

2021 SARF KZN Seminar

Critical Review of the KZN Road Network

Road Safety Trends in the KZN Region

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Road Safety Trends in KZN:

We look briefly at what the latest suggestions are in respect of the type of crash cases and a general overview of safety issues in respect of road safety, and what these imply.

Resources:

Data considered from:

- * Our own cases & research database for the last year
01/01/2020 – Current
- * Our own cases & research database for 20 years
- * Records from the eThekweni Municipality Traffic
Studies 01/01/2020 – June 2021
- * Brief industry consultation

Before we look at some data, a clear trend in respect of our case analysis work is:

Because of the massive uptake / implementation of In Vehicle Monitoring (IVM) cameras that are linked to GPS and vehicle telemetry, we have seen a massive increase in:

- * “Naturalistic study” type research (based on these video)
- * Video clip analysis for crash cases
- * Massive increase in vehicle telemetry availability and analysis

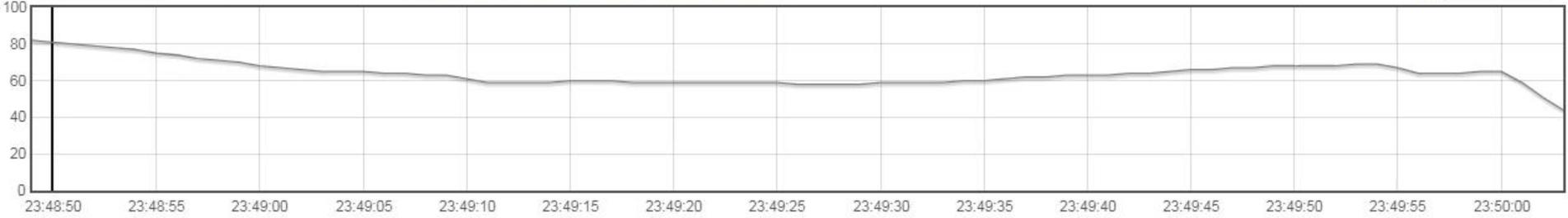
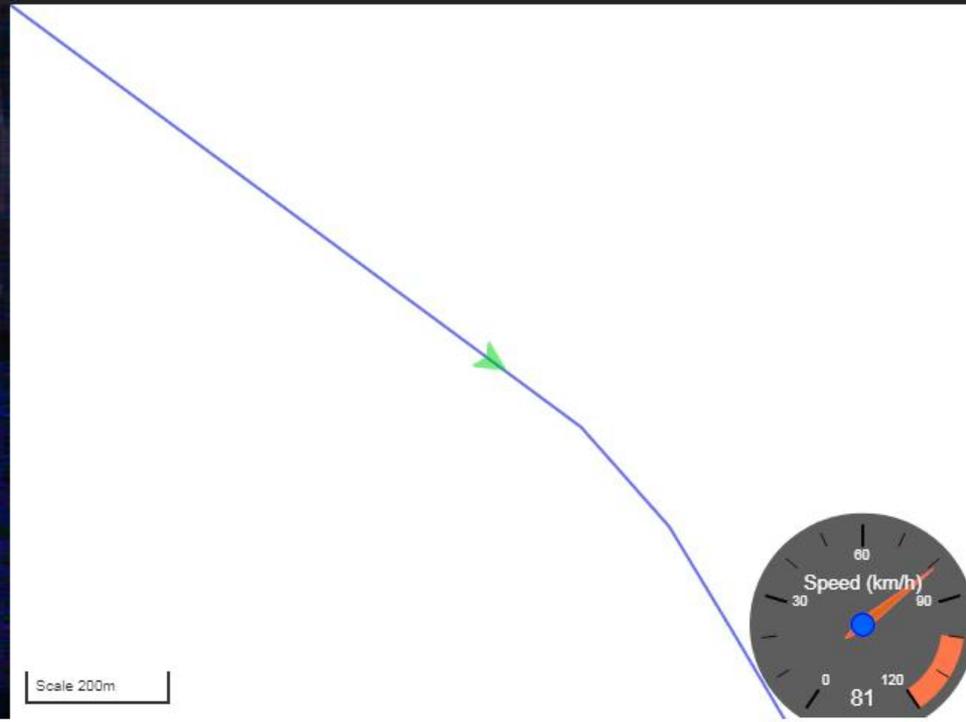
Here are three examples for you

Trends...!!??



