



Road Traffic
Management Corporation



Ensuring safe, secure and responsible use of roads in South Africa.

Cost of Crashes and HazRoad Sections in SA (2015-2018/19)

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The Road Traffic Management Corporation (RTMC)
is an Agency of The Department of Transport and a
Member of the United Nations Road Safety Collaboration

Content



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Part A Cost of Crashes in South Africa (2015-2018)

Part B HazRoad Sections in SA (2015-2018)

Part A



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Cost of Crashes in South Africa (2015-2018/19)

- **Real** - Adjusted with CPI from 2015
- **Nominal** – Not adjusted with CPI

What is the difference between **nominal** and **real** prices?

Nominal prices, or current prices, measure the value of a product at the time it was produced.

Real prices are adjusted for general price level changes over time, i.e., inflation or deflation.

Estimated Cost of Crashes (CoC) - Calendar Year

| Year | Period | Days | **Fatalities | **Fatal Crashes | CoC R* Billion | Change R* Billion | % Change | ***Est. Unit Cost Death | ***Est. Unit Cost Fatal Crash |
|-------|------------------|------|--------------|-----------------|----------------|-------------------|----------|-------------------------|-------------------------------|
| 2015 | 1Jan15 - 31Dec15 | 365 | 12 944 | 10 613 | 142,95 | - | - | R 3 916 187 | R 5 435 261 |
| *2016 | 1Jan16 - 31Dec16 | 365 | 14 071 | 11 676 | 167,63 | +24,68 | +17,27% | R 4 174 264 | R 5 793 445 |
| *2017 | 1Jan17 - 31Dec17 | 365 | 14 050 | 11 437 | 172,72 | +5,09 | +3,04% | R 4 390 908 | R 6 094 125 |
| *2018 | 1Jan18 - 31Dec18 | 365 | 12 921 | 10 564 | 166,72 | -6,00 | -3,48% | R 4 588 499 | R 6 368 360 |

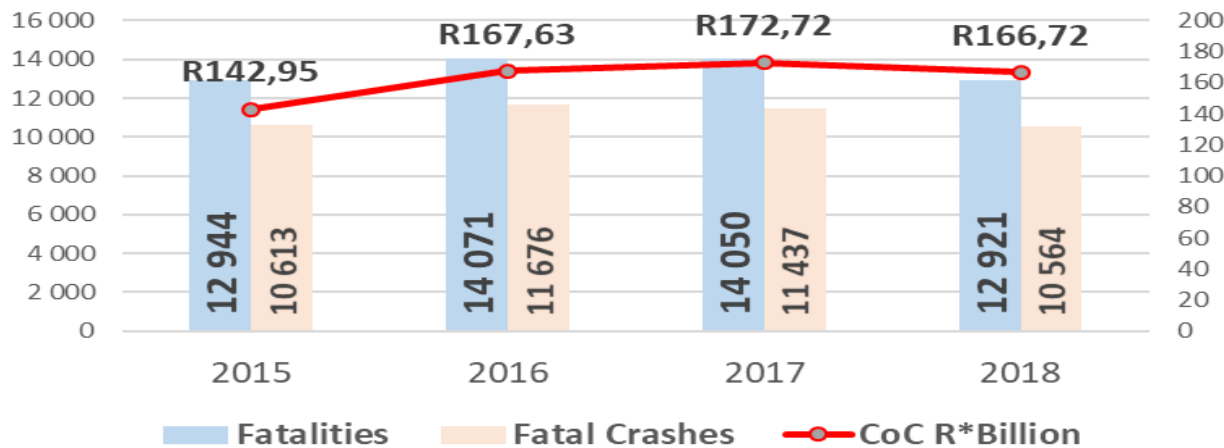
*Adjusted with CPI from 2015 (Cost of Crashes in South Africa - Published September 2016)

**Actual fatal crashes & fatalities recorded; 5% added in CoCs calculation for underreporting

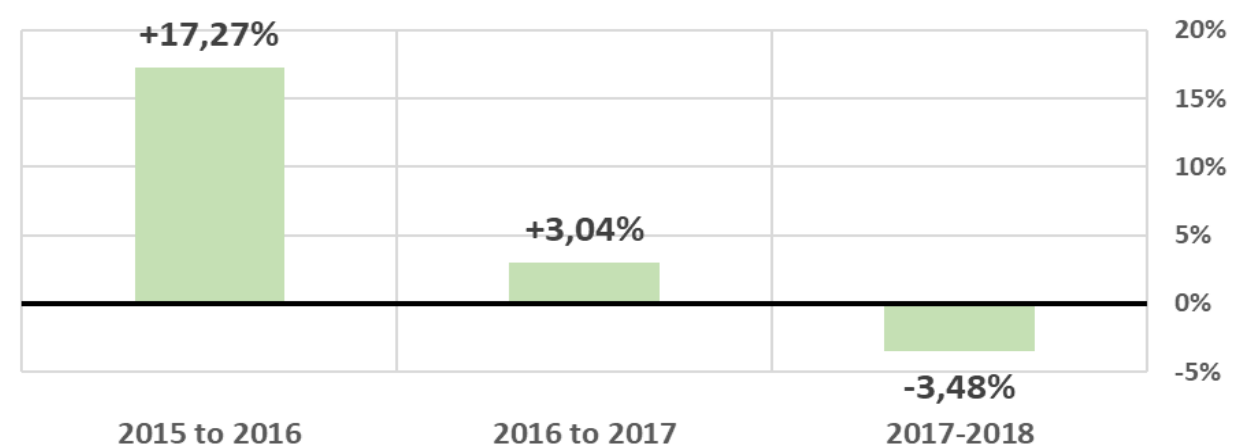
***Est. Unit Cost of one Death for respective year; CoCs include serious, slight and no injuries.

***Est. Unit Cost of one Fatal Crash for respective year; CoCs include major, minor and damage only crashes.

CoC vs Fatal Crashes and Fatalities - Calendar Year



% Change - Estimated Cost of Crashes (CoC) - Calendar Year



Estimated **Nominal** Cost of Crashes (CoC) - Calendar Year

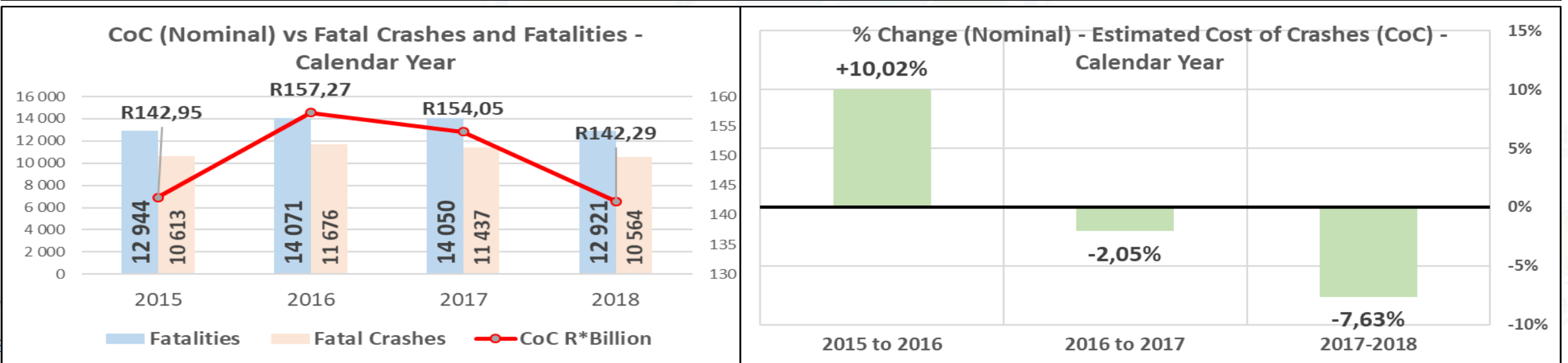
| Year | Period | Days | **Fatalities | **Fatal Crashes | CoC R*Billion | Change R*Billion | % Change | ***Est. Unit Cost Death | ***Est. Unit Cost Fatal Crash |
|-------|------------------|------|--------------|-----------------|---------------|------------------|----------|-------------------------|-------------------------------|
| 2015 | 1Jan15 - 31Dec15 | 365 | 12 944 | 10 613 | 142,95 | - | - | R3 916 187 | R5 435 261 |
| *2016 | 1Jan16 - 31Dec16 | 365 | 14 071 | 11 676 | 157,27 | +14,32 | +10,02% | | |
| *2017 | 1Jan17 - 31Dec17 | 365 | 14 050 | 11 437 | 154,05 | -3,22 | -2,05% | | |
| *2018 | 1Jan18 - 31Dec18 | 365 | 12 921 | 10 564 | 142,29 | -11,76 | -7,63% | | |

*Not adjusted with CPI

**Actual fatal crashes & fatalities recorded; 5% added in CoCs calculation for underreporting

***Est. Unit Cost of one Death for respective year; CoCs include serious, slight and no injuries.

***Est. Unit Cost of one Fatal Crash for respective year; CoCs include major, minor and damage only crashes.





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Part B

HazRoad Sections in SA

(2015-2018)



Content



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- Purpose & Challenges
- Problem Statement
- Introduction
- Background
- HazRoad Sections 2019 Methodology
- Top 10 SA & per Province (EC)
- Conclusions
- Spread Sheet – Model Top 100

Purpose

To present the Hazardous Road Sections
(HazRoads) Methodology



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Challenges

- Only Fatal Crash Data
- Crashes not recorded spatially accurate
- Vehicle Kilometres Travelled

