

 Hollywood, FL

 June 13-14, 2024

# 2024 TRANSPORTATION SYMPOSIUM



## Signal4 Analytics for Safety Analysis

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FDOT State Safety Office, Crash Records and Research Section

# Signal4 Analytics for Safety Analysis

## FLORIDA'S TWO PRIMARY CRASH DATA SYSTEMS ARE NOW MERGED INTO ONE!

The best of both platforms have been maximized – the power of FDOT's **Crash Analysis Reporting (CAR)** System's database & analytics and **Signal Four (S4) Analytics'** visualization capabilities and easy to use customer interface.

FDOT NOW HAS **ONE SOURCE** OF CRASH DATA.  
**S4 ANALYTICS** IS NOW FDOT'S OFFICIAL CRASH DATA REPOSITORY.



# Objectives:

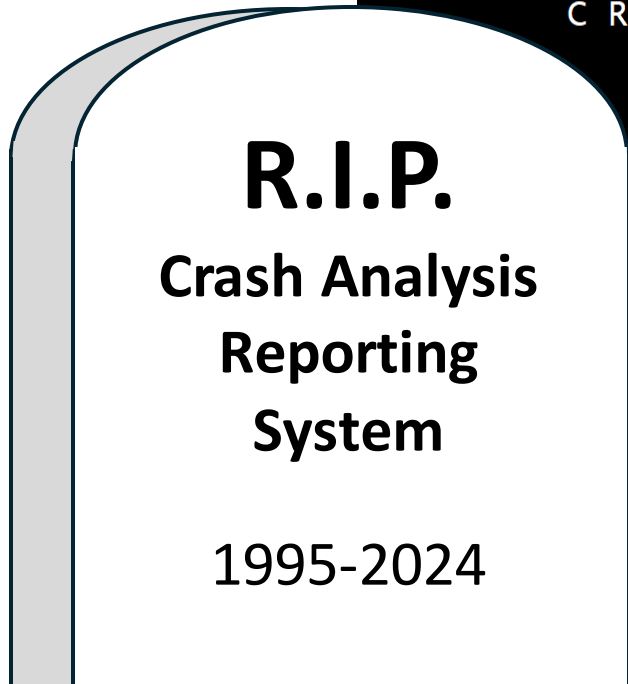
## ➤ Overview

- ❖ CAR System Legacy
- ❖ Signal4 Analytics
- ❖ Merging of databases
- ❖ Who can use Signal4?
- ❖ Public dashboard
- ❖ Tools inside the log-in
  - Crash data query and filtering
  - Network analyses

## ➤ Examples:

- ❖ Overview
  - Planning
  - PD&E
  - Design
  - Construction
- ❖ Data Guidance and Steps

# CAR System Legacy



```

CARA101      FLORIDA DEPARTMENT OF TRANSPORTATION      04/19/2024  12:06:39

C R A S H   A N A L Y S I S   R E P O R T I N G   S Y S T E M

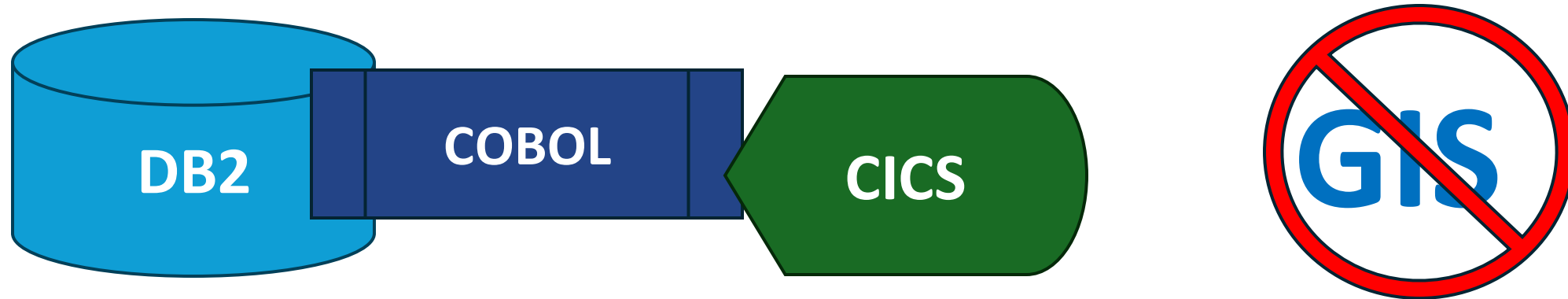
      CCCCCCCCCC      AAAAAAAAAA      RRRRRRRRR
      CCC             AAA      AAA      RRR      RRR
      CCC             AAA      AAA      RRR      RRR
      CCC             AAAAAAAAAA      RRRRRRRRR
      CCC             AAA      AAA      RRR      RRR
      CCCCCCCCCC      AAA      AAA      RRR      RRR

C E: THE INFORMATION CONTAINED IN THIS SYSTEM (REPORT, SCHEDULE,
TA) HAS BEEN COMPILED FROM INFORMATION COLLECTED FOR THE PURPOSE OF
, EVALUATING, OR PLANNING SAFETY ENHANCEMENTS. THIS PRODUCT
INFORMATION USED FOR THE PURPOSE OF DEVELOPING HIGHWAY SAFETY
N IMPROVEMENT PROJECTS WHICH MAY BE IMPLEMENTED UTILIZING FEDERAL-
FUNDS. ANY DOCUMENT DISPLAYING THIS NOTICE SHALL BE USED ONLY FOR
SES DEEMED APPROPRIATE BY THE FLORIDA DEPARTMENT OF TRANSPORTATION.
3, UNITED STATES CODE, SECTION 407.

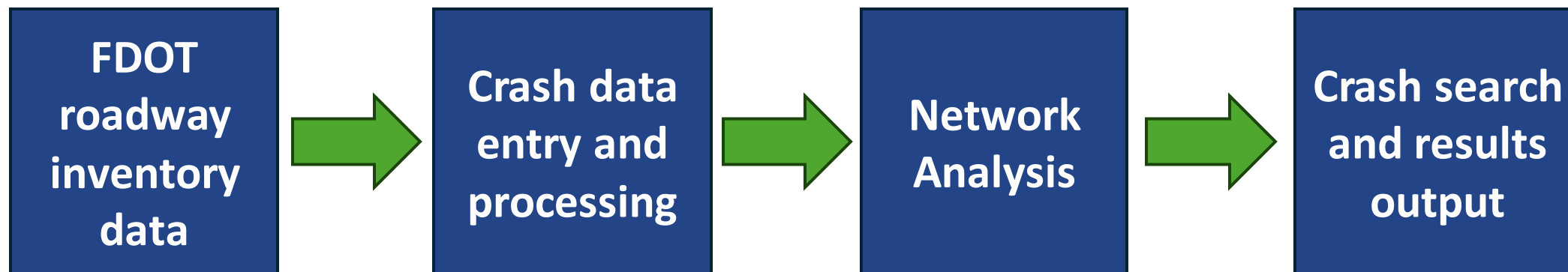
      <ENTER>      <PF3>
      MAIN MENU      EXIT

MR+ 02B      LTIP9J56      01/001
```

# CAR System Legacy



**Patrick Brady, P.E. 1950-2008**



# Signal4 Analytics: What is it?



**Integrates crash data through an interactive web-based platform developed by and hosted at University of Florida, Geoplan Center.**



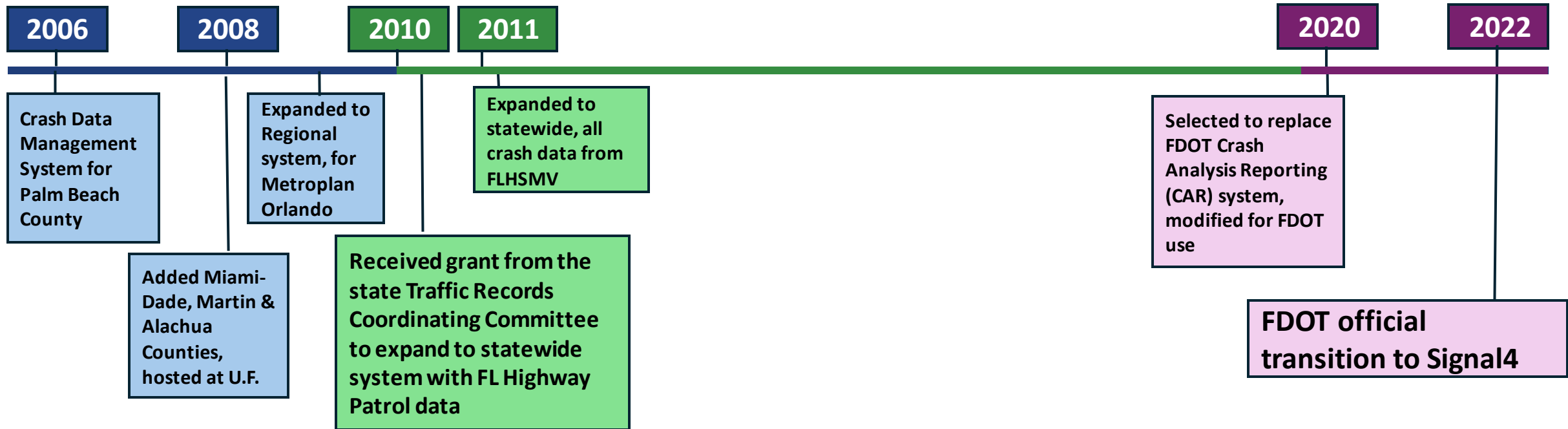
**Creates both spatial and non-spatial data downloads for users.**



**Supports the crash mapping and analysis needs of law enforcement, traffic engineering, transportation planning agencies, and research institutions in the state of Florida.**

# Signal4 Analytics: Developed through TRCC

Signal4 Analytics was created to improve accessibility and utilization of crash data in Florida by creating a web-based GIS analytical system for analysis and reporting of traffic crashes statewide.



# S4 and CAR: Merging of databases

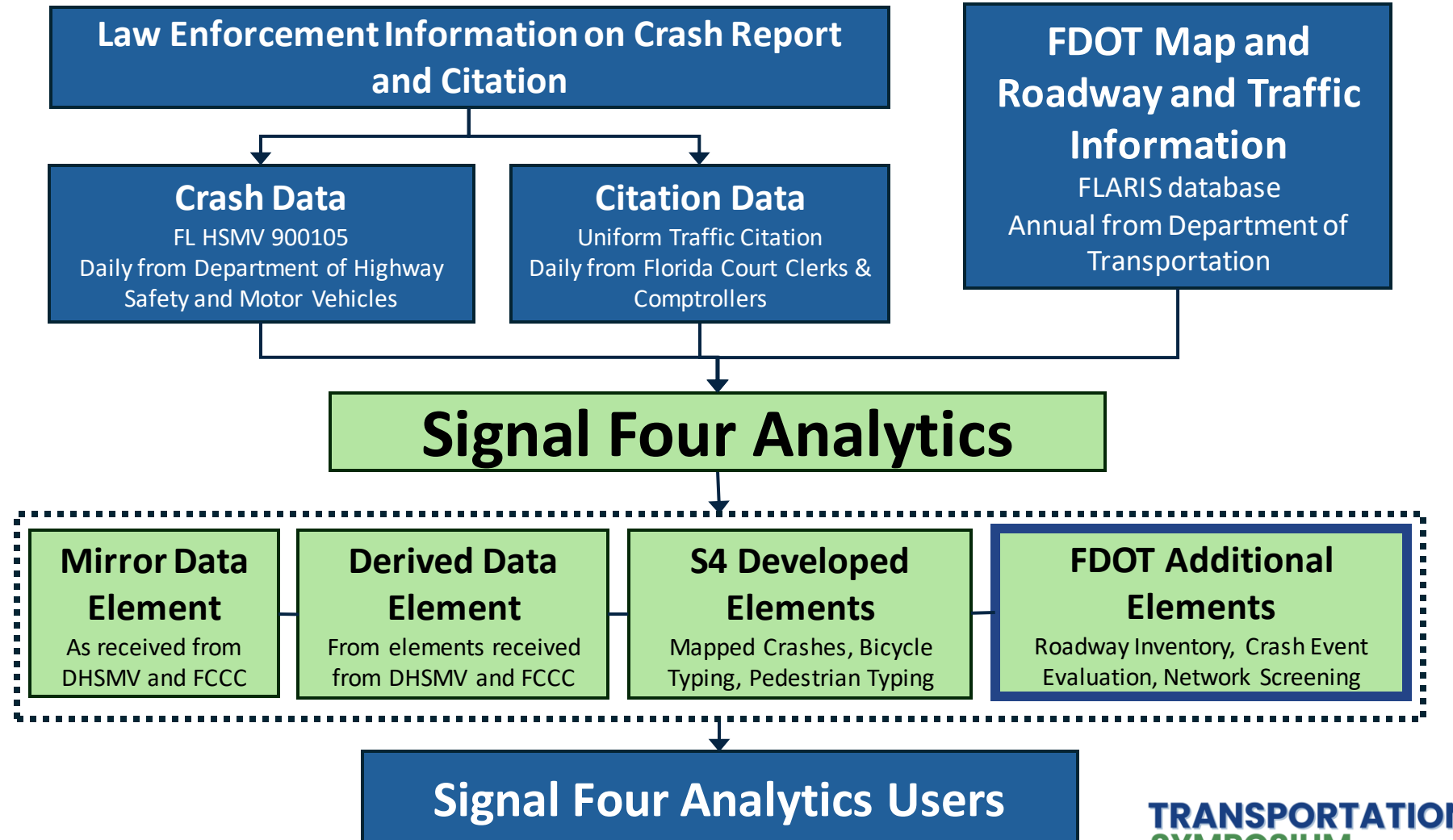
**FDOT data fields and historical data from the Crash Analysis Reporting database have been transferred to the Signal4 database**

**Signal4 is now the database of record for FDOT crash data**



# Signal4 Analytics : FLHSMV data loaded to S4

- New and updated crash data are transferred **daily** from FLHSMV
- **Preliminary** locations are completed and reportable within 24 hours
- FDOT changes become visible within 24 hours of update



# S4: FDOT reference map – FLARIS & ARBM

**FLARIS**: Florida All Roads, Intersections, and Streets database

The screenshot shows the FDOT Unified Basemap Repository website. The URL <https://ubr.fdot.gov/featured> is prominently displayed. The page features a 'Featured Links' section with several tiles. A green dashed box highlights the 'FLARIS 3.0.1' tile, and a larger green solid box surrounds it. A dashed green arrow points from the 'FLARIS 3.0.1' tile to the larger box. Another dashed green arrow points from a text box 'Some links require login' to the 'FLARIS 3.0.1' tile. The 'Featured Links' section includes:

- Accessibility Data
- Florida Roadway Data Elements
- NAVSTREETS FL 2nd QTR 2023
- NAVSTREETS GAAL 2nd QTR 2023
- NAVSTREETS GAAL 1st QTR 2024
- FLARIS 3.0.1
- FLARIS 3.0.1 Supplement

**ARBM**: All Roads BaseMap dataset

# S4: Adapted for FDOT needs

## FDOT Additional Elements

Roadway Inventory, Crash Event Evaluation, Network Screening

**SIGNAL FOUR GEOLOCATION** EDITOR SESSION: T

3:18 PM 0 (0%) 50 Rate: 0/HR

Report Number: 88419963	Batch: Computer Confident	Editor Action:	Reviewer Action:	Last Updated On: 6/11/2021 15:14:54
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Street Address #:	On Street:	Intersecting Street:	Offset Distance:	Direction:	City:	County:
	COUNTY ROAD 365 (SPRING CREEK HWY)	STEELE COURT	70 ft	North	Unincorporated	Wakulla

**Tools to verify and capture crash location coordinates**

**Additional data collection for FDOT analysis support**

- On Public Roads: Yes
- Roadway System Id: 4 - County
- Crash Severity: 5 - Fatal (within 30 days)
- DOT Property: No
- Site Location: [Dropdown]
- Side of Road: [Dropdown]
- Crash Lane: [Dropdown]
- Non-Motorist Mode: 1 - Bicycle
- Motorist Maneuver: S - Going Straight

Save ?

S4 Geolocation tools adapted for FDOT data collection

# S4 post-processing: FDOT value-added data

## FDOT Additional Elements

Roadway Inventory, Crash Event Evaluation, Network Screening

### FDOT

- analyzes each crash report
- collects additional data – added to the Signal4 database for each crash

#### Updated or added for all crashes

On Public Roads	Yes
Roadway System Id	5 - Local
Crash Severity	5 - Fatal (within 30 days) 5 - Fatal (within 30 days)
DOT Property	No
Site Location	
Side of Road	
Crash Lane	

#### Updated or added for ped & bike crashes

Non-Motorist Mode	2 - Pedestrian
Motorist Maneuver	5 - Going Straight
Non-Motorist Maneuver	
PBCAT Basic:	N/A
PBCAT Detail:	N/A

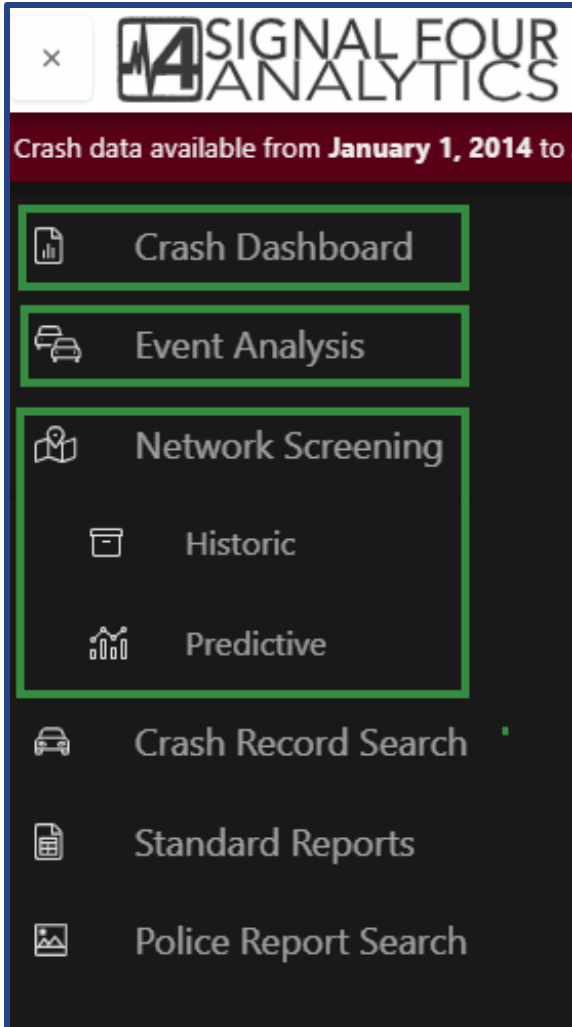
#### Updated or added for fatal crashes

Num. of Lanes	2
Posted Speed Limit	30
Functional Class	
NHS	
Route Signage	
FARS Ownership	
US/Interstate Route	
State Route	

# S4 post-processing: FDOT value-added data

## FDOT Additional Elements

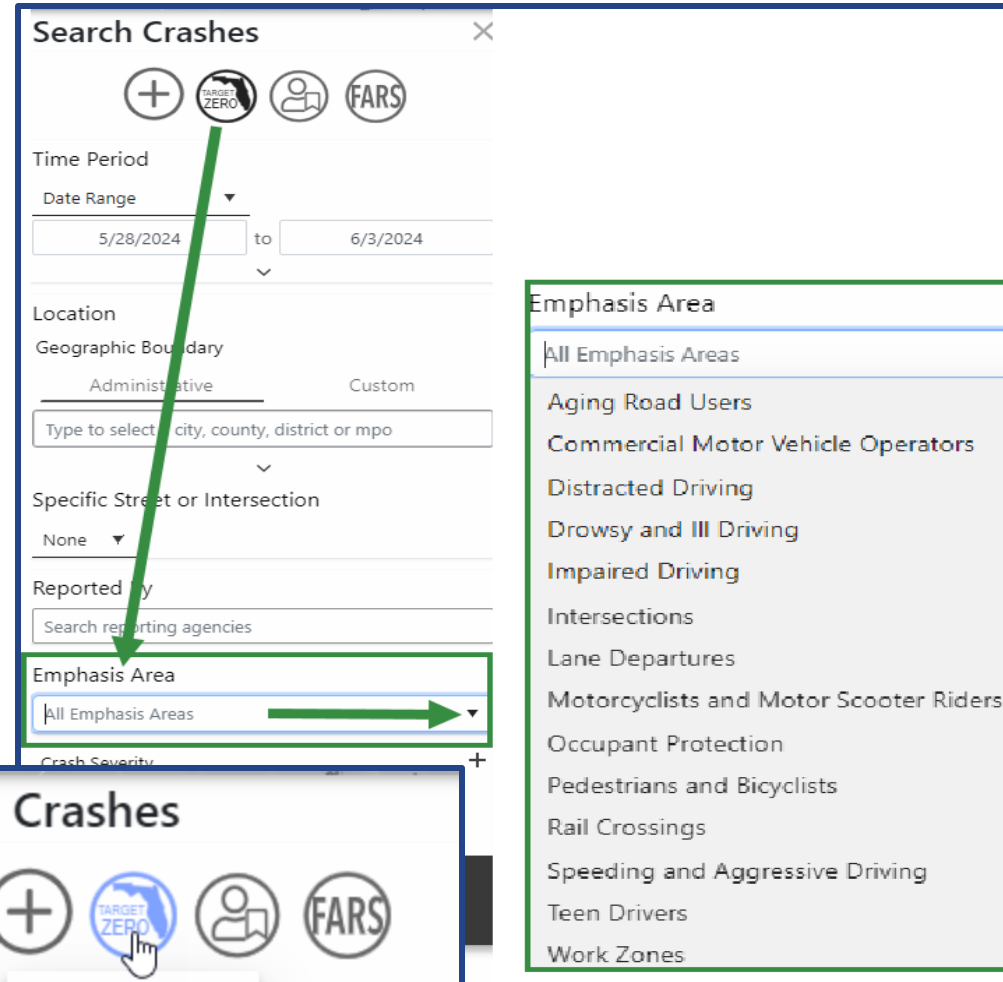
Roadway Inventory, Crash Event Evaluation, Network Screening



**SIGNAL FOUR ANALYTICS**

Crash data available from **January 1, 2014** to

- Crash Dashboard
- Event Analysis
- Network Screening
  - Historic
  - Predictive
- Crash Record Search
- Standard Reports
- Police Report Search



### Search Crashes

Time Period  
Date Range: 5/28/2024 to 6/3/2024

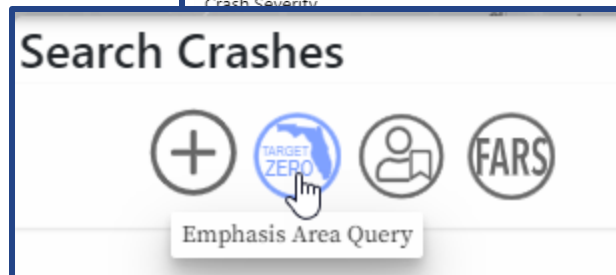
Location  
Geographic Boundary: Administrative / Custom  
Specific Street or Intersection: None

Reported by: Search reporting agencies

Emphasis Area: All Emphasis Areas

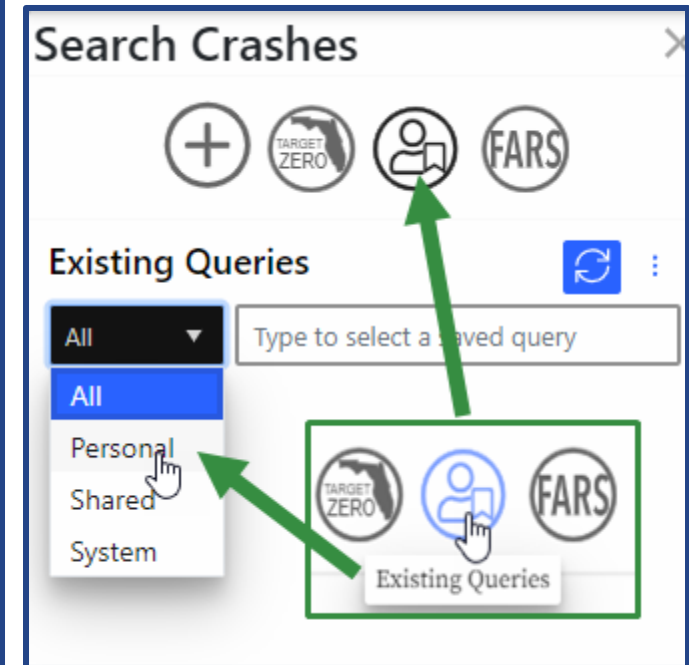
Crash Severity: +

- All Emphasis Areas
- Aging Road Users
- Commercial Motor Vehicle Operators
- Distracted Driving
- Drowsy and Ill Driving
- Impaired Driving
- Intersections
- Lane Departures
- Motorcyclists and Motor Scooter Riders
- Occupant Protection
- Pedestrians and Bicyclists
- Rail Crossings
- Speeding and Aggressive Driving
- Teen Drivers
- Work Zones



