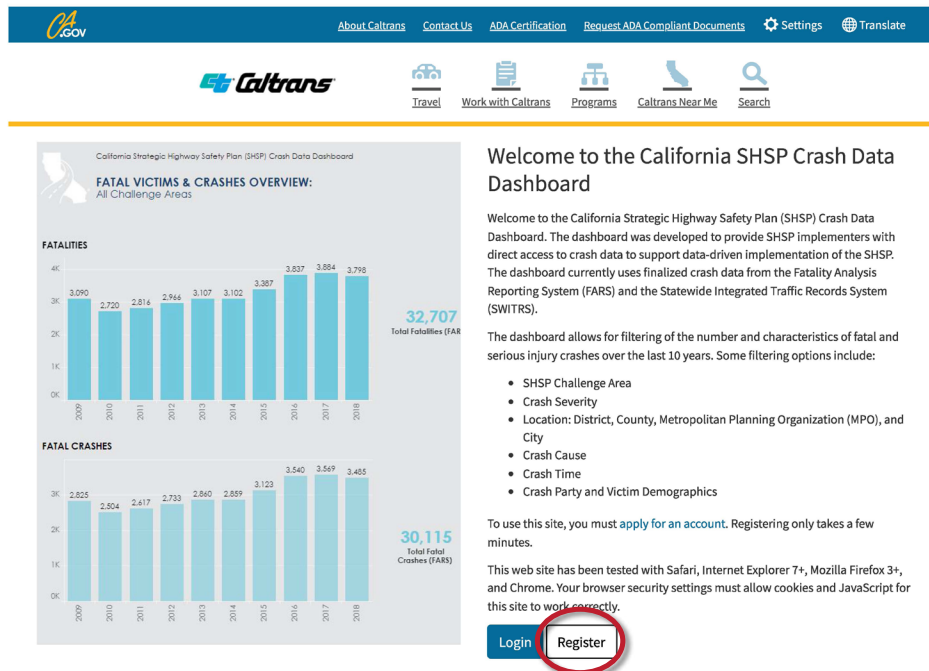
2. ACCESS THE CRASH DATA DASHBOARD

- Access the dashboard on any web browser at <https://shsp.dot.ca.gov/>.
- Once on the site the user should see the following home page for the Crash Data Dashboard:



3. CREATE AN ACCOUNT TO LOG IN TO THE CRASH DATA DASHBOARD

- a. Each user requires a unique password. If an account has already been set up, the user can skip to Section 4 of this guide. If an account has not already been setup, click the “Register” button.

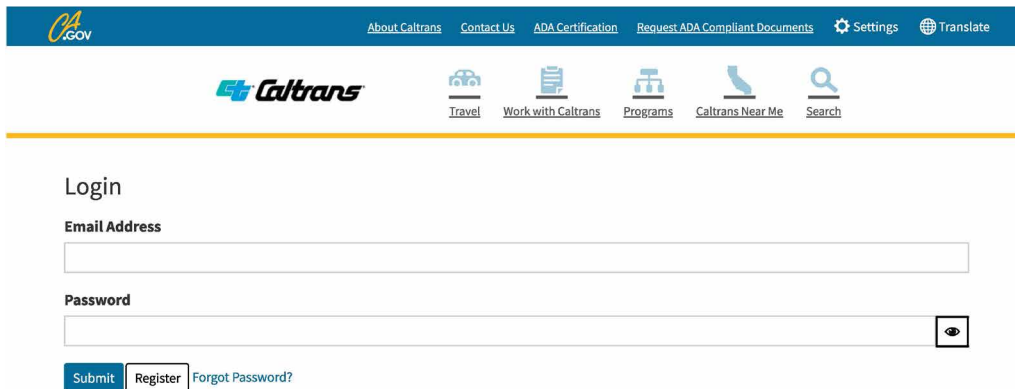


- b. It will take the user to the following page:

[illegible]

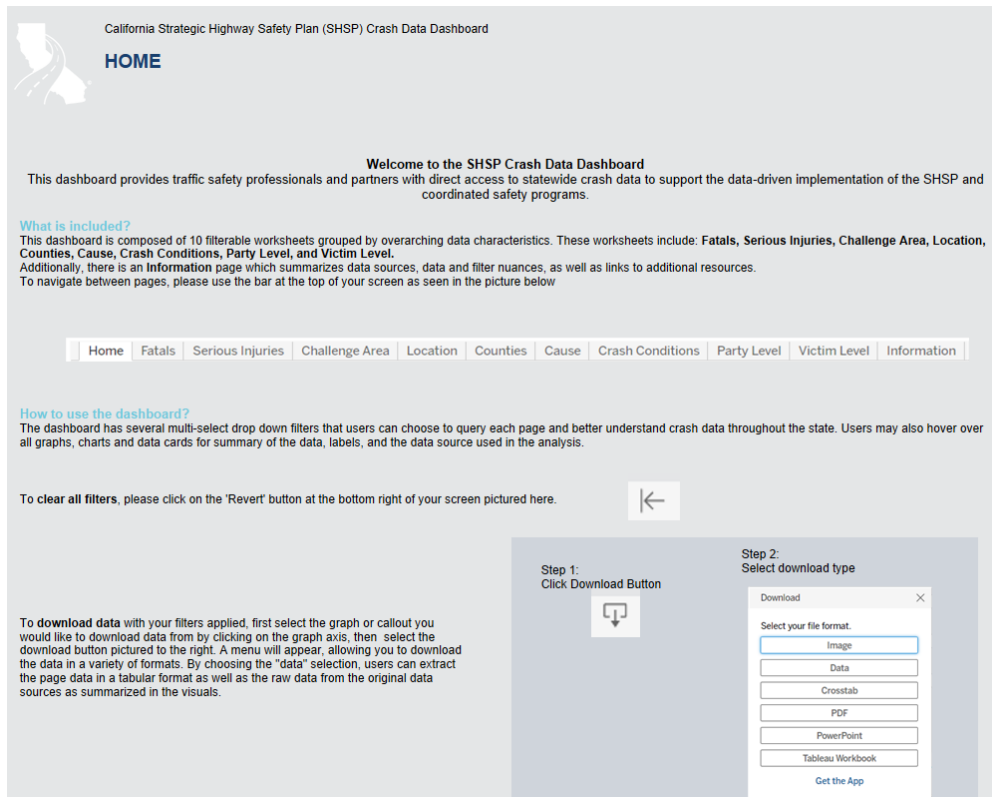
- c. Check both boxes to acknowledge.
- d. Fill in the required contact information and set a password. Confirm the User Account.
- e. Once the process of creating a new account is finished, the user will receive a confirmation email in their inbox. It may go to the spam/junk folder so be sure to check both locations.
- f. Once the process of creating a new account is finished, the user will receive a confirmation email in their inbox. It may go to the spam/junk folder so be sure to check both locations.

