



NORTH CAROLINA

Department of Transportation

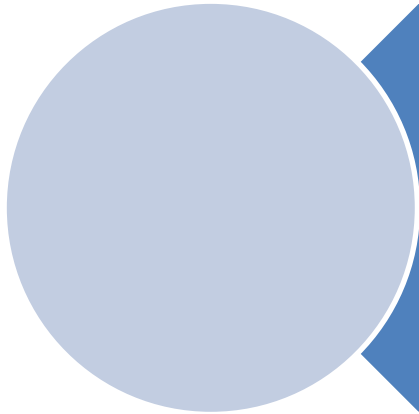


NCDOT and Crash Data

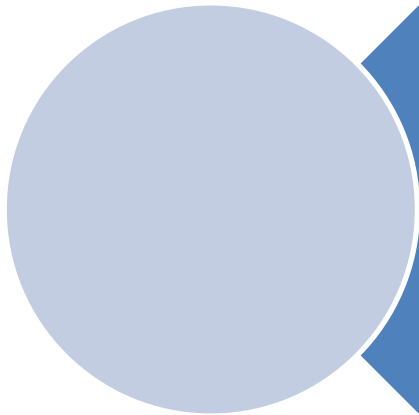
Daniel Carter, NCDOT Traffic Safety Unit

Vision Zero Webinar Series

12/5/22



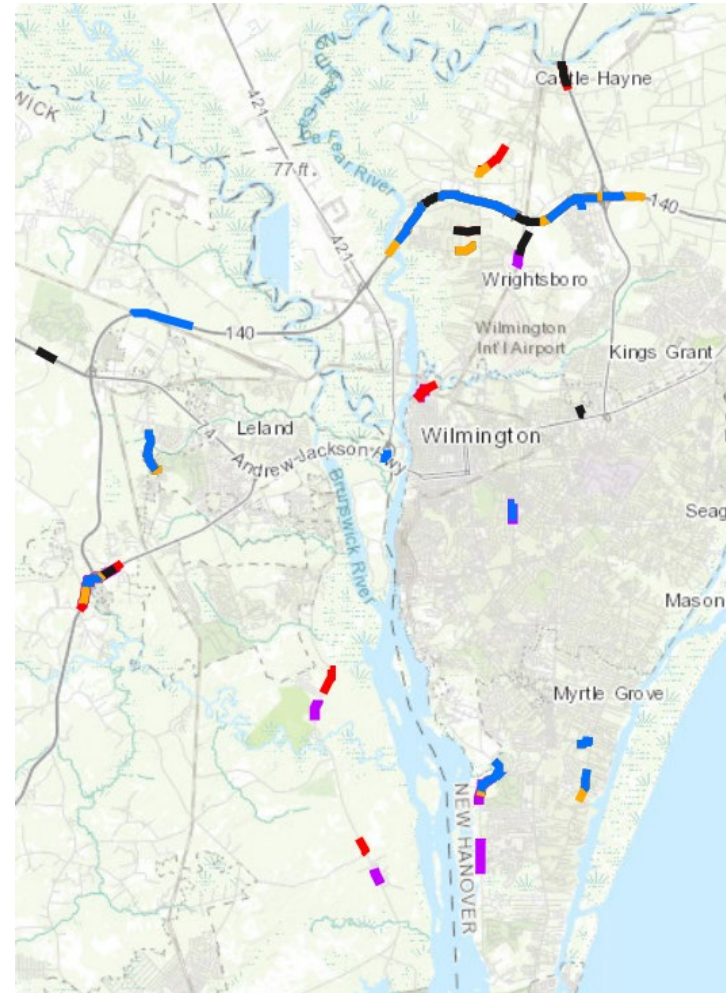
How NCDOT uses
crash data



Why crash location
is so important

NCDOT Traffic Safety Unit

- Analyze crash data to identify potentially hazardous locations
- Conduct field investigations
- Recommend road improvements to address crash patterns
- Fund and install road improvements



NCDOT Traffic Safety Unit

- Analyze crash data to identify potentially hazardous locations
- **Conduct field investigations**
- Recommend road improvements to address crash patterns
- Fund and install road improvements



