

# **ETHEKWINI TRANSPORT AUTHORITY (ETA)**

## **ROAD ACCIDENT STATISTICS AND ROAD TRAFFIC VOLUMES 2008-2009**

This report presents a summary of road traffic accident statistics and road traffic volumes in the eThekweni Municipal Area. Information contained herein may be reproduced provided that the source is acknowledged. The eThekweni Transport Authority cannot be held liable for any consequence arising from the use of this information either direct or otherwise.

All of the road accidents referred to in this report took place on public roadways unless otherwise stated. In recent years there have been some instances of false claims against the Road Accident Fund supported by accident reports with fictitious or inflated personal injuries. This practice may have impacted to a certain extent on casualty statistics for the eThekweni Municipal Area over the past few years.

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## INTRODUCTION

This report consists of two sections, Accident Statistics and Traffic Volumes. The Accident Statistics section is based on accident reports submitted to the South African Police Services by members of the public involved in accidents. The accident reports are captured and stored on the Accident Database called "Impact". This database has edit checks for accuracy. Computer tabulations and summaries are again checked for accuracy before information is released or disseminated. It is intended that the information presented in this report will assist road safety practitioners by highlighting some of the road safety problems currently being experienced.

The Traffic Volume section is based on classified vehicle counts at intersections. This type of survey records all the vehicle movements at an intersection classified by car, minibus-taxi, heavy vehicle and bus. Classified intersection surveys are usually conducted during school term from Mondays to Thursdays over a 12-hour period (from 06h00 to 18h00).

## 1. ACCIDENT STATISTICS

### 1.1. Trends in Accidents

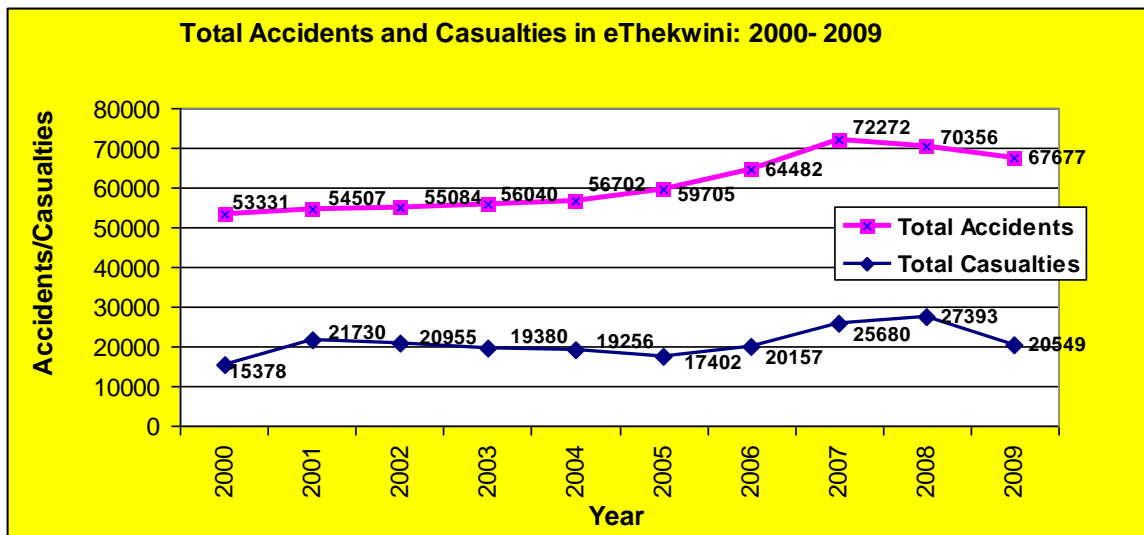
YEAR	NUMBER OF ACCIDENTS				
	Fatal	Serious	Slight	Damage only	Total Accidents
2000	496	2413	7751	42671	53331
2001	537	2620	10312	41038	54507
2002	635	2674	10309	41466	55084
2003	665	2824	9580	42971	56040
2004	720	2826	9467	43689	56702
2005	656	2497	9387	47165	59705
2006	613	3104	10521	50244	64482
2007	605	3659	13901	54107	72272
2008	492	3282	14873	51709	70356
2009	523	3051	11294	52809	67677

There was a statistically significant increase in fatal accidents of 6 percent from 492 in 2008 to 523 in 2009.

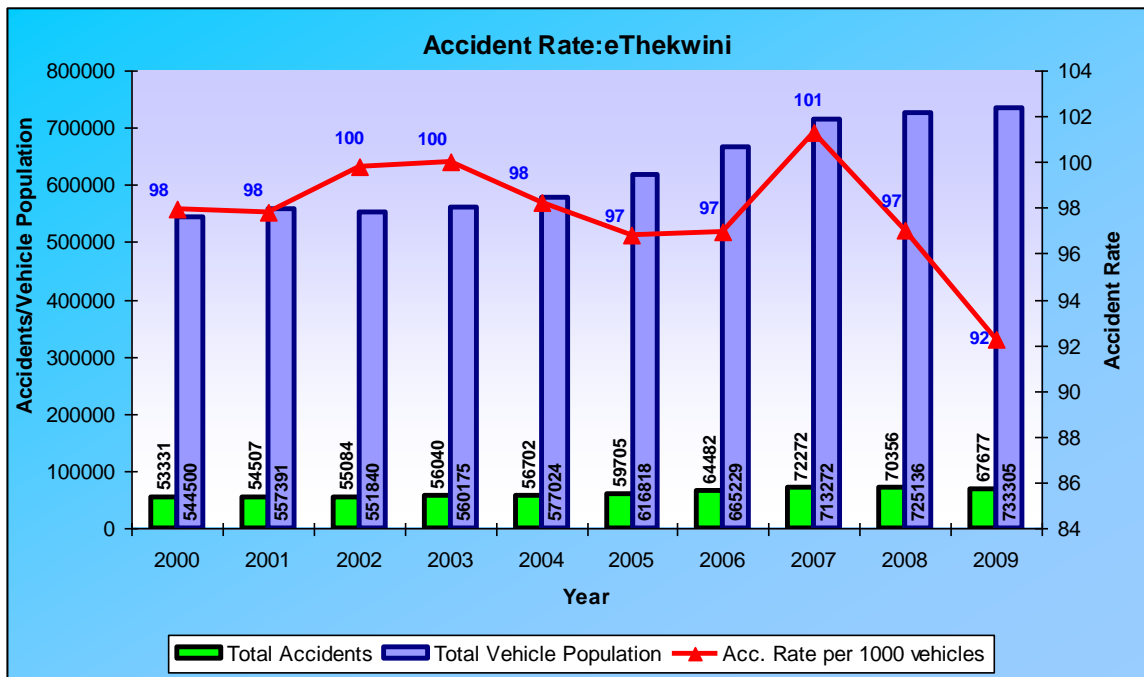
## 1.2. Trends in Casualties

YEAR	CASUALTIES			Total Casualties
	Fatal	Serious	Slight	
2000	545	3188	11645	15378
2001	609	3715	17406	21730
2002	714	3860	16381	20955
2003	753	3917	14710	19380
2004	789	4048	14419	19256
2005	719	3260	13423	17402
2006	708	4064	15385	20157
2007	683	4790	20207	25680
2008	534	4330	22529	27393
2009	579	4078	15892	20549

There was a statistically significant increase in fatalities of 8 percent from 534 in 2008 to 579 in 2009.



There was a 3.8 percent decrease in total accidents from 70356 in 2008 to 67677 in 2009; however total casualties decreased by 24.9 percent from 27393 in 2008 to 20549 in 2009.



The total vehicle population trend line shows a general increase. Although the accident rate per thousand vehicles increased from 97 in 2006 to 101 in 2007 it decreased to 97 in 2008 and decreased further to 92 in 2009.

### 1.3. Accidents by Road Type

There are five main classes of roads:

#### 1. Class 1 – Freeways

These roads carry large volumes of traffic making relatively long distance trips. Generally the physical characteristics are divided (dual) carriageways with grade separated intersections, a 120km/h design speed and they have no direct access to properties.

#### 2. Class 2 – Arterials

These roads supplement freeways forming the primary road network within an urban area. The physical characteristics are divided (dual) carriageways or at least 4 lane roads, intersections are usually at grade and signal controlled, 80km/h design speed, limited access to properties often via parallel service roads.

#### 3. Class 3 – Distributors

These roads distribute traffic between the various major land-use development areas linking arterials and freeways to the Class 4 roads. These roads have slightly lower design standards/capacities than major arterials with correspondingly lower running speeds and traffic volumes.

