

# Preliminary Analysis of Secondary Data Sources on Child Traffic Injuries

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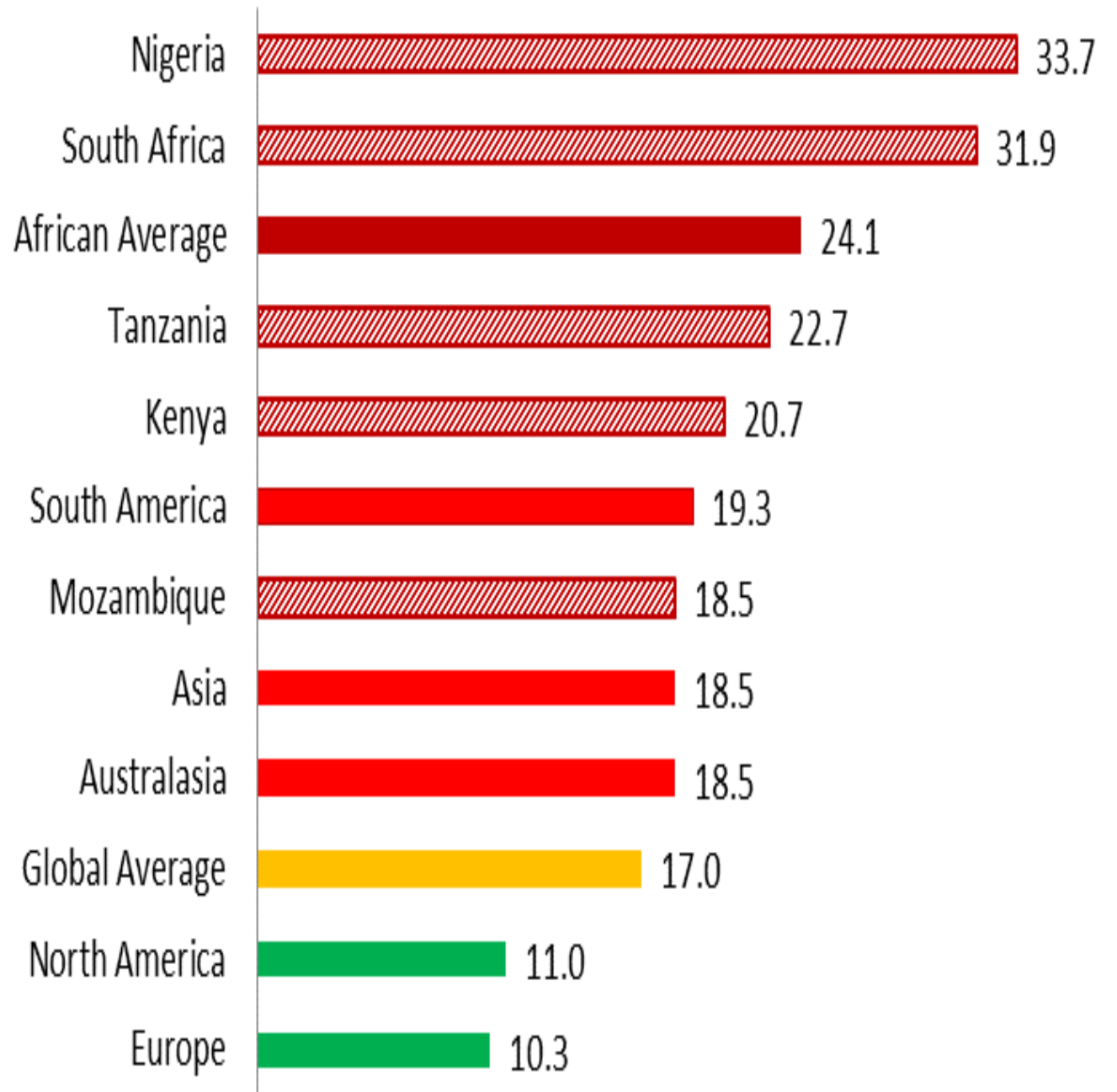
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- Background
- Examples from various data sources
- Preliminary results
- Way forward



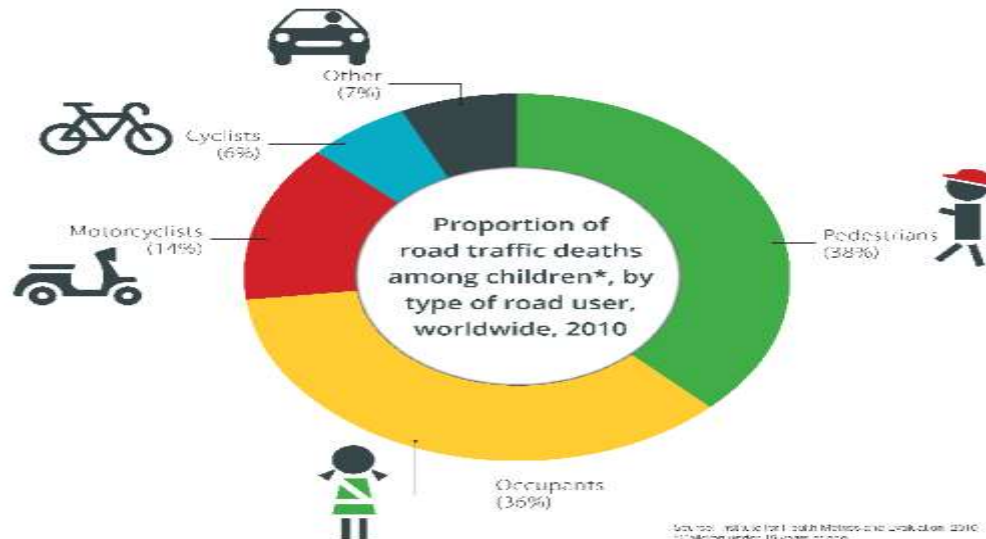
# Background

- South Africa has:
  - High road fatality rates per 100 000 population

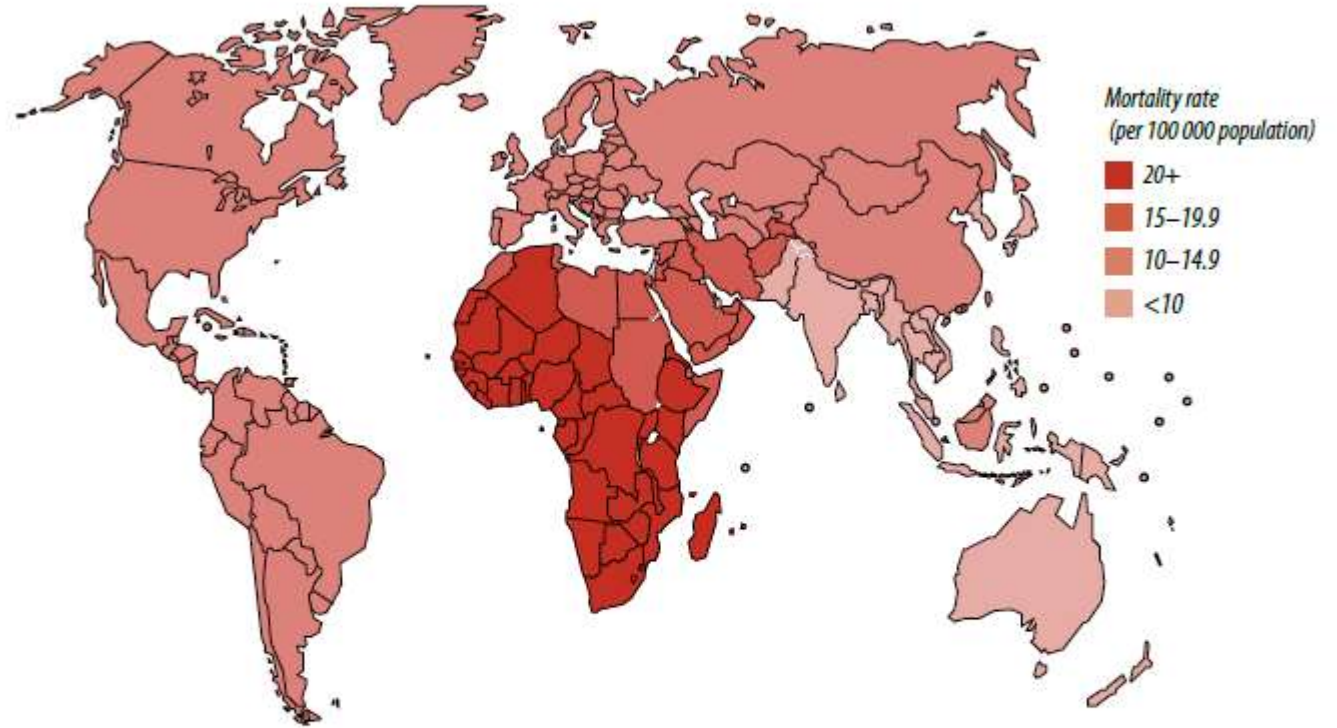


# Background

- South Africa has:
  - High road fatality rates per 100 000 population
  - High child fatalities per 100 000 population



Geographical variation in road traffic mortality rates (per 100 000 population) among those under 25 years, the world, 2002.



AFRO		AMRO		EMRO		EURO		SEARO		WPRO		World	
LMIC	HIC	LMIC	HIC	LMIC	HIC	LMIC	HIC	LIC	HIC	LMIC	HIC	LMIC	HIC
24.2	12.4	10.1	14.3	17.6	10.0	11.1	9.8	7.8	10.5	10.5	10.5	13.4	13.4

LIC low-income; LMIC low- middle-income; HIC high-income

AFRO = African region; AMRO = Region of the Americas; EMRO = Eastern Mediterranean region; EURO = European region; SEARO = South-East Asia region; WPRO = Western Pacific region.

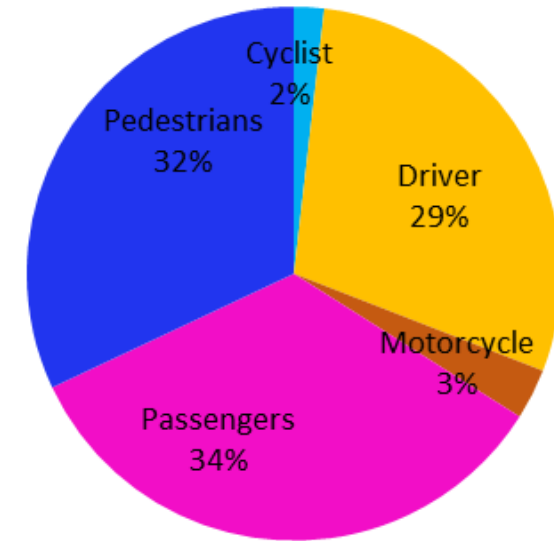
Countries within each geographical region have been further subdivided into income level, according to the divisions developed by the World Bank.  
Source: reference 2.



