Preliminary Analysis of Secondary Data Sources on Child Traffic Injuries

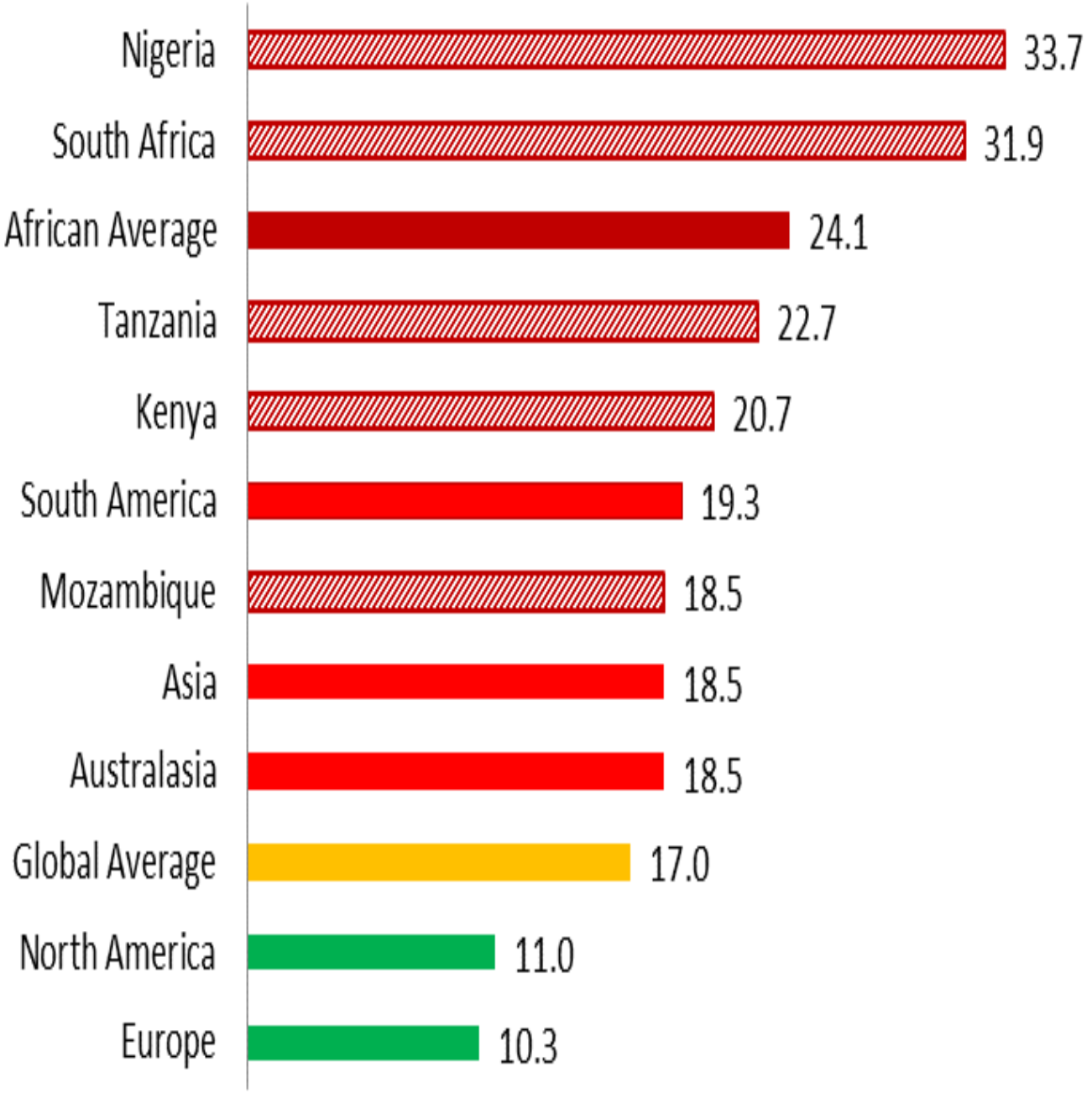
A/Prof Marianne Vanderschuren
Centre for Transport Studies
University of Cape Town

Content

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

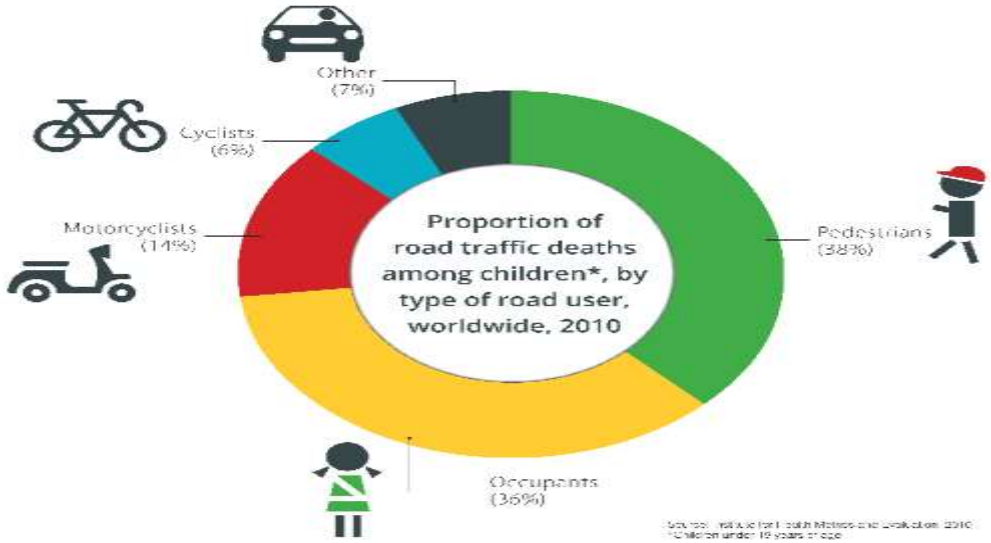
Background

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

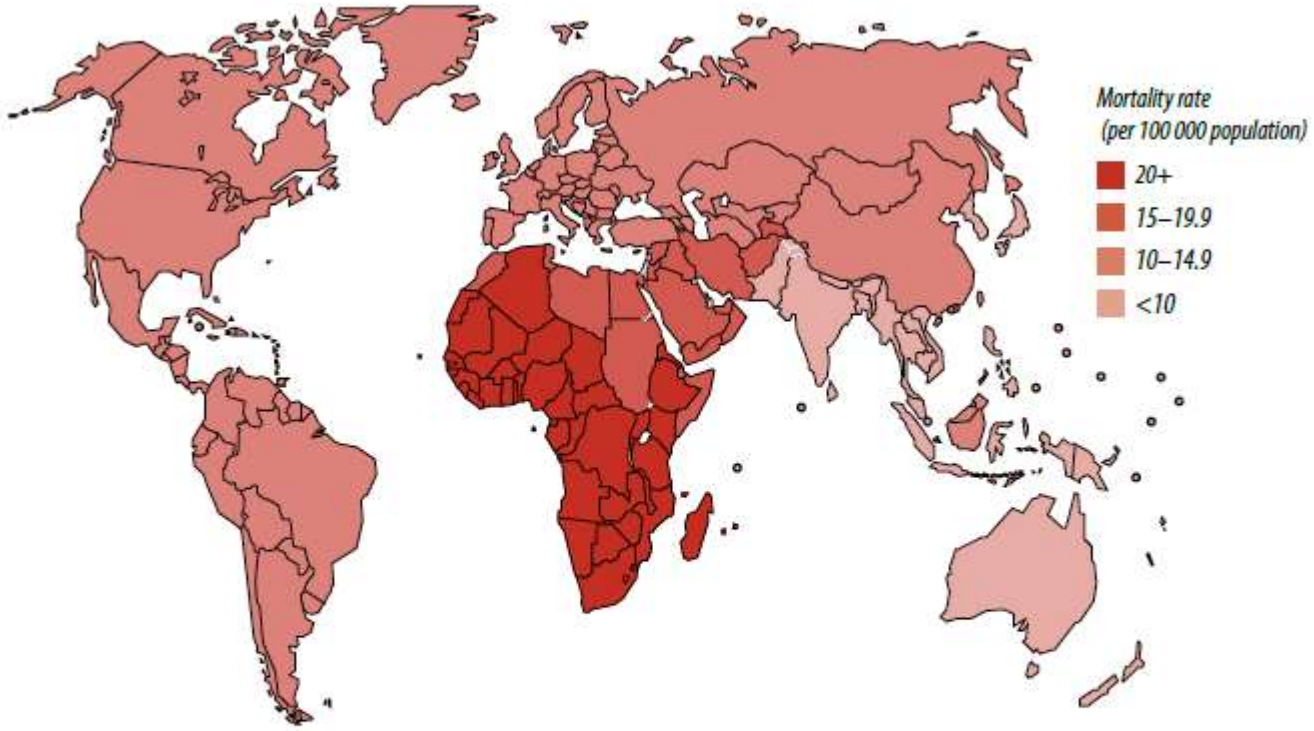


Background

- 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	LIC	HIC	LMIC	HIC	LMIC
24.2	12.4	10.1	14.3	17.6	10.0	11.1	9.8	7.8	10.5	10.5	13.4

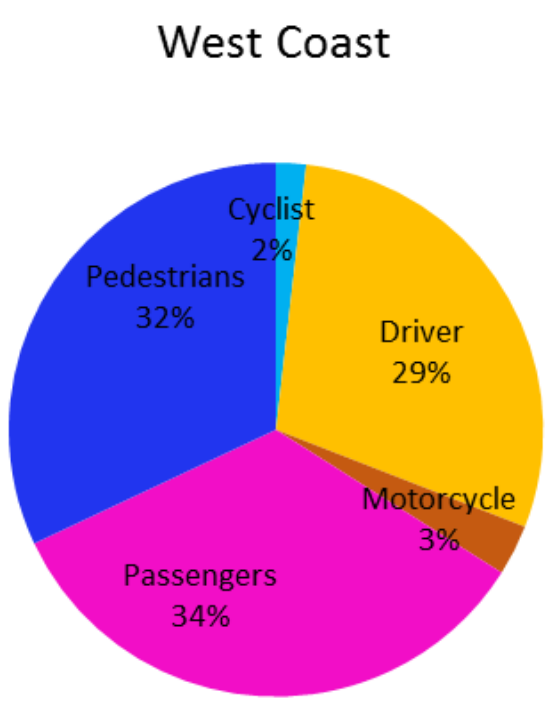
LIC low-income; LMIC low- middle-income; HIC high-income

