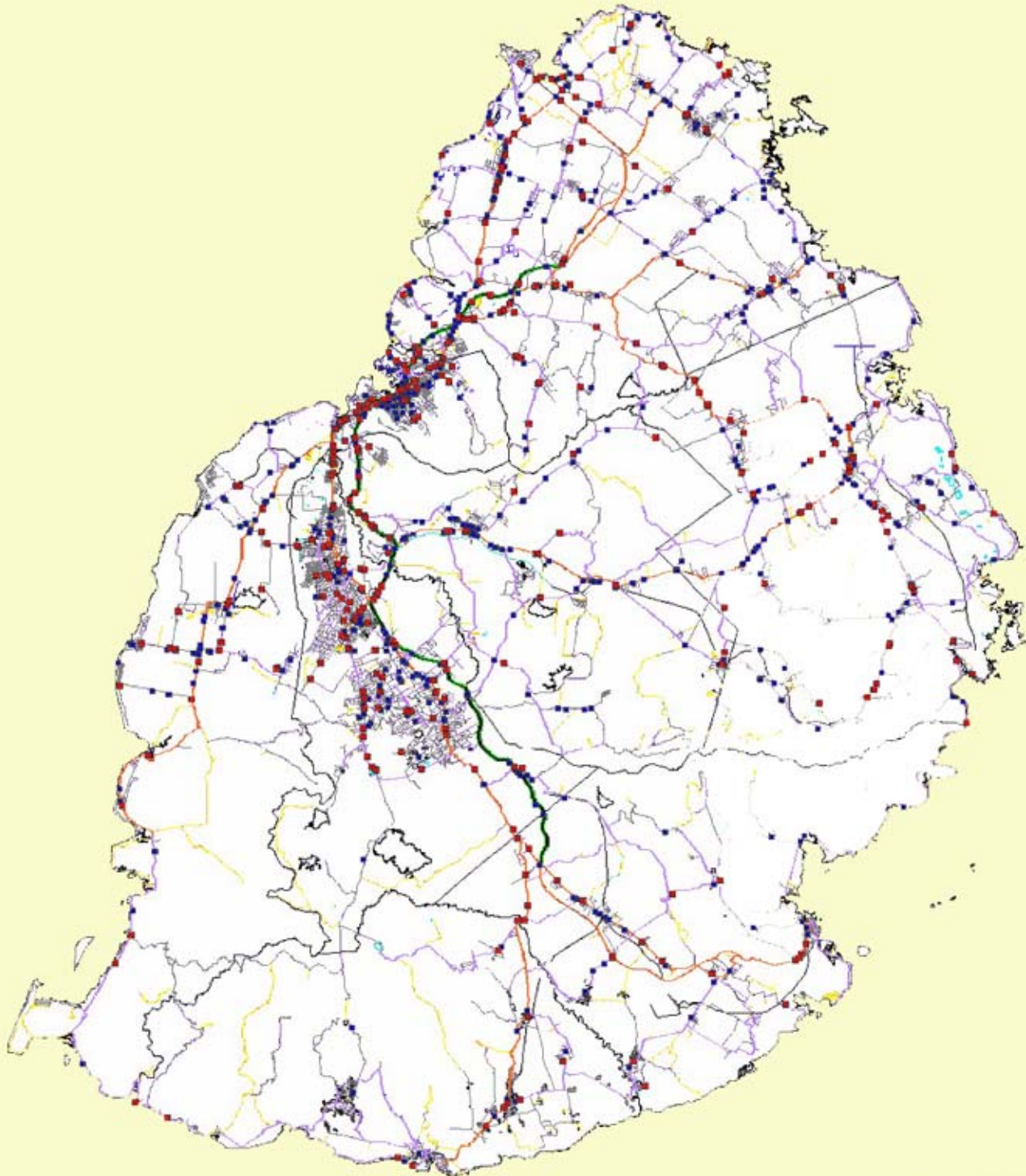


# Road Accidents In Mauritius

## Statistics and Analysis



July 2006



Ministry of Public Infrastructure, Land Transport & Shipping  
Traffic Management & Road Safety Unit  
(T.M.R.S.U.)



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## 1. INTRODUCTION

Road Safety is a complex issue which involves many disparate activities and programme. In Mauritius, as in other Developing Countries, comprehensive coordinated national road safety strategies aimed at achieving targeted reductions in road Trauma have been developed. A common factor of vital importance in road safety management is the collection and use of accurate and comprehensive data relating to road accidents. Data collection is in fact a prerequisite for accurate diagnosis of accident problems and development of accident counter measures.

### THE ACCIDENT REPORT FORM

The previous system of data collection and processing which dates from 1980's, the Fourot form became obsolete and was replaced in March 2002 by a new system using a New Police Accident report form, the P.F 178, which has been developed to suit the Mauritian context and which records about 100 details on every injury accidents reported to the police. A copy of each is attached at annex 1.

All information recorded on PF 178 are entered into a database.

The new accident data collection and management system is being supported by a software known as the Maap software for windows V. 4.0 (Micro Computer Accident Analysis Package).

### THE MAAP SOTWARE

The Maap software was developed by the Transport Research Laboratory of the United Kingdom and is being widely used in U.K and also in many developing countries for example India, Fiji, Saudi Arabia, Indonesia etc...

MAAP has been installed and is used in the countries shown in the map below.



The MAAP software provides the possibility of plotting accidents on a map using a Geographic Information System (G.I.S) module incorporated within the Maap for windows software V. 4.0, the version which is currently in use in Mauritius. A current version V.4.2 is currently available.

The starting point for a G.I.S system is the geographic or otherwise spatial reference coordinates of data which could be points representing accident spot and lines representing the road network or areas representing District boundaries.

The G.I.S module uses a system of geo-coding, a process by which geographic information is added to a file or database so that its objects can be displayed on a map.

A digital map of Mauritius with its road network has been incorporated in the software, and the menu command function “View map” or its corresponding icon can be used to view and zoom the map at different zoom level.

The command “Plot Accidents” will load the map window with all the accidents recorded in the database. The severities of the accidents are colour coded.

## **DATA COLLECTION AND ANALYSIS**

The analyses have been carried out solely on the basis of data collected using the PF 178, for the past three years, 2003, 2004 &.2005.

There are still certain areas which have to be addressed on the collection of accident data, particularly relating to drink driving.

### **1.4 AIM OF THIS DOCUMENT**

This document gives a picture of the dimension of the road safety problem by categories of Road Users in detail. It also determines the circumstances when they are most vulnerable. However, it takes into consideration only the **Killed and Seriously Injured (KSI)** and it aims at providing arguments for a better understanding of the accident problem and justification of accident countermeasures.

## 2. **ROAD TRAFFIC ACCIDENTS IN MAURITIUS**

### 2.1 TERMINOLOGIES & DEFINITIONS

#### 1. **Accidents**

Accidents refer to all accidents involving personal injury occurring on a public road (including footpath) in which a vehicle is involved and which is reported at a Police station.

#### 2. **Casualty**

The total number of persons who sustained fatalities and injuries resulting from road accidents.

#### 3. **Fatalities**

Deaths occurring as a result of road accident, if the victim dies within 30 days of the date of the accident.

#### 4. **Severity of accident**

Each accident is classified according to the degree of injury sustained by the road users involved in the accident and are as follows:

- i. Fatal
- ii. Serious
- iii. Slight
- iv. No injury

#### 5. **Injuries**

The reported number of persons seriously or slightly injured in road accidents.

##### ◆ **Serious Injury**

An injury for which a person is admitted in hospital as an “in-Patient” or any of the following injuries whether or not he is admitted in hospital

- i. Fractures
- ii. Concussions
- iii. Internal injuries
- iv. Severe cuts and lacerations
- v. Crushings
- vi. severe general shock requiring medical treatment

◆ **Slight injury**

An injury of minor character such as:

- i. Sprain
- ii. Bruise
- iii. Cut not judged to be severe

6. **Children**

Persons under 15 years of age

7. **Drivers**

Drivers of cars, motor caravan, Light Goods Vehicles (LGVs), Heavy Goods Vehicles (HGVs), taxis, minibuses and buses

8. **Motorcyclists**

Riders of mopeds/motorcycles, including riders of two wheeled motor vehicles, motorcycle combinations, scooters and mopeds.

9. **Pillion passengers**

Passenger on a motorcycle or an autocycle.

10. **Passengers**

Occupants of vehicles other than the driver or rider.

11. **Pedal cyclists**

Drivers/riders of pedal cycles. Including children riding cycles on the carriageway.

12. **Pedestrians**

Include:

- ◆ Children on scooters, roller skates or skateboards;
- ◆ Children riding toy cycles on the footpath;
- ◆ Persons pushing bicycles or other vehicles or operating pedestrian- controlled vehicles;
- ◆ Persons leading or herding animals;
- ◆ Occupants of prams or wheelchairs;
- ◆ People who alighted safely from vehicles onto the road.
- ◆ Persons pushing or pulling a vehicle;

13. **Other road users**

Drivers and passengers of invalid/ 3 wheelers, tractors, ridden horses, other vehicles and other non motor vehicles.

### 3. ROAD ACCIDENT COST

Besides pain, grief and suffering, Road Accident costs the country an enormous amount. Based on research carried out by the Transport Research Laboratory (TRL Report 445), accident cost is about 1.5% of the GNP for transitional countries and 2 % for highly motorised countries.

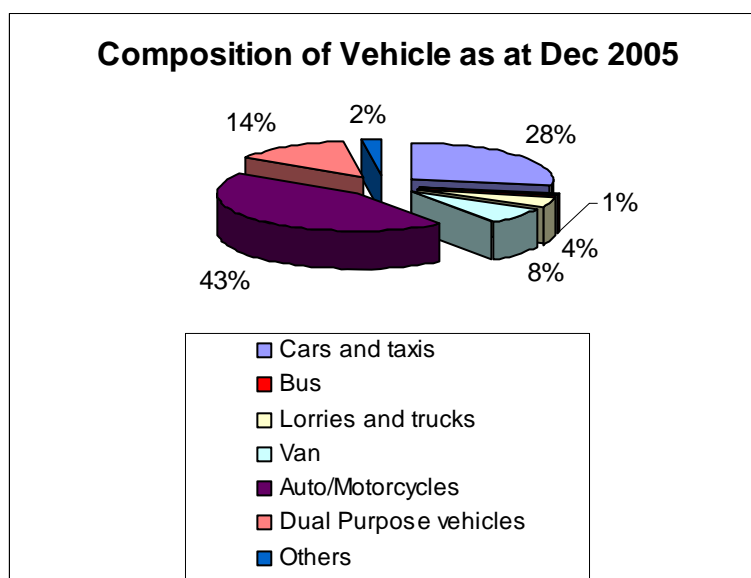
An exercise, carried out in 1999, also revealed that accident cost amounted to more than MRs 1.5 billion. This figure in fact represented 1.4 % of the GNP. The corresponding figure in 2005 amounts to MRs 2.6 billion.

Accordingly the cost of accident by categories in year 2005 would be as follows:

- (i) Fatal Accident - Rs 2,155,717.00
- (ii) Serious Accident - Rs 172,038.00
- (iii) Slight Accident - Rs 57,340.00

### 4. COMPOSITION OF VEHICLES AS AT DECEMBER 2005

CHART 4A



The fleet of motor vehicles increased by about 4.8% in 2005 and as at December 2005 has attained the figure of 305,496 as compared to 291,605 in December 2004. As usual Road Traffic demand is increasing every year and the social- economic development in our Country is generating increasing pressure on our road capacity. This increase has a negative impact on road safety.

## 5. OVERVIEW OF ROAD ACCIDENTS ( KSI) IN MAURITIUS

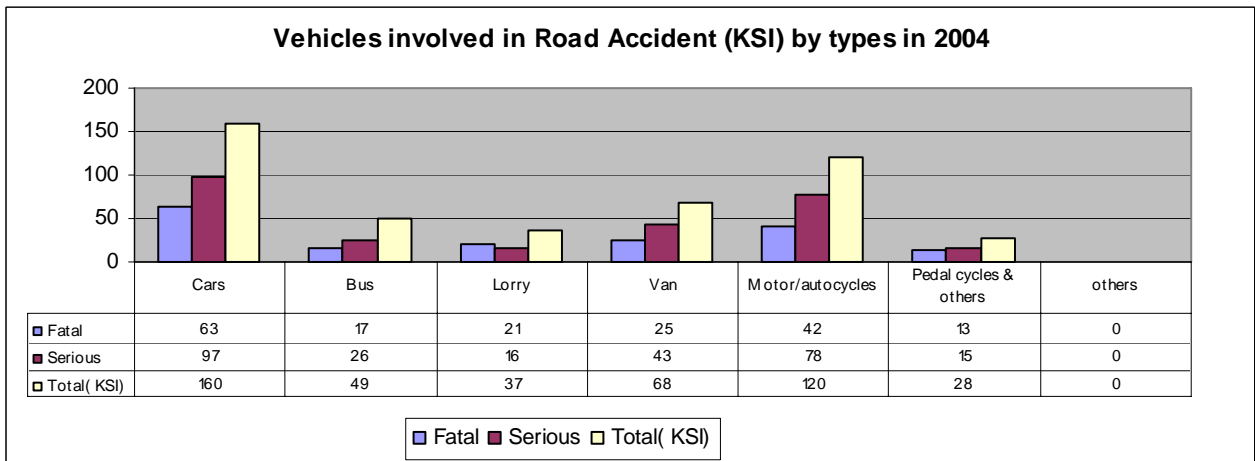
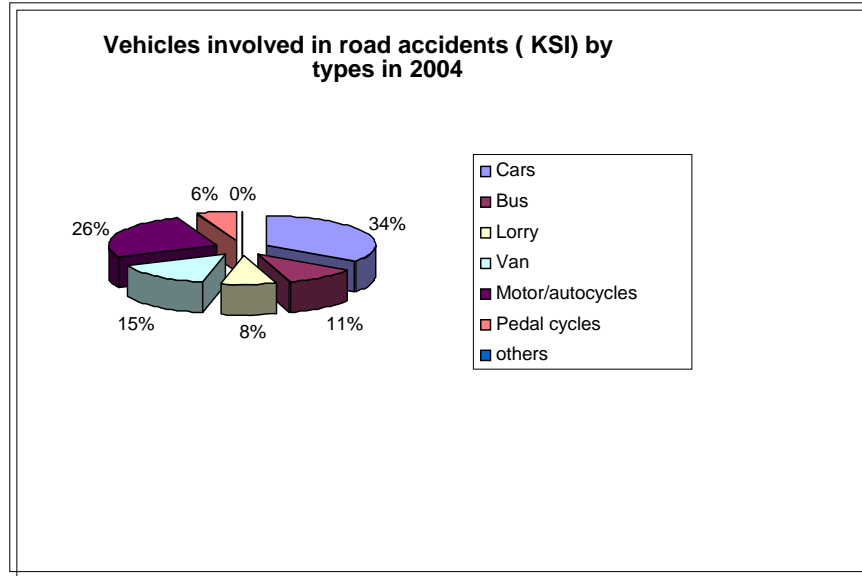
### FACTS SHEET

Road Safety is characterised by the severity of accidents and is dependent on many determinant factors which need to be analysed and interpreted.

Presently, in Mauritius, over the past ten years, the average number of fatal accidents was 149 and serious accidents were 268 annually. The average number of fatal accidents, when taken over the past five years, has decreased to 139. The average number of serious accidents, on the other hand, has increased since the introduction of the new data collection form PF 178; in 2005 the figure was 358 as compared to less than 300 for the previous years. The reason was because figures for the previous years were being under-rated, as many serious injuries were classified as slight injuries. This is confirmed due to the fact that the number of slight accidents has correspondingly decreased in 2005.

