

Michigan Traffic Safety Summit 2008

*Using Roadsoft GIS for a clearer picture
of traffic safety needs*

Who we are & what we do.



Who:

Jeffery Mitchell, Special Operations Officer,
Van Buren County Road Commission.

What we do:

- Traffic Crash Reconstruction's of serious and fatal crashes on our system.
- Investigations of Traffic Safety complaints & Traffic Safety Reviews.
- Commercial Vehicle Enforcement (Weigh Master).
- Traffic Services (Speed Studies, Traffic Control Issues, etc.)

Who we are & what we do.

Experience:

- 33rd Year at the Road Commission.
- 9 years investigating crashes.
- From 1998 - 2008 I have responded to over 580 "A" type crashes & 114 fatalities.

How do we find our safety problems?

- How do we sort through the mass of data to find our safety problem areas?
- Using RoadSoft to quickly confirm or refute anecdotal complaints.
- Using the RoadSoft program to identify our problem intersections & road segments.

What do we do next, The Overview

- Sorting the crashes by type and date.
- Using the crash diagram to see the whole picture.
- Using Summary Crash Statistics for a better focus.
- Evaluating the data in preparation for the field review.

The size of our problem or The Numbers – Miles of Roads

- Van Buren County is 632 Square Miles.
- 362.14 miles of Primary & 875.74 miles of local roads.
- Total county road miles - 1,237.88 (69%)
- State roads miles - 169.72 (9%)
- City streets & NCR's miles - 377.15 (21%)
- Total Non-county roads miles - 546.87 (30%)
- Total road miles in Van Buren County -1784.75

The size of the problem or The Numbers – The Crashes

Crashes 1998 to 2006

Total Crashes on all Van Buren County roads

- 22,558 or 2,819 average per year
- Personal Injury – 6,086 (Incapacitating Injury "A" – 1,152)
- Fatal - 172

Total Crashes on the Van Buren County Road Commission system

- 10,334 or 1,291.75 average per year
- Personal Injury – 3,193 (Incapacitating Injury "A" – 670)
- Fatal - 97

Why are we here? These are not just statistics or Numbers,

These are our fathers, mothers, brothers, sisters & children.



One Husband Killed



Three teens killed

Crashes happen at railroad grade crossings,



Three kid's died and one was seriously burned.

Police officers are not immune,



Sometimes the officer walks away.



And sometimes they die in their cars
(Scott A. Beyerstedt - 21 years old -
Mattawan PD)

And neither are MDOT or County workers.



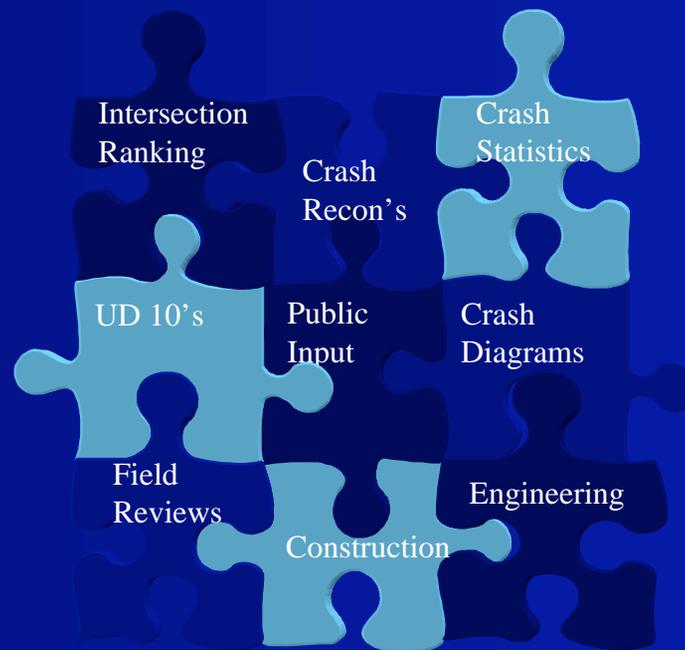
Sometimes the cause of the crash is easily determined, violation of the hours of service rule and cellular phone use by the truck driver.

And sometimes the cause is right in front of you.



The Big Picture

- When we use all the pieces, it all comes together to create safer roads.



Getting Started with the Safety Analysis Tool

- You can use RoadSofts Safety Analysis tool to locate the areas of the most concern.
- Using this tool you can sort your crash data a number of ways. (County local or primary intersections with fatal or incapacitating injuries)

After ranking your intersections you can then select the ones that most concern you to do further analysis on.