- g. Click the “confirm email address” hyperlink to begin the account confirmation process.
- h. Once the account has been confirmed, which usually takes a few minutes, the user is now able to log in to the Crash Data Dashboard and begin to explore its functions.
- i. Once an account is set up, the user can click the “Login” button on the home page (<https://shsp.dot.ca.gov/>), enter the associated email address and password and proceed to the Crash Data Dashboard.



The screenshot shows the Caltrans website header with navigation links: About Caltrans, Contact Us, ADA Certification, Request ADA Compliant Documents, Settings, and Translate. Below the header is the Caltrans logo and a row of icons for Travel, Work with Caltrans, Programs, Caltrans Near Me, and Search. The main content area is titled "Login" and contains two input fields: "Email Address" and "Password". There is a "Submit" button, a "Register" button, and a "Forgot Password?" link. A small eye icon is visible next to the password field.

- j. The user will see the Home page below once they have logged in.



The screenshot shows the "HOME" page of the California Strategic Highway Safety Plan (SHSP) Crash Data Dashboard. The page includes a welcome message, a description of the dashboard's purpose, and a list of included worksheets: **Fatals, Serious Injuries, Challenge Area, Location, Counties, Cause, Crash Conditions, Party Level, and Victim Level**. It also provides instructions on how to use the dashboard, including a note about multi-select drop-down filters and a "Revert" button to clear all filters. A "Download" button is highlighted, and a modal window is shown with options to select a file format (Image, Data, Crosstab, PDF, PowerPoint, Tableau Workbook) and a "Get the App" button.

- k. From here the user can begin to explore the Crash Data Dashboard and various functionalities.

4. USE THE MENU BAR AT THE TOP OF THE DATA DASHBOARD

The Crash Data Dashboard is composed of 10 filterable worksheets grouped by overarching data characteristics. The worksheets include:

- Fatal
- Serious Injuries
- Challenge Area
- Location
- Counties
- Cause
- Crash Conditions
- Party Level
- Victim Level
- Fatal (FARS)

Each of these tabs include a filterable worksheet grouped by one of the above data characteristics.

- a. Before beginning to use the dashboard, it is recommended to scroll to the Information Tabs located on the far upper right-hand side of the Crash Data Dashboard. These tabs provide additional details on the Crash Data Dashboard, including information on the Challenge Area queries and information on the filters that are included in the Crash Data Dashboard.

California Strategic Highway Safety Plan (SHSP)

Crash Data Dashboard

California Strategic Highway Safety Plan (SHSP) Crash Data Dashboard

INFORMATION (1/2)

Data Information:

1. The crash data represented in this dashboard is from the Statewide Integrated Traffic Records System (SWITS) and the Fatality Analysis Reporting System (FARS). Vehicle miles traveled (VMT) data is Caltrans Highway Performance Monitoring System (HPMS) at <https://dot.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system>
2. SWITS data used in this dashboard includes finalized 2019 data, and was retrieved in September 2021 and can be found here: <https://switsr.chr.ca.gov/Reports/ga/index.jsp>
3. FARS data used in this dashboard was extracted November 2021. Year 2019 data was considered finalized at that time and can be located at <https://cfsa.nhtsa.gov/fars.htm>
4. The FARS data source was used for the Overview Fatality worksheet on page 1 and the other 13 challenge areas.
5. To replicate the SHSP queries, data cleaning of the raw SWITS and FARS data. The dataset should be available to download from the dashboard Home tab for directions on downloading from Tableau. To download the <https://dot.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system>

Challenge Area Queries:

To learn more about the data definitions used to categorize crashes under (Appendix A – Data Definition Summary): <https://dot.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system>

Caltrans Districts:

To learn more about Caltrans District borders and counties incorporated: <https://dot.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system>

Caltrans Metropolitan Planning Organizations (MPO):

To learn more about MPOs and areas incorporated in specific MPOs plan: <https://www.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system> and <https://dot.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system>

Filter Information:

The data dashboard encompasses 14 of the 16 SHSP challenge areas which have various levels of crash data from SWITS or FARS databases. Emergency Response and Emerging Technologies are not represented in the data dashboard.

Crash Severity: The crash severity filter is only applicable to SWITS data. The Driver Licensing Challenge Area, which uses FARS data, only collects data on fatal crashes.

City: The city filter is only applicable to SWITS data and cannot query FARS data related to All Challenge Areas on the Fatal Page and the Driver Licensing Challenge Area.

District: MPO, County, City. These are relational filters that will automatically filter to represent each District, MPO, County, and City included in the user selection. However, the dashboard is only able to group counties and cities as a whole so it is not able to accurately display all district and MPO data. For example, all of Kern County is represented in District 8, even though the eastern portion is in District 9.

