

# GIS Crash Data

---

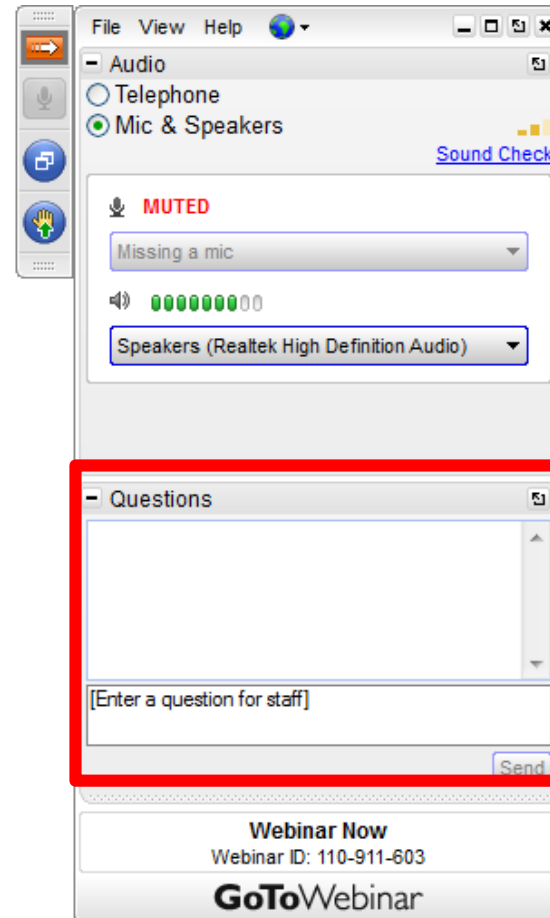
FLORIDA DEPARTMENT OF TRANSPORTATION – CRASH DATA ACADEMY

SHAUN DAVIS, FDOT – STATE SAFETY OFFICE

MAY 19, 2016

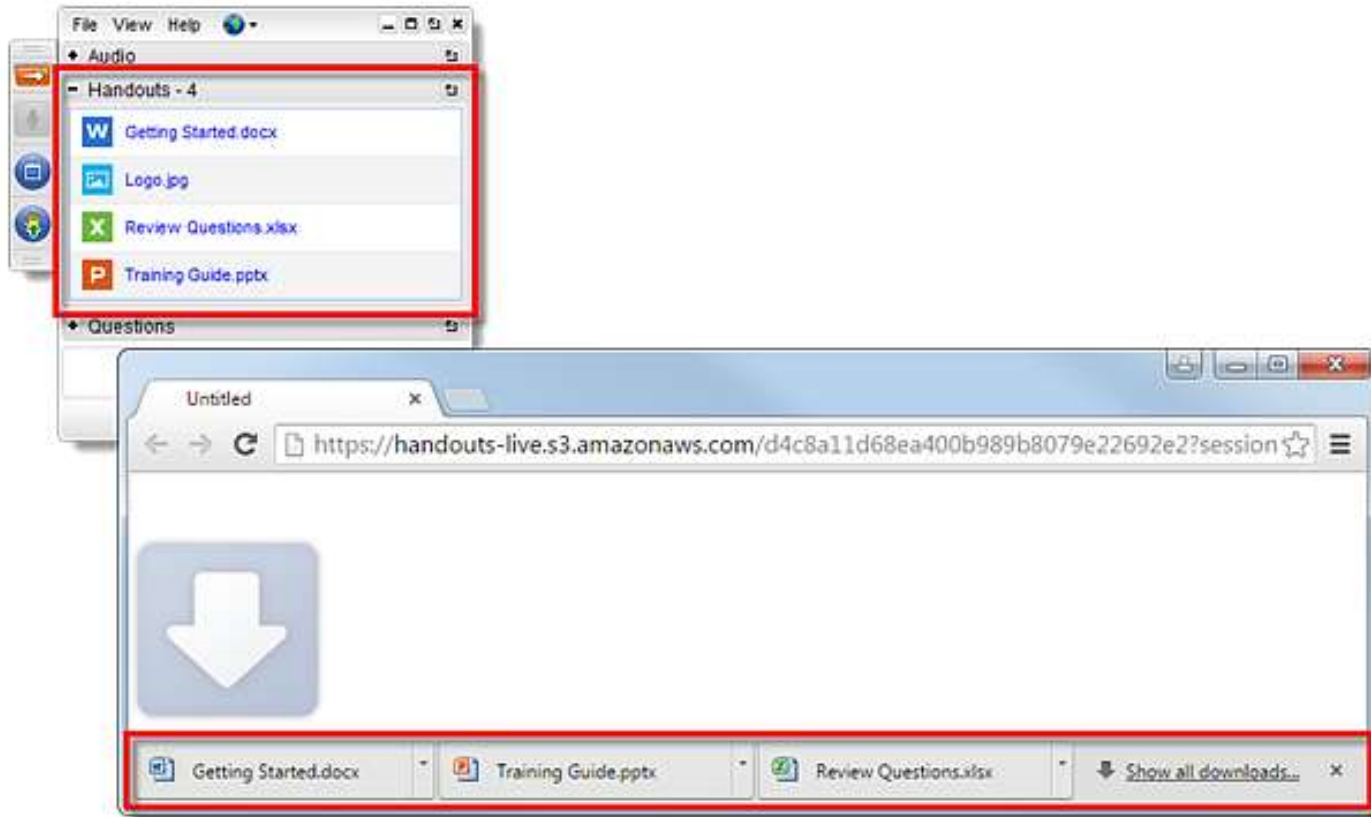
A solid orange horizontal bar at the bottom of the slide.

# How to ask a question:



# How to download handouts:

---



# Agenda

---

Technical Overview (10 min)

Why use GIS to analyze crashes?

Location Data Sources

Data Structure

Data Access

Data Analysis

# Pardon the Nerding

---









# Decoding the File Names

---

On / Off – Crash Level State / Non-State

Von / Voff – Vehicle Level State / Non-State

Oon / Ooff – Person Level State / Non-State

 Off2014.shp  
 On2014.shp  
 Ooff2014.shp  
 Oon2014.shp  
 Voff2014.shp  
 Von2014.shp

# Location Data Sources

---

Location information from crash report

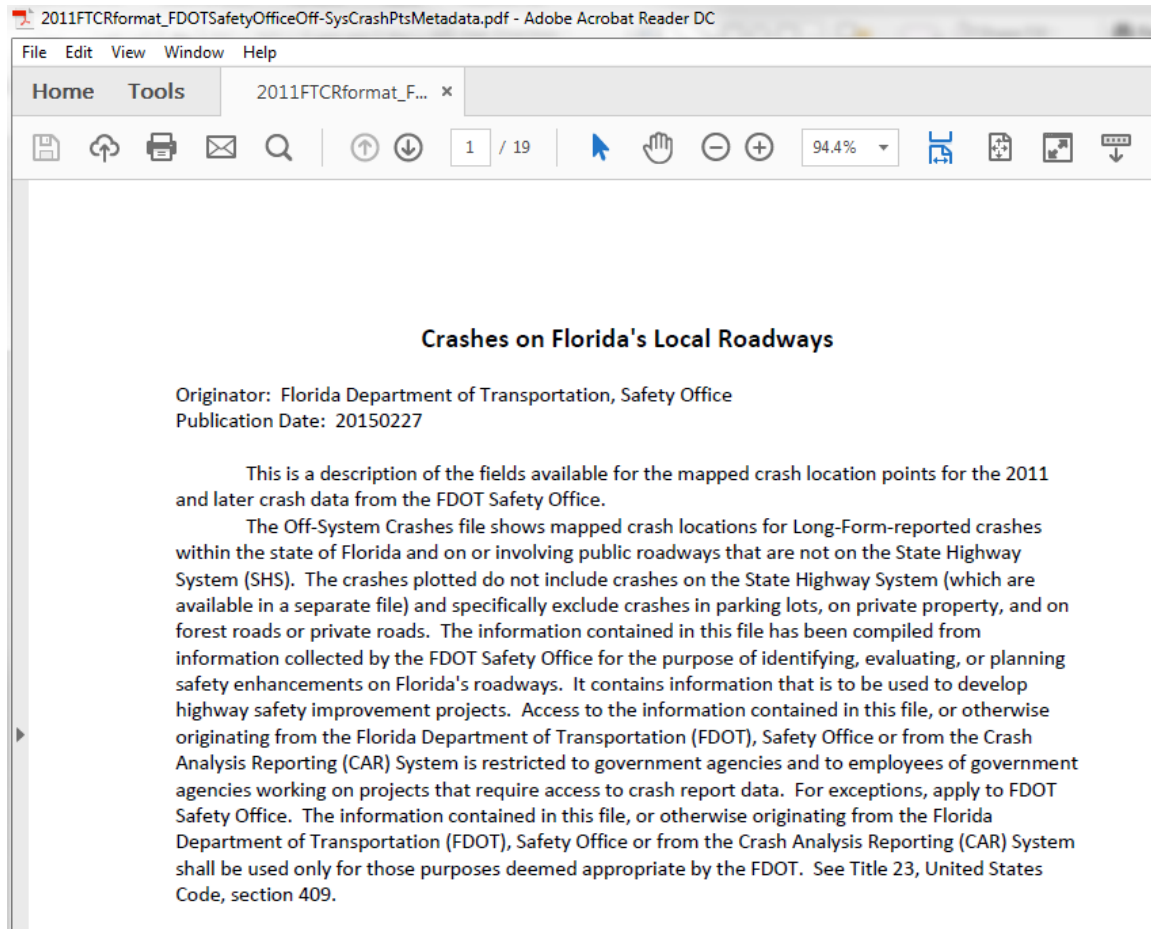
Interpreted by Analyst

- Accuracy

Transformed into Shapefiles

- State Roads
  - Linear Referencing
  - FDOT Transportation Statistics Basemap
- Local Roads
  - NavTeq / HERE Map
  - Crash placed at Latitude / Longitude

# Accessing Metadata - PDFs



- [2011FTCRformat\\_FDOTSafetyOfficeOff-SysCrashPtsMetadata.pdf](#)
- [2011FTCRformat\\_FDOTSafetyOfficeOff-SysOcpInfoPtsMetadata.pdf](#)
- [2011FTCRformat\\_FDOTSafetyOfficeOff-SysVehInfoPtsMetadata.pdf](#)
- [2011FTCRformat\\_FDOTSafetyOfficeOn-SysCrashPtsMetadata.pdf](#)
- [2011FTCRformat\\_FDOTSafetyOfficeOn-SysOcpInfoPtsMetadata.pdf](#)
- [2011FTCRformat\\_FDOTSafetyOfficeOn-SysVehInfoPtsMetadata.pdf](#)

Available in the handout pod.