NCDOT Traffic Safety Unit

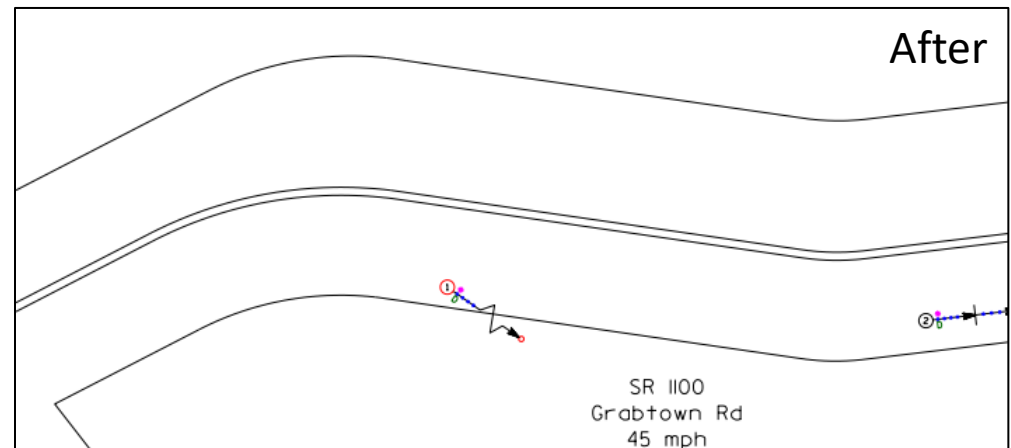
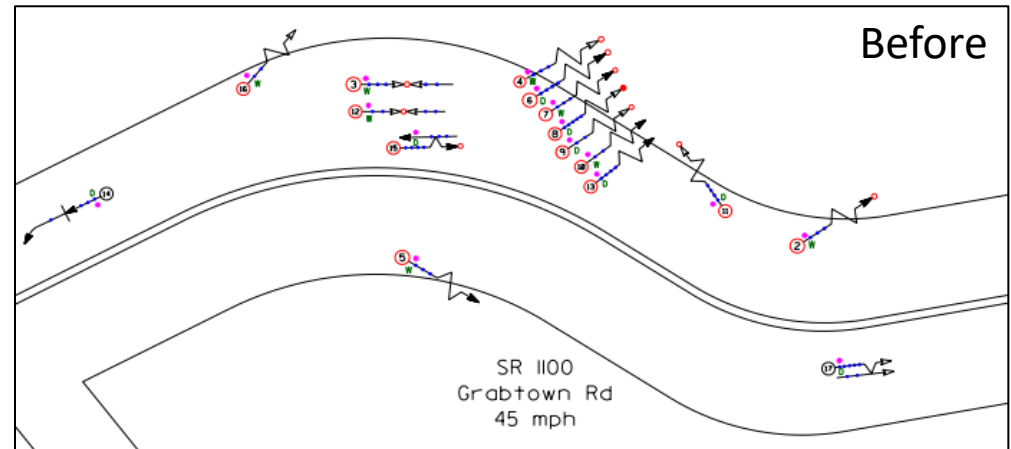
- Analyze crash data to identify potentially hazardous locations
- Conduct field investigations
- **Recommend road improvements to address crash patterns**
- Fund and install road improvements



Top photo source: City of Wilmington

NCDOT Traffic Safety Unit

- Analyze crash data to identify potentially hazardous locations
- Conduct field investigations
- Recommend road improvements to address crash patterns
- **Fund and install road improvements**



It all starts here



Sources:
Top left, Pinevillenc.gov
Top right, City of Kinston, NC
Bottom right, Vermont.gov

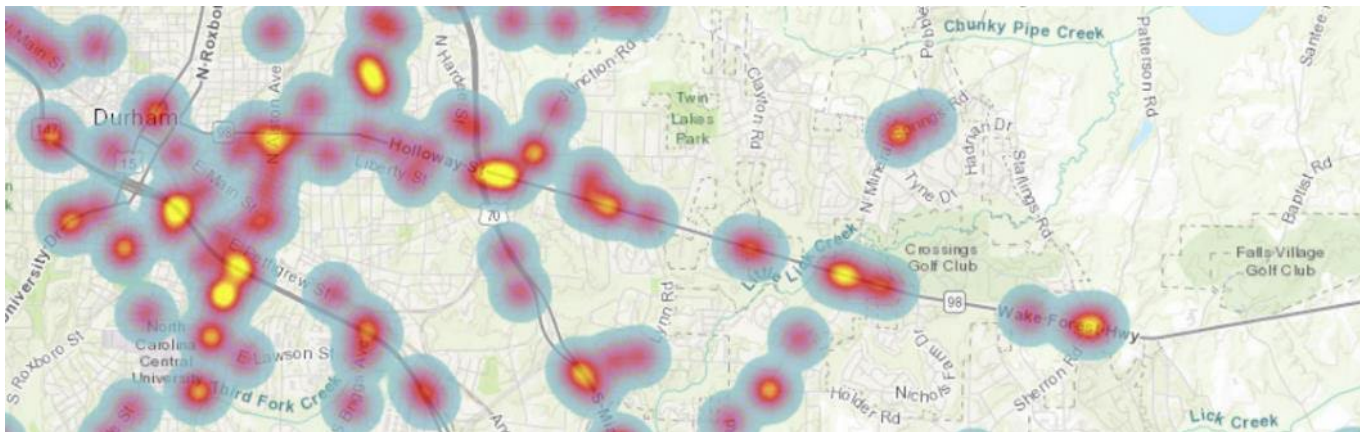
Crash Locating – Why is it important?