Tribal: The Tribal filter is included all crashes that are within five miles of the tribal boundary. This data is made available in collaboration with the Native American Advisory Committee (NAAC) and through geocoding efforts from Safe Transportation Research and Education Center (SafeTREC) at University of California, Berkeley. Tribal data is also available at <https://nmi Berkeley.edu>

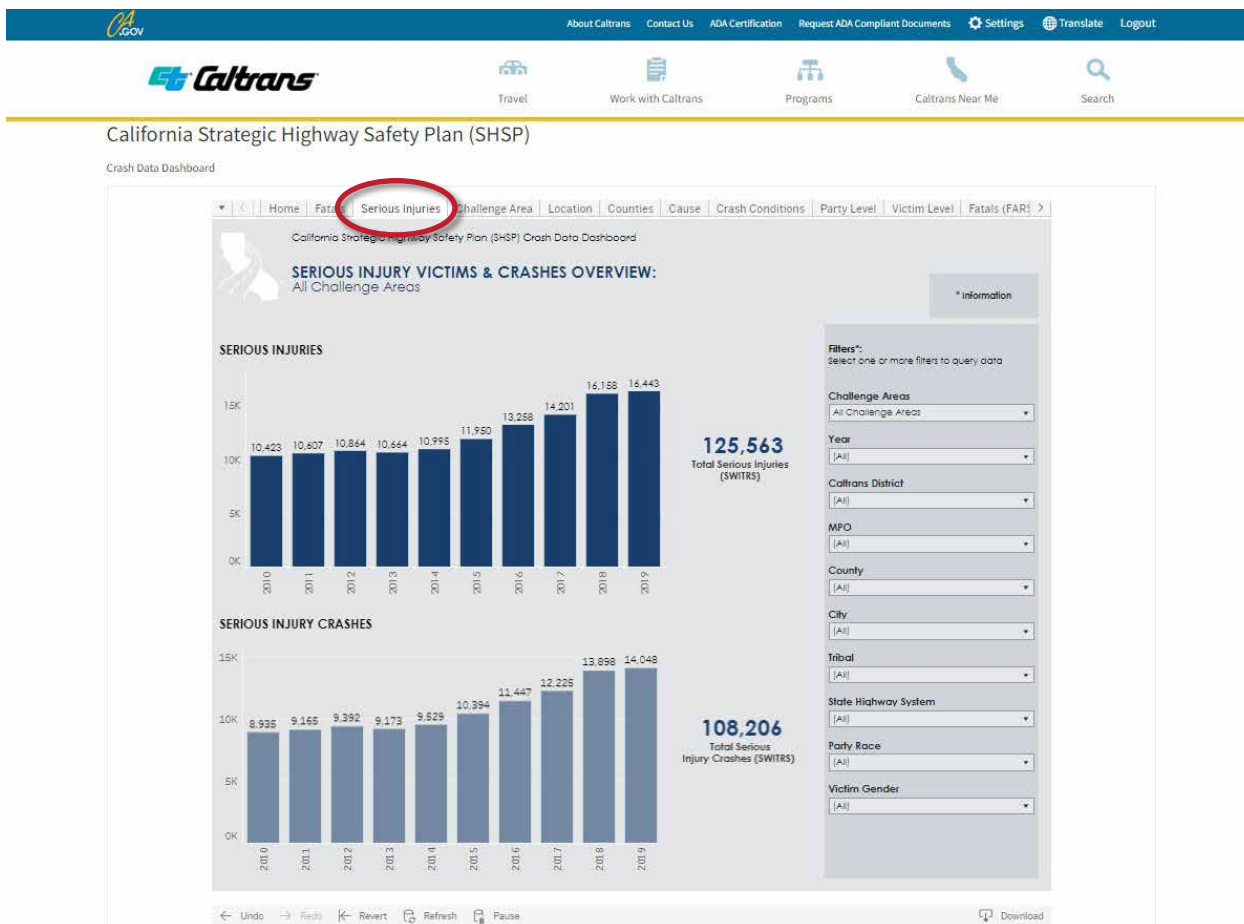
State Highway System: The highway system filter is only applicable to SWITS data and cannot query FARS data related to All Challenge Areas on the Fatal Page and the Driver Licensing Challenge Area.

MPO: The Tahoe MPO is currently not listed in this filter as jurisdiction overlaps with SACOG. This will be evaluated and improved upon in future dashboard updates.

Rate: The rate data displayed through use of this filter is determined on the party level rather than victim level, meaning that multiple victims in the same party are coded as a single rate, whether or not that is accurate. It should also be noted that the party rate is not a personal identification by the party and there is no standardized process for determining party rate at the scene of the crash. This suggests that some of the party rate data might be inaccurate and/or biased.

5. USE THE CRASH DATA DASHBOARD

- Select one of the 10 tabs to view the desired data.
- For the purpose of this guide, the Serious Injuries tab is presented as an example. Select the Serious Injuries tab from the top menu bar. It is important to note that this worksheet reports both serious injuries and serious injury crashes. The reason for the difference in the numbers is that a serious injury crash could result in multiple victims with serious injuries.



The charts show serious injury and serious injury crash data for the entire state, as the filters are currently set to "All".

- When a user opens the Crash Data Dashboard, the filters are set to "All". A user can filter the serious injuries and serious injury crashes by several choices including:
 - Challenge Areas
 - Year
 - Caltrans District
 - MPO
 - County
 - City
 - Tribal
 - State Highway System
 - Party Race

There can be multiple selections for each filter, except for Challenge Areas, where only a single selection is allowed.