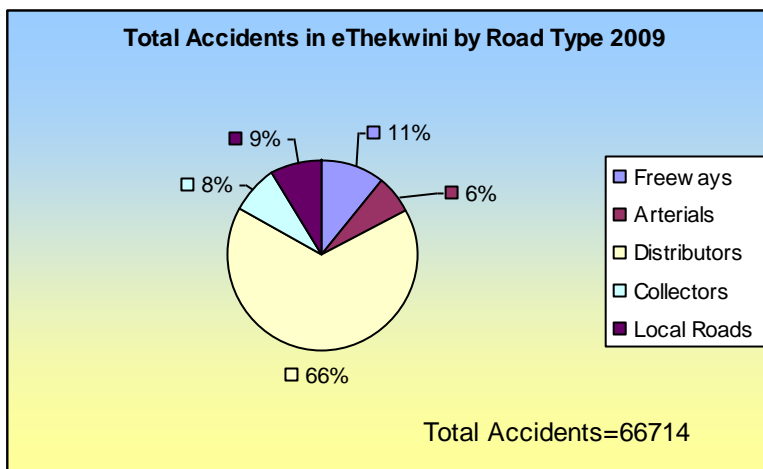
4. Class 4 –Collectors

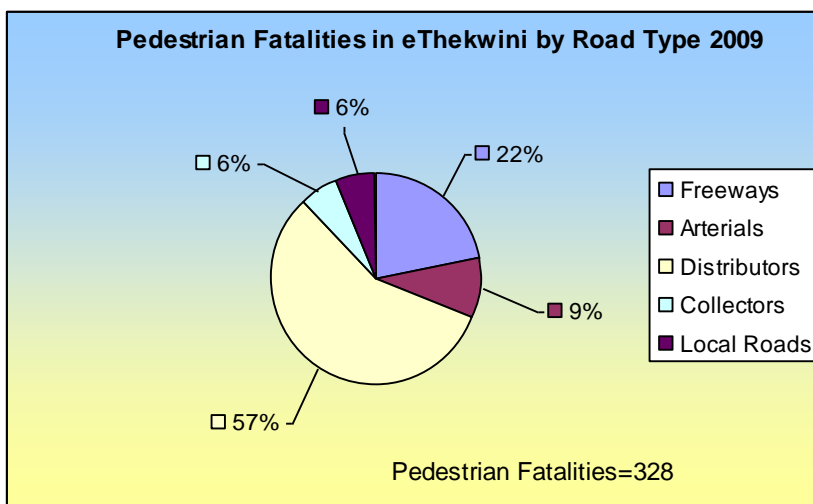
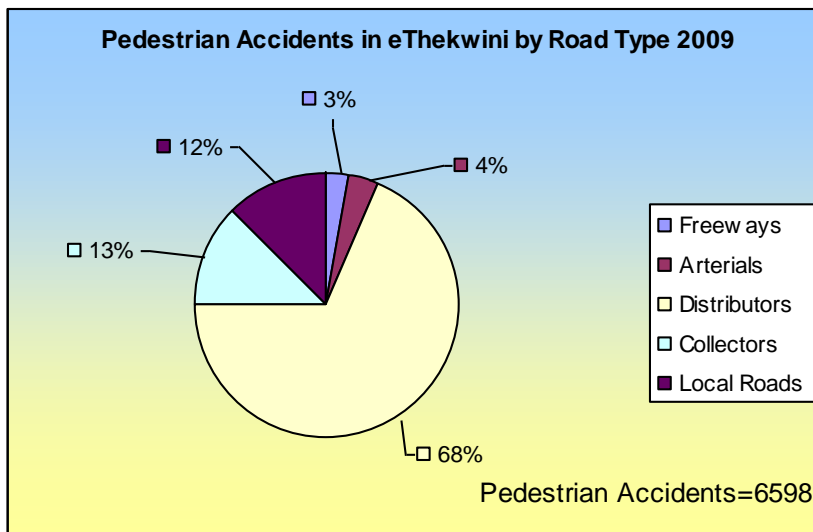
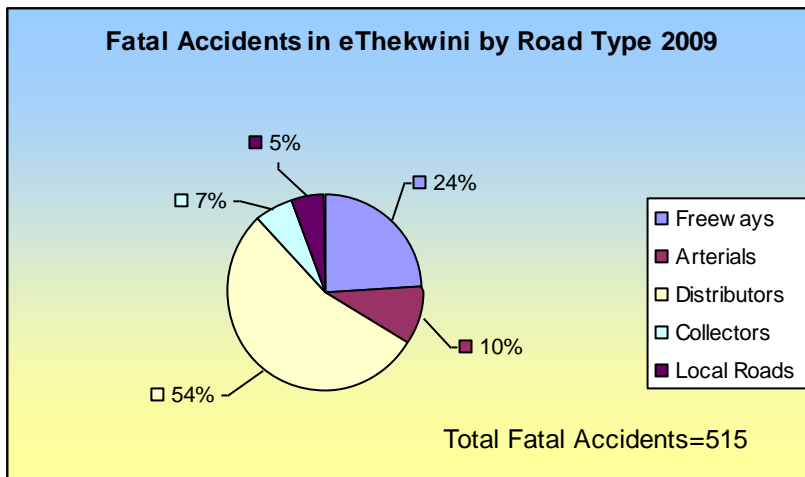
These roads distribute traffic within the residential development areas and in fact are the “main roads” in such areas providing the main circulation routes within residential areas. The physical characteristics are single carriageway roads two lanes wide.

5. Class 5 – Local Roads

These roads provide access to residential properties. The physical characteristics are single carriageway roads two (or sometimes less) lanes wide.

The following pie charts depict the total accidents, fatal accidents, pedestrian accidents and pedestrian fatalities reported in eThekweni during 2009 according to the type of road on which they have occurred.

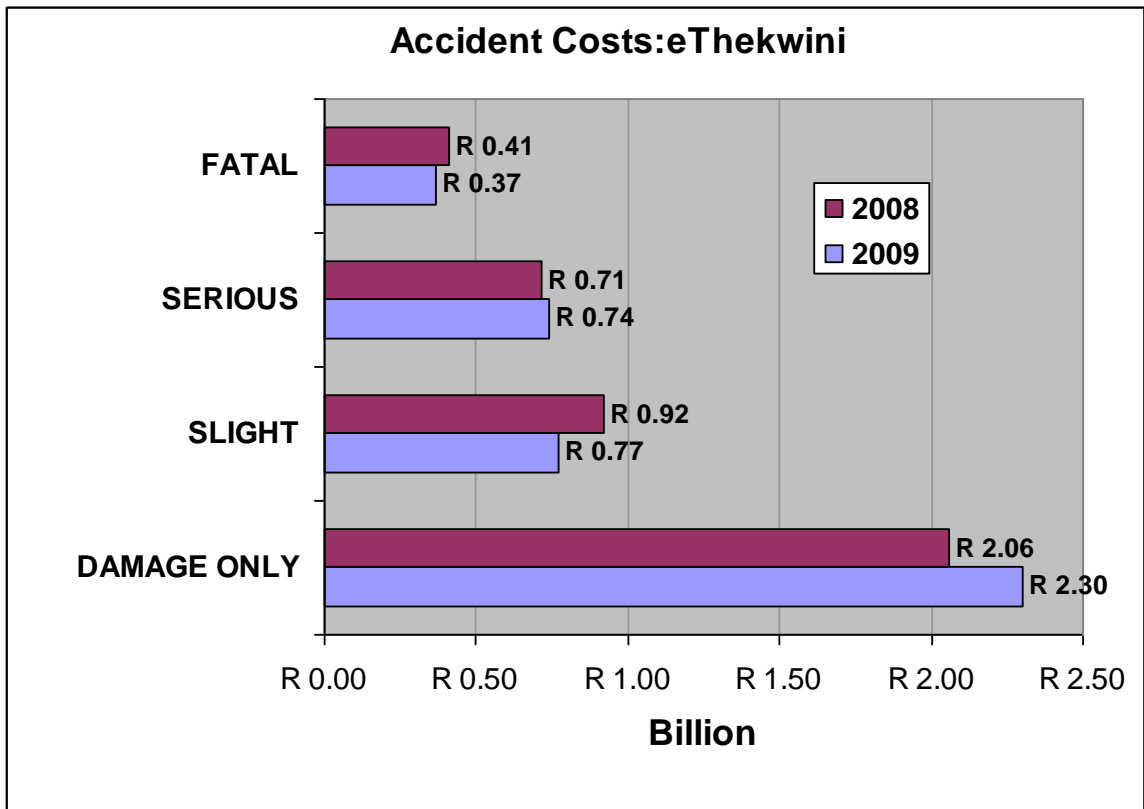




Overall the majority of accidents occurred on distributor roads. Freeways generally accounted for a small proportion of accidents but a significant proportion of these accidents were fatal. Pedestrians accounted for the majority of fatalities. A quarter of pedestrian fatalities occurred on freeways, highlighting the problem of pedestrian activity on freeways.

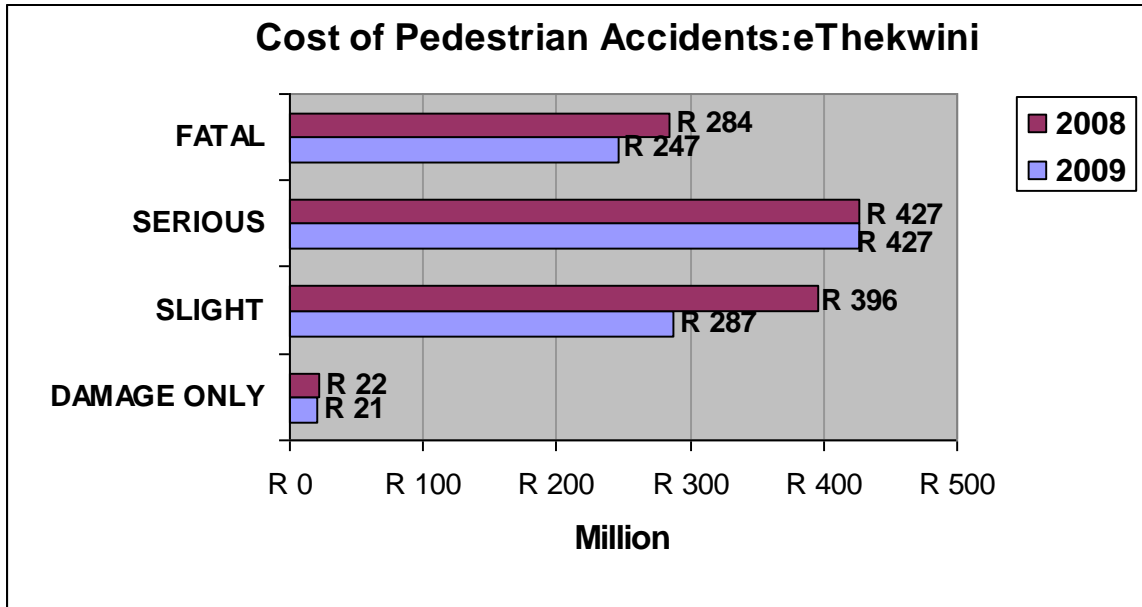
#### 1.4. Accident Costs

During 2008 the estimated cost of all accidents was R11 232 546.42 million per day and during 2009 an estimated R11 745 856.45 million per day. The accident costs used are based on a model developed by the CSIR. This 'cost' is derived by assigning a monetary value in rands to accidents of varying degree using variables such as medical costs, vehicle damage, property damage but excluding hidden costs such as trauma, grief, suffering, etc since these are difficult to quantify.