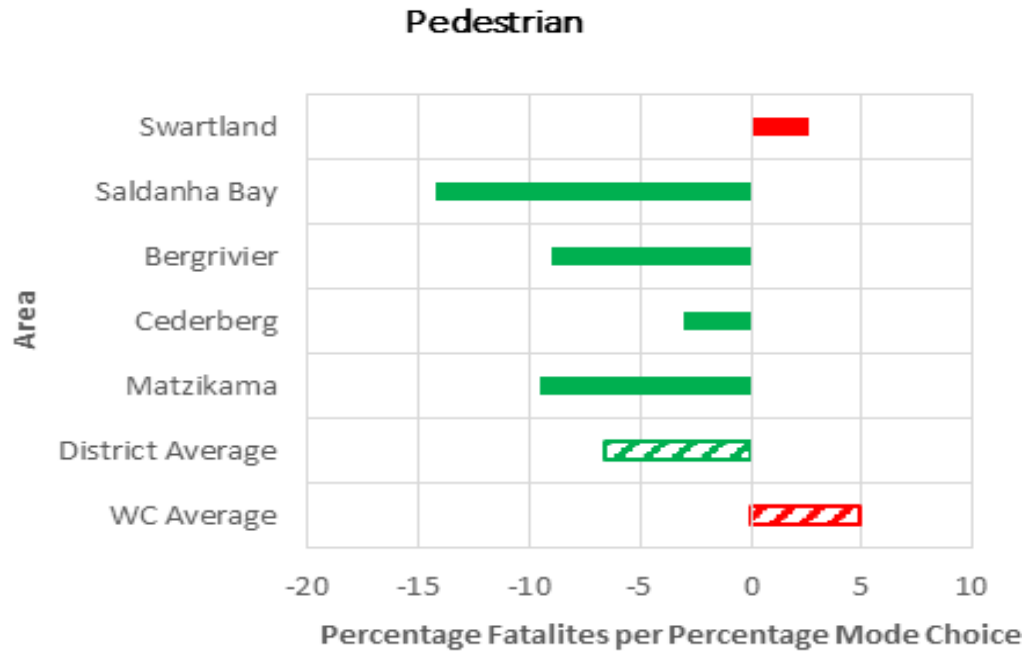
AFRO = African region; AMRO = Region of the Americas; EMRO = Eastern Mediterranean region; EURO = European region; SEARO = South-East Asia region; WPRO = Western Pacific region.

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

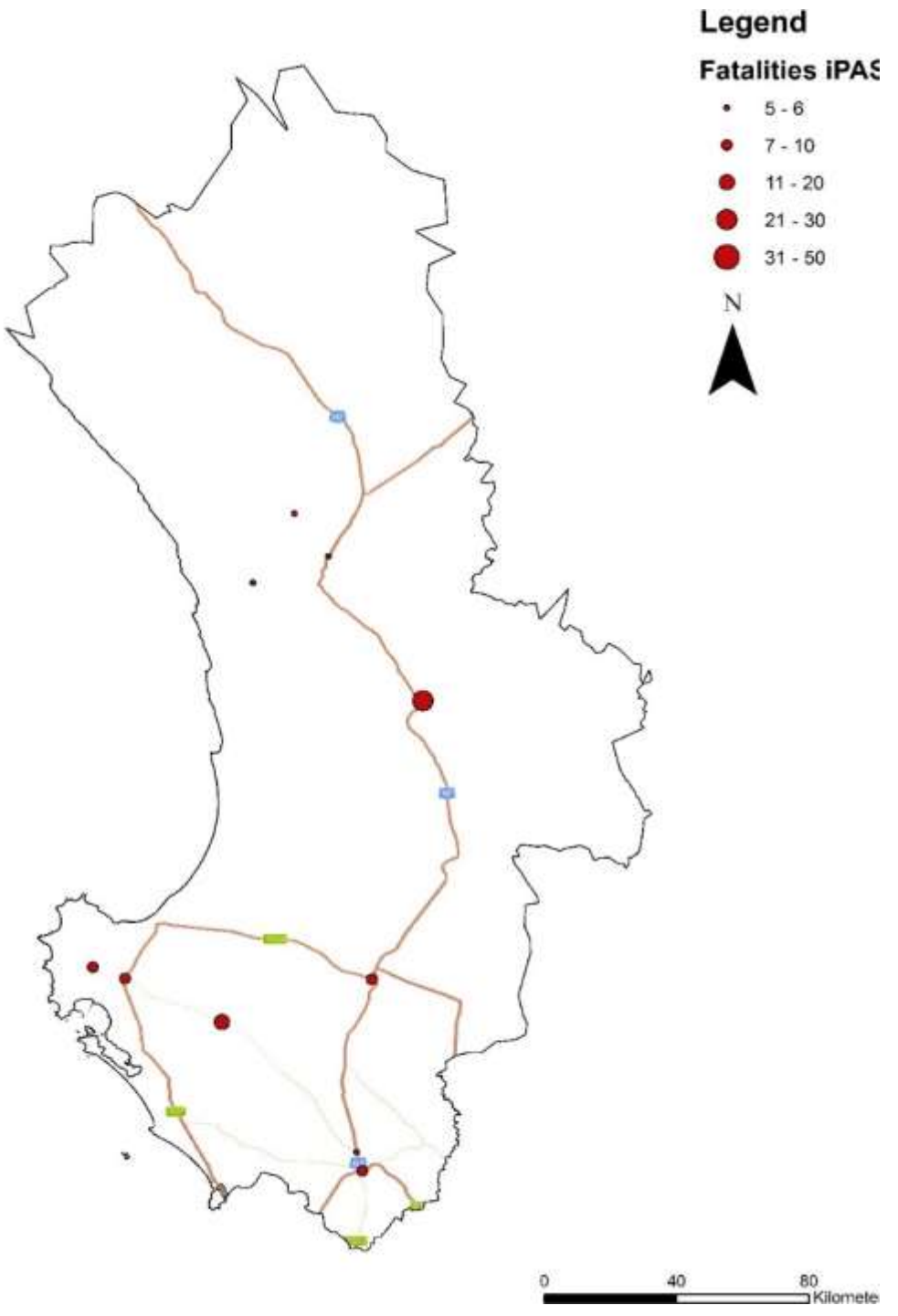
- South Africa has:
  - High road fatality rates per 100 000 population
  - High child fatalities per 100 000 population
  - A lack of disaggregated information (mode)





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)