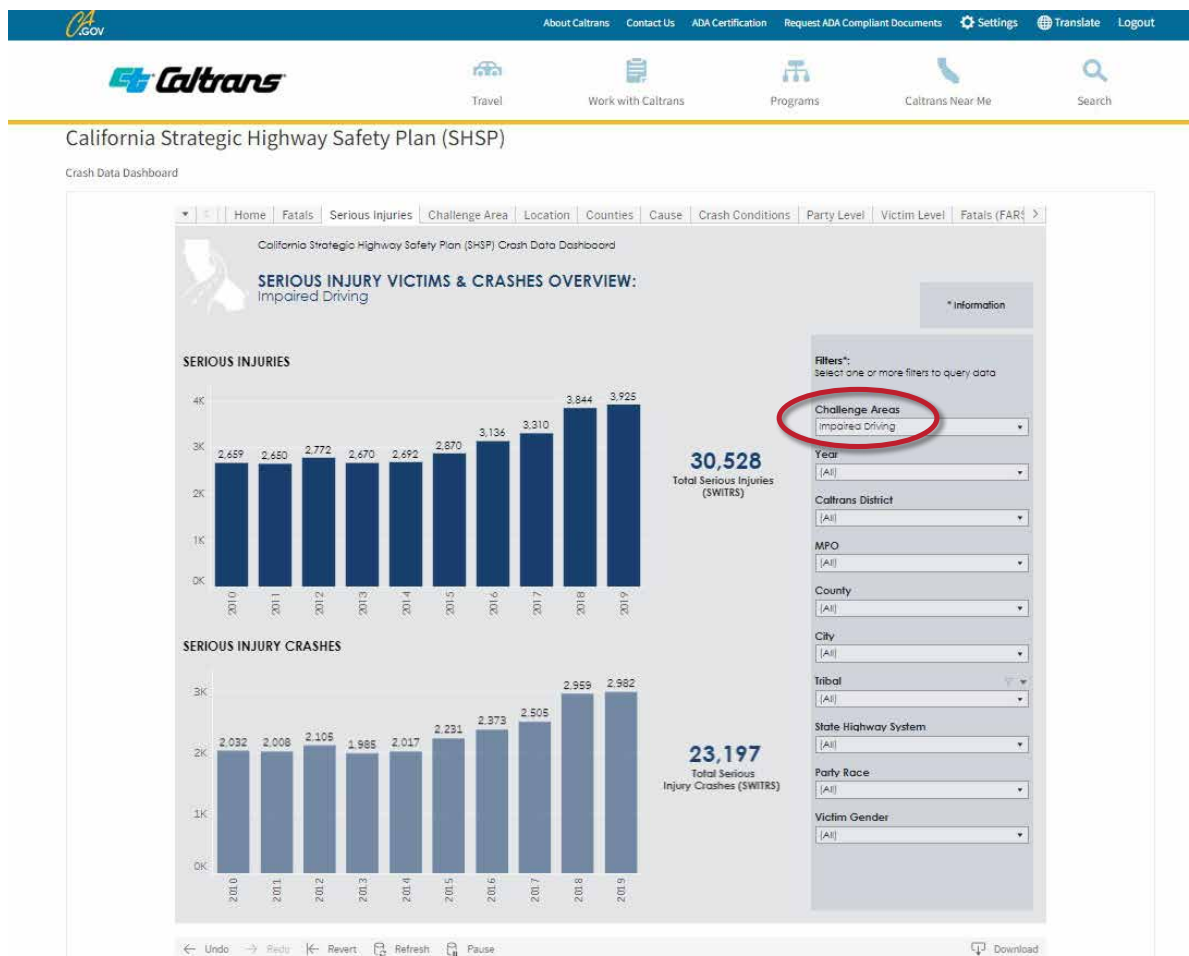
d. The Crash Data Dashboard encompasses 14 of the 16 SHSP Challenge Areas, which have various levels of crash data from SWITRS or FARS databases. The Challenge Areas included in the Crash Data Dashboard are:

- | | | |
|--------------------------|------------------------|--|
| i. Aging Drivers | vi. Impaired Driving | xi. Pedestrians |
| ii. Bicyclists | vii. Intersections | xii. Speed Management/
Aggressive Driving |
| iii. Commercial Vehicles | viii. Lane Departures | xiii. Work Zones |
| iv. Distracted Driving | ix. Motorcyclists | xiv. Young Drivers |
| v. Driver Licensing | x. Occupant Protection | |

Emergency Response and Emerging Technologies are not represented in the Crash Data Dashboard because current crash data is not able to be filtered for those two Challenge Areas.

e. In this example the Impaired Driving filter is selected.

f. Once the Impaired Driving filter is selected, the Crash Data Dashboard updates to show the crash data that involved impaired driving and resulted in a serious injury or a serious injury crash.



6. FILTER OPTIONS

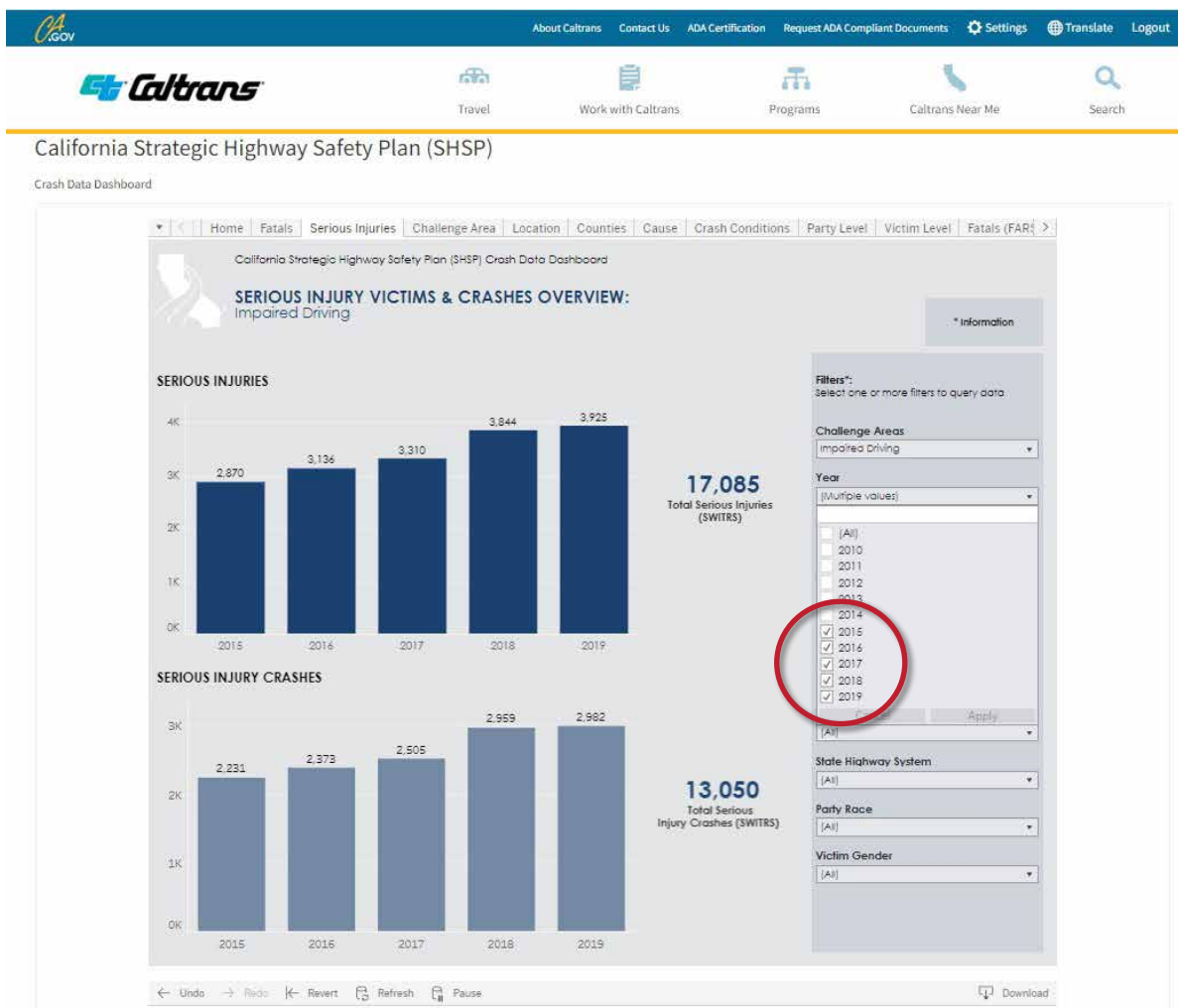
The following sections describe the filter options for the Crash Data Dashboard. The filters stay the same as a user moves from worksheet to worksheet, so once a user has filtered down the desired data selections, the user can click across the top worksheet options which will provide the data in different visualization formats which is further described in Section 7.