### Search Crashes

Emphasis Area Query



### Search Crashes

Existing Queries

All

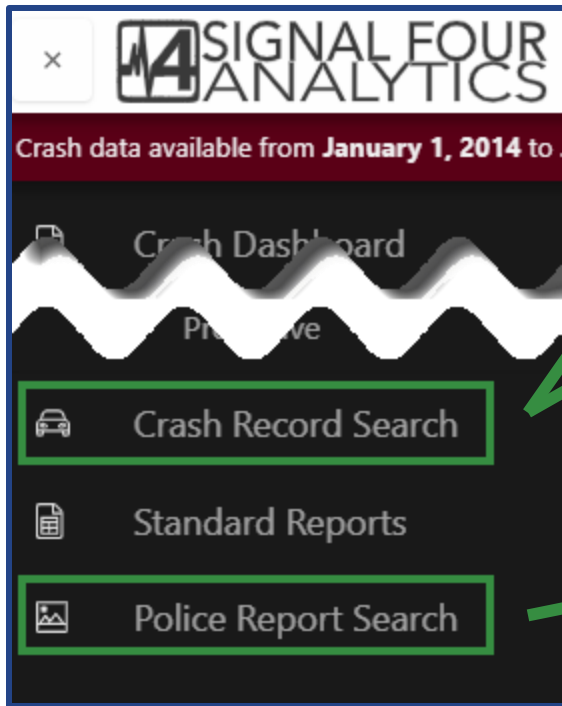
Type to select a saved query

Personal

Shared

System

# S4: Crash report lookup



SIGNAL FOUR ANALYTICS

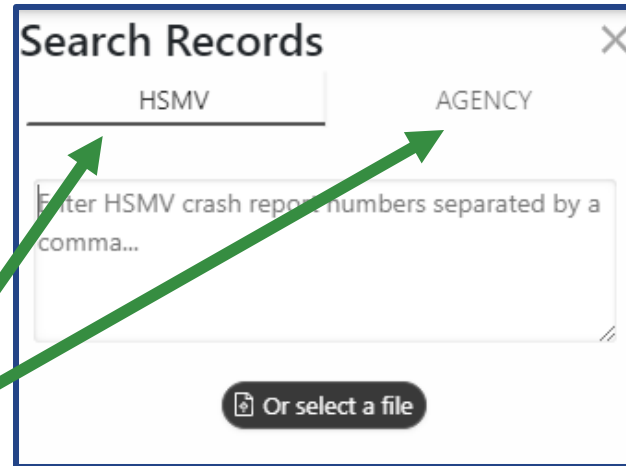
Crash data available from January 1, 2014 to

Crash Dashboard

Crash Record Search

Standard Reports

Police Report Search



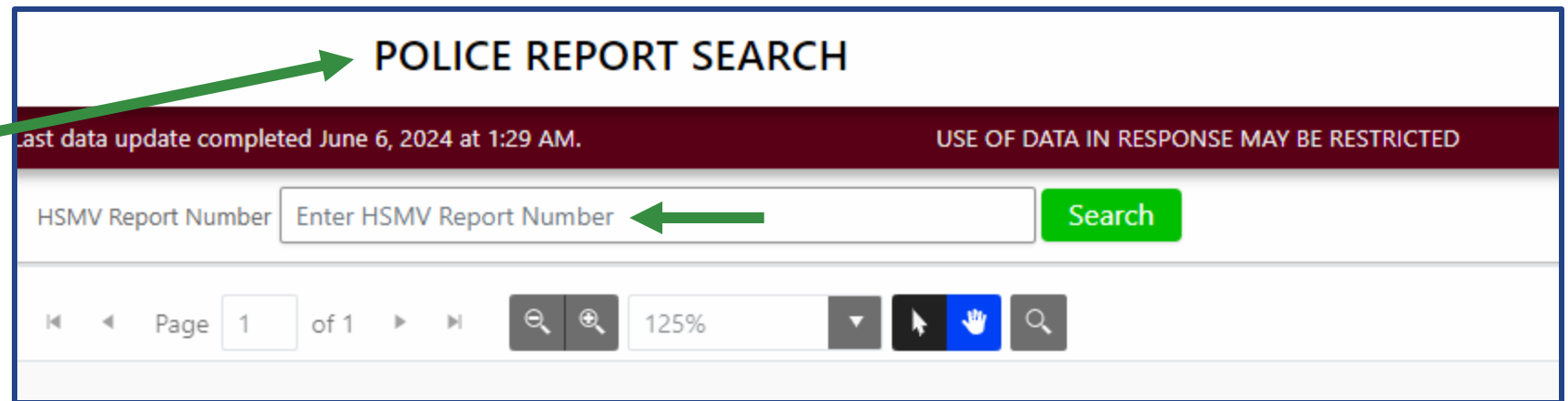
Search Records

HSMV AGENCY

Enter HSMV crash report numbers separated by a comma...

Or select a file

Crash reports are **linked from the data grid** in the query results, or they can be **searched by document number**



POLICE REPORT SEARCH

Last data update completed June 6, 2024 at 1:29 AM. USE OF DATA IN RESPONSE MAY BE RESTRICTED

HSMV Report Number Enter HSMV Report Number Search

Page 1 of 1 125%

# Crash Reports: Personally-Identifying Information

<b>Personal information (PII)</b>	Driver Privacy Protection Act (DPPA) 18 U.S.C. s. 2721(3) “information that identifies an individual, including an individual’s photograph, social security number, driver identification number, name, address (but not the 5-digit zip code), telephone number, and medical or disability information, but does not include information on vehicular accidents, driving violations, and driver’s status”
<b>Home or employment telephone number</b>	Title XXIII F.S. s. 119.071(4)(d)1.c. “includes home telephone numbers, personal cellular telephone numbers, personal pager telephone numbers, and telephone numbers associated with personal communications devices”
<b>Home or employment address</b>	Title XXIII F.S. s. 119.071(4)(d)1.a. “the dwelling location at which an individual resides and includes the physical address, mailing address, street address, parcel identification number, plot identification number, legal property description, neighborhood name and lot number, GPS coordinates, and any other descriptive property information that may reveal the home address”
<b>Driver license or identification card number</b>	
<b>Date of birth</b>	
<b>Other personal information</b>	Title XXIII F.S. s. 119.071(5) – includes social security number; ss. 119.071(5)(b) – includes bank account numbers and debit, charge, and credit card numbers

# Crash Reports: Confidentiality of PII

## Reports **with PII**

- Can be shared immediately with certain parties (listed in statute)
- Can be shared after 60 days with parties applying for access for “permissible uses” as defined in 18 U.S. Code s. 2721(b)
- Are not available except to those defined above

Reports with PII **removed (redacted)** are **not** directly addressed in the statute

“Crash **reports** that reveal the identity, home or employment telephone number or home or employment address of, or other personal information concerning the parties involved in the crash and that are held by an agency, as defined in s. 119.011, **are confidential and exempt** from s. 119.07(1) and s. 24(a), Art. I of the State Constitution for a period of 60 days after the date the report is filed.” (s. 316.066(2)(a), F.S.)



# FLHSMV Data: Statutory access restrictions

Record Type	Immediately to First 60 Days		After 60 Days and Beyond	
<b>1</b> <b>Crash Reports</b>	<b>Unredacted:</b> Involved parties and their legal/insurance representatives, victim services programs, governmental agencies, and 3 <sup>rd</sup> parties on behalf of the foregoing per 316.066(2)(b).	<b>Redacted:</b> Certain media entities per 316.066(2)(b). <b>Must redact:</b> <ul style="list-style-type: none"> <li>• Home/employment addresses</li> <li>• DL/ID numbers</li> <li>• Dates of birth</li> <li>• Home/employment phone numbers</li> </ul>	<b>Unredacted:</b> DPPA parties per <a href="#">18 U.S.C. s. 2721(b)</a> . <b>Note:</b> The parties entitled to unredacted and redacted crash reports during the first 60 days maintain such access after 60 days and beyond.  * See section I above for list of permissible uses under DPPA.	<b>Redacted:</b> Any requesting party. <b>Must redact:</b> <ul style="list-style-type: none"> <li>• Identities</li> <li>• Home/employment addresses</li> <li>• DL/ID numbers</li> <li>• Dates of birth</li> <li>• Home/employment phone numbers</li> <li>• Other personal information</li> </ul>
<b>See Title XXIII section 316.066 Florida Statutes</b>				
<b>2</b> <b>Crash Report Data</b>	<b>Unredacted:</b> No access within first 60 days.	<b>Redacted:</b> 3 <sup>rd</sup> parties <u>only via MOU</u> for sole purpose of identifying vehicles in crash. <b>Must redact:</b> <ul style="list-style-type: none"> <li>• Identities</li> <li>• Home/employment phone numbers</li> <li>• Home/employment addresses</li> <li>• Other personal information</li> </ul> <b>Note:</b> 3 <sup>rd</sup> parties entitled to redacted crash report data as described above maintain such access after 60 days and beyond.	<b>Unredacted:</b> Involved parties and their legal/insurance representatives, victim services programs, governmental agencies, and 3 <sup>rd</sup> parties on behalf of the foregoing per 316.066(2)(b); and DPPA parties per <a href="#">18 U.S.C. s. 2721(b)</a> * <u>only via MOU</u> .  * See section I above for list of permissible uses under DPPA.	<b>Redacted:</b> Any requesting party ( <u>no MOU required</u> ). <b>Must redact:</b> <ul style="list-style-type: none"> <li>• Identities</li> <li>• Home/employment addresses</li> <li>• DL/ID numbers</li> <li>• Dates of birth</li> <li>• Home/employment phone numbers</li> <li>• Other personal information</li> </ul>

- Protect personal information
- 2 groups restricted: (1) crash reports (all) and (2) crash data less than 60 days before the current date (s. 316.066(2)(g), F.S.)

# Crash Data Responsibility

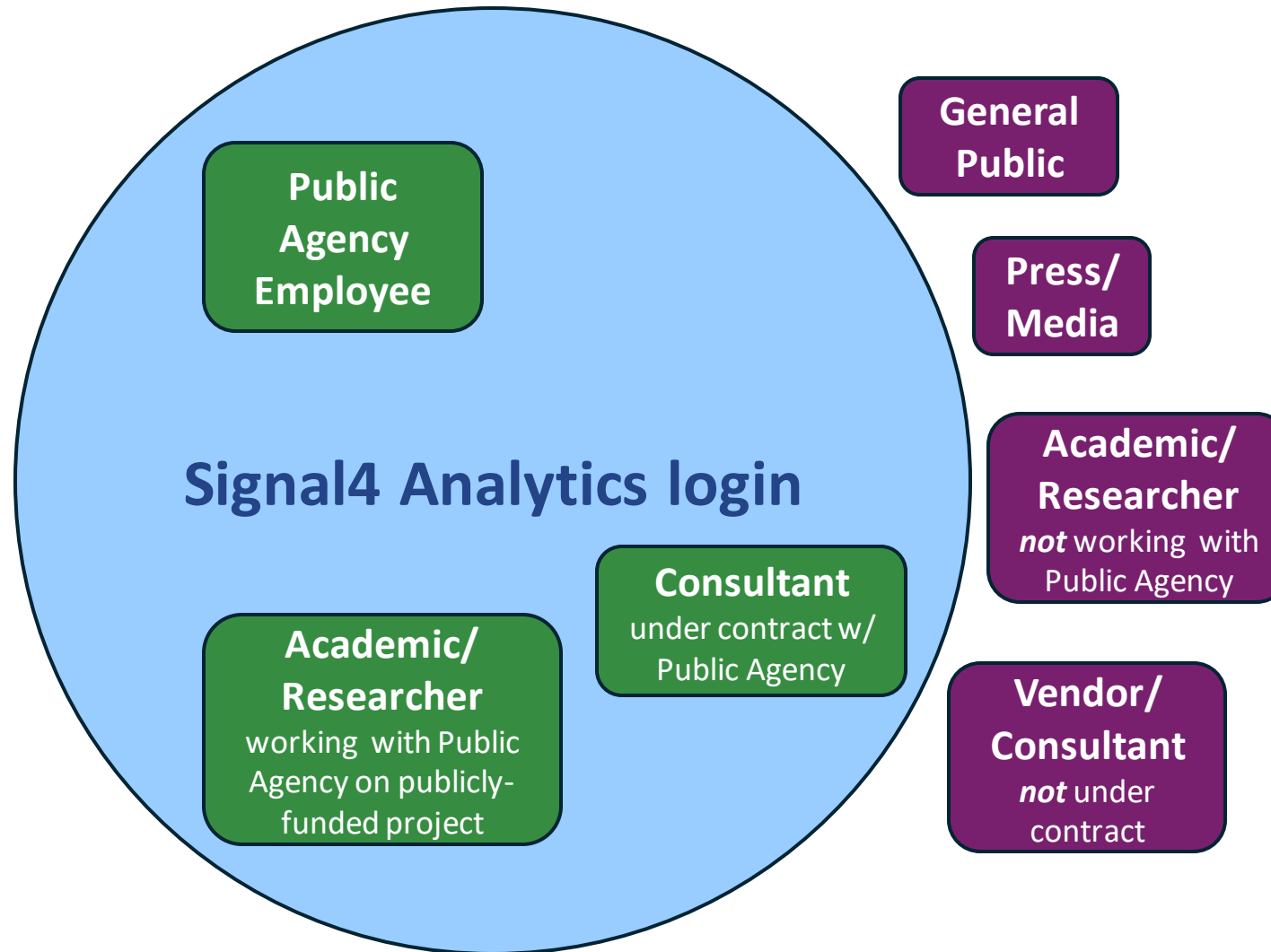
Any person or agency who has copies of or access to the data and/or documents has the same responsibility to maintain its confidentiality as the FLHSMV.

Includes **legal and civil liability** for misuse of the data that are shared

Must sign a Memorandum of Understanding (MOU) that stipulates:  
may not share the data with anyone who is not eligible to receive it under law  
may not sell the information to a third party

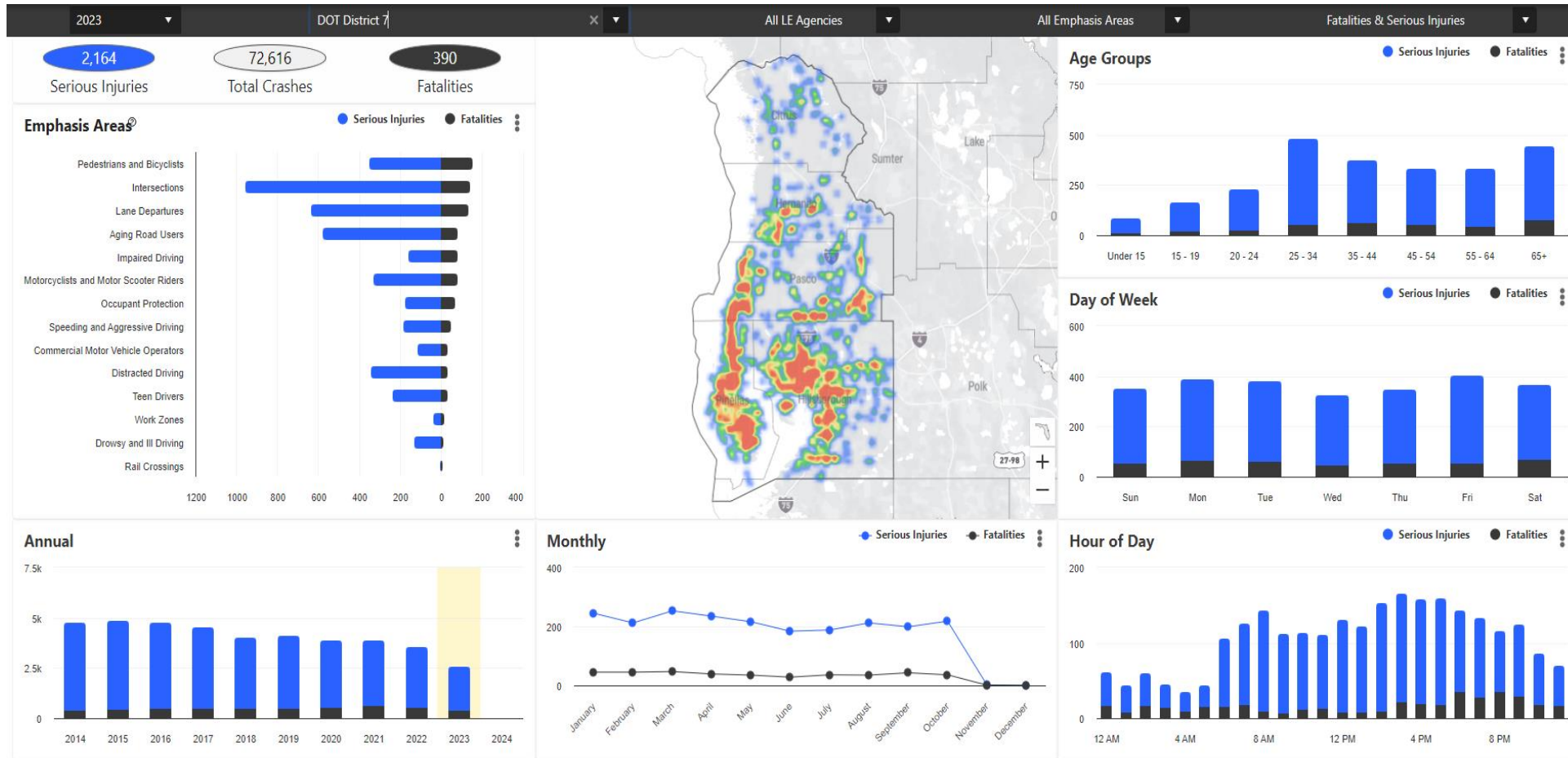
# Who can use Signal4 Analytics?

Only available to public agencies (government and law enforcement)



# Signal4 Analytics Public Dashboard

<https://signal4analytics.com/>



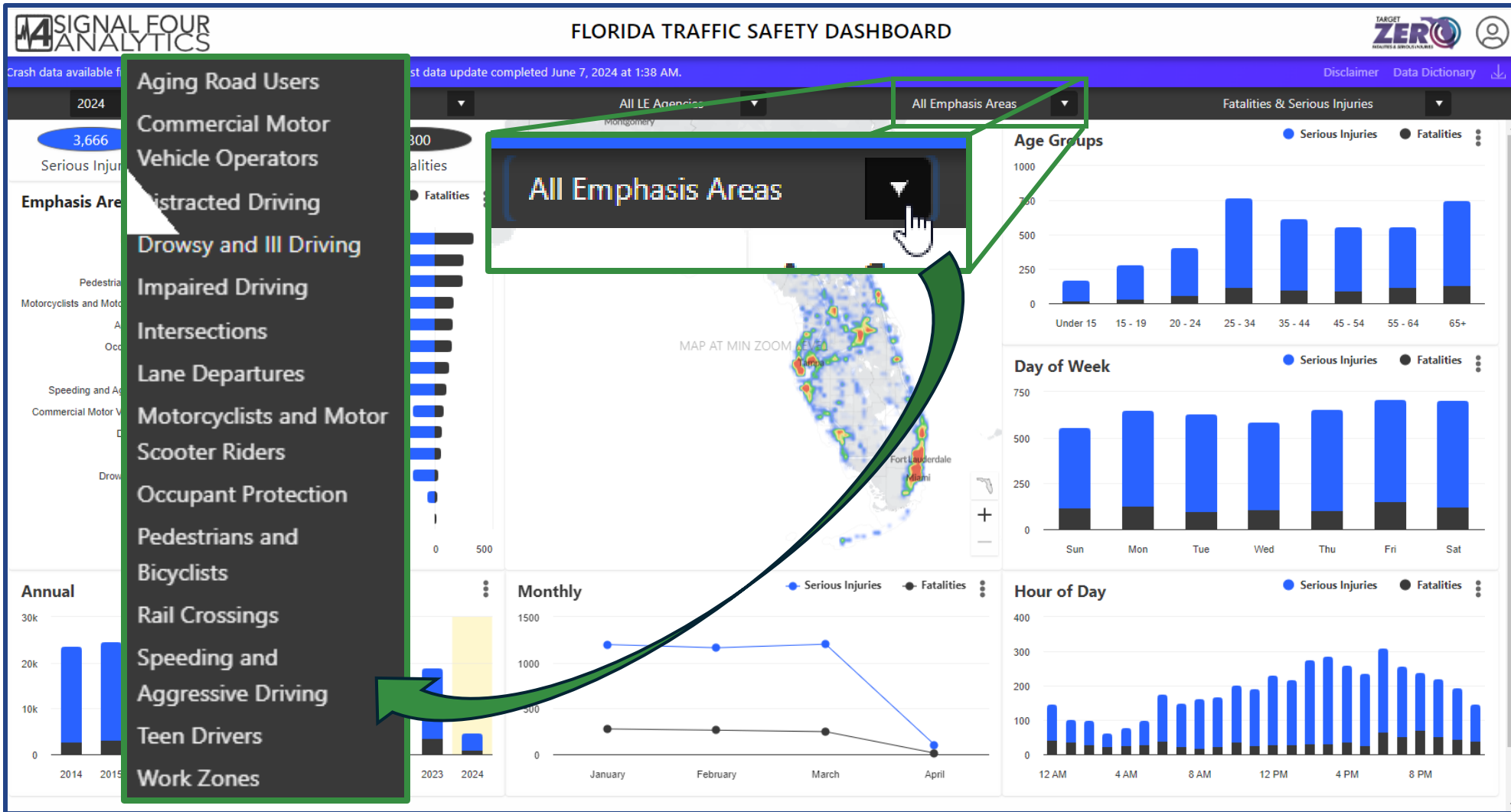
General  
Public

Press/  
Media

Academic/  
Researcher  
*not working with  
Public Agency*

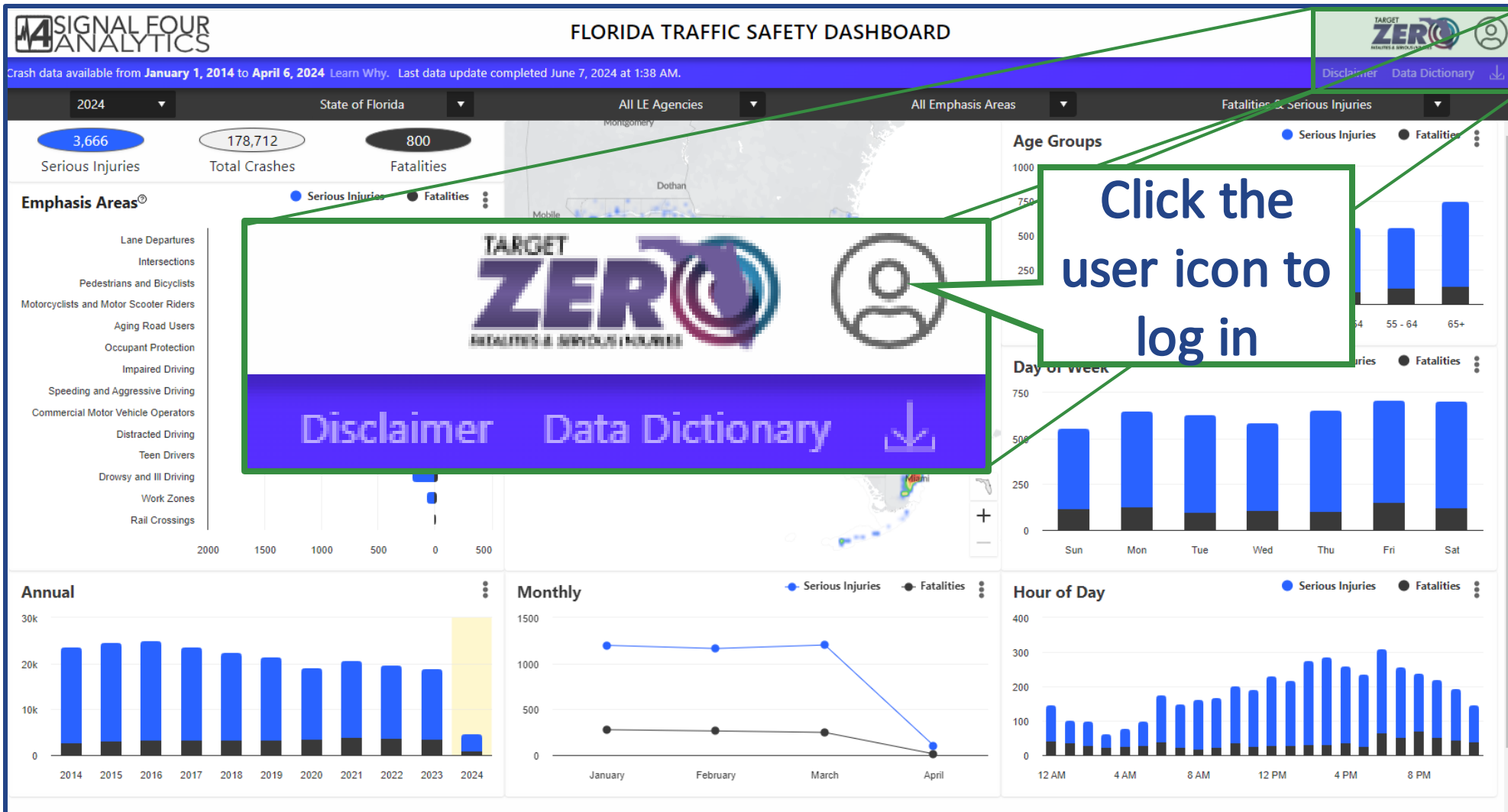
Vendor/  
Consultant  
*not under  
contract*

# S4 Dashboard: SHSP Emphasis Area filters



- Strategic Highway Safety Plan (SHSP)
- Data definitions on pages 48-49

# S4 Tools Inside the Log-in



Authorized users can access

- additional search filters
- individual crash data
- crash rate analyses

# S4 Tools: Crash data query and filtering

The screenshot displays the 'EVENT ANALYSIS' section of the 'SIGNAL FOUR ANALYTICS' interface. A dark red banner indicates that 'Crash data available from January 1, 2014 to June 4, 2014'. Below this, a 'Search Crashes' modal window is open, featuring a green border and a close button (X) in the top right corner. The modal contains four circular icons: a plus sign (+), a map of Florida with 'TARGET ZERO' text, a person icon, and the text 'FARS'. Blue arrows point from external text labels to these icons: 'General Queries' points to the plus sign, 'Target Zero Reporting' points to the Florida map icon, 'Saved Queries' points to the person icon, and 'Fatal Crash Reporting' points to the 'FARS' icon.