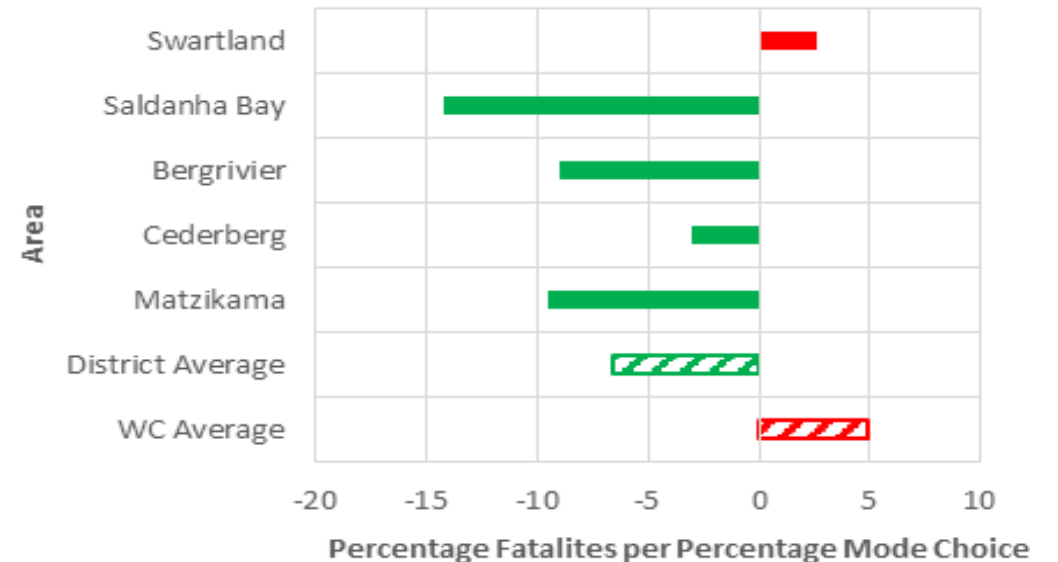
# Background

- South Africa has:
  - High road fatality rates per 100 000 population
  - High child fatalities per 100 000 population
  - A lack of disaggregated information (mode)

West Coast

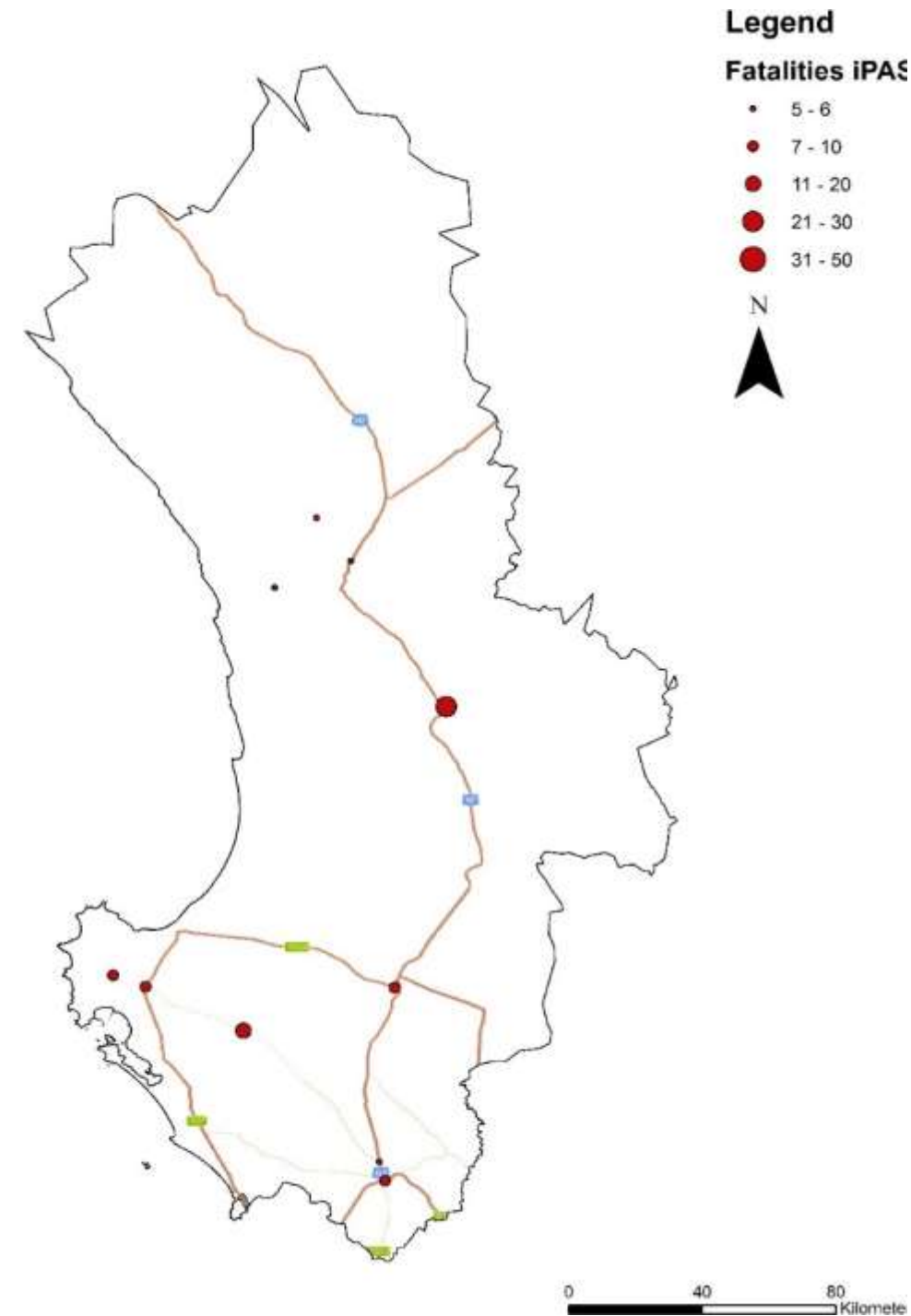


Pedestrian



# Background

- South Africa has:
  - High road fatality rates per 100 000 population
  - High child fatalities per 100 000 population
  - Cities with very high fatality rates per 100 000 population
  - A lack of disaggregated information (mode and location identification)



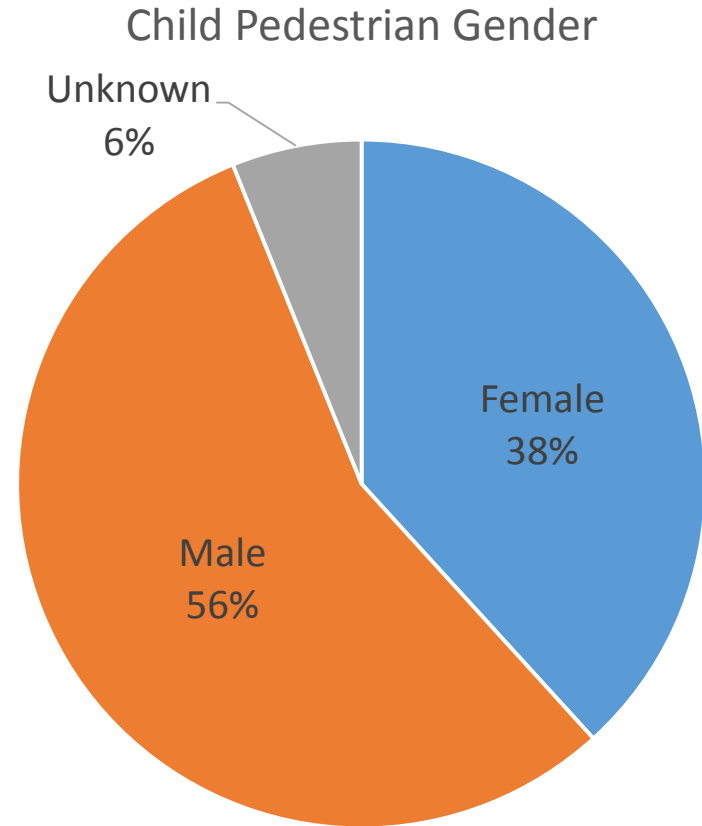
# Background

- South Africa has:
  - High road fatality rates per 100 000 population
  - High child fatalities per 100 000 population
  - Cities with very high fatality rates per 100 000 population
  - A lack of disaggregated information (mode and location identification)
  - A lack of appropriate pedestrian infrastructure



# Preliminary Results

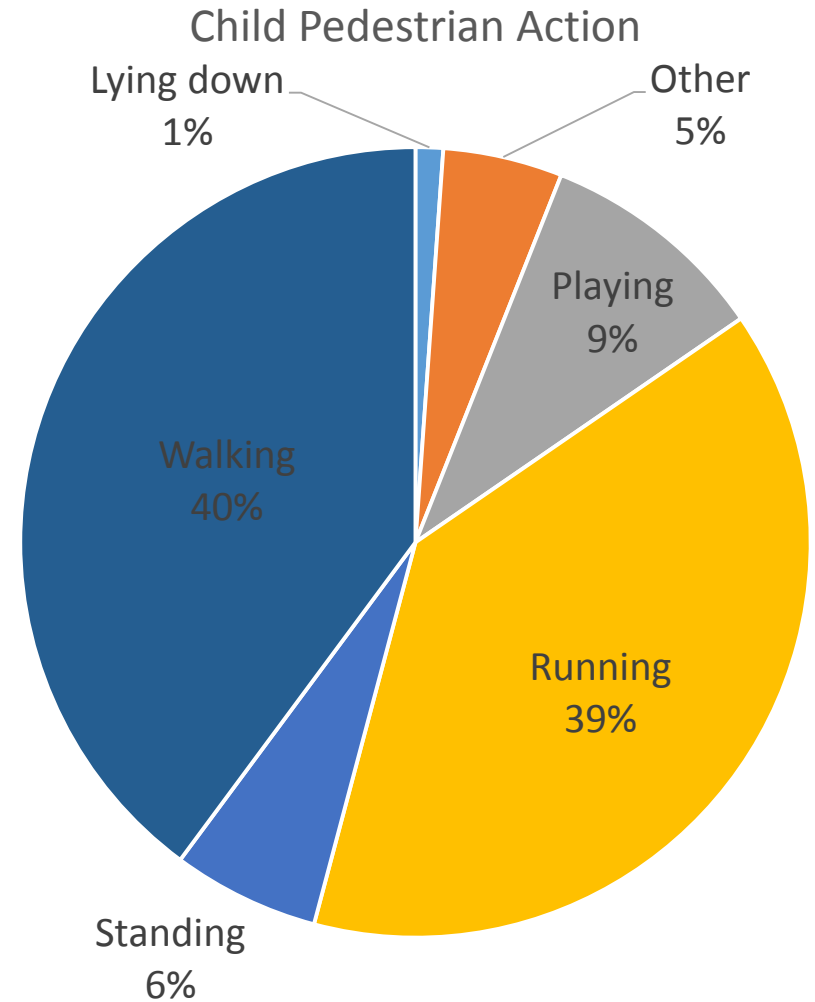
- iPAS analysis for the WC (2005-2014):
  - Child pedestrian gender