For engineers

1. Identify problem areas
2. Identify patterns
3. Know where and how to improve the road

For law enforcement

1. Identify problem areas
2. Identify patterns
3. Know where and how to deploy patrols and resources

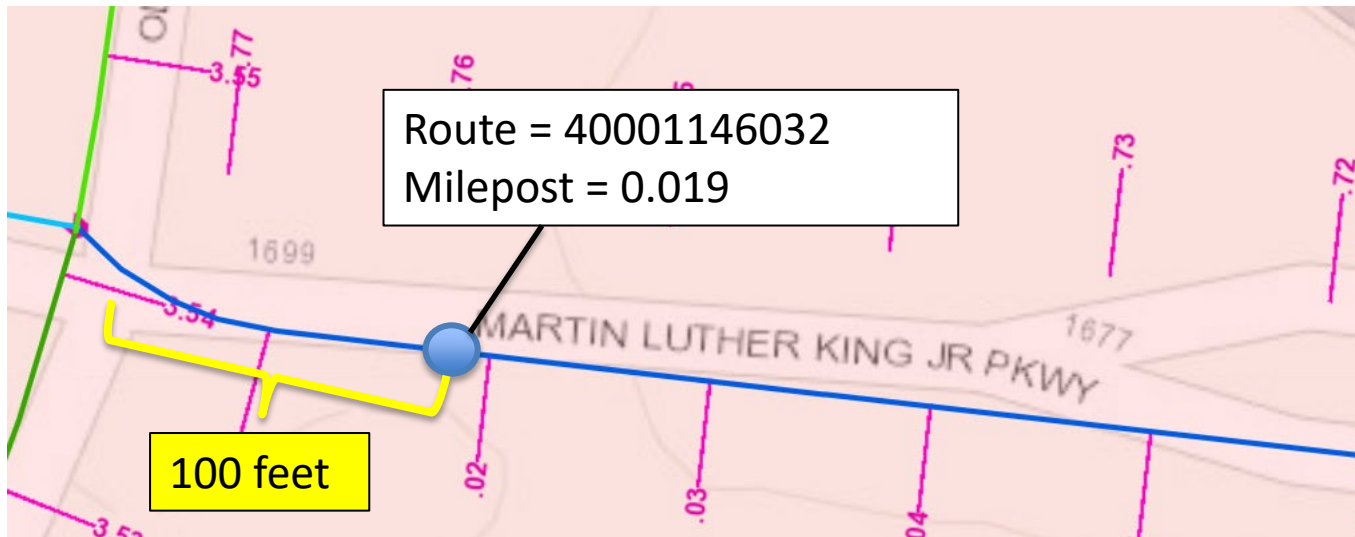


Crash Locating – How is it done?

LOCATION	33 Relation to Roadway Surface <u>1</u> Crash occurred <input checked="" type="checkbox"/> in <u>DURHAM</u> Municipality or _____ Miles <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> outside municipality
	on <u>MARTIN LUTHER KING JR</u> Highway Number, or Highway, Street. (If ramp or service road, indicate on line) Ramp or Service Road <input type="checkbox"/> (R.R. Crossing # _____) _____ Miles <u>100</u> ft. <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> (If available)
	### from <u>OLD CHAPEL HILL RD</u> Use Highway Number, Street Name or Adjacent County or State Line <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> toward <u>DIXON RD</u> Use Highway Number, Street Name or Adjacent County or State Line
	Latitude _____ Longitude _____ Altitude _____