- 5.1 **The Road Accidents Fatality rate per 100,000 populations for the year 2005** was '11.3' as compared to '12' in 2004 and '11' in the year 2003.
- 5.2 **The Road Accidents Fatality rate per 1,000 registered motor vehicles** for the year 2004 was '0.5' and '0.40' in 2005, as compared to '0.6' in 2002 and '0.7 - 0.8' between the year 1996 and 2000.
- 5.3 **Road Accidents Fatality rate per 10 million vehicle kms** (a new performance indicator introduced in our analyses based on vehicle usage data indicated in the Halcrow Fox report) is found to be 0.5 for 2004 & 0.45 for 2005 as compared to **0.6 in 2002**. This indicator relates road accidents to a measure of exposure to traffic, which is a more logical measure. Accident is in fact directly related to travel; it increases with increase in distance travelled by vehicles. , If properly managed, the severity of accidents can be controlled and brought down.
- 5.4 An indication by categories of vehicles involved in road accidents in percentage of the total number of KSI accidents for 2004 & 2005 is given in the charts below:

CHART 5A



CHARTS 5C

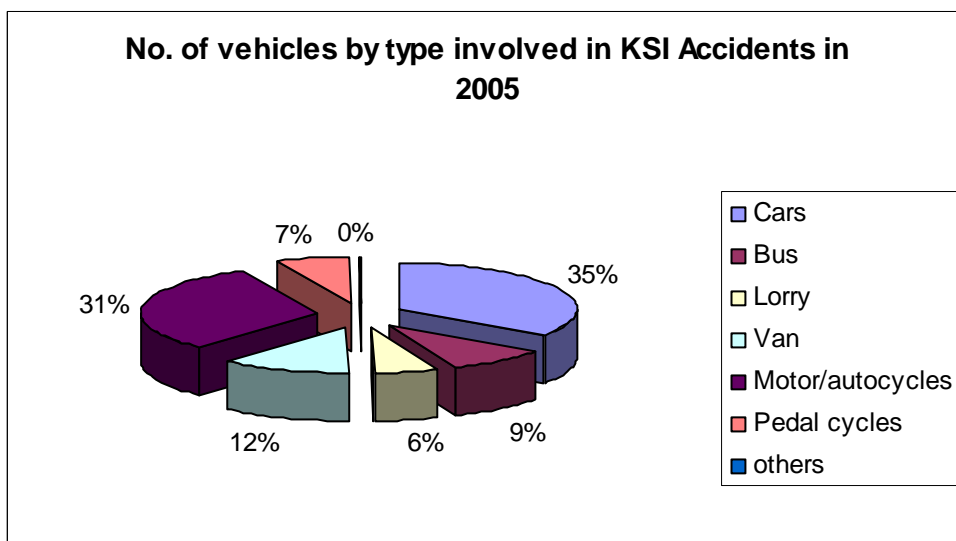
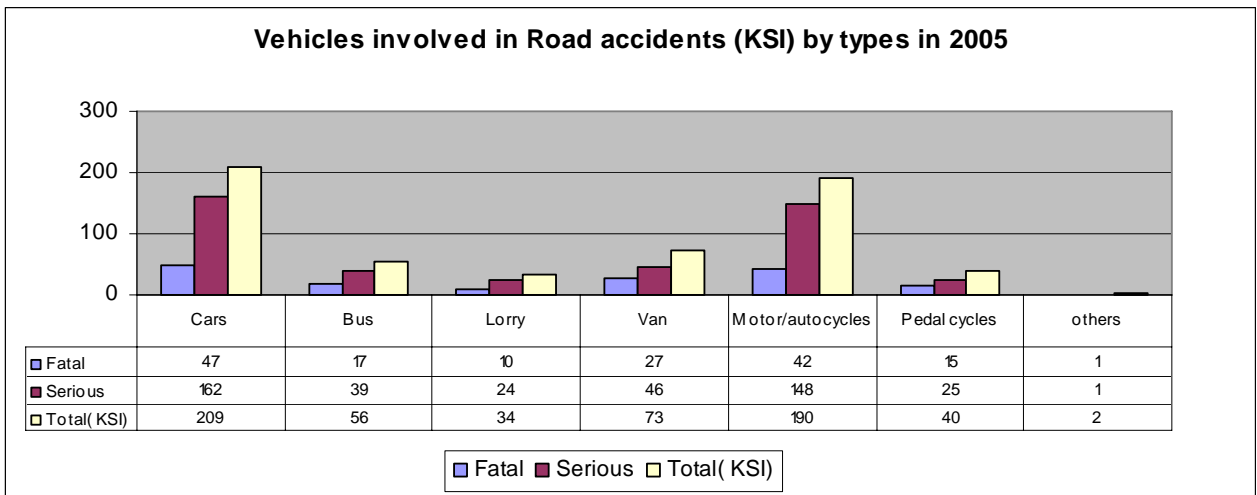


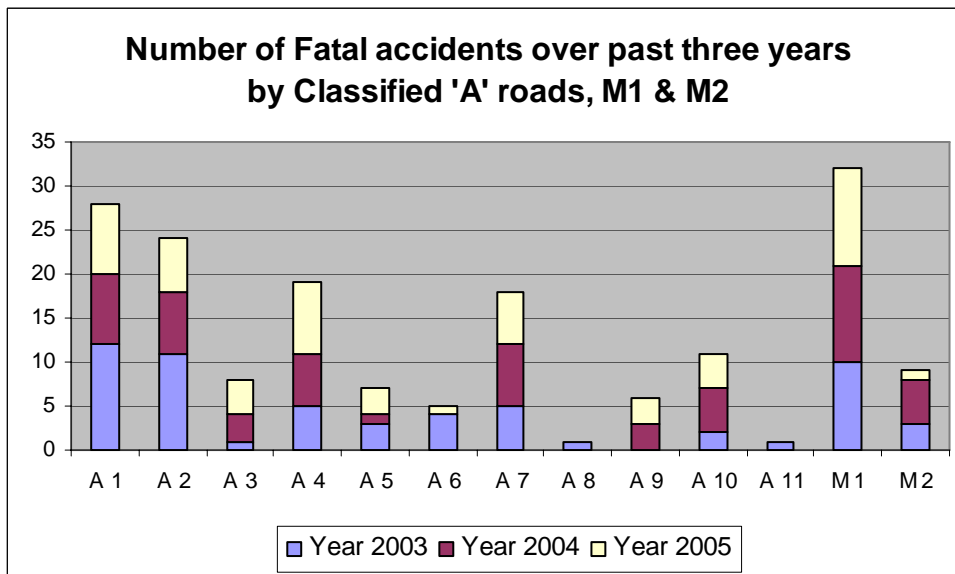
CHART 5D



### 5.5 An overview of Fatal accidents by categories of road

An overview of fatal accidents from 2002 to 2005 by categories of road is given in the Charts / tables below:

CHART5E



**TABLE VA**

FATAL ROAD ACCIDENTS ALONG 'A' ROADS AND MOTORWAY M1 & M2						
S.N	Name of Road		Year 2003	Year 2004	Year 2005	TOTAL
1	P-Louis - St - Jean Round About	A 1	12	8	8	28
2	P-Louis - Central - Flacq Road.	A 2	11	7	6	24
3	Riviere Noire Road	A 3	1	3	4	8
4	Terre Rouge - Triolet - Grand - Baie	A 4	5	6	8	19
5	Mapou - Goodlands Road .	A 5	3	1	3	7
6	Mon Piton - Riv Du Rempart Rd	A 6	4	0	1	5
7	Moka - Camp de Masque - Flacq	A 7	5	7	6	18
8	Saint -Jean Road	A 8	1	0	0	1
9	Savanne Rd	A 9	0	3	3	6
10	Phoenix - Plaisance Road	A 10	2	5	4	11
11	Vandermersch Street	A 11	1	0	0	1
12	P-Louis – Plaisance, Dual Carriageway	M 1	10	11	11	32
13	P-Louis - Pamplemousses ,Dual Carriageway	M 2	3	5	1	9

MAP VA  
A1 ROAD

■ - Fatal accidents    ■ - Serious Accidents

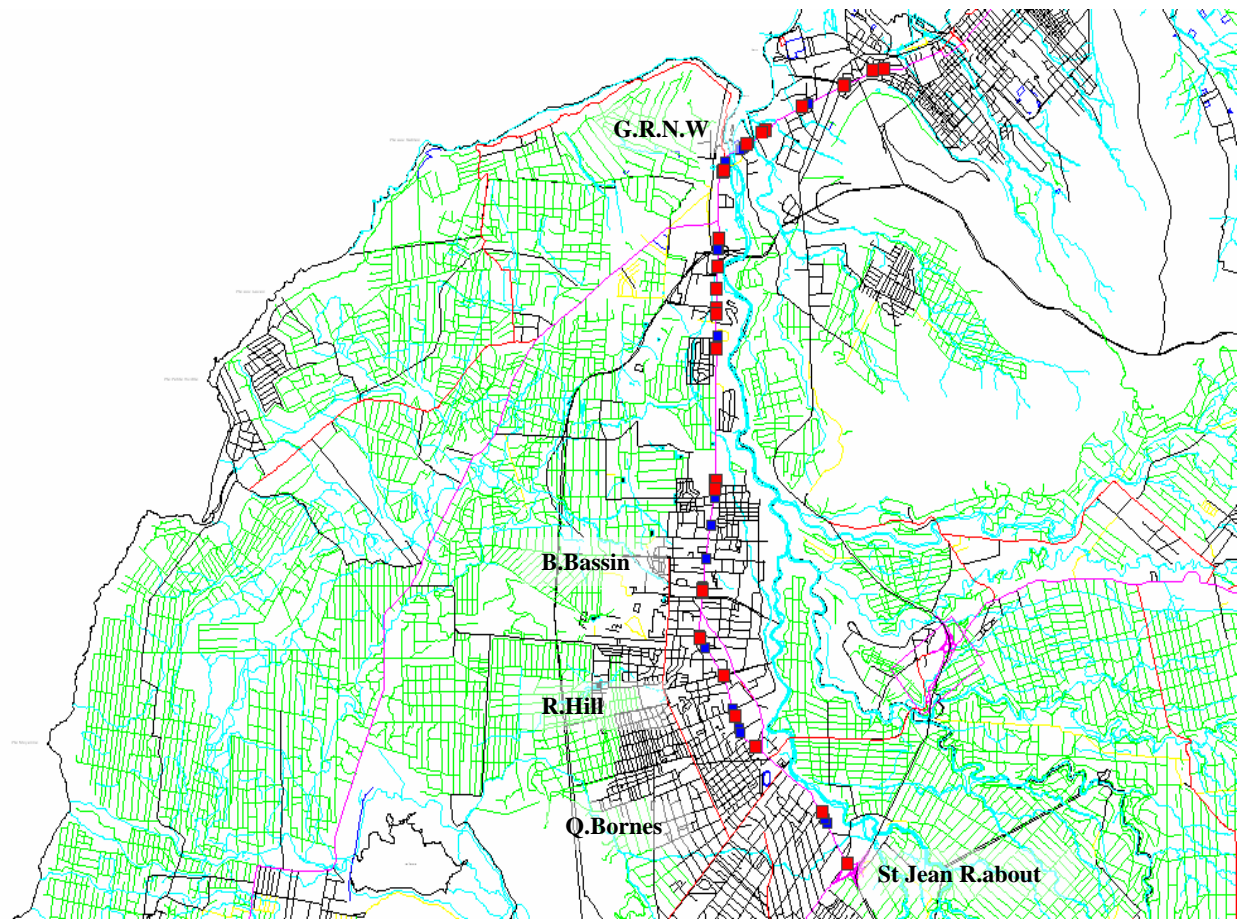


TABLE VB

Year	Fatal Accidents along Road A1 Collision Type								
	Head On	Rear End	Side Swipe	Ran Off Road	Hit Object Off Road	Hit Parked Vehicle	Hit Pedestrian	Other	Total
2003	1	0	1	1	3	0	6	0	12
2004	3	0	1	0	1	0	3	0	8
2005	0	2	0	0	1	1	3	1	8
<b>G. Total</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>12</b>	<b>1</b>	<b>28</b>

From the chart VA and table VB, it can be seen that P.Louis- St Jean road is the classified ‘A’ road which had the most fatal accidents during the past three years. It is noted that the trend is decreasing and in year 2005 we had 8 fatal accidents against 12 in 2003.

MAP VB

■ - Fatal accidents    ■ - Serious Accidents

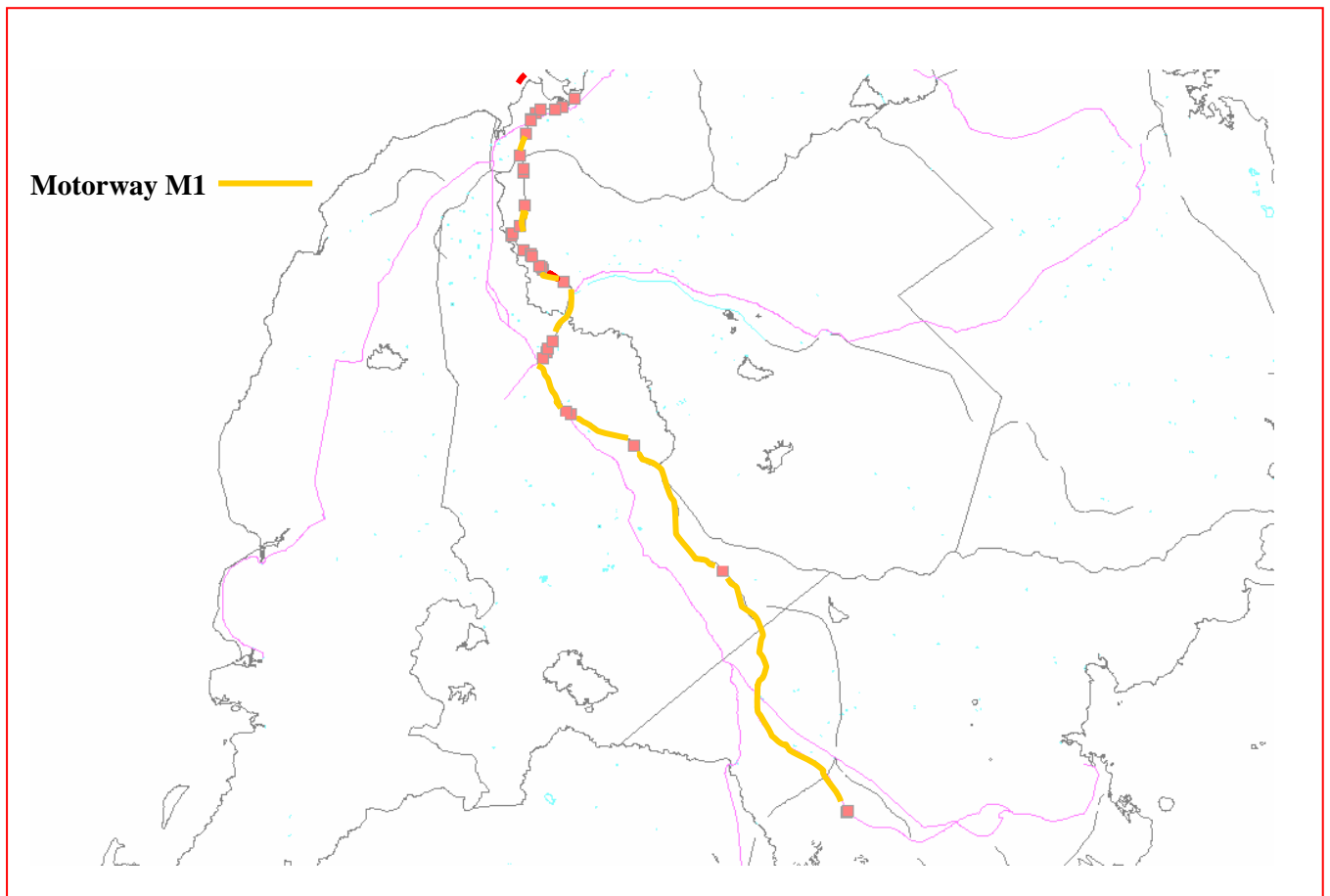


TABLE vC

Date	Collision Type										Total
	Head On	Rear End	Right Angle	Side Swipe	Ran Off Road	Hit Object in Road	Hit Object Off Road	Hit Parked Vehicle	Hit Pedestrian	Other	
2003	0	0	1	1	2	1	1	0	4	0	10
2004	2	1	0	0	2	0	1	1	3	1	11
2005	0	2	0	0	2	0	2	0	5	0	11
<b>Total</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>12</b>	<b>1</b>	<b>32</b>

Motorway M1 has the highest road accident death toll amongst all roads in the island and the locations of these accidents are spread over the whole stretch of the motorway. Measures are being taken to mitigate severe accidents along the motorway M1 and the situation should still be monitored.