Problem Statement



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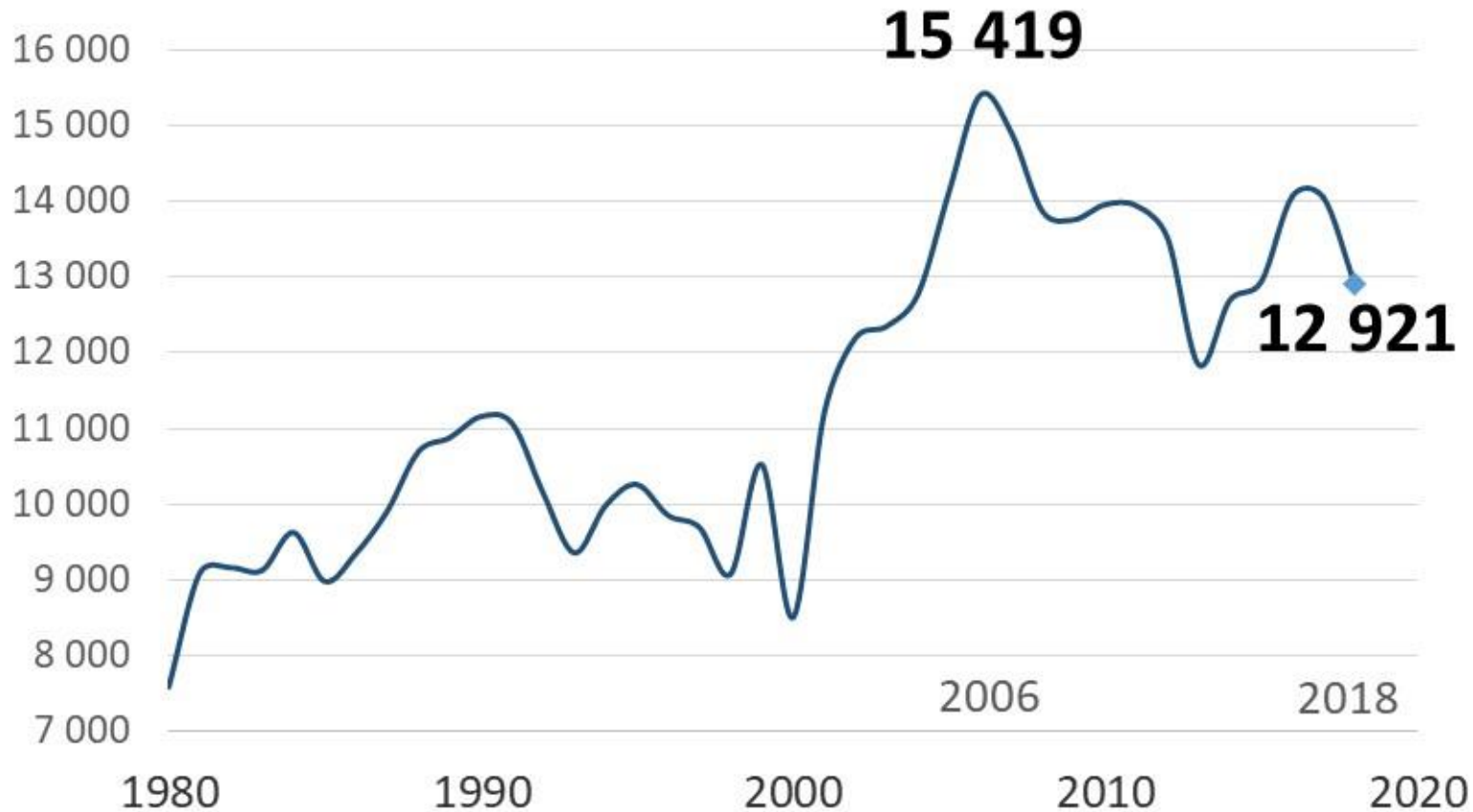
Where do we focus Road Safety Efforts?

Enforcement | Education | Engineering

Introduction

Road Casualties in South Africa

Total number of Deaths by year



Source: Road Traffic Management Corporation



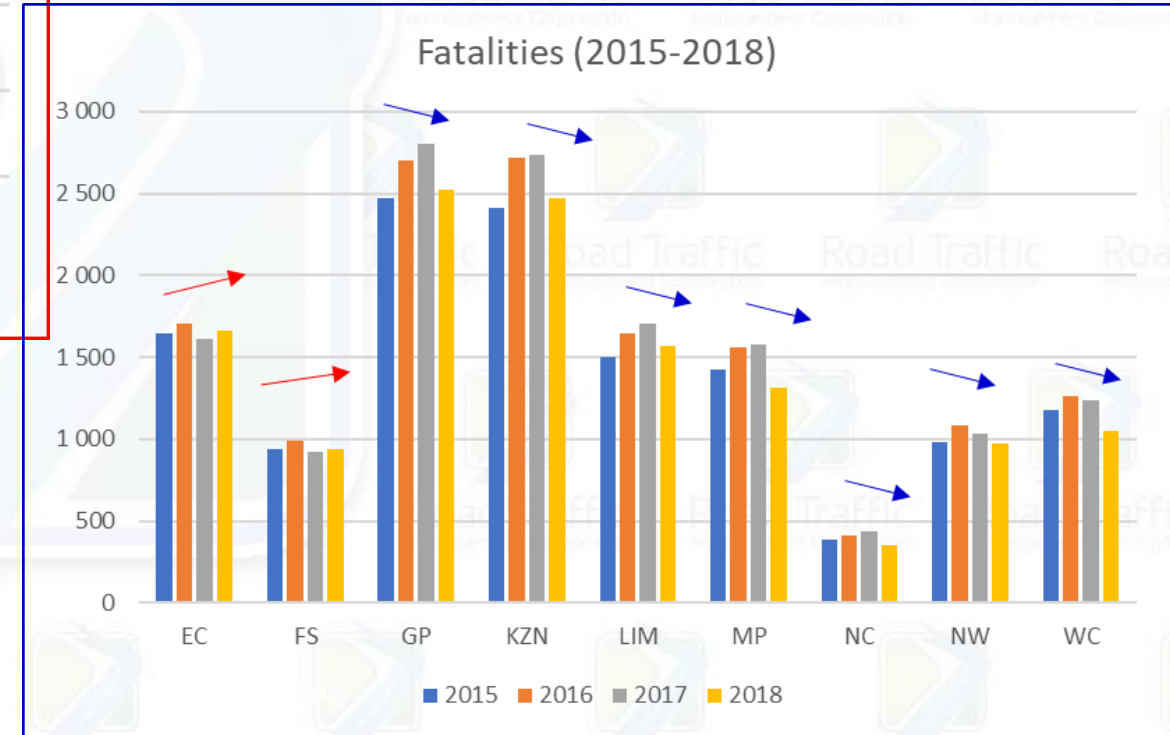
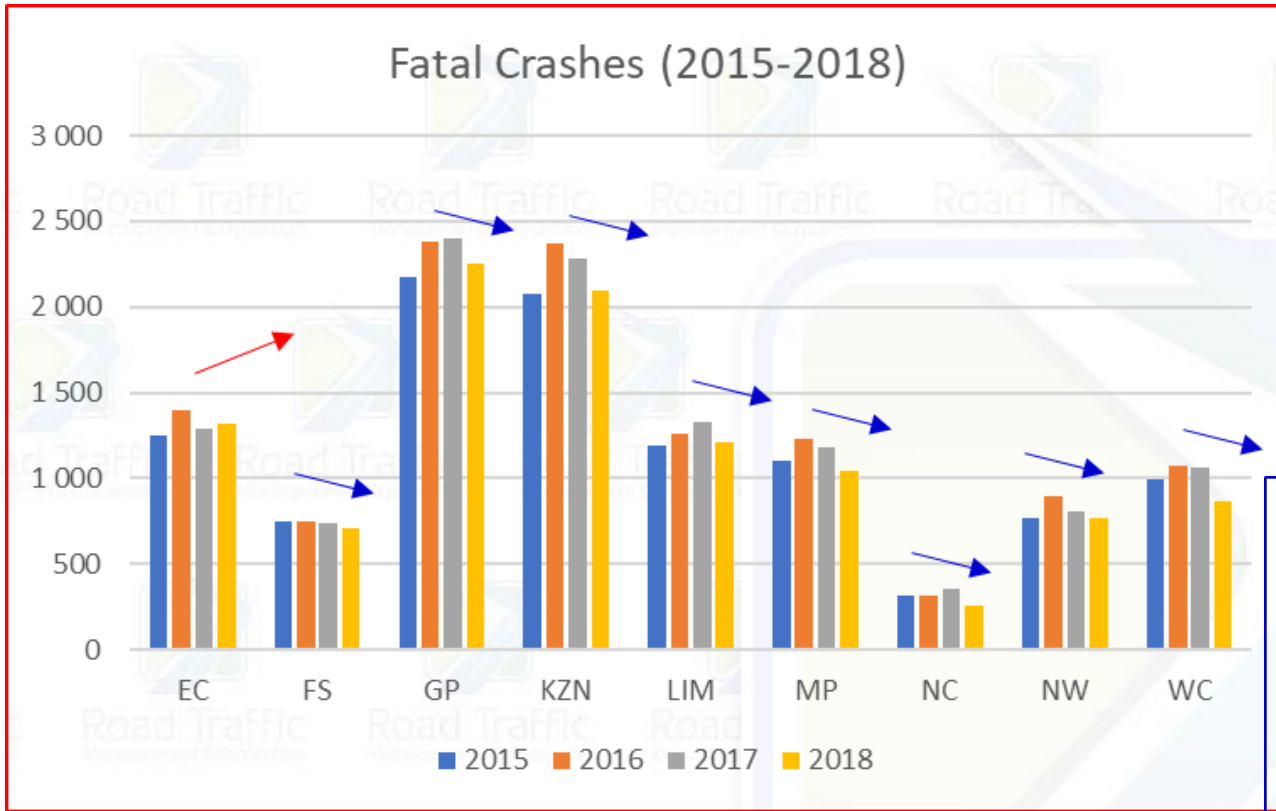
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-2 498
2006-2018
12 Yrs