RoadSoft GIS - [Intersection Ranking]

File | WMC | Reports | Asset Management | Safety Analysis | LDC | Tools | Help

Apply as Selection | Fixed Collision Diagram | Summary Collision Diagram | Trend Analysis | Intersection Module | Dash Summary

Rank	ID	Intersection	Total Crashes	Injury Crashes	# of A Injuries	Fatal Crashes	# of Fatal	EPDO	Modified EPDO	TCPOD	TCA	FCO	AADT	TOSA	MEV	Crashes / MEV	Inj / MEV
1	80007899	Red Arrow Hwy & County Road 661	4	4	8	0	0	36	5236	2000	18000	0	0	260000	0	0	0
2	80006996	28th St & E Red Arrow Hwy & County Road 652	3	3	3	0	0	27	3527	2000	18000	0	0	260000	0	0	0
3	80002047	12th Ave & 60th St	3	3	3	0	0	27	3527	2000	18000	0	0	260000	0	0	0
4	80001729	Blue Star Hwy	3	3	5	0	0	27	3527	2000	18000	0	0	260000	0	0	0
5	80001790	Lufange St & Blue Star Hwy	3	3	5	0	0	27	3527	2000	18000	0	0	260000	0	0	0
6	80006196	Fish Lake Rd & 44th Ave & 40th St	2	0	0	2	2	2500	2518	2000	18000	0	0	260000	0	0	0
7	80006270	County Road 375 & Akema Dr & S Van Kal St	2	2	2	0	0	18	2518	2000	18000	0	0	260000	0	0	0
8	80002137	12th Ave & 68th St	2	2	2	0	0	18	2518	2000	18000	0	0	260000	0	0	0
9	80007232	Butcher Rd, County Road 681	2	2	2	0	0	18	2518	2000	18000	0	0	260000	0	0	0
10	80006040	56th Ave & W Red Arrow Hwy	2	2	2	0	0	18	2518	2000	18000	0	0	260000	0	0	0
11	80007090	E Red Arrow Hwy & 25th St	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
12	80005936	County Road 652 & 64th Ave	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
13	80004632	County Road 378 & 68th St	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
14	80002543	12th Ave & 62nd St	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
15	80011574	54th St & 30rd Ave	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
16	80005945	County Road 365 & County Road 215	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
17	80010334	County Road 652 & County Road 254	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
18	80007290	Blue Star Hwy & Phoenix St	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
19	80006648	40th St & 47th Ave	2	2	3	0	0	18	2518	2000	18000	0	0	260000	0	0	0
20	8000714	Phoenix Rd, County Road 687	2	2	6	0	0	18	2518	2000	18000	0	0	260000	0	0	0
21	80006196	44th Ave & 27th St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
22	80006174	34th Ave & 60th St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
23	80001751	10th Ave & 36th St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
24	2018627	Baseline Rd & 49th St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
25	80011789	46th St & County Road 669 & Old Swamp Rd	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
26	80003096	County Road 360 & 60th St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
27	80006775	Lakewood Dr & County Road 262	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
28	80006225	Red Arrow Hwy & 59th St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
29	80005634	49th St & Paw Paw Rd	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
30	80006196	39th St & W Red Arrow Hwy	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
31	80001212	32nd St & M 40	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
32	80001492	8th Ave & 39 1/2 St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
33	80002185	25th St & 12th Ave	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
34	80002514	19th Ave & 72nd St	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0
35	80003772	County Road 687 & M 43	1	0	0	1	3	1300	1309	2000	18000	0	0	260000	0	0	0
36	80002582	19th Ave & 62nd St	1	0	0	1	3	1300	1309	2000	18000	0	0	260000	0	0	0
37	80006678	M 43 & County Road 316	1	0	0	1	1	1300	1309	2000	18000	0	0	260000	0	0	0

151 Intersections. - Intersections with at least one State Trunkline Leg

Printed Ranking Done

Var Buena County Map | Intersection Analysis | Intersection Ranking

start | Presentation | RoadSoft GIS - [D] | Document - [P] | 8:51 PM

For an even more detailed look you can use the diagram summary page.