Damage only accidents are accidents where no personal injury occurred. This type of accident continues to account for around half of all accident costs.

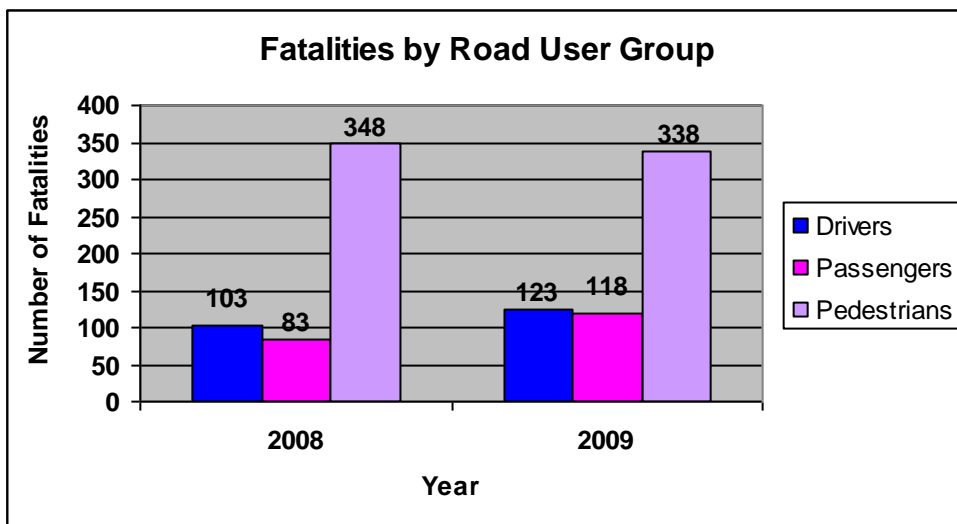




Pedestrian accidents account for around half of the cost of accidents involving injury.

#### 1.5. Fatalities by Road User Group

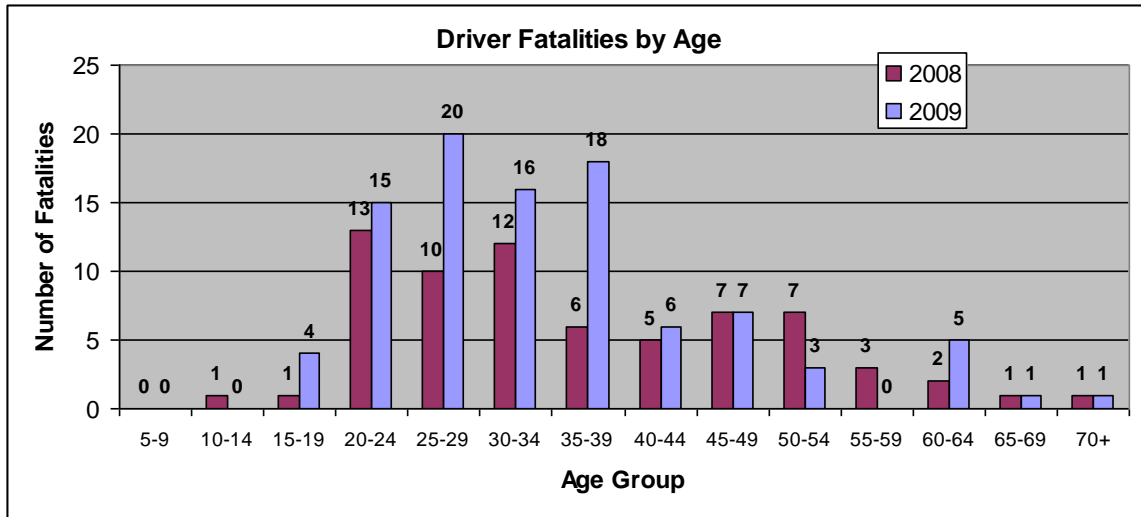
The number of fatalities per road user group is shown in the following histogram:



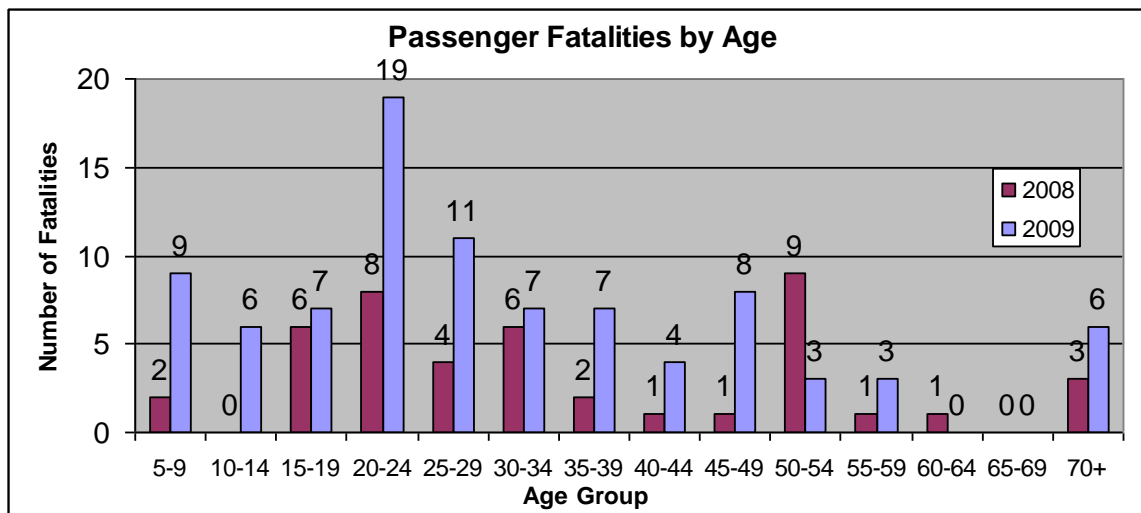
Pedestrian fatalities decreased by 3 percent from 348 in 2008 to 338 in 2009, passenger fatalities increased by 42% from 83 in 2008 to 118 in 2009 and the number of driver fatalities increased by 19 percent from 103 in 2008 to 123 in 2009.

## 1.6. Fatalities by Road User Group by Age

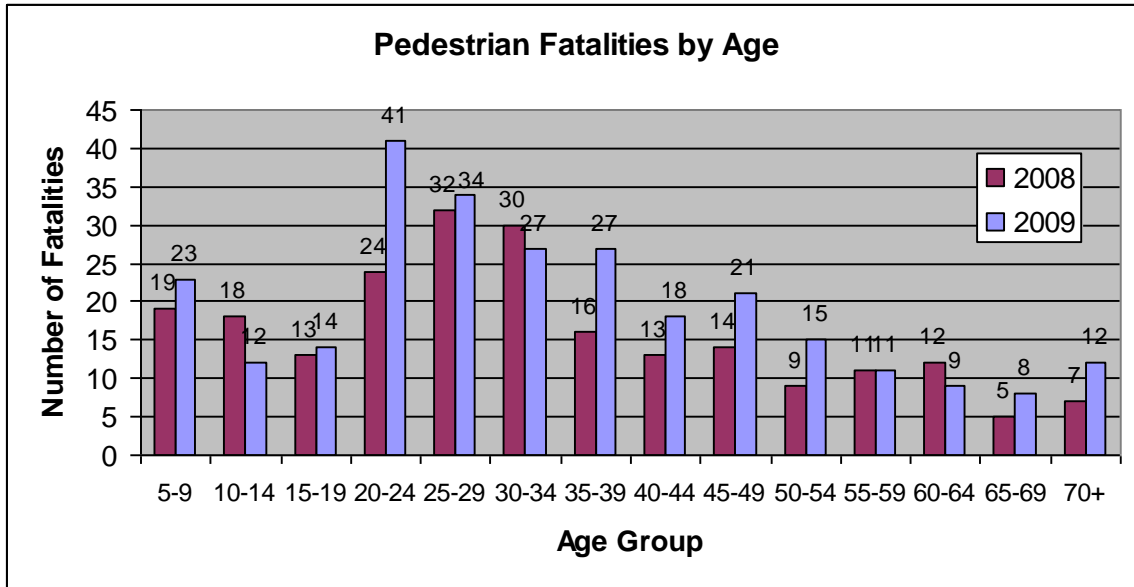
The following chart shows the fatalities by age for drivers involved in all accidents in eThekweni:



Nineteen percent of the drivers that died in 2008 were in the 20 to 24 age category, whilst the highest number of driver fatalities reported in 2009 was in the 25 to 29 age category which is 21 percent. The total driver fatalities were 69 in 2008 and 96 in 2009 reflecting a 39 percent increase.



Twenty percent of the passenger fatalities in 2008 were in the 50 to 54 age category, whilst the highest number of passenger fatalities reported in 2009 was in the 20 to 24 age category which equates to 21 percent and the second highest age category being the 25 to 29 age category with 12 percent. The total passenger fatalities were 44 in 2008 and 90 in 2009 reflecting a 105 percent increase.