Trends...!?!?

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Trends...!??



Point of note:

Besides the well known eThekweni Traffic Studies database, we remain with the known and documented difficulties of accessing and detailed data from the PDOT or NDOT traffic crash database stats.

General observations and comments:

Pedestrian (soft road users) remains the major issue. As we will see shortly, soft road users, remain the major fatality.

Even with the effect of Covid (2020 / 2021), KZN being a major transport hub in respect of both the key harbour and airport, has seen some level of “adjustment” in usual volumes. However the stats and indications therefrom are not reasonably expected to change the overall considerations.

General observations and comments (Continued):

Although at this stage, we do not have stats (empirical data) at hand, it appears (driving observations; cases at hand; commentary & interview) that commercial vehicle (lack of trains!?) crash rates are likely to be higher, this needs consideration.

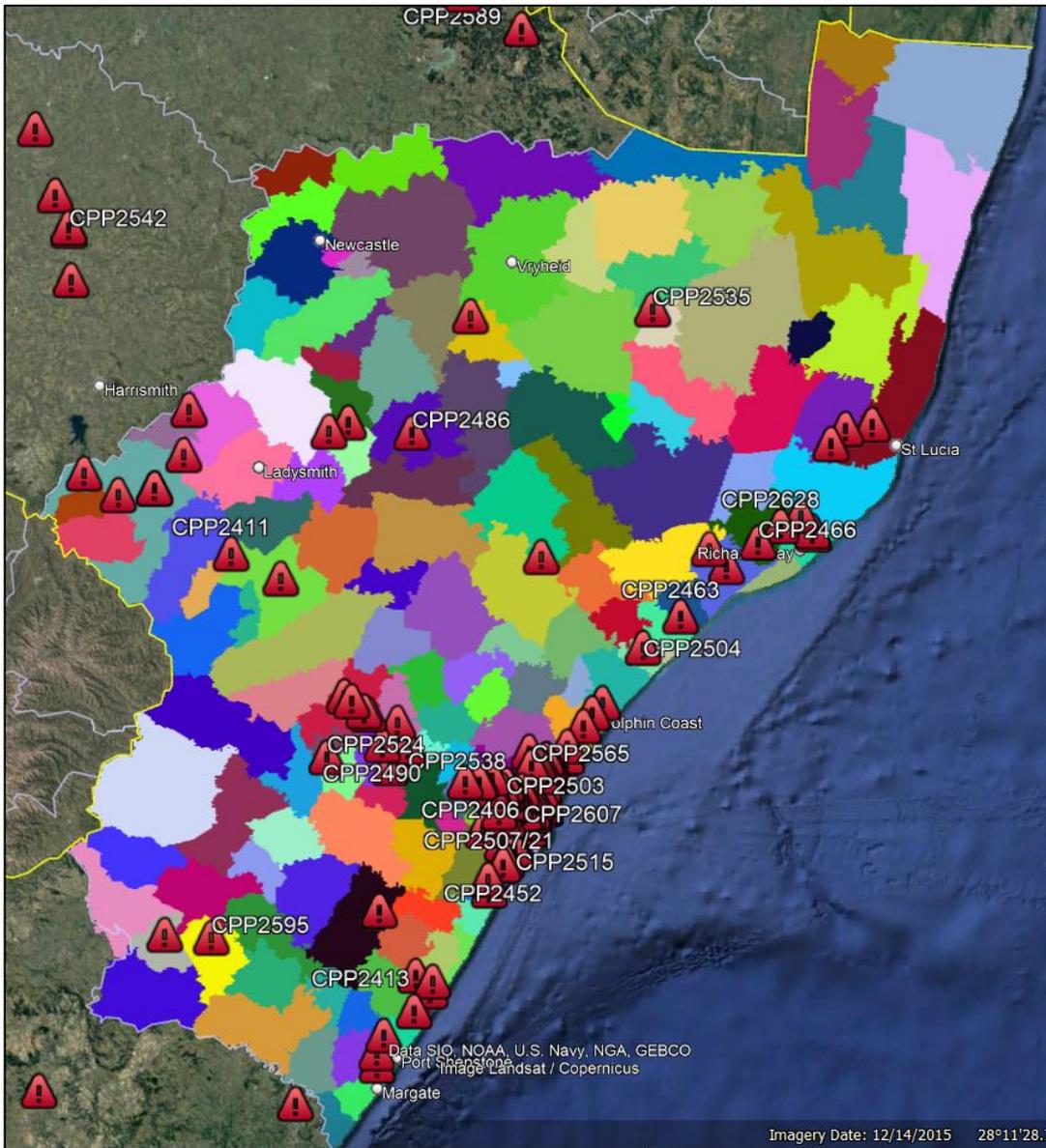
With appointment and now active implementation of the large scale SANRAL projects largely on the major corridors. We can expect some level of congestion, and therefore likely change in associated crash types in these zone (head-rear; sideswipe / glancing), however this can only be considered retrospective. *