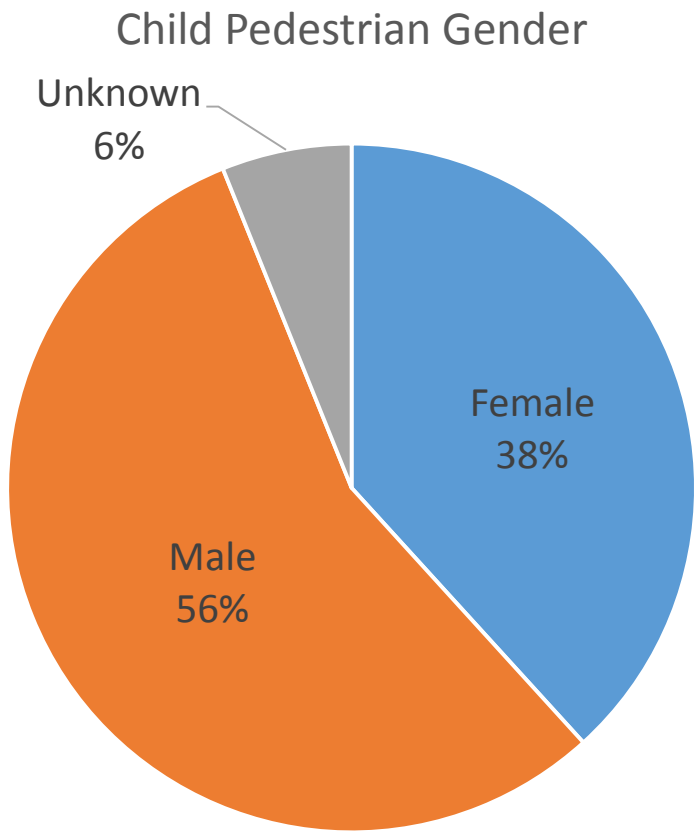


Background

- 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

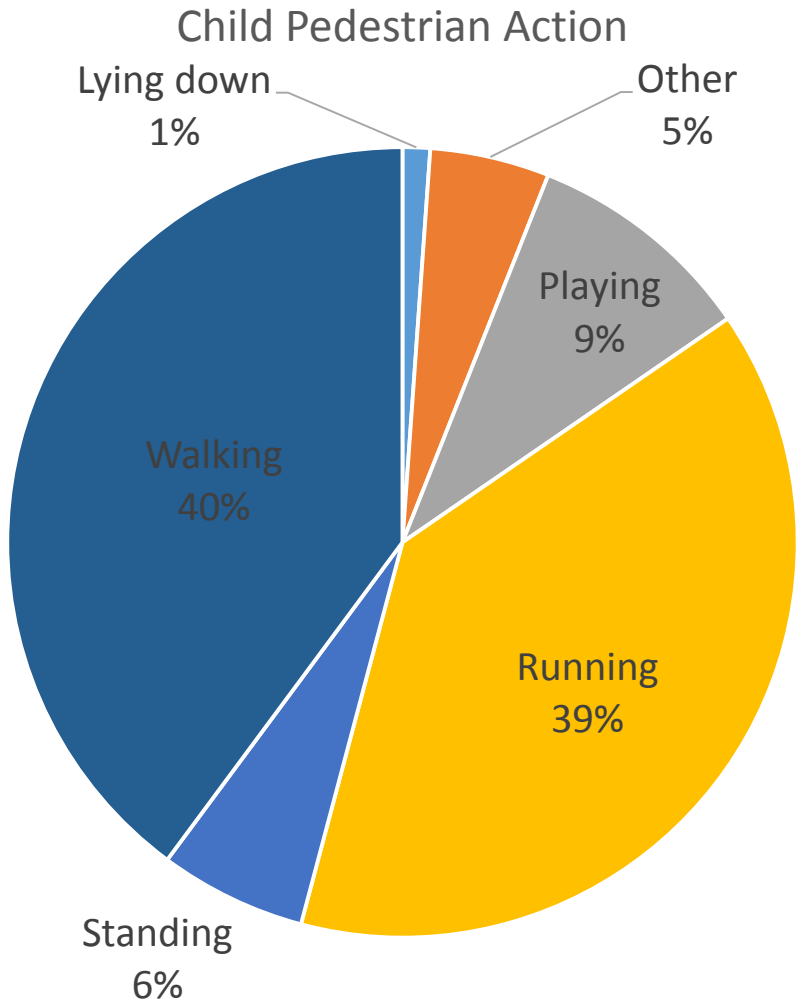
Preliminary Results

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



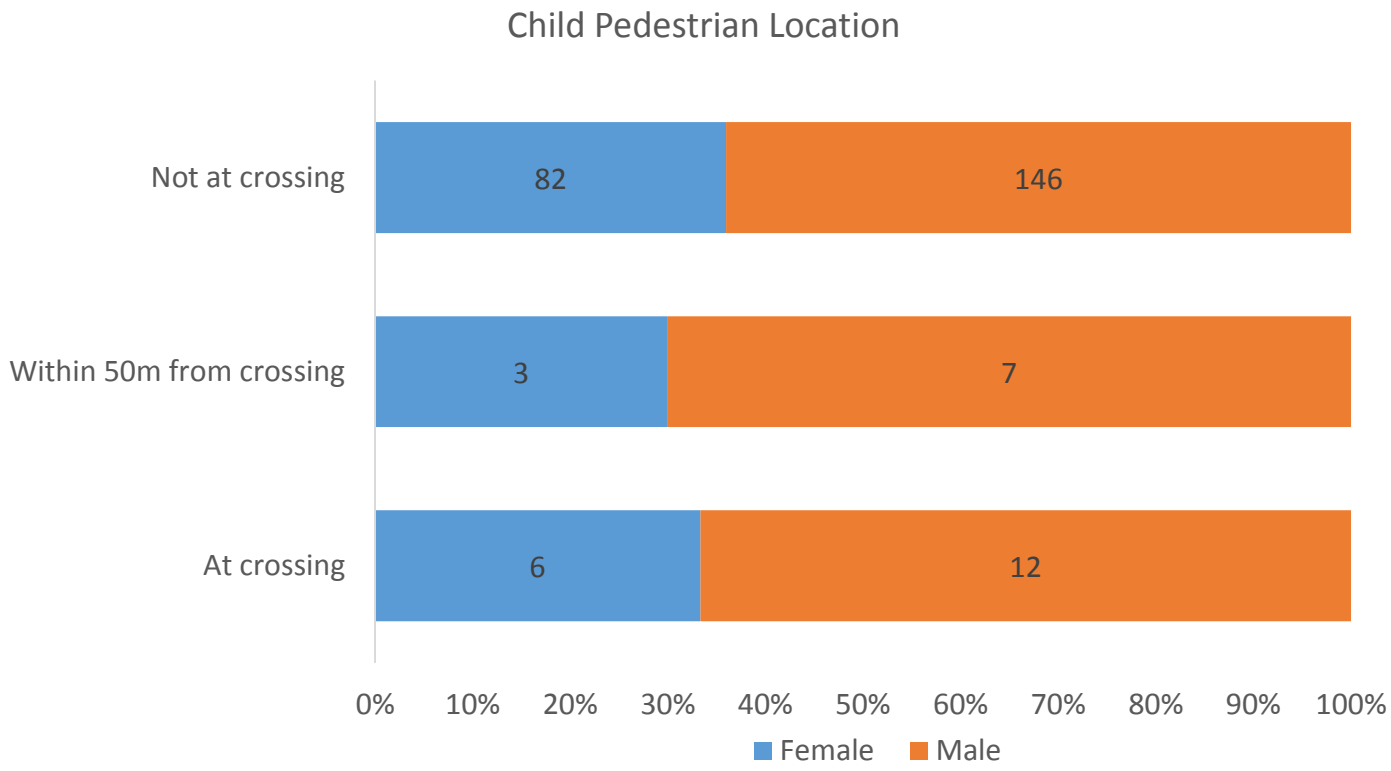
Preliminary Results

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



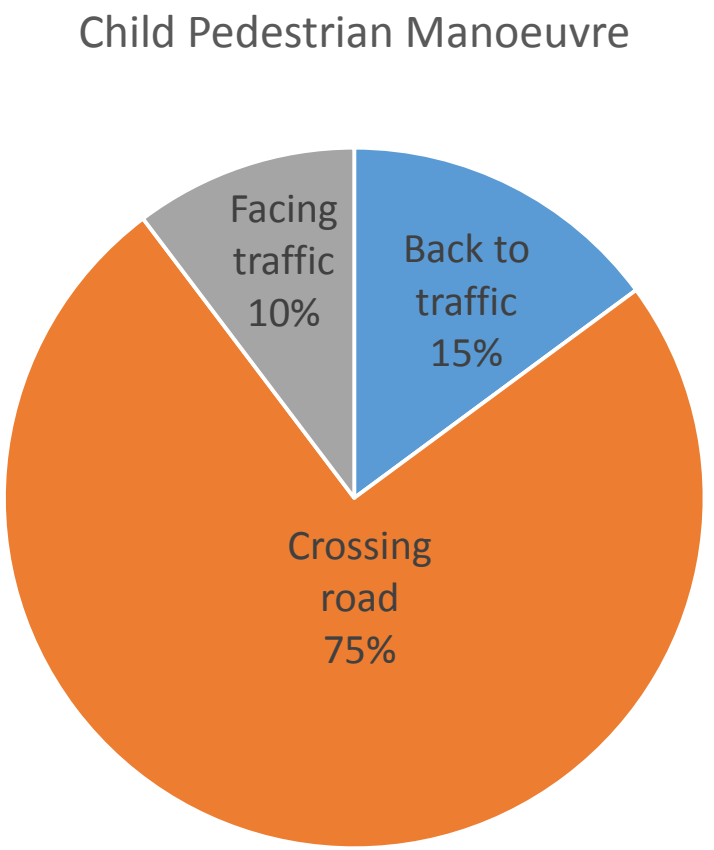
Preliminary Results

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



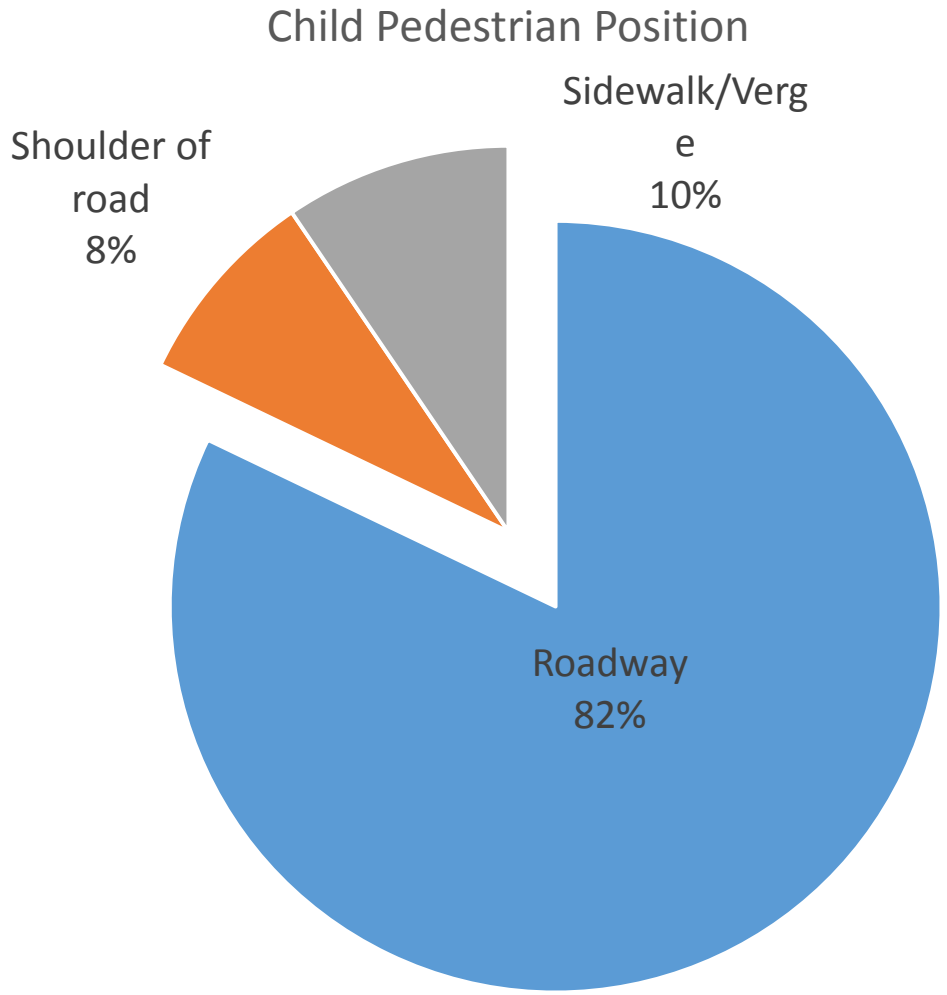