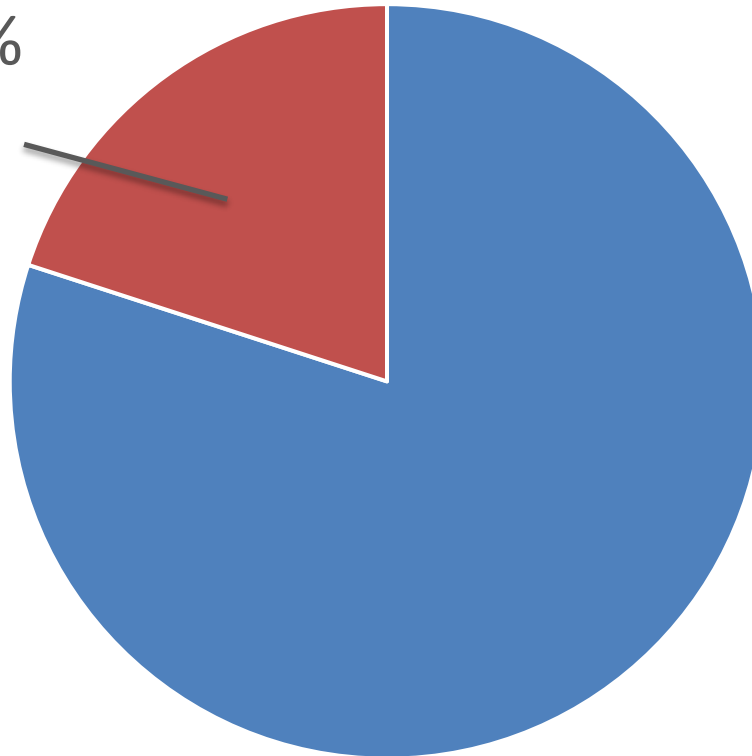
Officer provides this 

 Our system translates to this



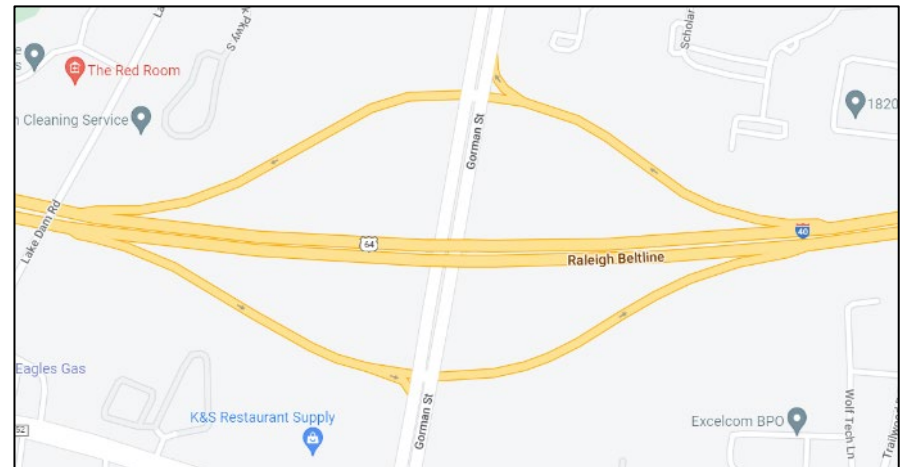
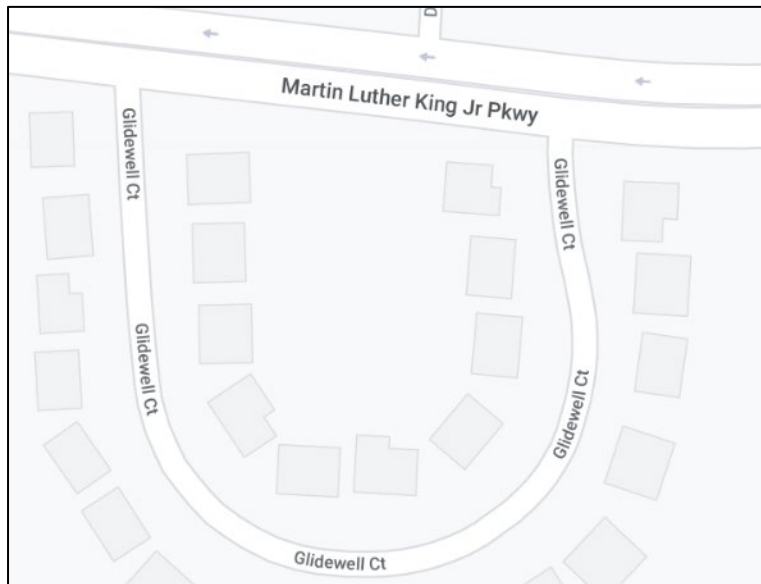
Crash Locating – The Problem

We cannot
locate 20%
of crashes



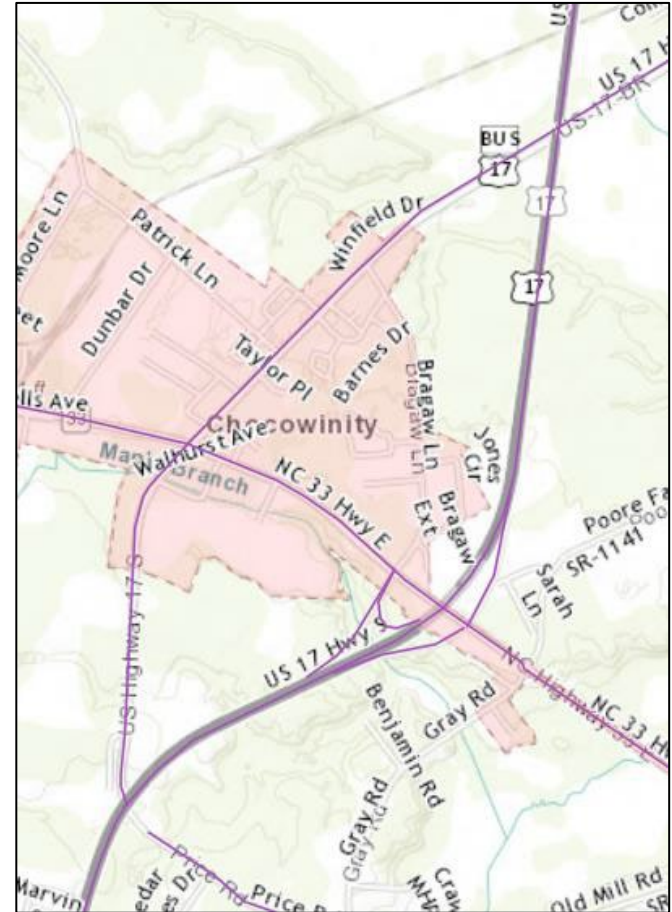
Crash Locating – Why is it difficult?

- Inability to locate the crash
 - Wrong or misspelled street name
 - Loop road
 - Interchange ramps



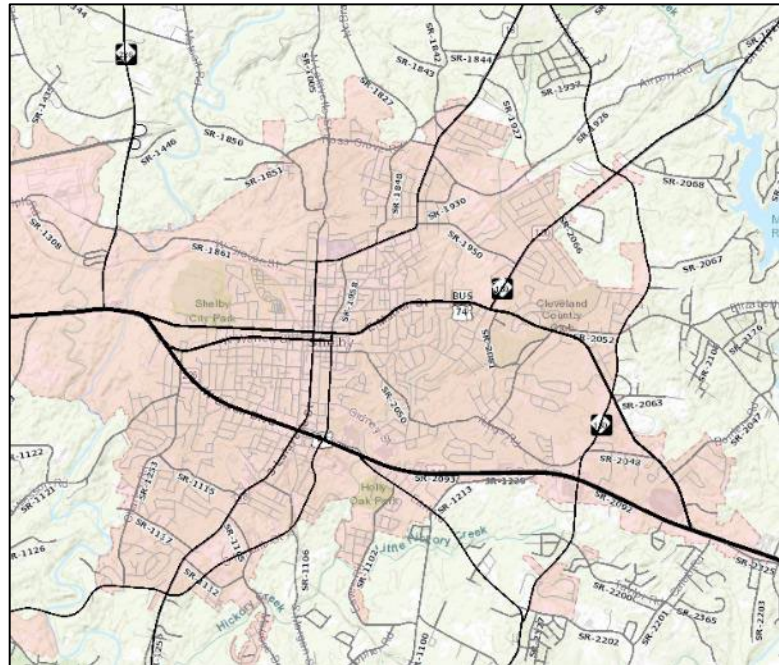
Crash Locating – Why is it difficult?