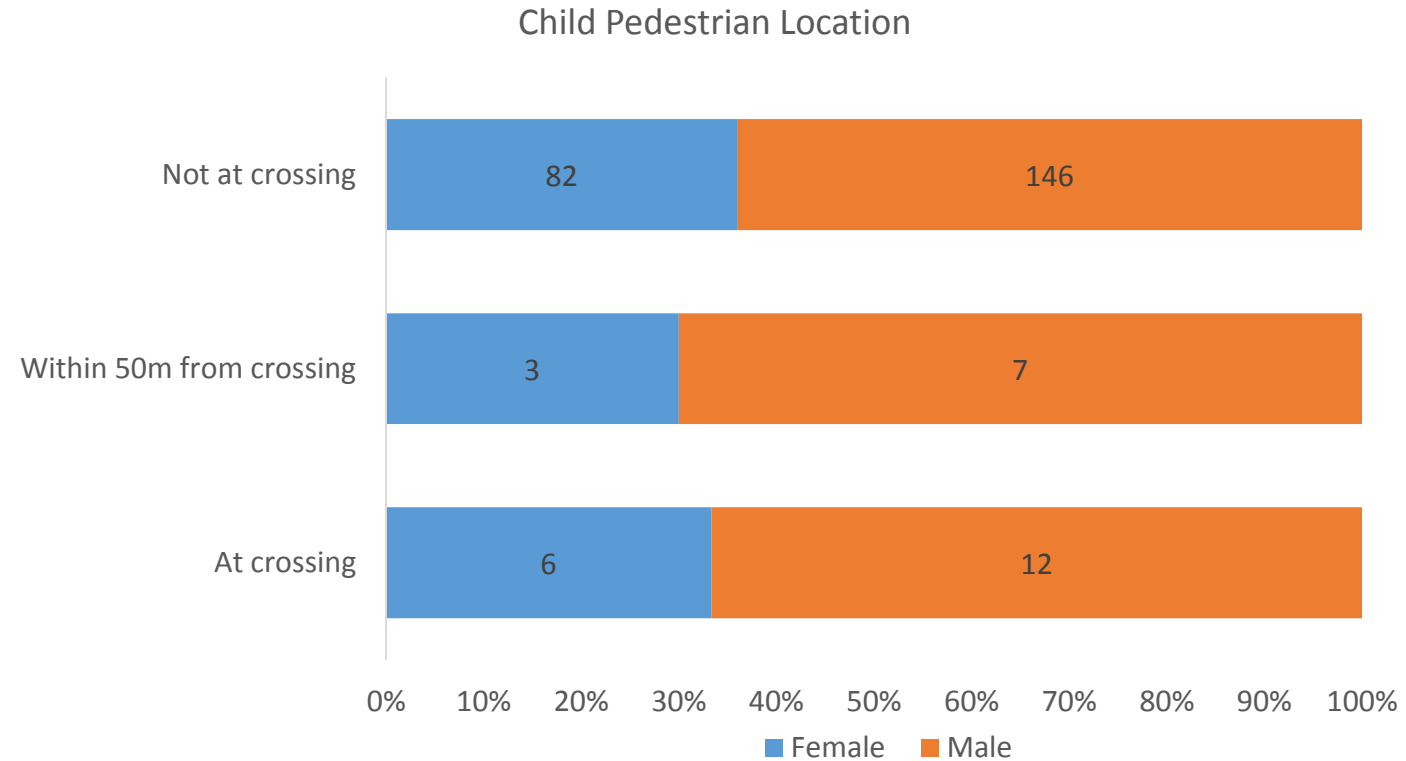
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- iPAS analysis for the WC (2005-2014):
  - Child pedestrian gender
  - Child pedestrian action



# Preliminary Results

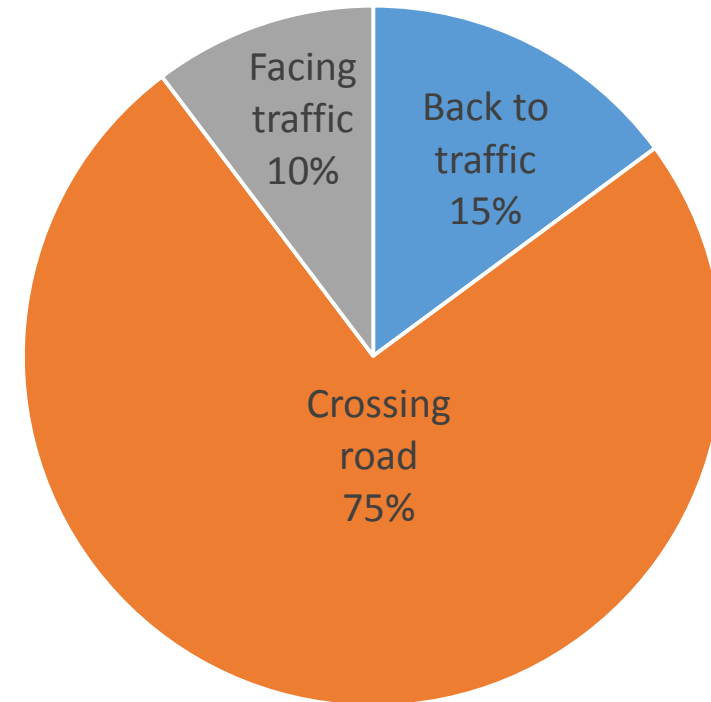
- iPAS analysis for the WC (2005-2014):
  - Child pedestrian gender
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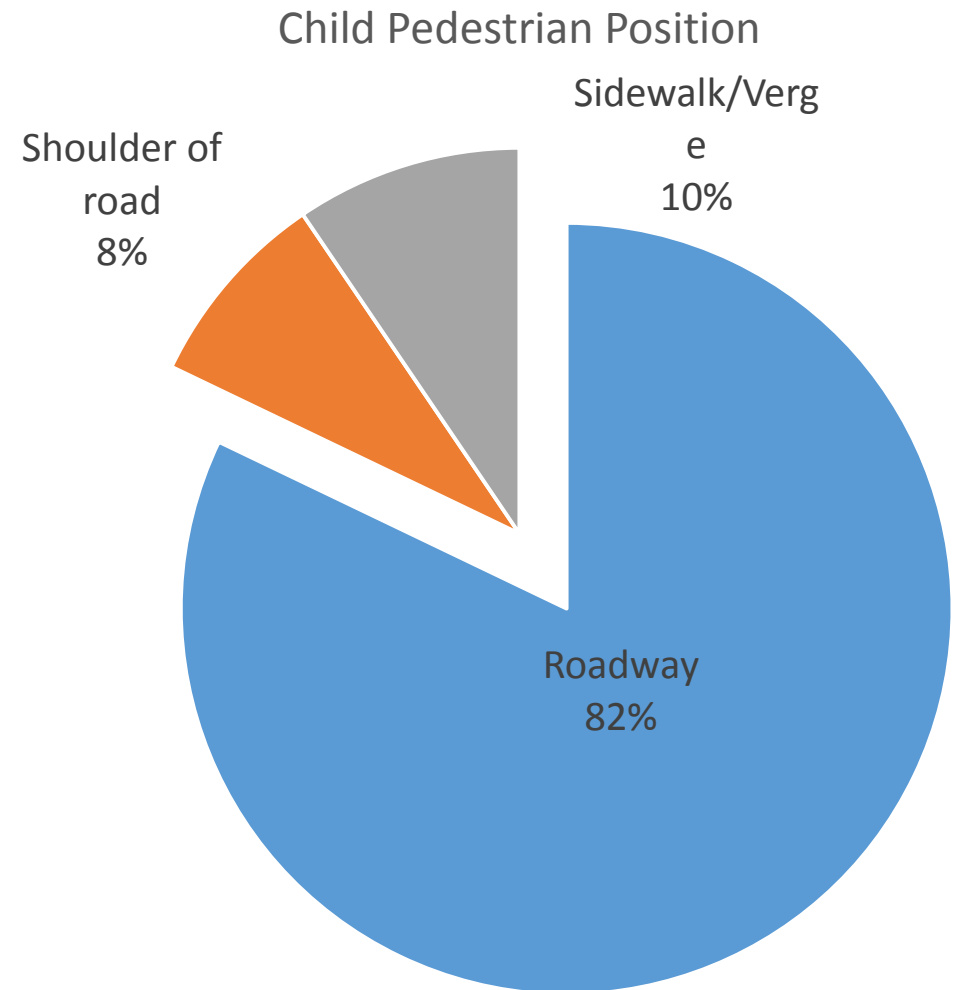
- iPAS analysis for the WC (2005-2014):
  - Child pedestrian gender
  - Child pedestrian action
  - Child pedestrian location
  - Child pedestrian manoeuvre