Preliminary Results

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



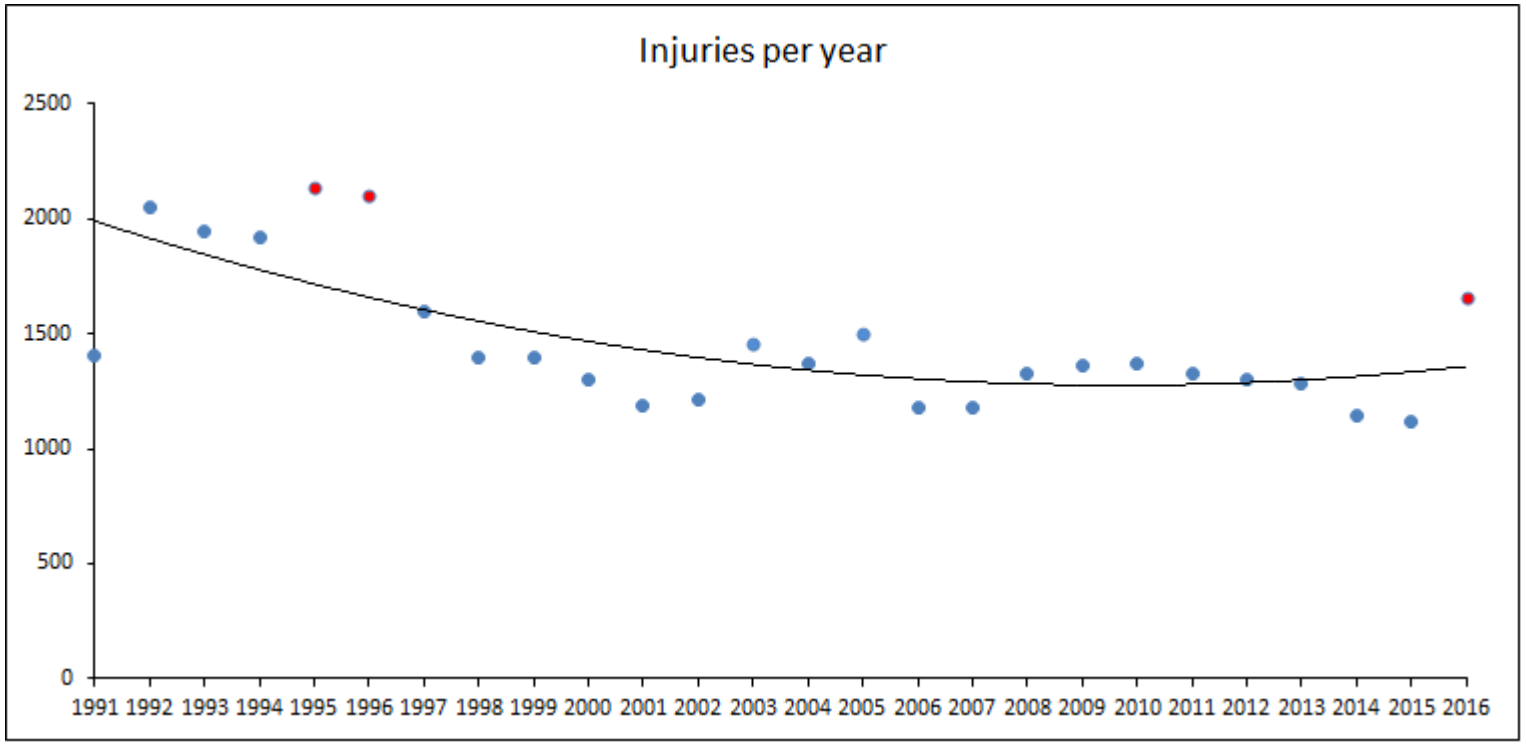
Preliminary Results

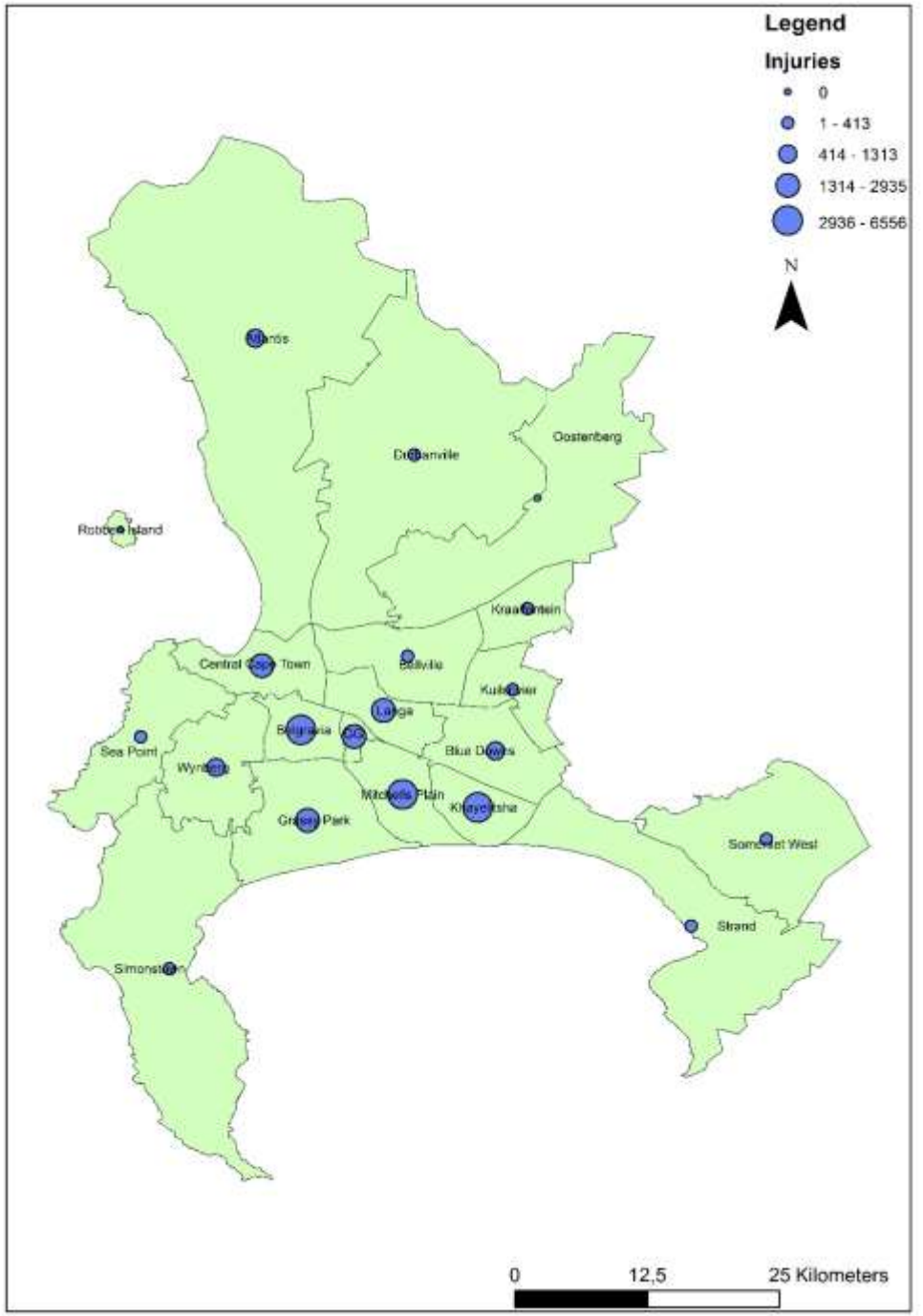
- iPAS analysis for the WC (2005-2014):
  - Child pedestrian gender
  - Child pedestrian action
  - Child pedestrian location
  - Child pedestrian manoeuvre
  - Child pedestrian position



Preliminary Results

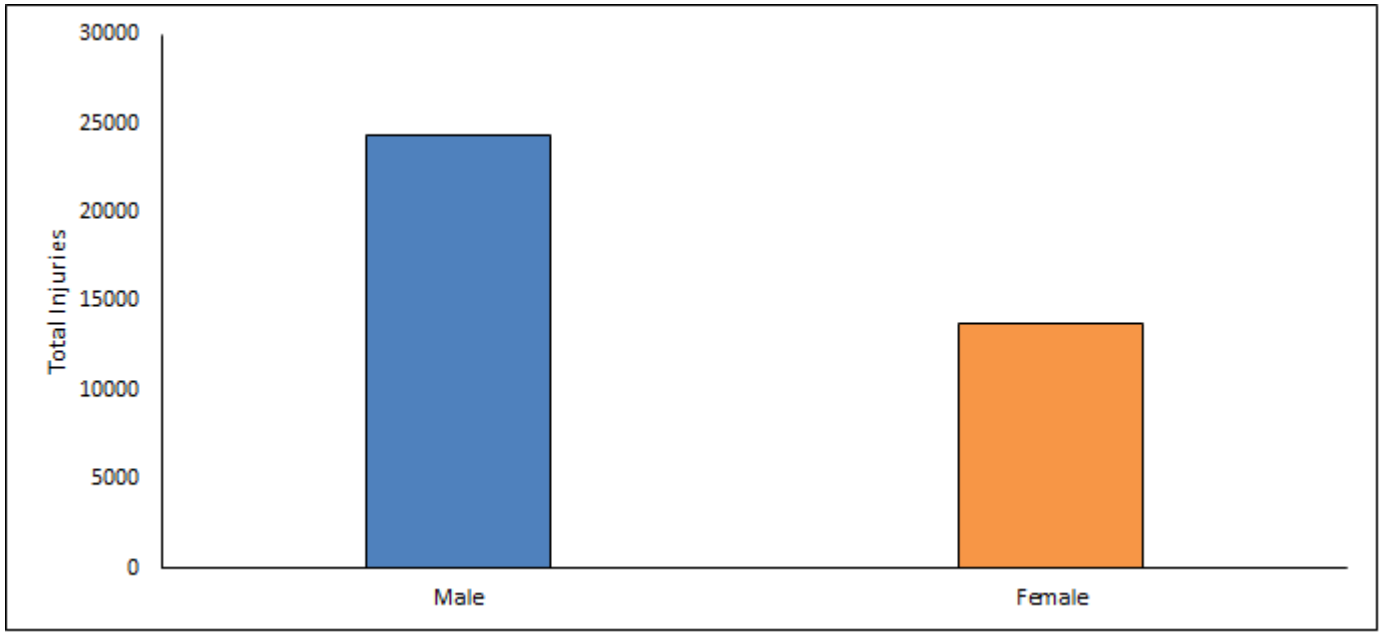
- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year