# Accessing Metadata - ArcMap

The screenshot displays the ArcMap interface with the metadata window open for a shapefile named 'Off2014'. The metadata window is titled 'Off2014 Shapefile' and contains the following information:

- Thumbnail:** A box indicating 'Thumbnail Not Available'.
- Tags:** crashes, crash location, SHS, Florida State Highway System, traffic crashes, crash incidents, Florida Traffic Crash Report Long Form crashes, Long Form crashes, Transportation, FTCT Long Form, FDOT
- Summary:** The information contained in this file has been compiled from information collected by the FDOT State Safety Office for the purpose of identifying, evaluating, or planning safety enhancements on Florida's public roadways. It contains information that is to be used to develop highway safety improvement projects.
- Description:** The Off-System Crashes file shows crash locations for Long-Form-reported crashes within the state of Florida, at a scale of 1:24,000 with a projection system of Universal Transverse Mercator (UTM) 17 North zone and a horizontal datum of North American 1983 (NAD 1983). The map units are in meters.
- Credits:** Florida Department of Transportation - State Safety Office
- Use limitations:**

The interface also shows a context menu for the 'Off2014' layer, with the 'Data' option selected. A sub-menu is open for 'Data', showing options like 'Repair Data Source...', 'Export Data...', 'Export To CAD...', 'Make Permanent', 'View Item Description...', and 'Review/Rematch Address...'. The 'View Item Description...' option is highlighted, and a tooltip is visible over it, stating: 'View Item Description: View the item description of the selected layer or table's data source.'

# Accessing Metadata - ArcCatalog

The screenshot displays the ArcCatalog interface. On the left, the 'Catalog Tree' shows a hierarchical structure of folders and files. The 'Published Files' folder is expanded to show 'All Roads Files', which includes 'District shapefiles', 'Map Support', 'Special Categories', and 'Statewide Crash Points'. The 'Statewide Crash Points' folder is further expanded to show years from 2003 to 2014, and sub-folders like 'Crashes\_Without\_Coordinates' and 'SHSP'. The 'Off2014.shp' file is selected and highlighted.

The main window shows the metadata for the selected file, 'Off2014 Shapefile'. The 'Contents' tab is active, displaying a toolbar with 'Print', 'Edit', 'Upgrade', and 'Import' options. Below the toolbar, the title 'Off2014 Shapefile' is displayed in blue. A placeholder box indicates that the thumbnail is not available. Below this, the 'Tags' section lists various keywords: 'crashes, crash location, SHS, Florida State Highway System, traffic crashes, crash incidents, Florida Traffic Crash Report Long Form crashes, Long Form crashes, Transportation, FTICR Long Form, FDOT'. The 'Summary' section provides a brief overview of the data source and purpose. The 'Description' section details the map's scale, projection, and datum.

**Off2014 Shapefile**

Thumbnail Not Available

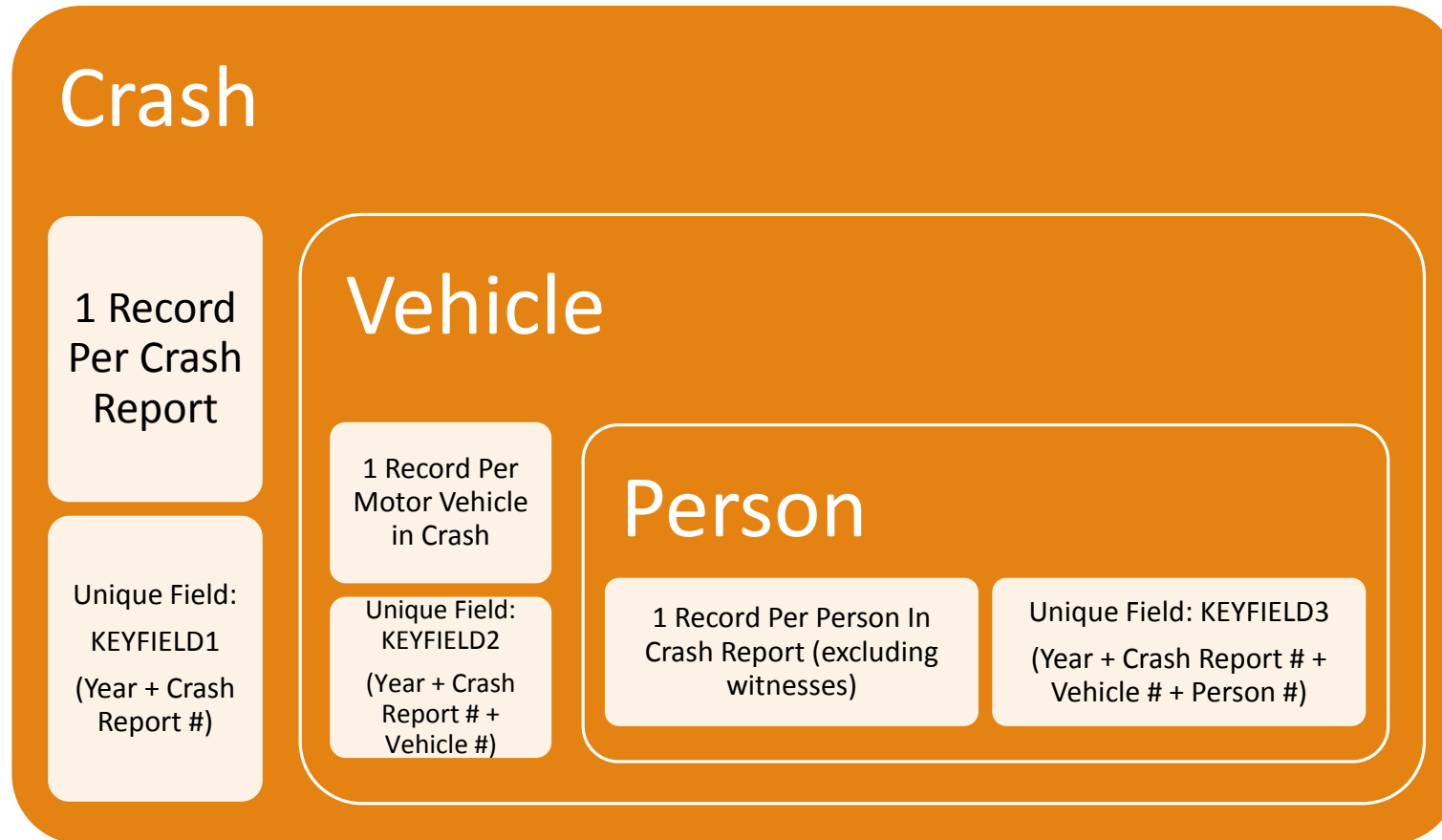
**Tags**  
crashes, crash location, SHS, Florida State Highway System, traffic crashes, crash incidents, Florida Traffic Crash Report Long Form crashes, Long Form crashes, Transportation, FTICR Long Form, FDOT

**Summary**  
The information contained in this file has been compiled from information collected by the FDOT State Safety Office for the purpose of identifying, evaluating, or planning safety enhancements on Florida's public roadways. It contains information that is to be used to develop highway safety improvement projects.

**Description**  
The Off-System Crashes file shows crash locations for Long-Form-reported crashes within the state of Florida, at a scale of 1:24,000 with a projection system of Universal Transverse Mercator (UTM) 17 North zone and a horizontal datum of North American 1983 (NAD 1983). The map units are in meters.

# Data Relationships

---



# Crash Data Collected

---

## Crash

- Time / Date
- Weather
- Location
- Roadway Information
- Causes / Event
- Summaries of Vehicle / Person
- Flags for SHSP + Vehicle / Person

## Vehicle

- Type
- Traffic Control Type
- Events

## Person

- Person Type
- Identifying Information
- Drugs / Alcohol
- Non Motorists
- Safety Equipment
- Citations

# ArcGIS Tools

---

Buffer

Point Density

Kernel Density

Overlay Tools (Spatial Join, Identity, Intersect)

Spatial Statistics

Linear Referencing Tools

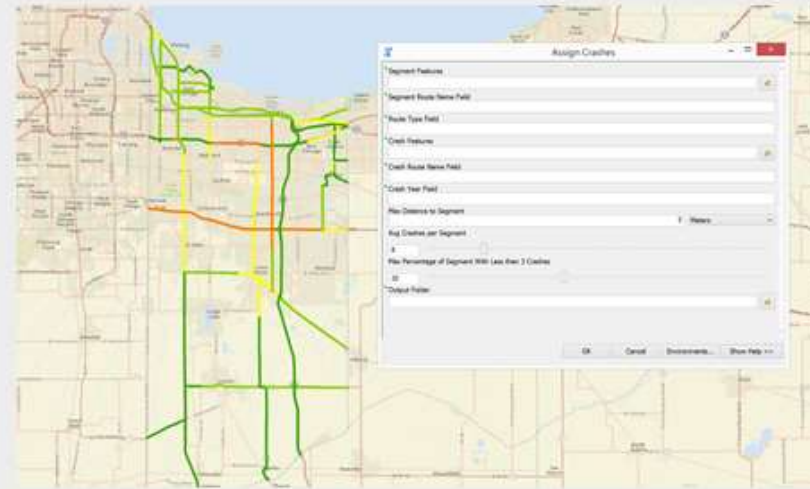
- Data has measures (Point M)

# ESRI Crash Analysis Tools

## Overview

Crash Analysis is a solution that helps state transportation departments standardize their road segment datasets and assign roadway crash locations to specific roadway segments. Risk maps created from crash analysis results can help inform decisions regarding safety improvement priorities or crash mitigation measures.

Crash Analysis includes three tools that help prepare your dataset with the necessary attributes, merge road segments together based on certain parameters, assign crashes to individual road segments, and create four standard crash risk maps.



[REQUIREMENTS](#)

[WHAT YOU GET](#)

[WHAT'S NEW](#)

[DOWNLOAD](#)

Link to this tool is in the handout pod.

# Using .dbf tables

---

## Programs

- Excel
- SAS (Statistical Analysis System)
- R
- ArcGIS
  - Export to Excel Tool

A television test pattern background with the text "AND NOW BACK TO OUR REGULARLY SCHEDULED PROGRAMMING" overlaid. The test pattern consists of a grid of colored squares: a top row of grey, yellow, cyan, green, magenta, red, and blue; a middle row of blue, black, cyan, black, black, black, and grey; and a bottom row of dark blue, white, purple, black, black, black, and black. The text is in a bold, white, sans-serif font with a black outline, centered on the screen.