Child Pedestrian Manoeuvre



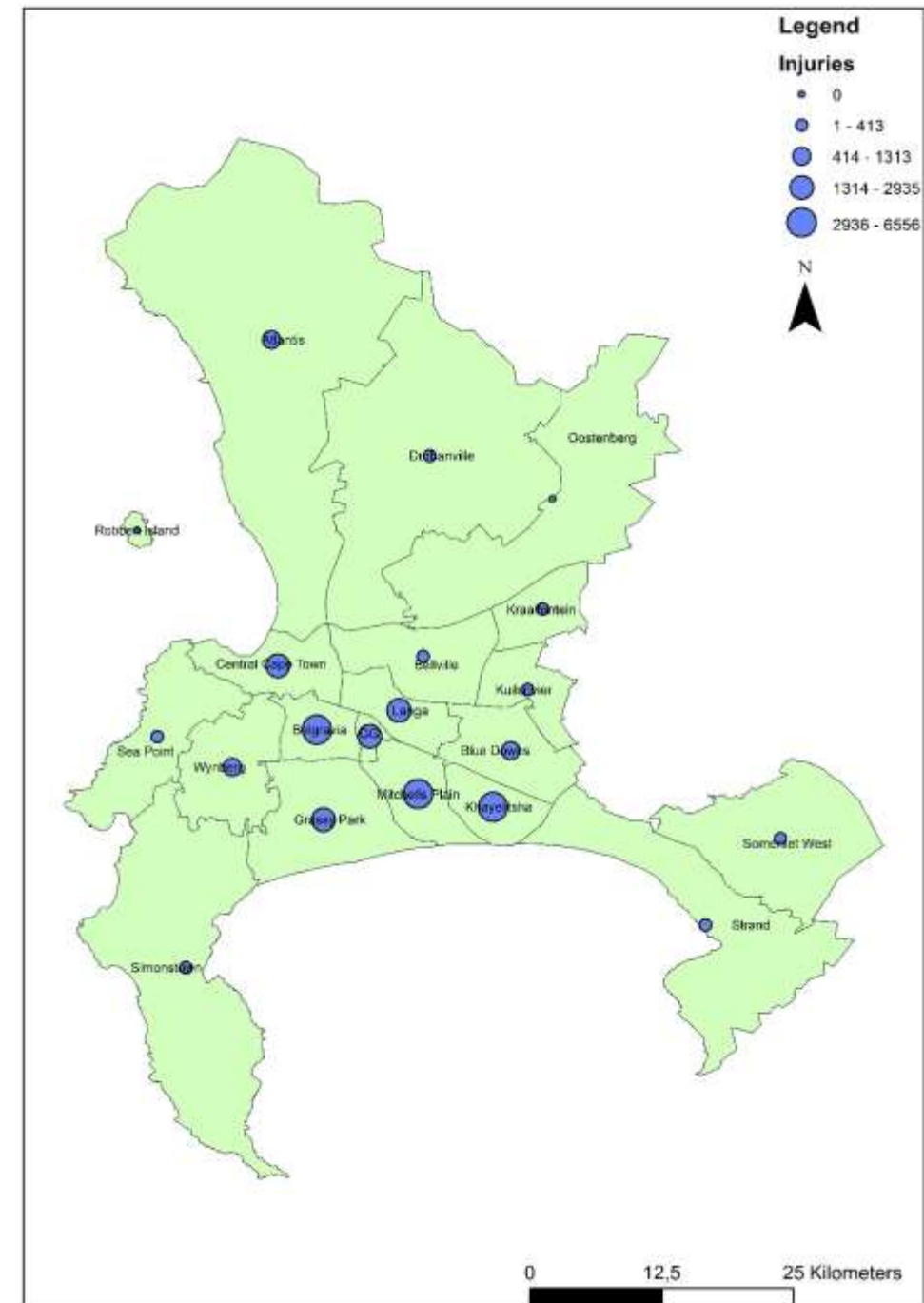
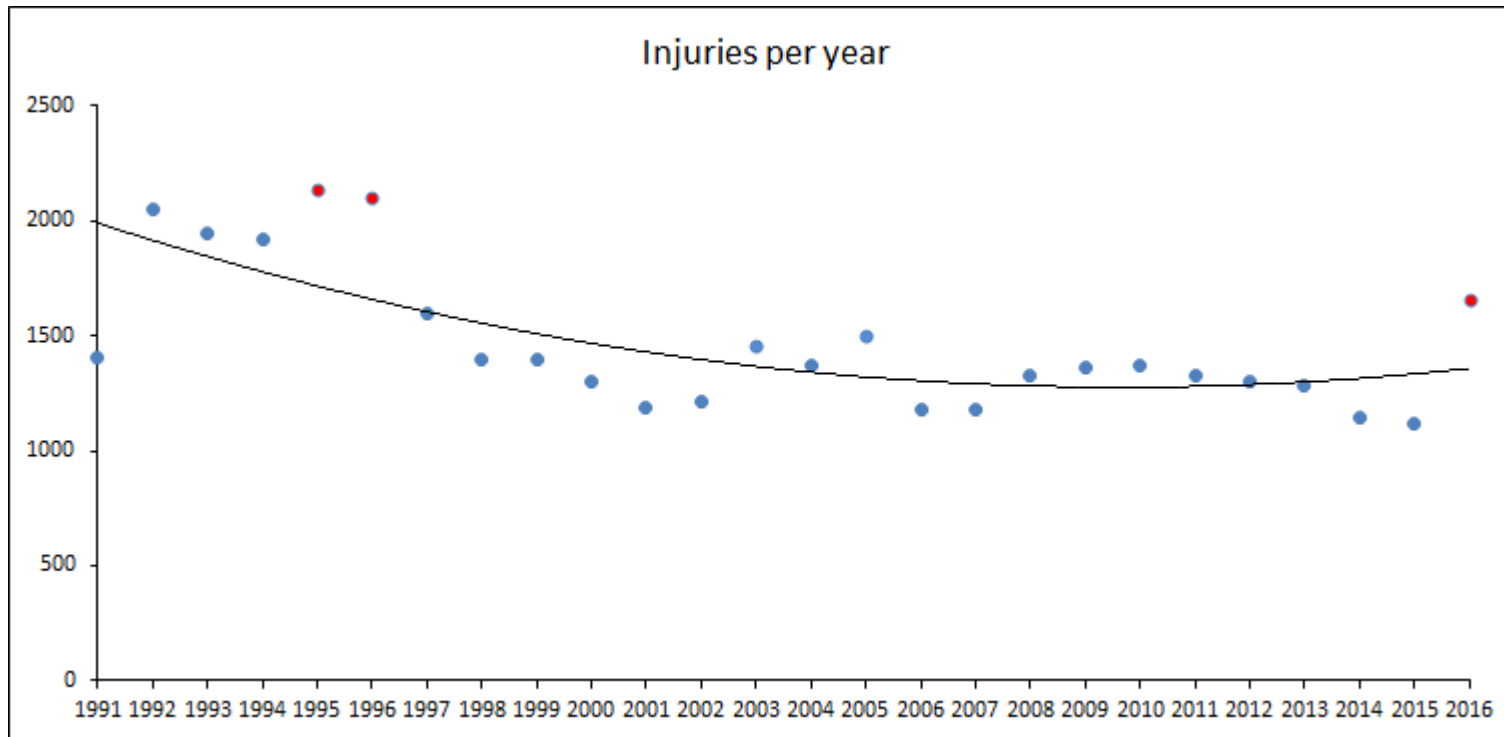
# Preliminary Results

- iPAS analysis for the WC (2005-2014):
  - Child pedestrian gender
  - Child pedestrian action
  - Child pedestrian location
  - Child pedestrian manoeuvre
  - Child pedestrian position



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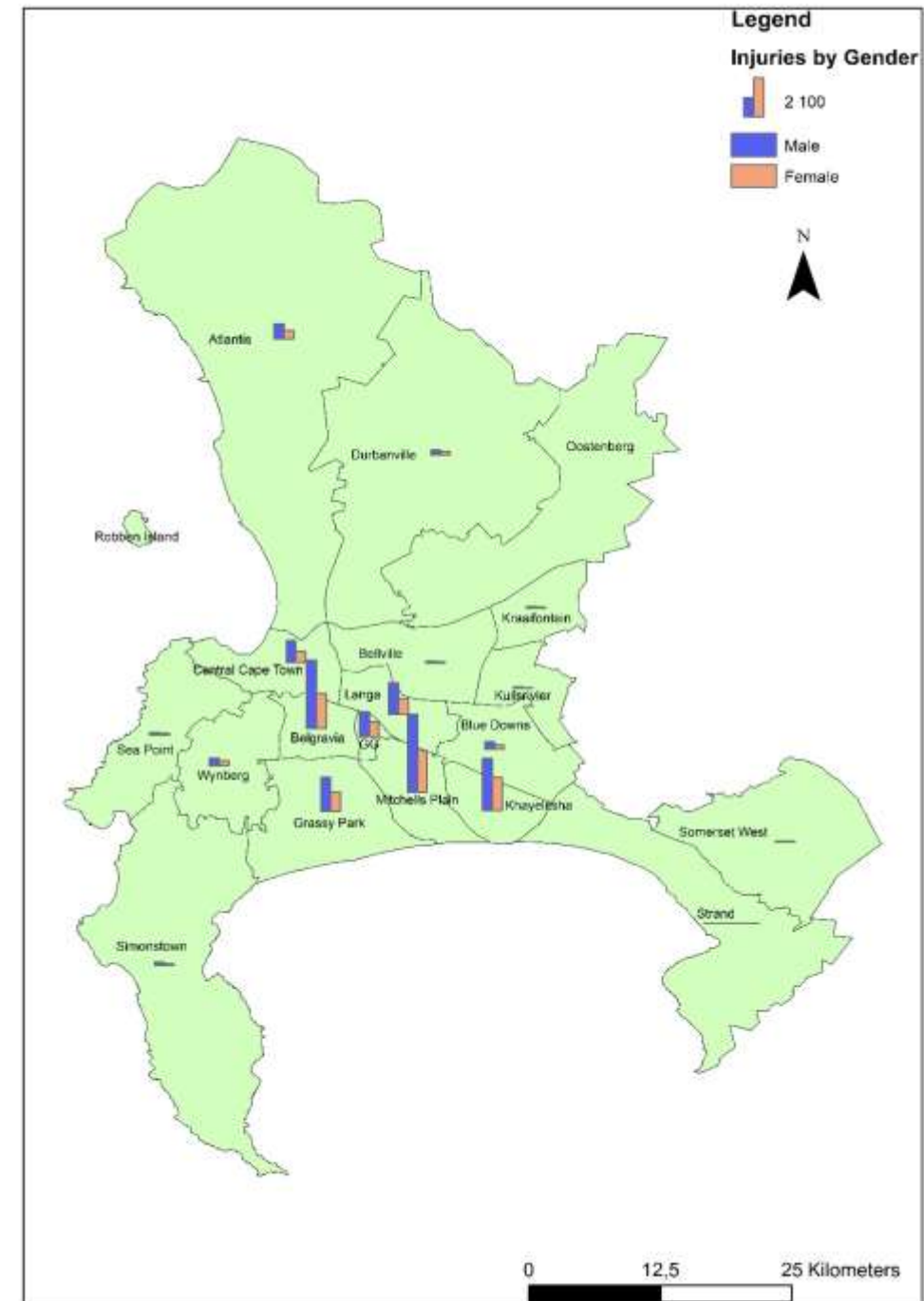
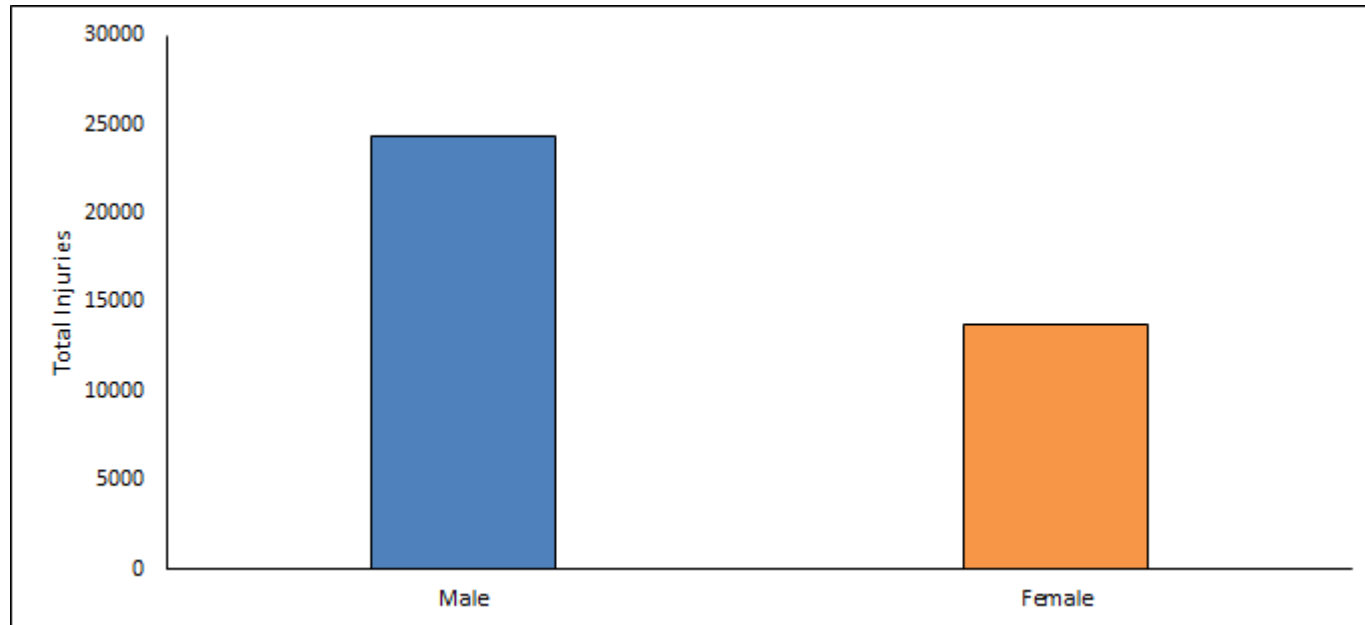
- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year