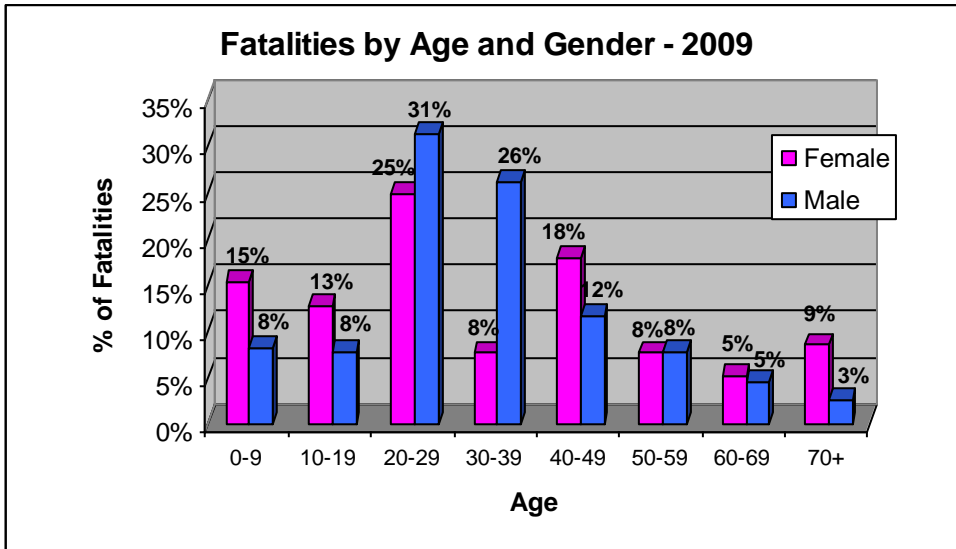
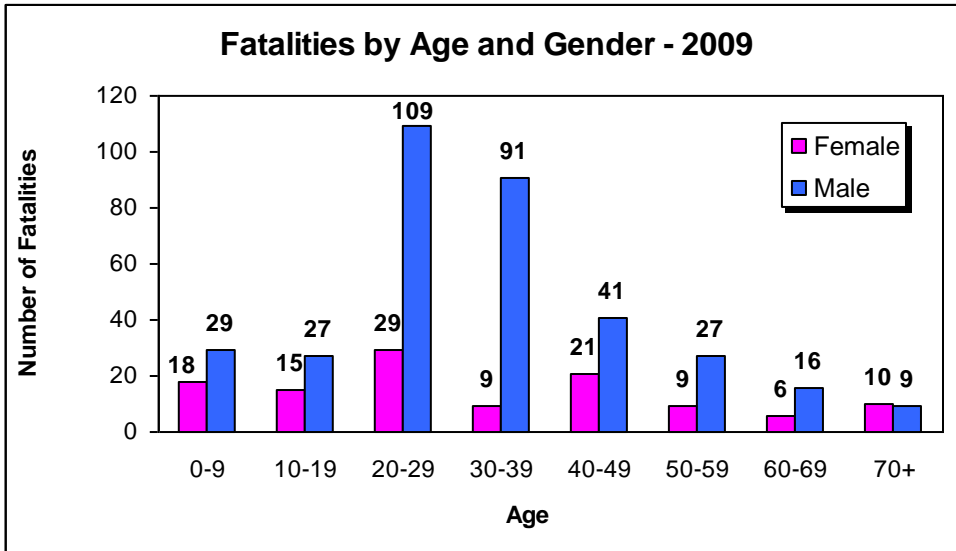
During 2008, the 25 to 29 age category accounted for 14 percent of pedestrian fatalities. In 2009 the highest number of pedestrian fatalities occurred in the 20 to 24 age category (15 percent), whilst 13 percent occurred in the 25 to 29 age group. The total pedestrian fatalities were 223 in 2008 and 272 in 2009 reflecting a 22 percent increase.

Overall, the number of fatalities in 2009 shows a statistically significant increase. The distribution of fatalities by age, however, continues to show that the 20 to 34 age group accounts for a disproportionate share of driver, passenger and pedestrian fatalities.

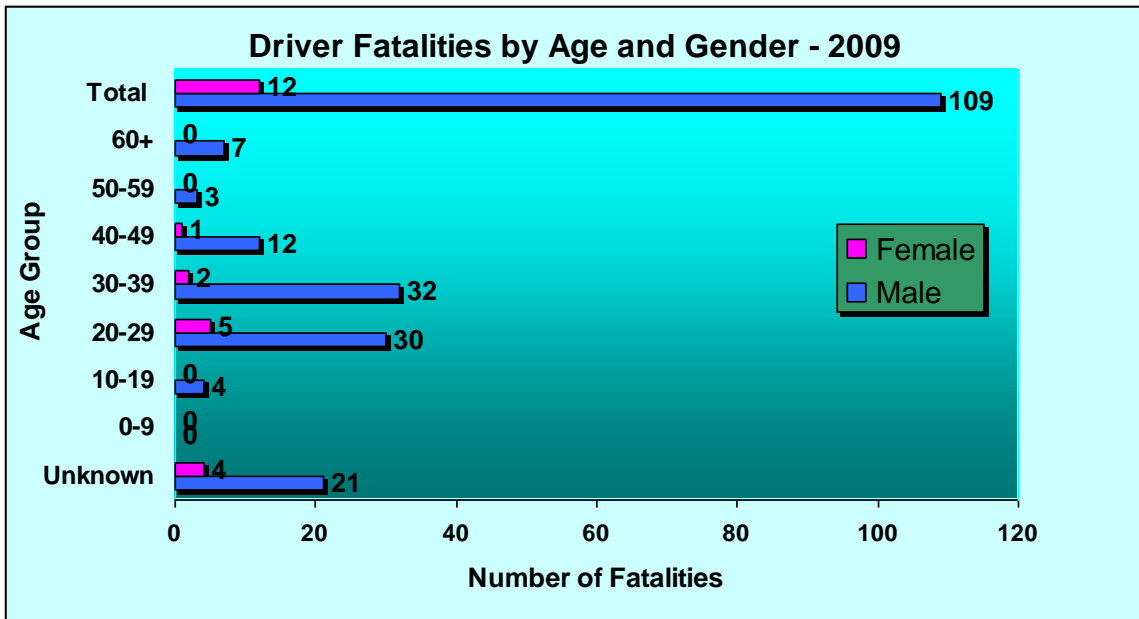
### 1.7. Fatalities by Age and Gender

The number of persons killed in collisions in 2009 is shown by age and gender in the accompanying table. There were 418 males versus 137 females killed. Thirty one percent of males killed in traffic collisions in 2009 were in the 20 to 29 year old age group, whilst 25 percent of the females killed were in the 20 to 29 year old age group.

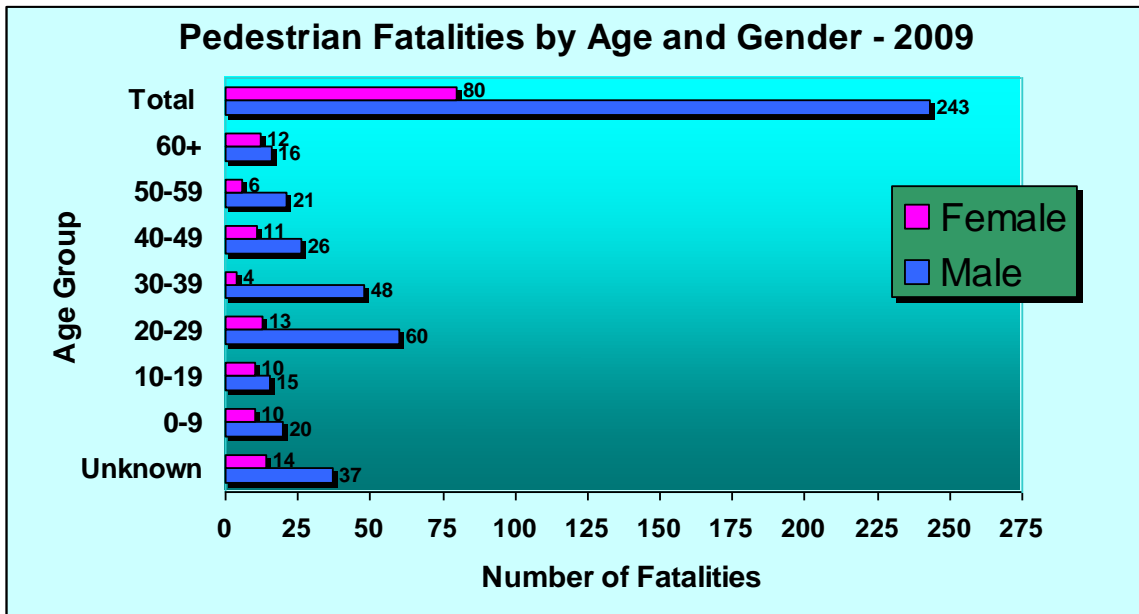
AGE	FEMALE	MALE	UNKNOWN	TOTAL
0-9	18	29	1	48
10-19	15	27	1	43
20-29	29	109	1	139
30-39	9	91	0	100
40-49	21	41	1	63
50-59	9	27	0	36
60-69	6	16	1	23
70+	10	9	0	19
Unknown Age	20	69	19	108
Total	137	418	24	579



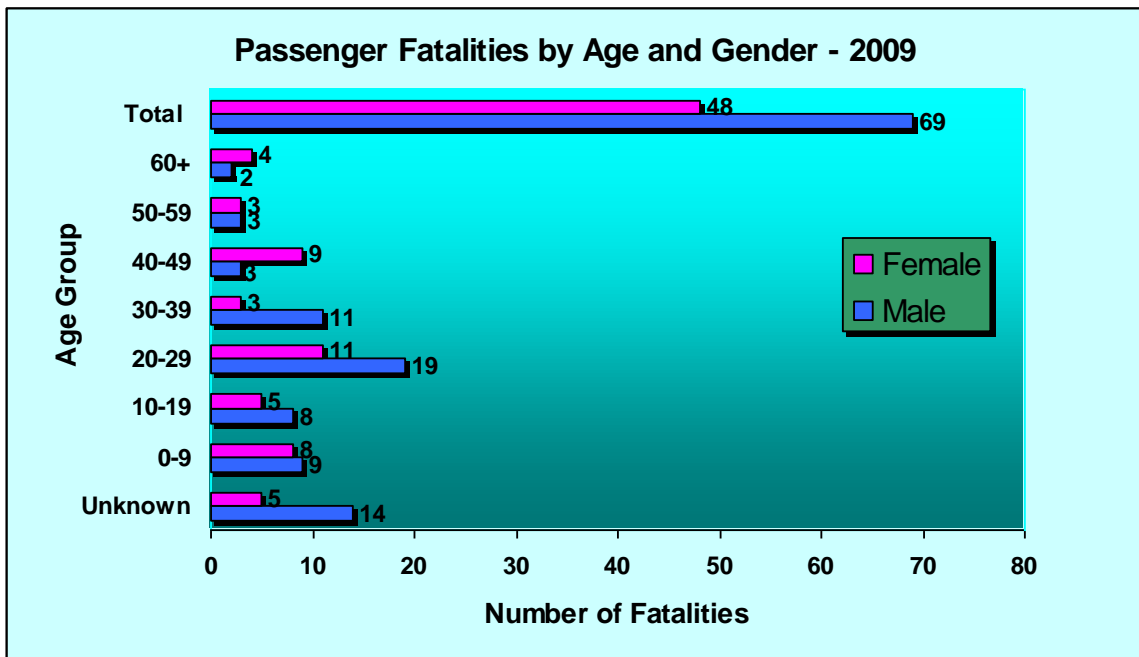
In 2009, over 500 fatalities occurred on the roads in eThekweni. Although males account for around half of the population they account for three quarters of these fatalities. Considering the distribution by age, female fatalities were unevenly distributed up to the age of 30 and this age group accounts for half of the female fatalities. However, the majority of male fatalities were between the ages of 20 to 39, displaying a skewed distribution.