EVENT ANALYSIS

SIGNAL FOUR ANALYTICS

Crash data available from January 1, 2014 to June 4, 2014

Search Crashes

General Queries

Target Zero Reporting

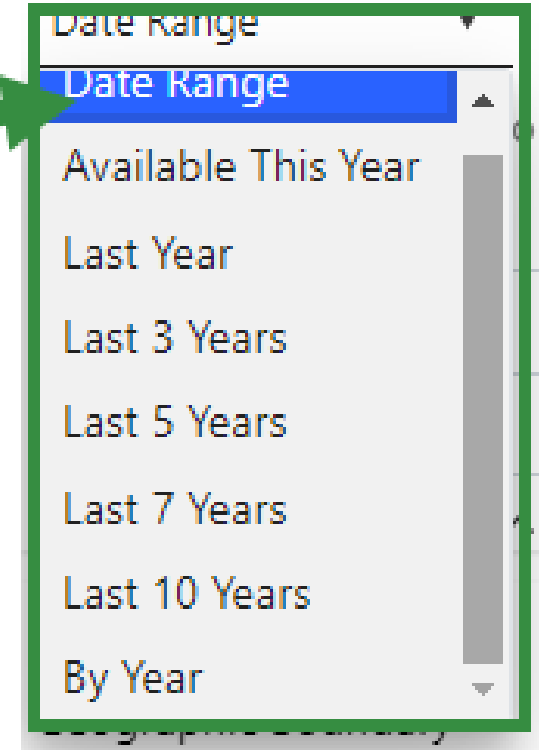
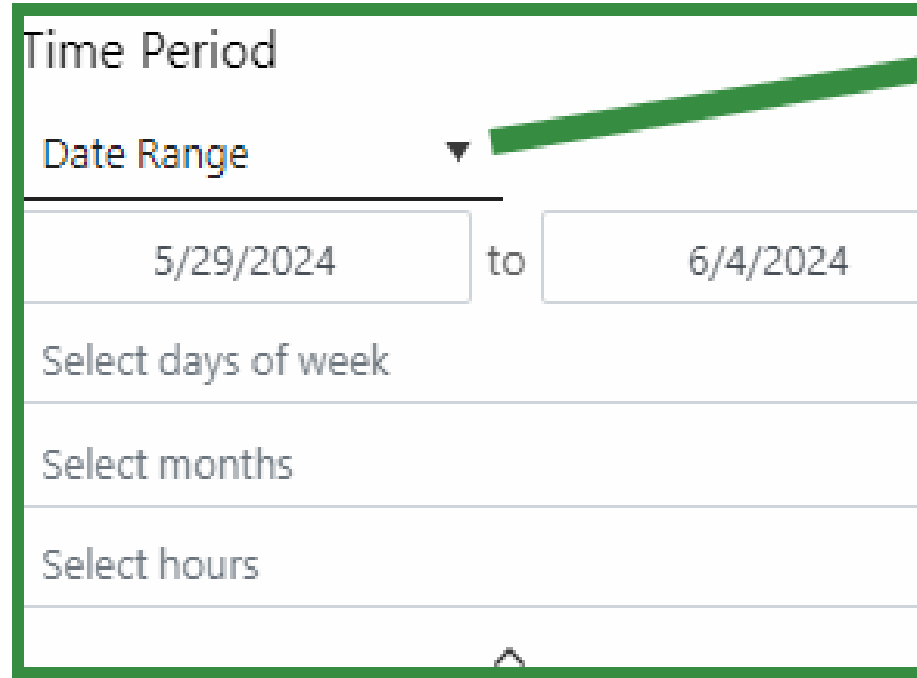
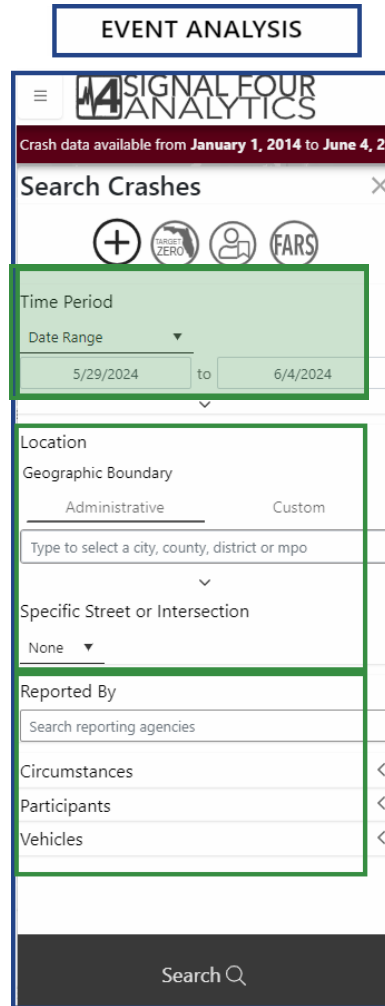
Saved Queries

Fatal Crash Reporting

# S4 Tools: Crash data query and filtering

Screen by

- **Date Range**





# S4 Tools: Crash data query and filtering

Screen by

- Date Range
- Location

The screenshot displays the 'EVENT ANALYSIS' interface for 'SIGNAL FOUR ANALYTICS'. It features a search bar and several filter panels:

- Time Period:** A date range selector set to '5/29/2024' to '6/4/2024'.
- Location:** A section with 'Geographic Boundary' (Administrative/Custom) and 'Specific Street or Intersection' (None).
- Roadway Type:** A list of checkboxes including 'FDOT Public Roads', 'FDOT Maintained (SHS, On System)', 'FDOT Inventoried (Off System)', 'Local Public Roads (Off System)', 'Private Roads', and 'Other'.
- Road System Identifier:** A list of checkboxes including 'Interstate', 'U.S.', 'State', 'County', 'Local', 'Turnpike/Toll', and 'Other'.
- Roadway by Area Type:** A list of checkboxes including 'Urban' and 'Rural'.
- Location Type:** A list of checkboxes including 'Within 250 ft of intersection', 'On Roadway Segment', 'On Ramp', 'Off Roadway', and 'Florida's Turnpike Enterprise' (Turnpike Only/Exclude Turnpike).
- Specific Street or Intersection:** A dropdown menu with options: 'None', 'Intersection', 'Street', 'Custom Network', and 'DOT Roadway'.

Geographic Boundary

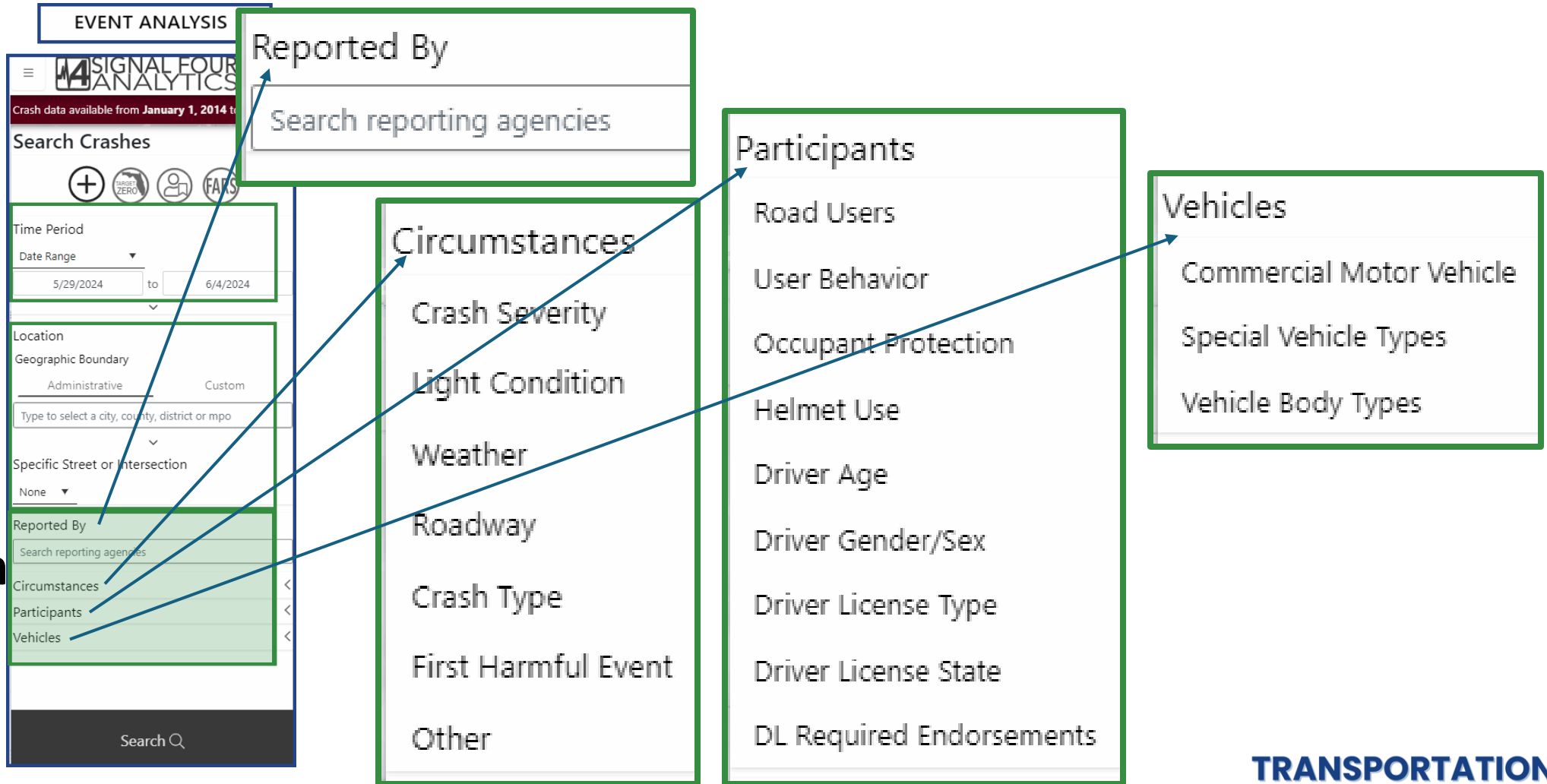
Administrative Custom

Type to select a city, county, district or mpo

# S4 Tools: Crash data query and filtering

Screen by

- Date Range
- Location
- **Filter Option**



# S4 Tools: Data Grid – Crash Listings

**Search Crashes**

Crashes in Florida  
From 5/29/2024 - 6/4/2024

**Charting**

Crash Severity

4 912

<u>Injury Summary</u>	Common Attributes	FDOT Attributes		
	Total	Fatal Crashes	Serious Injury C...	In
Crashes	6383	11	99	13
Fatalities (within 30 Days)	11	11	0	0
Incapacitating Injuries	117	2	115	0
Non-Incapacitating Injuries	643	7	16	62

# S4 Tools: Data Grid – Crash Listings

The screenshot shows a web application interface for viewing crash data. On the left, there is a 'Search Crashes' sidebar with a map and filters. The main area displays a data grid with the following columns: #, HSMV Report #, Reporting Agency, and Crash Date. The 'Common Attributes' tab is highlighted with a green box. The data rows are as follows:

#	HSMV Report #	Reporting Agency ...	Reporting Agency	Crash Date
1	<a href="#">26351813</a>	FHP24ON0270695	FHP	5/29/2024
2	<a href="#">84925746</a>	331042	Jacksonville SO	5/29/2024
3	<a href="#">26012878</a>	102405004917	Broward Co SO	5/29/2024
4	<a href="#">26571088</a>	202414212	Port St. Lucie PD	5/29/2024

# S4 Tools: Data Grid – Crash Listings

Search Crashes

Crashes in Florida  
From 5/29/2024 - 6/4/2024

Charting

**Injury Summary**   **Common Attributes**   **FDOT Attributes**

HSMV Report #	DOT Roadwa...	Milepos...	Nearest Intersection ...
<a href="#">26351813</a>	37A01270	0	29TH RD   US-90
<a href="#">84925746</a>	72028000	2.552	BAYMEADOWS RD   FREEDOM COMMERCE PKWY
<a href="#">26012878</a>	86170000	12.171	S DIXIE HWY   SW 10TH ST

# S4 Tools: Link to Crash Reports

Click crash report number to link to document

Injury Summary		Common Attributes	
#		HSMV Report #	Report #
1	→	<a href="#">26012813</a>	FHP24
2	→→	<a href="#">84925746</a>	33104
3	↗	<a href="#">26012878</a>	10240
4	→	<a href="#">26571088</a>	20241

1 / 3 | - 150% + | [ ] [ ]

**FLORIDA TRAFFIC CRASH REPORT**  
LONG FORM  SHORT FORM  UPDATE   
HIGHWAY SAFETY & MOTOR VEHICLES,  
TRAFFIC CRASH RECORDS  
NEIL KIRKMAN BUILDING, TALLAHASSEE, FL 32399-0537  
(Electronic Version)

Date of Crash 29/May/2024 05:07 PM	Time of Crash 29/May/2024 05:07 PM	Date of Report 29/May/2024 06:49 PM	Invest. Agency Report Number 331042	HSMV Crash Report Number 84925746
---------------------------------------	---------------------------------------	--	--	--------------------------------------

**CRASH IDENTIFIERS**

County Code 02	City Code 38	County of Crash DUVAL	Place or City of Crash JACKSONVILLE	Within City Limits Yes	Time Reported 29/May/2024 05:10 PM	Time Dispatched 29/May/2024 05:11 PM
Time on Scene 29/May/2024 05:29 PM	Time Cleared Scene 29/May/2024 07:03 PM	Completed Yes	Reason (if Investigation NOT Completed)			Notified By Law Enforcement

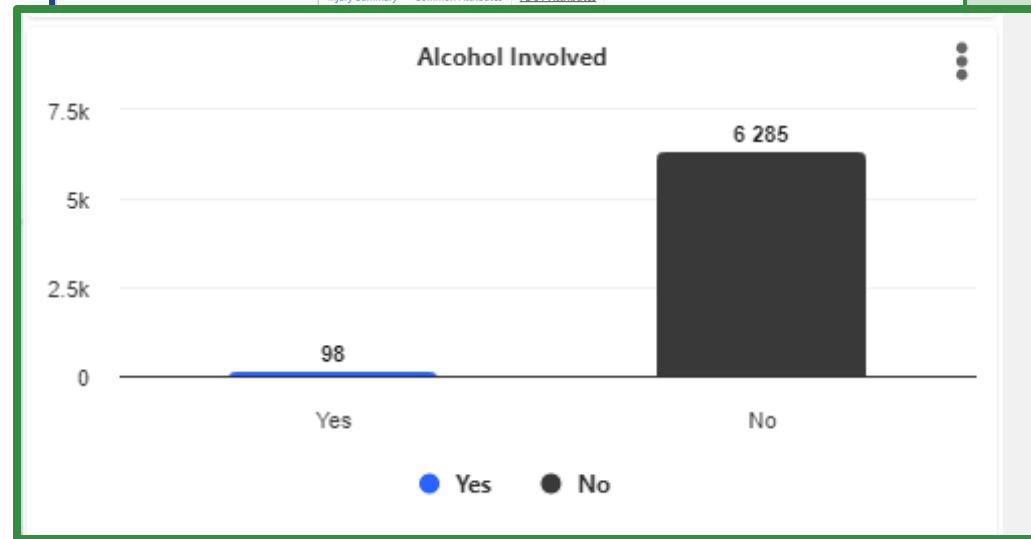
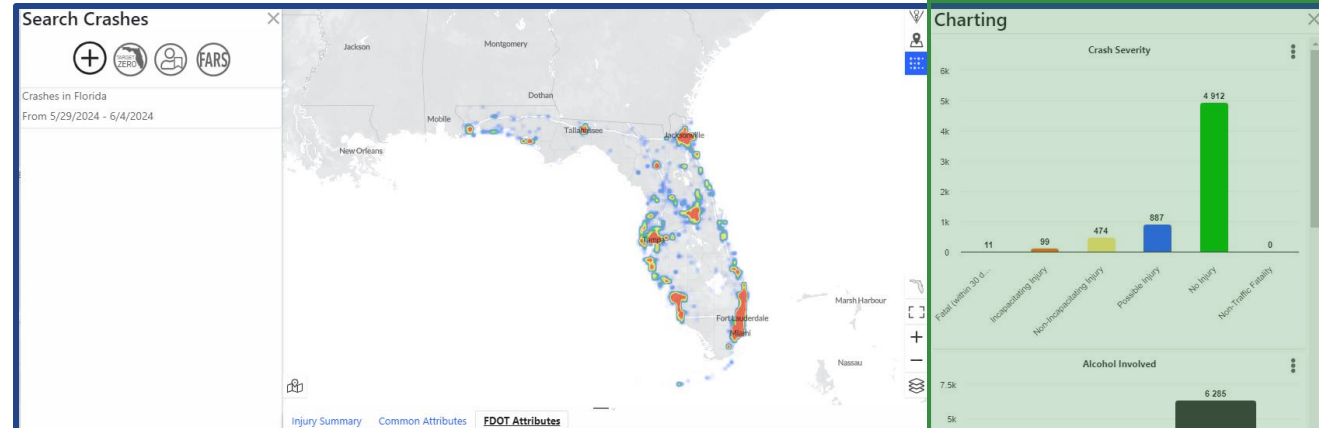
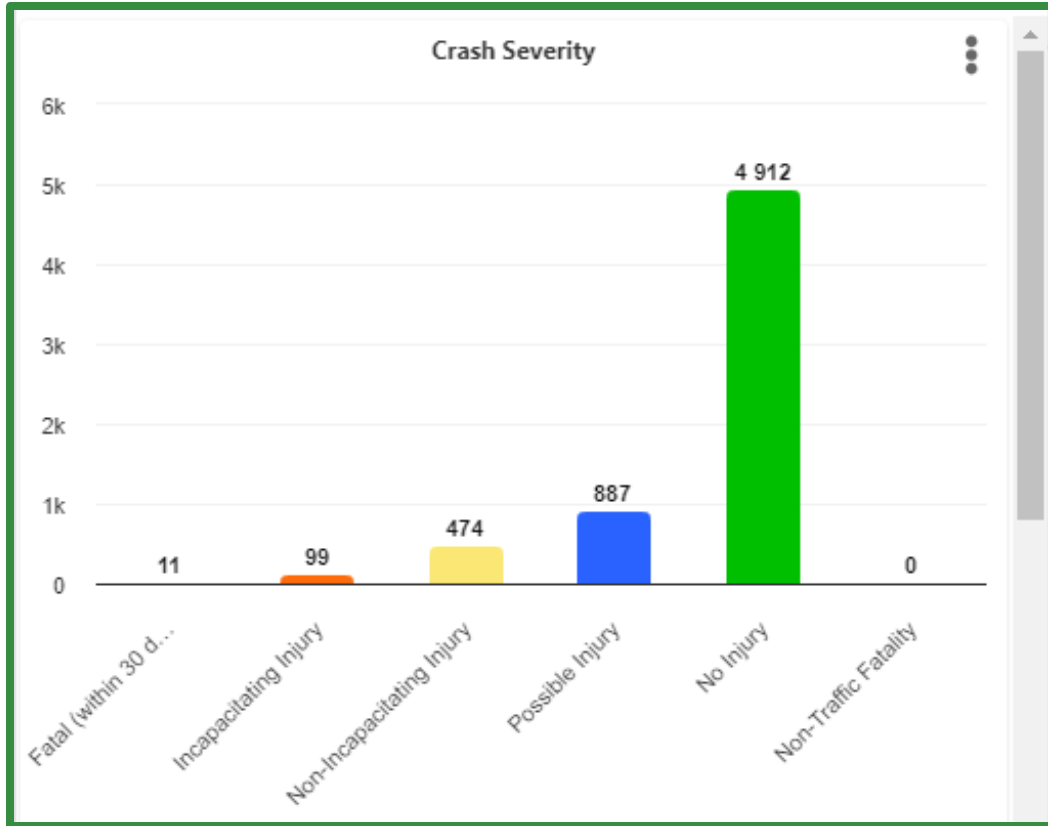
**ROADWAY INFORMATION**

Crash Occurred On Street, Road, Highway BAYMEADOWS RD		① At Street Address#	② At Latitude 30.2207984154355	and Longitude -81.57492688770406
At Feet 106	Or Miles	Direction West	③ From Intersection With Street, Road, Highway FREEDOM COMMERCE PKWY	④ Or From Milepost #
Road System Identifier 3 State		Type Of Shoulder 3 Curb	Type Of Intersection 1 Not at Intersection	

**CRASH INFORMATION (Check if Pictures Taken)**

Light Condition 1 Daylight	Weather Condition 1 Clear	Roadway Surface Condition 1 Dry	School Bus Related 1 No	Manner Of Collision 1 Front to Rear
-------------------------------	------------------------------	------------------------------------	----------------------------	--