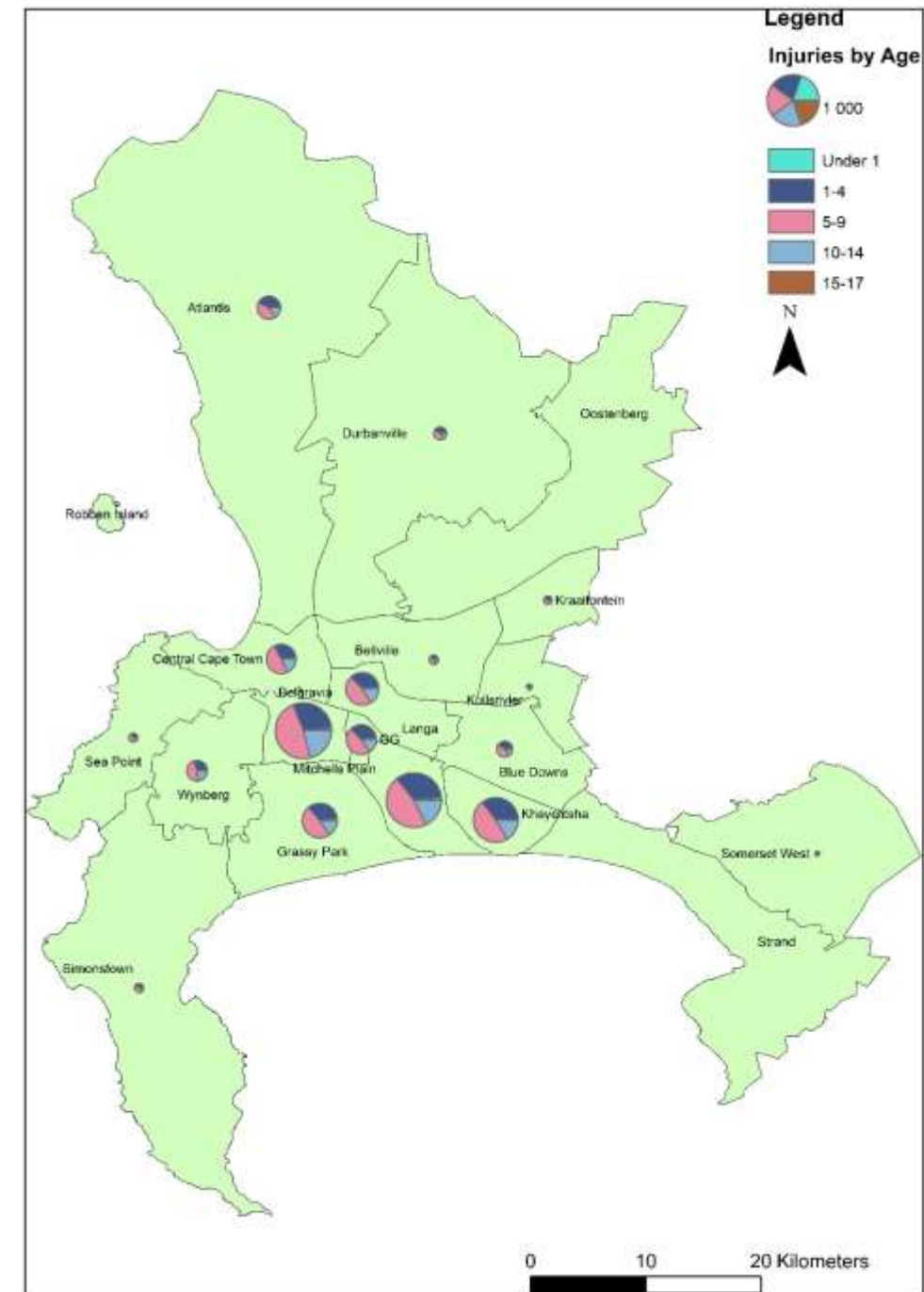
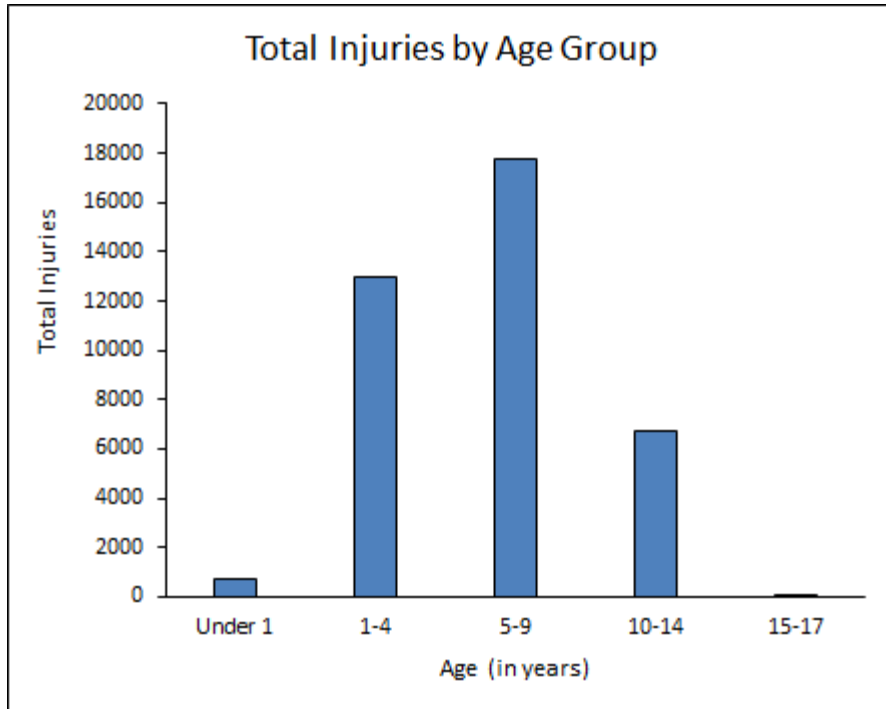
# Preliminary Results

- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year
  - Male vs Female



# Preliminary Results

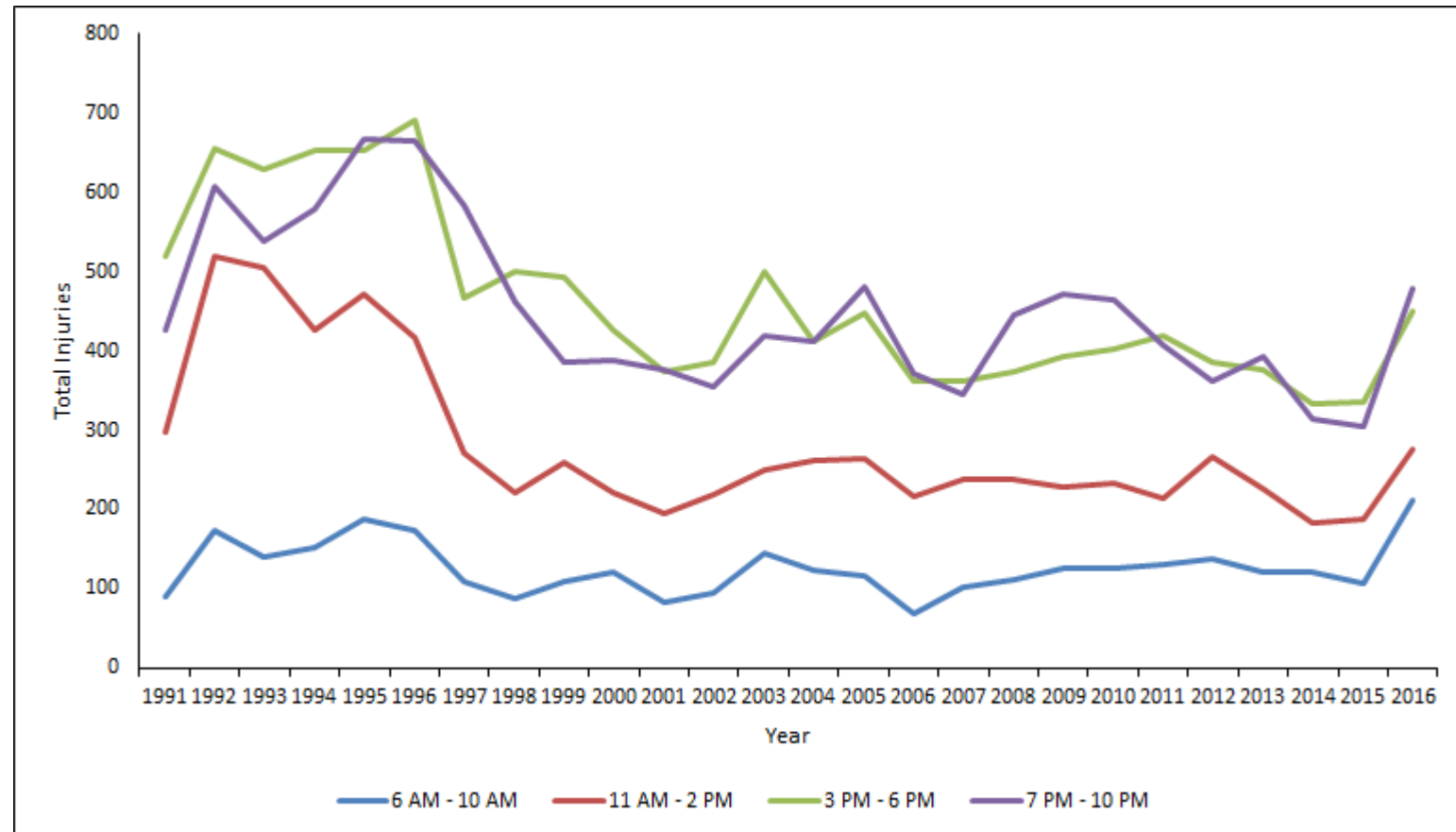
- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year
  - Male vs Female
  - Injuries by age group