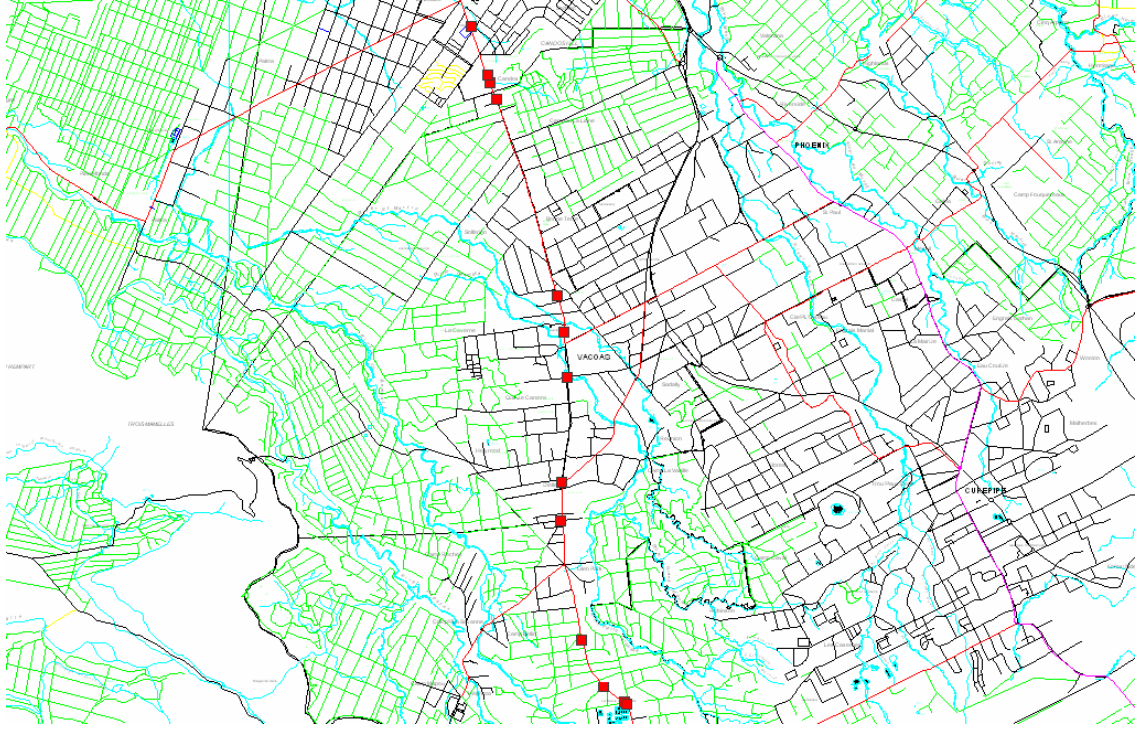
TABLE vD

FATAL ACCIDENTS ALONG 'B' ROADS						
	Name of road		Year 2003	Year 2004	Year 2005	TOTAL
1	Vacoas - Candos Road	B 3	10	2	3	15
2	Black River - Savanne Coast Road	B9	6	2	2	10
3	Plaines Des Papayes Rd	B11	1	4	2	7
4	G-Gaube Coast Road.	B14	4	0	3	7
5	Montagne Longue - Creve - Coeur Rd	B19	1	1	2	4
6	Montagne - Blanche , Bel -Air Road	B27	5	5	3	13
7	Baie du Tombeau Rd	B29	4	5	2	11
8	Abercrombie -SSR St- Q- Elizabeth	B32	2	2	1	5
9	Pte Aux Piments - M-Chosy Coast Rd	B38	2	0	2	4
10	Flic en Flac Rd	B34	1	0	5	6
11	Cote Dor Road	B48	4	1		5
12	La Marie Rd Vacoas,	B64	1	2	5	8
13	John Kennedy Road	B65	2	1	1	4
14	Huginn Road	B76	1	1	2	4
15	Pailles Branch Rd	B77	0		4	4
16	Mission Cross Rd	B98	0	3	2	5
17	Saint - Martin Rd	B101	0	3	1	4

Amongst the classified 'B' roads, Vacoas –Candos road 'B3' and Montagne Blanche –Bel Air road 'B27', are the roads which had the most fatal accidents over the past three years.

MAP VC  
VACOAS- CANDOS ROAD

■ - Fatal accidents   ■ - Serious Accidents



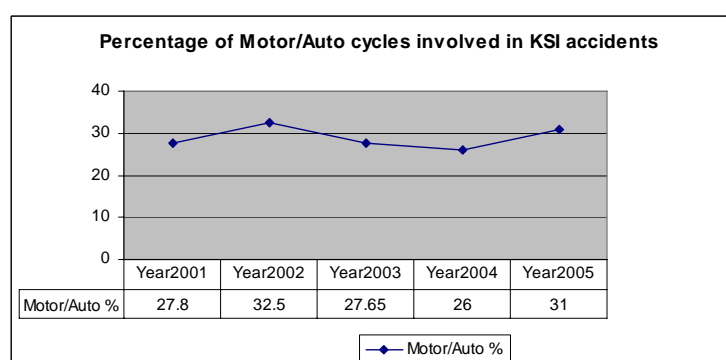
## 6. TWO WHEELERS

### 6.1 Auto cycles and Motorcycles

Motor/Auto cycles represented 43% of the fleet of vehicles registered with the National Transport Authority, as at December 2005. On the average, over the last five years, 28 % of the total number of vehicles involved in KSI accidents were from this category of vehicle ( i.e ‘motorcycles and autocycles’). The highest level recorded was in year 2002 representing a percentage 32.5 % of all categories of vehicles involved.

The ratio of KSI Accidents involving Motor/Auto cycles /1000 registered motor/auto cycles is ‘1.42’.

CHART VIA



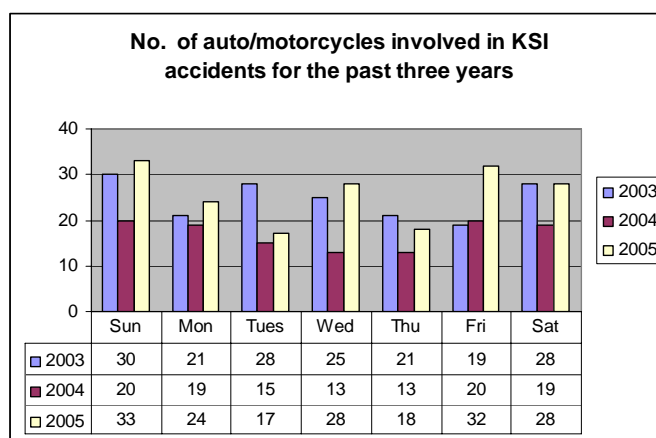
These figures were decreasing after 2002, in which year a new legislation to compulsorily wear and securely fasten a safety helmet was passed, but in 2005 it went up again.

Enforcement of this legislation will have to be more intensive in order to keep the situation under check.

### 6.2 Time Factor

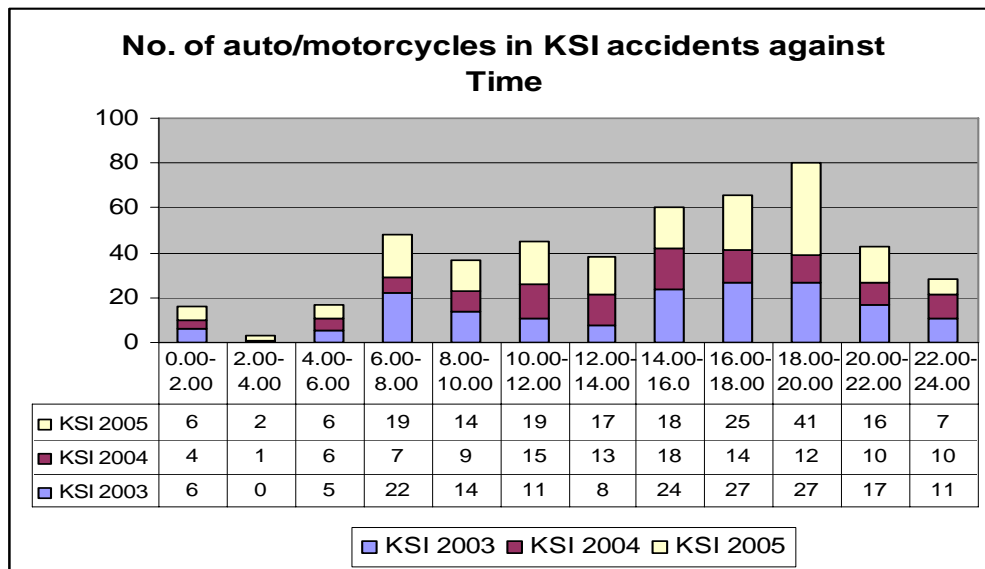
The Charts below indicate the occurrence of KSI accidents involving Auto/Motorcycles during week days. Although the rate is higher on Sundays; it does not vary much as compared to other week days.

CHART VI B



Motorcycles and auto cycle crashes occur during all time of the day, however they are over-represented between 14.00 hours up to 20.00 hours. This period is particularly dangerous for two wheelers which is characterised by tiredness and the tendency to rush back home after the day’s work, and same is applicable to other categories of road users or professional drivers as well.

CHART VI C

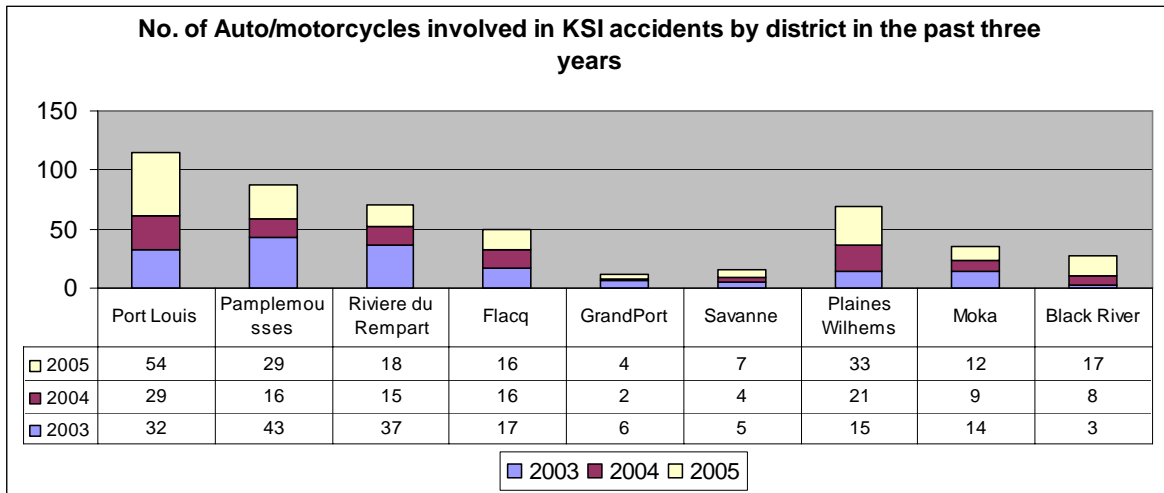


### 6.3 LOCATION

Traffic composition is in fact the most important factor determining the number of KSI accidents for different categories of vehicles. Port Louis is the district which generates/ attracts the maximum number of short trips, with people commuting from adjoining districts. The most practical common modes of transport for such trips are motorcycles and auto cycles.

The above statement is consolidated by the fact that the district having the most number of Auto & Motorcycles accidents (KSI), during the past three years is the district of Port Louis. The figures for the adjoining districts of Pamplemousses, Riviere Du Rempart and Plaines-Wilhems, are also high and comparable.

**CHART VI D**

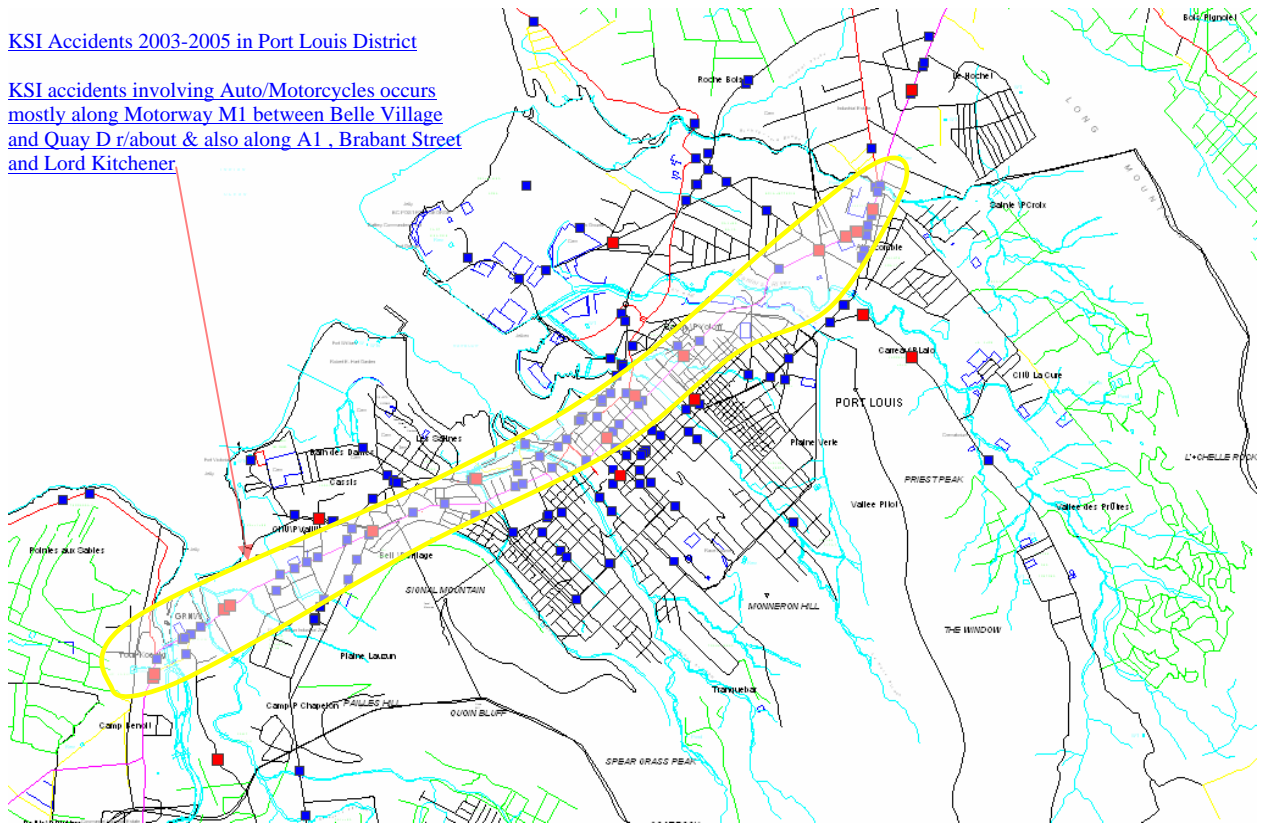


**MAP VIA**

■ - Fatal accidents   ■ - Serious Accidents

[KSI Accidents 2003-2005 in Port Louis District](#)