# S4 Tools: Data Visualization



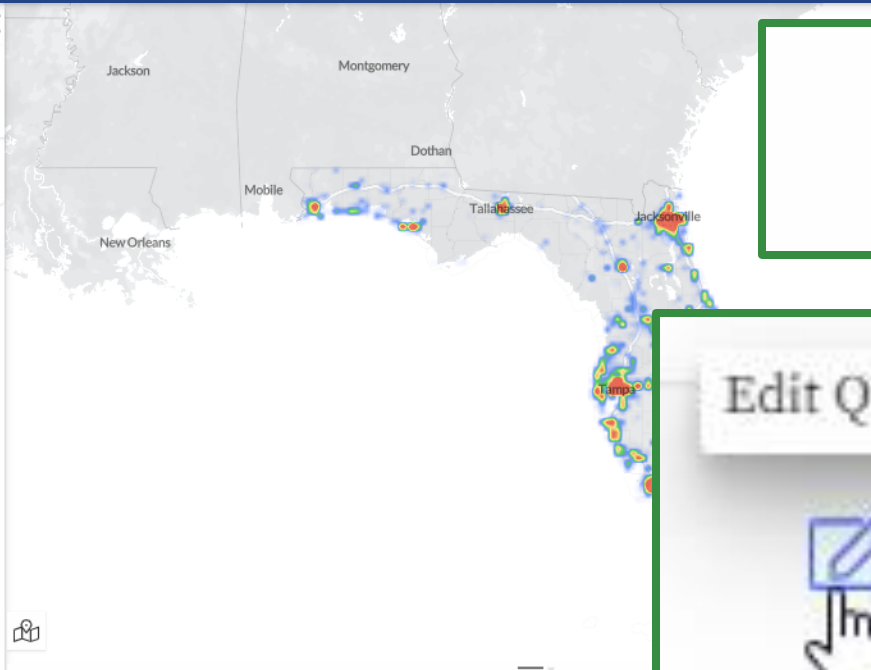
Several charts generated, scroll for more

# S4 Tools: Save and Edit Queries, Download Data

**Search Crashes** [Close]

[+], [TARGET ZERO], [User Icon], [FARS]

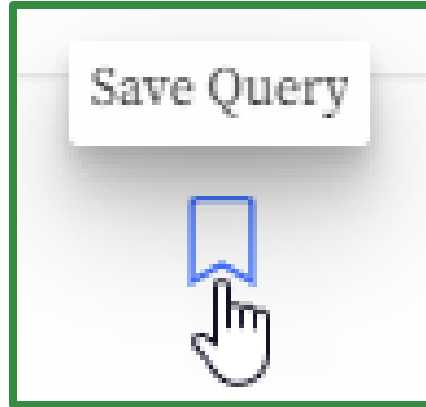
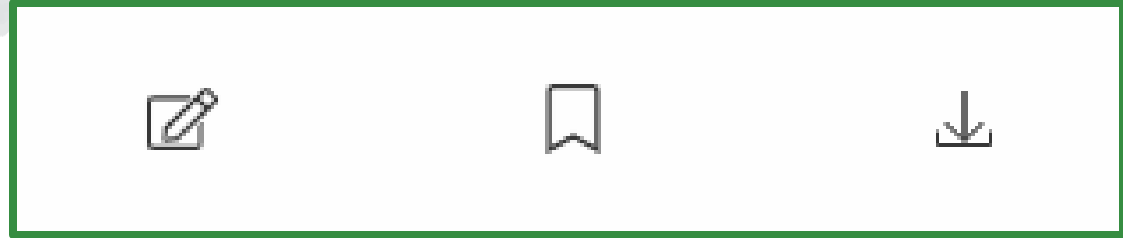
Crashes in Florida  
From 5/29/2024 - 6/4/2024



**Injury Summary** | **Common Attributes** | **FDOT Attributes**

HSMV Report #	DOT Roadwa...	Milepos...	Nearest Intersection ...	State Road ...	Ye
26351813	37A01270	0	29TH RD   US-90		202
84925746	72028000	2.552	BAYMEADOWS RD   FREEDOM COMMERCE PKWY		202
26012878	86170000	12.171	S DIXIE HWY   SW 10TH ST		202

[Edit], [Bookmark], [Download]





# S4 Tools: Data Download Formats

Available  
Downloads  
include:

**Crash Tables (csv)**  
**GIS Geolocation (ESRI Geodatabase)**  
**FDOT Tables (csv)**  
**Ped/Bike Typing (csv)**  
**Police Crash Reports (PDF)**  
**Readme File (HTML)**

## Crash Data Download

6,289 Crashes returned. Select data to download:

### Crash Tables (CSV)

- Crash Event
- Driver
- Non-Motorist
- Passenger
- Vehicle
- Violation

### GIS Geolocation (ESRI Geodatabase)

- Geolocation Only
- Geolocation & Crash Event

### FDOT Tables (CSV)

- Injury Summary
- FDOT Roadway
- Crash & Roadway & Vehicle 1&2 & Driver 1&2
- Vehicle & Driver & Passenger
- FARS

### Ped/Bike Typing (CSV)

- Pedestrian Typing
- Bicycle Typing

### Police Crash Reports (PDF)

- Individual Crash Reports (exceeded 100 limit)

### Readme File (HTML)

- Query parameters, disclaimer, data dictionary
- Add a note

# S4 Tools: Network Analyses

**SIGNAL FOUR ANALYTICS**

Crash data available from **January 1, 2014 to June 7, 2024** at 1:38 AM.

**HISTORIC NETWORK SCREENING**

USE OF DATA IN RESPONSE MAY BE RESTRICTED | Disclaimer | Data Dictionary

**SIGNAL FOUR ANALYTICS**

Crash data available from **January 1, 2014 to Ju**

**Search Historic Data**

Year(s): Five years 2018-2022

Geographic Area: Broward

Roadway Type: State Highway System

Network Type: Segments

Report Type: High Crash

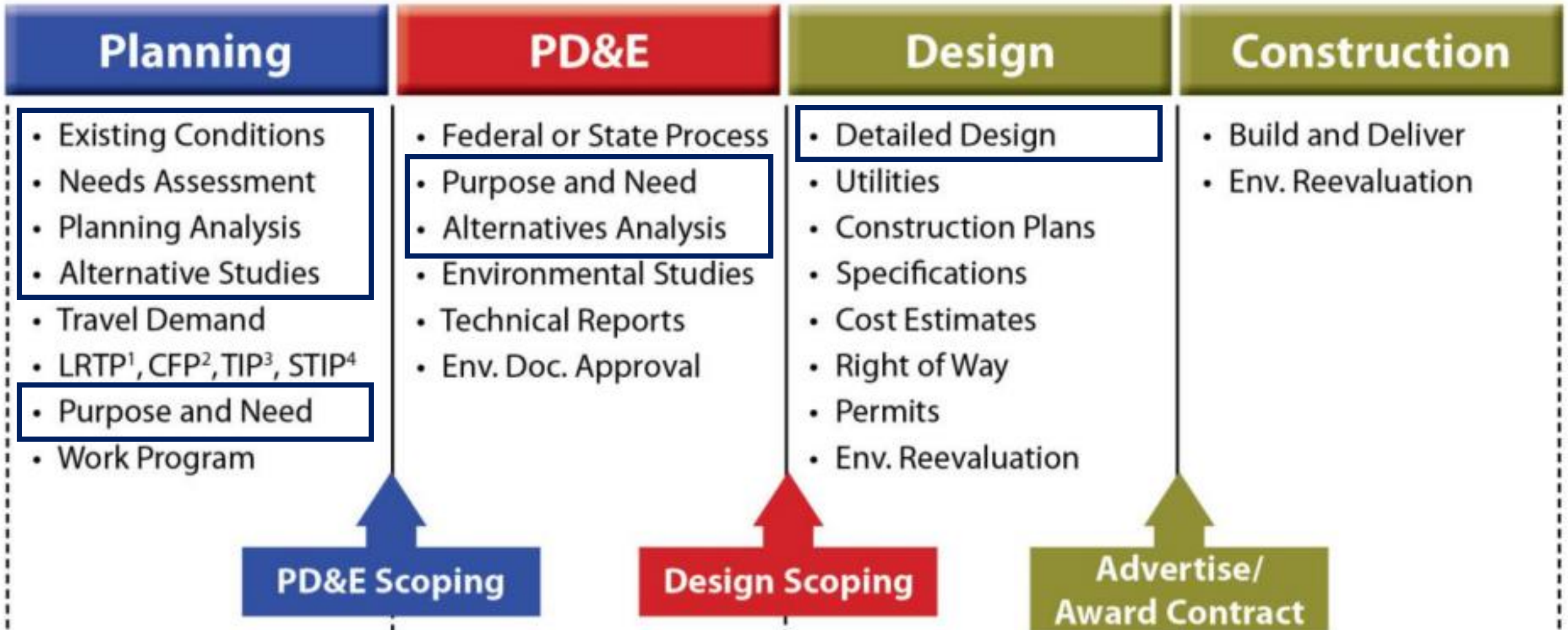
Urban/Rural: All

- Crash Dashboard
- Event Analysis
- Network Screening**
- Historic
- Predictive
- Crash Record Search
- Standard Reports
- Police Report Search

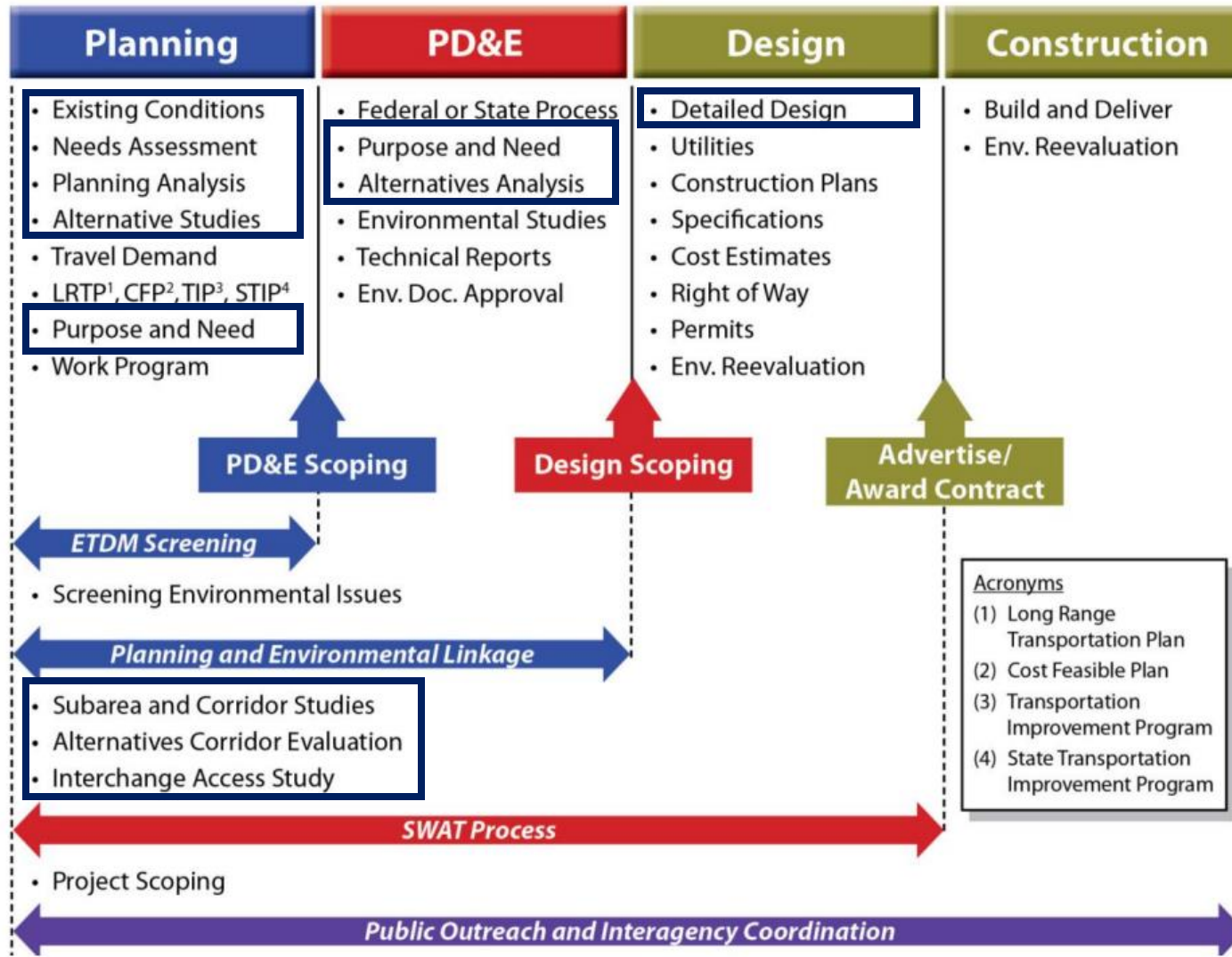
- Historical Crash Rate Analysis
- Predictive Crash Rate Analysis

DOT District Id	DOT County Id	County	AADT 2022	AADT 2021	AADT 2020	AADT 2019	AADT 2018	BMP	EMP	Context Classification	Crash Segment Category	Number Of Lanes	Ma
4	86	Broward	7310	7310	7310	7310	7310	0.5029	0.7396	C4	U 1 U	1.0	Nor
4	86	Broward	2910	2910	2910	2910	2910	0.005	0.508	C4	U 1 U	2.0	Nor
4	86	Broward	7410	7410	7410	7410	7410	0.0164	1.0206	C4	U 1 U	2.0	Nor
4	86	Broward	2310	2310	2310	2310	2310	0.2587	0.6611	SDC3C	U 1 U		

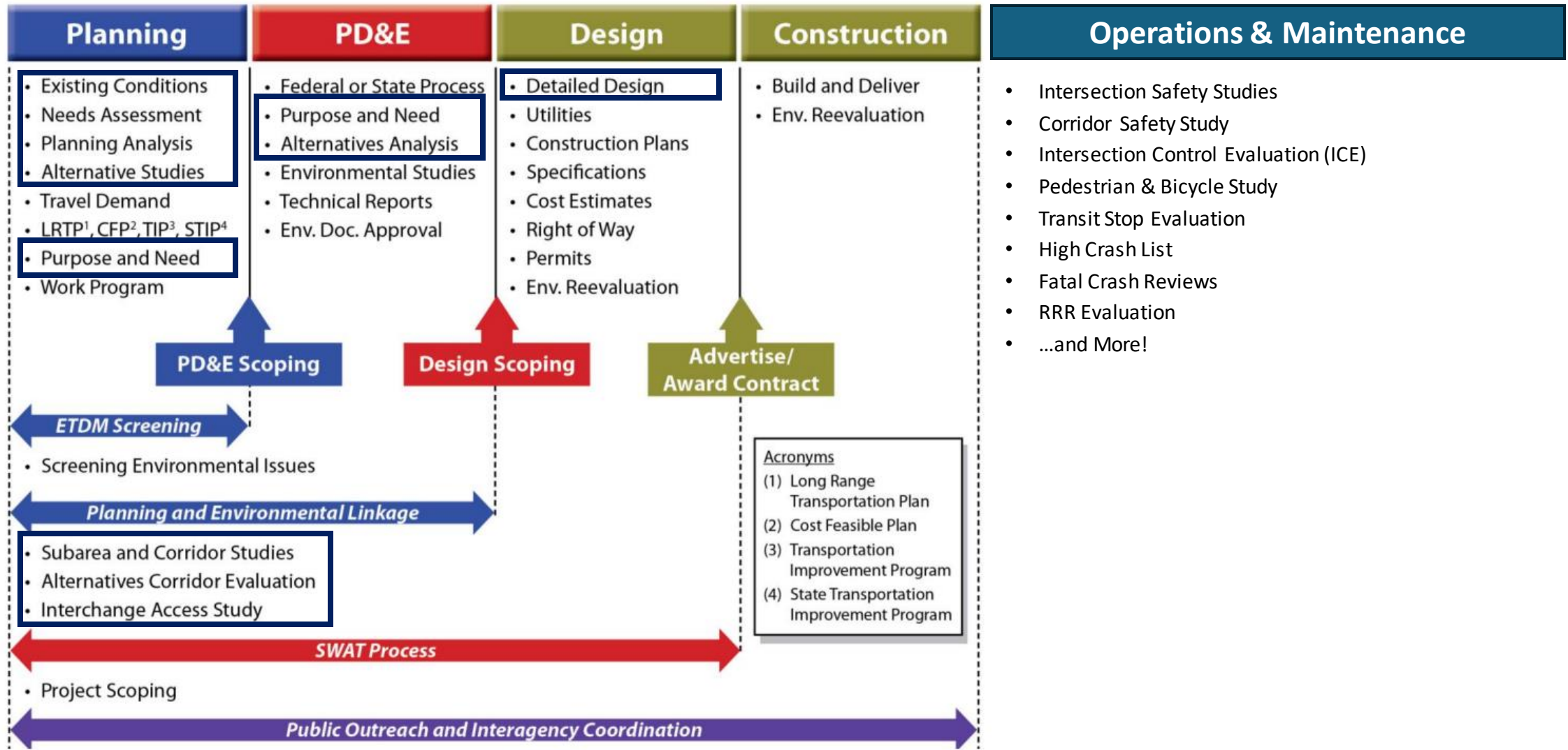
# Safety Analysis



# Safety Analysis



# Safety Analysis



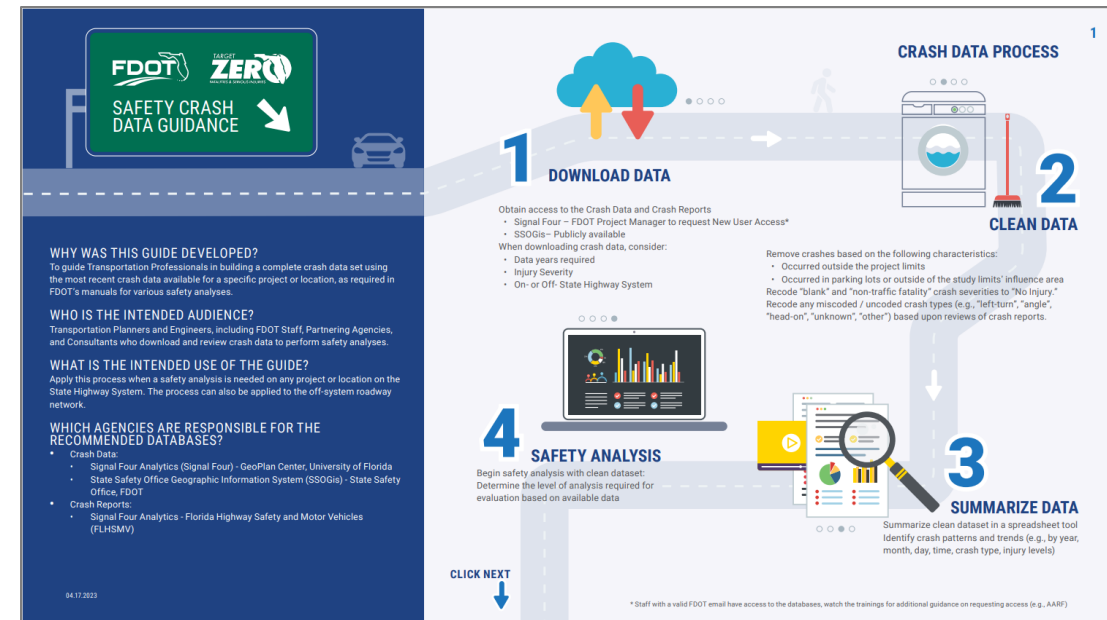
# Examples of Various Requirements

<b>PD&amp;E Study</b>	<b>Design Exception / Variation (FDM 122)</b>	<b>Intersection Control Evaluation (ICE)</b>
<ul style="list-style-type: none"><li>• Data driven safety analysis (e.g., analyzing historic crash data and applying HSM methods) should be used to the extent practicable to quantitatively assess safety performance of project alternatives.</li></ul>	<ul style="list-style-type: none"><li>• 5 years of historical crash data.</li><li>• Description of anticipated impact on safety, long and short-term effects, and any anticipated cumulative effects.</li><li>• Comparison of predicted or expected crash frequency.</li></ul>	<ul style="list-style-type: none"><li>• Safety Performance for Intersection Control Evaluation (SPICE) Tool, which includes two complimentary approaches to safety analysis:<ol style="list-style-type: none"><li>1. Crash prediction method</li><li>2. Safe System for Intersections (SSI) method</li></ol></li></ul>

# Manuals Providing Guidance On the Use of Crash Data

- FDOT Highway Safety Manual User Guide
- Project Development and Environment (PD&E) Manual
- Interchange Access Request Safety Guidance
- Access Management Guidebook
- FDOT Design Manual (FDM)
- Speed Zoning Manual
- Manual on Uniform Traffic Studies (MUTS)
- Traffic Engineering Manual (TEM)
- Intersection Control Evaluation (ICE) Manual

## FDOT Crash Data Guidance



# FDOT Crash Data Guidance



## WHY WAS THIS GUIDE DEVELOPED?

To guide Transportation Professionals in building a complete crash data set using the most recent crash data available for a specific project or location, as required in FDOT's manuals for various safety analyses.

## WHO IS THE INTENDED AUDIENCE?

Transportation Planners and Engineers, including FDOT Staff, Partnering Agencies, and Consultants who download and review crash data to perform safety analyses.

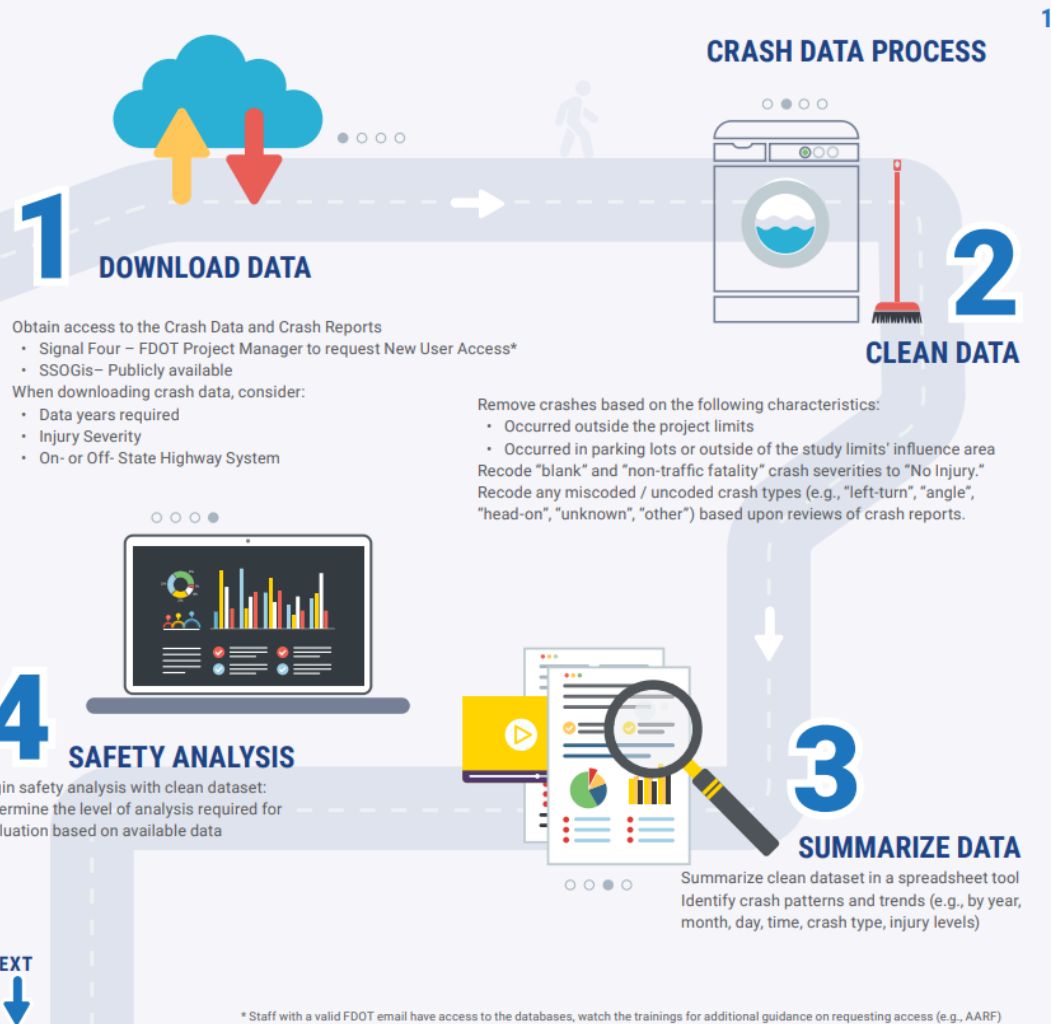
## WHAT IS THE INTENDED USE OF THE GUIDE?