6.1. Challenge Areas

Filtering by Challenge Area was previously described in Section 5. Note, a user can only select one Challenge Area at a time.

6.2. Year

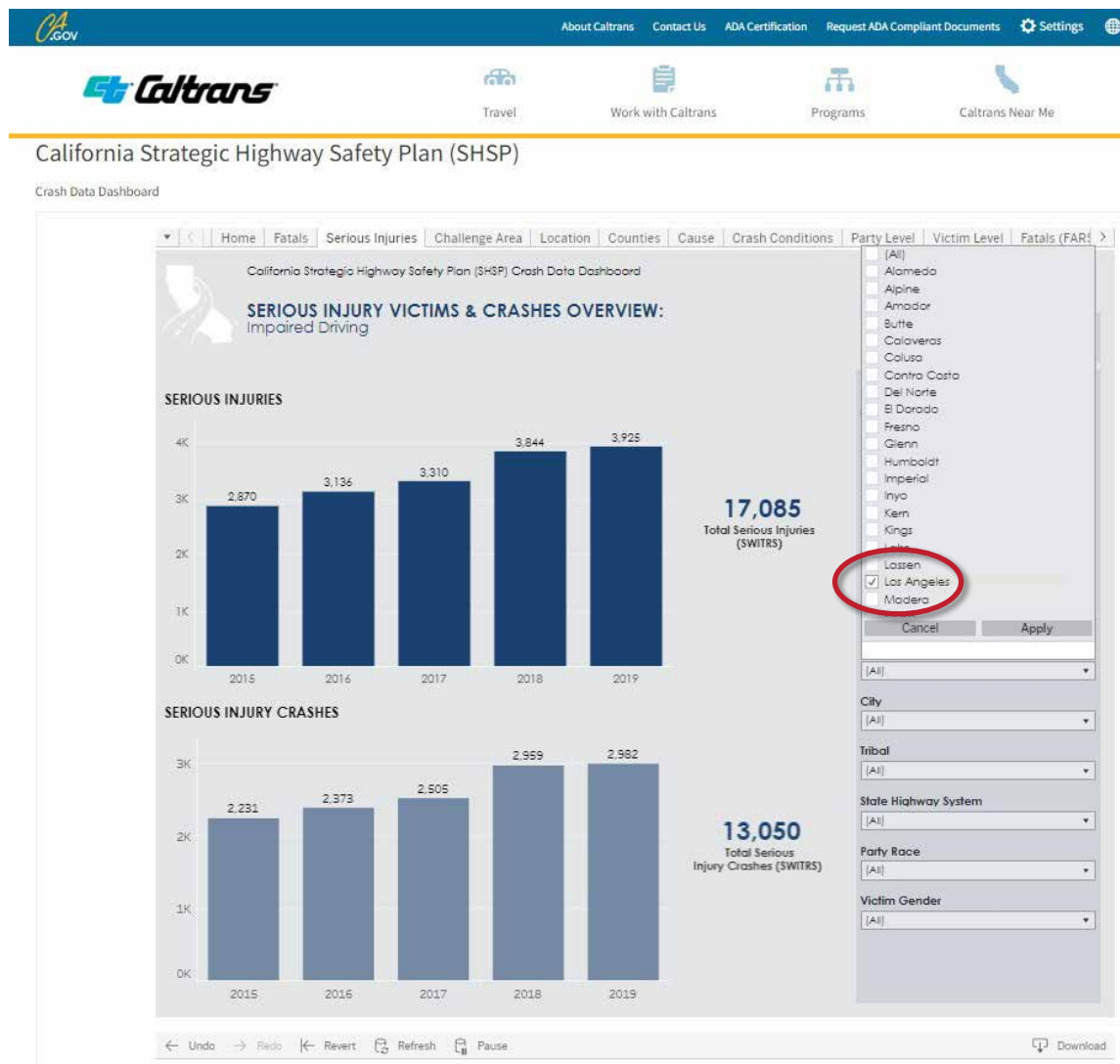
A user can also filter the data by year, or by multiple years. The Crash Data Dashboard includes finalized data from the most recent 10 years. As crash data is finalized, the Crash Data Dashboard is updated to include the most recent 10 years of finalized crash data. A user can view all 10 years of data or select the range of their choice. In this example, five years of crash data are selected (2015, 2016, 2017, 2018, 2019).



6.3. District, MPO, County, or City

The dashboard also allows for the filtering of data by geographic region. Users have the option to filter by Caltrans District, metropolitan planning organization (MPO), county, or city. Users can select multiple counties if they are doing an analysis covering more than one county. This is also true for the other geographic filters (i.e., a user can choose multiple cities or Districts).