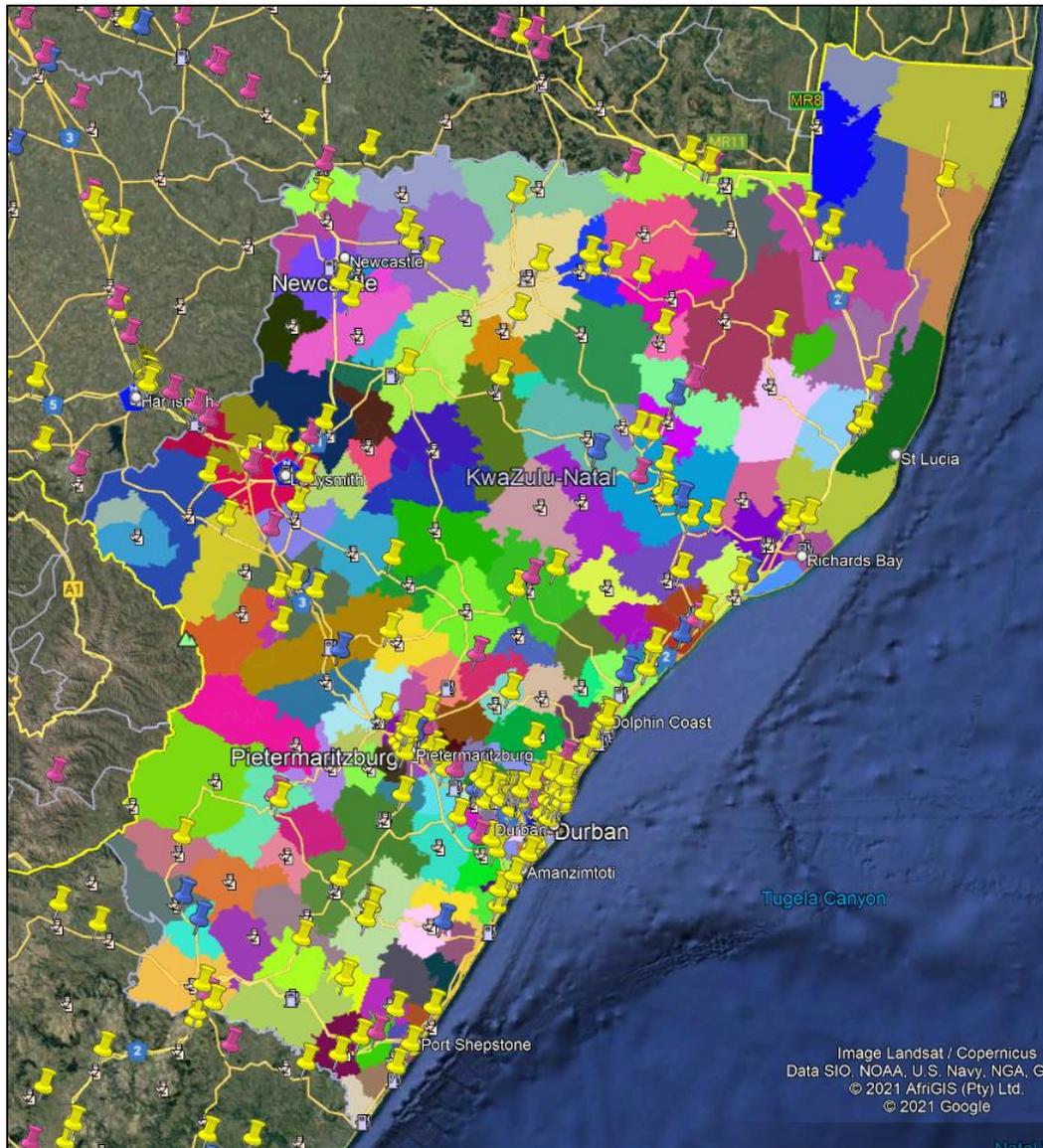
Our own cases
&
research database
for the last period