AND NOW BACK TO  
OUR REGULARLY  
SCHEDULED  
PROGRAMMING

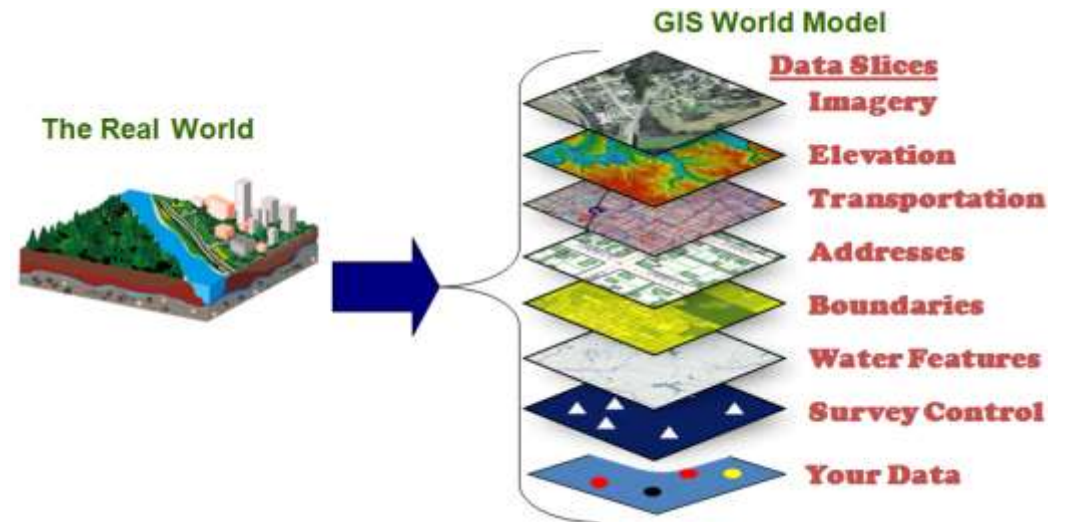


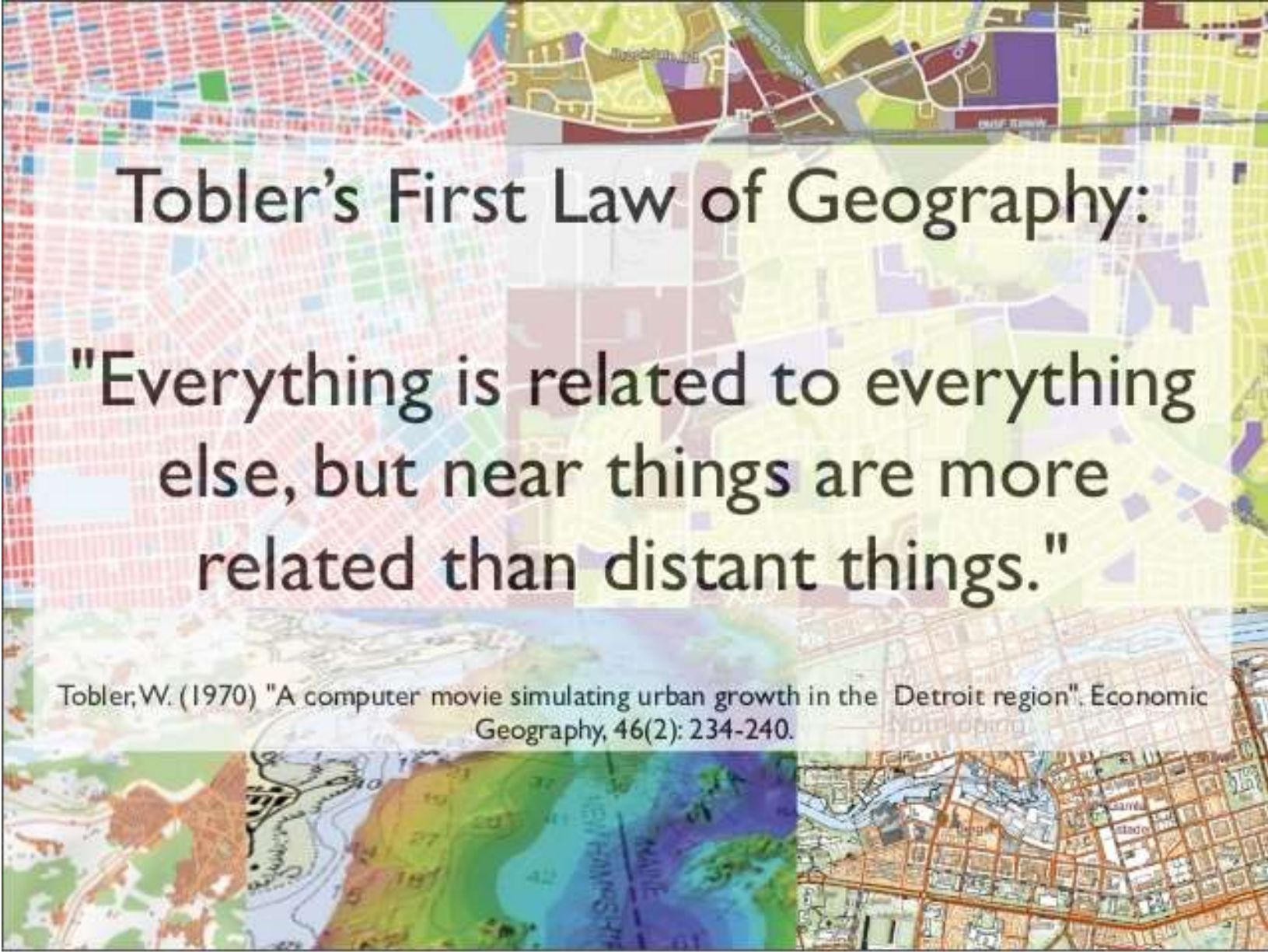
# What is a GIS?

---

A **geographic information system** or **geographical information system (GIS)** is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

[https://en.wikipedia.org/wiki/Geographic\\_information\\_system](https://en.wikipedia.org/wiki/Geographic_information_system)



The background of the slide is a collage of various maps. At the top, there's a colorful map with red, yellow, and purple areas. Below that, a semi-transparent white box contains the title and quote. Underneath the box, there's a smaller map showing a river and surrounding land. At the bottom, there's a detailed street map of a city grid.

## Tobler's First Law of Geography:

"Everything is related to everything else, but near things are more related than distant things."

Tobler, W. (1970) "A computer movie simulating urban growth in the Detroit region". *Economic Geography*, 46(2): 234-240.

# Why use GIS to analyze crashes?

## Limitations of an Linear Referencing System

- Roadway ID @ Mile Point

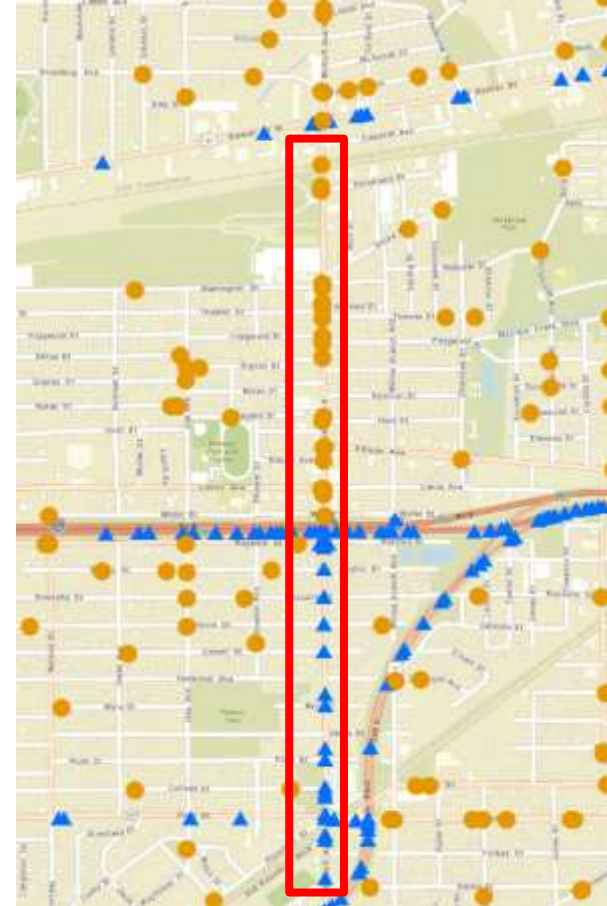
## Analyze State + Non – State Crashes Spatially

## Include additional data

- Census
- Economic
- Land Use

### Legend

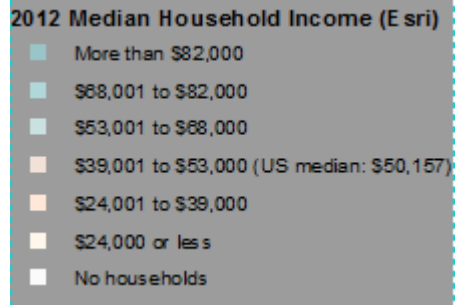
- Non-State Road Crashes
- ▲ State Road Crashes





# Why use GIS to analyze crashes?

## Pedestrian Crashes and Median Household Income



# Location Data Sources

---

Location information from crash report

Interpreted by Analyst

- Accuracy

Transformed into Shapefiles

- State Roads
  - Linear Referencing
  - FDOT Transportation Statistics Basemap
- Local Roads
  - NavTeq / HERE Map
  - Crash placed at Latitude and Longitude

# Crash Report Location Information

Date of Crash <b>07/Sep/2014 06:09 AM</b>	Time of Crash <b>07/Sep/2014 06:09 AM</b>	Date of Report <b>09/Oct/2014 04:39 PM</b>	Invest. Agency Report Number <b>FHPC14OFF081862</b>	HSMV Crash Report Number <b>84494570</b>
--	--	---	--	---

## CRASH IDENTIFIERS

County Code <b>03</b>	City Code <b>50</b>	County of Crash <b>HILLSBOROUGH</b>	Place or City of Crash <b>TAMPA</b>	Within City Limits <b>No</b>	Time Reported <b>07/Sep/2014 06:09 AM</b>	Time Dispatched <b>07/Sep/2014 06:09 AM</b>
Time on Scene <b>07/Sep/2014 06:09 AM</b>	Time Cleared Scene <b>07/Sep/2014 11:30 AM</b>	Completed <b>Yes</b>	Reason (if Investigation NOT Completed)			Notified By <b>Law Enforcement</b>

## ROADWAY INFORMATION

Crash Occured On Street, Road, Highway <b>I 275 (SR 93)</b>		<input checked="" type="radio"/> At Street Address#		<input checked="" type="radio"/> At Latitude and Longitude <b>28.081146884016601 -82.454630359318401</b>	
At Feet	Or Miles <b>.20</b>	Direction <b>South</b>	<input checked="" type="radio"/> From Intersection With Street, Road, Highway <b>SR 678 (BEARSS AVE)</b>		<input type="radio"/> Or From Milepost #
Road System Identifier <b>1 Interstate</b>		Type Of Shoulder <b>1 Paved</b>		Type Of Intersection <b>1 Not at Intersection</b>	

# Non – State Road Crash Location

**Crash Information**

Reported location  
Year: 2015 No: 045712880  
County: Orange  
Dr Road: LAKE UNDERHILL RD  
Int Road: COSMOS DR  
Dist: 0 Dr: East  
Lat: [ ] Long: [ ]  
Status: New  
Locator: Not located  
Reviewer: Not reviewed  
Rev Status: Not reviewed

**Actual location**

County: Orange  
Dr Road: LAKE UNDERHILL Type: RD  
Int Road: COSMOS Type: DR  
Dist: 0 Dr: East  
Lane: This Lane 1  
Side of Road: Left  
Lat: 28.538124 Long: -81.291456  
Status: New  
Locator: Jacobs, Benjamin Role: Administrator

**Crash position on roadway**

**Geographic coordinates**

FDOT  
Office of Information Systems

This site is maintained by the  
FDOT Office of Information Systems  
Please Contact: [SOS](#)