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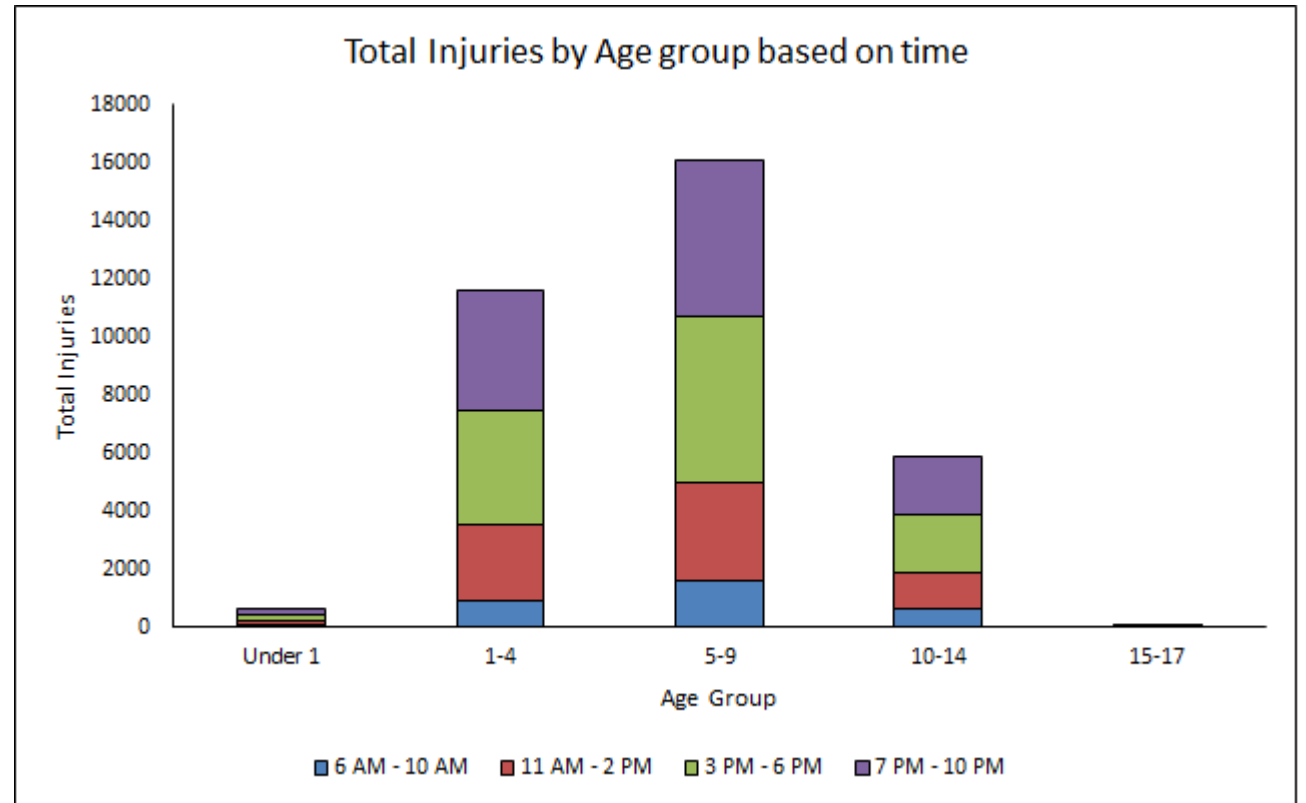
- CT Red Cross children's hospital analysis (1991-2016):

- Child Injuries per year
- Male vs Female
- Injuries by age group
- Injuries by time of the day



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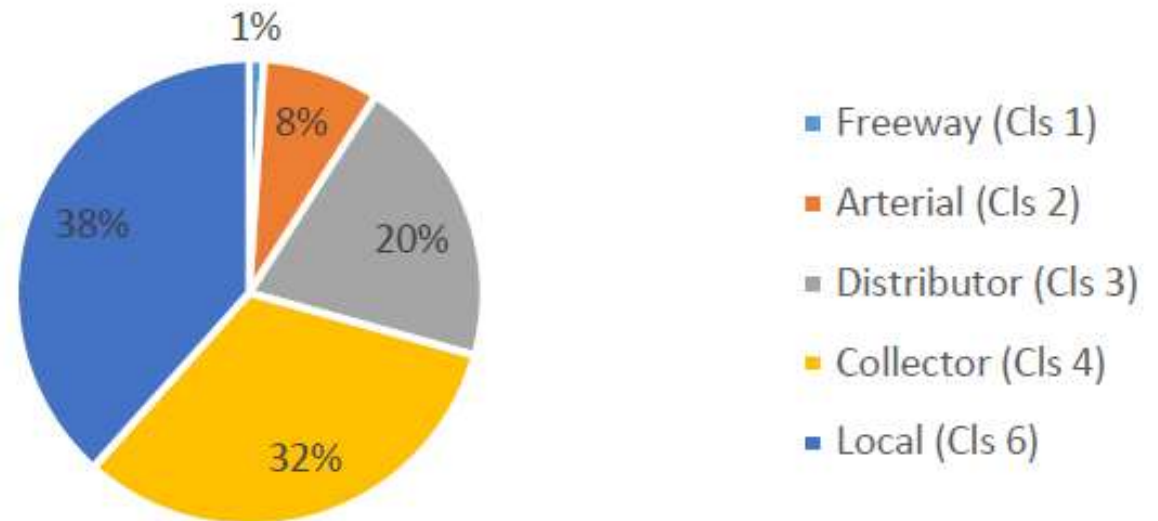
- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year
  - Male vs Female
  - Injuries by age group
  - Injuries by time of the day
  - Injuries by time of the day and group



# Preliminary Results

- Scholar Mobility Safety in Durban:
  - Child crashes vs road type

Contribution of road class to crashes involving Children under 14 years in eThekweni (2010 - 2014)