115 cases considered between
2020 – October 2021 in KZN

Of these:

Loss of control	- 52
Head on	- 11
Head rear	- 10
Fixed object	- 9
Right angle	- 7
Sideswipe	- 7
Pedestrian	- 3
Cyclist	- 3
Motorcycle	- 2
Animal	- 1
Mechanical issue	- 1





Our own cases
&
research database
for the last 20 years

The three major crash
types are:

- **Loss of control – opposite direction crash & rollover**
- **Opposite direction – head-on / partial head-on**
- **“Tyre” related crash – all types**

Accident Details By Accident Type

ETHEKWINI

Date Range: 01/01/2020 to 27/09/2021

Accident Type	Tot	Highest level of accident				Casualties			Day of Week			Visibility				Peak periods			Road Condition		
		Fatal	Serious	Slight	NonInj	Deaths	Serious	Slight	Sat	Sun	Week	Day	Night	Twl	Unkn	Am(6-8)	Pm(4-6)	Off	Wet	Dry	Unkn
Alighting/Boarding	19	0	13	6	0	0	14	6	5	2	12	12	4	3	0	3	4	12	1	18	0
Head on	453	13	42	92	306	15	84	172	96	79	278	262	142	49	0	45	83	325	58	394	1
Left turn (same)	1325	0	3	70	1252	0	3	80	168	91	1066	1084	146	95	0	162	219	944	84	1238	3
Multi-vehicle Rear end	197	2	14	61	120	2	21	106	17	7	173	160	13	24	0	50	32	115	35	162	0
Other	1470	15	71	144	1240	15	81	175	189	201	1080	849	493	127	1	130	159	1181	213	1244	13
Parked sideswipe	2097	3	18	78	1998	4	23	104	333	281	1483	1440	487	170	0	157	284	1656	139	1952	6
Parked/Parking	2083	0	5	43	2035	0	6	62	316	244	1523	1588	367	128	0	145	285	1653	139	1939	5
Projecting load	14	0	1	0	13	0	2	0	1	1	12	12	0	2	0	3	5	6	0	14	0
Rear end	22705	23	239	2176	20267	28	301	2839	2813	1884	18008	17550	3076	2078	1	3653	4047	15005	2707	19949	49
Reversing	4216	1	11	105	4099	1	12	133	604	434	3178	3310	570	335	1	448	641	3127	282	3924	10
Right Angle stationary	414	0	3	23	388	0	3	33	58	56	300	283	96	35	0	42	72	300	39	374	1
Right angle-straight	3584	13	106	571	2894	16	146	810	525	398	2661	2456	787	341	0	441	521	2622	314	3263	7
Right angle-turn	5728	2	116	677	4933	2	137	925	843	557	4328	4207	943	578	0	925	934	3869	510	5211	7
Right turn (same)	2337	0	27	200	2110	0	39	261	298	180	1859	1786	307	244	0	321	389	1627	182	2154	1
Side swipe ramp	2	0	0	0	2	0	0	0	0	0	2	2	0	0	0	1	0	1	0	2	0
Sideswipe: Opp direction	3139	18	106	371	2644	22	164	546	558	460	2121	1807	967	363	2	379	436	2324	334	2798	7
Sideswipe: Same direction	15624	14	176	1041	14393	16	228	1322	1942	1143	12539	11858	2294	1472	0	2258	2763	10603	1338	14259	27
Single vehicle - overturned	1542	72	202	526	742	91	298	782	269	272	1001	787	624	130	1	139	182	1221	472	1066	4
Turn right opposing	2847	8	89	577	2173	9	114	774	403	283	2161	2034	511	302	0	364	440	2043	268	2577	2
Unsecured load	62	0	0	3	59	0	0	7	11	5	46	48	11	3	0	4	8	50	4	58	0
Vehicle/animal	581	0	3	23	555	0	3	23	77	81	423	275	236	70	0	60	76	445	80	500	1
Vehicle/fixed object	5422	36	229	931	4226	39	283	1082	947	890	3585	2747	2213	462	0	453	577	4392	1337	4074	11
Vehicle/pedestrian	7227	464	2531	3968	264	473	2715	4565	1179	961	5087	4648	1706	873	0	929	1259	5039	361	6799	67
Vehicle/train	3	0	0	1	2	0	0	2	0	0	3	3	0	0	0	0	0	3	0	3	0
	83091	684	4005	11687	66715	733	4677	14809	1E+04	8510	62929	59208	15993	7884	6	1E+04	13416	58563	8897	73972	222