- Inaccurate location
 - Inaccurate or approximated distance
 - Inaccurate direction
 - Inaccurate road name (US 17 instead of US 17 bypass)



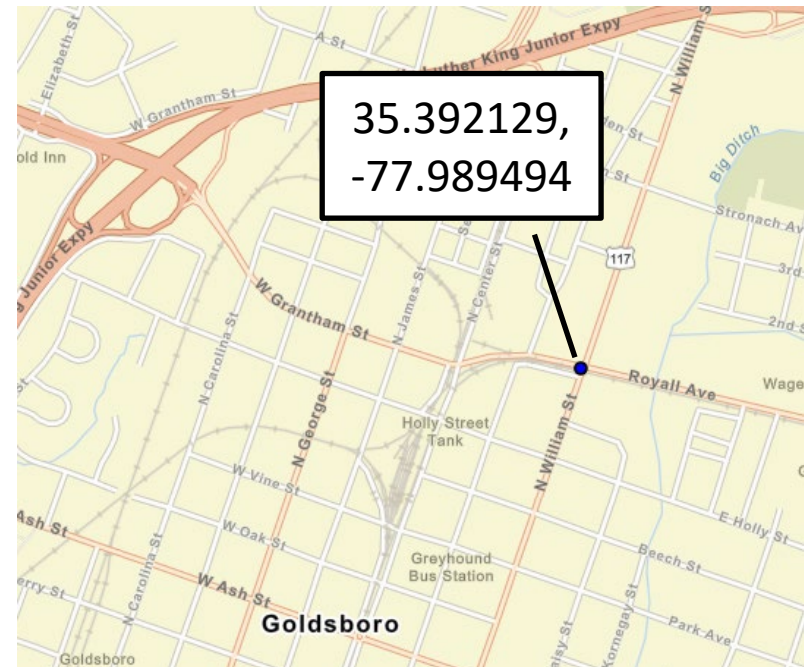
Crash Locating – Why is it difficult?

- Crime analysts cannot easily work with street names to map crashes
- Much manual effort required



Growing Trend – Assigning Lat/Long Coordinates to Crashes

- Coordinates gathered by the officer on-scene
 - Raleigh (100% of crashes)
 - Fuquay-Varina (100%)
 - Conover (100%)
 - Boone (100%)
 - Garner (99%)
 - Goldsboro (92%)
 - and others...



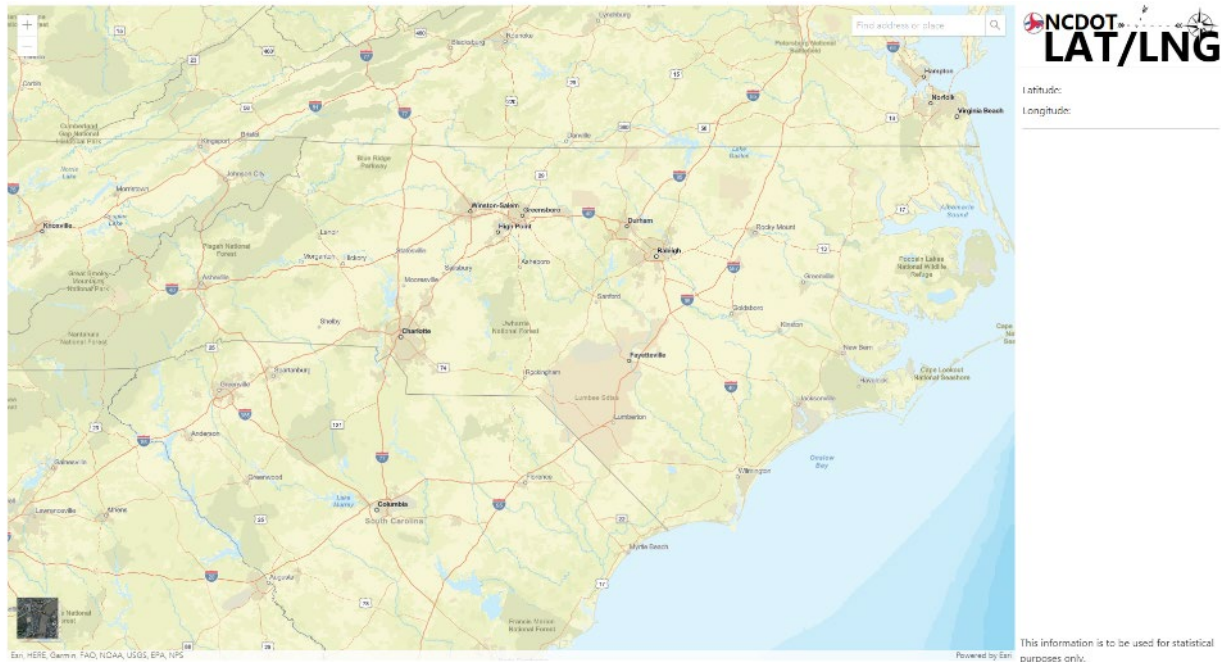
Advantages of Officer-Collected Lat/Long Crash Coordinates