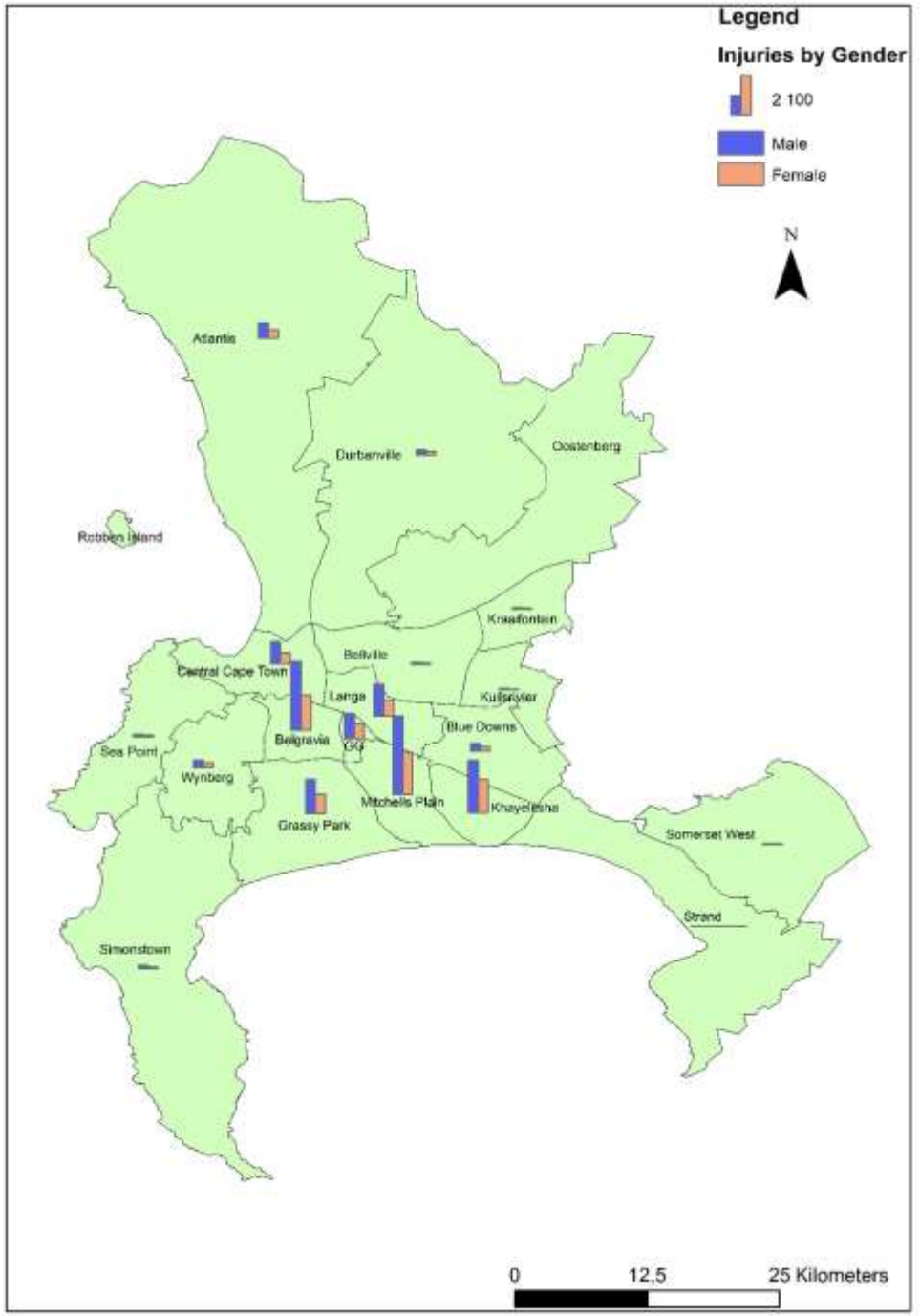




Preliminary Results

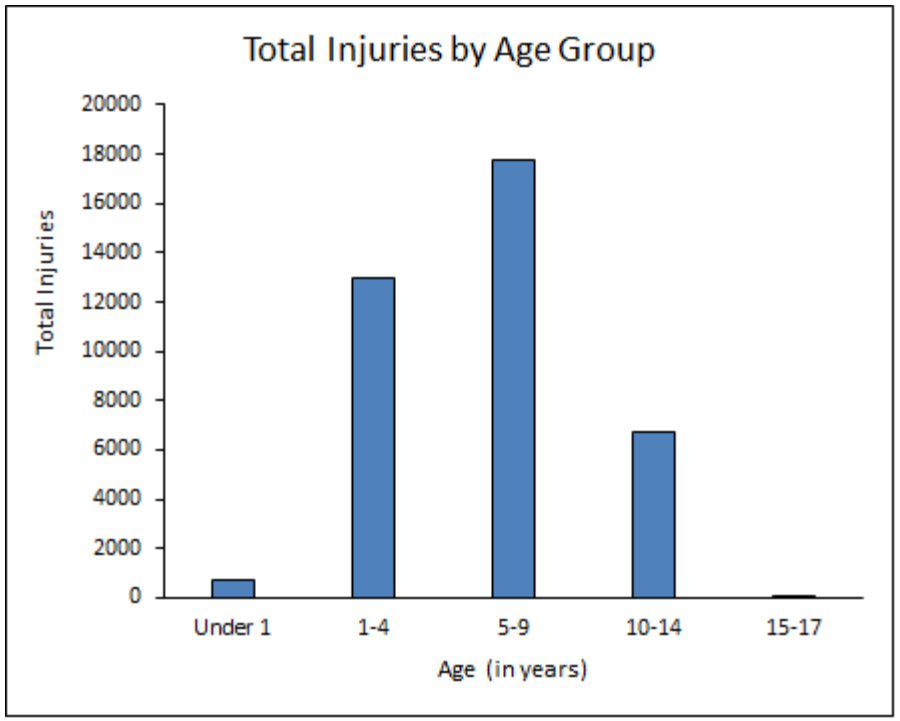
- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year
  - Male vs Female

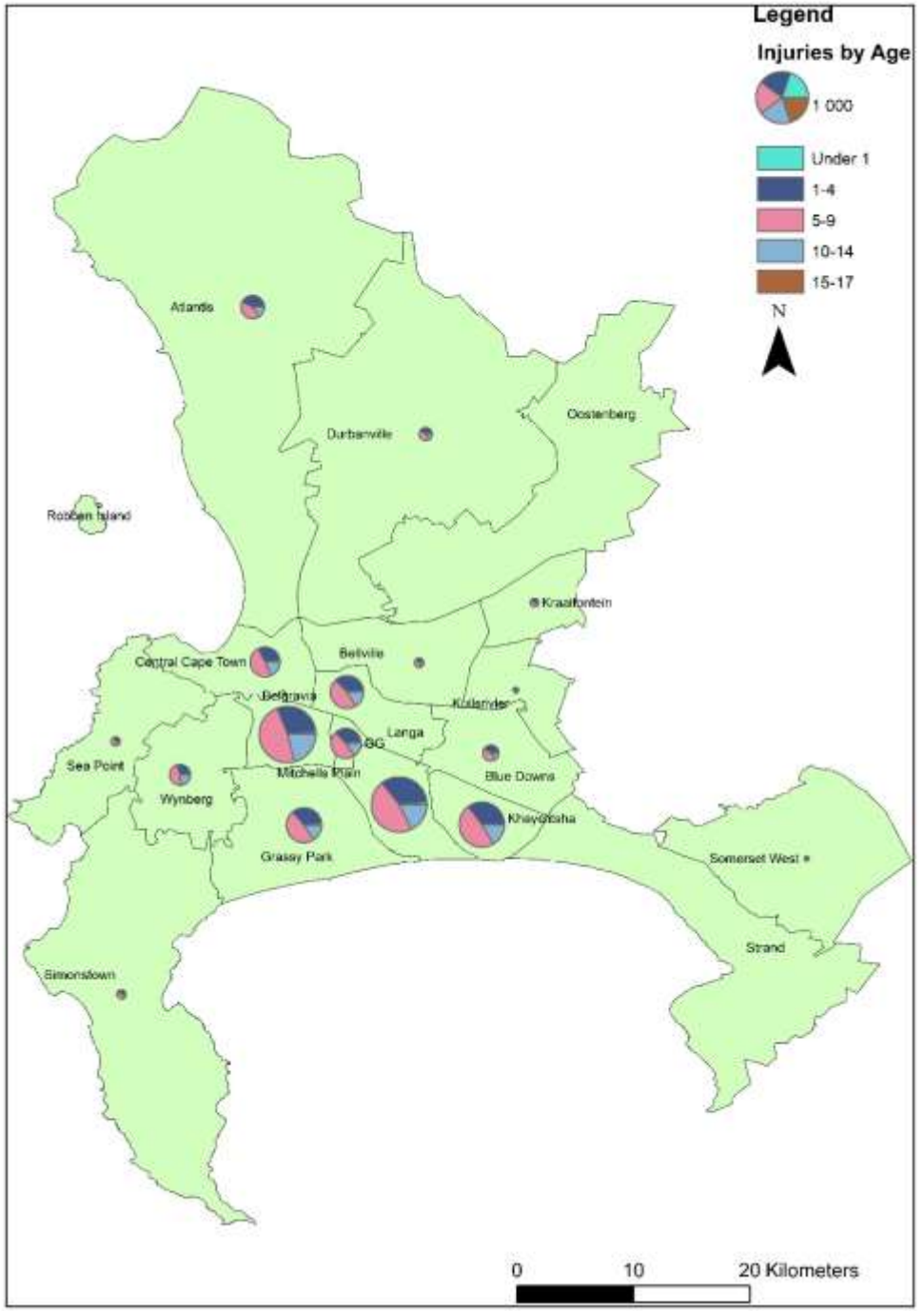




Preliminary Results

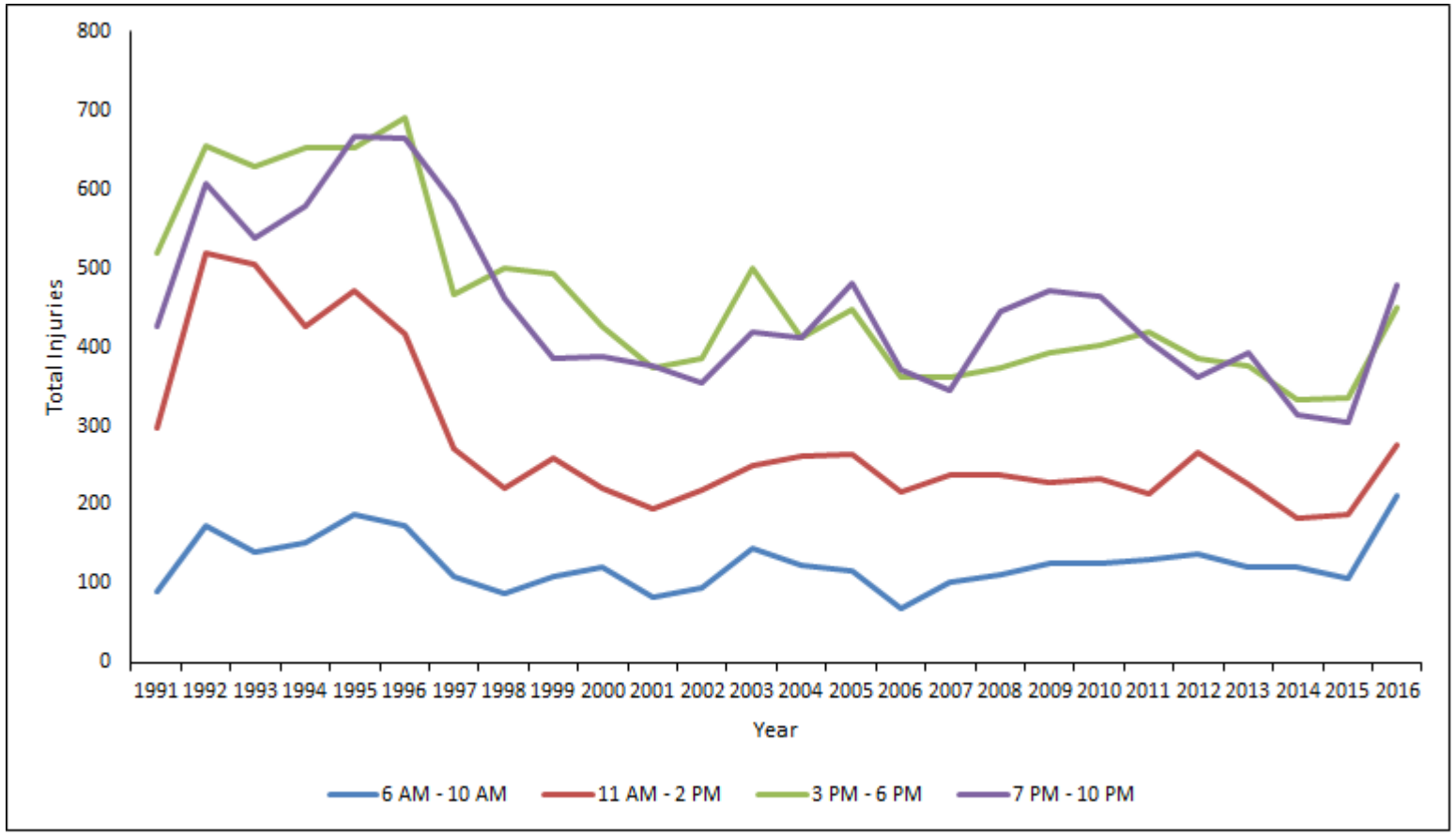
- CT Red Cross children's hospital analysis (1991-2016):
  - Child Injuries per year
  - Male vs Female
  - Injuries by age group