The highest numbers of female driver fatalities during 2009 were in the 20 to 29 age category (42 percent), whilst the highest number of male driver fatalities was in the 30 to 39 age category (29 percent). It is however important to note that there was a high percentage of unknown driver fatalities.



In 2009 over 300 pedestrian fatalities occurred, accounting for two thirds of all road accident fatalities in eThekweni. Again males accounted for a disproportionately high number of these fatalities.



The highest numbers of female passenger fatalities during 2009 were in the 20 to 29 age category (42 percent), whilst the highest number of male passenger fatalities was in the 30 to 39 age category (29 percent). It is however important to note that there was a high percentage of unknown passenger fatalities.

### 1.8. Child and Adult Casualties related to Mode of Travel

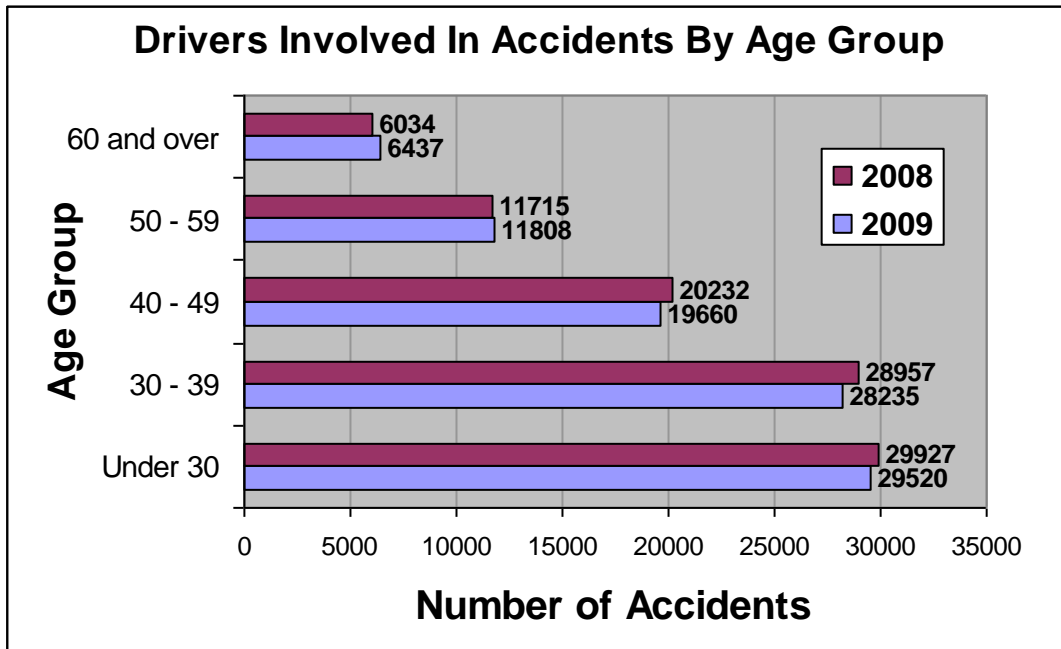
CHILD AND ADULT CASUALTIES RELATED TO MODE OF TRAVEL ETHEKWINI																		
	CHILDREN (16 AND UNDER)								ADULTS (OVER 16)								UNKNOWN AGE	
	TOTAL		DEATHS		SERIOUS		SLIGHT		TOTAL		DEATHS		SERIOUS		SLIGHT		TOTAL	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
<b>MOTOR CAR</b>	547	300	1	14	34	42	512	244	10555	8064	95	111	1173	1054	9287	6899	78	195
<b>COMBI/MINIBUS/MINIBUS TAXI</b>	93	62	2	2	17	16	74	44	3270	2109	21	18	503	442	2746	1649	55	145
<b>LIGHT DELIVERY VAN</b>	106	67	1	6	19	26	86	35	2360	2021	32	54	287	376	2041	1591	30	65
<b>HEAVY COMMERCIAL VEHICLE &amp; ARTICULATED VEHICLE</b>	9	7	0	2	2	2	7	3	327	282	5	9	55	53	267	220	7	10
<b>BUS</b>	8	1	0	0	0	0	8	1	181	117	4	3	27	19	150	95	4	26
<b>MOTOR CYCLE</b>	8	7	0	1	2	2	6	4	397	321	7	8	90	68	300	245	3	17
<b>BICYCLE</b>	20	15	2	1	3	2	15	12	140	107	4	4	31	16	105	87	7	12
<b>PEDESTRIAN</b>	1327	1069	50	48	358	302	919	719	7725	5318	293	281	1674	1487	5758	3550	81	150
<b>OTHER</b>	0	1	0	0	0	0	0	1	9	5	1	0	3	2	5	3	0	0
<b>UNKNOWN</b>	1	4	0	0	0	1	1	3	45	52	1	1	8	19	36	32	1	1
<b>TOTAL</b>	2119	1533	56	74	435	393	1628	1066	25009	18396	463	489	3851	3536	20695	14371	266	621

Total child casualties decreased by 28 percent from 2008 to 2009. The total number of child deaths (16 and below) increased by 32 percent from 56 in 2008 to 74 in 2009. A 26 percent decrease has occurred in the adult casualties from 25009 in 2008 to 18396 in 2009. The number of adult deaths shows an increase of 6 percent from 463 in 2008 to 489 in 2009. Adult driver casualties by motor car decreased by 15 percent from 7567 in 2008 to 6423 in 2009.

Adult passenger casualties by motor car decreased by 45 percent from 2988 in 2008 to 1641 in 2009, adult passenger casualties by combi/minibus/minibus taxi decreased by 45 percent from 2278 in 2008 to 1257 in 2009, and adult passenger casualties by bus decreased by 32 percent from 106 in 2008 to 72 in 2009.

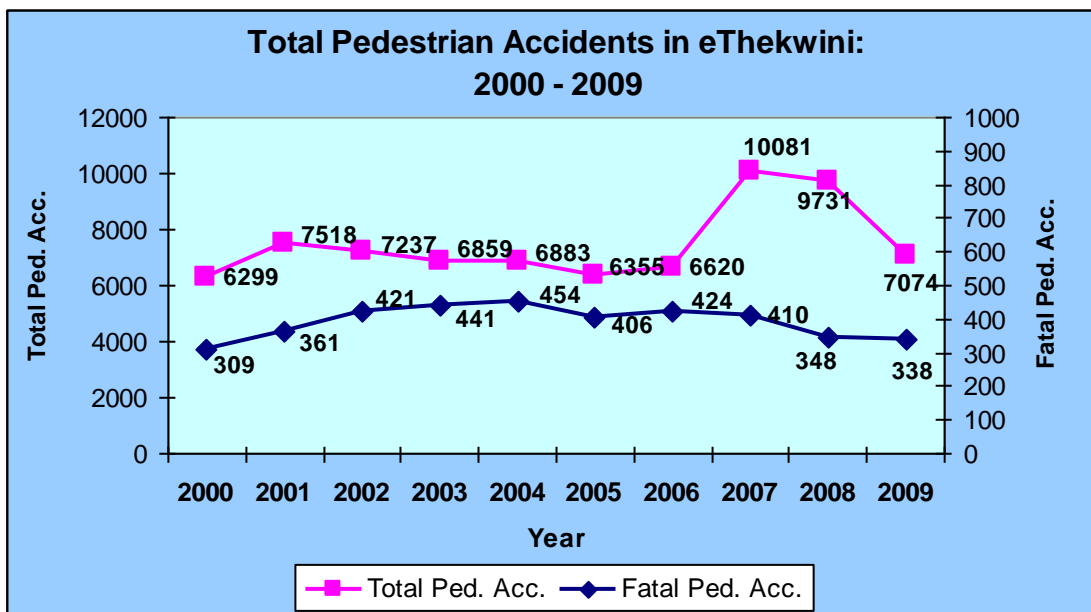
Child passenger casualties by motor car decreased by 45 percent from 547 in 2008 to 300 in 2009, child passenger casualties by combi/minibus/minibus taxi decreased by 33 percent from 93 in 2008 to 62 in 2009, and child passenger casualties by bus decreased by 88 percent from 8 in 2008 to 1 in 2009.

### 1.9. Drivers Involved in Accidents by Age Group



Thirty one percent of accidents involved drivers under the age of 30 years during 2008 and 2009.

