

# Systemic Inventory and Crash Analysis Tables (SICAT)



Mike Vaughn, PE – [mike.vaughn@ky.gov](mailto:mike.vaughn@ky.gov)  
Joel Morrill, PE – [joel.morrill@greshamsmith.com](mailto:joel.morrill@greshamsmith.com)  
Justin Hina, PE – [justin.hina@greshamsmith.com](mailto:justin.hina@greshamsmith.com)  
Robbie Holton, PE –



 Gresham  
Smith

# Is it the correct tool?



# Using the tool correctly?



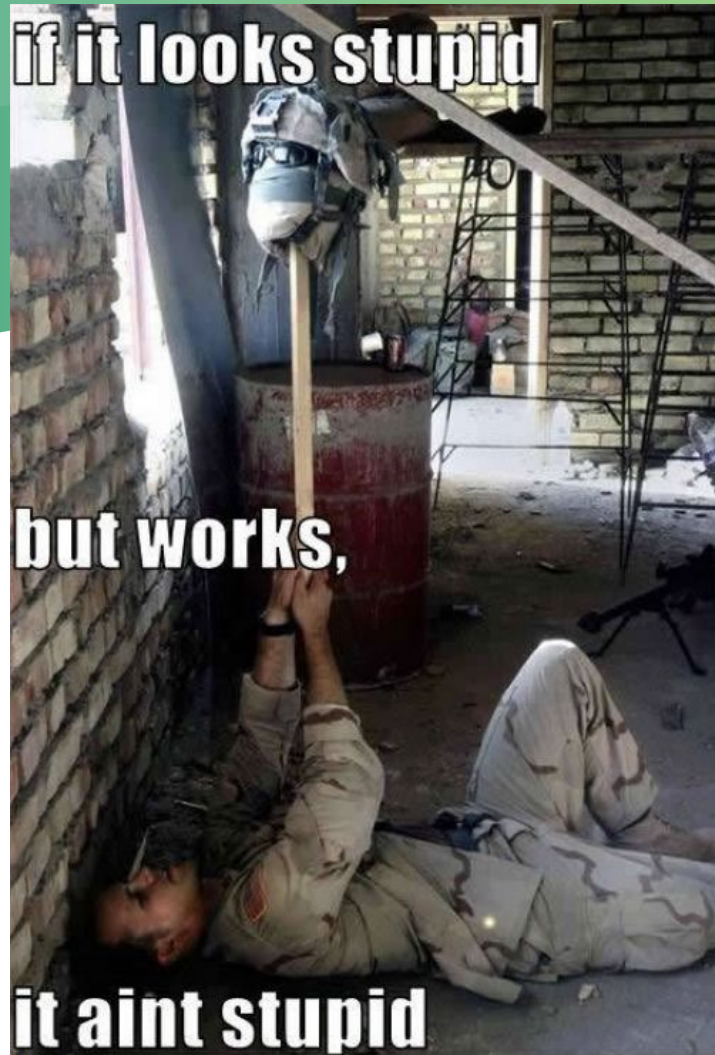
# Making most of tools you do have?



if it looks stupid

but works,

it aint stupid



# Background



- Rural, 50+ mph, 2-lane, undivided roadways
- Prioritized using SPF with EB method
- Developed to help identify safety challenges along Roadway Departure Corridors Initiative projects



# How to use this tool?

- Build a thorough database consisting of and linking crash data and roadway/roadside information
- Use the data to determine which roadway/roadside features are most correlated with crashes, especially severe crashes
- Develop options to “improve” the features that present the most challenges and/or risk



File Home Insert Draw Page Layout Formulas Data Review View Developer Help ProjectWise Tell me what you want to do

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11 A<sup>+</sup> A<sup>-</sup> Wrap Text General Normal Bad Good Neutral Calculation Check Cell Explanatory ... Followed Hy... Hyperlink