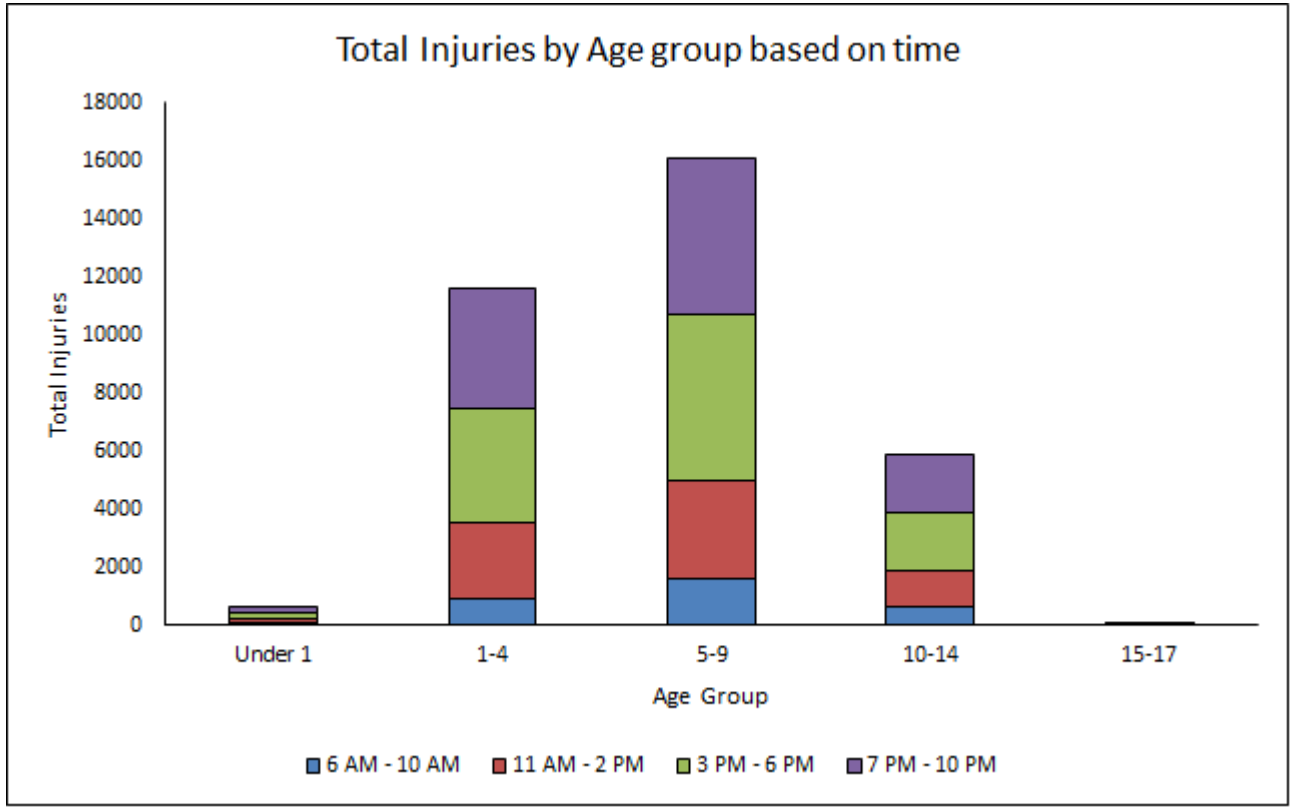
Preliminary Results

- 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



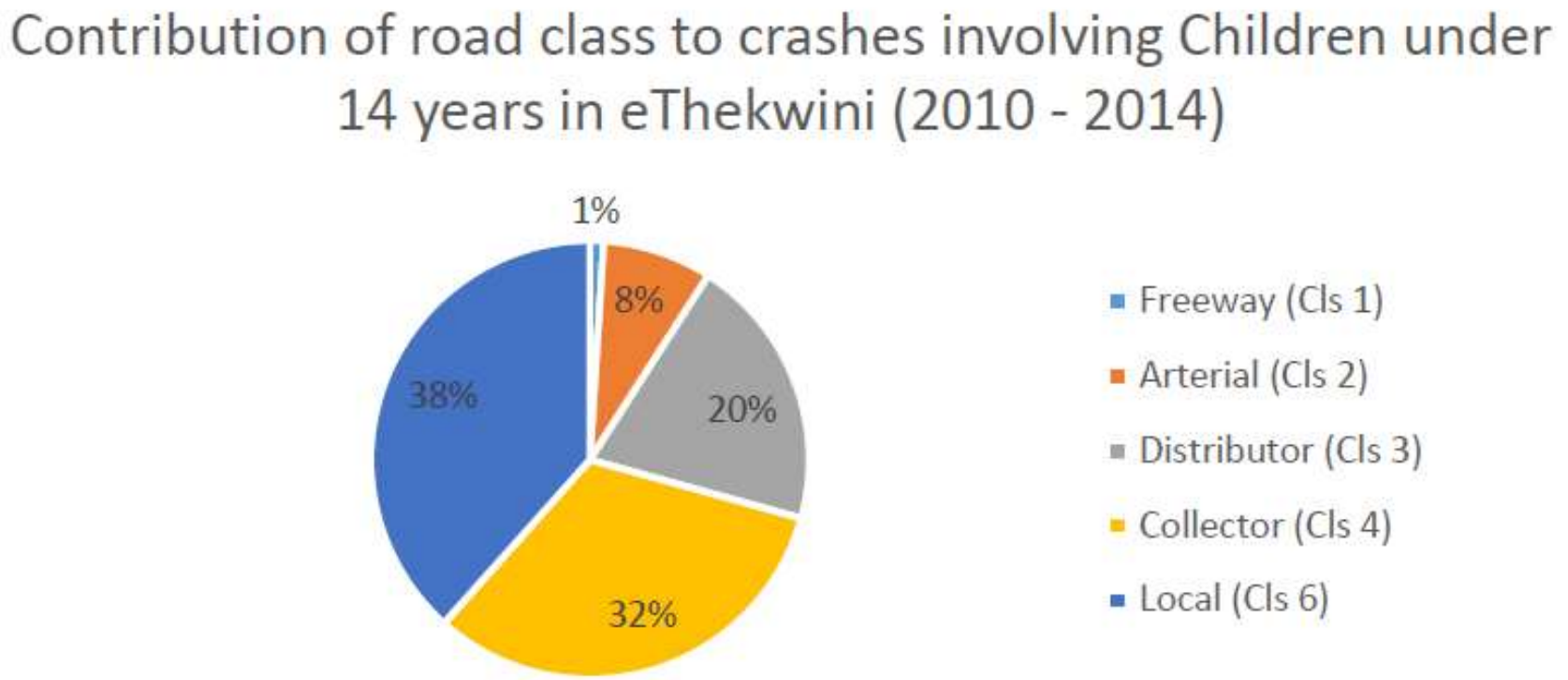
Preliminary Results

- 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



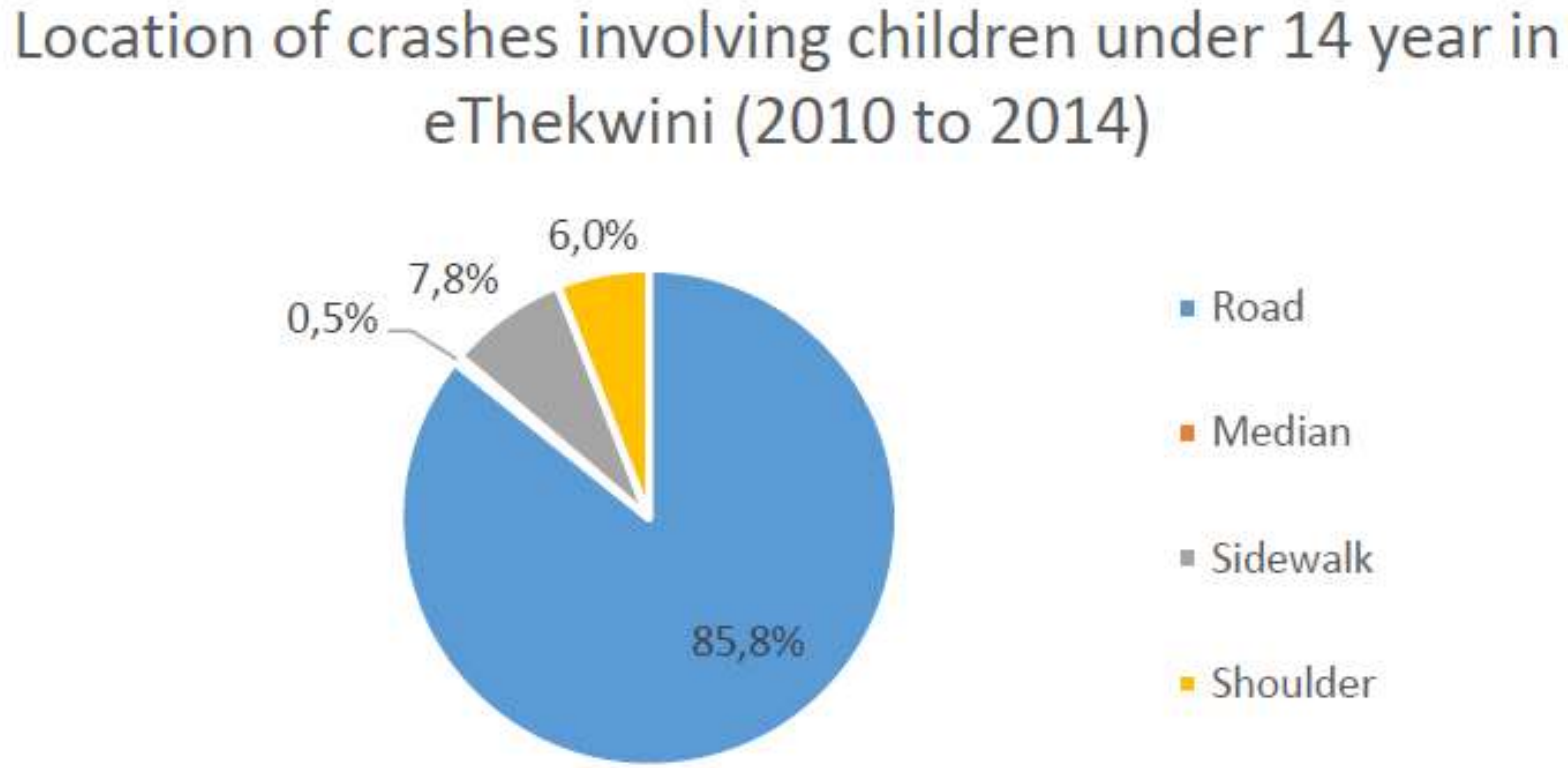
Preliminary Results

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



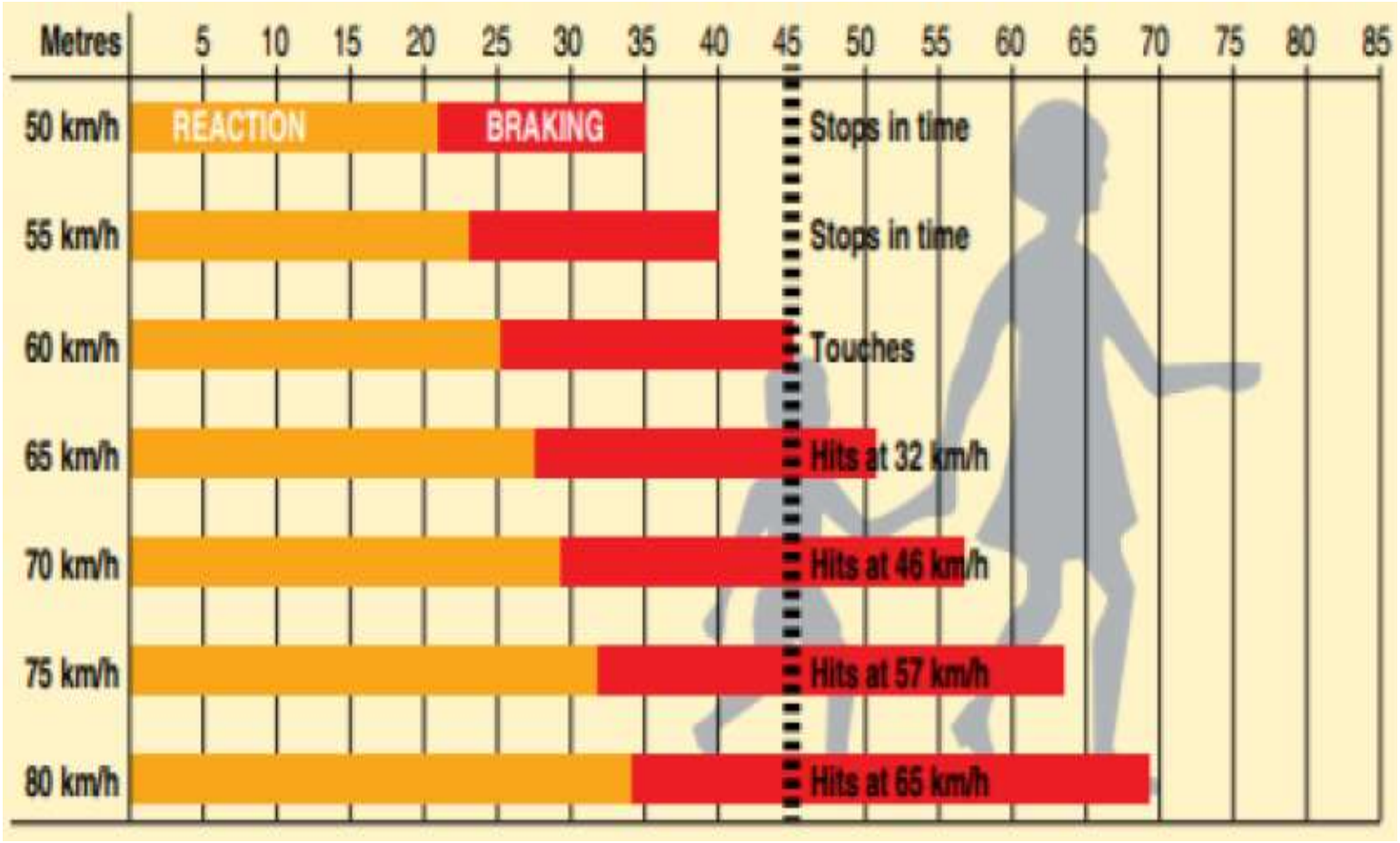
Preliminary Results