Summary from Collision Diagram

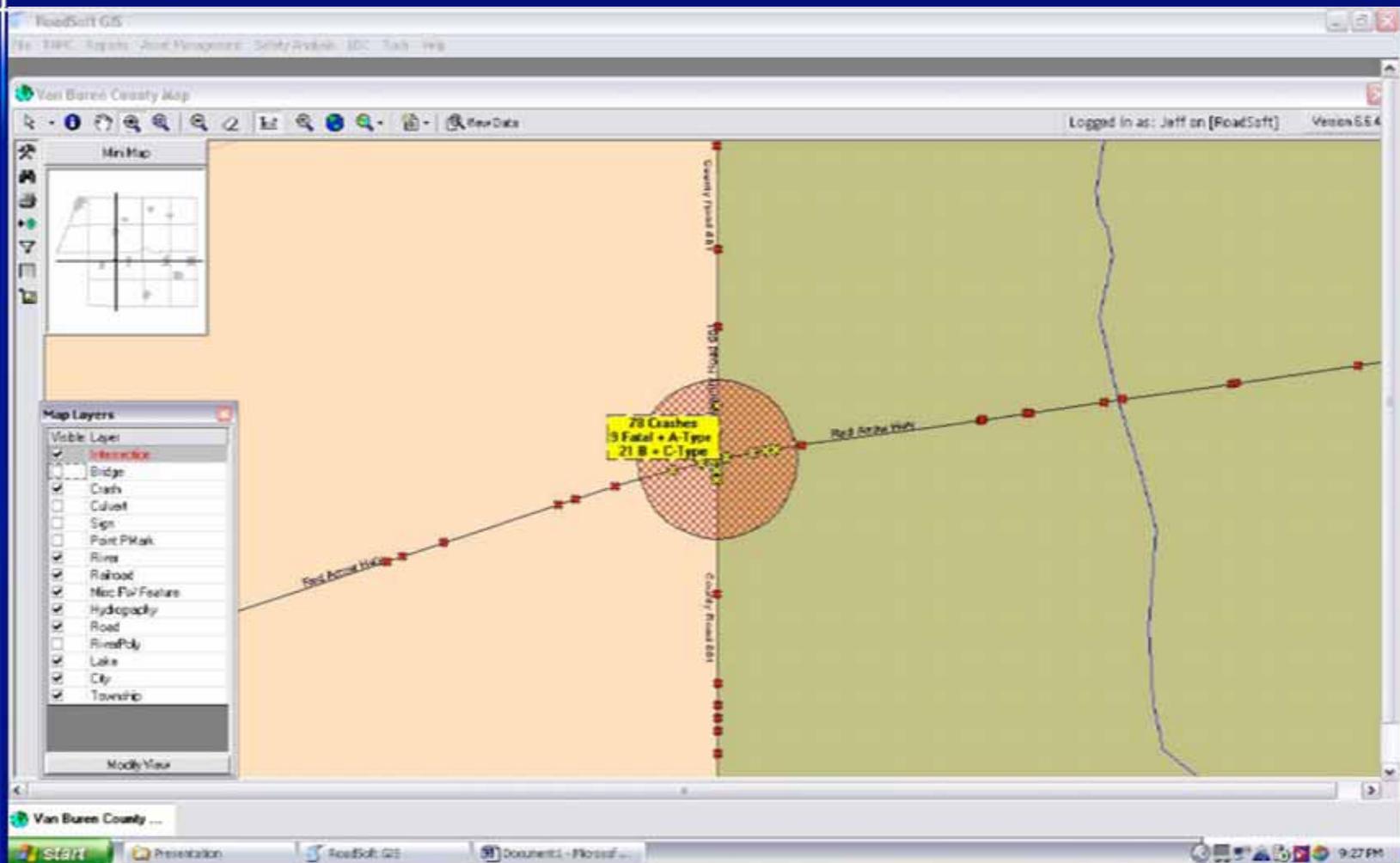
All Collisions on Intersection of Red Arrow Hwy and County Road 681