Apply this process when a safety analysis is needed on any project or location on the State Highway System. The process can also be applied to the off-system roadway network.

## WHICH AGENCIES ARE RESPONSIBLE FOR THE RECOMMENDED DATABASES?

- Crash Data:
  - Signal Four Analytics (Signal Four) - GeoPlan Center, University of Florida
  - State Safety Office Geographic Information System (SSOGis) - State Safety Office, FDOT
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04.17.2023





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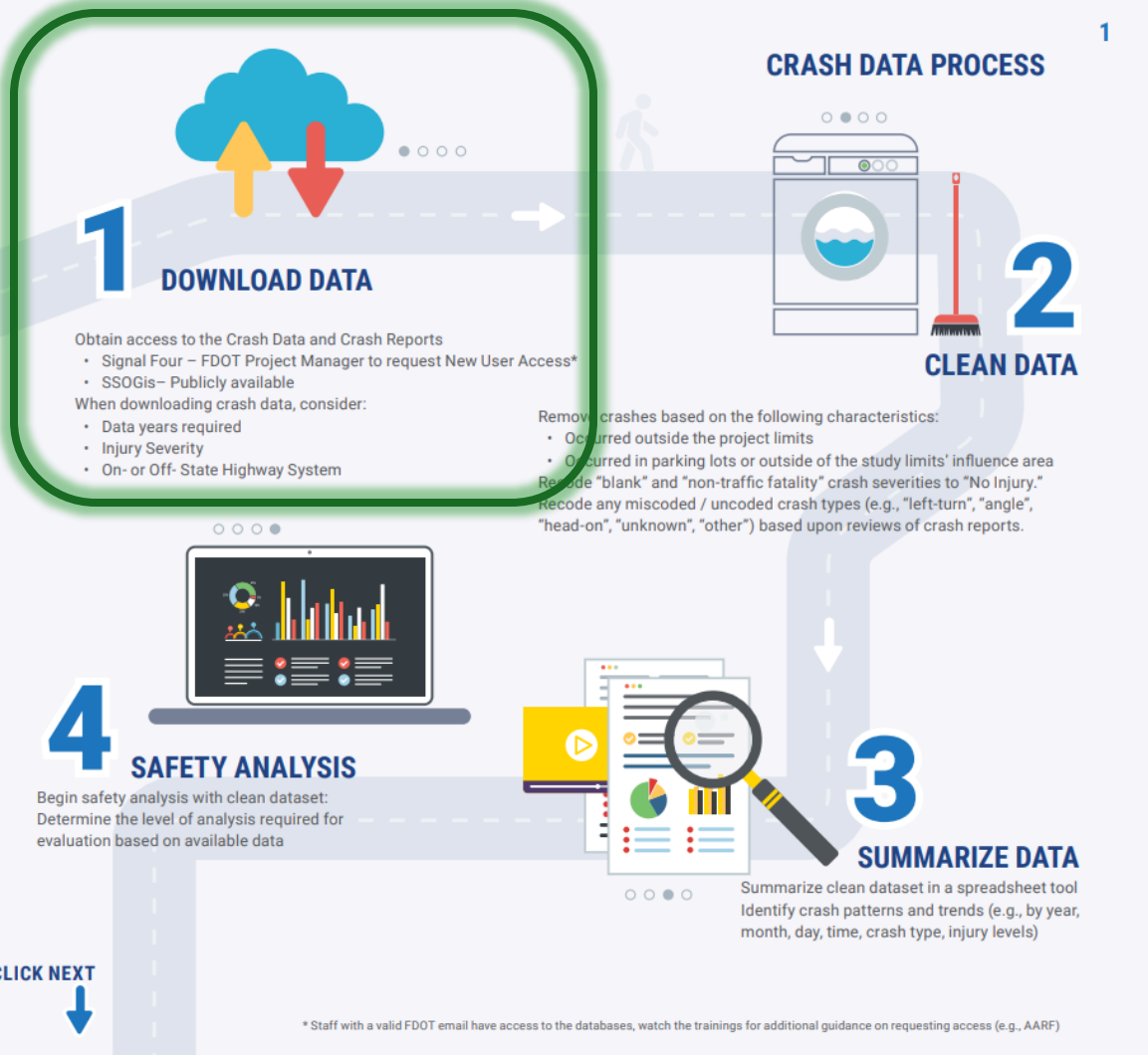
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# FDOT Crash Data Guidance

1 DOWNLOAD DATA



## How do you access crash data?

- **Signal 4 Analytics** - Pre-approval needed for non-FDOT staff
- **SSOgis** – Open to the public

## How do you pull crash reports?

- Available on Signal 4 Analytics
- Use the unique crash numbers

## How do you define project limits?

- **Intersection:** turn lane extent or minimum 0.1mile from center of intersection
- **Segment:** recommended minimum length is 0.2 miles

## How many years of crash data should be downloaded?

- Pull last **five (5) full calendar years** and the **partial year** up to the day before the crash data is available

# FDOT Crash Data Guidance



## SAFETY CRASH DATA GUIDANCE



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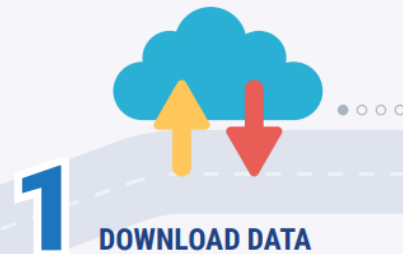
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04.17.2023



## 1 DOWNLOAD DATA

- Obtain access to the Crash Data and Crash Reports
- Signal Four – FDOT Project Manager to request New User Access\*
  - SSOGis – Publicly available
- When downloading crash data, consider:
- Data years required
  - Injury Severity
  - On- or Off- State Highway System



## 4 SAFETY ANALYSIS

Begin safety analysis with clean dataset:  
Determine the level of analysis required for evaluation based on available data

CLICK NEXT



## CRASH DATA PROCESS



## 2 CLEAN DATA

- Remove crashes based on the following characteristics:
- Occurred outside the project limits
  - Occurred in parking lots or outside of the study limits' influence area
- Recode "blank" and "non-traffic fatality" crash severities to "No Injury."  
Recode any miscoded / uncoded crash types (e.g., "left-turn", "angle", "head-on", "unknown", "other") based upon reviews of crash reports.



## 3 SUMMARIZE DATA

Summarize clean dataset in a spreadsheet tool  
Identify crash patterns and trends (e.g., by year, month, day, time, crash type, injury levels)

\* Staff with a valid FDOT email have access to the databases, watch the trainings for additional guidance on requesting access (e.g., AARF)

TRANSPORTATION  
SYMPOSIUM



How is crash data cleaned?

Based on location

- Non-public roadways
- Outside of project limits

Based on crash attributes for safety analysis

- Crash Severity
- Crash type interpretation

# FDOT Crash Data Guidance



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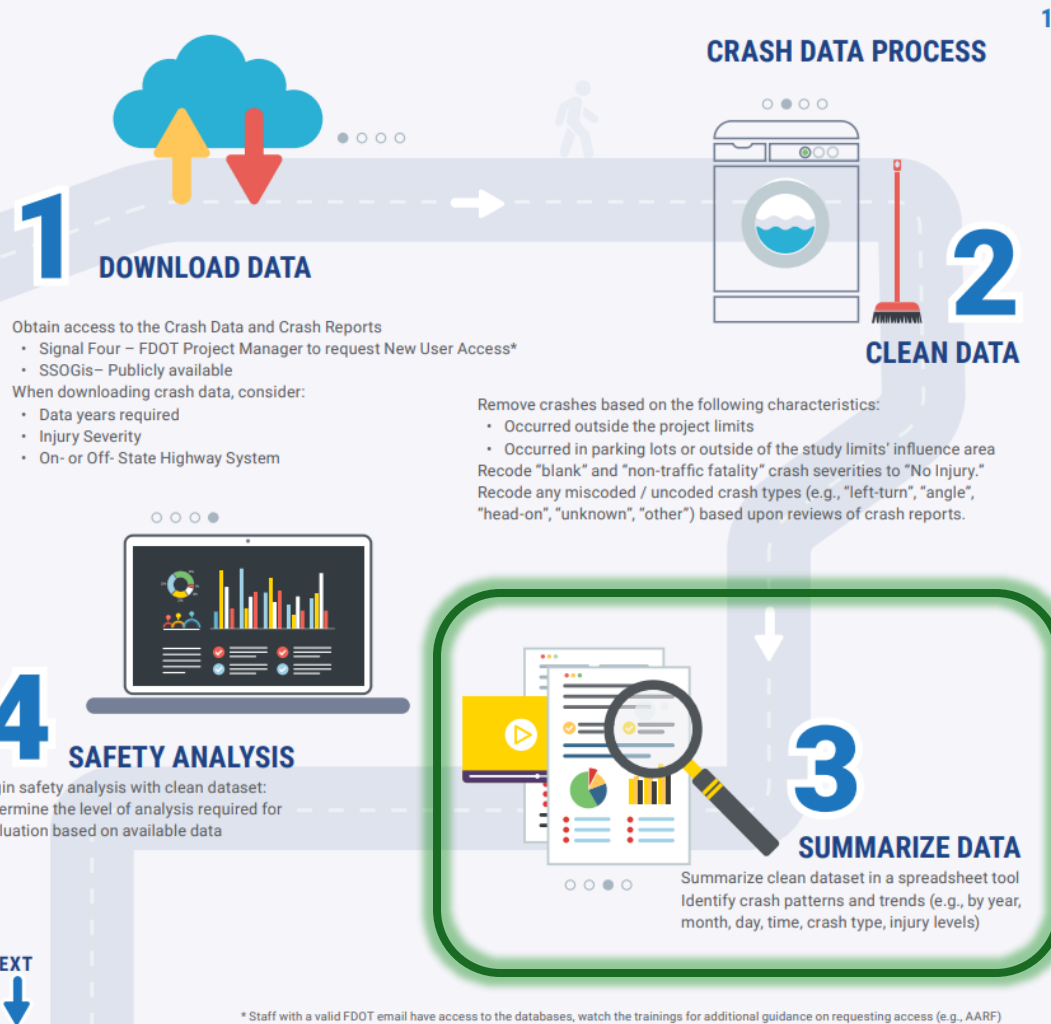
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04.17.2023



# FDOT Crash Data Guidance

## 3 SUMMARIZE DATA



How should crash data be summarized?



# FDOT Crash Data Guidance

## 3 SUMMARIZE DATA



### How should crash data be summarized?

Crashes by Year and Severity

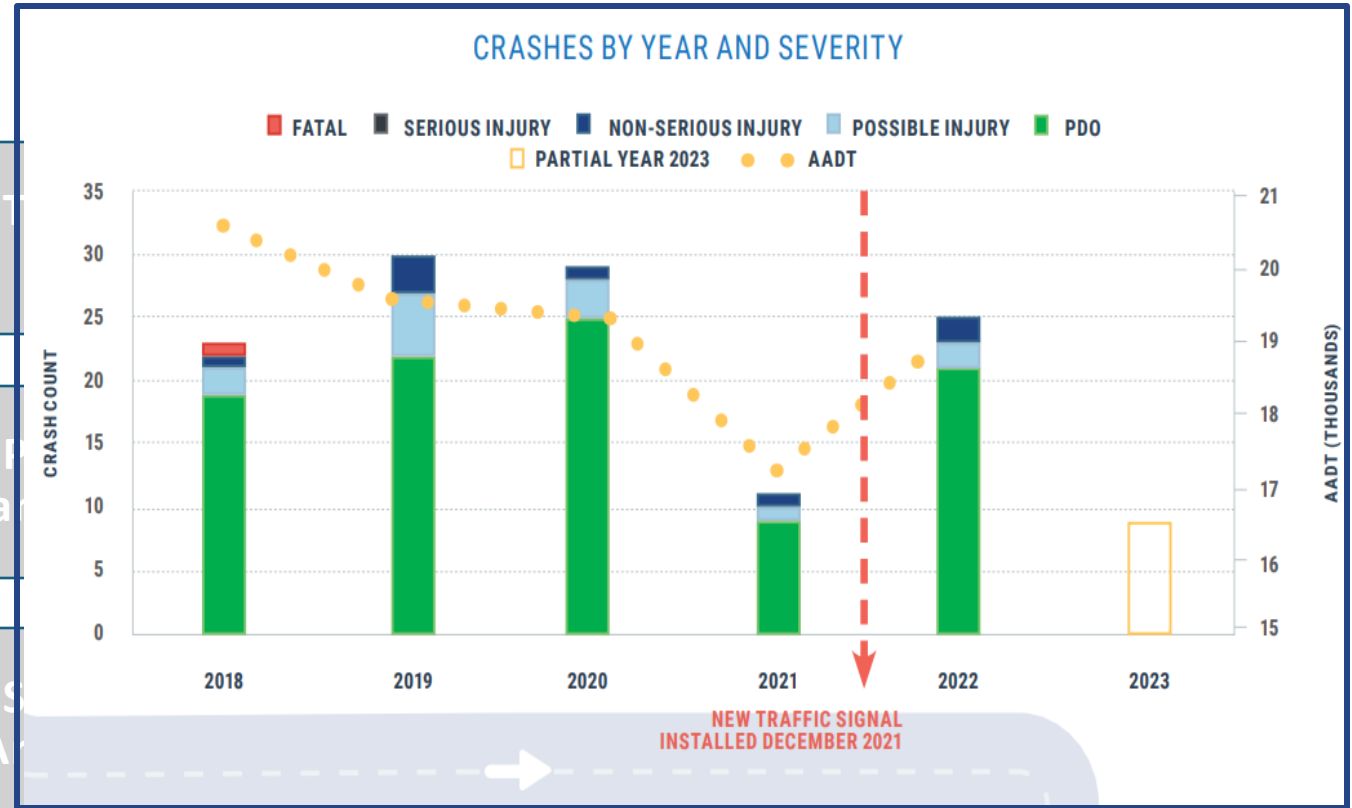
Crashes by Severity

Crashes by Lighting Condition and Severity

Crashes by Condition and Severity

Collision Diagram


Crashes by Severity and Emphasis Area



# FDOT Crash Data Guidance



## How should crash data be summarized?




Crashes by Year and Severity



Crashes by Type and Severity



Crashes by Lighting Condition and Severity



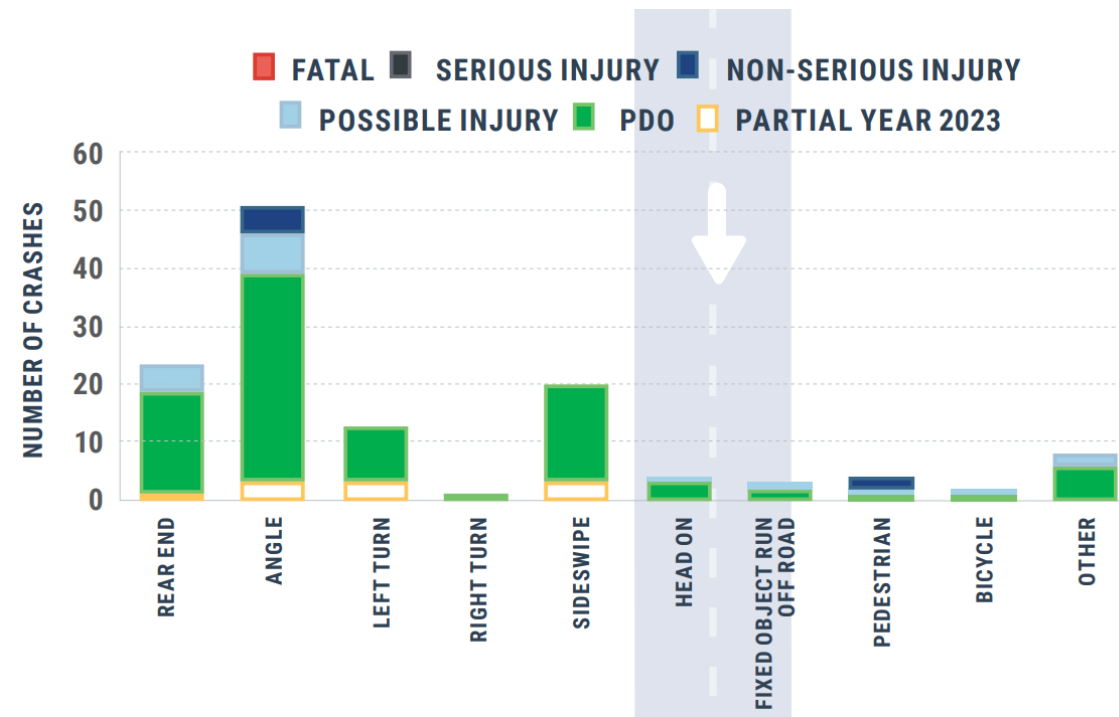
Crashes by Pavement Condition and Severity



Collision Diagram



Crashes by SHSP Emphasis Area







# FDOT Crash Data Guidance



## How should crash data be summarized?




Crashes by Year and Severity



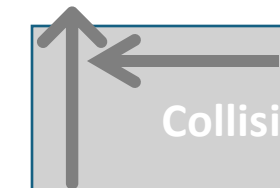
Crashes by Type and Severity



Crashes by Lighting Condition and Severity



Crashes by Pavement Condition and Severity

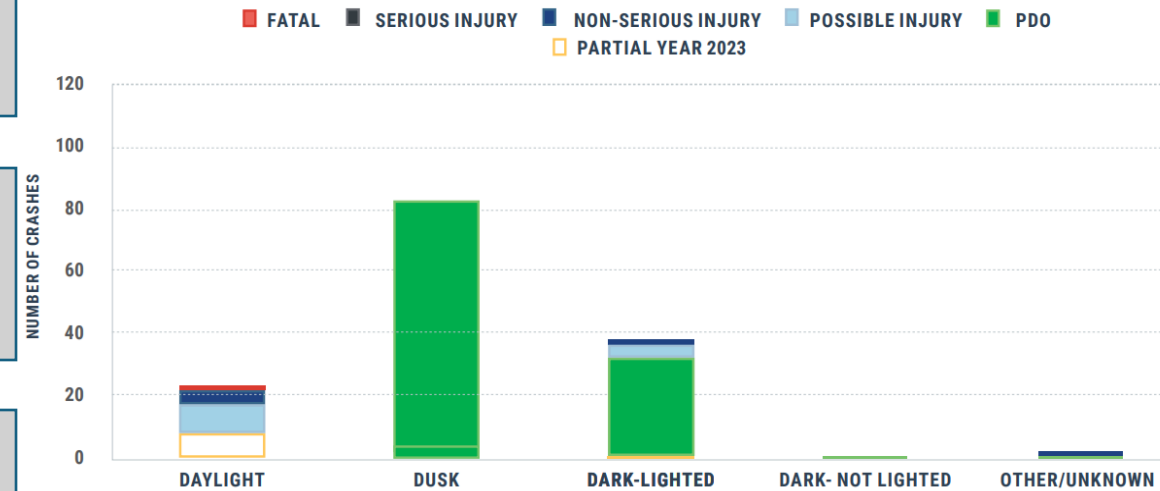


Collision Diagram



Crashes by SHSP Emphasis Area


CRASHES BY LIGHTING CONDITION AND SEVERITY




# FDOT Crash Data Guidance



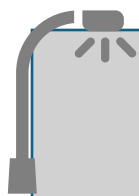
How should crash data be summarized?



Crashes by Year and Severity



Crashes by Type and Severity



Crashes by Lighting Condition and Severity



Crashes by **Pavement Condition and Severity**



Collision Diagram



Crashes by SHSP Emphasis Area




# FDOT Crash Data Guidance




## How should crash data be summarized?




Crashes by Year and Severity



Crashes by Type and Severity



Crashes by Lighting Condition and Severity



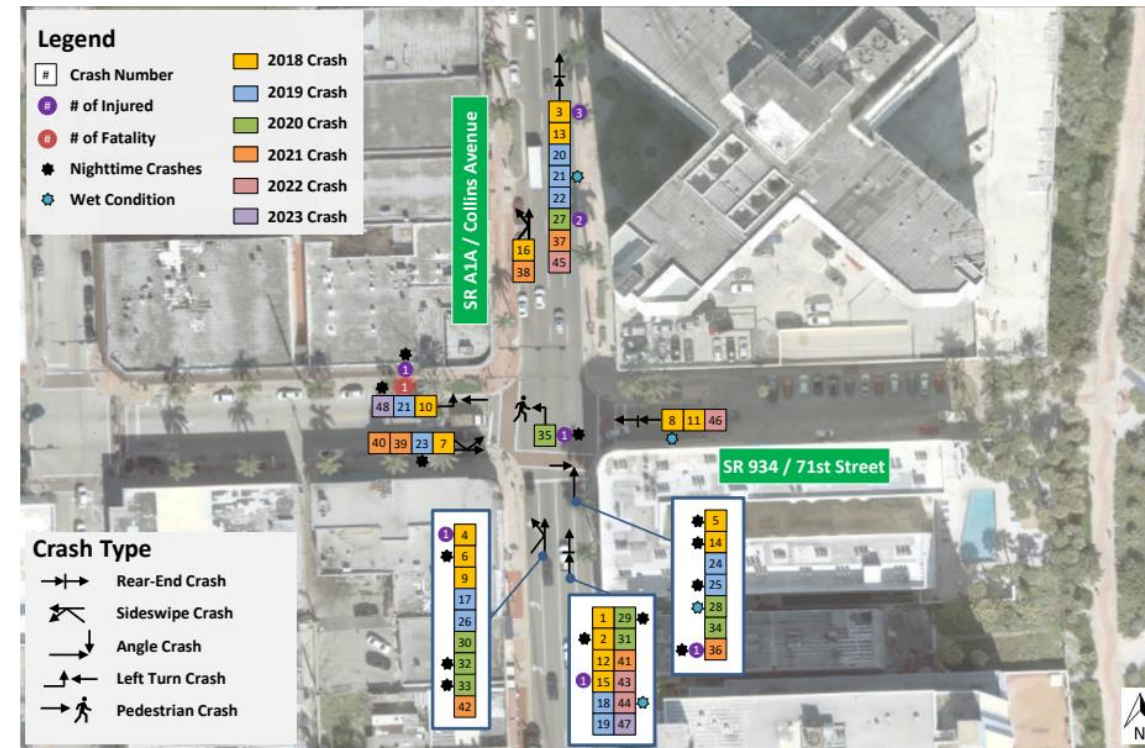
Crashes by Pavement Condition and Severity



Collision Diagram



Crashes by SHSP Emphasis Area




# FDOT Crash Data Guidance


## 3 SUMMARIZE DATA



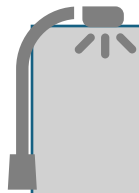
How should crash data be summarized?