[KSI accidents involving Auto/Motorcycles occurs mostly along Motorway M1 between Belle Village and Quay D r/about & also along A1, Brabant Street and Lord Kitchener](#)

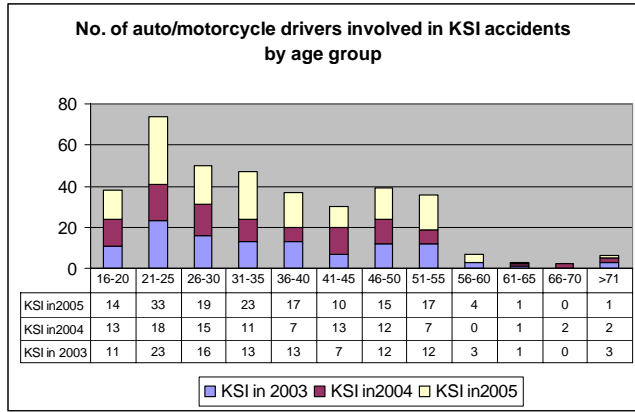


#### 6.4 **GENDER AND AGE-GROUP**

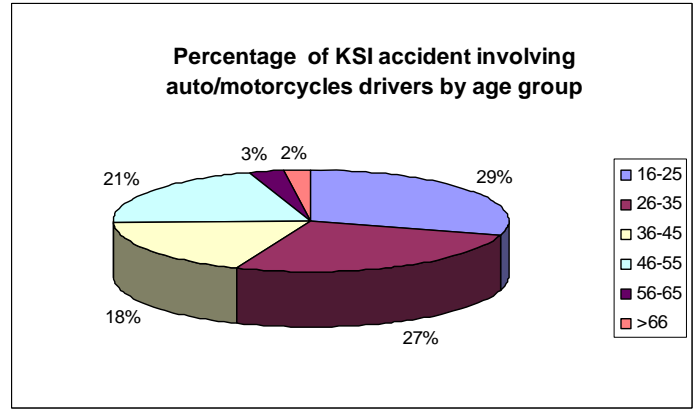
Female riders have not been involved in any KSI accidents during the past three years. They have been involved only as pillion riders.

From the charts below it is seen that three out of every ten auto/motorcycle drivers, involved in KSI accidents, are from the age group of 16-25, and that the vulnerable age group for this category of road users span from 21-25 years.

**CHART VI E**



**CHART VI F**



Although, laws have been made stiffer as regards to the wearing of helmets, it is often observed that for short trips people just ignore this rule and wear the helmet without having it securely fastened, this contributes in aggravating the severity of accidents.

## 7. TWO WHEELERS – BICYCLES

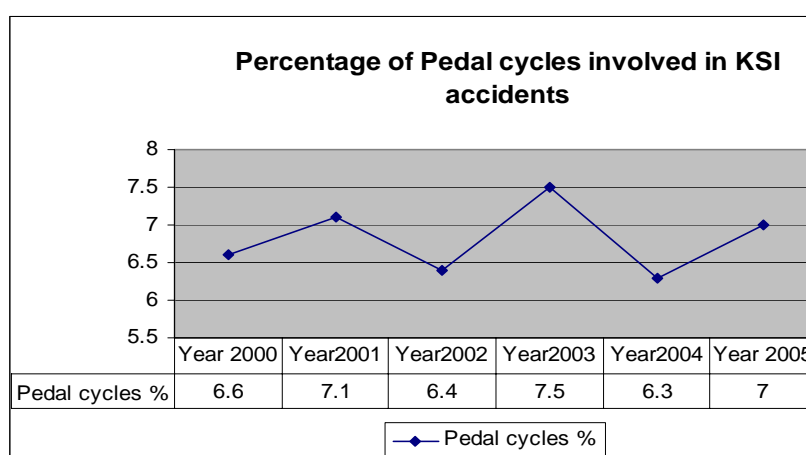
Bicycle use varies considerably from region to region, in the rural areas bicycle trips account for short trips and leisure trips. Bicyclists mostly do not follow the traffic rules and fail to observe the safety norms, which thus increases the risks of a pedal cyclist to be involved in KSI accidents, particularly at night time.

During the past six years the involvement of bicycles in KSI accidents ranged between 6 and 7.5 % of the total number of vehicles involved.

There is no record as regards to the number of bicycles on our roads, since registration of such vehicles is not being carried out therefore the ratio of KSI accidents involving bicycles / 1000 bicycles cannot be worked out.

In Mauritius no such survey has yet been carried out to determine the average use of bicycles and the ‘person kilometres travel’ on bicycle. But as stated above, since bicycles are used mostly for short trips, their contribution to the person kilometres of travel (by all categories of vehicles) would be negligible. It can therefore be deduced that bicyclists run higher risks of being involved in a KSI accident, per km of travel.

CHART VII A

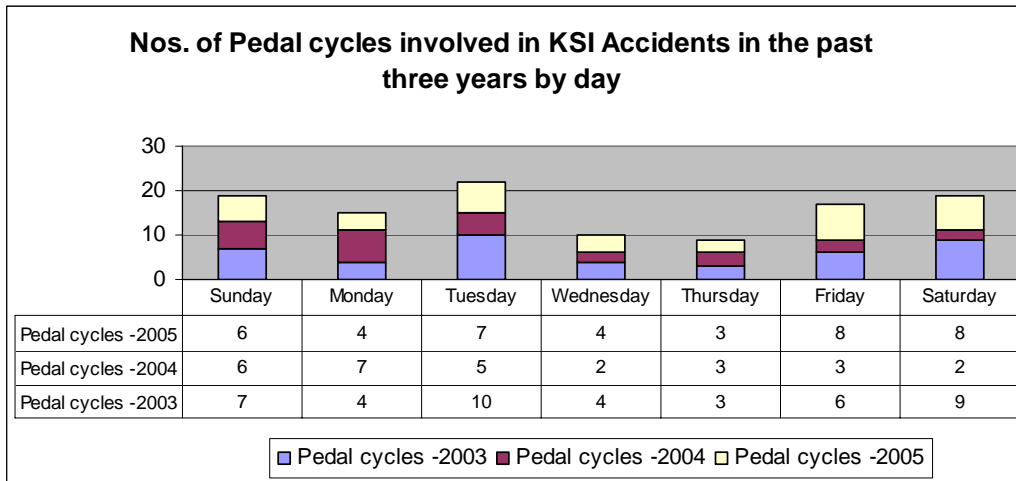


### 7.1 TIME FACTOR

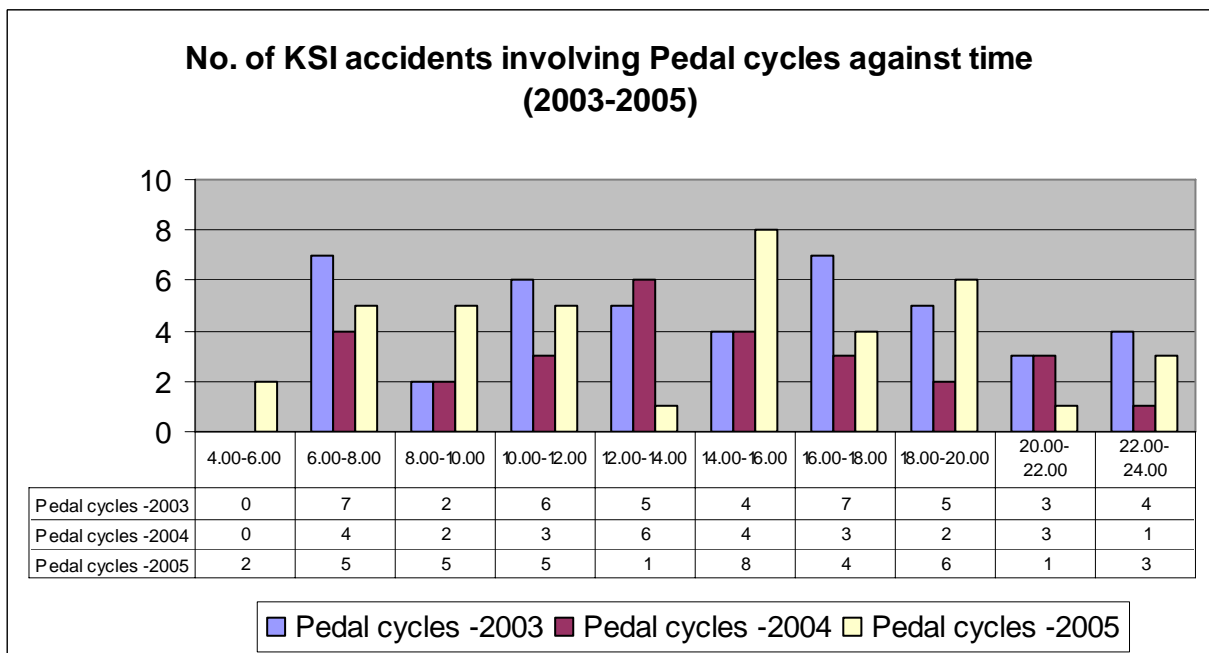
During the past three years, it has been found that KSI accidents involving pedal cycles were highest on Tuesdays followed by Sundays and Saturdays. It is also observed that most accidents occur during day time. Although the travel demand is less at dawn and dusk, the

risk of being involved in a KSI accident for pedal cyclists is high, mainly because of poor inter-visibility between other vehicles users and pedal cyclists.

**CHART VII B**



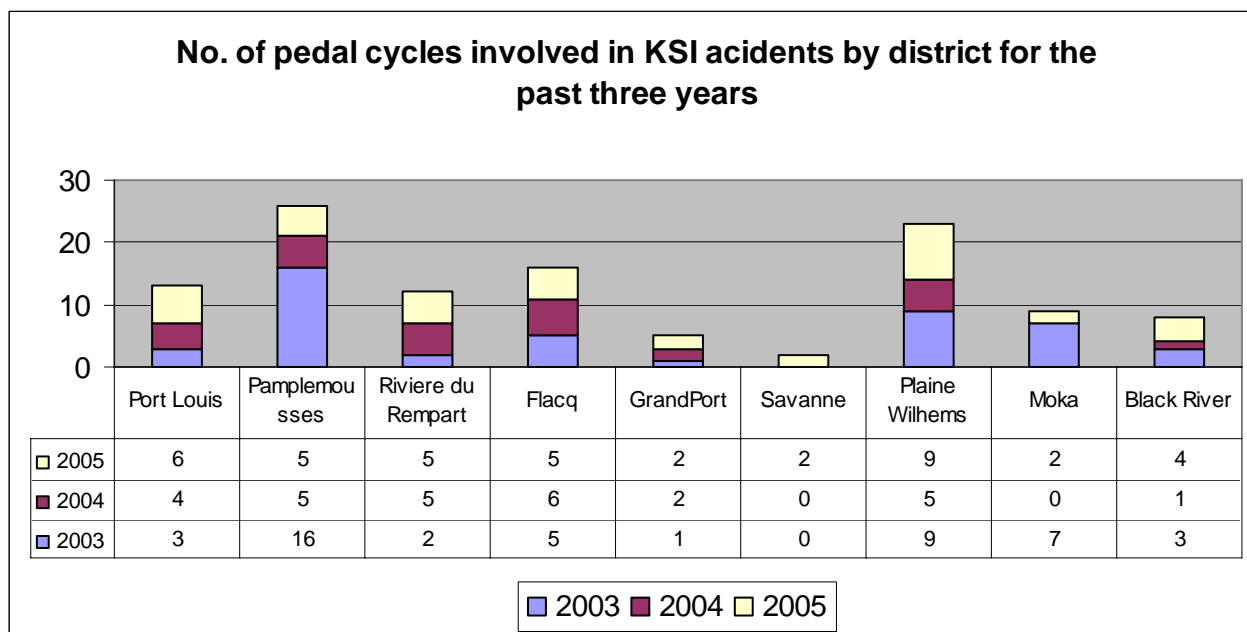
**CHART VII C**



**7.2 LOCATION**

The district having the most KSI accidents involving pedal cycles is Pamplemousses followed by Plaines Wilhems and Flacq district.

CHART VII D



**7.3 GENDER AND AGE**

Bicyclists most at risk are the young males. From statistical records and as indicated in the chart below, during the past three years, 29% of KSI accidents were from the age-group of 11-15 years, among which, 19% were below 15 years of age. 22 % of KSI accidents were between the ages of 41-50 years.