This example shows filtering by county level.



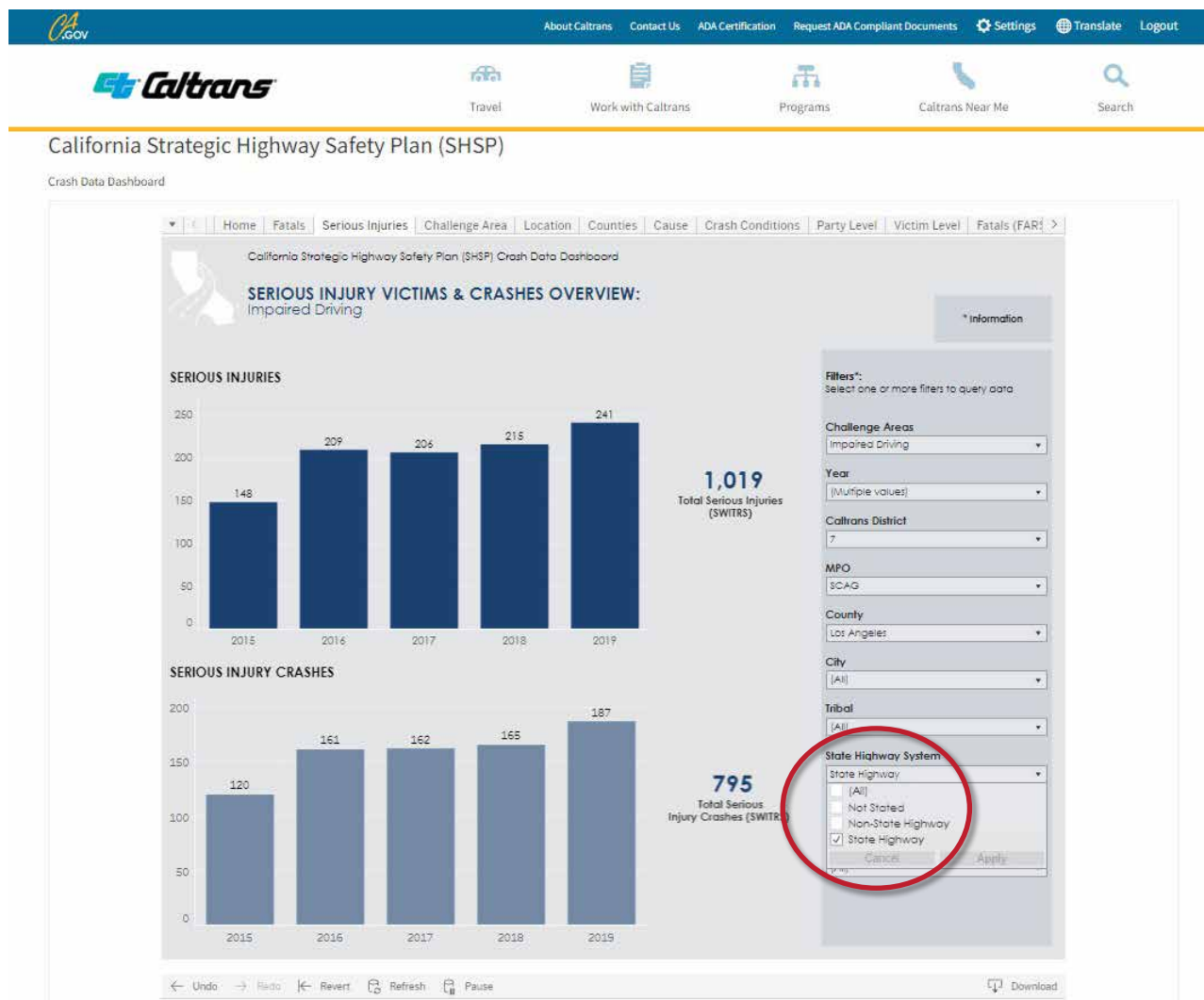
It is important to note that the Crash Data Dashboard is only able to group counties and cities as a whole, so it is not able to accurately display all district and MPO data. For example, all of Kern County is represented in District 6, even though the eastern portion is in District 9.

6.4. Tribal

A unique feature of the Crash Data Dashboard is the ability to filter crash data by tribal land. The tribal filter includes all crashes that are within five miles of the tribal boundary. This data is made available in collaboration with the Native American Advisory Committee (NAAC) and through geocoding efforts from Safe Transportation Research and Education Center (SafeTREC) at the University of California, Berkeley. A user can select any number of tribes to see crash data for tribal land including five miles adjacent to tribal land.

6.5. State Highway Versus Non-State Highway

Additionally, it is possible to filter to determine if a crash took place on a California State Highway, or a non-state highway. Following is an example of filtering by state highway crashes.



6.6. Race

There is the ability for a user to filter the data by race. It is important to note that the race data displayed through the use of this filter is determined on the party level rather than victim level, meaning that multiple victims in the same party are coded as a single race, whether or not that is accurate. It should also be noted that the party race is not a personal identification by the party and there is no standardized process for determining party race at the scene of the crash. This suggests that some of the party race data might be inaccurate and/or biased.

6.7. Gender

A user can also filter the crash data by gender data.