Crashes by Year and Severity



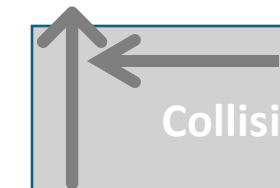
Crashes by Type and Severity



Crashes by Lighting Condition and Severity



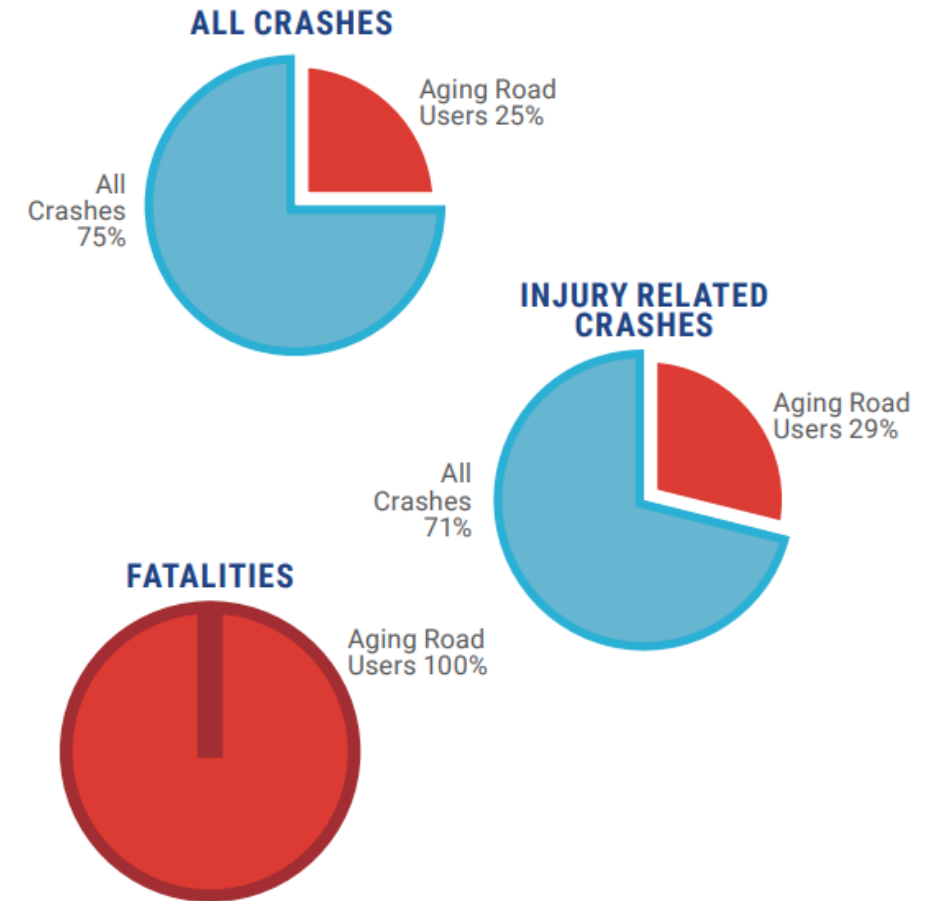
Crashes by Pavement Condition and Severity



Collision Diagram



Crashes by SHSP Emphasis Area



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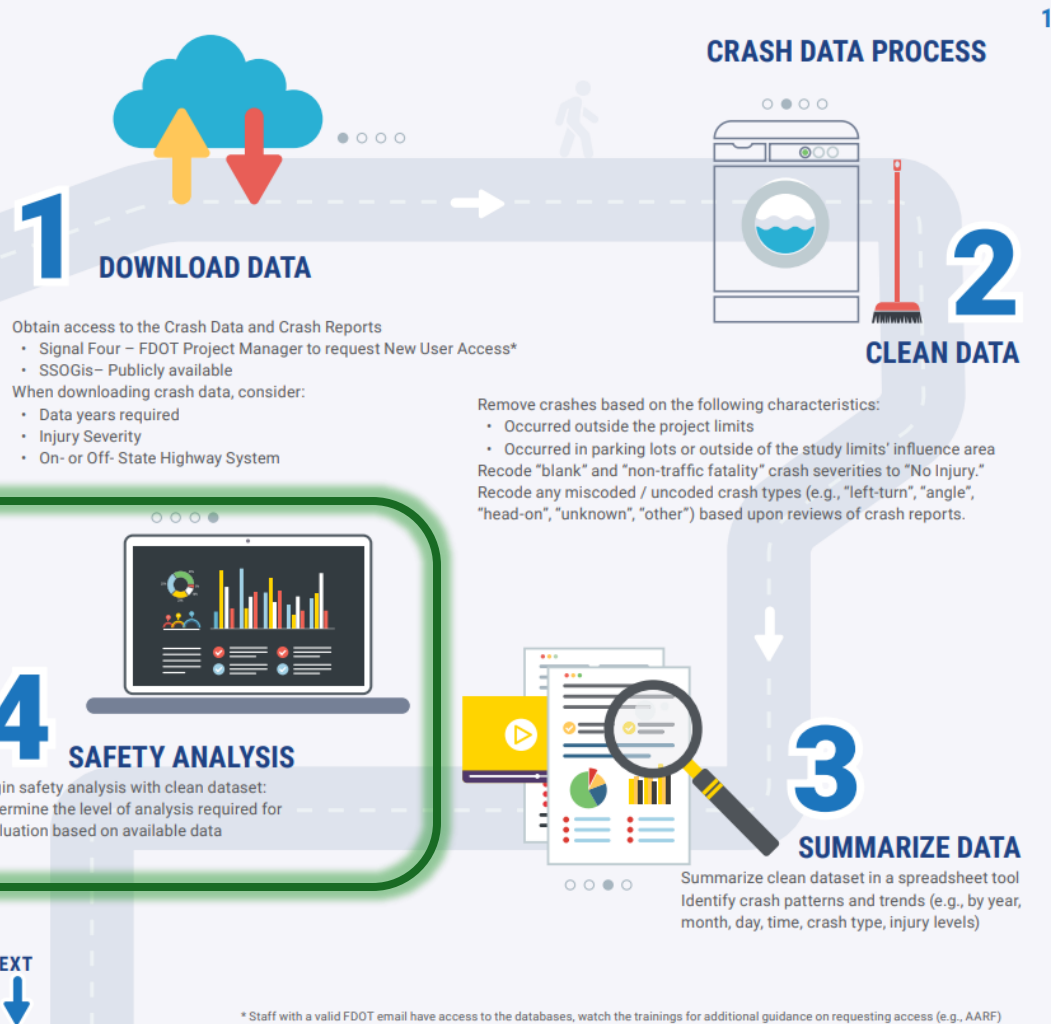
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04.17.2023



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# FDOT Crash Data Guidance

## 4 SAFETY ANALYSIS



### What safety analysis method should be used?

	SAFETY ANALYSIS METHOD	DATA NEEDS	STRENGTHS	WEAKNESSES	RESOURCES
1	Excess expected average crash frequency with Empirical Bayes (EB) method adjustment	<ul style="list-style-type: none"> <li>A minimum of five (5) years of crash data</li> <li>Crashes by type, severity, and location</li> <li>Calibrated SPF and overdispersion parameter</li> <li>Traffic volume (AADT)</li> <li>Roadway/intersection design elements</li> </ul>	<ul style="list-style-type: none"> <li>Reliable and comprehensive</li> <li>Accounts for regression to the mean</li> <li>Accounts for volume</li> <li>Accounts for design elements</li> <li>Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>Data-intensive</li> <li>Limited SPFs available for all conditions (e.g., midblock crosswalk where there are no non-motorist crashes)</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">FDOT HSM Trainings</a></li> <li><a href="#">FDOT MUTS Chapter 5 and 6</a></li> <li>Computer Based Training (CBTs) provide detailed guidance on data collection needs</li> <li><a href="#">FDOT MUTS Chapter 14</a> CBT provides detailed guidance on how to apply this method for lighting justification</li> <li>FDOT ICE Training (SPICE) Modules 2.7.1 and 2.7.2 (coming Spring 2023)</li> </ul>
2	Predicted average crash frequency using SPFs	<ul style="list-style-type: none"> <li>Traffic volume (AADT)</li> <li>Calibrated SPF Roadway/intersection design elements</li> </ul>	<ul style="list-style-type: none"> <li>Reliable and comprehensive</li> <li>Accounts for volume</li> <li>Accounts for design elements</li> <li>Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>Data-intensive</li> <li>Limited SPFs available for all conditions (e.g., Leading Pedestrian Interval implementation)</li> </ul>	
3	Relative severity index	<ul style="list-style-type: none"> <li>Crashes by type</li> <li>Crash frequency by facility type</li> <li>Crash costs by facility type</li> </ul>	<ul style="list-style-type: none"> <li>Low-effort</li> <li>Considers facility type and crash severity</li> <li>Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>Does not account for regression to the mean bias</li> <li>May overemphasize locations with a small number of serious crashes; and</li> <li>Does not account for traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">FDOT FDM Chapter 122</a></li> <li>FDOT FDM Table 122.6.4 provides the HSM Crash Distribution for Florida</li> </ul>
4	Critical crash rate	<ul style="list-style-type: none"> <li>Crash counts</li> <li>Crash rates by facility type, district, or geographic area of interest</li> <li>Traffic volume (AADT)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces the exaggerated effect of sites with low volumes</li> <li>Considers variance in crash data</li> <li>Can be applied to a specific crash type or severity</li> <li>Quantitative</li> </ul>	<ul style="list-style-type: none"> <li>Does not account for regression to the mean bias</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">FDOT SSO Presentation Slides</a></li> </ul>
5	Qualitative analysis	<ul style="list-style-type: none"> <li>Crashes by type</li> <li>Site Characteristics</li> <li>Traffic volume (AADT)</li> <li>Comparison to similar locations</li> </ul>	<ul style="list-style-type: none"> <li>Low-effort</li> <li>Documents existing conditions</li> <li>Qualitative</li> </ul>	<ul style="list-style-type: none"> <li>Does not yield the necessary information to quantify expected safety benefits</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">FDOT SSO Crash Data Guidance: Step 4</a></li> </ul>

# Signal 4 Crash Data Demo



## FLORIDA TRAFFIC SAFETY DASHBOARD

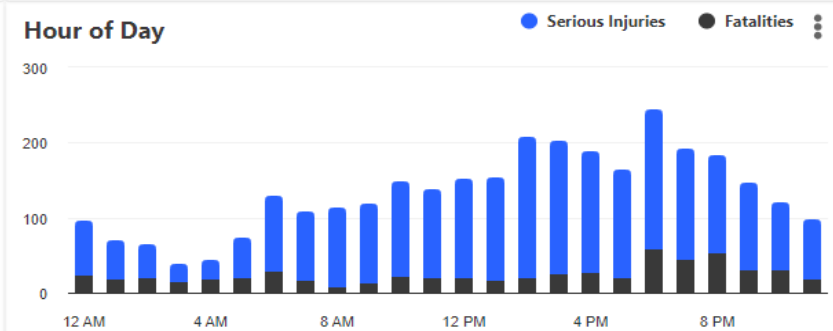
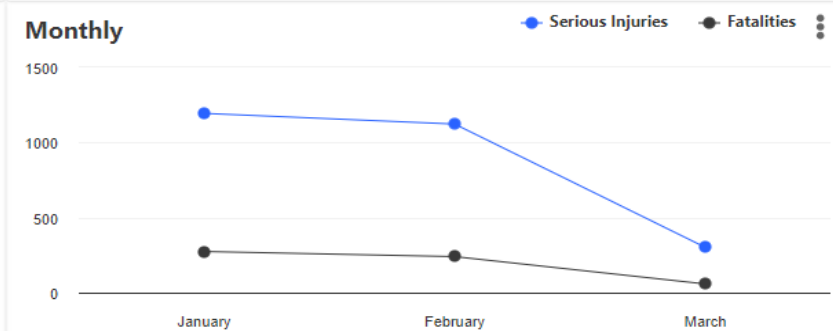
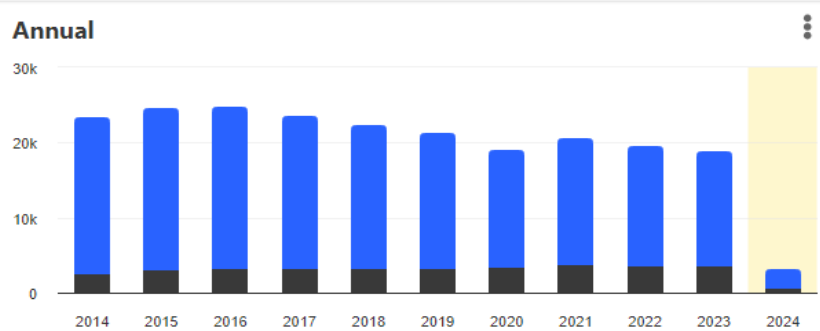
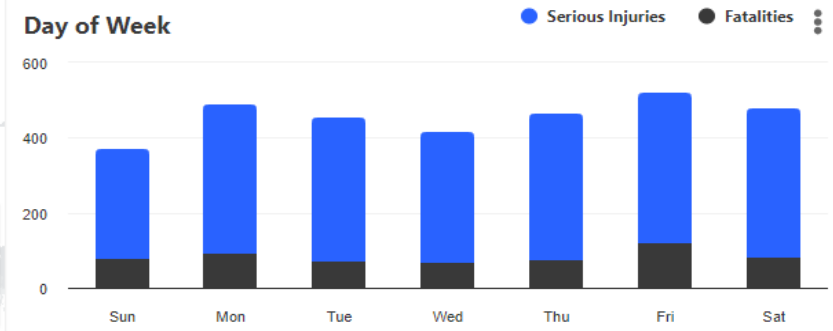
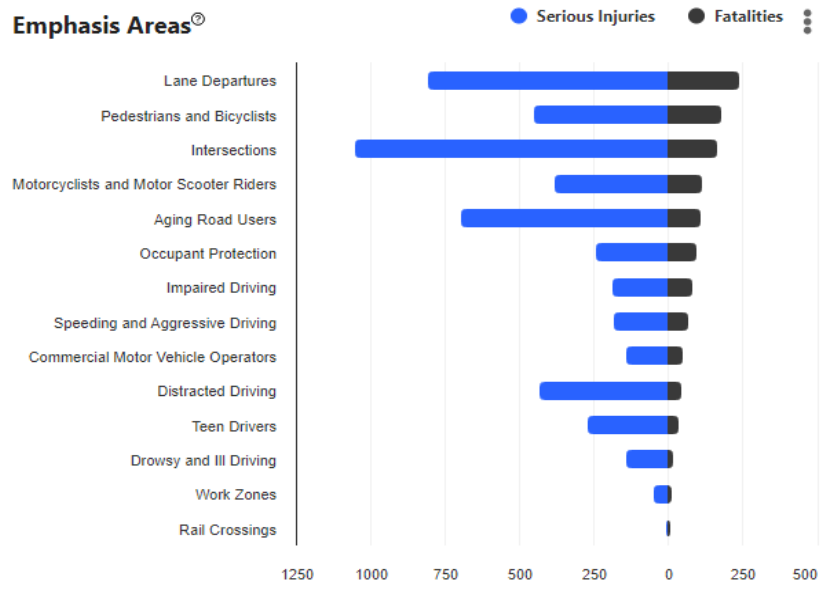
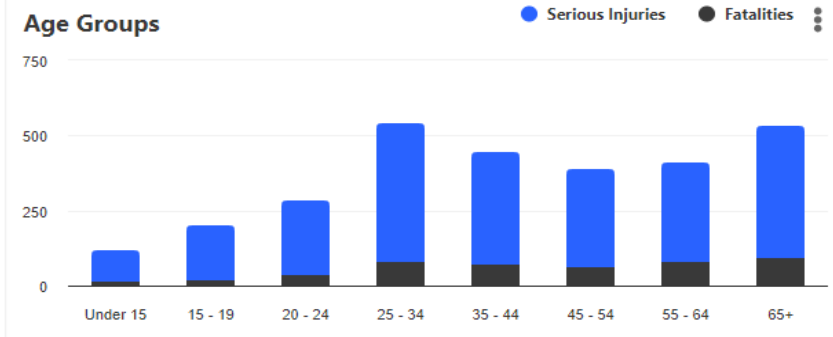
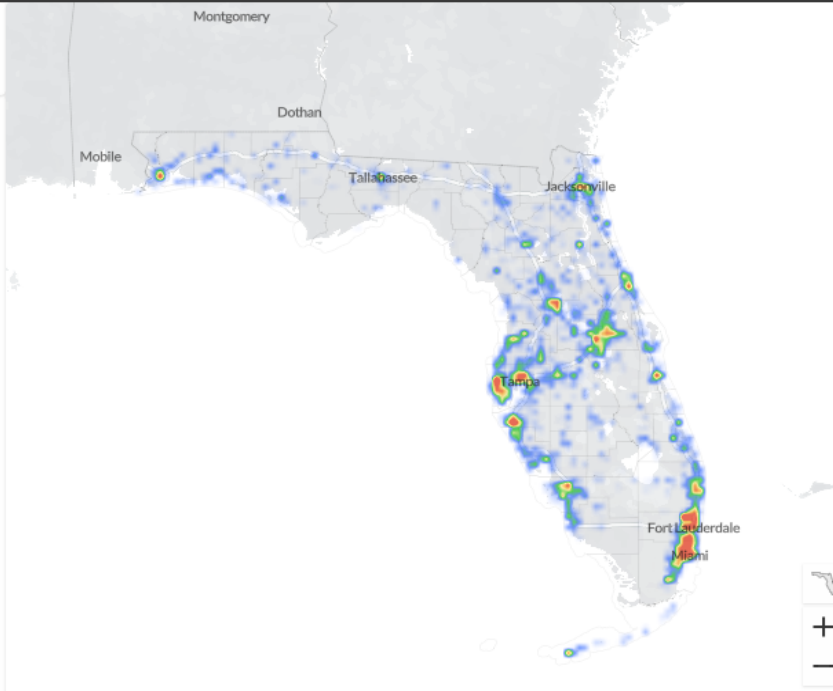


Crash data available from **January 1, 2014 to March 14, 2024** Learn Why. Last data update completed May 16, 2024 at 1:33 AM.

[Disclaimer](#) [Data Dictionary](#)

2024 State of Florida All LE Agencies All Emphasis Areas Fatalities & Serious Injuries

2,619 Serious Injuries  
131,219 Total Crashes  
572 Fatalities



# Signal 4 Crash Data Query Options



## Search Crashes



### Time Period

Date Range

5/8/2024 to 5/14/2024

### Location

Geographic Boundary

Administrative Custom

Type to select a city, county, district or mpo

### Specific Street or Intersection

None

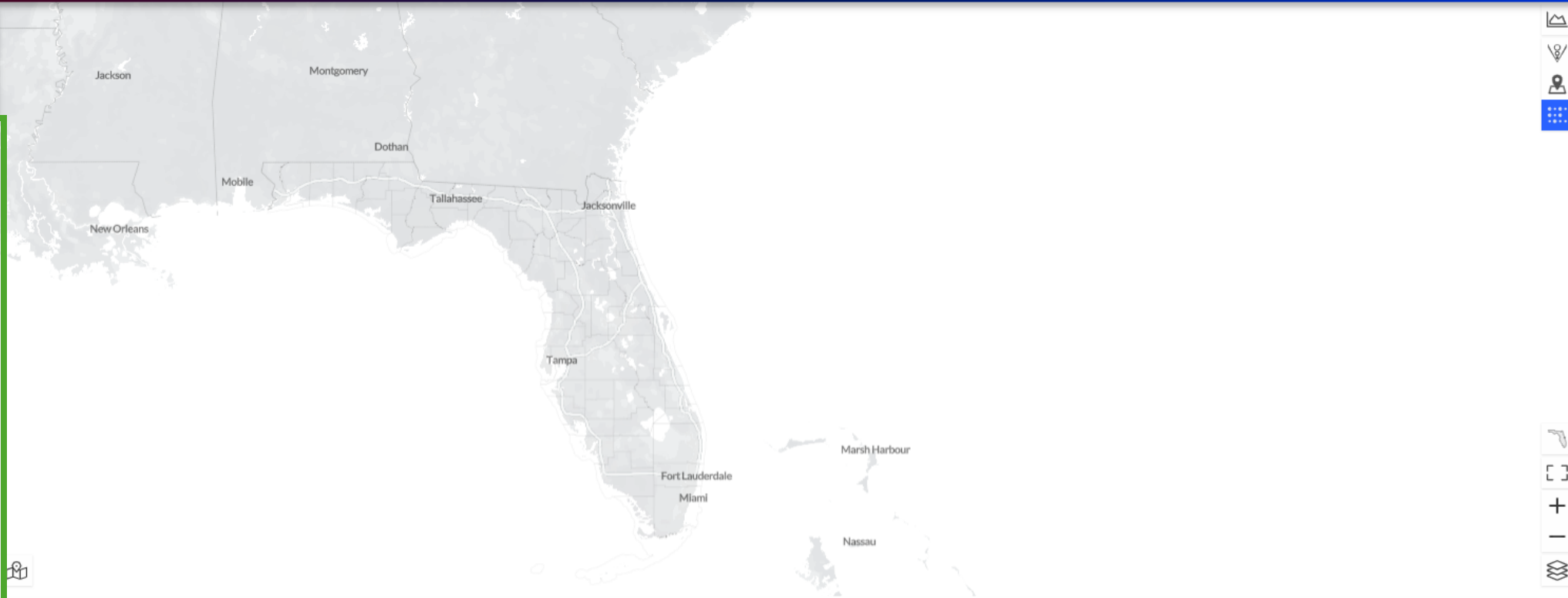
### Reported By

Search reporting agencies

### Circumstances

### Participants

### Vehicles



Injury Summary [Common Attributes](#) [FDOT Attributes](#)

	Total	Fatal Crashes	Serious Injury Crashes	Injury Crashes	Property Damage Only Crashes
No records currently being displayed. Please issue a query...					



# Signal 4 Crash Data Query Options



**Time Period**

Date Range ▼

5/8/2024 to 5/31/2024

---

**Location**

Geographic Boundary

Administrative Custom

Type to select a city, county, district or mpo

---

Specific Street or Intersection

None ▼

---

Reported By

Search reporting agencies

**EVENT ANALYSIS**

Last data update completed May 16, 2024 at 1:33 AM.

USE OF DATA IN RESPONSE MAY BE RESTRICTED

Disclaimer Data Dictionary

**Circumstances** ▼

Crash Severity —

- Fatal (within 30 days)
- Incapacitating Injury
- Non-Incapacitating Injury
- Possible Injury
- No Injury
- Non-Traffic Fatality

Light Condition +

Weather +

Roadway +

Crash Type +

First Harmful Event +

Other +

**Participants** ▼

Road Users —

- Pedestrians
- Bicyclists
- Moped (Motor Scooter Riders)
- Motorcyclists

User Behavior +

Occupant Protection +

Helmet Use +

Driver Age +

Driver Gender/Sex +

Driver License Type +

Driver License State +

DL Required Endorsements +

**Vehicles** ▼

- Commercial Motor Vehicle +
- Special Vehicle Types +
- Vehicle Body Types +

**Injury Summary** Common Attributes FDOT Attributes

	Total	Fatal Crashes	Serious Injury Crashes
No records currently being displayed. Please issue a query...			

# Signal 4 Crash Data Query Options

CRASH DATA PROCESS

1 DOWNLOAD DATA



SIGNAL FOUR ANALYTICS

EVENT ANALYSIS

Crash data available from **January 1, 2014 to May 14, 2024** (with some exceptions). Last data update completed May 16, 2024 at 1:33 AM.