Introduction

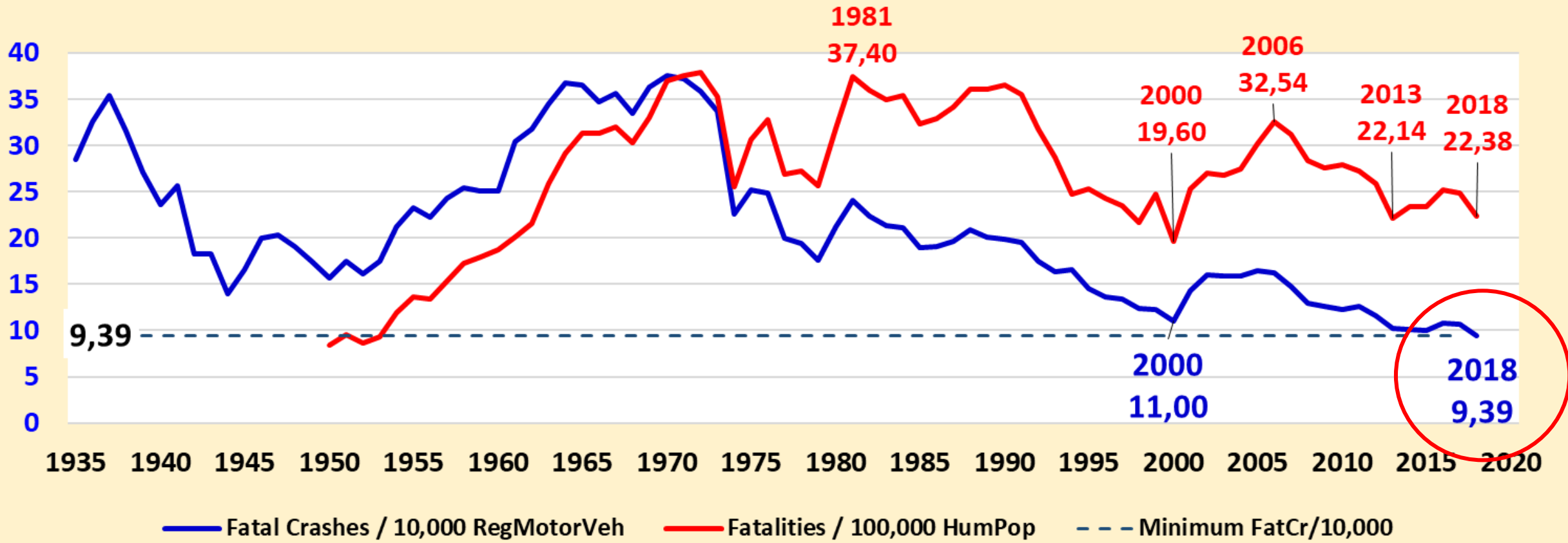


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Introduction

SA Historic Fatal Crashes per 10 000 RegMotVeh vs Fatalities per 100 000 HumanPop



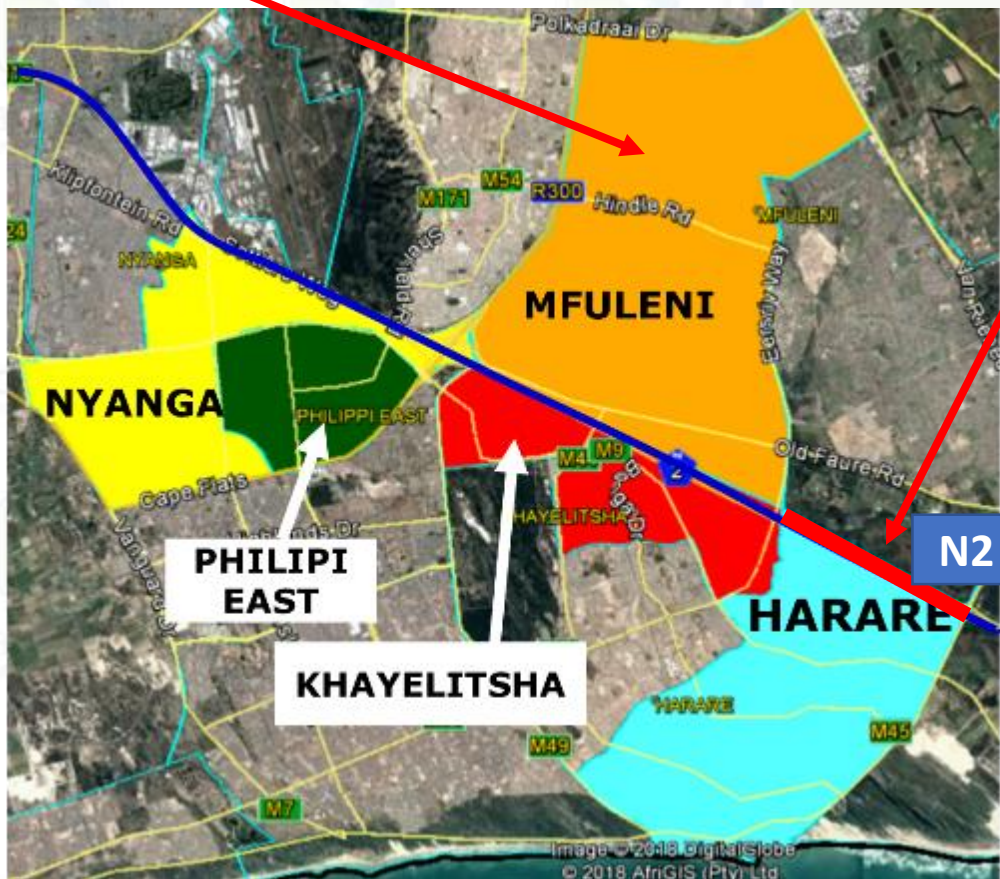
Introduction

Difference between **HazArea**, **HazRoad** & **HazLoc**?



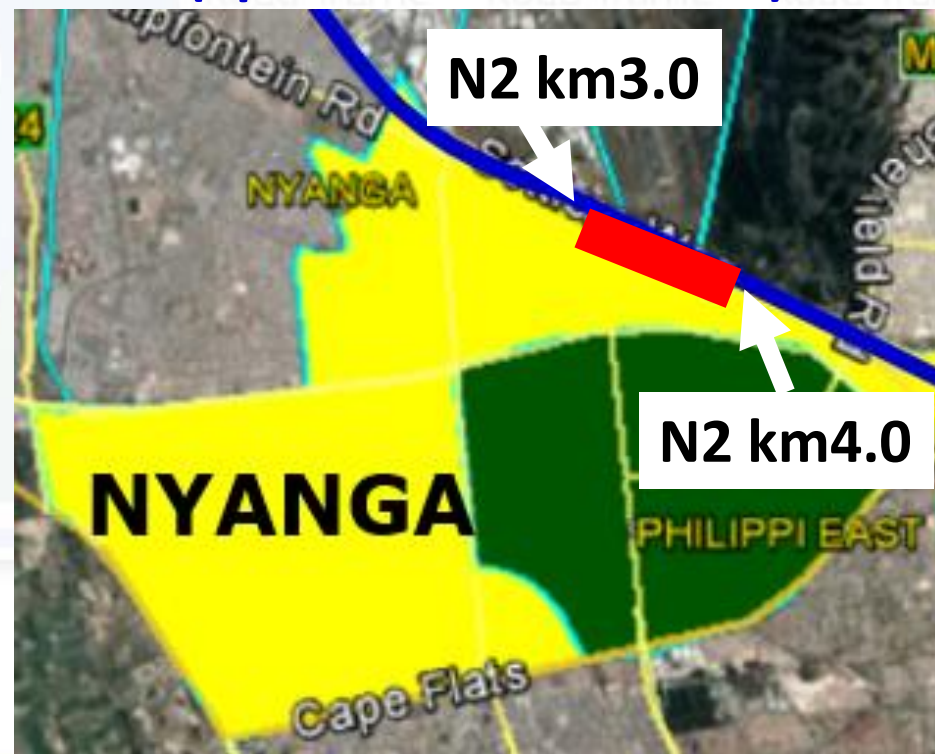
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HazAreas (All roads within SAPS Area) 2017/18



HazRoad
Specific
Road within
SAPS Area
i.e. N2
within
Harare SAPS
Area
2019

HazLoc (Specific Road Section) When?



Notes

- **Fatal Crash:**
1 or more person died in a crash
- **Fatal Pedestrian Crash:**
1 or more pedestrian died in a crash
- **Fatal Public Transport Crash:**
1 or more Public Transport Vehicle involved in a fatal crash
- **Fatal Heavy Vehicle Crash:**
1 or more Heavy Vehicle involved in a fatal crash



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Background

- HazLocs **2017** based on No. of **Fatalities** per SAPS Area
- **Logic** in using No. of **Fatal Crashes** per SAPS Area in refined Methodology 2018
- Should provide **more accurate** Location
- 2019 Methodology – HazRoad Sections within defined SAPS Sreas
- HazRoads will become **redundant** when all crashes recorded with spatial accuracy
- HazLocs - Equivalent Accident Number (EAN) / Personal Injury Accident (PIA)

Background

The EAN method assigns weighting factors to crashes by severity (i.e. fatal, serious, slight, no injury) to develop a combination of frequency and severity score per site. The advantage of this method over the previous method is that it considers crash severity but it may overemphasise locations with a low frequency of fatal crashes depending on the weighting factors used. The weighting factors used in the study are Fatal = 12, Serious = 5, Slight = 3 and No Injury (damage only) = 1.

| EAN | Fatal Crash | Major Crash | Minor Crash | Damage only |
|--|------------------|----------------|----------------|---------------|
| Total crash costs 2018 (by crash severity): | 6 368 360 | 897 109 | 178 380 | 56 865 |
| Factor: | 112 | 16 | 3 | 1 |
| Currently Used: | 5 700 000 | 733 000 | 81 500 | 8 150 |
| Factor: | 699 | 90 | 10 | 1 |
| Research Needed - Dr. C van As | | | | |

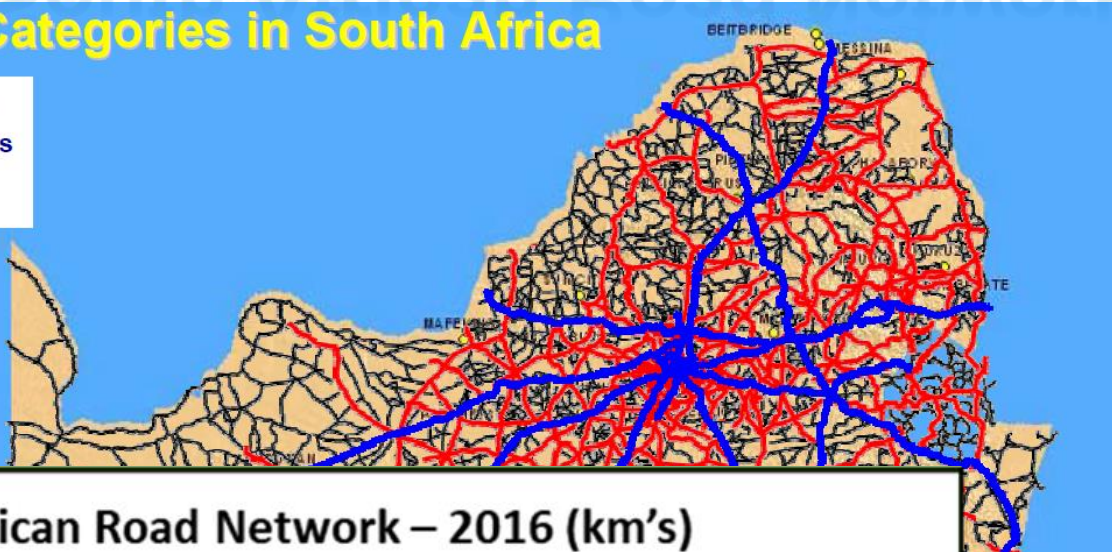
EAN per million vehicle km

$$= \frac{\sum \text{Crash weighting}}{\text{Link ADT} \times \text{Section length} \times (365 \times \text{crash data years})} / 1\,000\,000$$