- **Eliminates** many typical locating issues
- **Quick** to collect (under a minute)
- **Easy** to collect with web map tool
- **Enables** crime analysts and engineers to quickly create accurate crash maps
- **Officer on the scene has the best knowledge of where the crash occurred**

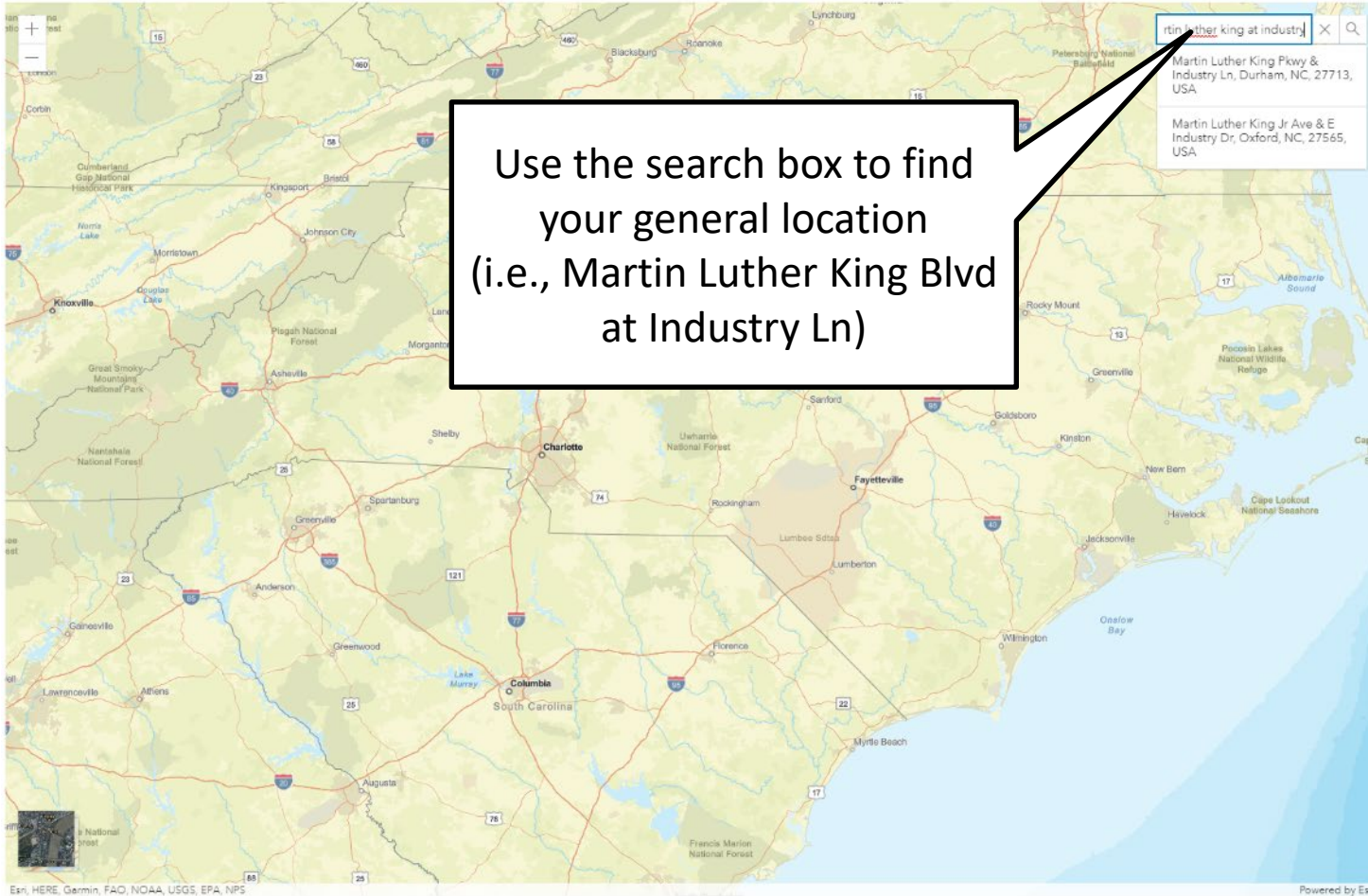
How easy is it?