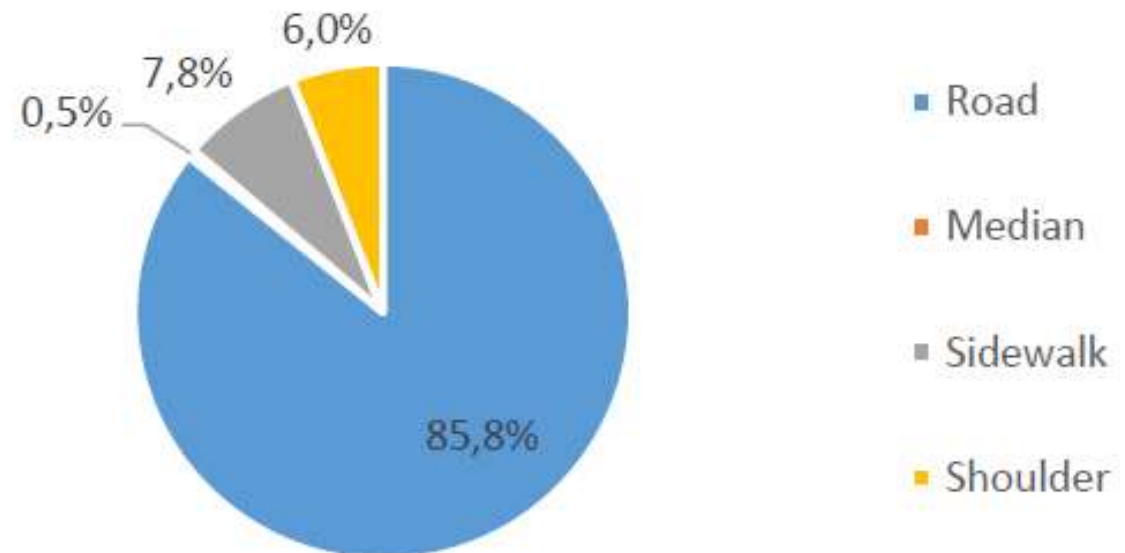




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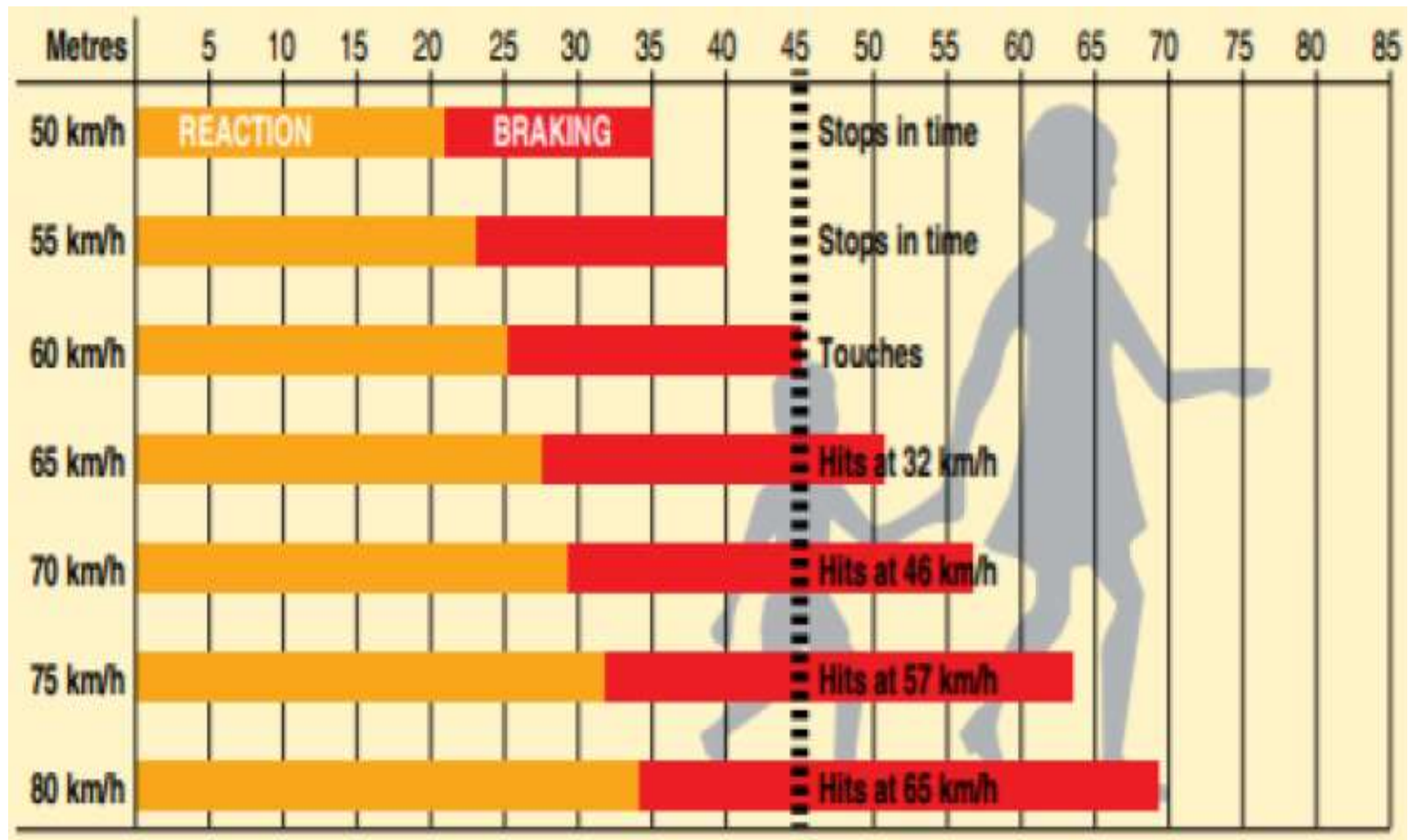
- Scholar Mobility Safety in Durban:
  - Child crashes vs road type
  - Child crashes vs location

Location of crashes involving children under 14 year in eThekwinini (2010 to 2014)



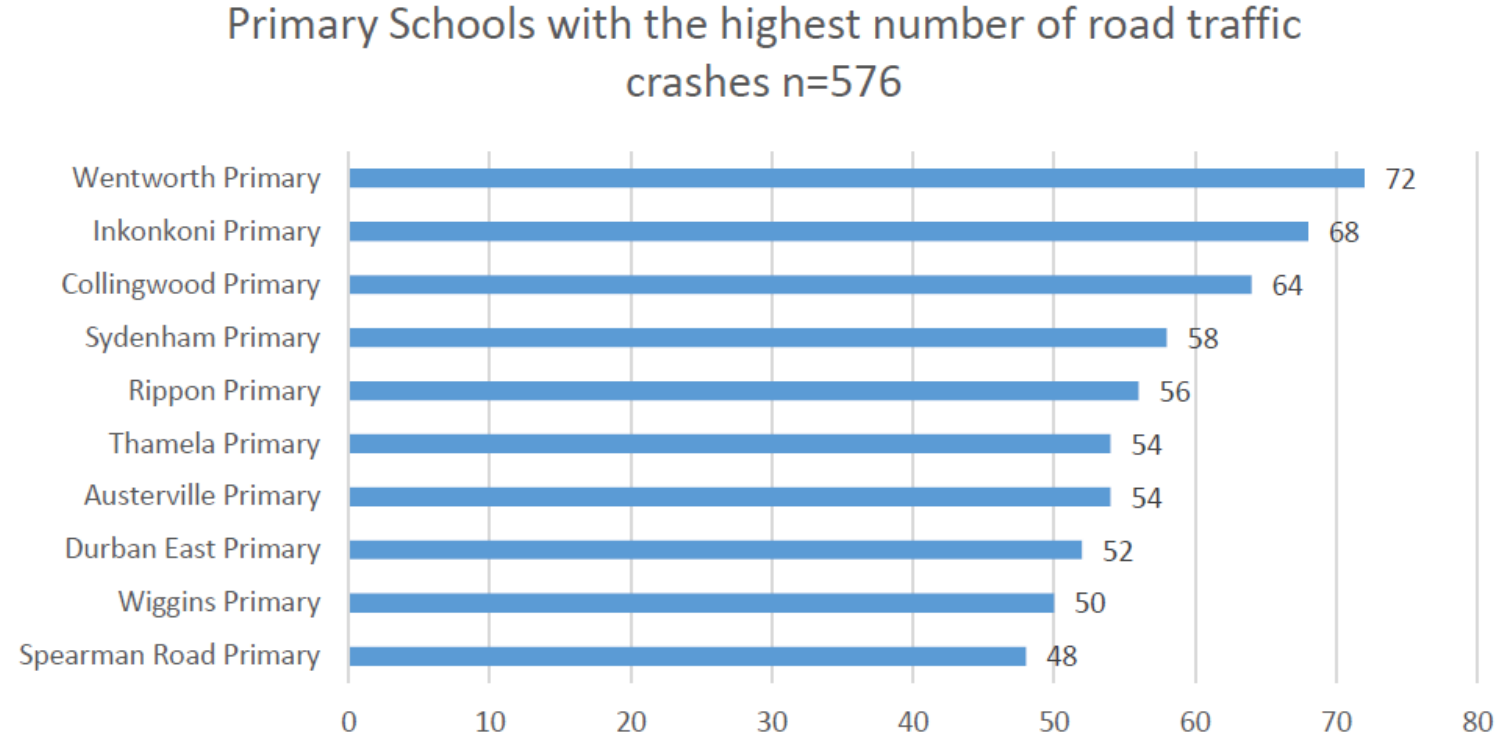
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- Scholar Mobility Safety in Durban:
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  - Child crashes vs location
  - Need for traffic calming



# Preliminary Results

- Scholar Mobility Safety in Durban:
  - Child crashed vs road type
  - Child crashes vs location
  - Need for traffic calming
  - Schools with high crash rates

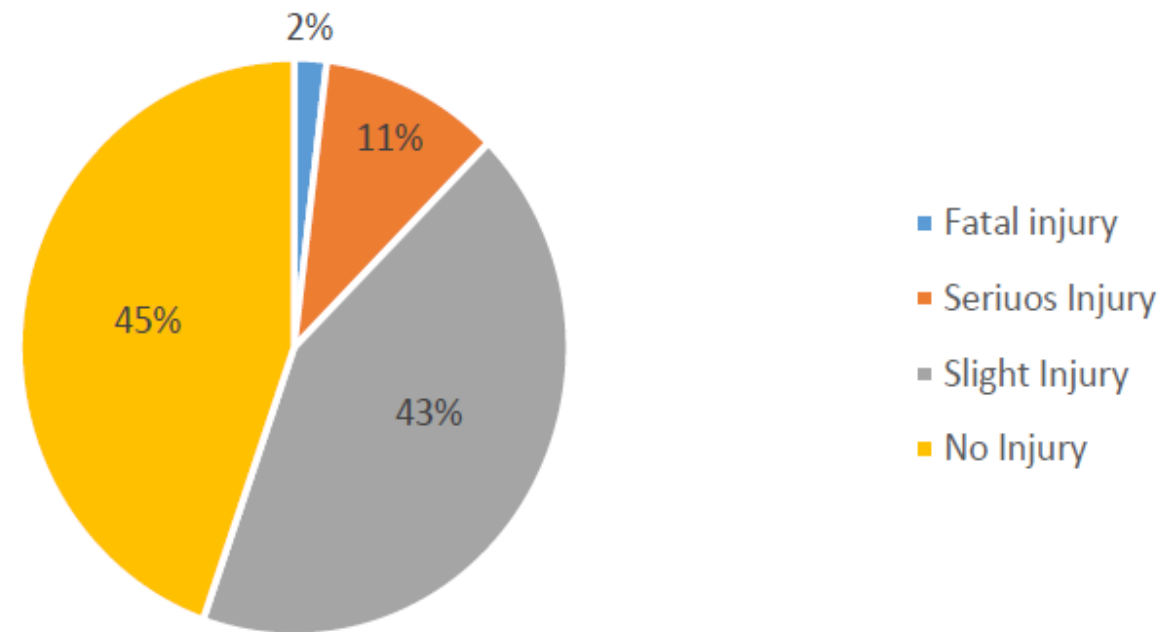


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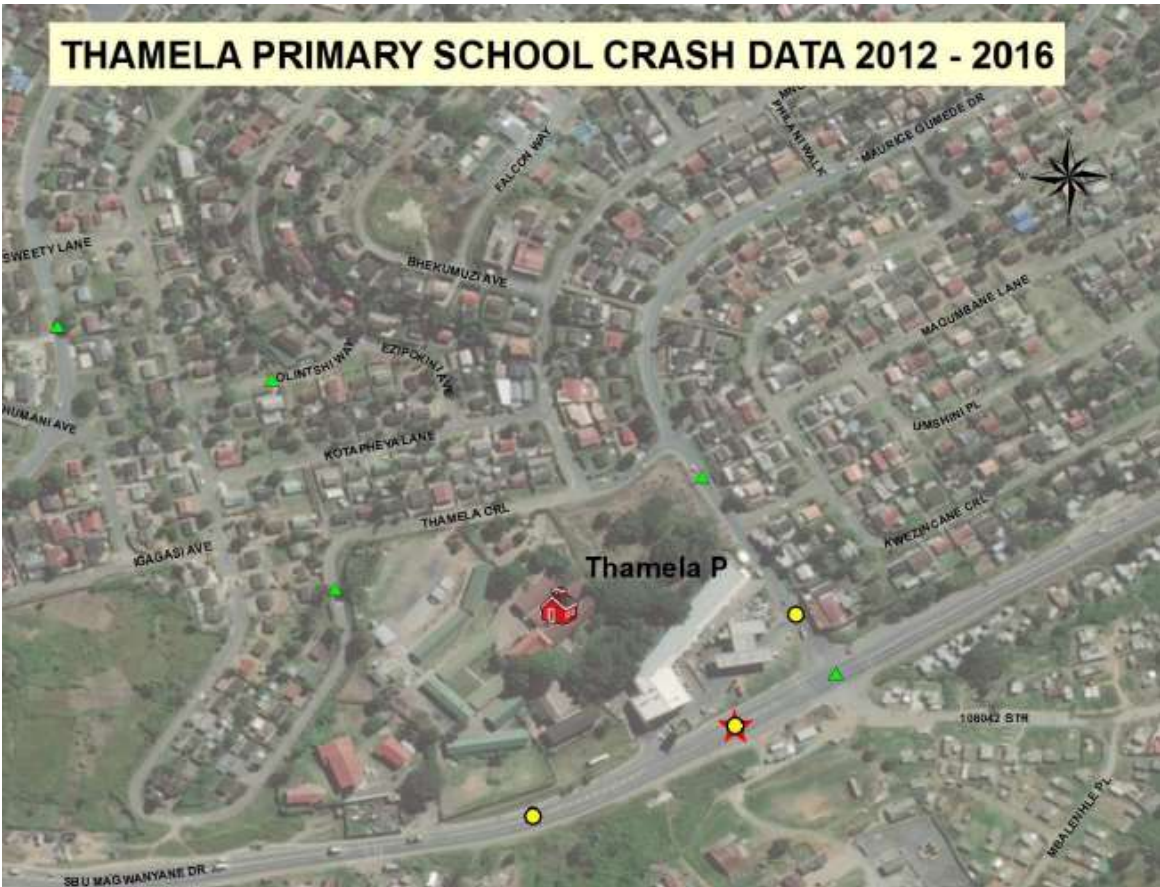
- Child crashed vs road type
- Child crashes vs location
- Need for traffic calming
- Schools with high crash rates