South African Road Network

Main Road Categories in South Africa

- National Roads
- Secondary Roads
- Tertiary Roads



South African Road Network – 2016 (km's)

| Authority | Paved | Gravel | Total |
|--------------------------|----------------|----------------|----------------|
| SANRAL | 21 946 | 0 | 21 946 |
| Provinces - 9 | 46 805 | 226 273 | 273 078 |
| Metros - 8 | 51 682 | 14 461 | 66 143 |
| Municipalities | 37 691 | 219 223 | 256 914 |
| Sub-total | 158 124 | 459 957 | 618 081 |
| Un-Proclaimed (Estimate) | | 131 919 | 131 919 |
| Estimated Total | 158 124 | 591 876 | 750 000 |



| Rank | Country | Road length (km) |
|------|---------------|------------------|
| | <i>World</i> | 64 285 009 |
| 1 | United States | 6 586 610 |
| 2 | India | 4 689 842 |
| 3 | China | 4 237 500 |
| 4 | Brazil | 1 751 868 |
| 5 | Japan | 1 210 251 |
| 6 | Canada | 1 042 300 |
| 7 | Russia | 982 000 |
| 8 | France | 951 200 |
| 9 | Australia | 823 217 |
| 10 | South Africa | 750 000 |
| 11 | Spain | 681 298 |
| 12 | Germany | 644 480 |
| 13 | Sweden | 572 900 |
| 14 | Italy | 487 700 |
| 15 | Indonesia | 437 759 |

| | | | |
|----|--|--------------|---------|
| 8 | | France | 951 200 |
| 9 | | Australia | 823 217 |
| 10 | | South Africa | 750 000 |
| 11 | | Spain | 681 298 |

| | | | |
|-----|--|-------------------|------------------|
| 72 | | Namibia | 64 189 |
| 98 | | Mozambique | 30 331 |
| 104 | | Botswana | 25 798 |
| 122 | | Malawi | 15 451 |
| 148 | | Lesotho | 7 438 |
| 161 | | Swaziland | 3 594 |
| 173 | | Mauritius | 2 066 |
| 193 | | Seychelles | 508 |
| | | SADC Total | 1 449 720 |

SAPS Areas in SA

EC 196

KZN 186

WC 150

GP 143

FS 110

LIM 99

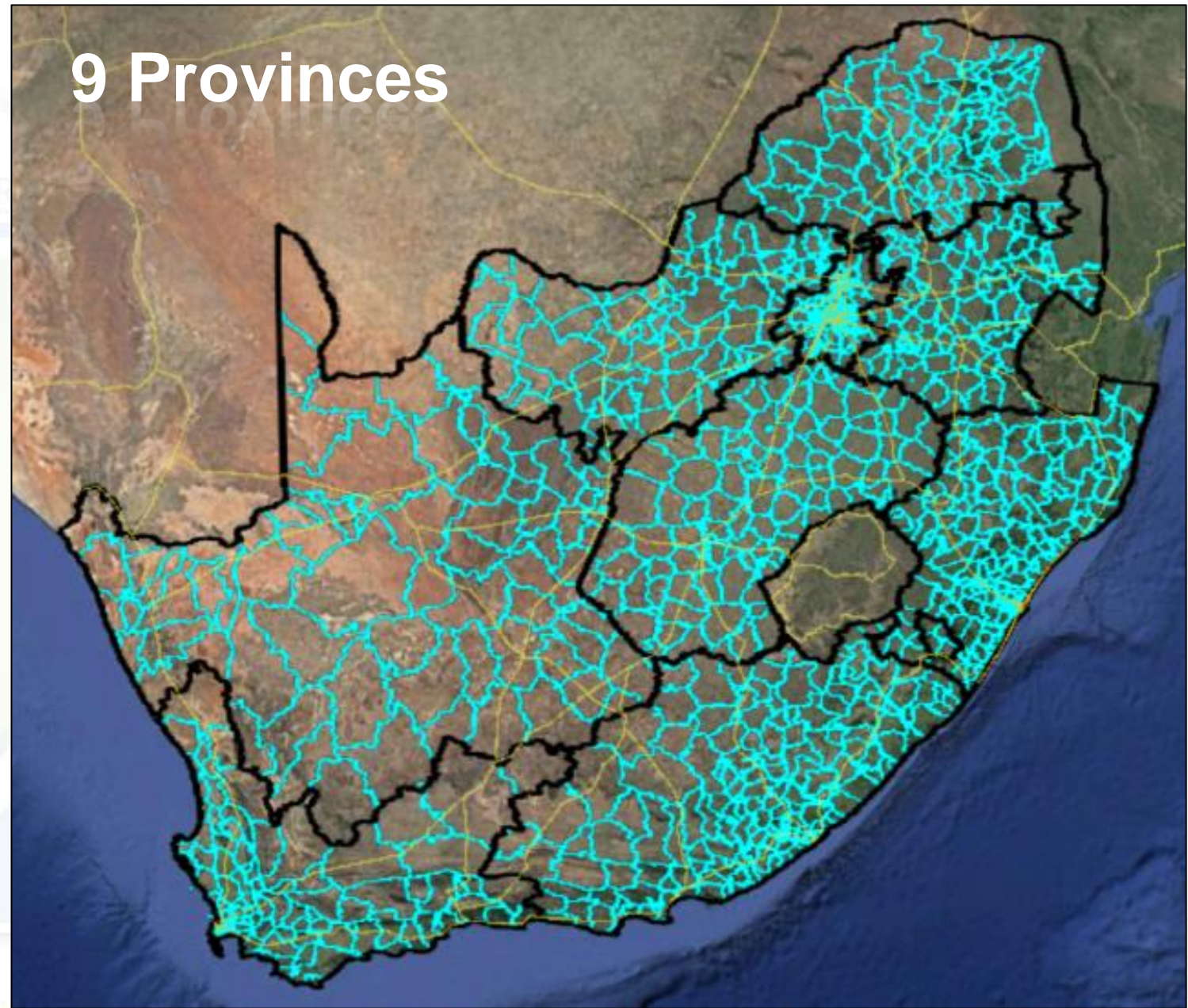
NC 91

MP 86

NW 82

Total 1 143

9 Provinces



HazRoads Methodology



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- Fatal Crashes reported/recorded per SAPS Area
- Road number / Street Name
- Weighted Ratio 2015-2018 Data
- Rank WR
- All types of FatCr, Pedestrian FatCr, PT FatCR, HV FatCr

HazRoads Methodology



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Weighted Ratio (WR) 2015 - 2018

| | | | | | | | | |
|--|-------------|--|-------------|--|-------------|--|-------------|--|
| | 10% | | 15% | | 25% | | 50% | |
| | 2015 | | 2016 | | 2017 | | 2018 | |



Available Output



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| Type of Crashes | All Prov | EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
|--------------------------------------|----------|----|----|----|-----|-----|----|----|----|----|
| All Types | X | X | X | X | X | X | X | X | X | X |
| Pedestrian | X | X | X | X | X | X | X | X | X | X |
| Public Transport | X | X | X | X | X | X | X | X | X | X |
| Heavy Vehicle | X | X | X | X | X | X | X | X | X | X |
| 40 Output Scenarios Available | | | | | | | | | | |

E.g. Ranked according to:

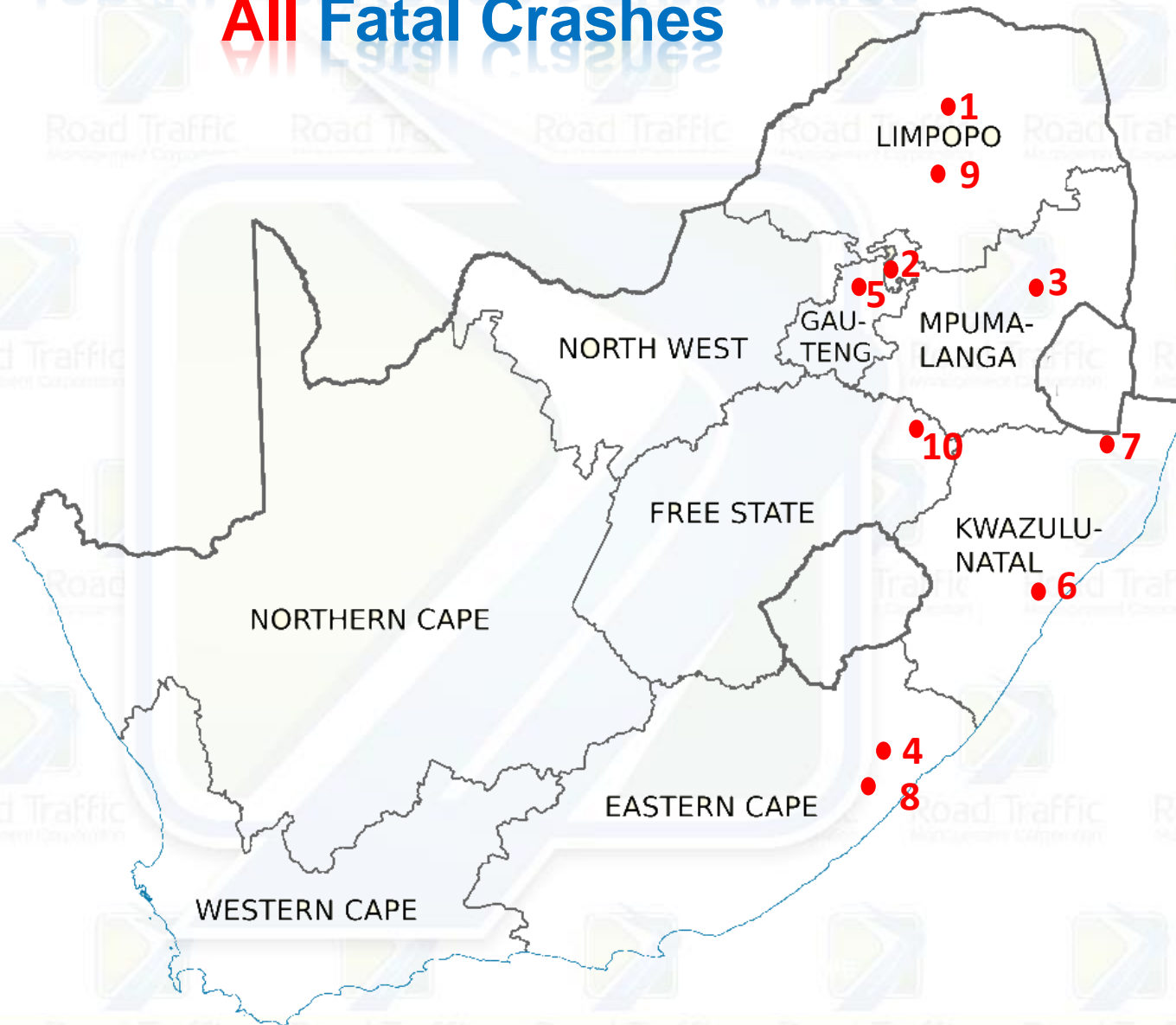
- All Provinces / Heavy Vehicle Crashes
- Limpopo / Pedestrian Crashes