2020 and 6 months' 2021 data – Approx. 83 000 crash cases

Rear Ends (22,705) 27% and Side Swipes same direction (15,624) 19% are the predominant crash types only 5 % of these crashes result in fatal crashes (usually where a heavy vehicle or motorcycle is involved) *

Right Angle (9,726) Crashes account for **12 %** of all crashes and 2% of fatal crashes.

Head on and side swipe opposing (3,594) crashes account for both **5%** of total and fatal crashes.

Single vehicle crashes - fixed objects and overturning (6,964) - 8% of total crashes but **15%** of fatal crashes.

The winner (or biggest loser) is **ped crashes - 9%** of total crashes, **but 68% of fatal crashes.**

During this period - 288 occurred on the N2 and N3 with 99 fatalities i.e. 20% of all pedestrian fatalities in eThekweni. *

This data implies (trends):

- * The key issue to note is what crash type produces the most fatalities (in order)
 - Pedestrians 68 % of fatal crashes
 - Single vehicle crashes - fixed objects and overturning (loss of control?) 15% of fatal crash cases
 - * **Notably this accords with our 18 months' stats and our 20 years' stats in the same categories**
 - Head on and side swipe opposing (3,594) 5% of fatal
 - * **Notably this accords with our 18 months' stats and our 20 years' stats in the same categories**