# State Road Crash Location

```
CARB107          CRASH LOCATION - UPDATE          03/22/2016 16:22:29
CRASH #: 2016 857093520          3U
CRASH AT 002.337 MP ON 87060001 0000.006 MI S FR NODE 02024 69 ST
-----
DATE: 01/05/2016 CRASH #: 857093520 STATUS.. 31 Q/C COMPLETED - LOC VER
TIME: 15:45      PREV #:              USERID: SF945BJ  UPDTE: 03/22/2016
                                      LOCATOR USERID: SF945BJ  UPDTE: 03/22/2016
                                      QC USERID:          UPDTE:
Linear-reference
coordinates
_ 0000.000 DIR: OF CITY MIAMI BEACH IN CNTY 87 MIAMI-DADE
_ 0000.000 DIR: AT/FROM NODE: 02024 TOWARD NEXT NODE:
ON STREET/ROAD/HIGHWAY: ABBOTT AVE ROUTE ID: SR A1A
X 0030.000 FT DIR: S AT/FROM INTERSECTION: 69TH ST * FDOT property
damage
_ ON CO/SEC/SUB (Crash position on roadway) 001 AT MP 000.000 (Roadway information) DOTPROP: N OWNRSHP: 01
SPDLIM : 030 #LANES
SIDE ROAD: R SITE LOC: 01 FUNCL:DOT 14 FAR 2 03 RTE SGN: 3 DOT 03
LANE ID: 3 INJ SEV: 1 NHS:DOT 5 FAR 1 US/I RT: _____ DHS 03
C518 ----- UPDATE SUCCESSFUL -----
<PF1> <PF3> <PF4> <PF5> <PF8> <PF10> <PF11> <PF12>
HELP MAIN MENU UPDT REFRESH NEXT LOCATE NOTES CRASH MENU
```



# Data Relationships

---

Example:

On May 19<sup>th</sup>, 2016 at 3:22 PM, a Geo Metro with a driver and a passenger is driving west on Main St. and rear ends a Ford Pinto with a driver and no passengers at the intersection of 1<sup>st</sup> Avenue. The Ford continues forward and strikes a pedestrian in the cross walk. The pedestrian suffers “Possible” injuries.



# Data Relationships

---

## Crash Level

- Crash Report#: 12345678
- Date: Thursday, 5/19/2016
- Crash Time: 3:22 PM
- Crash Type: Rear End
- Location: Main St @ 1<sup>st</sup> Ave, Tallahassee, Leon County, FDOT District 3, DOT Road# 12345 MP 1
- Roadway Information
- Injury Level: Possible
- Environment / Weather
- Counts
- Strategic Safety Plan Flags

## Vehicle Level

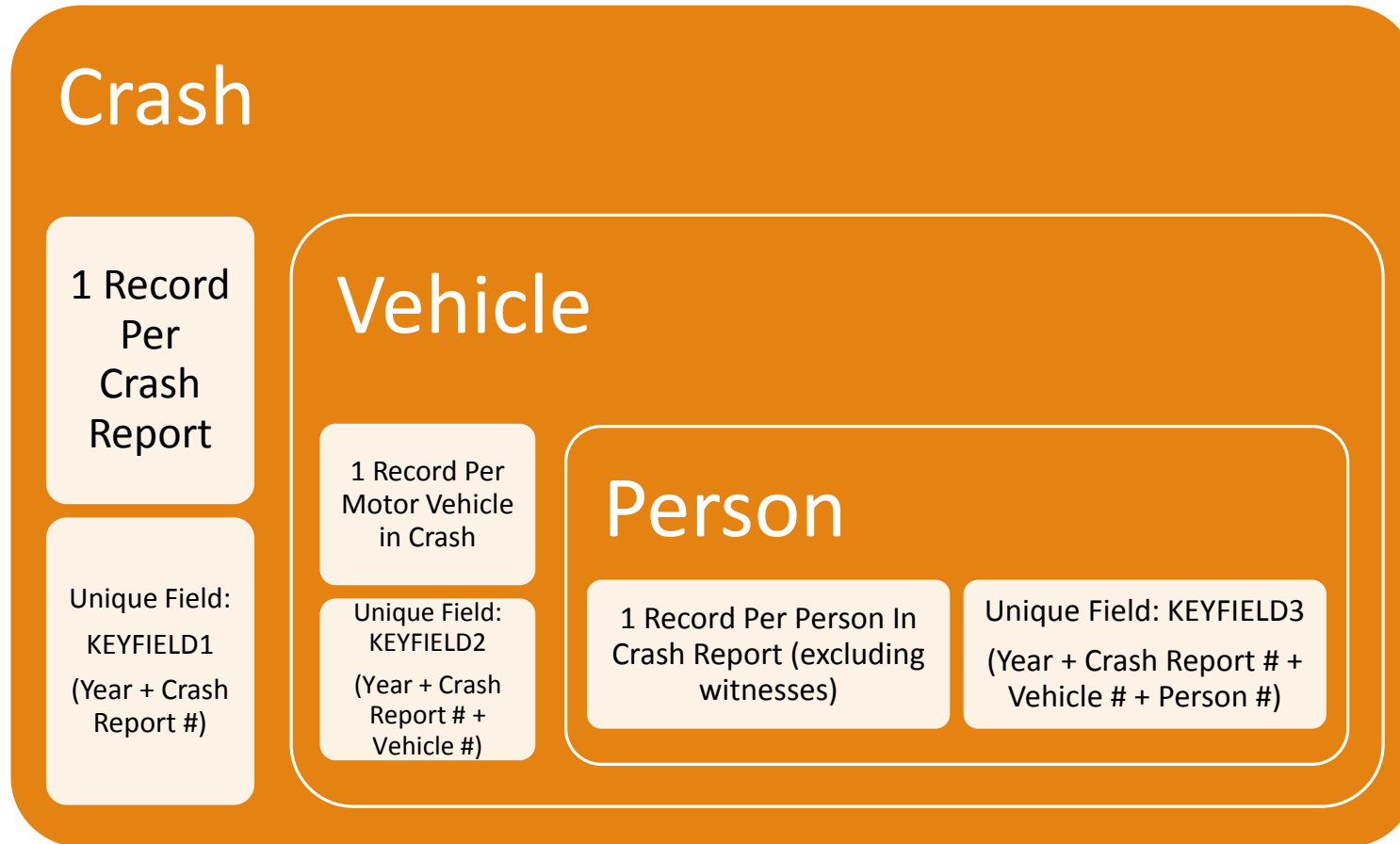
- Geo Metro – Vehicle 01
- Ford Pinto – Vehicle 02
- Type, Traffic Control, Events, Mechanical Problems

## Person Level

- Person 1 – Driver – Vehicle 01
- Person 2 – Passenger – Vehicle 01
- Person 3 – Driver – Vehicle 02
- Person 4 – Non-Motorist – Vehicle 00
- Type, Age, Actions / Errors, Non-Motorist, Impairment, Citations

# Data Relationships

---



# Data Structure

---

## Roadway System

- “On” – State Roads
- “Off” – Non-State Roads

## Shapefile Record Level

- Crash – On / Off
- Vehicle – Von / Voff
- Person – Oon / Ooff

# Data Access

---

## Public Tools

- FDOT SSOGis
- FIRES Portal
- GIS @ FDOT / ArcGIS Online
- Fatality Analysis and Reporting System (FARS)

## Restricted Tools

- Signal 4 Analytics
- FIRES Portal

Links to these tools are in the handouts pod.

# GIS @ FDOT / ArcGIS Online

<http://fdot.maps.arcgis.com>

The screenshot shows the GIS@FDOT website interface. At the top, the logo "GIS @ FDOT" is displayed next to the text "Florida Department of Transportation". Below this is a navigation bar with the text "FDOT's Maps, Apps and Layers". The main content area features a large background image of a road with a truck. Below the image are four app tiles, each with a thumbnail and a title: "Rail System Map" (with a train thumbnail), "SUN Trail Network" (with a trail thumbnail), "Active Construction Projects" (with a "ROAD CLOSED" sign thumbnail), and "Turnpike Wildflower Locations" (with a field of wildflowers thumbnail). Below these tiles is a paragraph of text: "Welcome! GIS@FDOT is the portal for FDOT's organizational account for ArcGIS Online, which is a collaborative, cloud-based platform that allows members of an organization to use, create, and share maps, apps, and data with anyone. It provides a mechanism for data organization and management across districts and functional areas within the Department, eliminating the need for data duplication. This platform is also portable and all maps created will be compatible across desktops, tablets, and smart phones." Below the text is a section titled "Request Access" and "FDOT Data Sources:". Under "FDOT Data Sources:" are four data source tiles: "Data Clearinghouse" (with a map of Florida thumbnail), "A+PLUS Aerial Photography" (with a dark background and "A+PLUS" text thumbnail), "TranStat GIS" (with a train thumbnail), and "Public Content" (with a circular icon of two people thumbnail).

GIS @ FDOT Florida Department of Transportation

FDOT's Maps, Apps and Layers

App  
FDOT Rail System  
Rail System Map

App  
FDOT SUN Trail  
SUN Trail Network

App  
FDOT Active Projects  
Active Construction Projects

App  
FDOT Wildflowers  
Turnpike Wildflower Locations

Welcome! GIS@FDOT is the portal for FDOT's organizational account for ArcGIS Online, which is a collaborative, cloud-based platform that allows members of an organization to use, create, and share maps, apps, and data with anyone. It provides a mechanism for data organization and management across districts and functional areas within the Department, eliminating the need for data duplication. This platform is also portable and all maps created will be compatible across desktops, tablets, and smart phones.

**Request Access**

**FDOT Data Sources:**

FDOT Data Clearinghouse

FDOT A+PLUS Aerial Photography

FDOT TranStat GIS

FDOT Public Content

# GIS @ FDOT / ArcGIS Online

## Pedestrian-Involved Crash Clusters in Florida from 2009 through 2013



The screenshot shows the ArcGIS Online interface for a map titled "Pedestrian-Involved Crash Clusters". The map thumbnail features a black silhouette of a person and the FDOT logo. To the right of the thumbnail, the text reads: "This map contains clusters of all pedestrian-involved crashes in Florida from 2009 through 2013." Below this, it says "Web Map by shaun.davis" and "Last Modified: May 19, 2016". There are also five stars and the text "(0 ratings, 19 views)". Social media sharing icons for Facebook and Twitter are visible. At the bottom of the map interface, there is a row of action buttons: OPEN, SHARE, EDIT, DELETE, MOVE, USAGE, and METADATA.

### Description

This map contains counts of all pedestrian-involved crashes clusters of crashes from 2009 through 2013. This map shows clusters of 'Long Form' crashes which were reported to a law enforcement officer and located by the Florida Department of Transportation. Pedestrian-involved crashes are crashes which involve at least one person who was categorized by the reporting officer as a Pedestrian (Non Motorist Code 1) or Other Pedestrian (Non Motorist Code 2) and a motor vehicle. A 'cluster' is defined as any pedestrian involved crash which occurred within 300 feet (straight line distance) of another pedestrian involved crash. Counts of the number of crashes, injuries and fatalities are summed for each cluster.