7. OTHER WORKSHEETS

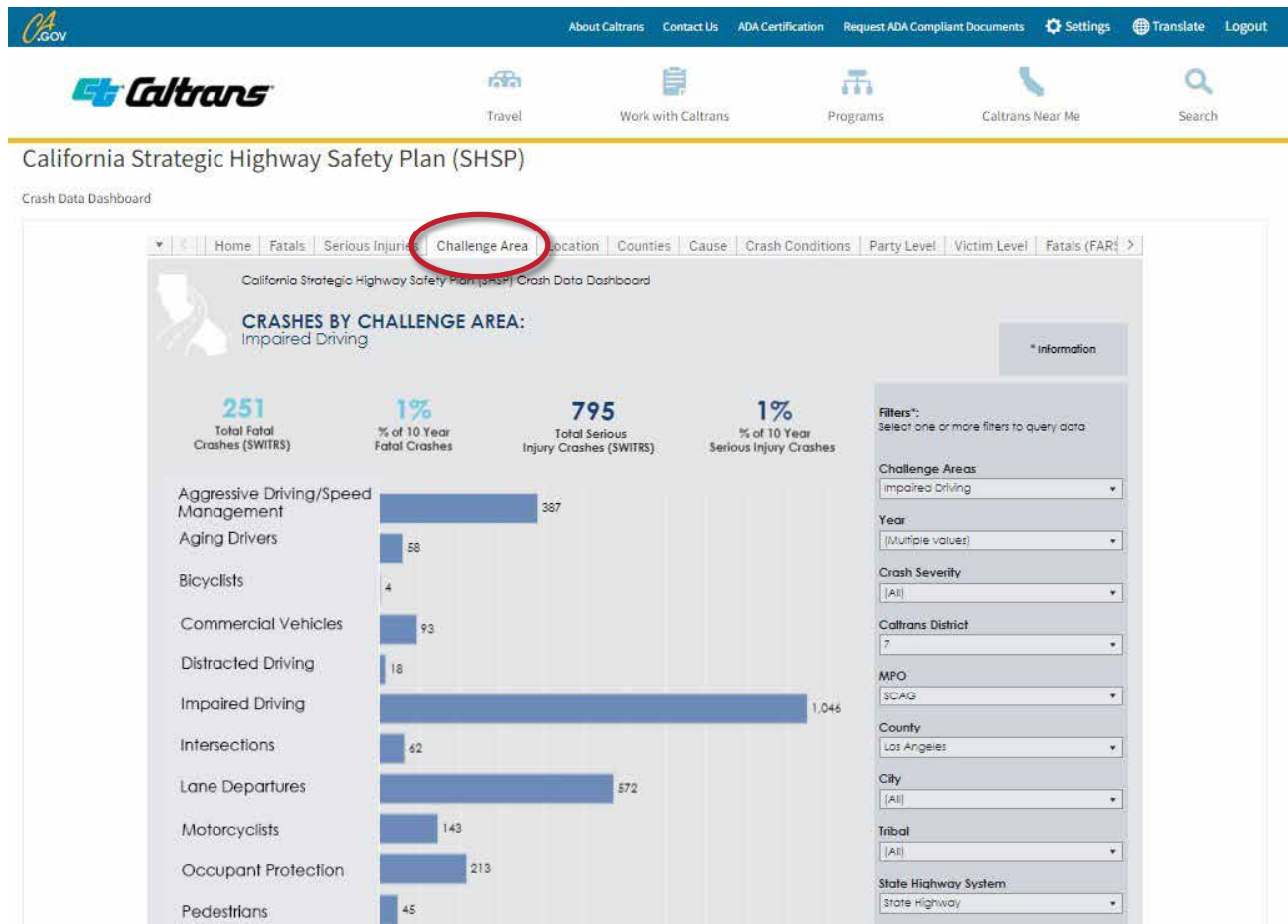
After your filters are set, you can move between different worksheets to view different crash characteristics. The Crash Data Dashboard is composed of 10 filterable worksheets grouped by overarching data characteristics. These worksheets include:

- Fatals
- Serious Injuries
- Challenge Area
- Location
- Counties
- Cause
- Crash Conditions
- Party Level
- Victim Level
- Fatals (FARS)

Following are examples of the Challenge Area, Location, Cause, and Crash Conditions worksheets.