CHART VII E

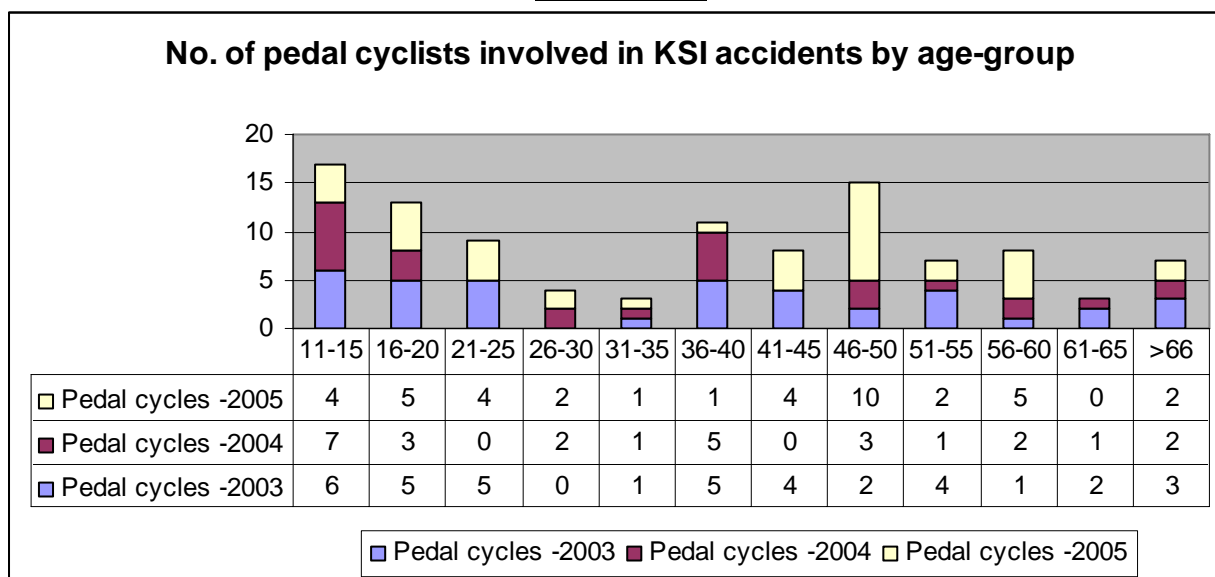
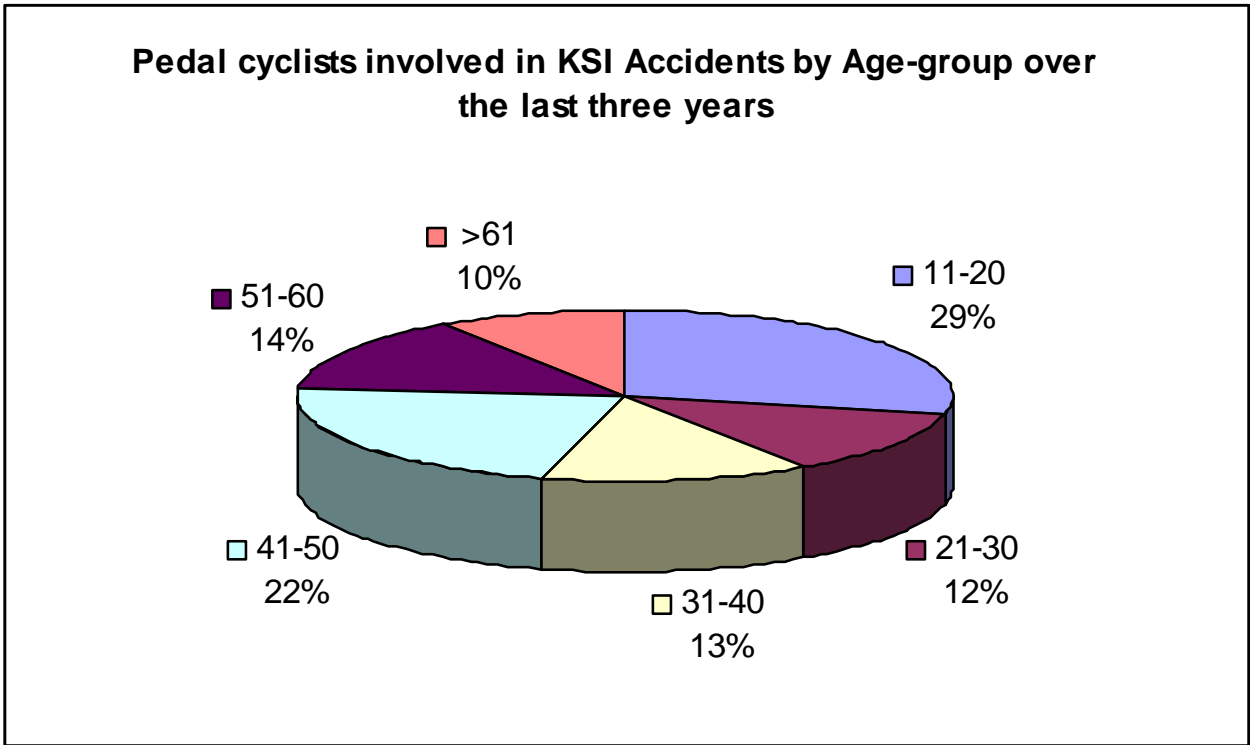


CHART VII F



## 8. ACCIDENTS INVOLVING PRIVATE CARS AND TAXIS

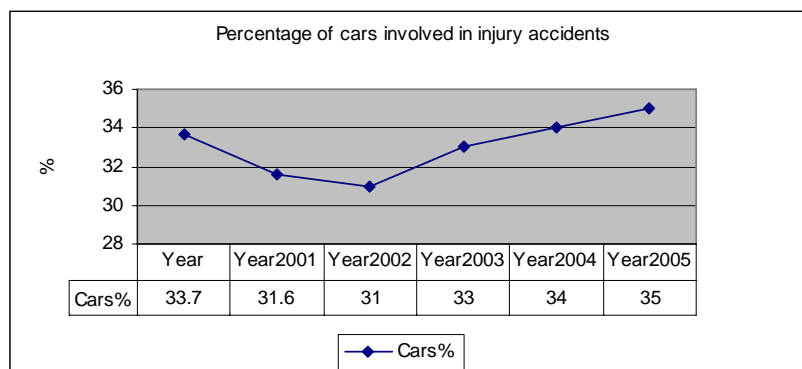
During the period 2003 – 2005 about 34% of the vehicles involved in injury accidents were cars, inclusive of private cars and Taxi cars. From chart 5-A, 5C & 5D at page 7 and 8, it is deduced that cars are the vehicles that are mostly involved in road accidents (KSI) in Mauritius. From our records it is found that the number of cars involved in KSI accidents for the year 2005 is 210 against 160 for the year 2004 and that it has increased from 31% in 2002 to 35 % in 2005.

Cars & taxis constitute 28% of the total fleet of vehicles in Mauritius.

The ratio of KSI Accidents involving cars & taxis /1000 registered cars & taxis is 1.65.

The recorded number of car rear seat passengers killed and seriously injured is found to be 16 and 13 in 2003 & 2004 respectively out of which 6 were killed during each year. There are many more unrestrained passengers who may have been killed or seriously injured, which have not been reported.

CHART VIII A

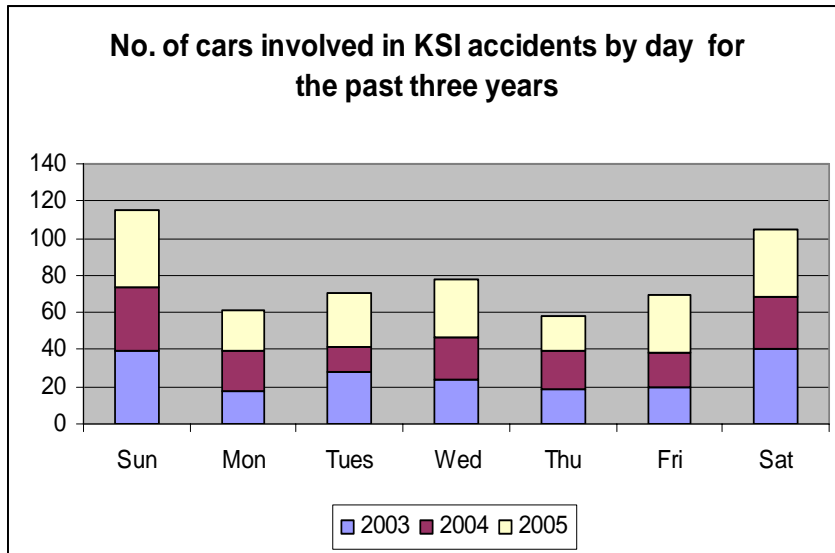


### 8.1 Time Factor

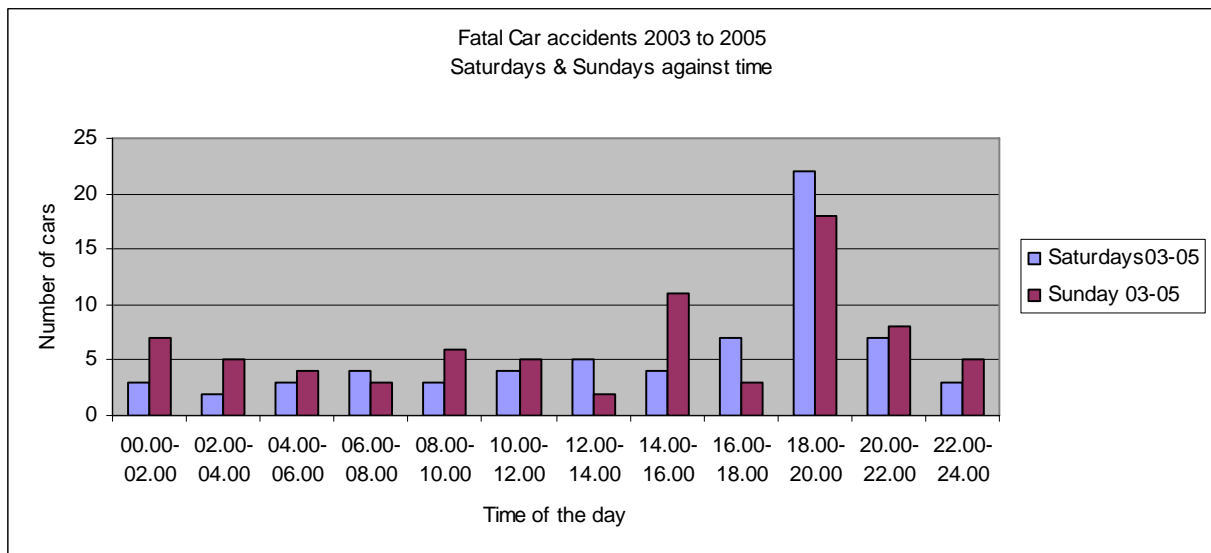
The analysis of accidents involving drivers and passengers of cars (private cars and taxis) reveals that most accidents occur during Saturdays and Sundays.

On Sundays, 58% of the KSI accidents, involving cars occurred between 14.00 –24.00 hours; and on Saturdays 58% of accidents occurred between 16.00 and 24.00 hours, with the peak occurring between 18.00 and 20.00 hours on both days. From these figures it can be deduced that speeding and alcohol might be the most common contributing factors, although no realistic statistical evidence are available for the accidents involving drunken driving and over speeding.

**CHART VIII B**



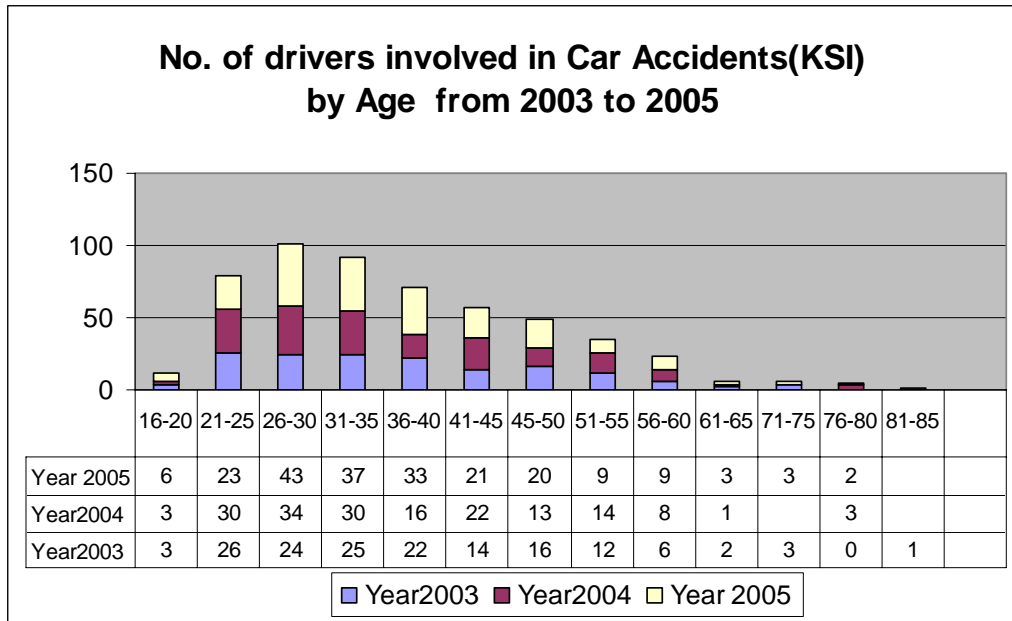
**CHART VIII C**



## 8.2 GENDER AND AGE-GROUP

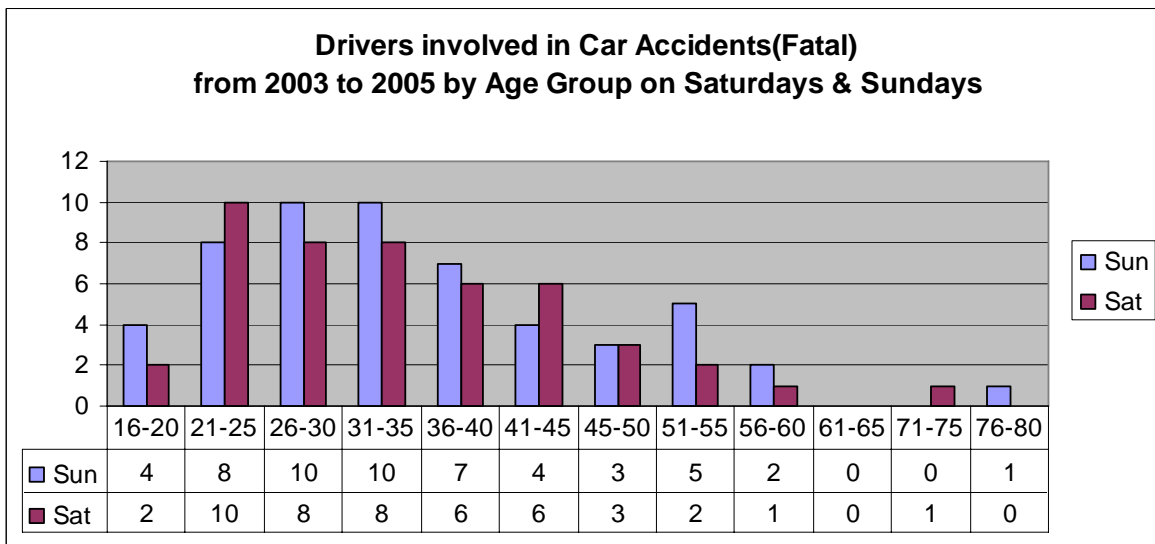
From the chart below it is clear that the most vulnerable drivers are those between the ages of 21 up to 35 years old. The percentage of female drivers involved in KSI accidents involving cars is also very negligible as compared to male drivers.

CHART VIII D



In the analysis by age group also, emphasis has been made on accidents occurring on Saturdays and Sundays. Accordingly it is found that car drivers of the age group 21-25 are most vulnerable on Saturdays, whereas on Sundays, car drivers of the age-group 26-30 and 31-35 are the most vulnerable.

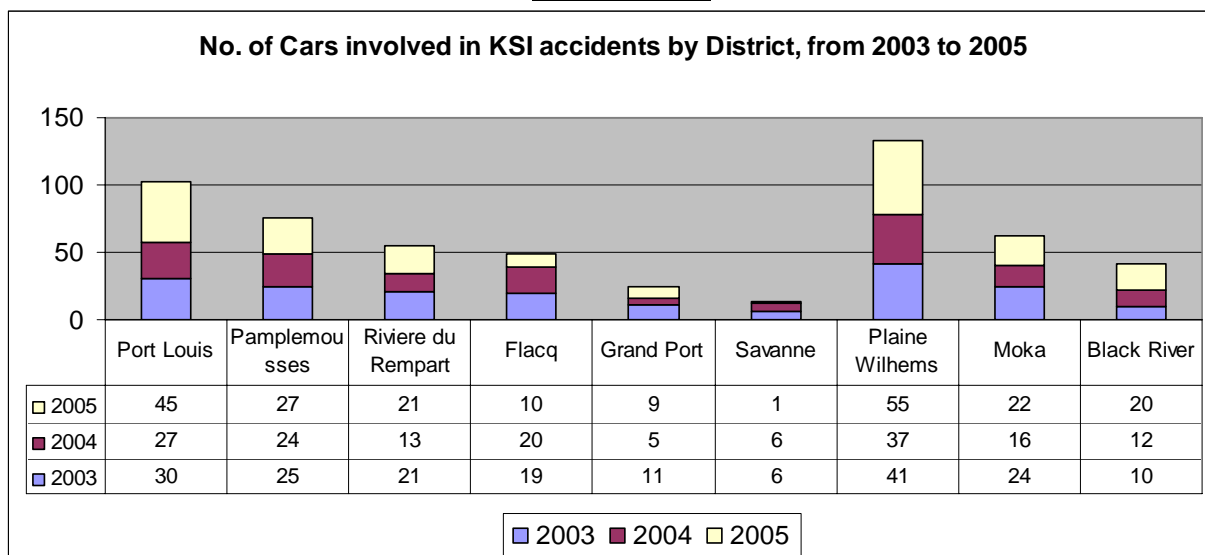
CHART VIII E



### 8.3 LOCATION

From the table below it can be found that the District with the most KSI accidents, involving cars during the past three years is the district of Plaines Wilhems, followed by Port Louis and Pamplemousses respectively.