The data contained in this map may be used for any purpose consistent with the access and use constraints listed below.

If you have any questions or comments, please contact:

Shaun Davis

Florida Department of Transportation – State Safety Office

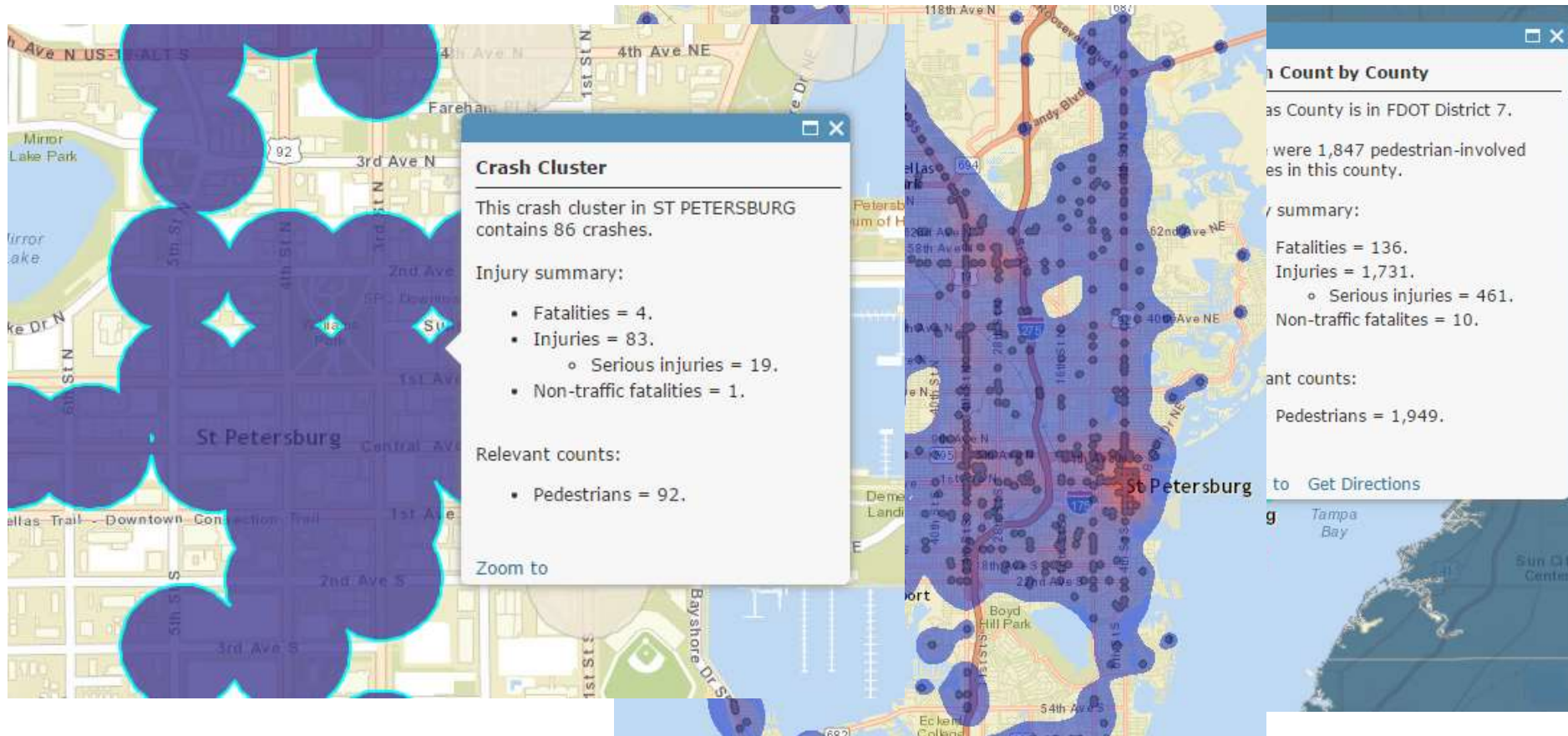
605 Suwannee Street

Tallahassee, Florida 32399

850-414-4075 or [shaun.davis@dot.state.fl.us](mailto:shaun.davis@dot.state.fl.us)



# GIS @ FDOT / ArcGIS Online





# GIS @ FDOT / ArcGIS Online

---

## CRASH DATA

### Maps

- Bike / Pedestrian Clusters

### Data / Layers

- Crash Shapefiles (2011 to 2014)
- Bike / Ped Crash Clusters
- Bike / Ped Crash Counts by County
- Bike / Ped Crash Shapefiles
- 5 Year Segment / Intersection Crash Rates
- High Crash Intersections
- 65+ Crash Counts by County

## ROADWAY INFORMATION

### Maps / Apps

- Bike Friendly Roads
- SUN Trail
- Active Construction Projects
- Work Program

### Data / Layers

- State Road Inventory

# FDOT SSO GIS Query Tool

The screenshot displays the FDOT SSO GIS Query Tool web application. At the top left is the FDOT logo (Florida Department of Transportation) with the text "Florida Department of TRANSPORTATION". To the right of the logo is a navigation menu with links for "Home", "About FDOT", "Contact Us", and "Office". Below the navigation menu is a "Web Application" header. The main content area is titled "SSOGis" and features a map of Florida with various cities and highways labeled. On the left side of the map is a sidebar containing a "Crashes" filter panel. The filter panel includes a "Map" button, a "Reset" button, and a "Crash Filters" section with the following options:

- Calendar Year (Post 2010): All, choose at most five
- Crash Date: From [ ] to [ ]
- Crash Time: From [ ] to [ ]
- Highest injury in Crash: All
- Relation to Junction: All
- Crash Harmful Event Location: All
- Intersection Type: All
- Crash Harmful Event: All
- Driver Action Vehicle 1 or 2: All
- DHSMV City: All

Below the "Crash Filters" section are "Location Filters" and "Safety Office Supplemental Layers". The map shows major cities like New Orleans, Jacksonville, Orlando, Tampa, and Miami, along with major highways like I-10, I-75, I-95, and I-4.

# FDOT SSO GIS Query Tool

**Calendar Year (Post 2010)\*:**  
All, choose at most five

**Crash Date\*:**  
From  to

**Crash Time:**  
From  to

**Highest Injury in Crash:**  
All

**Relation to Junction:**  
All

**Crash Harmful Event Location:**  
All

**Intersection Type:**  
All

**Crash Harmful Event:**  
All

**Driver Action Vehicle 1 or 2:**  
All

**DHSMV City:**  
All

▸ Location Filters

▸ Safety Office Supplemental Layers

▸ Legend

**Geometry:**

**FDOT Managing District & County:**  
All

**Roadway Search Type:**  
FDOT Roadway and Milepost

**FDOT Roadway:**  
Enter at least 2 characters

**BMP** **EMP**

**From MP** **To MP**



# FDOT SSO GIS Query Tool - Table

**SSOGis** [About](#)

[Florida Traffic Safety Portal](#)

Crashes Projects

Map Reset

Crash Filters

Location Filters

Geometry:

FDOT Managing District & County:  
55 Leon

Roadway Search Type:  
FDOT Roadway and Milepost

FDOT Roadway:  
Enter at least 2 characters

BMP EMP

From MP To MP

Crash Query - [500 of 5544] more >>

Drag a column header and drop it here to group by that column

County	Crash Date	Crash Time	Day	DHSMV City	Crash Report City Code	In Town	On Roadway Name
Leon	02/08/2013	0000	FRIDAY	Tallahassee	1350	N	E. TENNESSEE ST
Leon	03/17/2013	1749	SUNDAY	Unincorporated, Leon	1300	Y	INTERSTATE 10
Leon	03/08/2013	1140	FRIDAY	Tallahassee	1350	N	INTERSTATE 10
Leon	02/25/2013	2325	MONDAY	Tallahassee	1350	N	W. ON INTERSTATE 10 (I10) (SR8) MM
Leon	03/03/2013	0335	SUNDAY	Florida State University	1340	N	AIRPORT DR
Leon	03/28/2013	1425	THURSDAY	Tallahassee	1350	N	U.S.-319 (SR-261 / CAPITOL CIRCLE E
Leon	02/24/2013	0952	SUNDAY	Unincorporated, Leon	1300	Y	INTERSTATE 10
Leon	01/12/2013	0215	SATURDAY	Unincorporated, Leon	2100	Y	HIGHWAY 90 (SR 10)
Leon	02/17/2013	0630	SUNDAY	Unincorporated, Leon	1300	Y	U.S. HIGHWAY 90
Leon	06/17/2013	0800	MONDAY	Unincorporated, Leon	1300	Y	US HIGHWAY 319
Leon	04/04/2013	0746	THURSDAY	Unincorporated, Leon	1300	Y	I-10 (SR-8) WB ENTRANCE RAMP FR
Leon	06/12/2013	2206	WEDNESDAY	Unincorporated, Leon	1300	Y	INTERSTATE 10

# FDOT SSO GIS Query Tool – Table Groupings

Crash Query - [500 of 5544] [more >> X](#)

Grouped by: **Highest Injury in Crash**

	Object Id	Calendar Year	FDOT Crash Number	Reporting Agency Case Number	Reporting Agency Type	FDOT Managing District	County
^ Fatal(Within 30 Days) Injury							
>	442387	2013	841474450	0013024104	SO	03	Leon
	443752	2013	841981410	130145477	CPD	03	Leon
v Incapacitating Injury							
v No Injury							
v No-Incapacitating Injury							
v Possible Injury							
v Unknown/Not Coded							



# FIRES Portal – Public / Restricted Query + Map

Agency  
City  
County of Crash  
Crash in Work Zone  
Date of Crash (required)  
Fatalities Count  
First Harmful Event  
First Harmful Event Location  
First Harmful Event Relation to Junction  
First Harmful Event within Interchange  
Geolocated Latitude  
Geolocated Longitude  
Hit and Run  
Injured Count  
Injuries  
Intersection  
Intersection Name  
Latitude  
Law Enforcement in Work Zone  
Light Condition  
Location  
Longitude  
Manner of Collision/Impact  
Number of Vehicles  
Property Damage  
Road System Identifier  
Roadway  
Roadway Name  
Roadway Surface Condition  
School Bus Related

Traffic Control  
Type of Work Zone  
Weather Condition  
Work Zone Related  
Workers in Work Zone

**FIRES** FLORIDA'S INTEGRATED REPORT EXCHANGE SYSTEM

Home Public Quick Statistics Advanced Search Geolocation Search Traffic Crash Facts

You are using a browser that is not supported by the Google Maps JavaScript API. Consider changing your browser. [Learn more](#) [Dismiss](#)

**Useful Tips:**

**Hand Icon**  
Click this icon to move your view of a map up and down as well as left and right. This is particularly useful when you have zoomed in on a view, and want to move the view around to see other areas of interest.

**Zoom Control**  
Click the '+' to zoom in on the map view to see more detail. Click the '-' to zoom out.

**Draw Icon (square image next to hand icon)**  
Click this icon to allow you to draw a box/rectangle around a specific area of the map. Doing so will automatically enter the latitude and longitude criteria into your search and will display accidents that have coordinates within the box.