Top 10 HazRoads South Africa

All Fatal Crashes

1. R71 Mankweng
LIM (32,2)
2. R573 Kwamhlanga
MP (28,3)
3. N4 Nelspruit
MP (26,3)
4. N2 Libode
EC (25,6)
5. N1 Naboomspruit
LIM (25,5)
6. N2 Umkomaas
KZN (24,4)
7. N2 Pongola
KZN (24,1)
8. N2 Dutywa
EC (22,2)
9. R37 Mecklenburg
LIM (21,2)
10. N3 Harrismith
FS (19,7)



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Top 10 HazRoads South Africa

All Fatal Crashes

| | | | | Total All SA: | 10 613 | 11 676 | 11 437 | 10 564 | 44 290 | |
|----------------------------|------|--------------|------|-------------------|--------|--------|--------|--------|--------|-------|
| | | | | Top 100 %: | 11,1% | 11,5% | 12,8% | 12,8% | 12,0% | |
| | | | | Top 100: | 1 177 | 1 339 | 1 464 | 1 356 | 5 336 | 1 363 |
| HazRoads Rank and Location | | | | All Fatal Crashes | | | | | | |
| Rank | Road | SAPS Station | Prov | 2015 | 2016 | 2017 | 2018 | Total | WR | |
| 1 | R71 | MANKWENG | LIM | 26 | 32 | 31 | 34 | 123 | 32,2 | |
| 2 | R573 | KWAMHLANGA | MP | 32 | 32 | 37 | 22 | 123 | 28,3 | |
| 3 | N4 | NELSPRUIT | MP | 19 | 26 | 32 | 25 | 102 | 26,3 | |
| 4 | N2 | LIBODE | EC | 17 | 26 | 22 | 29 | 94 | 25,6 | |
| 5 | N1 | NABOOMSPRUIT | LIM | 20 | 35 | 19 | 27 | 101 | 25,5 | |
| 6 | N2 | UMKOMAAS | KZN | 11 | 15 | 28 | 28 | 82 | 24,4 | |
| 7 | N2 | PONGOLA | KZN | 19 | 26 | 25 | 24 | 94 | 24,1 | |
| 8 | N2 | DUTYWA | EC | 19 | 20 | 27 | 21 | 87 | 22,2 | |
| 9 | R37 | MECKLENBURG | LIM | 16 | 22 | 23 | 21 | 82 | 21,2 | |
| 10 | N3 | HARRISMITH | FS | 16 | 12 | 19 | 23 | 70 | 19,7 | |

| Number of and % of Top 10 HazRoads in Province | | | | | | | | |
|--|----|----|-----|-----|----|----|----|----|
| EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
| 2 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 |
| 2% | 1% | 0% | 2% | 3% | 2% | 0% | 0% | 0% |

% HazRoads per Province (All Fatal Crashes)



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| Number of and % of Top 10 HazRoads in Province | | | | | | | | |
|--|----|----|-----|-----|----|----|----|----|
| EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
| 2 | 1 | 0 | 2 | 3 | 2 | 0 | 0 | 0 |
| 2% | 1% | 0% | 2% | 3% | 2% | 0% | 0% | 0% |

| Number of and % of Top 50 HazRoads in Province | | | | | | | | |
|--|----|----|-----|-----|-----|----|----|----|
| EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
| 10 | 1 | 2 | 12 | 10 | 10 | 0 | 5 | 0 |
| 10% | 1% | 2% | 12% | 10% | 10% | 0% | 5% | 0% |

| Number of and % of Top 100 HazRoads in Province | | | | | | | | |
|---|----|-----|-----|-----|-----|----|----|----|
| EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
| 18 | 3 | 11 | 24 | 16 | 16 | 0 | 5 | 7 |
| 18% | 3% | 11% | 24% | 16% | 16% | 0% | 5% | 7% |



Top 100 HazRoads South Africa vs. All types of Fatal Crashes (2015-2018)

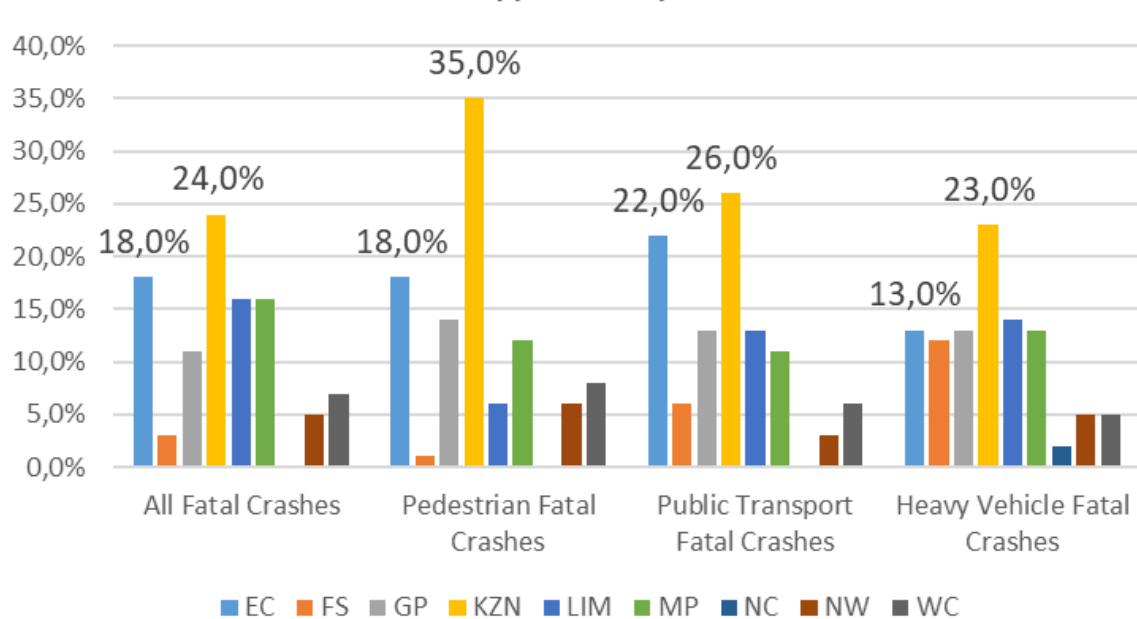
% Fatal Crash Type in Top 100 HazRoads

| Type of Fatal Crash | EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
|--------------------------------|-------|-------|-------|-------|-------|-------|------|------|------|
| All Fatal Crashes | 18,0% | 3,0% | 11,0% | 24,0% | 16,0% | 16,0% | 0,0% | 5,0% | 7,0% |
| Pedestrian Fatal Crashes | 18,0% | 1,0% | 14,0% | 35,0% | 6,0% | 12,0% | 0,0% | 6,0% | 8,0% |
| Public Transport Fatal Crashes | 22,0% | 6,0% | 13,0% | 26,0% | 13,0% | 11,0% | 0,0% | 3,0% | 6,0% |
| Heavy Vehicle Fatal Crashes | 13,0% | 12,0% | 13,0% | 23,0% | 14,0% | 13,0% | 2,0% | 5,0% | 5,0% |

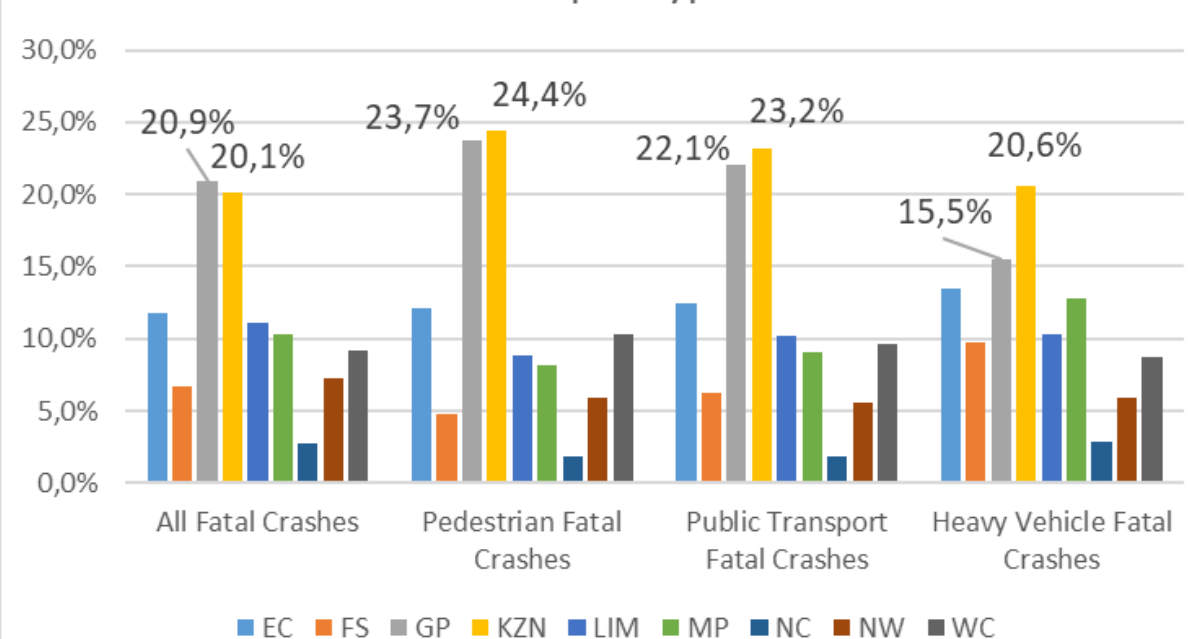
% Fatal Crashes per Type 2015-2018

| Type of Fatal Crash | EC | FS | GP | KZN | LIM | MP | NC | NW | WC |
|---------------------|----|----|----|-----|-----|----|----|----|----|
|---------------------|----|----|----|-----|-----|----|----|----|----|