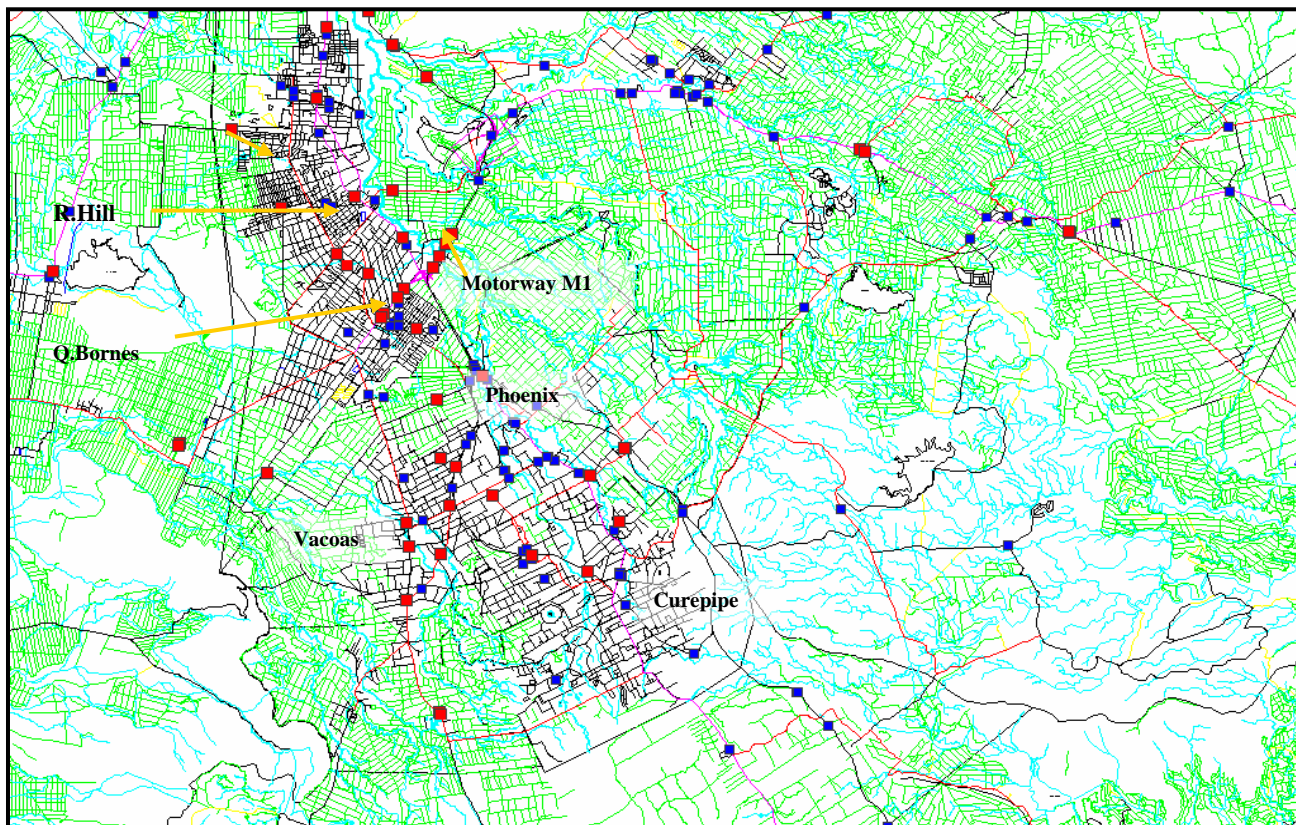
CHART VIII F



MAP VII A

**Cars involved in KSI Accidents in P. Wilhems**

■ - Fatal accidents   ■ - Serious Accidents



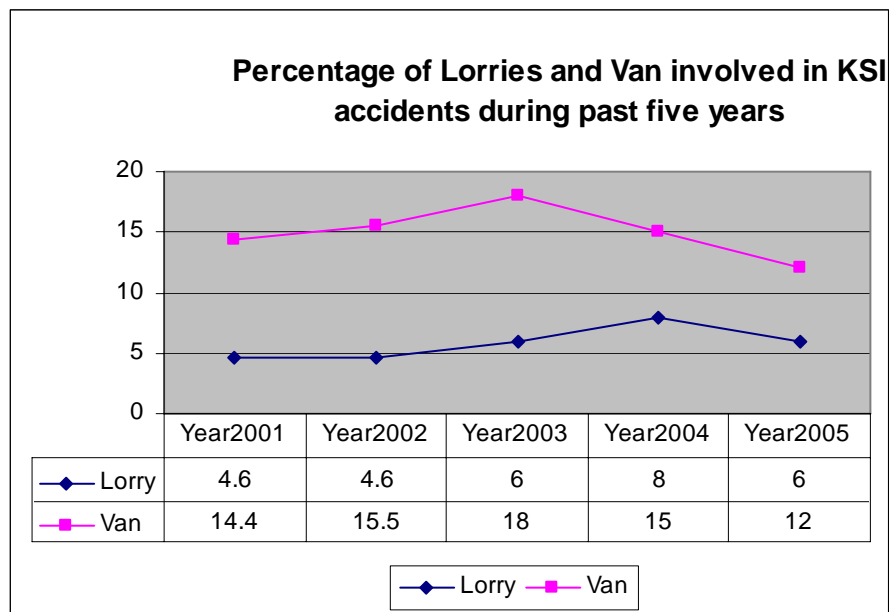
## 9. ACCIDENTS INVOLVING HEAVY GOODS AND LIGHT GOODS VEHICLES

Lorries and trucks constitute only 4 % of the total fleet of vehicles in Mauritius and are involved in 6 to 8% of the KSI accidents every year (in more than 30 KSI accidents). The ratio of KSI Accidents involving Lorries and trucks /1000 Lorries and trucks is 2.82, quite high as compared to other vehicles.

Light Goods vehicle (< 3.5 Tons) which comprises of Vans, Dual purpose vehicles constitute of 22 % of the total fleet of vehicles and it is observed that this category of vehicle was involved in 15 % of the KSI accidents on an average over the last five years. However this figure came down to 12% in 2005.

The ratio of KSI Accidents involving LGV /1000 LGVs registered is 3, quite high as compared to other vehicles.

CHART IX A



### 9.1 Time Factor

The analysis of accidents involving Light Goods and Heavy Goods vehicles reveals that occurrence of these accidents are spread over the whole week.

It is however noted that Sunday is the day on which the number of KSI accidents involving Light Goods Vehicles is the highest, followed by Thursday.

The scenario for Heavy Goods Vehicles is quite different with its peak on Thursdays and it is also noted that on Sundays it is the lowest, most probably because of the volume of Heavy goods vehicles on our roads is lowest on Sundays as compared to the other days.

CHART IX B

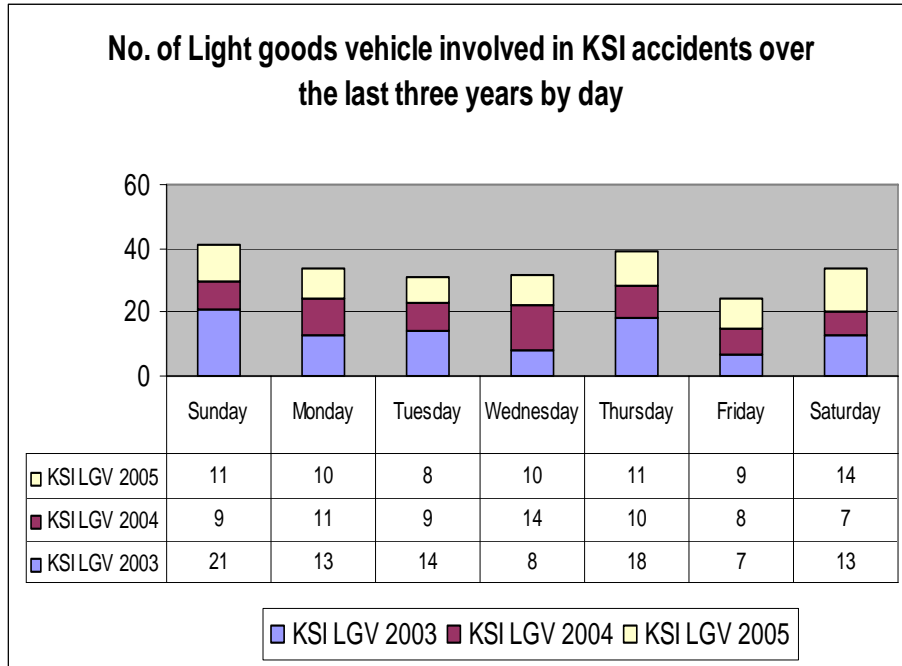
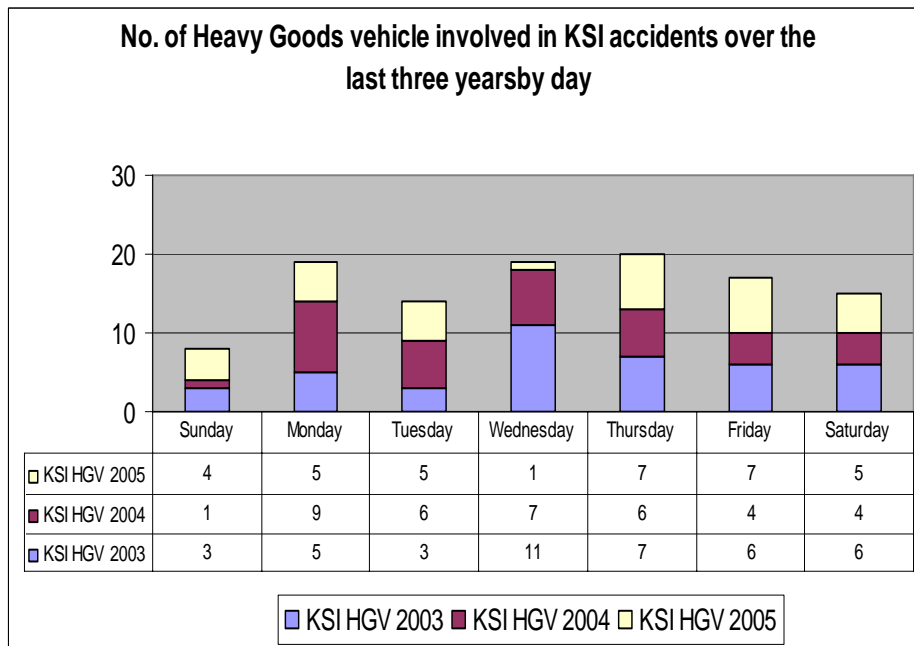
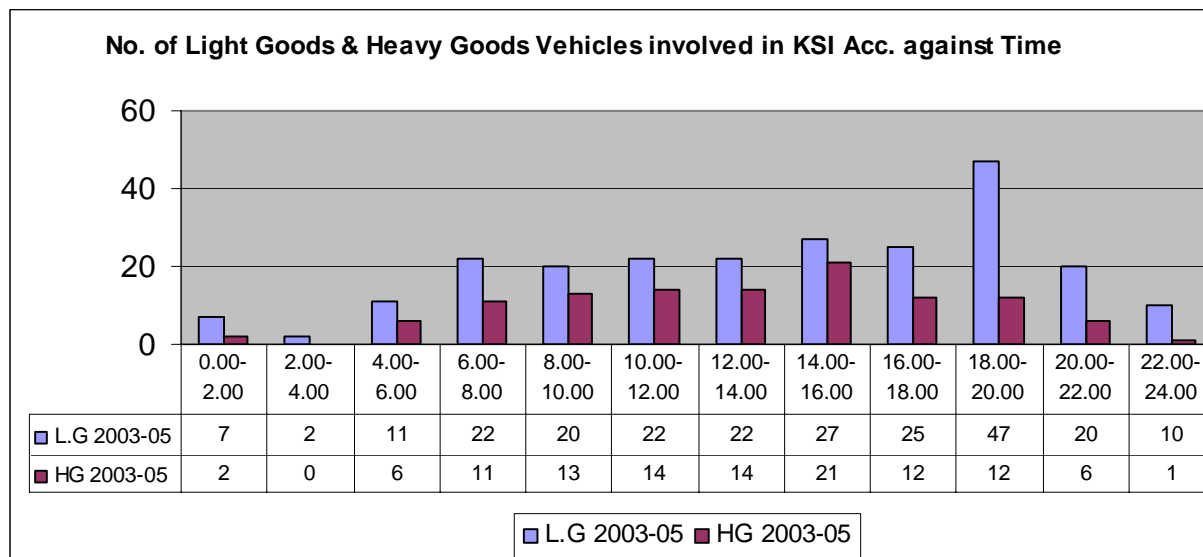


CHART IX C



It is observed from chart below, that Light Goods vehicles are most likely to be involved in KSI accidents between 18.00 and 20.00 hours and Heavy Goods vehicles between 14.00 & 16.00 hours.

**CHART IX D**

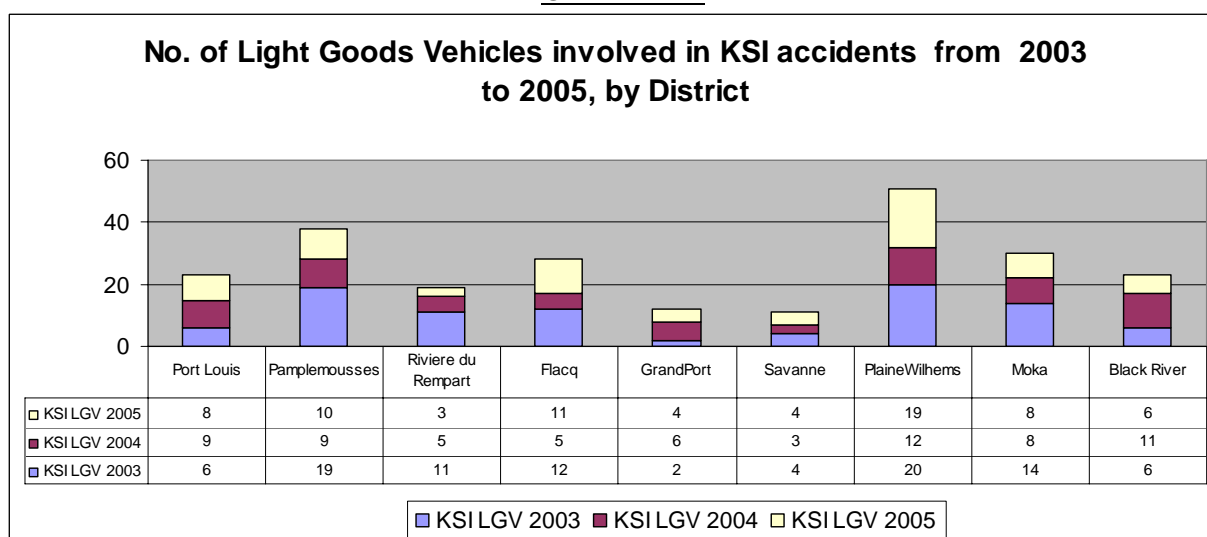


## 9.2 **LOCATION**

### 9.2.1 **LIGHT GOODS VEHICLES**

From the table below it can be found that the District with the most KSI accidents, involving Light Goods vehicles during the past two years is the district of Plaines Wilhems, followed by Pamplemousses.