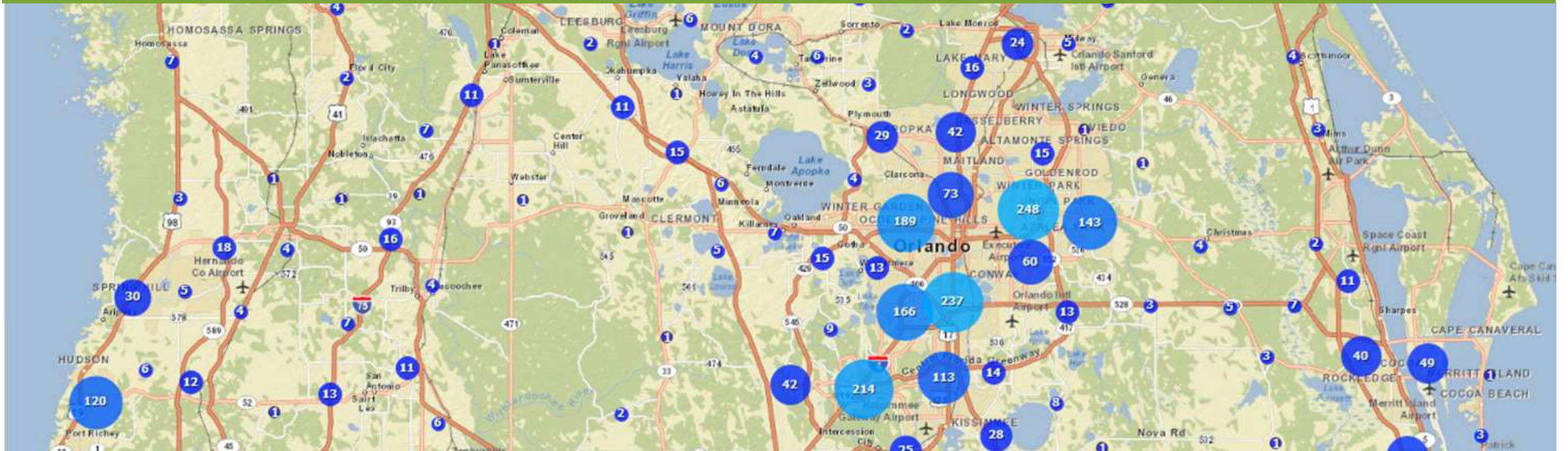
**Polygon/Circle Icons (Images next to the square icon)**  
Click these icons to draw a polygon/circle around a specific area of the map. Doing so will automatically filter your results to the area inside the shape.

**Adding Additional Criteria**  
Choose your index by selecting from the drop-

# Signal 4 Analytics (S4A)

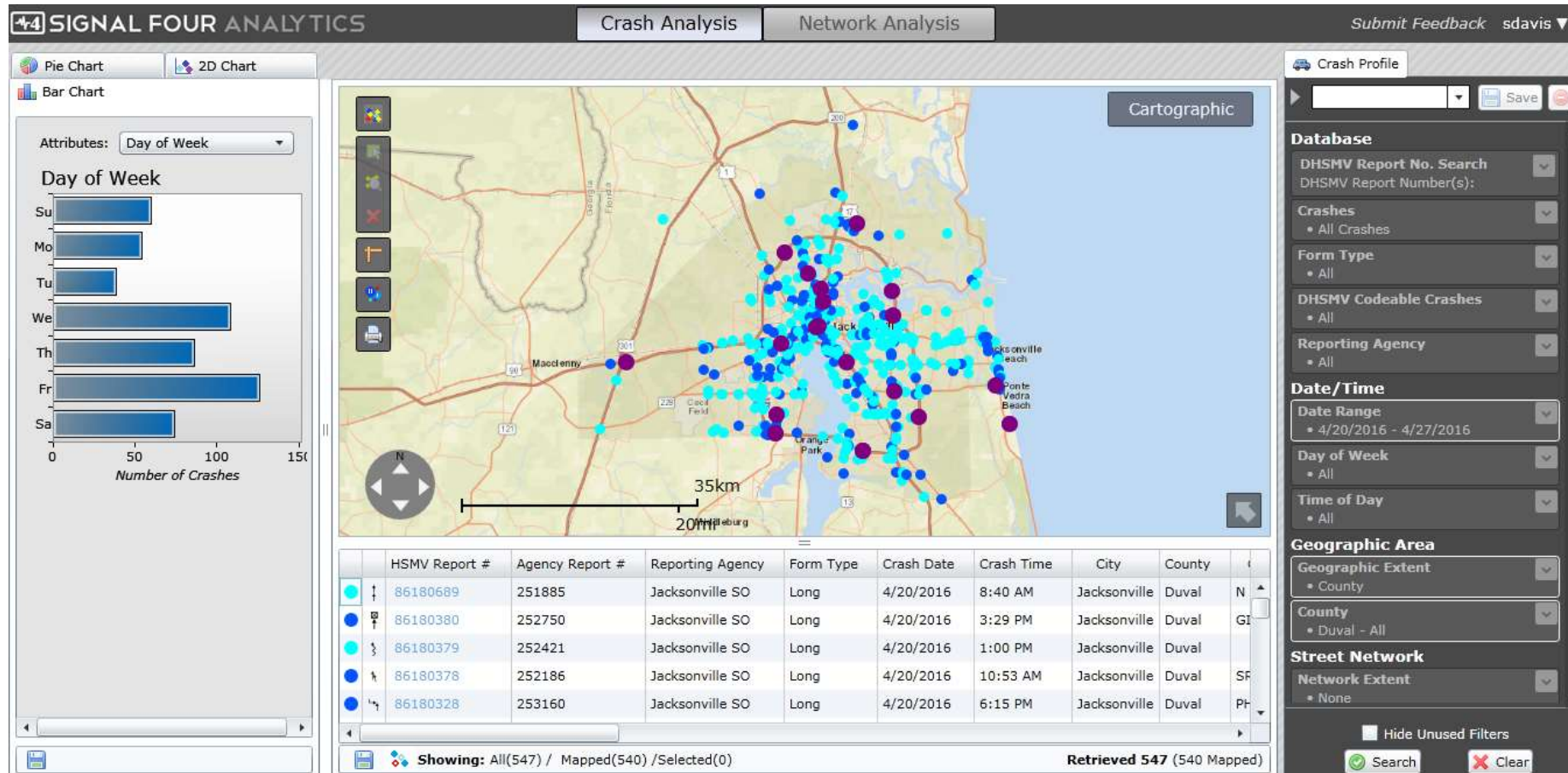


## SIGNAL FOUR ANALYTICS



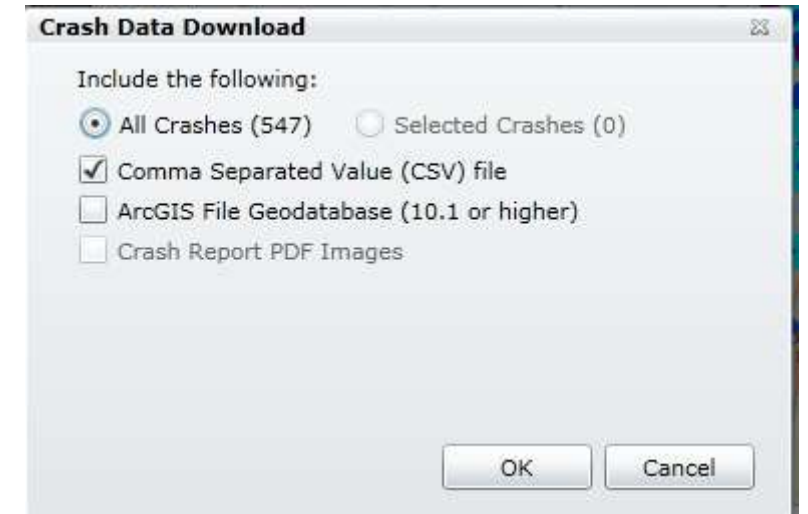
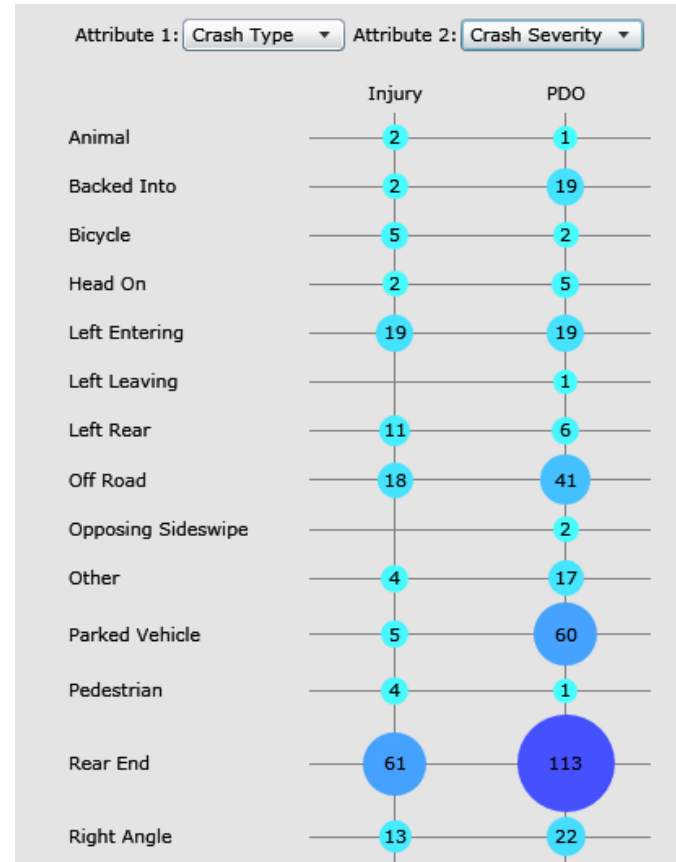
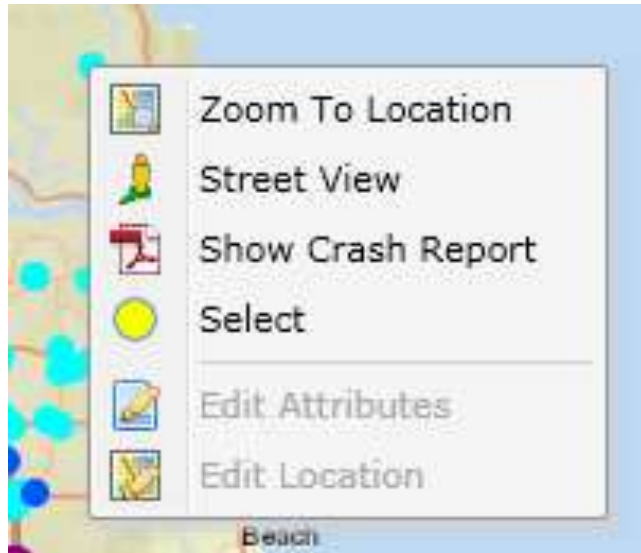


# Signal 4 Analytics (S4A)





# Signal 4 Analytics



# FARS

**NHTSA**  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Driving Safety | Vehicle Safety | Research | **Data** | Laws & Regulations | About NHTSA

## Fatality Analysis Reporting System (FARS)

**Detailing the Factors Behind Traffic Fatalities on our Roads - FARS**  
is a nationwide census providing NHTSA, Congress and the American public yearly data regarding fatal injuries suffered in motor vehicle traffic crashes.