NCDOT hosts a simple web page for this purpose:

<https://gis13.services.ncdot.gov/latlongmap>



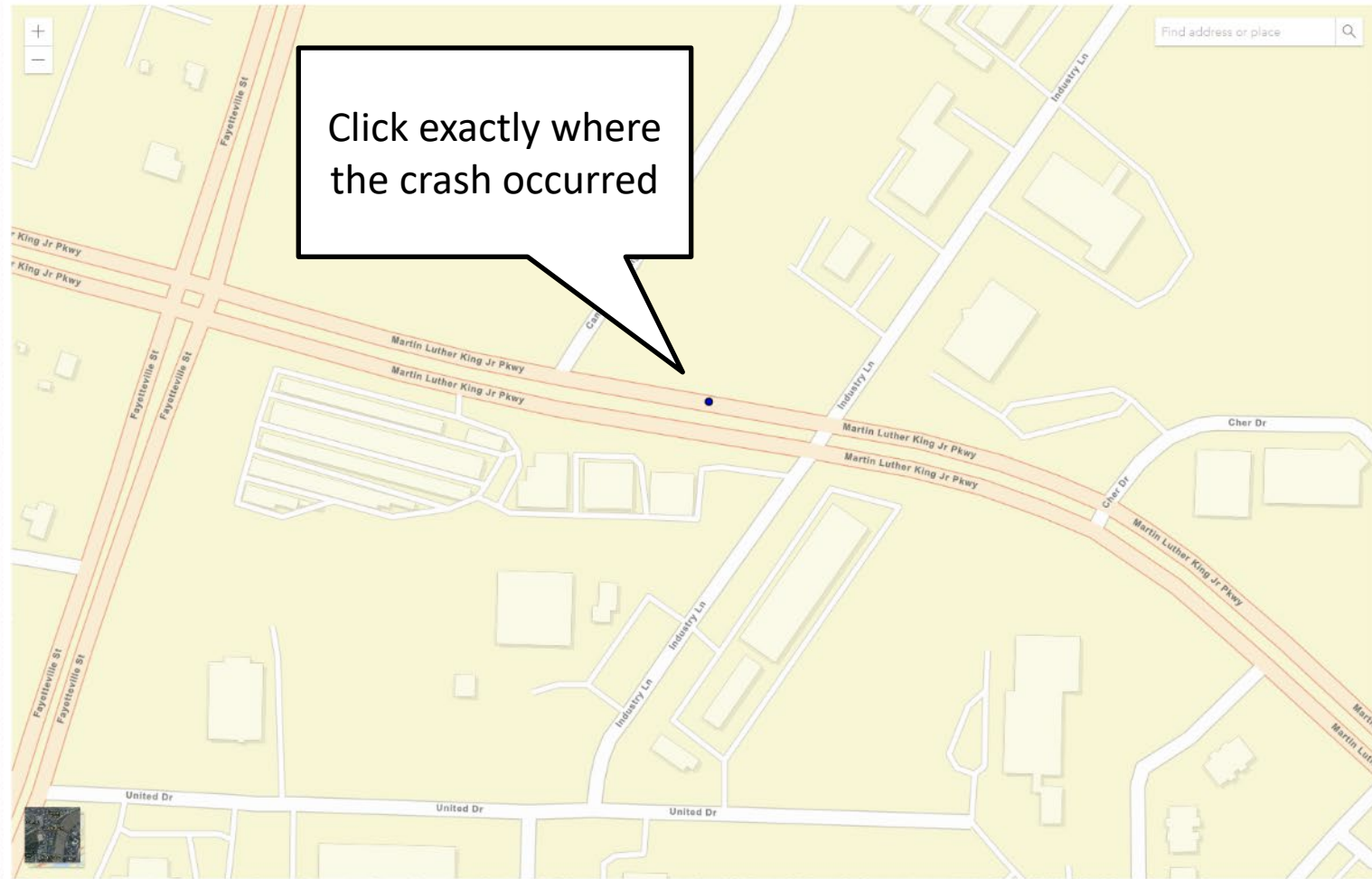
How easy is it?



Latitude:

Longitude:

How easy is it?



 NCDOT
LAT/LNG

Latitude: 35.939018 [Copy](#)
Longitude: -78.903639 [Copy](#)

How easy is it?



 **LAT/LNG**

Latitude: 35.939018 [Copy](#)

Longitude: -78.903639 [Copy](#)

How easy is it?

The screenshot shows the NCDOT LAT/LNG tool interface. At the top, there is a search bar with the text "Find address" and a search icon. Below the search bar is the NCDOT logo and the text "LAT/LNG". The tool displays the following coordinates:

- Latitude: 35.939026
- Longitude: -78.903821

Each coordinate is followed by a blue "Copy" button. A callout box points to the "Copy" button for the latitude with the text "Click to copy the latitude number".

How easy is it?

eCRASH Task Panel

Crash Reports to Display:

- Within the last week
- Within the past month
- Within the past year
- Other

Status to include:

- Incomplete
- Ready to Send
- Supervisor

Local ID	Date	Location	Status	DMV Crash
	2022-09-28	In Durham on MARTIN LUT...	Incomplete	

Location | Crash Codes | Roadway | Workzone

Relation to Roadway Surface:
[01 On Roadway] [In] [Durham] or
[] miles [] N [] S [] E [] W outside municipality
on [OT] [MARTIN LUTHER KING EXPW] [] Ramp or Service Road
R.R. Crossing No.: [] miles or [200] feet (0 ft.-Intersection)
[] N [] S [] E [checked] W [From] [OT] [Industry]
[] N [] S [] E [checked] W toward [SR] [1118]
Latitude: [35.939026] Longitude: [] Altitude: []

Report Status: Incomplete

< Back Next >

Paste the latitude number (Ctrl+v) in the crash form

How easy is it?