USE OF DATA IN RESPONSE MAY BE RESTRICTED

[Disclaimer](#) [Data Dictionary](#)

## Search Crashes



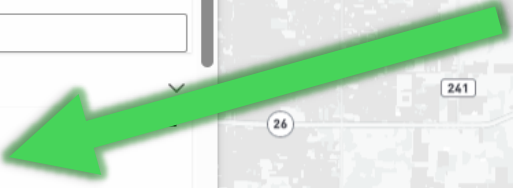
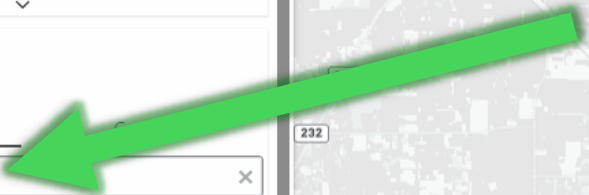
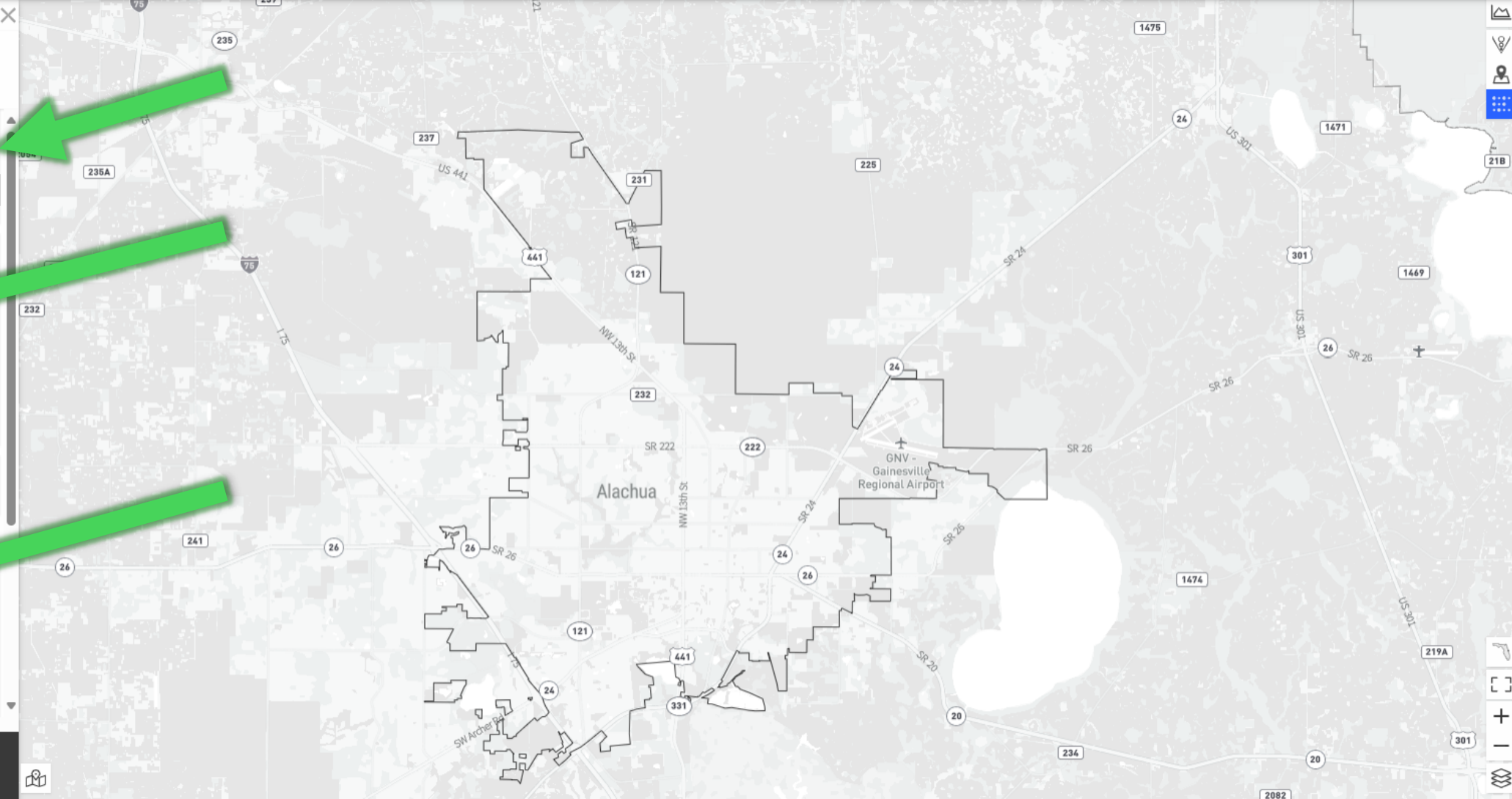
Time Period  
Date Range  
1/1/2019 to 5/31/2024

Location  
Geographic Boundary  
Administrative  
Gainesville

Specific Street or Intersection  
None

Reported By  
Search reporting agencies

Circumstances  
Crash Severity  
 Fatal (within 30 days)  
 Incapacitating Injury  
 Non-Incapacitating Injury  
 Possible Injury  
 No Injury



Search

# Signal 4 Crash Data Query Options

CRASH DATA PROCESS

1 DOWNLOAD DATA



Crash data available from January 1, 2014 to May 14, 2024 (with some exceptions). Last data update completed May 16, 2024 at 1:33 AM. USE OF DATA IN RESPONSE MAY BE RESTRICTED Disclaimer Data Dictionary

**Search Crashes**

Non-Incapacitating Injury  
 Possible Injury  
 No Injury  
 Non-Traffic Fatality

Light Condition +  
Weather +  
Roadway +  
Crash Type +  
First Harmful Event +  
Other +

**Participants**

Road Users -

- Pedestrians
- Bicyclists
- Moped (Motor Scooter Riders)
- Motorcyclists

User Behavior +  
Occupant Protection +  
Helmet Use +  
Driver Age +  
Driver Gender/Sex +  
Driver License Type +

Search 🔍

# Signal 4 Crash Data Query Options

CRASH DATA PROCESS

1 DOWNLOAD DATA



SIGNAL FOUR ANALYTICS

EVENT ANALYSIS

Crash data available from **January 1, 2014 to May 14, 2024** (with some exceptions). Last data update completed May 16, 2024 at 1:33 AM.

USE OF DATA IN RESPONSE MAY BE RESTRICTED

[Disclaimer](#) [Data Dictionary](#)

Search Crashes

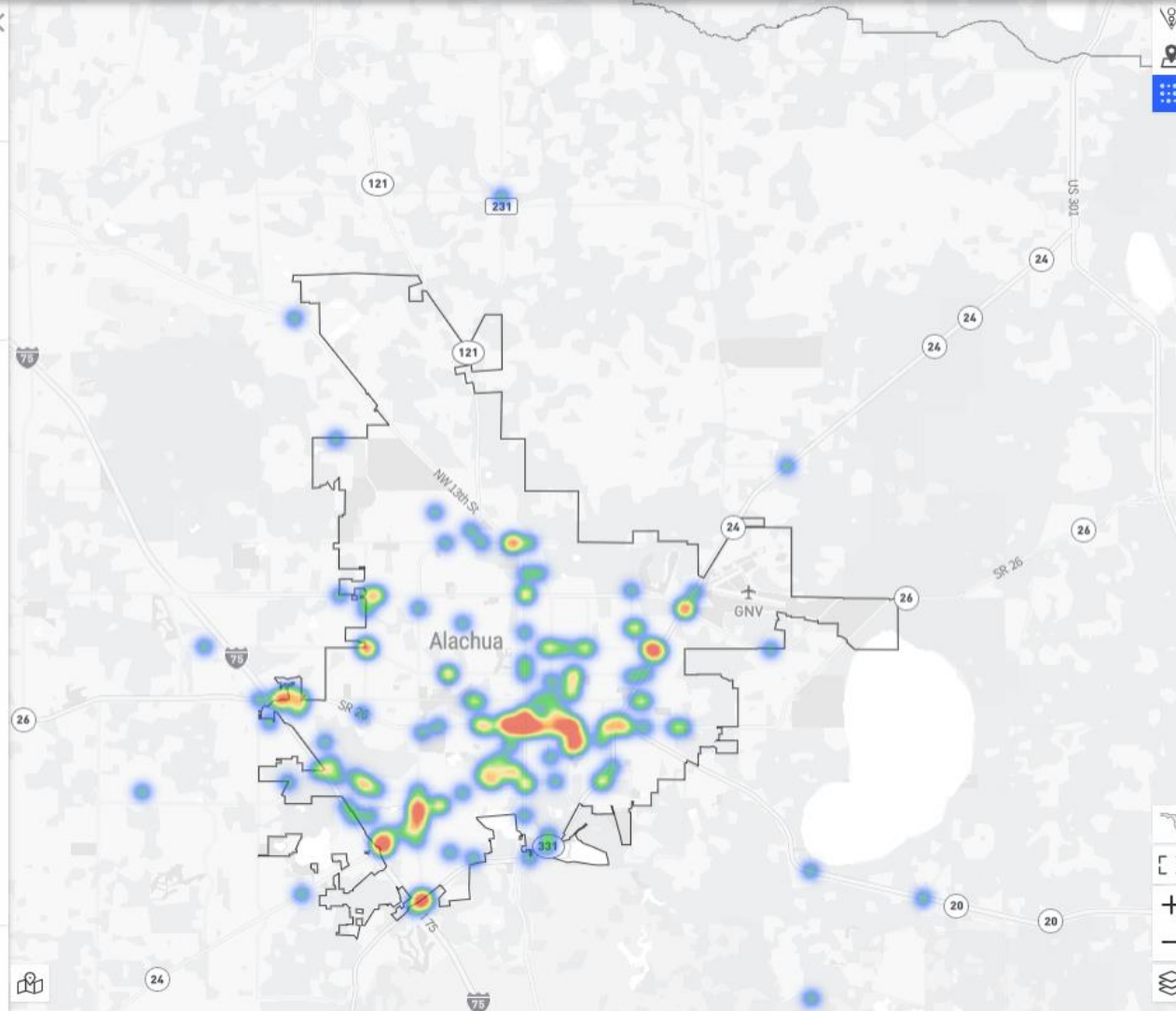


Crashes in Gainesville

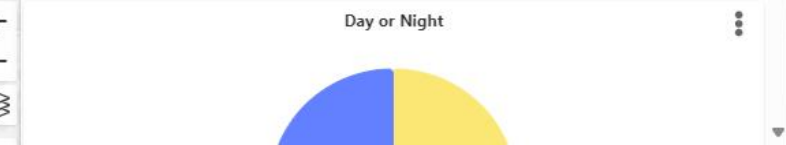
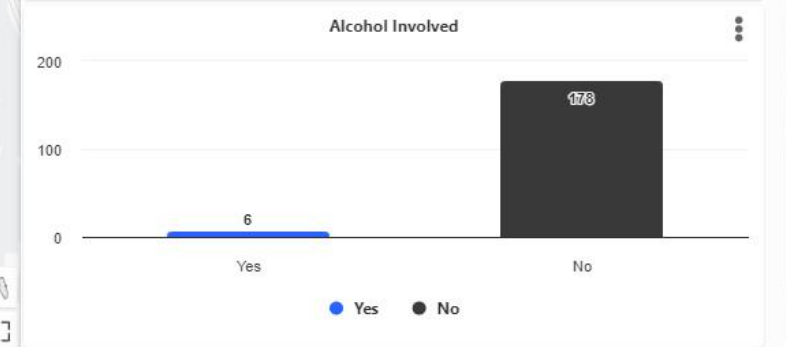
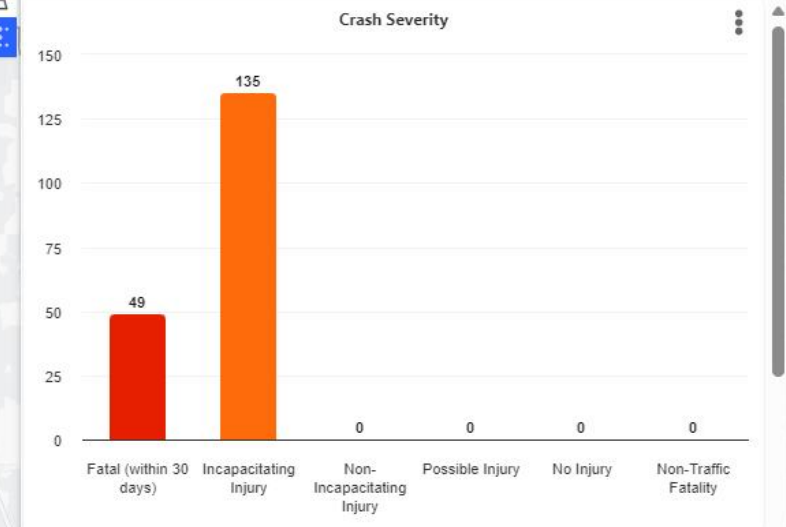
From 1/1/2019 - 5/31/2024

With Attributes

- Incapacitating Injury
- Fatal (within 30 days)
- Bicyclists
- Pedestrians



Charting



# Signal 4 Crash Data Output Options



1 DOWNLOAD DATA

**SIGNAL FOUR ANALYTICS**

Crash data available from **January 1, 2014** to **May 14, 2024** (with some exceptions)

**Search Crashes**

Crashes in Gainesville  
From 1/1/2019 - 5/14/2024  
With Attributes

- ✓ Incapacitating Injury
- ✓ Fatal (within 30 days)
- ✓ Bicyclists
- ✓ Pedestrians

### Crash Data Download

**Crash Tables (CSV)**

- Crash Event
- Driver
- Non-Motorist
- Passenger
- Vehicle
- Violation

**GIS Geolocation (ESRI Geodatabase)**

- Geolocation Only
- Geolocation & Crash Event

**FDOT Tables (CSV)**

- Injury Summary
- FDOT Roadway
- Crash & Roadway & Vehicle 1&2 & Driver 1&2
- Vehicle & Driver & Passenger
- FARS

**Ped/Bike Typing (CSV)**

- Pedestrian Typing
- Bicycle Typing

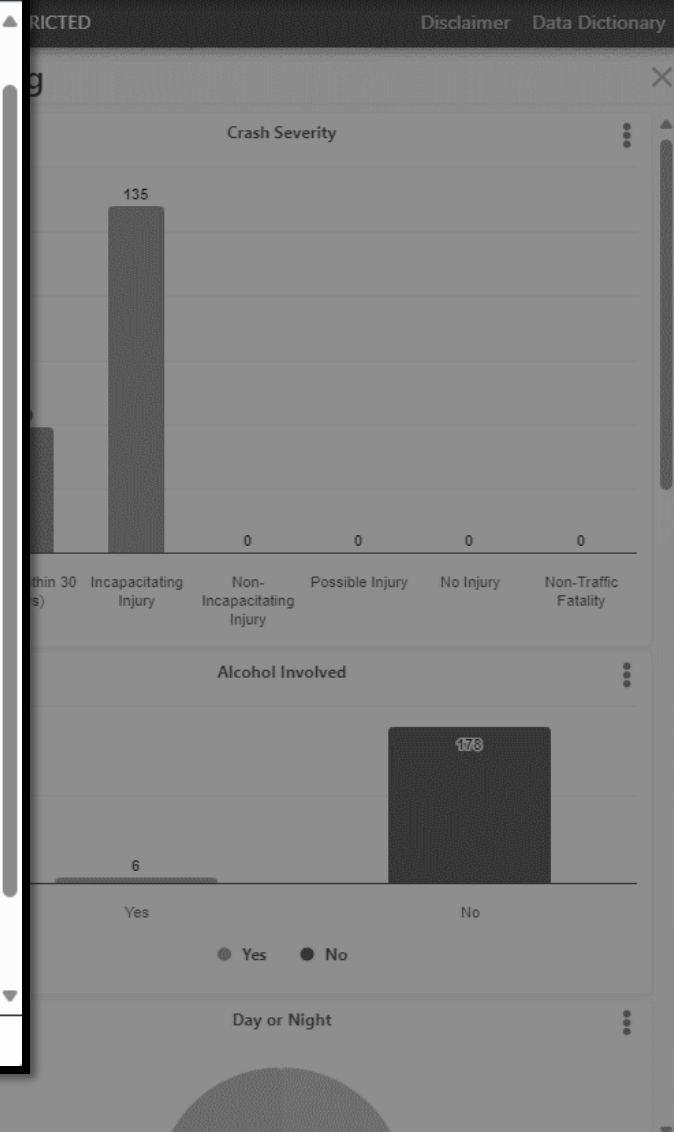
**Police Crash Reports (PDF)**

- Individual Crash Reports (exceeded 100 limit)

**Readme File (HTML)**

- Query parameters, disclaimer, data dictionary
- Add a note

Data Dictionary    Cancel    **OK**



# Signal 4 Crash Data Output Options



**SIGNAL FOUR ANALYTICS**

Crash data available from **January 1, 2014** to **May 14, 2024** (with some exceptions)

**Search Crashes**

Crashes in Gainesville  
From 1/1/2019 - 5/14/2024  
With Attributes

- Incapacitating Injury
- Fatal (within 30 days)
- Bicyclists
- Pedestrians

### Crash Data Download

**Crash Tables (CSV)**

- Crash Event ← **Raw Data Output**
- Driver
- Non-Motorist
- Passenger
- Vehicle
- Violation

**GIS Geolocation (ESRI Geodatabase)**

- Geolocation Only ← **GIS Shapefile**
- Geolocation & Crash Event

**FDOT Tables (CSV)**

- Injury Summary
- FDOT Roadway
- Crash & Roadway & Vehicle 1&2 & Driver 1&2 ← **More detail on roadway, vehicle and driver**
- Vehicle & Driver & Passenger
- FARS

**Ped/Bike Typing (CSV)**

- Pedestrian Typing ← **Pedestrian and Bicycle Crash typing**
- Bicycle Typing

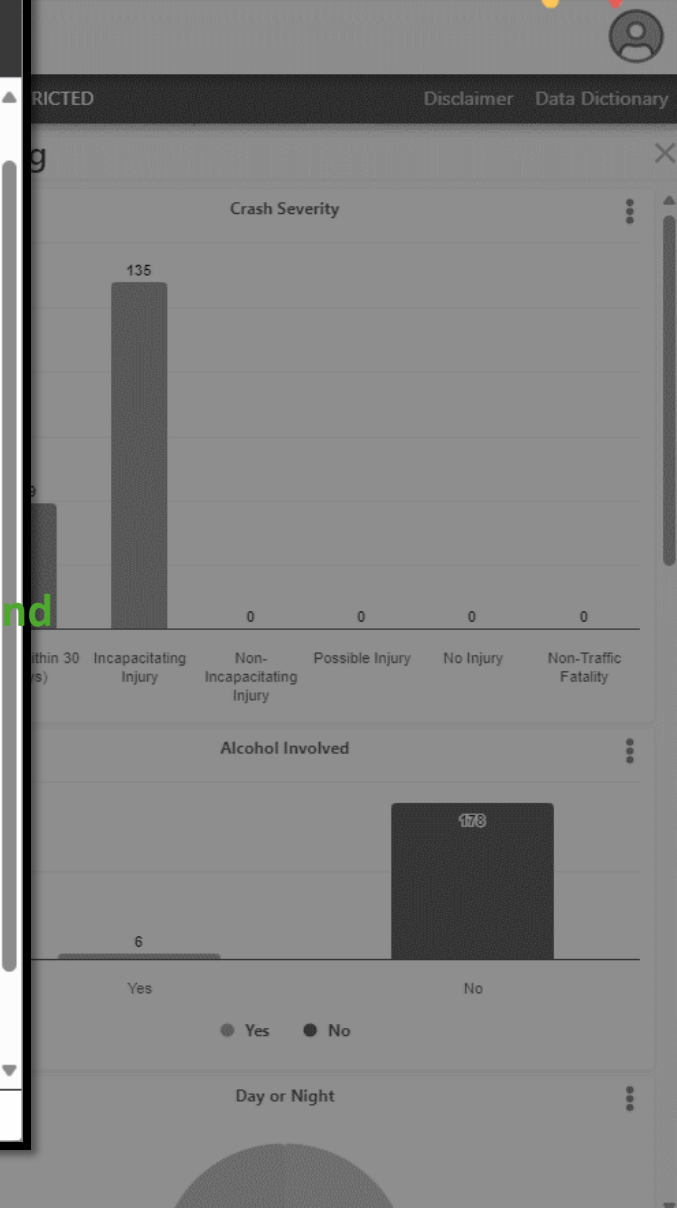
**Police Crash Reports (PDF)**

- Individual Crash Reports (exceeded 100 limit) ← **Crash Report**

**Readme File (HTML)**

- Query parameters, disclaimer, data dictionary
- Add a note

Data Dictionary    Cancel    **OK**



# Signal 4 Crash Data Download

1 DOWNLOAD DATA



Crash data download Job#99827 ready



s4-support@ufl.edu

To ○



**EXTERNAL SENDER:** Use caution with links and attachments.

The crash data you requested on 5/16/2024 3:54 PM from Signal Four Analytics (job# 99827) is now available for download. The compressed file size is 0.028 MB.

**This file will be available for download for 3 days until 5/19/2024 3:54 PM.** If you miss downloading the file by then, you will have to put in a new data download request in Signal Four Analytics.

[Click here to download the data](#)

Please contact us at [s4-support@ufl.edu](mailto:s4-support@ufl.edu) for any issues regarding this download and reference the download job# 99827.

Best regards,  
Signal Four Analytics Team  
GeoPlan Center  
University of Florida  
[s4-support@ufl.edu](mailto:s4-support@ufl.edu)

# Signal 4 Crash Data Download






1

••••  
DOWNLOAD DATA



Name

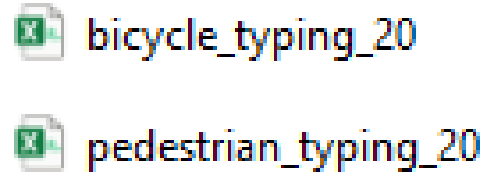
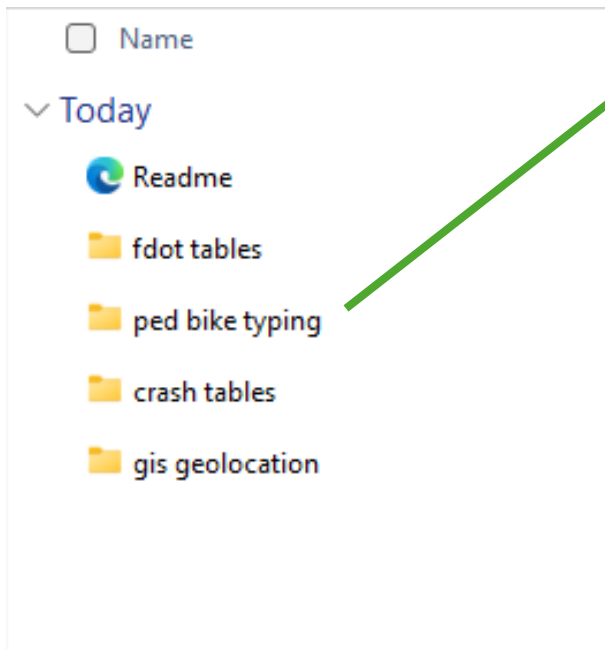
▼ Today

-  Readme
-  fdot tables
-  ped bike typing
-  crash tables
-  gis geolocation



# Signal 4 Crash Data Download

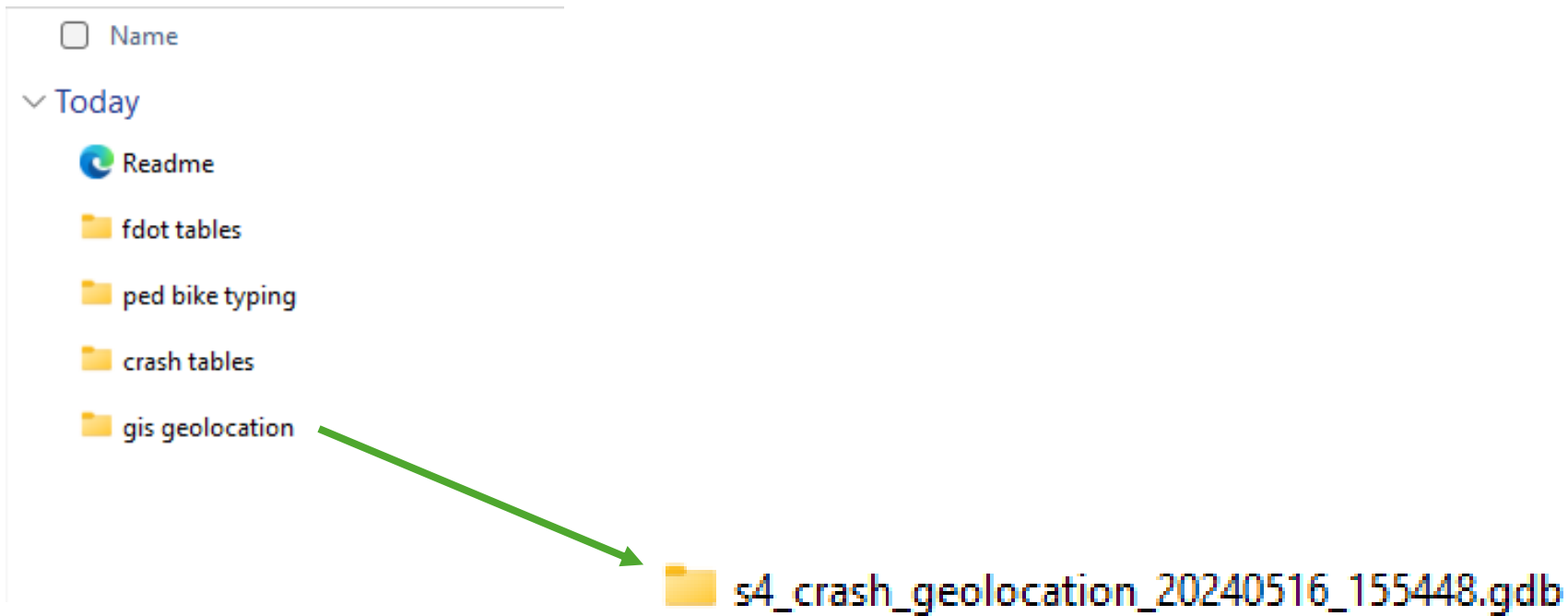
1 DOWNLOAD DATA



	A	B	C	
1	REPORT_NUMBER	S4_CRASH_GROUP_NUMBER	S4_CRASH_GROUP_DESCRIPTION	S4_CRA
2	88818158	200	Backing Vehicle	
3	88814242	990	Other/Unknown - Insufficient Details	
4	88813855	990	Other/Unknown - Insufficient Details	
5	88819056	990	Other/Unknown - Insufficient Details	
6	88818206	600	Pedestrian in Roadway - Circumstances Unknown	
7	88818227	740	Dash/Dart-Out	
8	88815936	740	Dash/Dart-Out	
9	88814689	740	Dash/Dart-Out	
10	88815065	740	Dash/Dart-Out	
11	88815478	740	Dash/Dart-Out	
12	88818231	740	Dash/Dart-Out	
13	88238518	740	Dash/Dart-Out	
14	88818049	790	Crossing Roadway - Vehicle Turning	
15	88818878	800	Off Roadway	
16	88813712	800	Off Roadway	
17	88817636	750	Crossing Roadway - Vehicle Not Turning	