Crash Type: Various

Mo/Year	Day	Time	Severity	Lighting	Weather	Surface Condition	Intent
5/2004	Mon	2:30 p.m. to 3:00 p.m.	Property Damage Only	Daylight	Cloudy	Dry	Gang Straight
5/2004	Mon	6:30 p.m. to 7:00 p.m.	Personal Injury	Daylight	Clear	Dry	Gang Straight
6/2004	Fri	2:30 p.m. to 3:00 p.m.	Personal Injury	Daylight	Clear	Dry	Starting up on Read
7/2004	Sat	10:00 p.m. to 11:00 p.m.	Property Damage Only	Dark, Lighted	Clear	Dry	Starting up on Read
7/2004	Thu	9:30 p.m. to 10:00 p.m.	Property Damage Only	Dark	Cloudy	Dry	Gang Straight
8/2004	Sat	1:30 p.m. to 2:00 p.m.	Property Damage Only	Daylight	Cloudy	Dry	Starting up on Read
8/2004	Tue	3:30 p.m. to 4:00 p.m.	Property Damage Only	Daylight	Clear	Dry	Starting up on Read
8/2004	Wed	10:00 p.m. to 11:00 p.m.	Property Damage Only	Daylight	Cloudy	Dry	Gang Straight
8/2004	Mon	9:30 p.m. to 10:00 p.m.	Property Damage Only	Dark, Unlighted	Clear	Dry	Gang Straight
8/2005	Fri	4:30 p.m. to 5:00 p.m.	Personal Injury	Daylight	Cloudy	Dry	Turning Left
9/2005	Tue	7:30 p.m. to 8:00 p.m.	Property Damage Only	Dark, Unlighted	Clear	Dry	Gang Straight
9/2005	Sun	7:30 p.m. to 8:00 p.m.	Property Damage Only	Daylight	Rain	Wet	Gang Straight
9/2005	Mon	10:00 p.m. to 11:00 p.m.	Property Damage Only	Dark, Unlighted	Clear	Dry	Stepped on Road
9/2005	Sat	5:30 p.m. to 6:00 p.m.	Personal Injury	Daylight	Clear	Dry	Gang Straight
7/2005	Sun	3:30 p.m. to 4:00 p.m.	Personal Injury	Daylight	Clear	Dry	Unocded & Excess
7/2005	Wed	9:30 a.m. to 10:00 a.m.	Personal Injury	Daylight	Clear	Dry	Gang Straight
8/2005	Mon	1:30 a.m. to 2:00 a.m.	Property Damage Only	Dark, Unlighted	Fog or Smoke	Dry	Turning Right
11/2005	Thu	10:00 a.m. to 11:00 a.m.	Personal Injury	Daylight	Clear	Dry	Starting up on Read

Total: 44

There are a number of ways to display your data. But it's all useless unless you act on your findings.



Dissecting The data & field reviews

- What are the trends that come out in your cash data? Right angle crashes, rear end crashes, run off the road?
- Look at the crash statistics to find the trend. (time of day, weather, time of year).
- Don't waste your time. Why look at a road on a mid-summer afternoon when all the crashes are occurring in the fall in the early morning.

During your field review take pictures, look for the vision obstruction or hill that might be resulting in the right angle crashes from a certain direction.

Field investigations at the time of the crash can tell you things that will not show up on the UD10's. Learn to read the paint signs & gouges.



But the diagram shows a right angle crash.

BACK

Unit Number: 2, State: MI, Other License Number: [redacted], Date of Birth: 07/30/1942

NCS
Law Type: **LARRY LANTON**
Street Address: **LAWTON MI 48065-265**

Other Condition: No Yes
Hazard: No Yes
Accident: No Yes

Damage: No Yes
Vehicle Registration: **MI** **5078** **FAH** **1950**

1 FAPP 5357
Location of Damaged Vehicle: **08** **2**

Vehicle Type: **FAH** **1950**

Unit Reported on Front: **01/17**
Unit Reported Above: **01/17**

Address: **22 E/B W. HIGHLAND DR. #1 S/B S. KANKAL AT STOP SIGN. A1 TRUCKS 4-WAY STOP, PROCEEDS THROUGH INTERSECTION. #2 HAS RIGHT WAY. #1 TRUCK IS NOT 4-WAY STOP, IS A THROUGH INTERSECTION. #1 TRUCK #2.**

City: **Ann Arbor**, State: **MI**, Center Section: Figures Intersect Lay Book Other

Draw a CCA Type: C-1 C-2 C-3 C-4 C-5 C-6 C-7 C-8 C-9 C-10 C-11 C-12 C-13 C-14 C-15 C-16 C-17 C-18 C-19 C-20 C-21 C-22 C-23 C-24 C-25 C-26 C-27 C-28 C-29 C-30 C-31 C-32 C-33 C-34 C-35 C-36 C-37 C-38 C-39 C-40 C-41 C-42 C-43 C-44 C-45 C-46 C-47 C-48 C-49 C-50 C-51 C-52 C-53 C-54 C-55 C-56 C-57 C-58 C-59 C-60 C-61 C-62 C-63 C-64 C-65 C-66 C-67 C-68 C-69 C-70 C-71 C-72 C-73 C-74 C-75 C-76 C-77 C-78 C-79 C-80 C-81 C-82 C-83 C-84 C-85 C-86 C-87 C-88 C-89 C-90 C-91 C-92 C-93 C-94 C-95 C-96 C-97 C-98 C-99 C-100

Unit Number: **8133599**, Date: **1/17/04**, Page: **1/09**

Do Not Write or Mark Below This Line

Engineering & Cost Effective Results

- After all the data mining & field work there comes a time for engineering and action.
- What are your recommendations?
- Do they solve the problem & save lives?
- Are they cost effective and affordable?

Summary

- We believe a proactive stance towards highway safety is in the best interest of everyone involved.
- Using programs RoadSoft and like the High Risk Rural Roads program can greatly increase roadway safety.

Questions?

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