% Fatal Crash Type in Top 100 HazRoads



% Fatal Crashes per Type 2015-2018

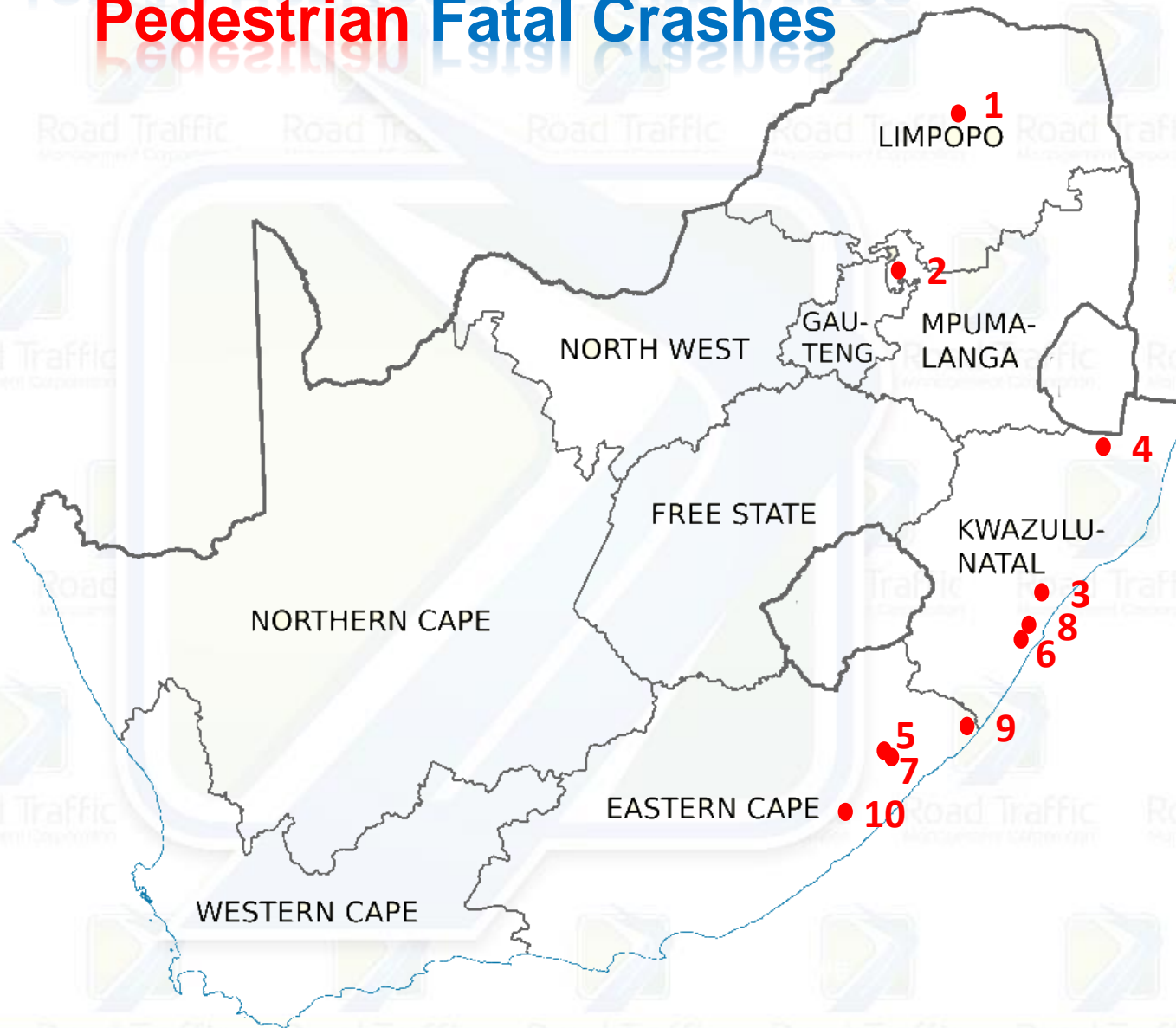


Top 10 HazRoads South Africa Pedestrian Fatal Crashes



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1. R71 Mankweng | **1 – 73%** | LIM (23.4)
2. R573 Kwamhlanga | **2 – 70%** | MP (19.8)
3. N2 Umkomaas | **6 – 66%** | KZN (16,2)
4. N2 Pongola | **7 – 65%** | KZN (15,7)
5. N2 Libode | **4 – 61%** | EC (15,6)
6. M35 Folweni | **13 – 87%** | KZN (15,7)
7. R61 Libode | **22 – 79%** | EC (13,1)
8. M30 Umlazi | **21 – 77%** | KZN (12,7)
9. R61 Mzamba | **14 – 70%** | EC (12,1)
10. N2 Butterworth | **27 – 76%** | EC (11.9)



(WR PedFatCr 2015-2018)

| Rank All Fatal Crashes - % Ped of All |



Eastern Cape Top 10 HazRoads



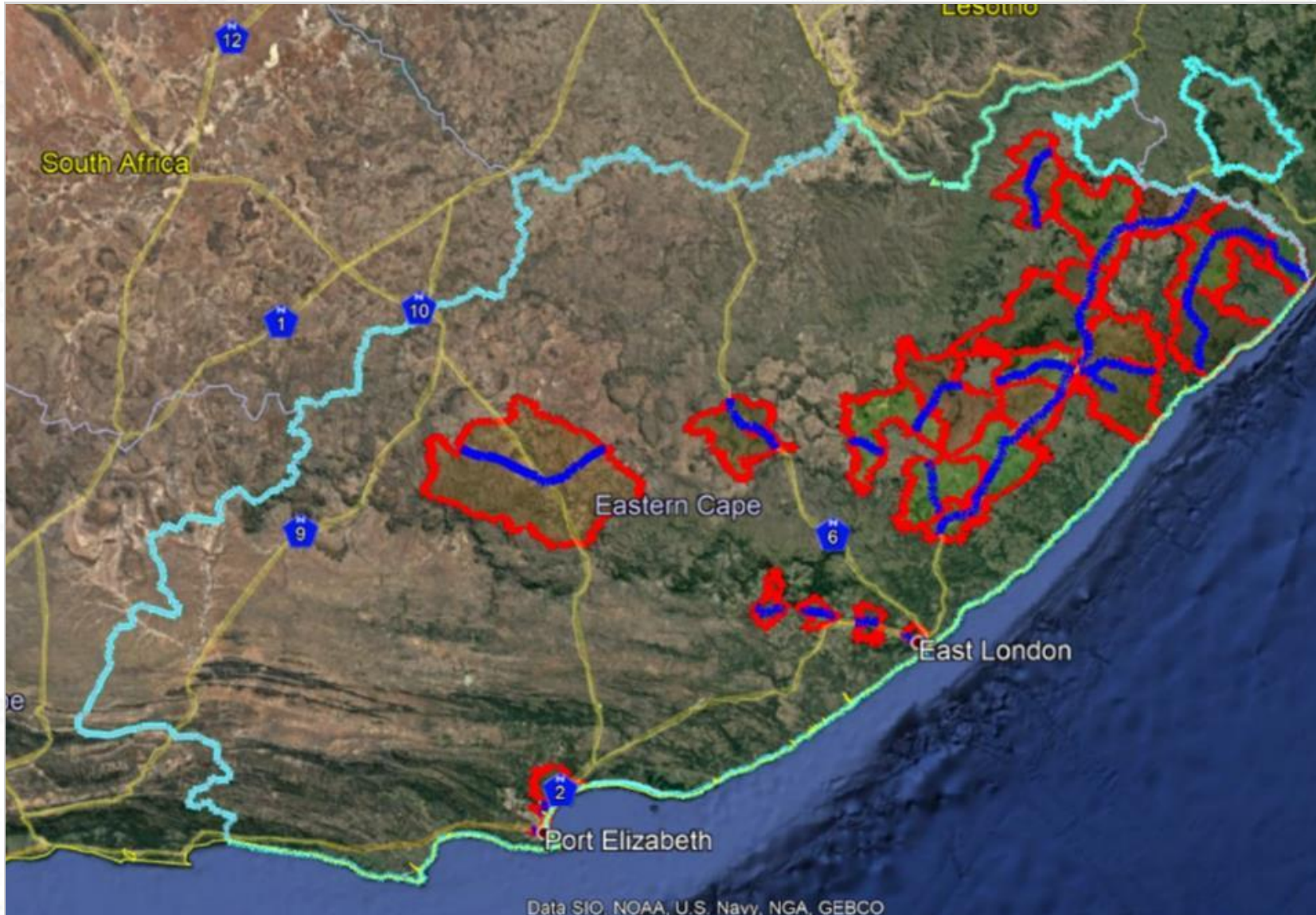
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Eastern Cape Top 10 (All Fatal Crashes)

| Hazardous Road Sections within SAPS Areas | | | | Province Select →: EC | | | | | |
|---|------|--------------|-----|--|--------|--------|--------|--------|------|
| Top 100 - Ranked WR - Fatal Crash | | | | Fatal Crash Type Select →: All Fatal Crashes | | | | | |
| Verion 1.2 June 2019 | | | | | | | | | |
| Total All SA: | | | | 10 613 | 11 676 | 11 437 | 10 564 | 44 290 | |
| Top 100 %: | | | | 4,9% | 5,1% | 5,3% | 6,4% | 5,4% | |
| Top 100: | | | | 516 | 598 | 606 | 672 | 2 392 | 629 |
| HazRoads Rank and Location | | | | All Fatal Crashes | | | | | |
| Ran | Road | SAPS Station | Pro | 2015 | 2016 | 2017 | 2018 | Total | WR |
| 1 | N2 | LIBODE | EC | 17 | 26 | 22 | 29 | 94 | 25,6 |
| 2 | N2 | DUTYWA | EC | 19 | 20 | 27 | 21 | 87 | 22,2 |
| 3 | N2 | MOUNT FRERE | EC | 18 | 13 | 15 | 22 | 68 | 18,5 |
| 4 | R61 | MZAMBA | EC | 8 | 11 | 25 | 17 | 61 | 17,2 |
| 5 | R61 | MTHATHA | EC | 22 | 20 | 14 | 17 | 73 | 17,2 |
| 6 | N2 | MOUNT AYLIFF | EC | 25 | 18 | 20 | 14 | 77 | 17,2 |
| 7 | R61 | FLAGSTAFF | EC | 8 | 14 | 14 | 21 | 57 | 16,9 |
| 8 | R61 | LIBODE | EC | 11 | 9 | 20 | 18 | 58 | 16,5 |
| 9 | N2 | BUTTERWORTH | EC | 13 | 15 | 14 | 17 | 59 | 15,6 |
| 10 | R61 | MBIZANA | EC | 23 | 11 | 15 | 10 | 59 | 12,7 |