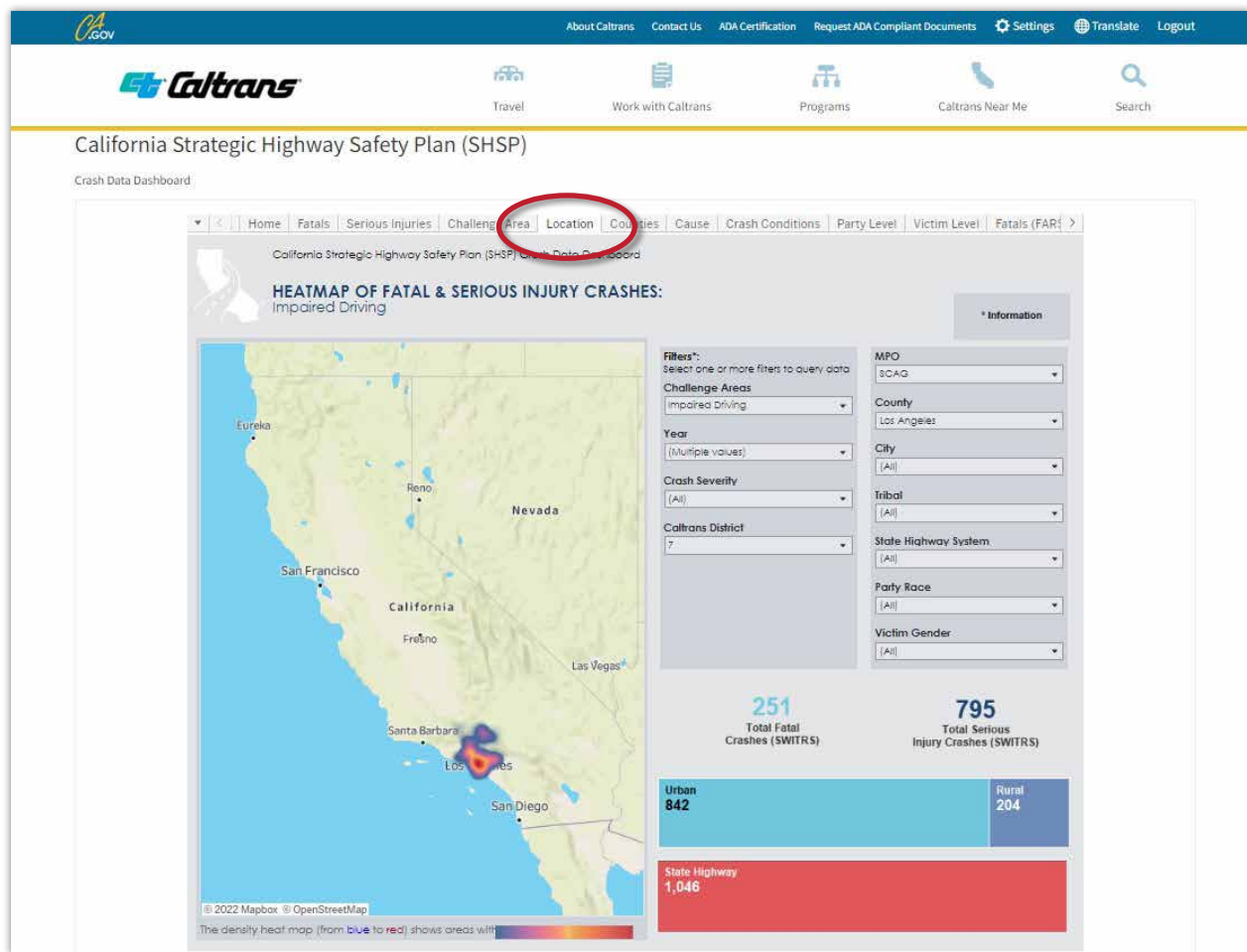
Challenge Area Worksheet

The Challenge Area worksheet shows the number of fatal and serious injury crashes by Challenge Area for the filters selected.



Location Worksheet

The Location worksheet displays a heatmap of fatal and serious injury crashes for the selected crashes. It also shows the urban versus rural breakdown and state highway versus non-state highway for the filters chosen.



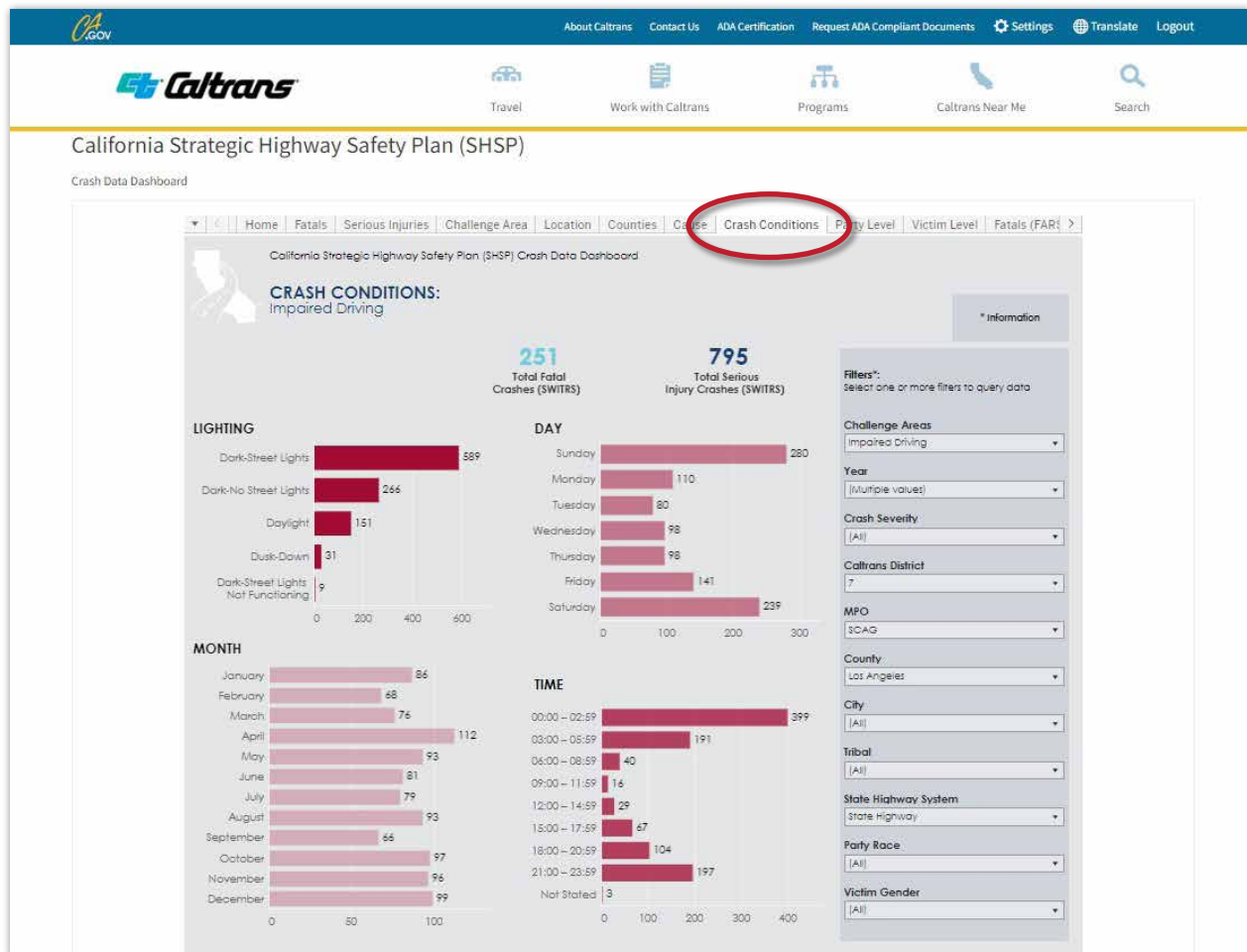
Cause Worksheet

The Cause worksheet shows the type of crash (hit object, broadside, vehicle/pedestrian, etc.) and the primary collision factor (unsafe speed, improper turning, under the influence, etc.) for the filters chosen.



Crash Conditions Worksheet

The Crash Conditions worksheet shows information on lighting, day of week, month of year, and time of day for the filters chosen.



8. DOWNLOAD THE DATA

- Once a user has filtered the data to the level of specificity desired, the user can proceed with downloading the data.
- The data can be downloaded as an image, a PDF, or a PowerPoint of the image produced from the data selection. If a user prefers to download the data to analyze it in an excel format, they can select the crosstab option.
- If a user would like to download all of the crash data used for the Crash Data Dashboard, there are links to the SWITRS and FARS data on the information tab.

9. CONTACT INFORMATION

For questions, please email SHSP@dot.ca.gov.