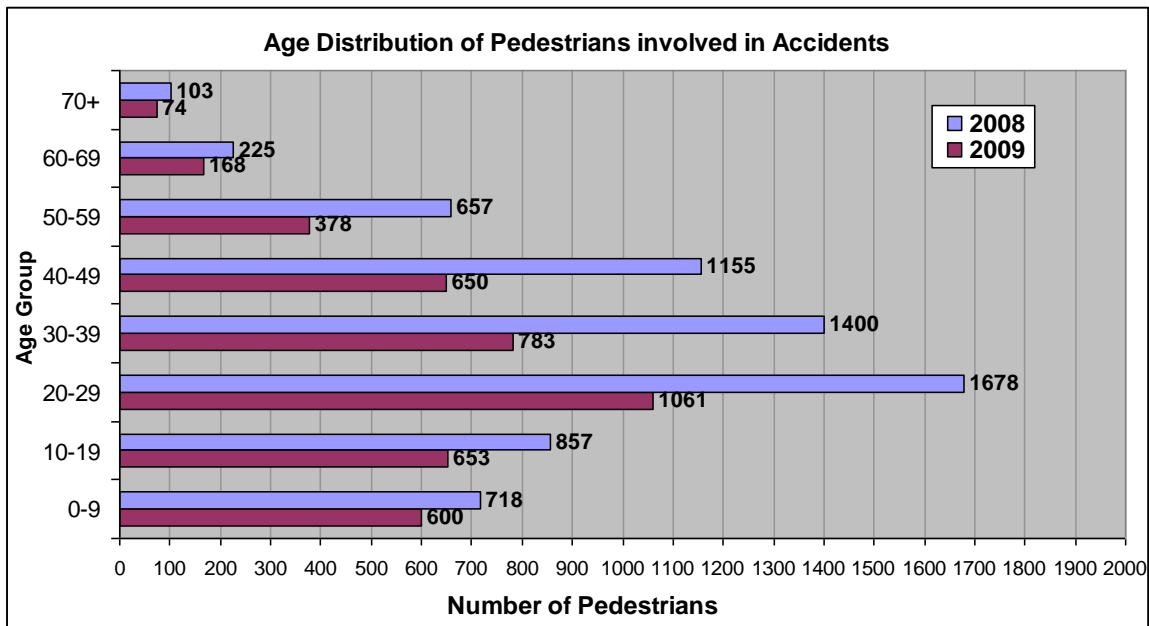
### 1.10. Trends in Pedestrian Accidents



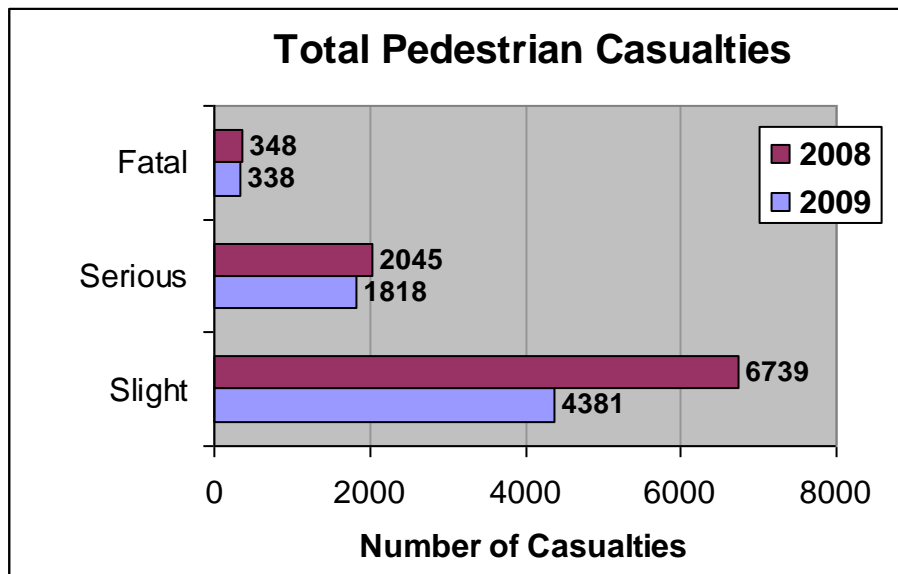
The high number of pedestrians involved in accidents is a cause for concern. During 2008, 9731 pedestrians were involved in accidents of which 348 died and 2045 were seriously injured. In 2009, 7074 pedestrians were involved in accidents of which 338 pedestrians died and 1818 were seriously injured.



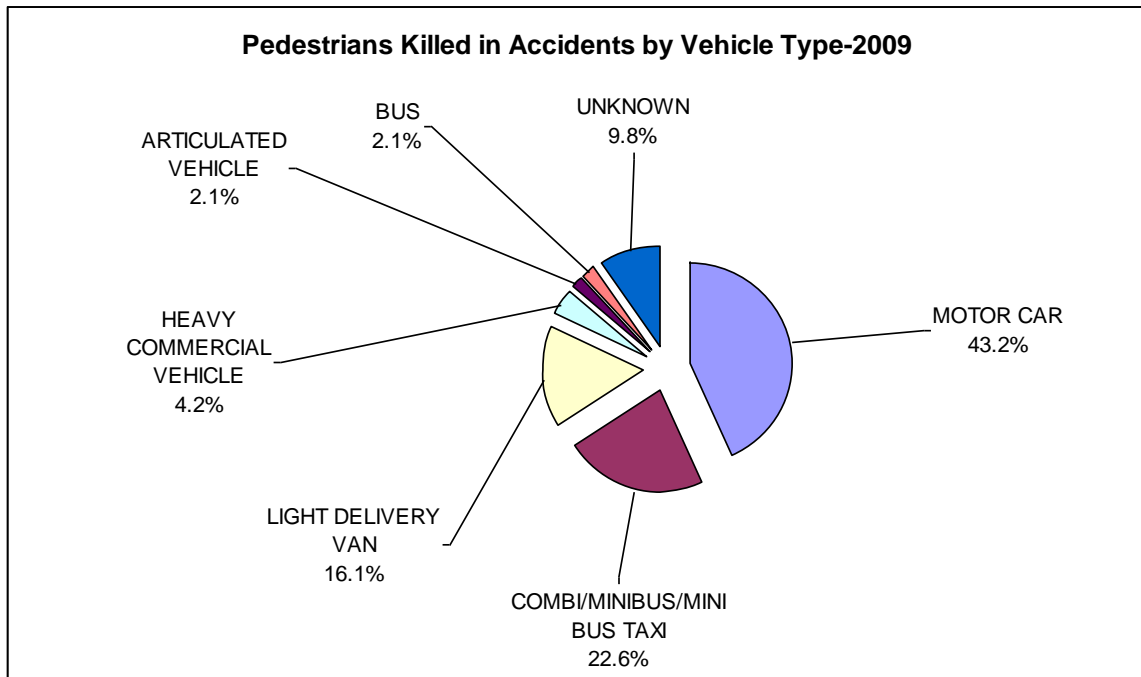
### 1.11. Age Distribution of Pedestrians involved in Accidents



### 1.12. Total Pedestrian Casualties

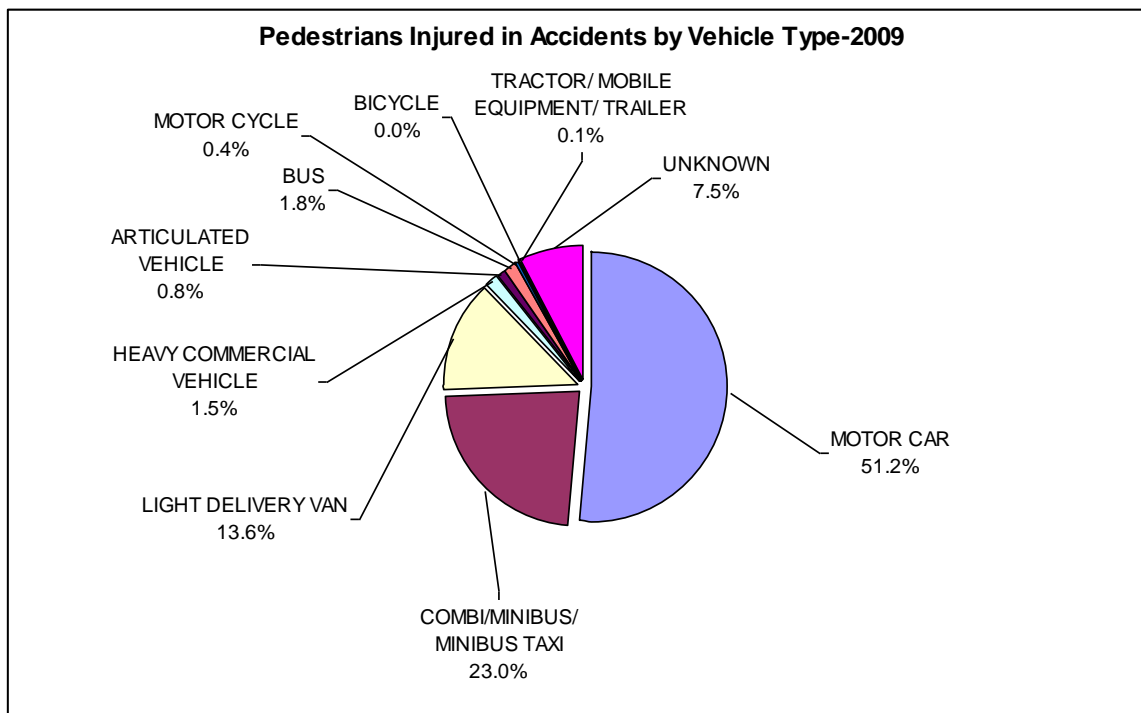


### 1.13. Pedestrians Killed in Accidents by Vehicle Type-2009



Forty three percent of pedestrians killed were by motor cars, 23 percent killed were by combi/minibus/minibus taxis and 16 percent of the pedestrians killed were by light delivery vans during 2009.