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



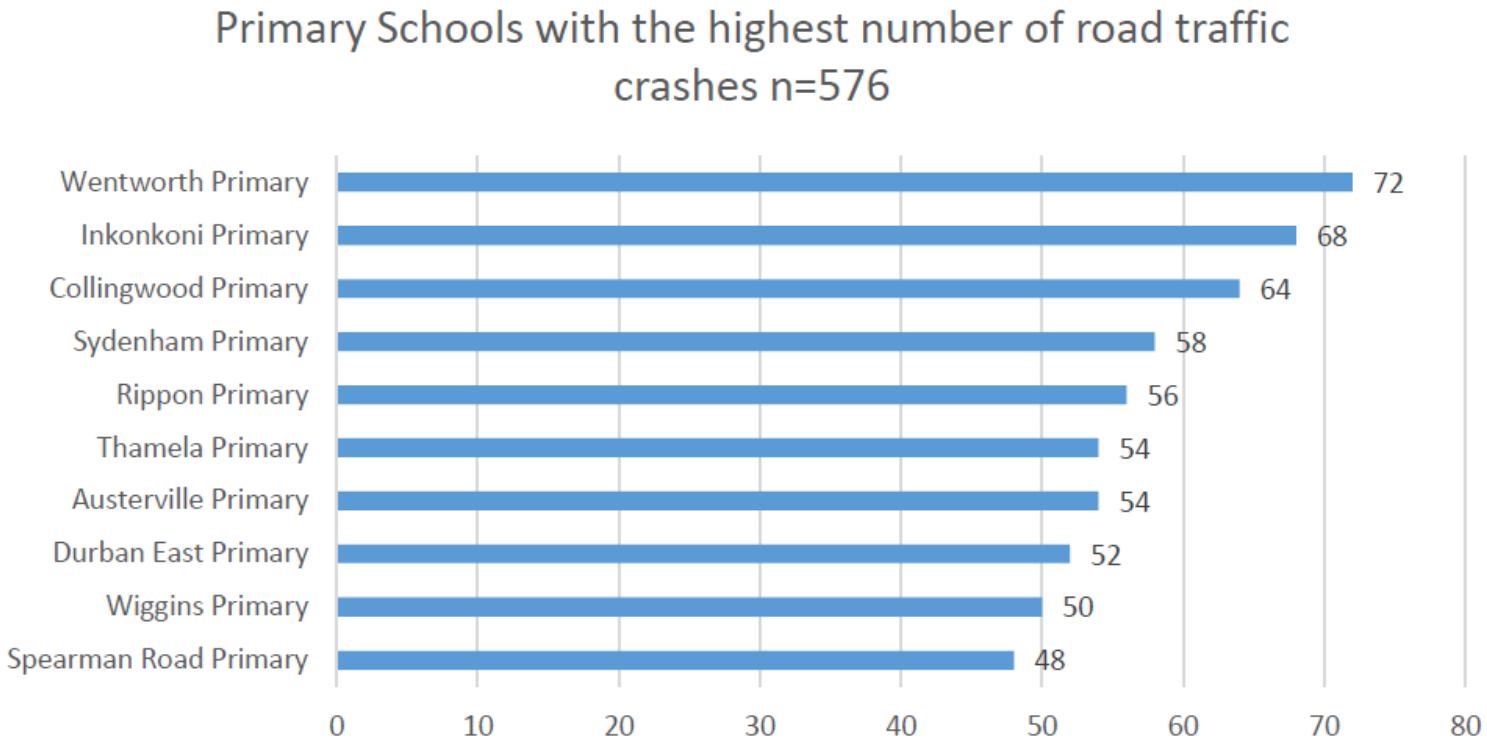
Preliminary Results

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



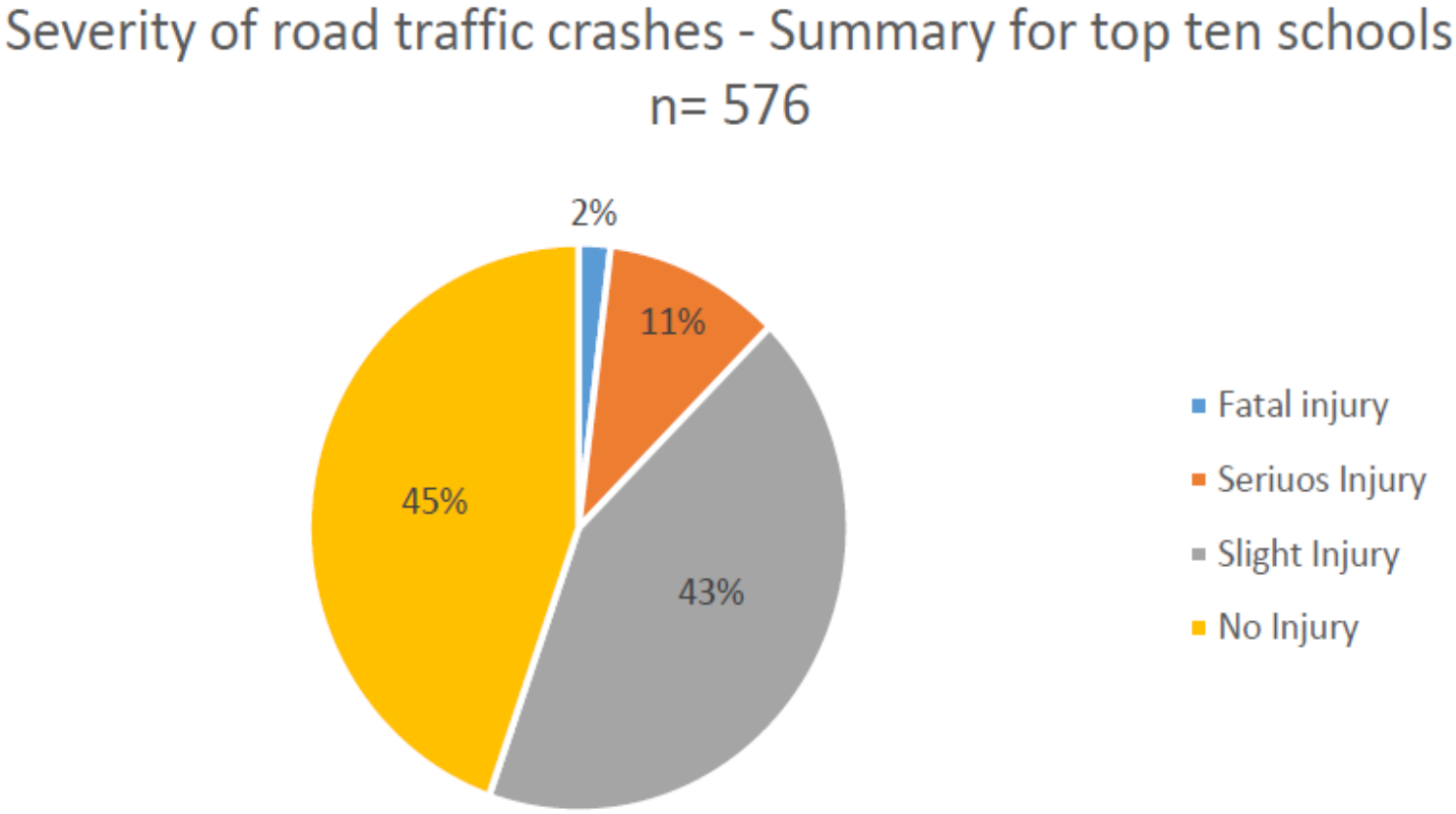
Preliminary Results

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



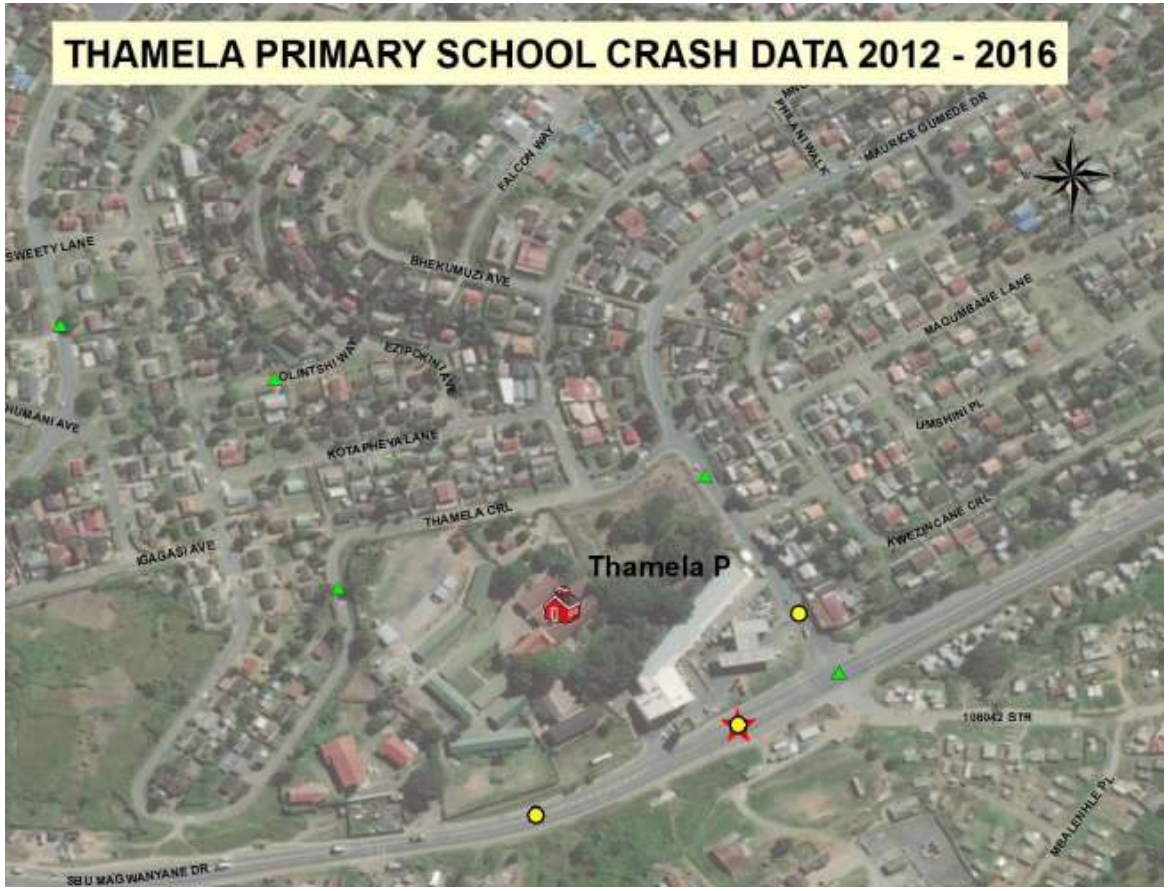
Preliminary Results

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



Preliminary Results

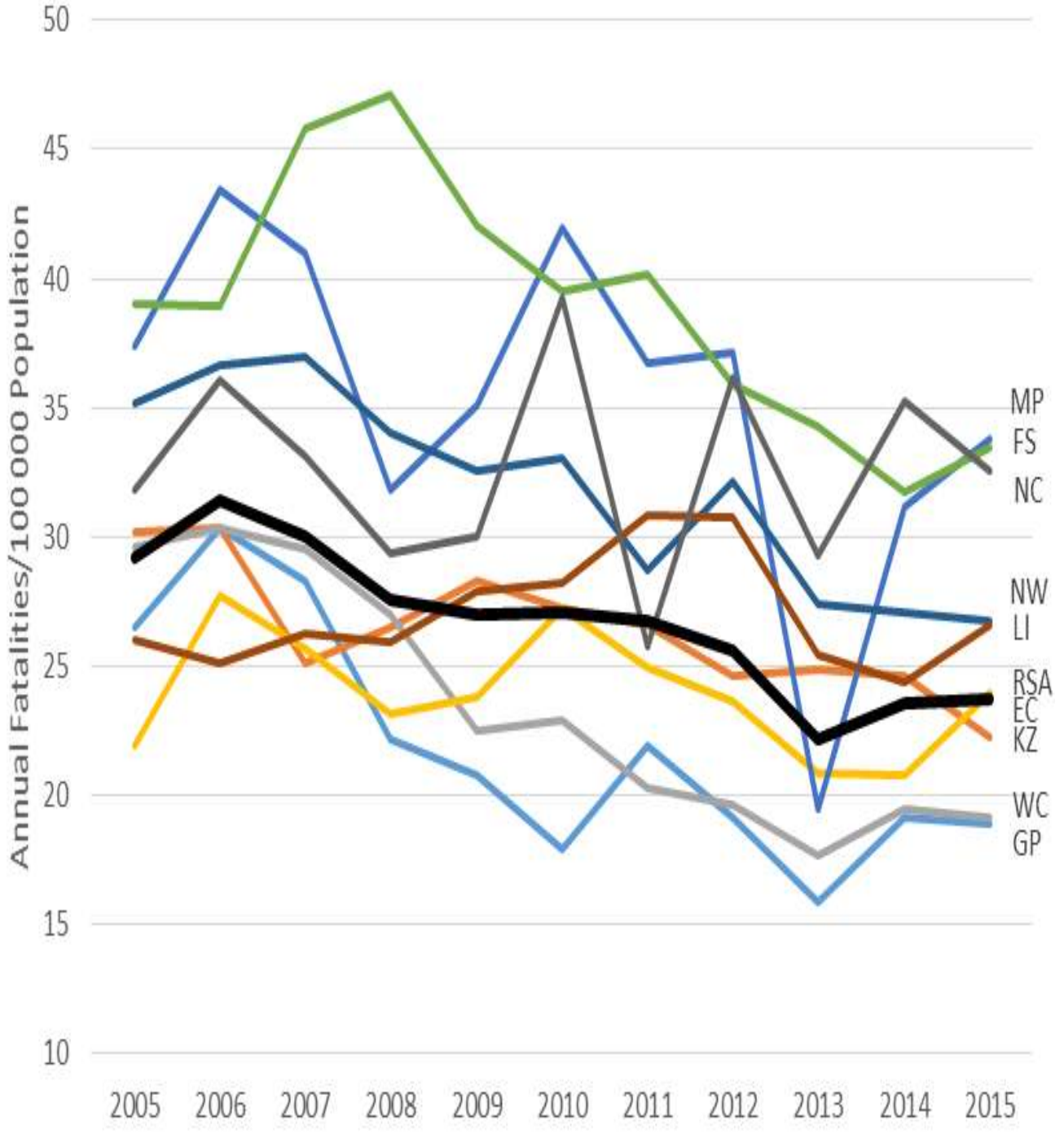