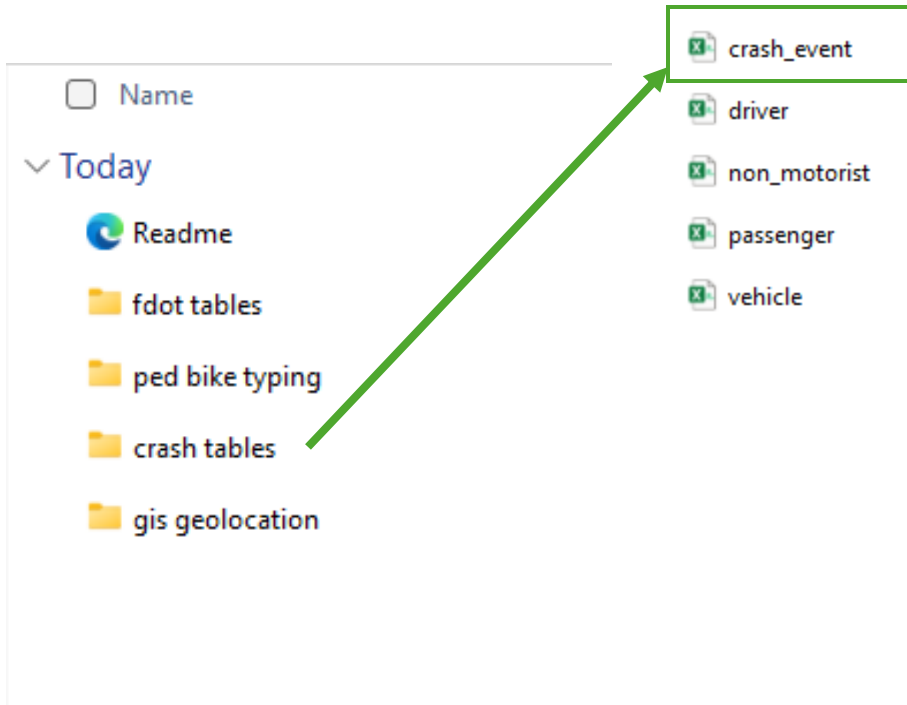
# Signal 4 Crash Data Download

1 DOWNLOAD DATA



# Signal 4 Crash Data Download

1 DOWNLOAD DATA



# Signal 4 Crash Data Download



AutoSave Off crash\_event - Read-Only

File Home Insert Draw Page Layout Formulas Data Review View Automate Help Acrobat

Clipboard Font Alignment Number Styles Cells Editing Sensitivity Add-ins Adobe Acrobat

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	REPORT_NUMBER	CRASH_YEAR	CRASH_DATE_AND_TIME	REPORT_DATE_AND_TIME	INVESTIGATING_AGENCY_REPORT_NUMBER	FORM_TYPE	TOTAL_NUMBER_OF_VEHICLES	TOTAL_NUMBER_OF_PERSONS	COUNTY_CODE	CITY_CODE	COUNTY_NAME	CITY_NAME	RURAL_OR_URBAN	NOTIFIED_TIMI
1	88817636	2019	8/23/2019 20:20	8/24/2019 0:00	219013953	L	1	2	11	34	Alachua	Gainesville	Urban	8/23/2019 20:
2	88818158	2019	9/23/2019 11:14	9/23/2019 0:00	219015778	L	1	2	11	34	Alachua	Gainesville	Urban	9/23/2019 11:
3	88054880	2019	4/29/2019 12:57	4/29/2019 13:33	FHPB19OFF010403	L	1	2	11	34	Alachua	Gainesville	Urban	4/29/2019 13:
4	88818049	2019	9/16/2019 20:00	12/7/2020 0:00	219015373	L	1	1	11	34	Alachua	Gainesville	Urban	9/16/2019 20:
5	88818227	2019	9/27/2019 15:47	10/11/2019 0:00	219016048	L	1	2	11	34	Alachua	Gainesville	Urban	9/27/2019 15:
6	88819307	2019	11/26/2019 14:47	11/26/2019 0:00	219019694	L	1	2	11	34	Alachua	Gainesville	Urban	11/26/2019 14:
7	88238518	2019	12/23/2019 18:30	7/22/2020 14:18	FHPB19OFF031746	L	1	6	11	34	Alachua	Gainesville	Rural	12/23/2019 18:
8	88813762	2019	1/3/2019 18:35	1/3/2019 0:00	219000170	L	1	2	11	34	Alachua	Gainesville	Urban	1/3/2019 18:
9	88815763	2019	4/25/2019 13:32	4/29/2019 0:00	219006798	L	2	4	11	34	Alachua	Gainesville	Urban	4/25/2019 13:
10	88818687	2019	10/21/2019 18:57	4/30/2020 0:00	219017557	L	1	2	11	34	Alachua	Gainesville	Urban	10/21/2019 18:
11	88817700	2019	8/27/2019 16:50	8/27/2019 0:00	219014202	L	1	2	11	34	Alachua	Gainesville	Urban	8/27/2019 16:
12	88813855	2019	1/12/2019 21:44	1/17/2019 0:00	219000739	L	1	2	11	34	Alachua	Gainesville	Urban	1/12/2019 21:
13	88813965	2019	1/18/2019 19:47	2/4/2019 0:00	219001074	L	1	3	11	34	Alachua	Gainesville	Urban	1/18/2019 19:
14	88816090	2019	5/20/2019 21:18	5/21/2019 0:00	219008321	L	1	2	11	34	Alachua	Gainesville	Urban	5/20/2019 21:
15	88815936	2019	5/9/2019 6:31	6/20/2019 0:00	219007660	L	1	2	11	34	Alachua	Gainesville	Urban	5/9/2019 6:
16	88815913	2019	5/7/2019 17:52	5/7/2019 0:00	219007564	L	1	2	11	34	Alachua	Gainesville	Urban	5/7/2019 17:
17	88816869	2019	7/8/2019 16:00	7/12/2019 0:00	219011161	L	1	2	11	34	Alachua	Gainesville	Urban	7/8/2019 16:
18	88814242	2019	2/3/2019 16:17	2/3/2019 0:00	219001951	L	1	2	11	34	Alachua	Gainesville	Urban	2/3/2019 16:
19	83826523	2019	12/2/2019 22:15	12/2/2019 22:41	FHPB19OFF029819	L	1	2	11	34	Alachua	Gainesville	Rural	12/2/2019 22:
20	88816671	2019	6/28/2019 8:30	6/28/2019 0:00	219010577	L	1	2	11	34	Alachua	Gainesville	Urban	6/28/2019 8:
21	88814689	2019	2/28/2019 2:57	2/28/2019 0:00	219003503	L	1	2	11	34	Alachua	Gainesville	Urban	2/28/2019 2:

# Signal 4 Crash Data Cleaning



Microsoft Excel interface showing the ribbon with tabs: File, Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, Automate, Help, Acrobat. The Home tab is active, showing options for Clipboard, Font, Alignment, Number, Styles, Cells, Editing, Sensitivity, Add-ins, and Adobe Acrobat.

**Remove Forest Road, Parking Lot, & Private Roadway**      **Recode "Blank" or "Non-Traffic Fatality" to "No Injury"**

X	Y	Z	AB	BB	BC	BD	BE	BF	BG	BH	
COM_INTERSECTIO	DIRECTION_FROM_INTERSECTIO	FROM_INTERSECTION_OF	MILEPOST_NUM	ROAD_SYSTEM_IDENTIF	INVESTIGATING_AGENCY_TYF	LOAD_DATE	CODEAB	S4_CRASH_TY	S4_CRASH_TYPE_SIMPLIFIE	S4_CRASH_SEV	S4_CRASH_SEVERITY_DET
144	East	CR 222 (NE 39TH AVE)		Police Department (PD)	8/26/2019 14:02	Y	Pedestrian	Pedestrian	Fatal		
238	East	INTERSTATE 75		Police Department (PD)	9/24/2019 14:28	Y	Pedestrian	Pedestrian	Series		
0		SW WILLISTON RD		Florida Highway Patrol (FHP)	4/30/2019 14:32	Y	Pedestrian	Pedestrian	Series		
431	West	NW 62ND ST		Police Department (PD)	9/18/2019 14:50	Y	Pedestrian	Pedestrian	Series		
171	East			Police Department (PD)	10/12/2019 14:18	Y	Pedestrian	Pedestrian	Series		
0		TURKEY CREEK BLVD		Police Department (PD)	11/27/2019 14:32	Y	Bicycle	Bicycle	Series		
0		SR 222 (NW 39TH AVE)		Florida Highway Patrol (FHP)	7/23/2020 14:06	Y	Pedestrian	Pedestrian	Fatal		
207502505	East	CR 2053 (NW 43RD ST)		Police Department (PD)	1/8/2019 14:16	Y	Bicycle	Bicycle	Series		
181	North	CR 120 (NE 16TH AVE)		Police Department (PD)	5/1/2019 14:26	Y	Pedestrian	Pedestrian	Fatal		
0		NW 40TH ST		Police Department (PD)	5/5/2020 15:47	Y	Single Vehicle	Other	Fatal		
453	South	SW 21ST AVE		Police Department (PD)	8/28/2019 14:35	Y	Pedestrian	Pedestrian	Series		
4	South	SR 222 (NE 39TH AVE)		Police Department (PD)	1/18/2019 14:36	Y	Pedestrian	Pedestrian	Fatal		
0		SR 222 (NE 39TH AVE)		Police Department (PD)	2/7/2019 14:31	Y	Pedestrian	Pedestrian	Fatal		
0		SW 40TH BLVD		Police Department (PD)	5/23/2019 14:26	Y	Pedestrian	Pedestrian	Fatal		
0		WINDMEADOWS BLVD		Police Department (PD)	6/21/2019 14:32	Y	Pedestrian	Pedestrian	Series		
199	South	SW 62ND BLVD		Police Department (PD)	5/9/2019 14:33	Y	Bicycle	Bicycle	Series		
0		NE 18TH ST		Police Department (PD)	7/13/2019 14:20	Y	Bicycle	Bicycle	Series		
312	West	SE CR 234		Police Department (PD)	2/5/2019 14:30	Y	Pedestrian	Pedestrian	Series		
207	South	SW 20TH AVE		Florida Highway Patrol (FHP)	12/7/2019 14:09	Y	Pedestrian	Pedestrian	Series		
1	East	NEWELL DR		Police Department (PD)	7/6/2019 14:12	Y	Bicycle	Bicycle	Series		
8	East	SR20 NW 6TH ST		Police Department (PD)	3/3/2019 14:03	Y	Pedestrian	Pedestrian	Series		
62	West	SW 40TH TER		Police Department (PD)	3/21/2019 14:32	Y	Pedestrian	Pedestrian	Series		
				Police Department (PD)	11/14/2019 14:58	Y	Pedestrian	Pedestrian	Series		
				Police Department (PD)	3/26/2020 14:04	Y	Pedestrian	Pedestrian	Fatality		Fatal (within 30 days)

Filter menu for ROAD\_SYSTEM\_IDENTIF column:

- Sort A to Z
- Sort Z to A
- Sort by Color
- Sheet View
- Clear Filter From "ROAD\_SYSTEM\_IDENTIF..."
- Filter by Color
- Text Filters
- Search
- (Select All)
- County
- Interstate
- Local
- Other
- Parking Lot
- Private Roadway
- State
- U.S.

OK Cancel

Filter menu for S4\_CRASH\_SEVERITY\_DET column:

- Sort A to Z
- Sort Z to A
- Sort by Color
- Sheet View
- Clear Filter From "S4\_CRASH\_SEVERITY..."
- Filter by Color
- Text Filters
- Search
- (Select All)
- Fatal (within 30 days)
- Incapacitating Injury

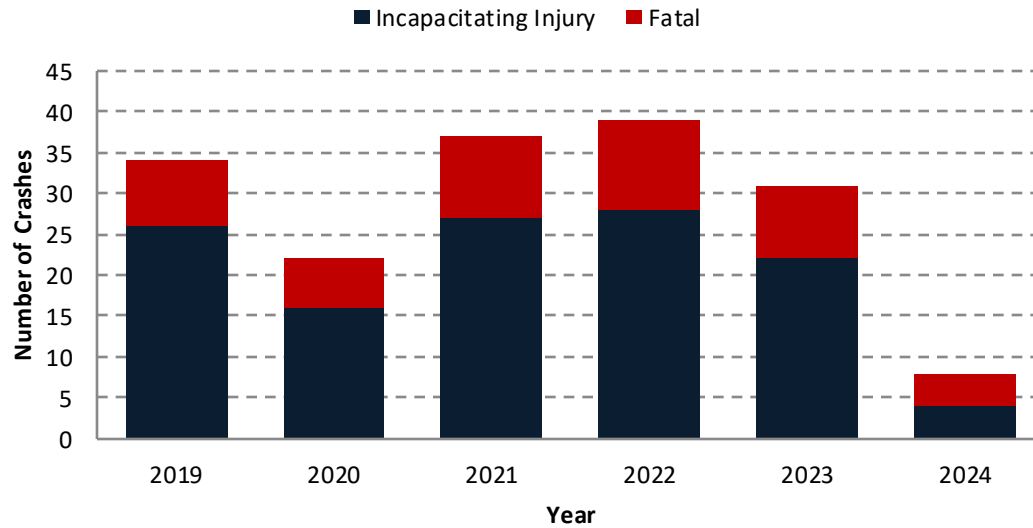
Good to go!

OK Cancel

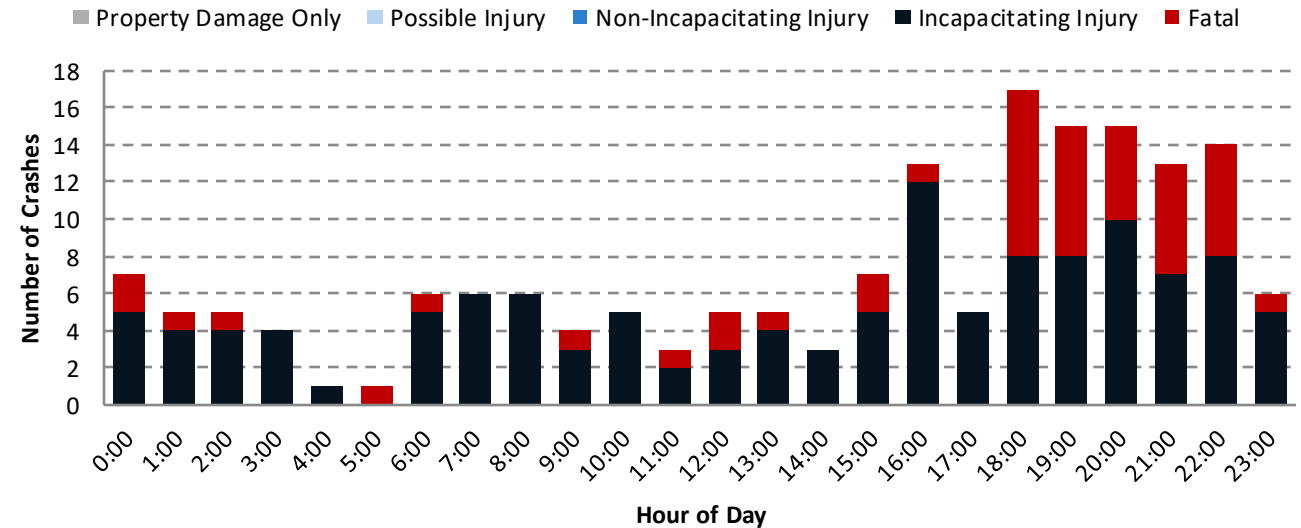
# Signal 4 Crash Data Summary



### Crashes by Year and Severity



### Crashes by Time of Day and Severity



# Resources and Links

**Crash Data Guidance:** a short guide on how to pull, process, and analyze crash data

- [Crash Data Systems and Mapping \(fdot.gov\)](https://www.fdot.gov/crash-data-systems-and-mapping)

**Signal4 Analytics:** FDOT's crash data repository

- [Florida Traffic Safety Dashboard - S4Analytics \(signal4analytics.com\)](https://signal4analytics.com)

**Root Cause Analysis:** a data-driven methodology to identify key risk factors prevalent in Florida's top 3 SHSP emphasis areas to inform strategic safety investments toward Florida's target of ZERO roadway fatalities and serious injuries.

- [Safety Engineering \(fdot.gov\)](https://www.fdot.gov/safety-engineering)
- [Lane Departure Emphasis Area Fact Sheet](#)
- [Ped/Bike Emphasis Area Fact Sheet](#)
- [Intersection Emphasis Area Fact Sheet](#)

**FDOT Safety Analysis Methods & Resources:** a brief overview of safety analysis methods and a repository of FDOT's HSM Tools

- [Safety Analysis Methods \(fdot.gov\)](https://www.fdot.gov/safety-analysis-methods)

**Training Resources:**

- Guidance for MPO Partners: [The NEW Signal 4 Analytics for Our MPO Partners - Florida LTAP Center](#)
- Crash Data Guidance: [Safety Crash Data Guidance - Step 1: Signal Four Analytics \(S4\) Crash Data Download – YouTube](#)
- FDOT Safety Engineering: [Training \(fdot.gov\)](https://www.fdot.gov/training)
- Signal4 Analytics: [Signal4 Analytics Training Page](#)

**FDOT Safety Data Integration Space:** these public apps provide simple access to information and tools for you to collect data and help your users understand your data.

- [SDIS Public \(fdot.gov\)](https://www.fdot.gov/sdis-public)

# Resources and Links

**Unified Basemap Repository:** a site that offers mapped datasets for download

- <https://ubr.fdot.gov/basemaps>

**Florida's Strategic Highway Safety Plan 2021-2024:**

- <https://www.fdot.gov/Safety/shsp/shsp.shtm>



# Safety Message



**BEHIND THE  
WHEEL, THE FOCUS MUST  
BE ON ONE AND  
ONLY ONE TASK:**

**SAFE  
DRIVING**

**LET'S GET EVERYONE HOME.**

TARGET  
**ZERO**  
FATALITIES & SERIOUS INJURIES

**TRANSPORTATION  
SYMPOSIUM**

# Contact Us



- Crash Records

Benjamin Jacobs [benjamin.jacobs@dot.state.fl.us](mailto:benjamin.jacobs@dot.state.fl.us)

- Safety Data

Rupert Giroux [rupert.giroux@dot.state.fl.us](mailto:rupert.giroux@dot.state.fl.us)

- State Safety Engineer

Brenda Young [brenda.young@dot.state.fl.us](mailto:brenda.young@dot.state.fl.us)



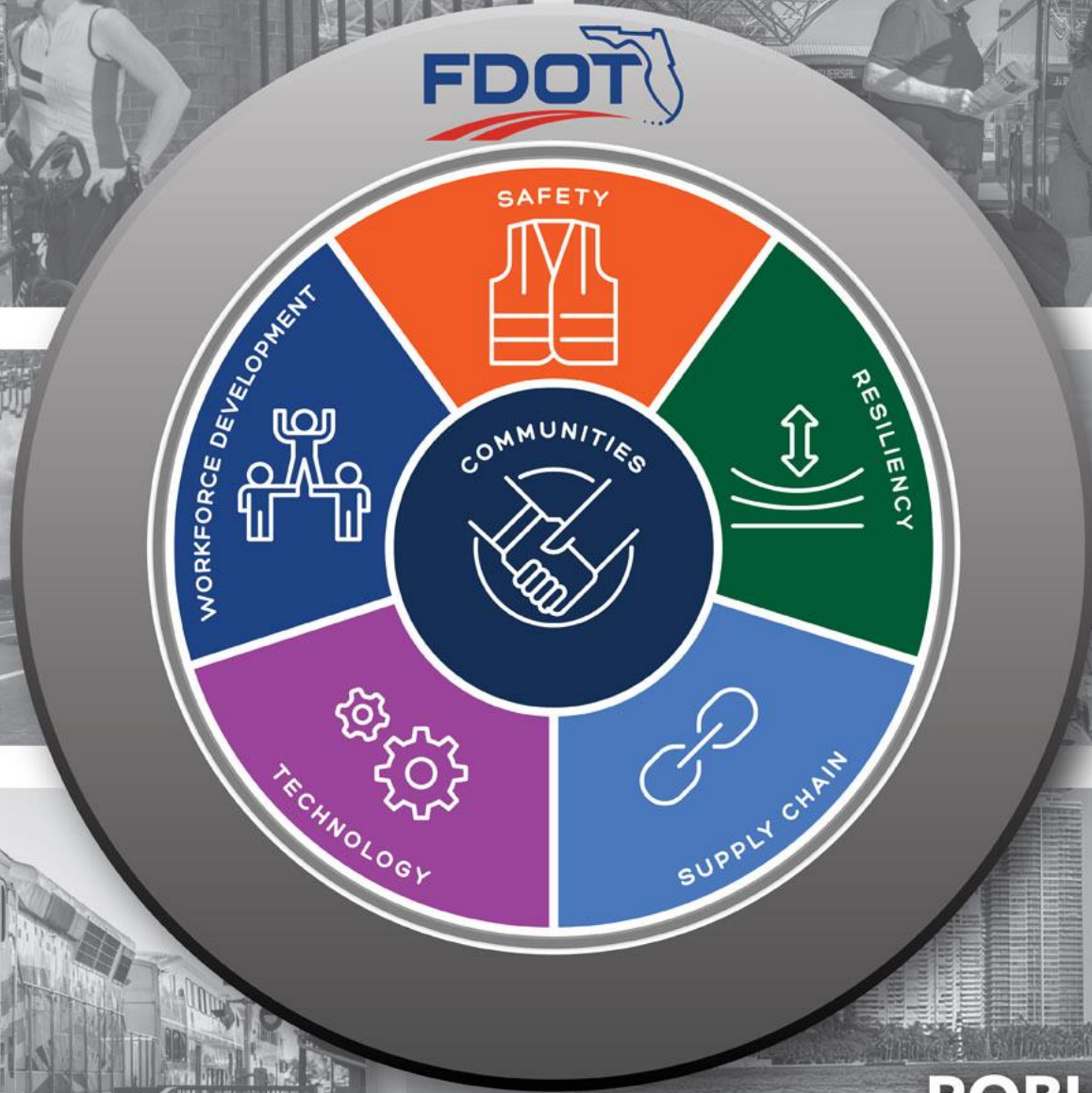
**SAFETY**



**COMMUNITIES**



**WORKFORCE  
DEVELOPMENT**



**RESILIENCY**



**TECHNOLOGY**



**ROBUST SUPPLY CHAIN**