Severity of road traffic crashes - Summary for top ten schools  
n= 576



# Preliminary Results

- Scholar Mobility Safety in Durban:
  - Child crashes vs road type
  - Child crashes vs location
  - Need for traffic calming
  - Schools with high crash rates
  - Crash location analysis

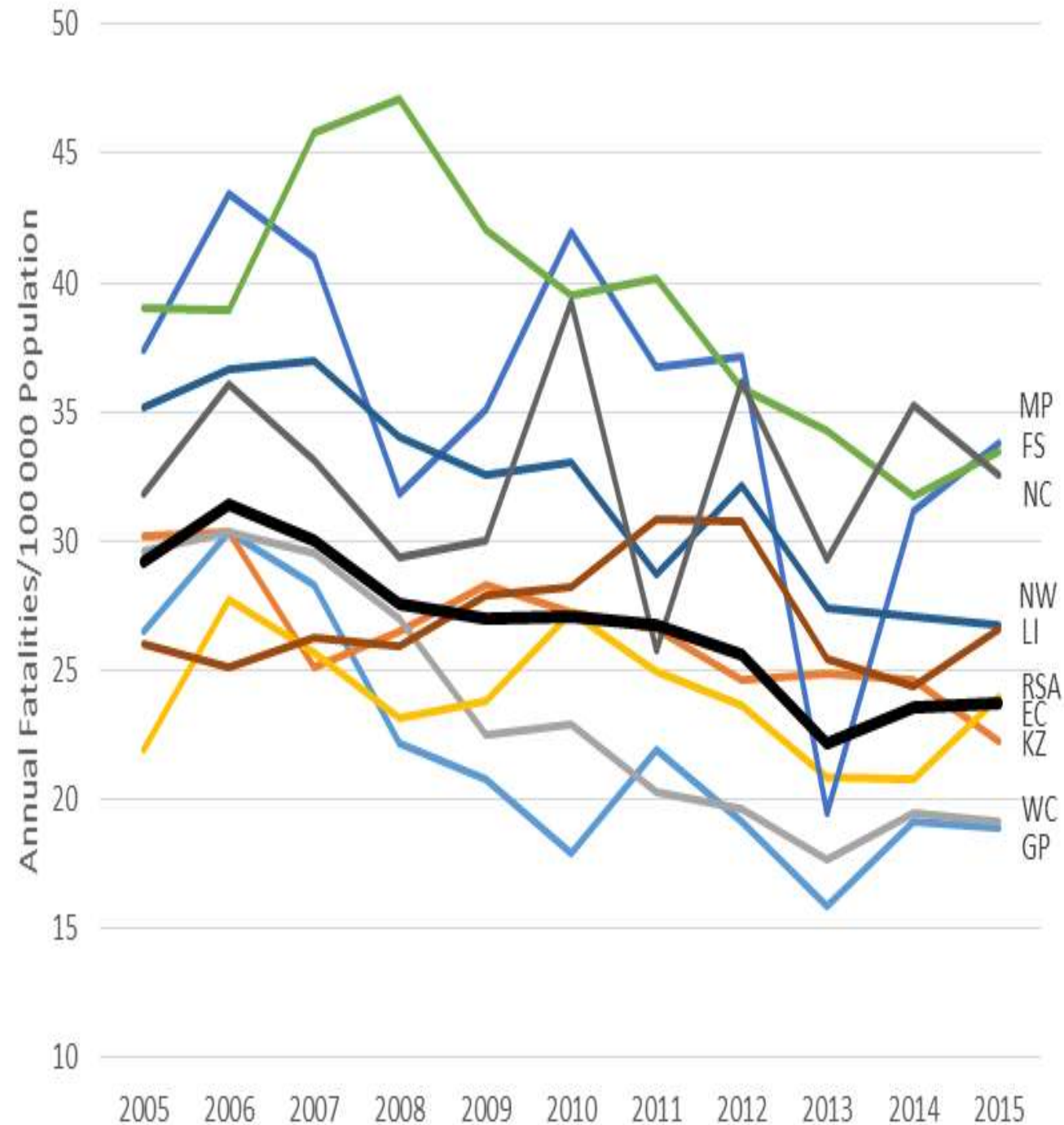


Road name	Road class	Length	Speed limit	Number of crashes	Traffic calming	Sidewalks	Pedestrian crossing	Hazard
Austerville Drive	Class 4	1 900m	60km/h	35	Yes	Yes	Only one close to Wentworth	Through road, public transport route with high traffic volume



# Way Forward

- Requested child specific information from the RTMC
- In contact with NETCARE about nation wide database
- In contact with the WC Health Department regarding ambulance services
- Identifying vehicle design databases for SA
- .....



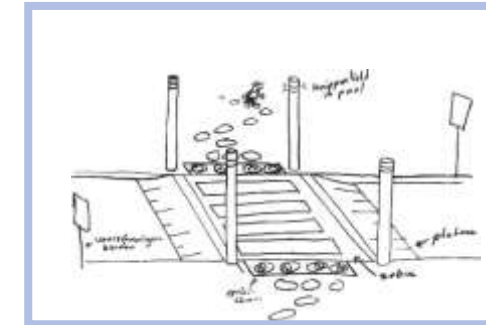
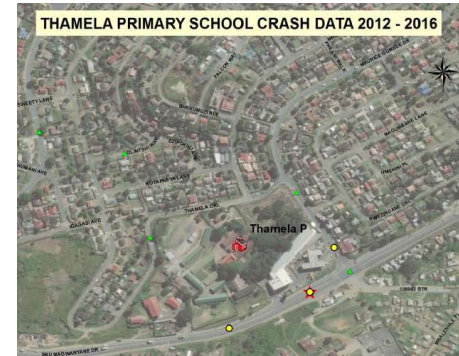
# Way Forward

Identify Literature Findings

Analyse South African  
Child Pedestrian Specific Data


Findings and Recommendations for  
Pedestrian Child Protection in SA

Area wide traffic calming reduces  
child pedestrian injury rates (Jones et al., 2004)



Name of Scenario:	Costs (R million)		Lives saved/20 years		Overall BC Ratio/20 years		Break-Even (fatalities only)	
	Capital/20 year	Operational/year	Conservative	Optimistic	Conservative	Optimistic	Conservative	Optimistic
Infrastructure based scenarios								
Prince Alfred Hamlet	9	0.0868	16.0	79.1	11.3	56.0	60 (67)	2 (29)
Khayelitsha	9	0.0868	58.4	288.9	41.3	383.2	44 (49)	28 (29)
Rumble strips in Grabouw	0.784	0.014	286.8	371.8	2113	2738	3 (4)	3 (3)
Lighting at the intersection in Rawsonville	0.135	0.001	4	16	202.9	811.5	26 (31)	13 (16)
Enforcement based scenarios								
Speed over distance in Leeu Gamka	2.1	1.0	59.13	80.41	21.0	28.5	15 (17)	14 (16)
Education based scenarios								
Campaigns	0	45.2	1238.4		15.1		19 (21)	
Emergence Medical Services based scenarios								
Improved ambulance services	1.8	0.495	200	300	67	101	1 (1)	1 (1)
Improved motorcycle services	0.6	0.145	200	280	224	314	1 (1)	1 (1)
Improved helicopter services	0	18.0	215	7648	4.7	166	1 (1)	1 (1)
All costings are based on base year values. No inflation on costs or benefits have been included								



Intervention	Example	Warranted Along	Measure to Pre
<p><b>Delineation:</b></p> <p>Delineation is the pavement marking, guideposts, and raised pavement markers used on, and adjacent to, the roadway to define and communicate vehicle travel paths for motorist.</p> <p>Centre and edge delineation treatments help drivers judge their position on the road and provide advice about conditions ahead.</p> <p><b>Types of delineation treatments:</b></p> <ul style="list-style-type: none"> <li>Line Marking - Painted line marking, Rumble strips;</li> <li>Retroreflective Pavement Markers (RRPMs) - "Cat eyes"</li> <li>Guide posts - 1 metre high reflective posts;</li> <li>Chevron Alignment markers (CAMs);</li> <li>Warning signs and Advisory speed signs. Advisory signs tell drivers how to navigate the hazard safely.</li> </ul>		<ul style="list-style-type: none"> <li>All roads to assist motorists to judge the alignment of the road, see their dedicated lanes and discourage them from overtaking and accidental drifting from high speed or driver fatigue;</li> <li>Delineation treatments are particularly helpful where there is poor visibility (for example, due to rain, fog or darkness) and on sharp bends;</li> <li>Roadways with a change in alignment e.g. sharp bends, at night and in rainy weather;</li> <li>Where road alignment guidance is required to navigate the horizontal and vertical curves;</li> <li>Roads with road hazards to inform drivers of the nature of the hazard they are approaching.</li> </ul>	Run-off Road

2017 - Rating					ABOUT 2017 RATING			
Make & Model	Safety Equipment	Overall rating	Adult	Child	Pedestrian	Motorcyclist		
VW Arteon	Standard	★★★★★	96%	85%	85%	82%		
Subaru XV	Standard	★★★★★	94%	89%	84%	68%		
Subaru Impreza	Standard	★★★★★	94%	89%	82%	68%		
BMW 6 Series GT	Standard	★★★★★	86%	85%	81%	59%		