**How to Access FARS Data**  
Create your own fatality data run online by using the FARS Query System. Or download all FARS data from 1975 to present from the FTP Site.

- Run a Query Using the FARS Web-Based Encyclopedia
- 2010 FARS/NASS GES Standardization -- Posted 12/8/2011
- FARS and GES Auxiliary Datasets Q & A -- Posted 9/9/2010 These files will complement the standard FARS and GES files by providing new variables that have been derived from all the commonly used HCSA analytical data classifications (e.g. speeding related, race and ethnicity, etc).
- FARS Manuals and Documentation
- 2009 FARS/NASS GES Changes (Sept. 14 Webinar Recording) -- Posted 9/23/2010

**Additional Resources**  
HCSA Publications and Customized Data Requests (CATS)

Pubs/Data Requests | **FARS Data Tables** | Query FARS Data | State Traffic Safety Info | Help

Summary | Trends | Crashes | Vehicles | People | **States**

Crashes and All Victims | Occupants | Pedestrians | Alcohol | Fatalities and Fatality Rates | Laws

**NEW** [File Versions](#)  
2014 data based on FARS data publication, 1st release

**NEW** [GIS Map features](#)

**NEW** [Vehicle Registration and VMT Changes](#)

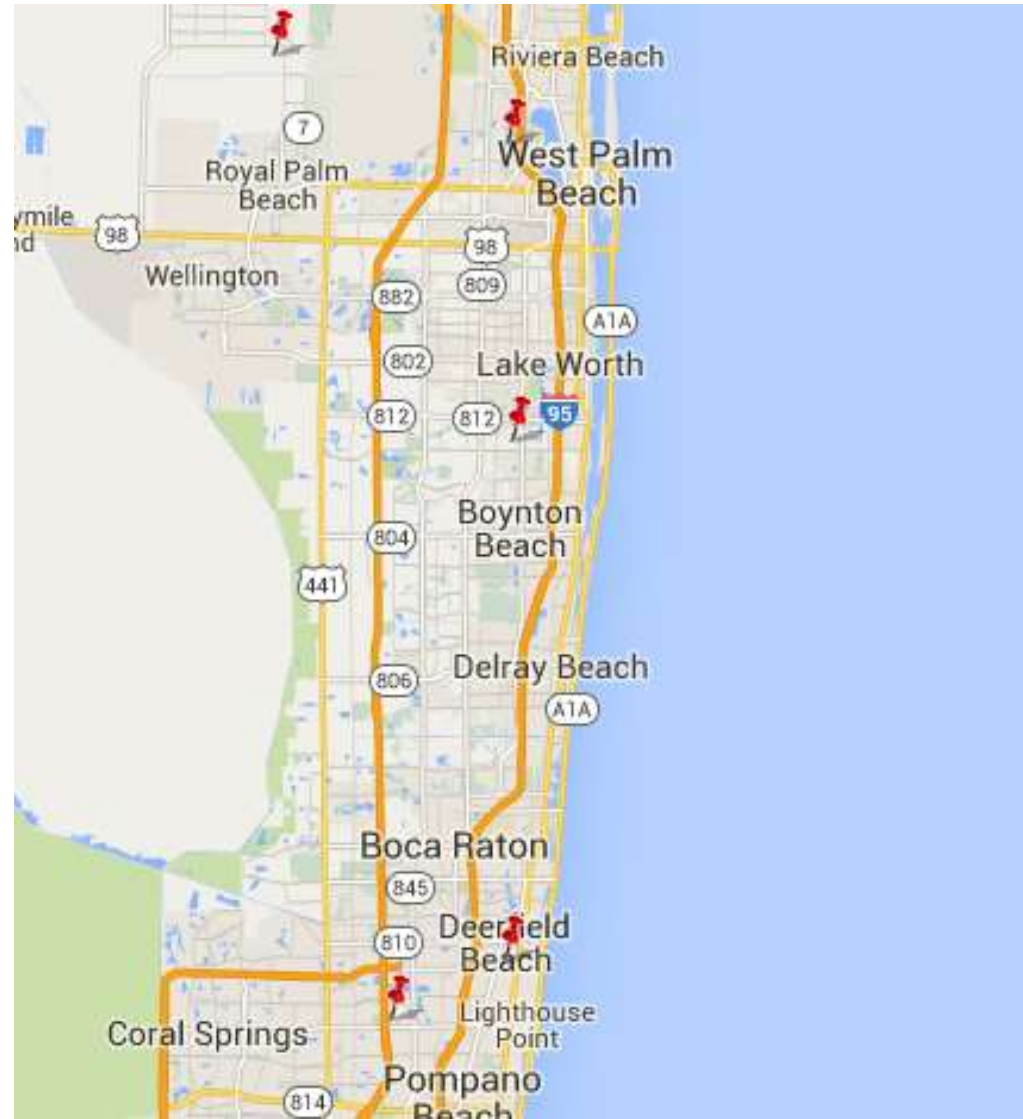
### 2014 Traffic Fatalities by STATE and Percent Change from 2013 - State : USA

SELECT REPORT CRITERIA: STATE: USA | YEAR: 2014 | **VIEW**

OUTPUT OPTIONS: EXPORT (TXT) | EXPORT (XLS)

State	2014	2013	Percent Change
<a href="#">Alabama</a>	820	853	-4
<a href="#">Alaska</a>	73	51	43
<a href="#">Arizona</a>	770	849	-9
<a href="#">Arkansas</a>	466	498	-6
<a href="#">California</a>	3,074	3,107	-1
<a href="#">Colorado</a>	488	482	1
<a href="#">Connecticut</a>	248	286	-13
<a href="#">Delaware</a>	121	99	22
<a href="#">District of Columbia</a>	23	20	15
<a href="#">Florida</a>	2,494	2,403	4
<a href="#">Georgia</a>	1,164	1,180	-1

# FARS Fatality Map



# Data Analysis Tools - ArcGIS

---

Buffer

Point Density

Kernel Density

Overlay Tools (Spatial Join, Identity, Intersect)

Spatial Statistics

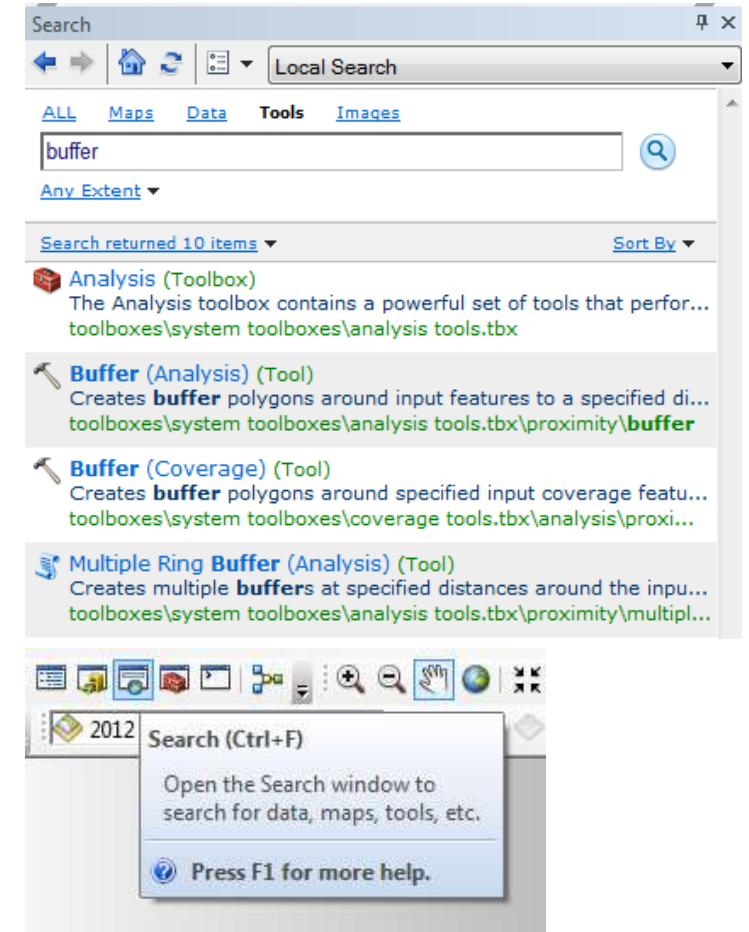
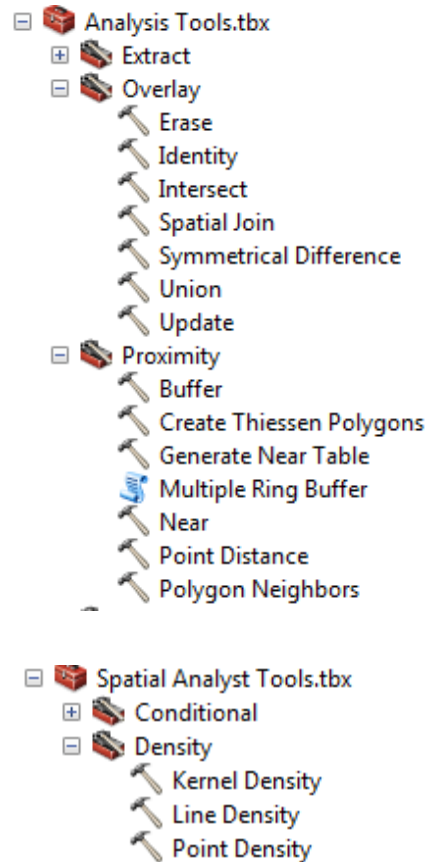
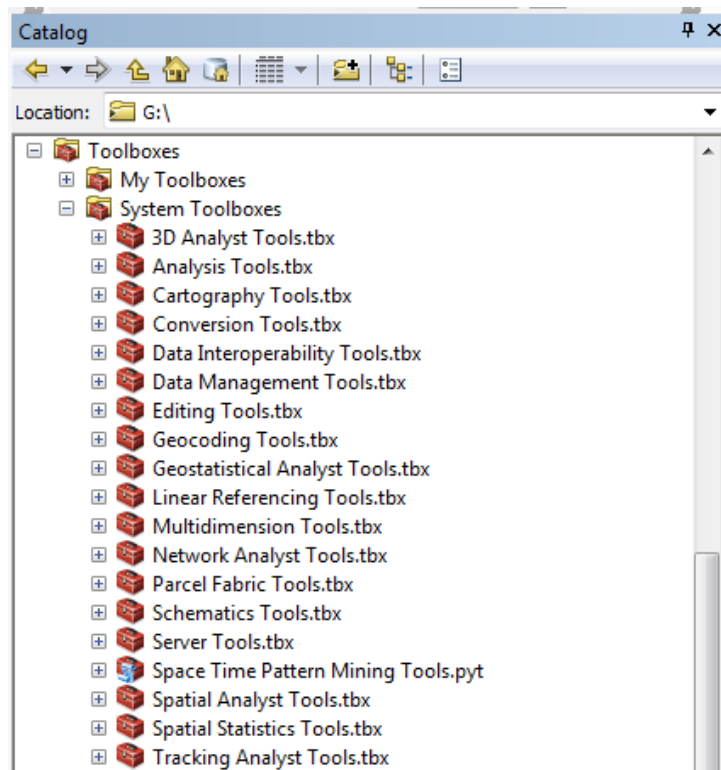
Linear Referencing Tools