- eCRASH

File View Go Tools Help

Search Bar

eCRASH Task Panel

Crash Reports to Display:

- Within the last week
- Within the past month
- Within the past year
- Other

Status to include:

- Incomplete
- Ready to Send
- Supervisor

Local ID	Date	Location	Status	DMV Crash
	2022-09-28	In Durham on MARTIN LUT...	Incomplete	

Location Crash Codes Roadway Workzone

Relation to Roadway Surface:

or

miles N S E W outside municipality

on Ramp or Service Road

R.R. Crossing No.: miles or feet
(0 ft.-Intersection)

N S E W

N S W toward

Latitude: Longitude: Altitude:

Report Status: Incomplete

< Back Next >

Repeat for
longitude

Does it make a difference?

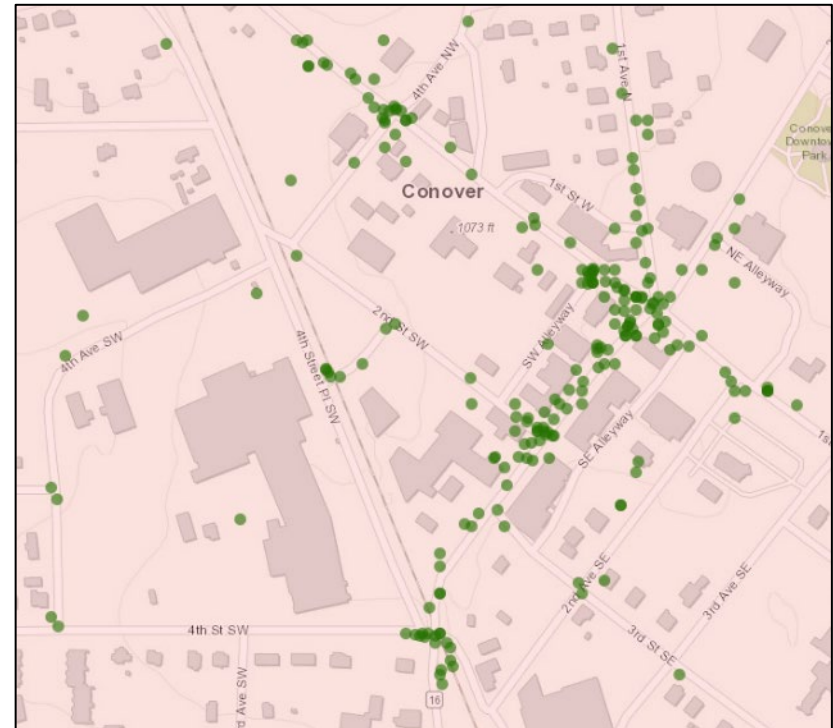
Crash Map

Made using road names only



Crash Map

Made using lat/long coordinates



Example from Conover, NC. Three years of crash data illustrated.

Does it make a difference?

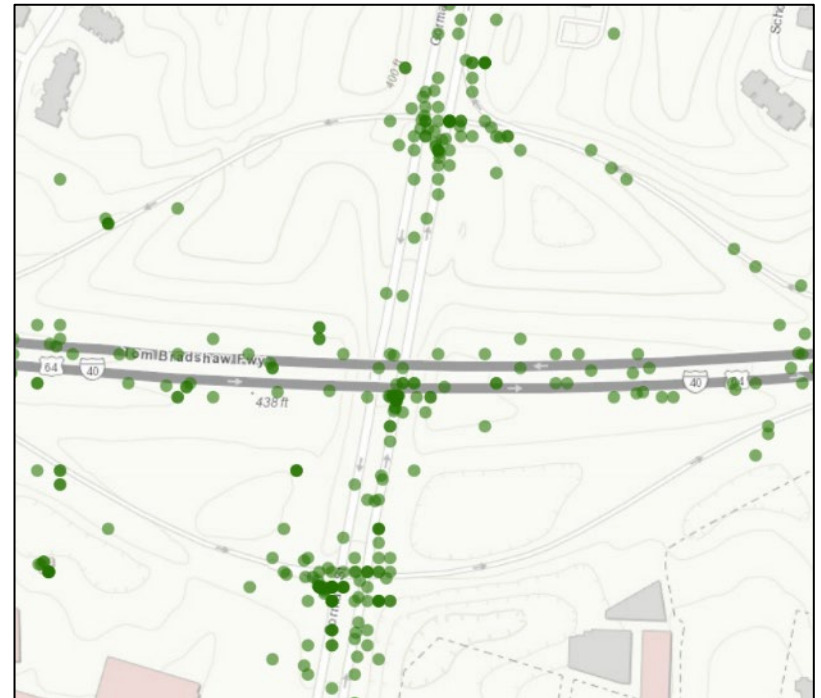
Crash Map

Made using road names only



Crash Map

Made using lat/long coordinates



Example from Raleigh, NC. Three years of crash data illustrated.

Officer-
collected
crash
coordinates

=

Better
knowledge of
where crashes
are occurring

=

Better safety
improvements

Thank You

Daniel Carter
NCDOT Traffic Safety Unit
dlcarter4@ncdot.gov

919-814-4949