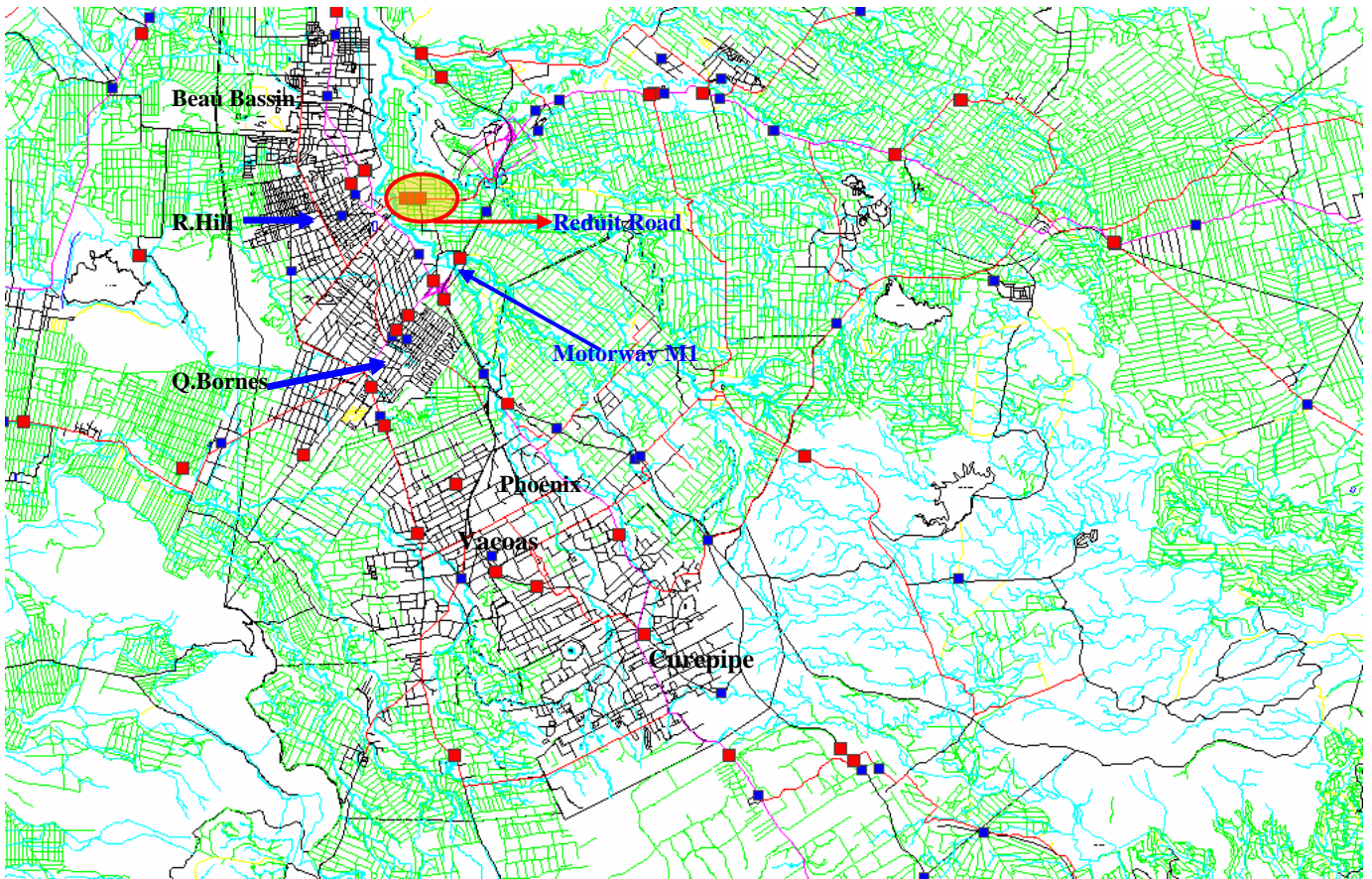
**CHART IX E**



## LGV Ksi in P Wilhems

### MAP IX A

■ - Fatal accidents   ■ - Serious Accidents



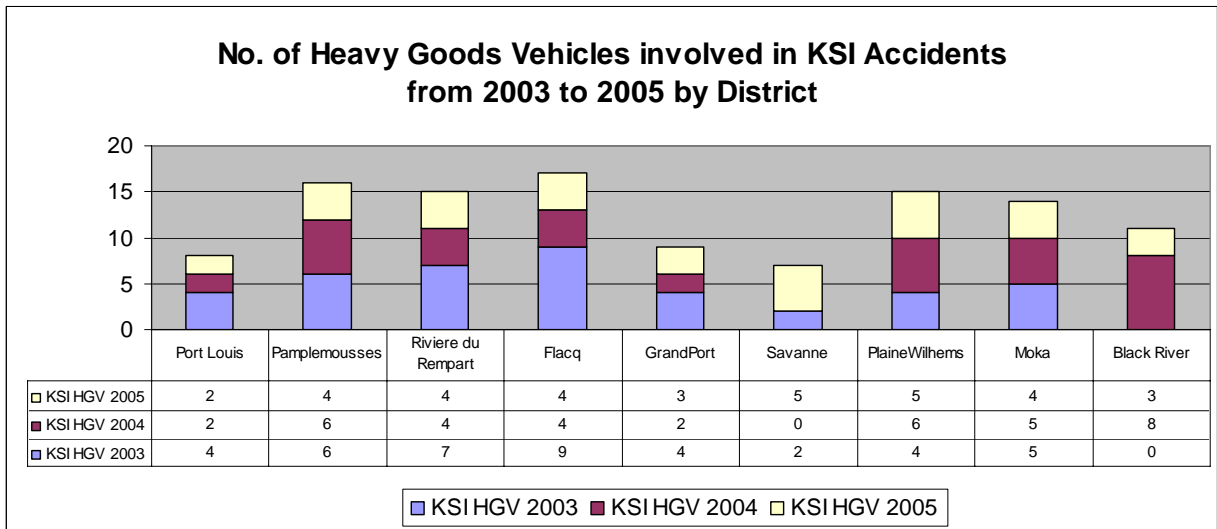
From the MAP IX A, it can be seen that KSI accidents involving Light Goods Vehicles do not occur at a particular spot, but are rather scattered and occurs mostly along the classified roads. It is also seen that along Redit road there have been many fatal accidents involving LGVs. This area has been analysed to determine the causes of the accidents and necessary remedial measures are being incorporated in the on-going road infrastructural development works. The situation will continue to be monitored.

#### 9.2.3 HEAVY GOODS VEHICLES

The District with the most KSI accidents involving Heavy Goods Vehicles over the past three years is **Flacq**, followed by Pamplemousses but the figures are comparable to the District of Riviere Du Rempart, Plaines Wilhems and Moka.

However, it should be noted that for the year 2004 alone the District of Black River had the highest number of KSI accidents involving HGVs.

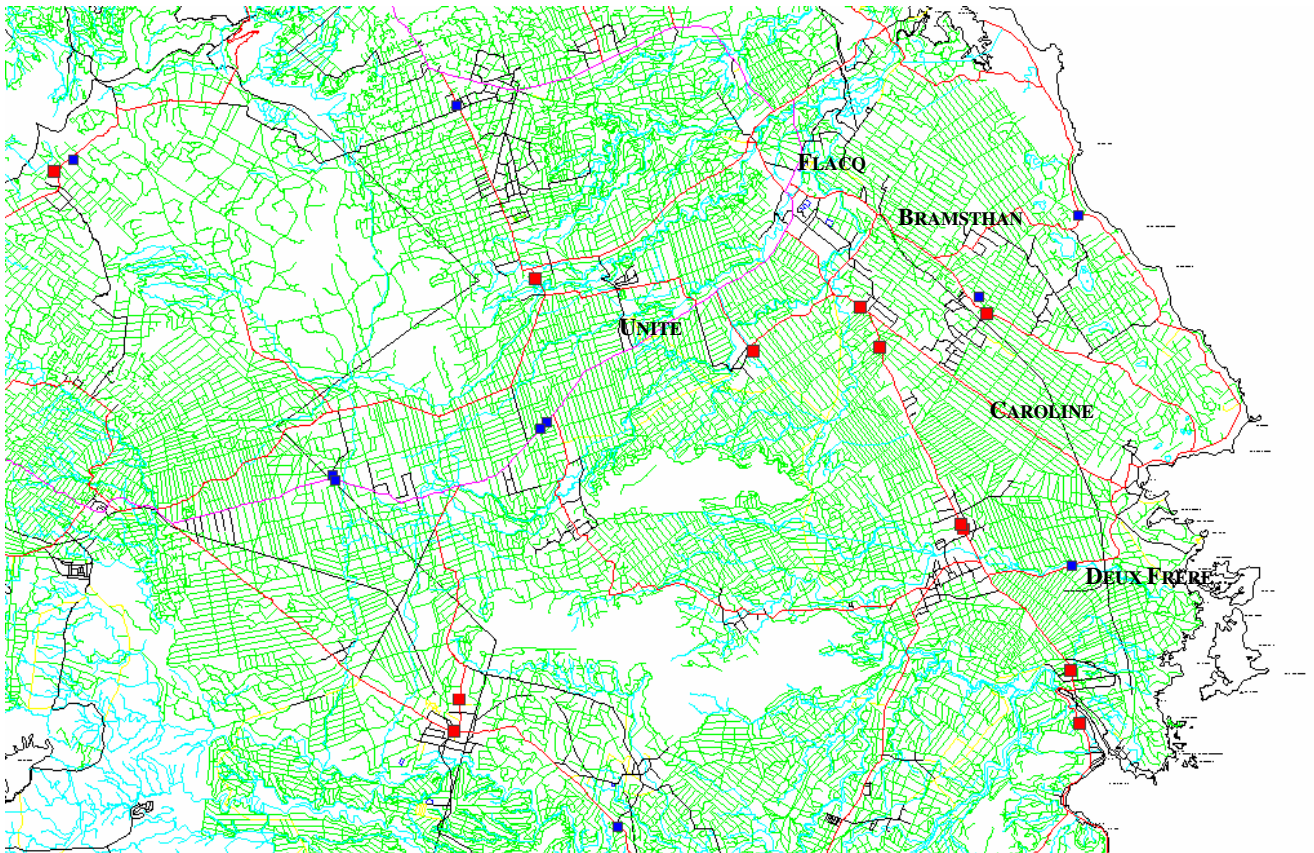
CHART IX F



MAP IX B

Heavy Good Vehicles involved in KSI Accidents in Flacq

■ - Fatal accidents   ■ - Serious Accidents



### 9.3 GENDER AND AGE-GROUP

From the chart below it is clear that the most vulnerable drivers of LGVs are those in the age group between 26 to 35 years old and for HGVs are those in the age group between 36-45 years

CHART IX G

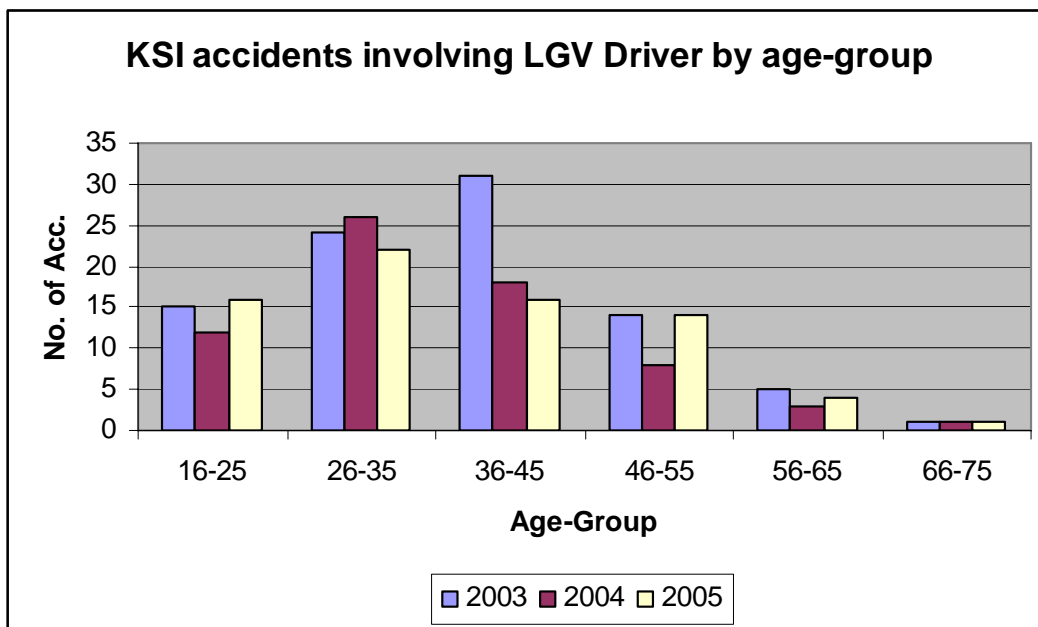
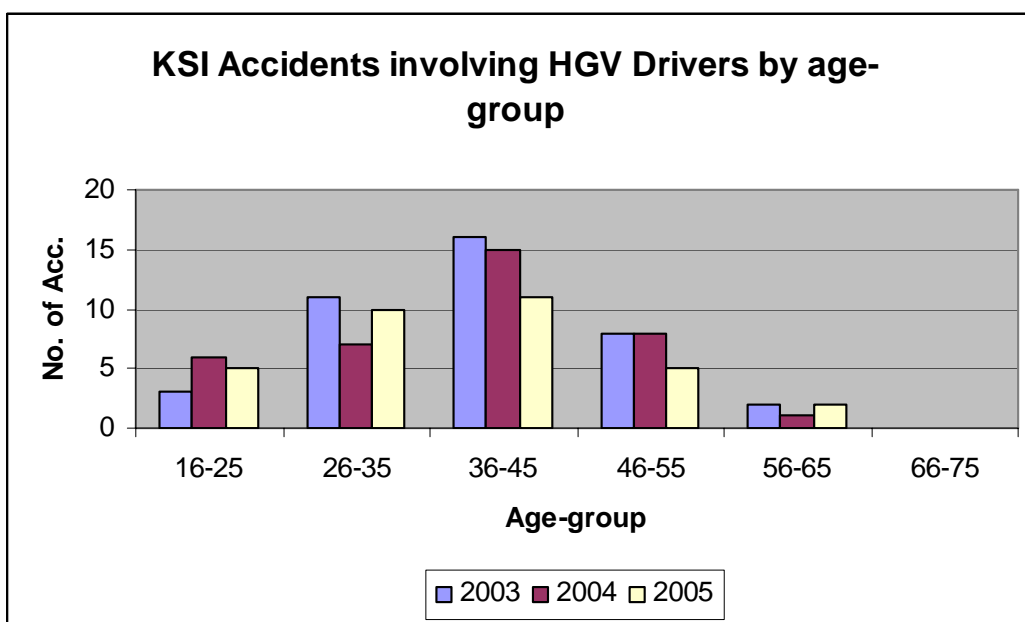


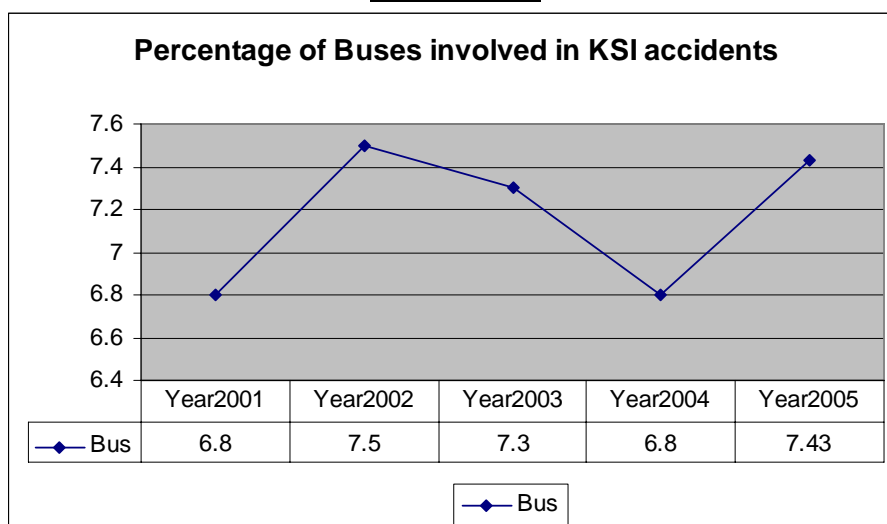
CHART IX H



## 10. ACCIDENTS INVOLVING BUSES

Buses (excluding minibuses) constitute only 1 % of the total fleet of vehicles in Mauritius and are involved in 7 to 10% of the KSI accidents every year (in more than 30 - 45 KSI accidents). The ratio of KSI Accidents involving buses /1000 buses is 17.5, very high as compared to other vehicles.