### 1.14. Pedestrians Injured in Accidents by Vehicle Type-2009



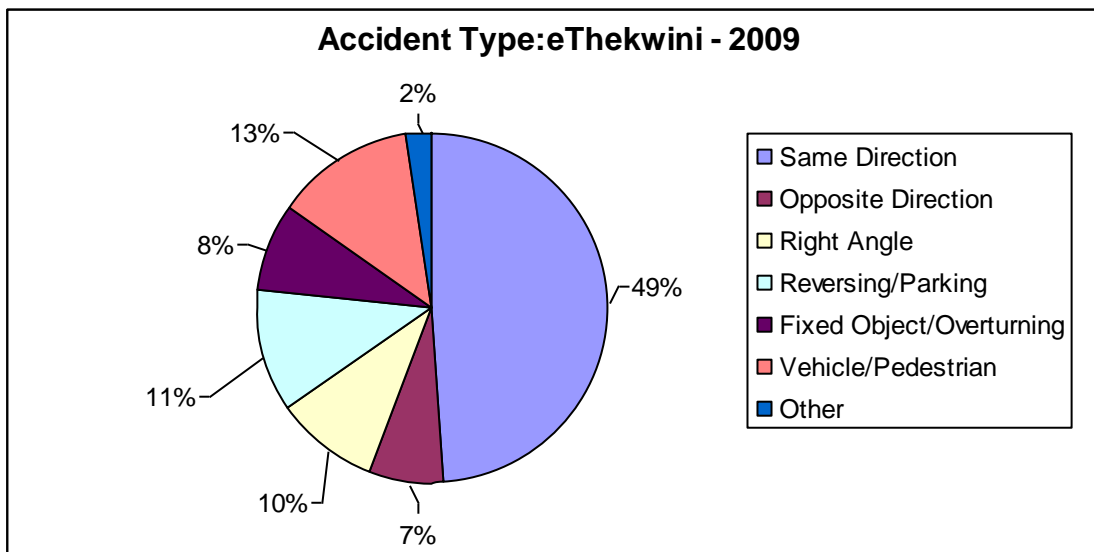
Motor cars, combi/minibus/minibus taxi and light delivery vehicles are mostly involved in pedestrian accidents. Fifty one percent of pedestrians were injured in accidents by motor cars, 23 percent by combi/minibus/minibus taxi, 14 percent by light delivery van and 2 percent by bus.

Analysis reveals that 29 percent of the pedestrians involved in accidents were children thereby making them a high-risk category. To reduce the high occurrences of pedestrian accidents and to increase road safety awareness, the ETA has implemented the Road Safety School Awareness campaign at various primary schools within the eThekweni Municipal Area. The programme commenced in 2005 and is ongoing. The School's Road Safety Campaign aims to educate school children in order to reduce the number of pedestrian accidents occurring in residential areas. This is done via a road safety drama presentation. The Road Safety Drama presentation teaches the correct procedure to follow when crossing the road and when travelling in or alighting from and boarding buses and taxis. This programme is presented in a fun filled manner that is both stimulating and interactive for the learners. Approximately 495 000 learners have been educated thus far with a majority of the schools having been completed.

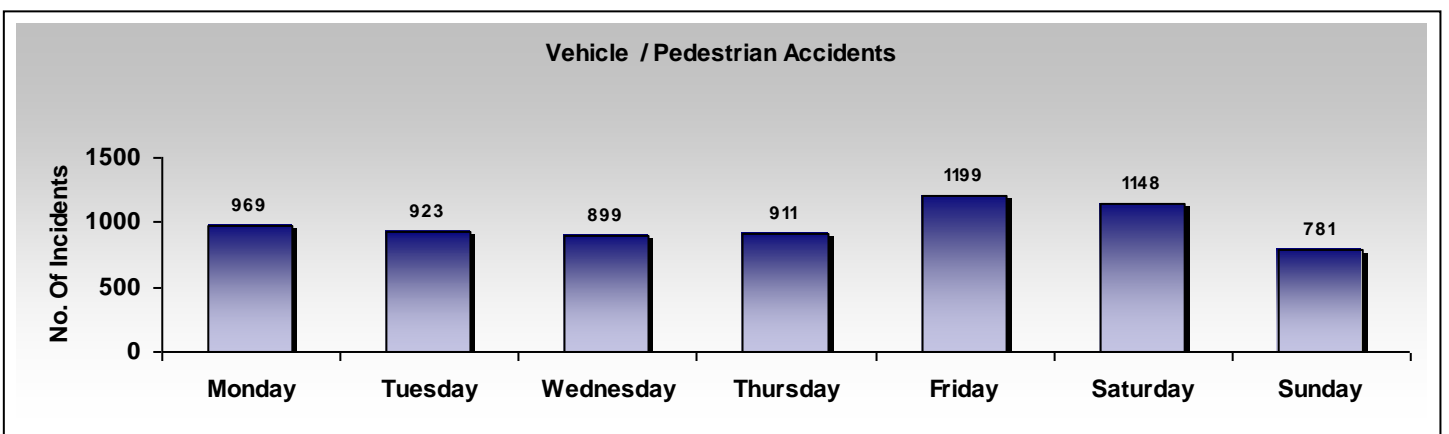
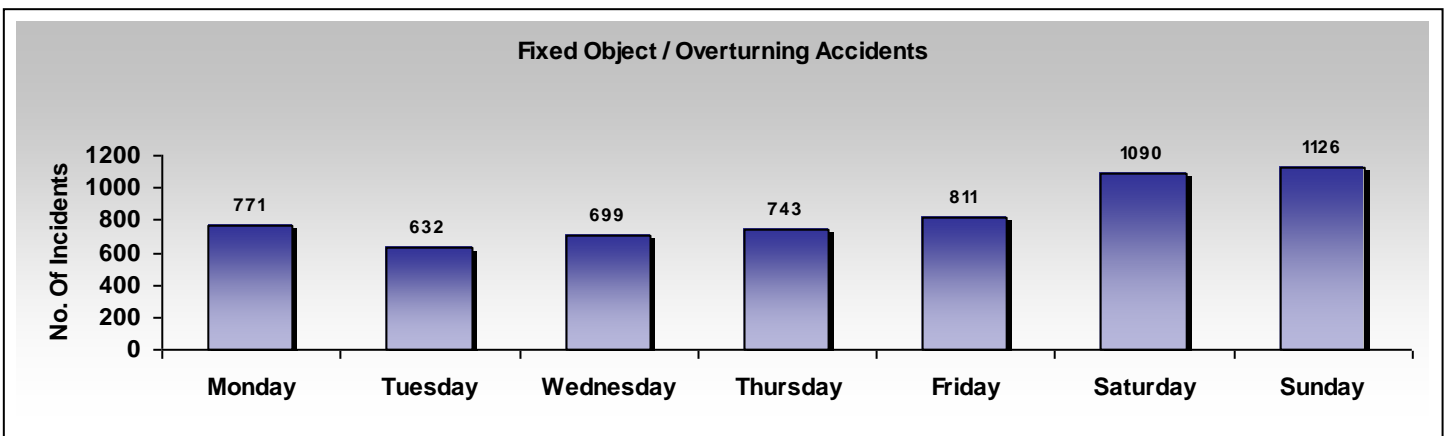
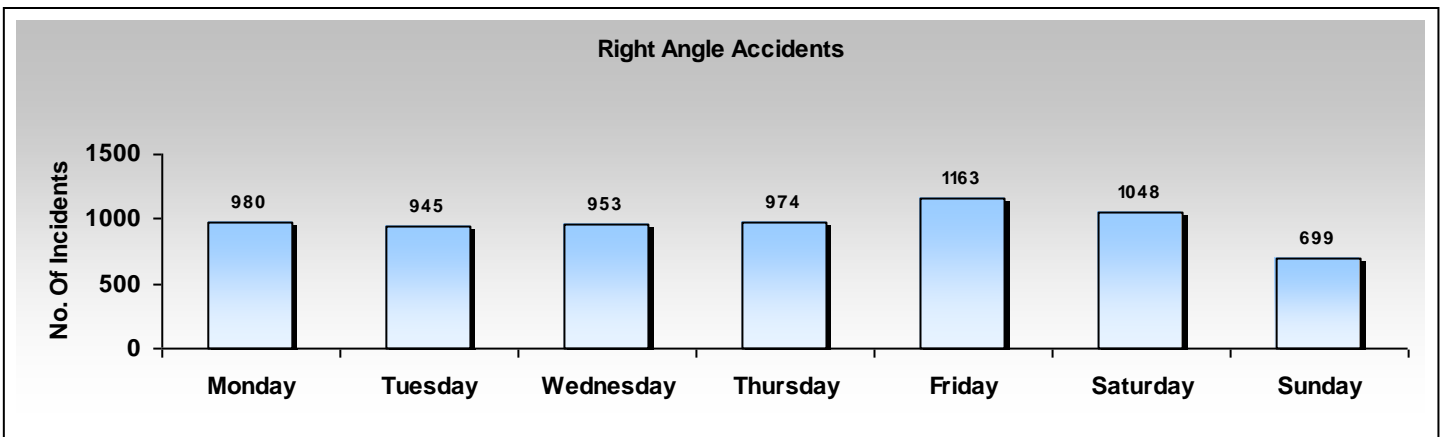
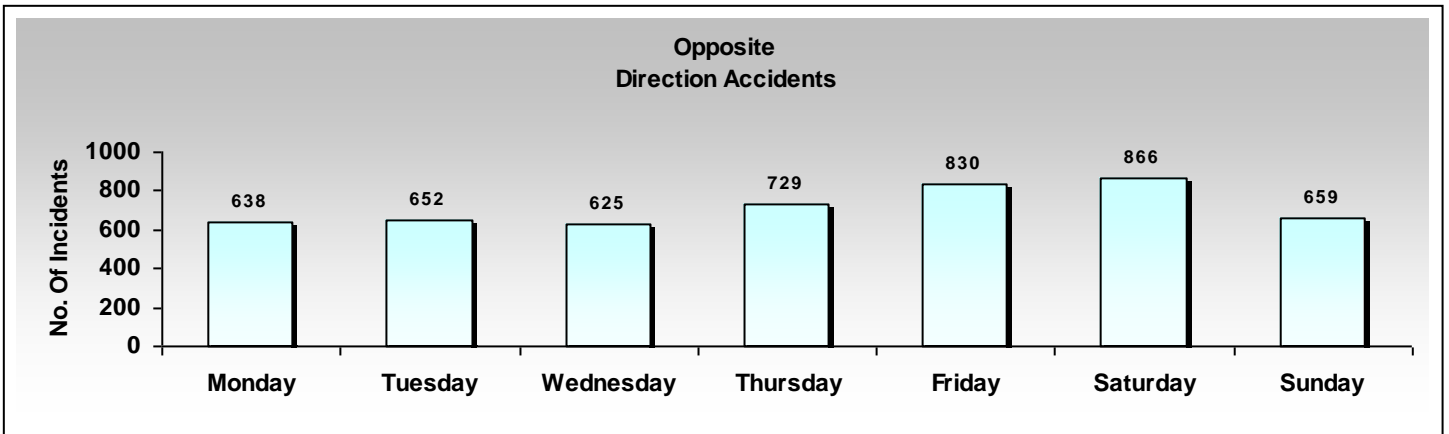
### 1.15. Vehicle Accidents by Type