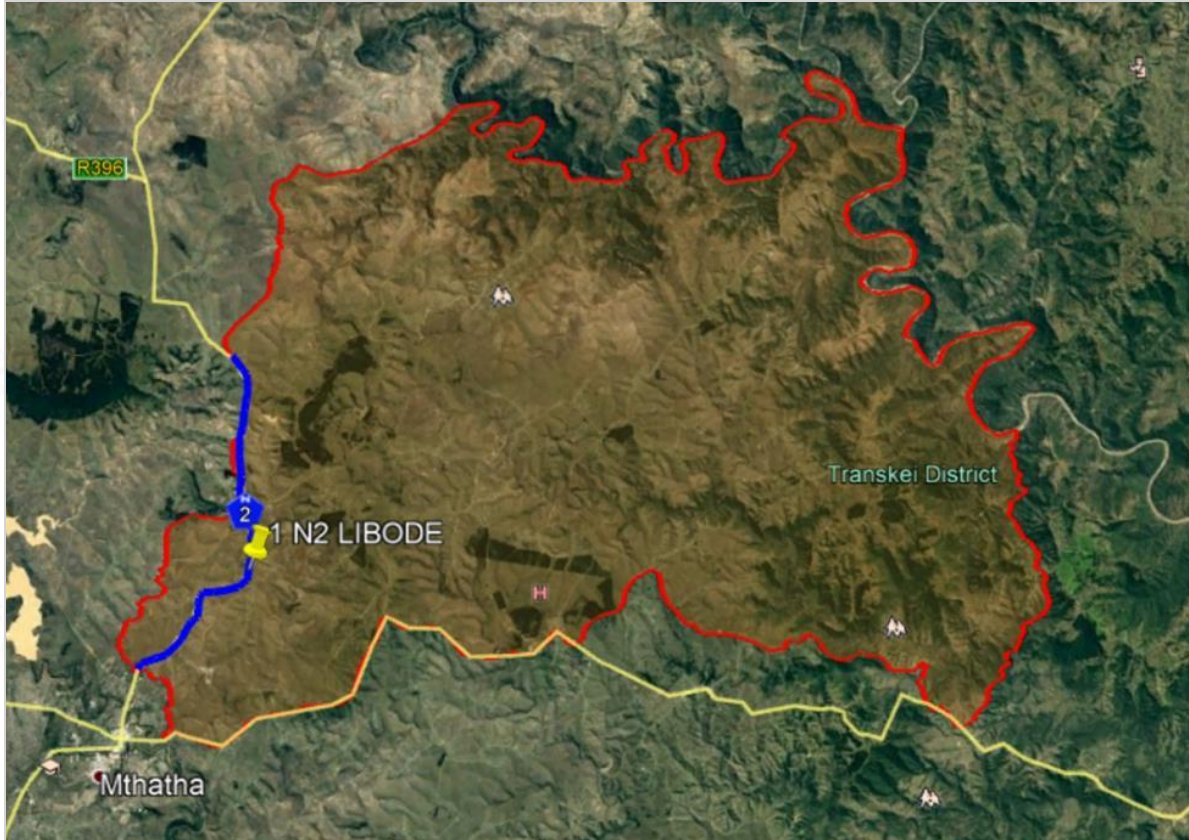
Eastern Cape Top 10



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Eastern Cape Top 10



| HazRoads Rank and Location | | | | | All Fatal Crashes | | | | | |
|----------------------------|------|--------------|----------|------|-------------------|------|------|-------|------|--|
| Rank | Road | SAPS Station | Province | 2015 | 2016 | 2017 | 2018 | Total | WR | |
| 1 | N2 | LIBODE | EC | 17 | 26 | 22 | 29 | 94 | 25,6 | |
| 2 | N2 | DUTYWA | EC | 19 | 20 | 27 | 21 | 87 | 22,2 | |

Eastern Cape Top 10 (Pedestrian Fatal Crashes)

| Hazardous Road Sections within SAPS Areas | | | | Province Select →: EC | | - | - | | |
|---|------|--------------|-----|---|-------|-------|-------|--------|------|
| Top 100 - Ranked WR - Fatal Crash | | | | Fatal Crash Type Select →: Pedestrian Fatal Crashes | | - | - | | |
| Verion 1.2 June 2019 | | | | | | - | - | | |
| Total All SA: | | | | 4 769 | 5 307 | 5 233 | 4 889 | 20 198 | |
| Top 100 %: | | | | 5,8% | 5,4% | 6,1% | 7,0% | 6,1% | |
| Top 100: | | | | 278 | 286 | 321 | 342 | 1 227 | |
| HazRoads Rank and Location | | | | Pedestrian Fatal Crashes | | | | | |
| Ran | Road | SAPS Station | Pro | 2015 | 2016 | 2017 | 2018 | Total | WR |
| 1 | N2 | LIBODE | EC | 12 | 14 | 15 | 17 | 58 | 15,6 |
| 2 | R61 | LIBODE | EC | 9 | 8 | 14 | 15 | 46 | 13,1 |
| 3 | R61 | MZAMBA | EC | 6 | 8 | 19 | 11 | 44 | 12,1 |
| 4 | N2 | BUTTERWORTH | EC | 11 | 10 | 9 | 14 | 44 | 11,9 |
| 5 | R61 | FLAGSTAFF | EC | 3 | 10 | 10 | 14 | 37 | 11,3 |
| 6 | R61 | MTHATHA | EC | 12 | 16 | 7 | 11 | 46 | 10,9 |
| 7 | N2 | MOUNT FRERE | EC | 12 | 9 | 8 | 10 | 39 | 9,6 |
| 8 | N2 | DUTYWA | EC | 7 | 8 | 6 | 12 | 33 | 9,4 |
| 9 | N2 | MOUNT AYLIF | EC | 13 | 10 | 10 | 6 | 39 | 8,3 |
| 10 | R61 | MBIZANA | EC | 16 | 4 | 9 | 7 | 36 | 8,0 |

Eastern Cape Top 10 (**Public Transport** Fatal Crashes)

| | | | | |
|--|---|--|---|---|
| Hazardous Road Sections within SAPS Areas | Province Select →: EC | | - | - |
| | Fatal Crash Type Select →: Public Transport Fatal Crashes | | - | - |
| | Verion 1.2 June 2019 | | - | - |

| | | | | | | |
|---------------|-------|-------|-------|-------|-------|-----|
| Total All SA: | 1 283 | 1 567 | 1 493 | 1 424 | 5 767 | |
| Top 100 %: | 6,2% | 6,6% | 6,4% | 8,9% | 7,0% | |
| Top 100: | 79 | 104 | 95 | 127 | 405 | 111 |

| HazRoads Rank and Location | | | | | Public Transport Fatal Crashes | | | | | | |
|----------------------------|------|--------------|-----|------|--------------------------------|------|------|-------|-----|--|--|
| Rank | Road | SAPS Station | Pro | 2015 | 2016 | 2017 | 2018 | Total | WR | | |
| 1 | R61 | MTHATHA | EC | 5 | 5 | 3 | 4 | 17 | 4,0 | | |
| 2 | R61 | FLAGSTAFF | EC | 2 | 5 | 3 | 4 | 14 | 3,7 | | |
| 3 | R61 | MZAMBA | EC | 1 | 1 | 7 | 3 | 12 | 3,5 | | |
| 4 | N2 | LIBODE | EC | 1 | 5 | 3 | 3 | 12 | 3,1 | | |
| 5 | N2 | DUTYWA | EC | 5 | 2 | 5 | 2 | 14 | 3,1 | | |
| 6 | R61 | ABERDEEN | EC | 1 | 2 | 2 | 4 | 9 | 2,9 | | |
| 7 | R61 | NGQELENI | EC | 0 | 0 | 1 | 5 | 6 | 2,8 | | |
| 8 | R61 | LUSIKISIKI | EC | 2 | 1 | 3 | 3 | 9 | 2,6 | | |
| 9 | R61 | CRADOCK | EC | 3 | 3 | 1 | 3 | 10 | 2,5 | | |
| 10 | N2 | BUTTERWORTH | EC | 0 | 3 | 4 | 2 | 9 | 2,5 | | |

Eastern Cape Top 10 (Heavy Vehicle Fatal Crashes)

| | | | | |
|--|--|--|---|---|
| Hazardous Road Sections within SAPS Areas | Province Select →: EC | | - | - |
| | Fatal Crash Type Select →: Heavy Vehicle Fatal Crashes | | - | - |
| Top 100 - Ranked WR - Fatal Crash | Verion 1.2 June 2019 | | - | - |

| Total All SA: | | | | 1 054 | 1 214 | 1 238 | 1 077 | 4 583 | | |
|----------------------------|------|--------------|-----|-----------------------------|-------|-------|-------|-------|-----|--|
| Top 100 %: | | | | 4,6% | 6,6% | 5,5% | 11,3% | 7,0% | | |
| Top 100: | | | | 49 | 80 | 68 | 122 | 319 | 95 | |
| HazRoads Rank and Location | | | | Heavy Vehicle Fatal Crashes | | | | | | |
| Rank | Road | SAPS Station | Pro | 2015 | 2016 | 2017 | 2018 | Total | WR | |
| 1 | N2 | MOUNT FRERE | EC | 6 | 5 | 1 | 6 | 18 | 4,6 | |
| 2 | N2 | DUTYWA | EC | 1 | 5 | 5 | 4 | 15 | 4,1 | |
| 3 | N2 | MOUNT AYLIFF | EC | 4 | 3 | 2 | 3 | 12 | 2,9 | |
| 4 | N2 | QUMBU | EC | 2 | 4 | 1 | 3 | 10 | 2,6 | |
| 5 | N2 | MSOBOMVU | EC | 1 | 2 | 0 | 4 | 7 | 2,4 | |
| 6 | N2 | BITYI | EC | 2 | 3 | 2 | 2 | 9 | 2,2 | |
| 7 | N2 | LIBODE | EC | 1 | 3 | 2 | 2 | 8 | 2,1 | |
| 8 | N2 | KOMGA | EC | 2 | 3 | 3 | 1 | 9 | 1,9 | |
| 9 | R61 | MTHATHA | EC | 0 | 2 | 2 | 2 | 6 | 1,8 | |
| 10 | R61 | MZAMBA | EC | 1 | 1 | 4 | 1 | 7 | 1,8 | |