- Scholar Mobility Safety in Durban:
  - Child crashes vs road type
  - Child crashes vs location
  - Need for traffic calming
  - Schools with high crash rates
  - Crash location analysis



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
- ……



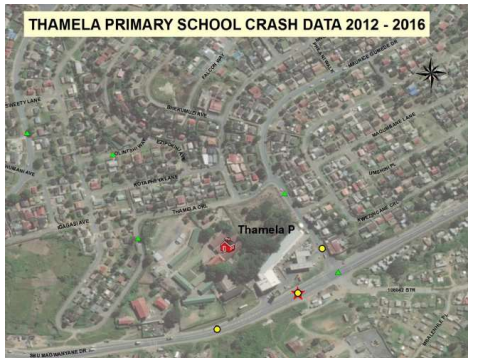
Way Forward

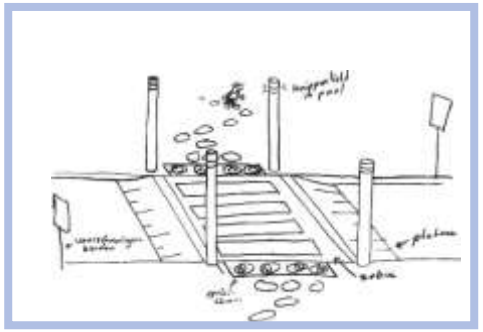
Identify Literature Findings

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