The classification of the accident type is based upon the traffic movements leading up to the conflict situation. In 2009, 50 percent of all accidents in eThekweni were of the same direction accident type whilst the second highest were the vehicle pedestrian accidents which constituted 13 percent of the total accidents. Vehicle/pedestrian accidents are a cause for concern as they account for the highest number of fatalities.

2009	TOTAL ACCIDENTS	% OF ALL	FATAL ACCIDENTS	SERIOUS INJURY ACCIDENTS
Same Direction	33609	49.7%	31	383
Opposite Direction	4999	6.7%	45	217
Right Angle	6762	10.1%	25	180
Reversing/Parking	7996	11.5%	2	30
Fixed Object/Overturning	5872	8.2%	78	375
Vehicle/Pedestrian	6830	13.1%	333	1777
Other	1609	2.4%	9	89
<b>TOTAL</b>	<b>67677</b>	<b>101.7%</b>	<b>523</b>	<b>3051</b>



### 1.16. Accident Type by Day of Week

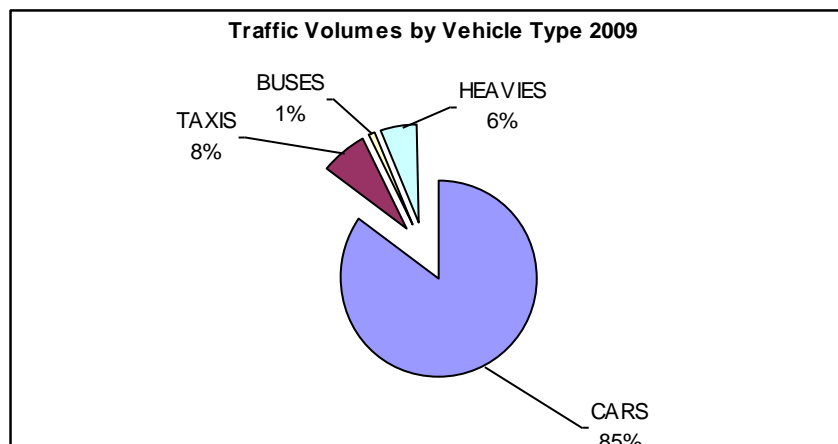
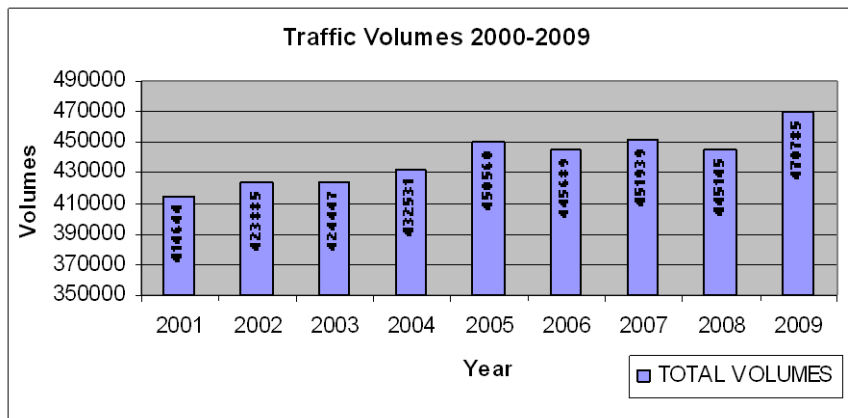


## 2. TRAFFIC VOLUMES

### 2.1. Traffic Volume Growth

The following table shows the traffic volume growth for the period 2001 through to 2009 in the eThekweni Municipal Area. The figures were derived from two-way counts conducted over a 12 hour period of vehicles accessing the central area of the city.

YEAR	CARS	TAXIS	BUSES	HEAVIES	TOTAL VOLUMES
2001	361011	26802	6641	20190	414644
2002	366770	30357	5802	20956	423885
2003	366643	30404	5231	22169	424447
2004	367641	34266	5824	24800	432531
2005	384660	33846	5612	26442	450560
2006	378934	32763	5431	28561	445689
2007	384212	32548	5510	29669	451939
2008	376839	34187	4446	29673	445145
2009	402043	36617	3108	29017	470785



## 2.2. Top 10 Busiest Signalised Intersections for all Vehicles in eThekweni

RANK	LOCATION	12 HOUR VOLUME 06:00 TO 18:00	NUMBER OF ACCIDENTS (2009)
1	MR94 (M41) and Outer Ring Road (N2) (West)	68100	102
2	Sandile Thusi Road(Argyle Road) (M17) and Stalwart Simelane Street (Stanger Street) (M4)	67000	202
3	Umgeni Road (M19) and Outer Ring Road (N2) (East)	66300	224
4	Chris Hani Road (North Coast Road) (R102) and Sea Cow Lake Road (M21)	65800	69
5	Solomon Mahlangu Drive (Edwin Swales Drive) (M7) and South Coast Road	64400	317
6	M19 and Outer Ring Road (N2) (West)	64200	135
7	MR94 (M41) and Outer Ring Road (N2) (East)	62800	40
8	Umgeni Road (R102) and Smiso Nkwananya Road (Goble Road)	59800	148
9	Umgeni Road (M19) and Alpine Road (M10)	57800	130
10	Umgeni Road (R102) and Sandile Thusi Road(Argyle Road) (M17)	56600	146

## 2.3. Top 10 Busiest Intersections by Vehicle Type

### BUSES

RANK	LOCATION	12 HOUR VOLUME 06:00 TO 18:00
1	Johannes Nkosi Street (Alice Street) (R102) and Ingcuce Road (Albert Street) (R102)	2506
2	David Webster Street (Leopold Street) (M4) (R102) and Joe Slovo Street (Field Street)	2431
3	Dr Yusuf Dadoo Street (Grey Street) and Charlotte Maxeke Street (Beatrice Street)	2339
4	David Webster Street (Leopold Street) (M4) (R102) and Julius Nyerere Avenue (Warwick Avenue) (M4) (R102)	2240
5	Braam Fischer Road (Ordinance Road) (M4) and Soldiers Way	1989
6	Umgeni Road (R102) and Smiso Nkwananya Road (Goble Road)	1944
7	Umgeni Road (M19) and K E Masinga Road (Old Fort Road) (M4)	1827
8	Market Road (M4) and Johannes Nkosi Street (Alice Street) (M4)	1709
9	Ingcuce Road (Albert Street) and Charlotte Maxeke Street (Beatrice Street)	1685
10	Soldiers Way and Dr Goonam Street (Prince Edward Street)	1674

## TAXIS

RANK	LOCATION	12 HOUR VOLUME 06:00 TO 18:00
1	David Webster Street (Leopold Street) (M4) (R102) and Julius Nyerere Avenue (Warwick Avenue) (M4) (R102)	17894
2	Market Road (M4) and David Webster Street (Leopold Street) (M4)	17093
3	Market Road (M4) and Johannes Nkosi Street (Alice Street) (M4)	14660
4	Johannes Nkosi Street (Alice Street) (M4) (R102) and Julius Nyerere Avenue (Warwick Avenue) (M4) (R102)	13832
5	David Webster Street (Leopold Street) (M4) (R102) and Joseph Nduli Street (Russel Street)	12486
6	Josiah Gumede Road (Old Main Road-Pinetown) (M31) and Anderson Road	11503
7	Johannes Nkosi Street (Alice Street) (R102) and Ingcuze Road (Albert Street) (R102)	11484
8	Braam Fischer Road (Ordinance Road) (M4) and Soldiers Way	10971
9	Umgeni Road (M19) and KE Masinga Road (Old Fort Road) (M4)	10806
10	Dr Yusuf Dadoo Street (Grey Street) and Dr Pixley kaSeme Street (West Street)	10802

## HEAVIES

RANK	LOCATION	12 HOUR VOLUME 06:00 TO 18:00
1	Solomon Mahlangu Drive (Edwin Swales VC Drive) (M7) and South Coast Road	13329
2	South Coast Road (R102) and Transnet	6863
3	Solomon Mahlangu Drive (Edwin Swales VC Drive) (M7) and Wakesleigh Road (M10)	7362
4	South Coast Road and Bayhead Road	7210
5	Bayhead Road (M9) and Langeberg Road	6778
6	Solomon Mahlangu Drive (Edwin Swales VC Drive) (M7) and Outer Ring Road (N2) (East)	6612
7	Solomon Mahlangu Drive (Edwin Swales VC Drive) (M7) and Pinedene Road	6559
8	South Coast Road (R102) and Eel Road	6416
9	Bayhead Road (M9) and Dockyard Road	6315
10	Solomon Mahlangu Drive (Edwin Swales VC Drive) (M7) and Titren Road	6233