Conclusions

- HazRoads **Additional Tool** in Toolbox to focus road safety efforts –

Endorsed/Approved by NRSSC

- **NB: Current efforts ongoing** with special additional focus on Top

HazRoads

- **Measurable Effort** – Next year Fatal Crashes

Maximum Output with Minimum Input (Pareto)

| Hazardous Road Sections within SAPS Areas | | | | Province Select →: | | All Provinces | | Number of and % of Top 100 HazRoads in Province | | | | | | | | | |
|---|------|----------------------|------|----------------------------|--------|-------------------|--------|---|-------|----------------|--------|--------|--------|--------|---------|----------|-----|
| | | | | Fatal Crash Type Select →: | | All Fatal Crashes | | EC | FS | GP | KZN | LIM | MP | NC | NW | WC | |
| Top 100 - Ranked WR - Fatal Crash | | | | Verion 1.2 June 2019 | | | | 18 | 3 | 11 | 24 | 16 | 16 | 0 | 5 | 7 | |
| | | | | | | | | 18% | 3% | 11% | 24% | 16% | 16% | 0% | 5% | 7% | |
| Total All SA: | | | | 10 613 | 11 676 | 11 437 | 10 564 | 44 290 | | 12 944 | 14 071 | 14 050 | 12 921 | 53 986 | | | |
| Top 100 %: | | | | 11,1% | 11,5% | 12,8% | 12,8% | 12,0% | | 11,4% | 12,2% | 13,1% | 13,9% | 12,7% | | | |
| Top 100: | | | | 1 177 | 1 339 | 1 464 | 1 356 | 5 336 | 1 363 | 1 477 | 1 715 | 1 846 | 1 794 | 6 832 | 1 708 | 1,3 | |
| HazRoads Rank and Location | | | | All Fatal Crashes | | | | | | All Fatalities | | | | | | Crash | |
| Rank | Road | SAPS Station | Prov | 2015 | 2016 | 2017 | 2018 | Total | WR | 2015 | 2016 | 2017 | 2018 | Total | Average | Severity | |
| 1 | R71 | MANKWENG | LIM | 26 | 32 | 31 | 34 | 123 | 32,2 | 26 | 31 | 33 | 41 | 134 | 34 | 1,1 | |
| 2 | R573 | KWAMHLANGA | MP | 32 | 32 | 37 | 22 | 123 | 28,3 | 26 | 26 | 26 | 27 | 150 | 38 | 1,2 | |
| 3 | N4 | NELSPRUIT | MP | 19 | 26 | 32 | 25 | 102 | 25,2 | 26 | 26 | 26 | 42 | 139 | 35 | 1,4 | |
| 4 | N2 | LIBODE | EC | 17 | 26 | 22 | 29 | 94 | 22,8 | 24 | 24 | 24 | 37 | 109 | 27 | 1,2 | |
| 5 | N1 | NABOOMSPRUIT | LIM | 20 | 35 | 19 | 27 | 101 | 25,2 | 15 | 15 | 15 | 36 | 89 | 250 | 63 | 2,5 |
| 6 | N2 | UMKOMAAS | KZN | 11 | 15 | 28 | 28 | 82 | 22,2 | 11 | 20 | 28 | 31 | 90 | 23 | 1,1 | |
| 7 | N2 | PONGOLA | KZN | 19 | 26 | 26 | 26 | 77 | 24,1 | 24 | 28 | 33 | 32 | 117 | 29 | 1,2 | |
| 8 | N2 | DUTYWA | EC | 19 | 26 | 26 | 26 | 87 | 22,2 | 33 | 29 | 45 | 25 | 132 | 33 | 1,5 | |
| 9 | R37 | MECKLENBURG | LIM | 21 | 21 | 21 | 21 | 82 | 21,2 | 18 | 26 | 27 | 30 | 101 | 25 | 1,2 | |
| 10 | N3 | HARRISMITH | MP | 19 | 19 | 19 | 23 | 70 | 19,7 | 21 | 21 | 26 | 26 | 94 | 24 | 1,3 | |
| 11 | N2 | MOUNT FREPP | MP | 15 | 15 | 15 | 22 | 68 | 18,5 | 20 | 16 | 17 | 28 | 81 | 20 | 1,2 | |
| 12 | N12 | POTCHEFS | MP | 19 | 19 | 19 | 18 | 73 | 18,3 | 19 | 24 | 23 | 27 | 93 | 23 | 1,3 | |
| 13 | M35 | FOLWENI | MP | 10 | 12 | 19 | 21 | 62 | 18,1 | 11 | 12 | 19 | 21 | 63 | 16 | 1,0 | |
| 14 | R61 | MZAMBA | EC | 8 | 11 | 25 | 17 | 61 | 17,2 | 9 | 12 | 35 | 17 | 73 | 18 | 1,2 | |
| 15 | R61 | MTHATHA | EC | 22 | 20 | 14 | 17 | 73 | 17,2 | 37 | 20 | 16 | 23 | 96 | 24 | 1,3 | |
| 16 | N2 | MOUNT AYLIF | EC | 25 | 18 | 20 | 14 | 77 | 17,2 | 33 | 22 | 22 | 20 | 97 | 24 | 1,3 | |
| 17 | N4 | MIDDELBURG MPUMALANG | MP | 18 | 25 | 12 | 17 | 72 | 17,1 | 22 | 31 | 15 | 27 | 95 | 24 | 1,3 | |
| 18 | R61 | FLAGSTAFF | EC | 8 | 14 | 14 | 21 | 57 | 16,9 | 11 | 15 | 14 | 24 | 64 | 16 | 1,1 | |
| 19 | N4 | VOSMAN | MP | 17 | 18 | 18 | 16 | 69 | 16,9 | 19 | 21 | 21 | 24 | 85 | 21 | 1,2 | |
| 20 | N2 | KWAMSANE | KZN | 12 | 11 | 15 | 20 | 58 | 16,6 | 13 | 11 | 17 | 21 | 62 | 16 | 1,1 | |

Version 1.2 June 2019

MS Excel HazRoads Model 2018

EC Workshop 3 July 2019

| Eastern Cape - Top 30 Road Sections (All Fatal Crashes 2015-2018) | | | | 305 | 326 | 344 | 372 | 351 |
|---|------|----------------|--------------------------|-------------------------|------|------|------|------|
| | | | | Number of Fatal Crashes | | | | |
| Ran | Road | SAPS Area | Top 30 EC HazRoads | 2015 | 2016 | 2017 | 2018 | WR |
| 1 | N2 | LIBODE | 1- N2 - LIBODE | 17 | 26 | 22 | 29 | 25,6 |
| 2 | N2 | DUTYWA | 2- N2 - DUTYWA | 19 | 20 | 27 | 21 | 22,2 |
| 3 | N2 | MOUNT FRERE | 3- N2 - MOUNT FRERE | 18 | 13 | 15 | 22 | 18,5 |
| 4 | N2 | MOUNT AYLIFF | 4- N2 - MOUNT AYLIFF | 25 | 18 | 20 | 14 | 17,2 |
| 5 | R61 | MTHATHA | 5- R61 - MTHATHA | 22 | 20 | 14 | 17 | 17,2 |
| 6 | R61 | MZAMBA | 6- R61 - MZAMBA | 8 | 11 | 25 | 17 | 17,2 |
| 7 | R61 | FLAGSTAFF | 7- R61 - FLAGSTAFF | 8 | 14 | 14 | 21 | 16,9 |
| 8 | R61 | LIBODE | 8- R61 - LIBODE | 11 | 9 | 20 | 18 | 16,5 |
| 9 | N2 | BUTTERWORTH | 9- N2 - BUTTERWORTH | 13 | 15 | 14 | 17 | 15,6 |
| 10 | R61 | MBIZANA | 10- R61 - MBIZANA | 23 | 11 | 15 | 10 | 12,7 |
| 11 | R61 | LUSIKISIKI | 11- R61 - LUSIKISIKI | 13 | 10 | 9 | 14 | 12,1 |
| 12 | N2 | MSOBOMVU | 12- N2 - MSOBOMVU | 7 | 13 | 6 | 15 | 11,7 |
| 13 | N2 | BITYI | 13- N2 - BITYI | 11 | 15 | 10 | 10 | 10,9 |
| 14 | N2 | TSOLO | 14- N2 - TSOLO | 14 | 13 | 9 | 10 | 10,6 |
| 15 | R56 | MOUNT FLETCHER | 15- R56 - MOUNT FLETCHER | 7 | 4 | 13 | 12 | 10,6 |
| 16 | N2 | MTHATHA | 16- N2 - MTHATHA | 9 | 11 | 12 | 9 | 10,1 |
| 17 | R61 | NGCOBO | 17- R61 - NGCOBO | 8 | 7 | 8 | 11 | 9,4 |
| 18 | N2 | CAMBRIDGE | 18- N2 - CAMBRIDGE | 10 | 3 | 9 | 11 | 9,2 |
| 19 | N2 | QUMBU | 19- N2 - QUMBU | 10 | 10 | 6 | 9 | 8,5 |
| 20 | R63 | DIMBAZA | 20- R63 - DIMBAZA | 6 | 9 | 8 | 9 | 8,5 |
| 21 | R63 | MIDDLEDRIFT | 21- R63 - MIDDLEDRIFT | 5 | 12 | 3 | 10 | 8,1 |
| 22 | R409 | NGQAMAKHWE | 22- R409 - NGQAMAKHWE | 4 | 14 | 6 | 7 | 7,5 |



MS Excel EC Top 100 HazRoads



Road Traffic
Management Corporation

Thank You

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