Share Comments

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
	MSTRFILEN BRTXT	Severity	Main	COUNTYCD	COUNTY	HWYD	K	RDWRSEUNIQ	MILEPTDRIV ECURRNM	LATDECIMALN	LONGDECIMALN	RDWYIDTXT	INTERSECT	RAMPID	RAMPDA	ROADNAME_I	ROADNAME_BT	ROADNAME_BT	MANNERCOLL	MANNERCC	CDAT	COLLIMET	CLONGDAT	CYE	CM	
1																										
2	71676993	P	Maadit	103	ROWAN	9	8	103-US-0060-000	0.242	38.1411858	-83.5482648	US0060	N	N	TO					1	20151008	2049	201510082049	2015		
3	71881614	C	Maadit	103	ROWAN	9	8	103-US-0060-000	0.247	38.1412363	-83.5481947	US0060	N	N	TO					1	20161029	1134	201610291134	2016		
4	71933908	P	Maadit	103	ROWAN	9	8	103-US-0060-000	0.247	38.1411996	-83.5481578	US0060	N	N	TO					1	20170115	1915	201701151915	2017		
5	71417953	A	Maadit	103	ROWAN	9	8	103-US-0060-000	0.249	38.1412	-83.54813333	US0060	N	N	TO					1	20140201	1455	201402011455	2014		
6	71789652	C	Maadit	103	ROWAN	9	8	103-US-0060-000	0.252	38.1412041	-83.5480772	US0060	N	N	TO					1	20160616	800	201606160800	2016		
7	71657644	P	Maadit	103	ROWAN	9	8	103-US-0060-000	0.277	38.1412427	-83.5476181	US0060	N	N	TO					5	20150909	1655	201509091655	2015		



# Context is important.

**Bath/Rowan Co.**

**US 60 (5.15 miles)**

**CL Rumble Strips**

Centerline Rumble Strips (Y/N)	Number of Crashes
N	15
Y	5
<b>Total Crashes</b>	<b>20</b>

**Shoulder/Edge Rumble Strips**

Shoulder or Edge Rumble Strips (Y/N)	Number of Crashes
N	17
Y	3
<b>Total Crashes</b>	<b>20</b>



# Drilling Into the Data:

Casey Co.  
KY 70 (8.168  
miles)

Roadway Departure Crashes Stations	Manner			Grand Total
	Head On	Side-swipe	Single	
4.7-5.7	-	2	17	19
5.7-6.7	-	1	5	6
6.7-7.7	-	-	3	3
7.7-8.7	-	2	7	9
8.7-9.7	-	-	9	9
9.7-10.7	1	3	6	10
10.7-11.7	-	2	8	10
11.7-12.7	-	5	3	8
<b>Grand Total</b>	<b>1</b>	<b>15</b>	<b>58</b>	<b>74</b>

19/74 (25.68%) of the roadway departure crashes occurred in the first mile of the corridor (~12.2% of the 8.168-mile corridor).



# Drilling Into the Data:

Casey Co.  
KY 70 (8.168  
miles)

MP 4.7 - 5.7 C/NC & Severity	Side-swipe	Manner	
		Single	Grand Total
<b>4.7-5.7</b>	<b>2</b>	<b>17</b>	<b>19</b>
<b>C</b>	<b>1</b>	<b>7</b>	<b>8</b>
B	-	1	1
C	-	1	1
O	1	5	6
<b>NC</b>	<b>1</b>	<b>10</b>	<b>11</b>
B	-	3	3
C	-	1	1
O	1	6	7
<b>Grand Total</b>	<b>2</b>	<b>17</b>	<b>19</b>

## Severity Legend

- K = Fatality
- A = Incapacitating Injury
- B = Non-Incapacitating Injury
- C = Possible Injury
- O = Property Damage Only

11/19 of the roadway crashes within this critical segment occurred in the NC direction.



# Drilling Into the Data:

Casey Co.  
KY 70 (8.168  
miles)

MP 4.7 - 5.7		Condition		
NC	DRY	ICE	WET	Grand Total
4.7-5.7	4	1	6	11
NC	4	1	6	11
B	1	1	1	3
C	-	-	1	1
O	3	-	4	7
<b>Grand Total</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>11</b>

MP 4.7 - 5.7		Condition		
NC	DRY	ICE	WET	Grand Total
4.7-5.7	4	1	6	11
NC	4	1	6	11
<b>LT</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>11</b>
<b>Grand Total</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>11</b>

## Severity Legend

- K = Fatality
- A = Incapacitating Injury
- B = Non-Incapacitating Injury
- C = Possible Injury
- O = Property Damage Only

All of the NC roadway departure crashes within this segment initially departed the LT side of the roadway and 7/11 occurred in icy/wet roadway conditions.



# Thank you!

- Mike Vaughn, PE – [mike.vaughn@ky.gov](mailto:mike.vaughn@ky.gov)
- Joel Morrill, PE – [joel.morrill@greshamsmith.com](mailto:joel.morrill@greshamsmith.com)
- Justin Hina, PE – [justin.hina@greshamsmith.com](mailto:justin.hina@greshamsmith.com)
- Robbie Holton, PE –  
[robert.holton@greshamsmith.com](mailto:robert.holton@greshamsmith.com)