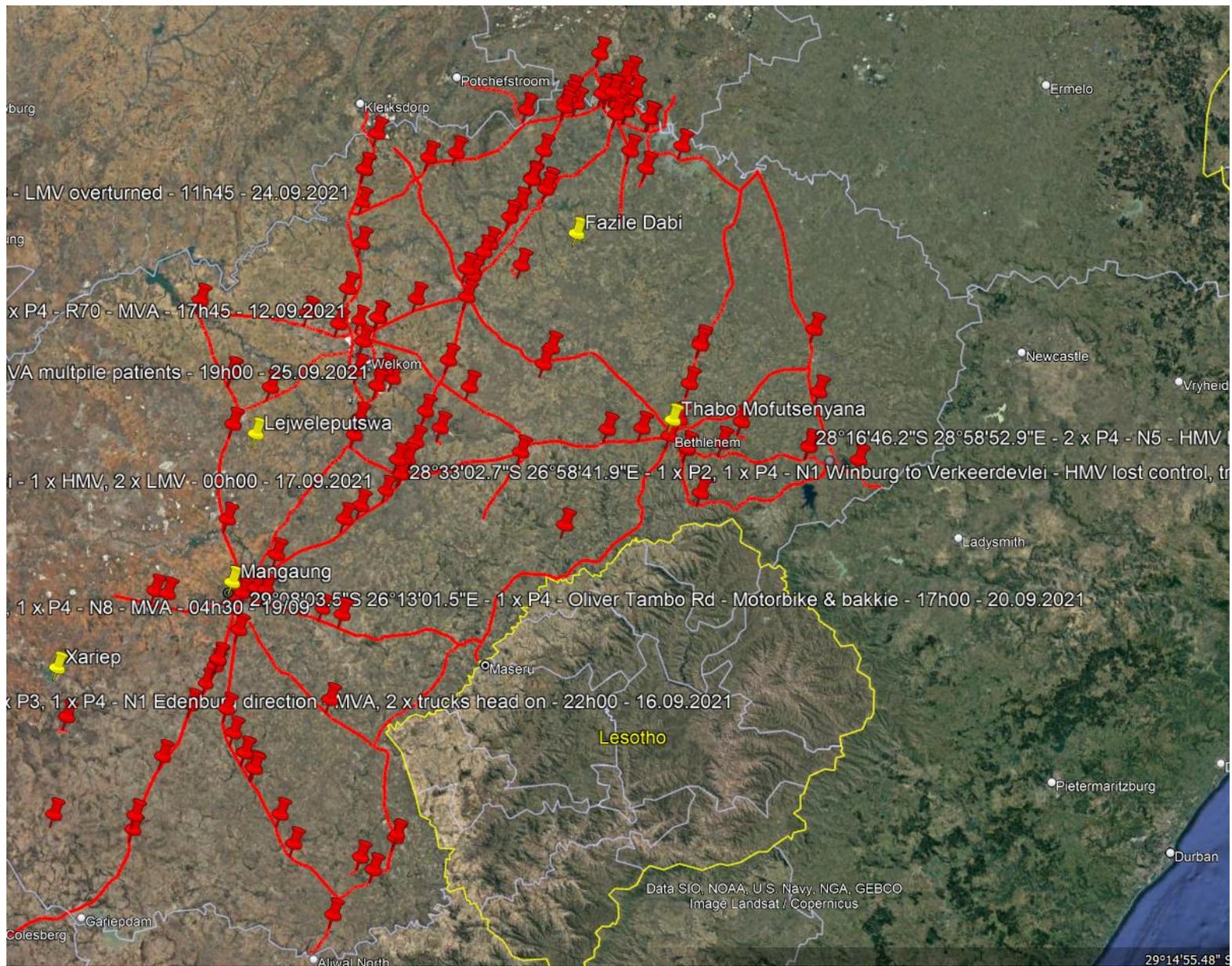
This data implies (trends):

* The key issue to note is what crash type produces the most fatalities (in order)

- Rear Ends (22,705) and Side Swipes same direction 5% of fatalities

This noted, implies that for approximately 18 months, only the 5% (1,916) fatalities of the **Rear Ends (22705) and Side Swipes same direction (15,624) has cost in excess of 10 billion!** (RTMC / CSIR 08/2016 – 5.4 Mil per fatal crash)

Interestingly and for comparative, for the seven month period we have monitored only fatal crash cases for the Free State, some 136 fatal crash cases therefore equates to around 734 Million



Comments:

- 1 Greater emphasis on securing a comprehensive, reliable database – This should be worked on as a specific emphasis project - co-operation between various role players (NDOT / PDOT / RTMC / Municipalities / **Private** – especially insurers)
- 2 Pedestrian (Highest stats) related designs / facilities / education remains a no. 1 priority, yet more often that not, remains a “secondary” consideration – greater emphasis on this issue needs to be highlighted from grass roots.
- 3 In respect of the 15% single vehicle crash fatalities (second highest stats). Renewed emphasis on driver standards from grass roots driver testing, training and licencing (driver school inspectors !?) and general education needs to be addressed as a priority.
- 4 From an engineering perspective, continued improvement of lane separation, where possible, and roadside furniture protection is key.

For an alternate perspective on this subject, you can read the article - **Trends of the transport field as a whole during the COVID Lockdown in relation to telematics:**

<https://www.accidentsspecialist.co.za/wp-content/uploads/2020/12/Making-sense-of-transport-sector-over-Covid.pdf>

Thank you