- Data has measures (Point M)

ESRI Crash Analysis Tools

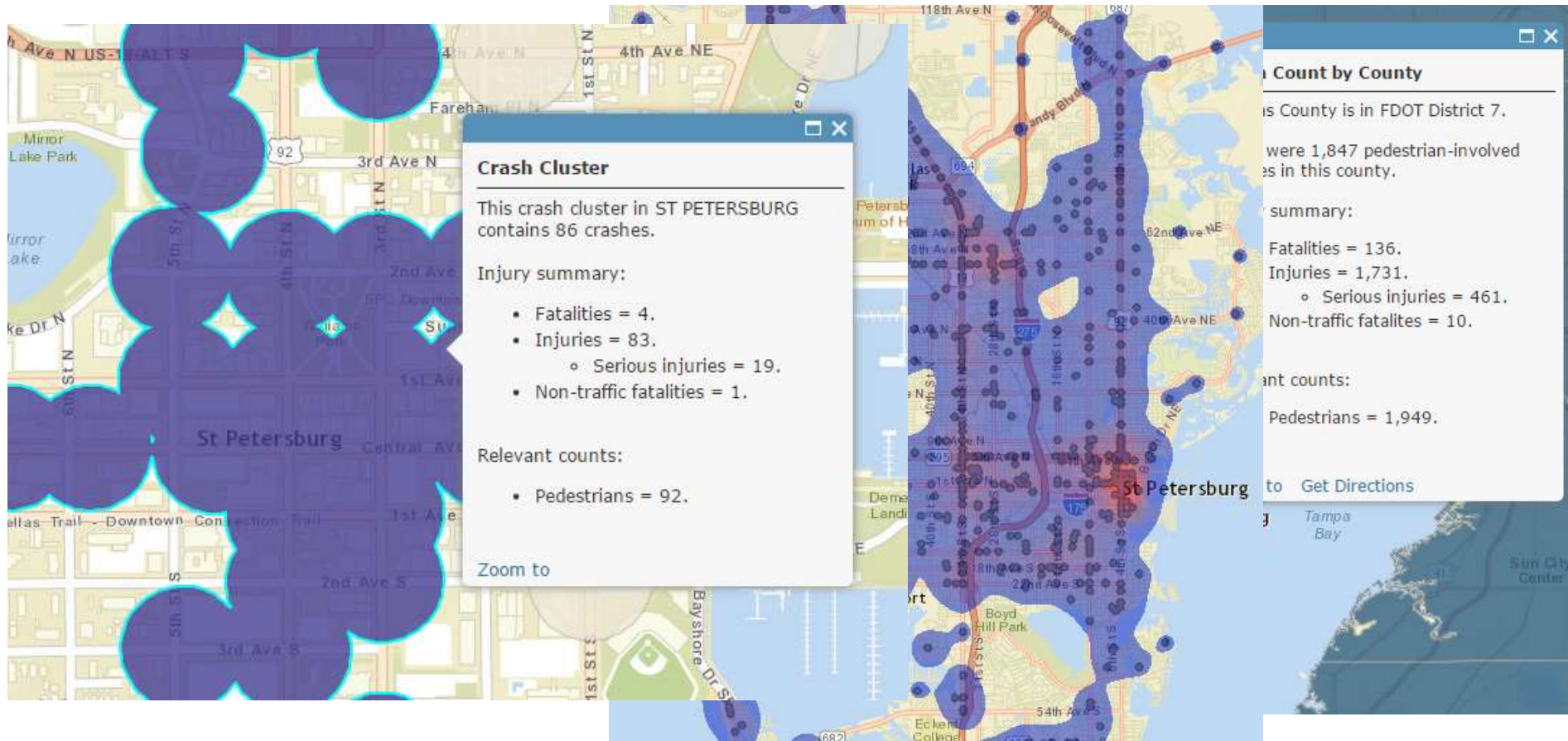
- usRAP Methodology
- Inputs
  - Crash Density
  - Roadway Inventory
- Outputs
  - Crash Density
  - Crash Rate
  - Crash Rate Ratio
  - Potential Crash Savings
- Link in handouts pod

# Finding Tools in ArcMap





# Data Analysis – Intersect + Density



# Using GIS tables

---

## Programs

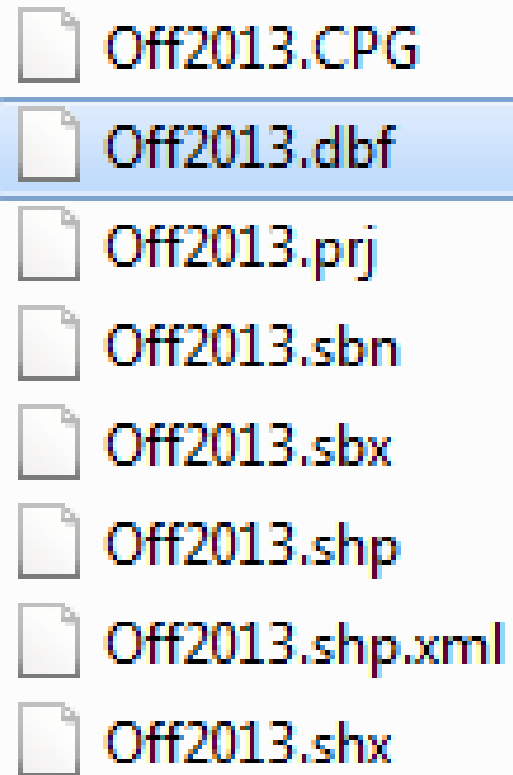
- Excel
- SAS (Statistical Analysis System)
- ArcGIS
  - Export to Excel Tool



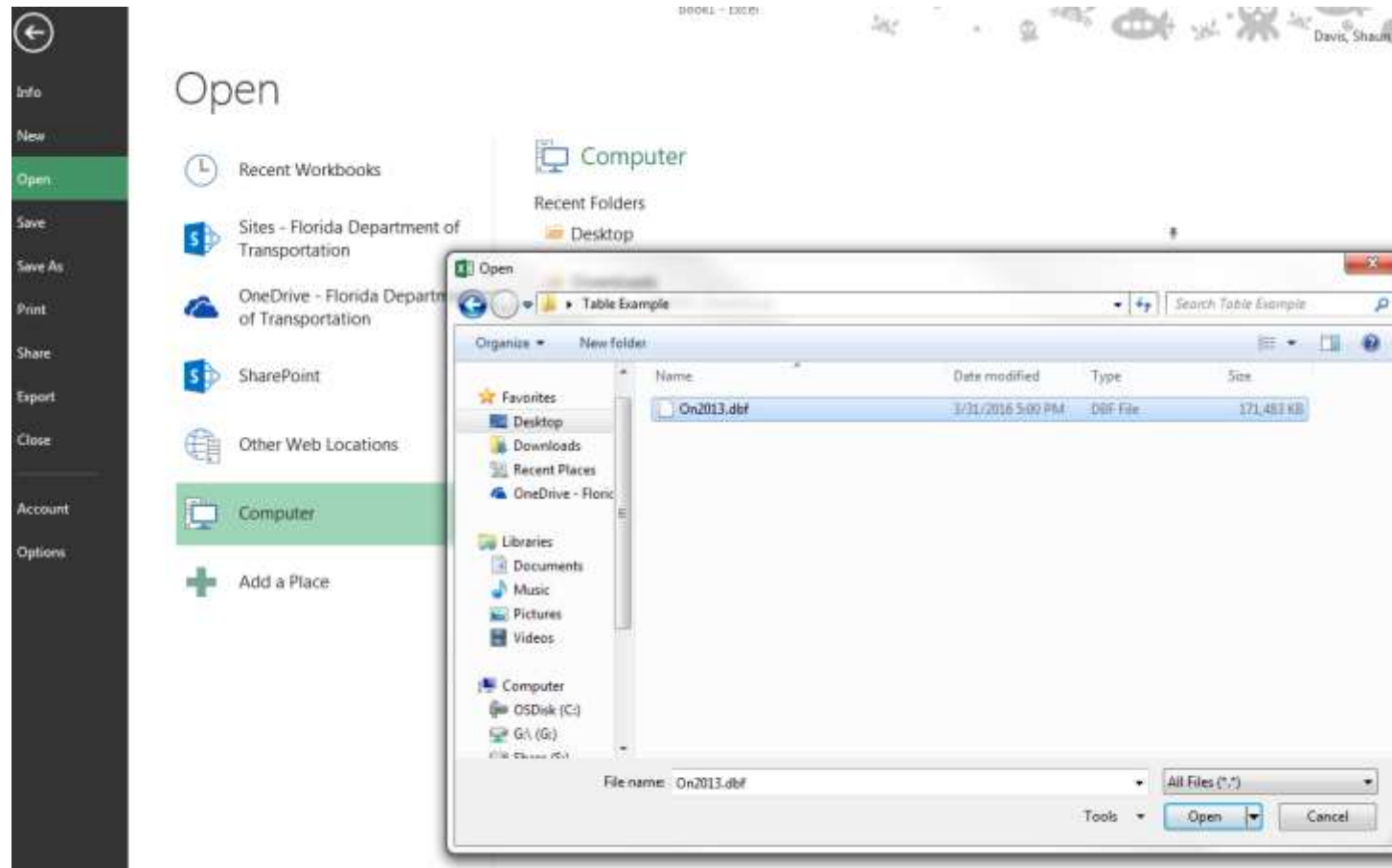
# Using GIS tables in Excel

Use .dbf file

MAKE A COPY!!



# Using GIS tables in Excel



# Using GIS tables in Excel

Highest Injury Code	Count of KEYFIELD1
<b>0</b>	<b>1577</b>
N	1557
Y	20
<b>1</b>	<b>115148</b>
N	94030
Y	21118
<b>2</b>	<b>42167</b>
N	36451
Y	5716
<b>3</b>	<b>25743</b>
N	20516
Y	5227
<b>4</b>	<b>8434</b>
N	6352
Y	2082
<b>5</b>	<b>1315</b>
N	781
Y	534
<b>6</b>	<b>72</b>
N	36
Y	36
<b>(blank)</b>	
(blank)	
<b>Grand Total</b>	<b>194456</b>

ROWS	VALUES
HIGHESTINJ	Count of KEYFIELD1
FL_LANEDEP	

# Crash Data Academy Webinars

---

**State Safety Office GIS Query Tool**

June 23, 2016 @ 2:30 PM (Eastern)

# Questions?

---

SHAUN DAVIS

[SHAUN.DAVIS@DOT.STATE.FL.US](mailto:SHAUN.DAVIS@DOT.STATE.FL.US)

850-414-4075