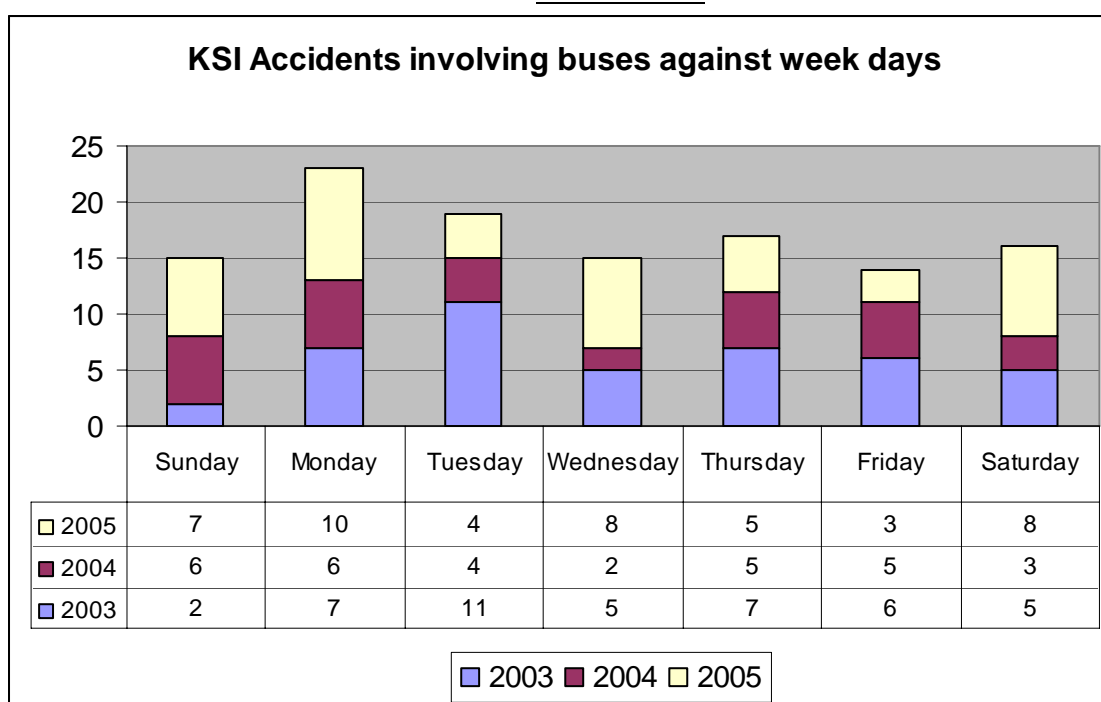
CHART X A



### 10.1 Time Factor

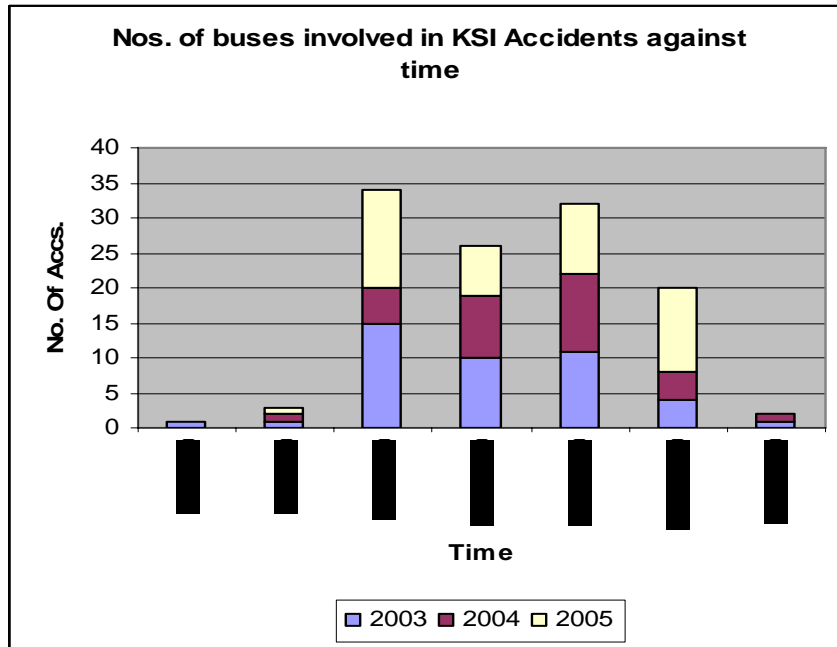
Involvement of buses in KSI accidents spread over the whole week. Over the past three years the highest number recorded was on Monday.

CHART X B



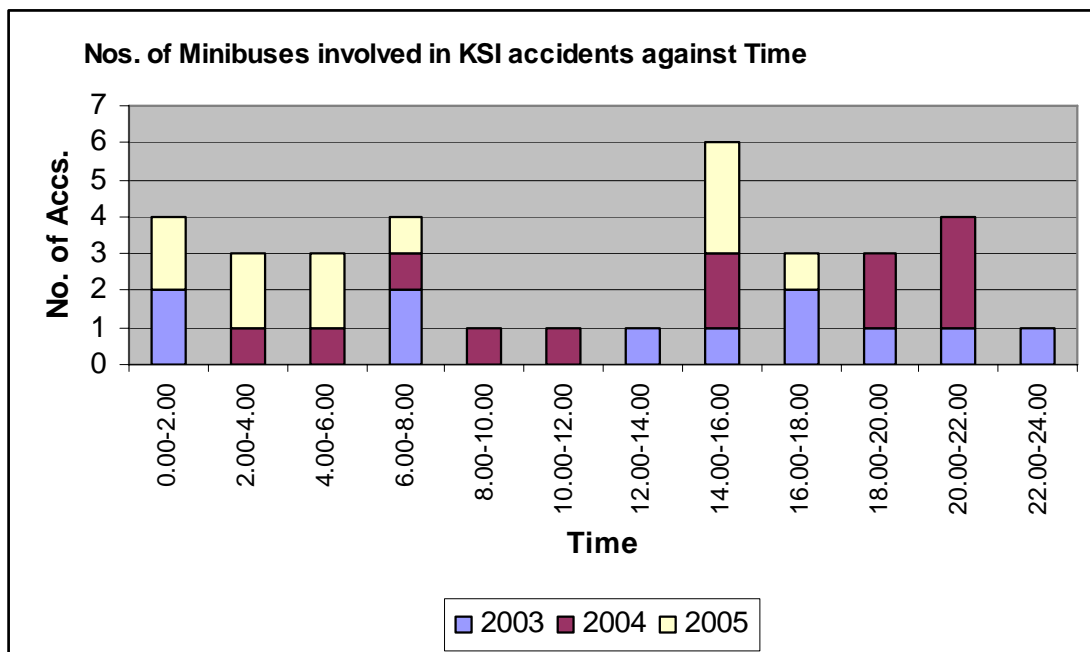
The time between which KSI accidents involving buses is highest is between 6.00 and 10.00 a.m. It is furthermore observed that between 14.00 and 18.00, the number of accidents is quite high as the travel demand by bus is very high during these times of the day.

CHART X C



Minibuses are involved in accidents mostly between 14.00 and 16.00 hours.

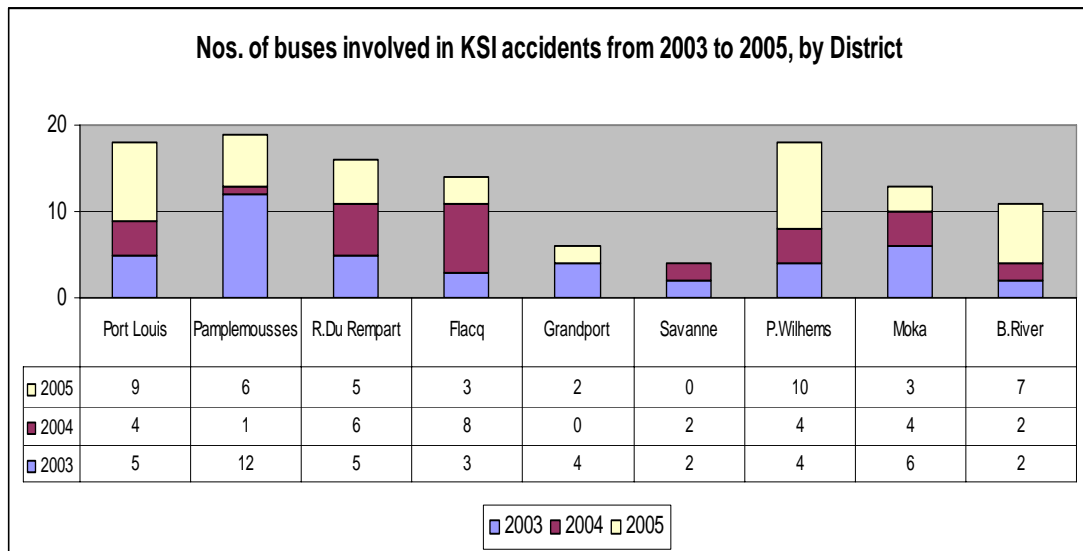
CHART X D



## 10.2 LOCATION

From the table below it can be found that the District with most KSI accidents over the past three year's period of 2003 - 2005, involving buses is the district of Pamplemousses, followed by Port Louis & Plaines Wilhems.

CHART X E

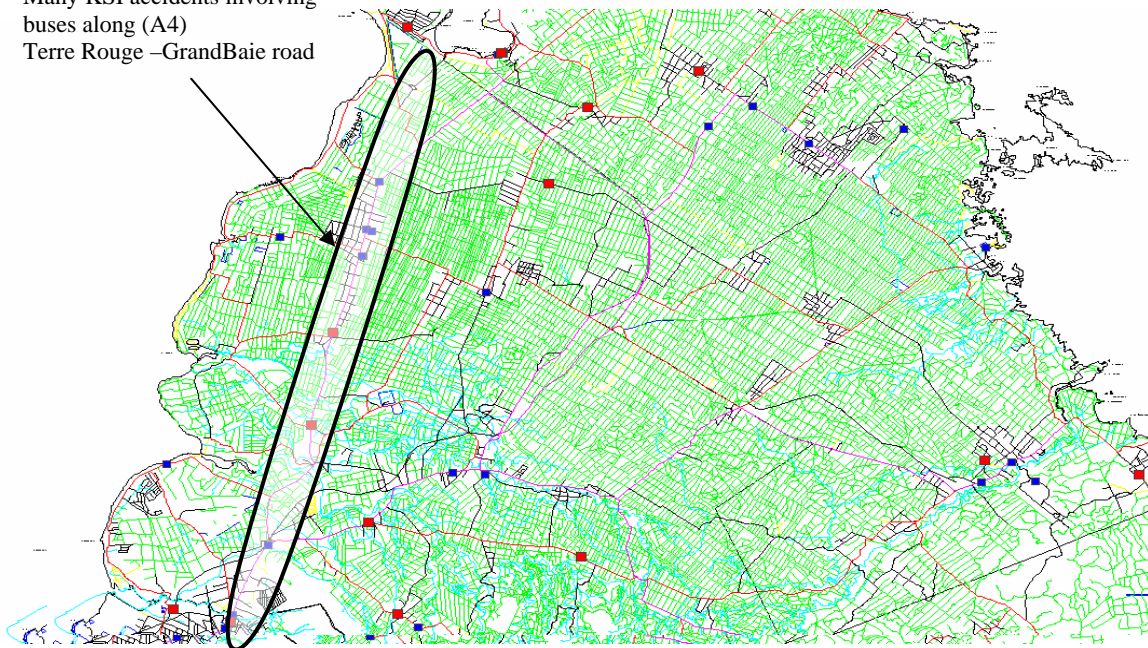


MAP X A

### BUSES INVOLVED IN KSI FOR DISTRICT OF PAMPLEMOUSSES.

■ - Fatal accidents    ■ - Serious Accidents

Many KSI accidents involving buses along (A4) Terre Rouge –GrandBaie road

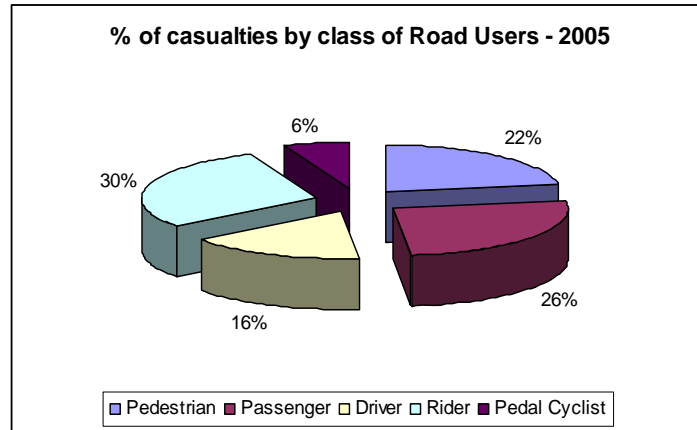


**Terre Rouge- Grand-Baie road has the highest number of KSI accidents in the district of Pamplemousses and it ranks third, in the whole of Mauritius.**

## 11. PEDESTRIANS IN KSI ACCIDENTS

Pedestrians are road users subjected to high risks of being involved in KSI accidents and they rank third, in the number of Killed and Seriously Injured, by class of road users (with an average of 22 % of the total number of road casualties per year), despite their relatively low exposure on the road in terms of 'Kilometres travelled'.

CHART XI A



In terms of fatal accidents, pedestrians accounted for 33.5 % of the total number of road users killed during the period 2001-2005 (refer table XI A & chart IX B).

TABLE XI A

Description	Year					
	2001	2002	2003	2004	2005	2001-05
Pedestrians	47	51	45	51	42	<b>236</b>
All road Users	126	158	139	144	136	<b>703</b>
% of Pedestrian killed	<b>38</b>	<b>32</b>	<b>32</b>	<b>35</b>	<b>31</b>	<b>33.5</b>

CHART XI B

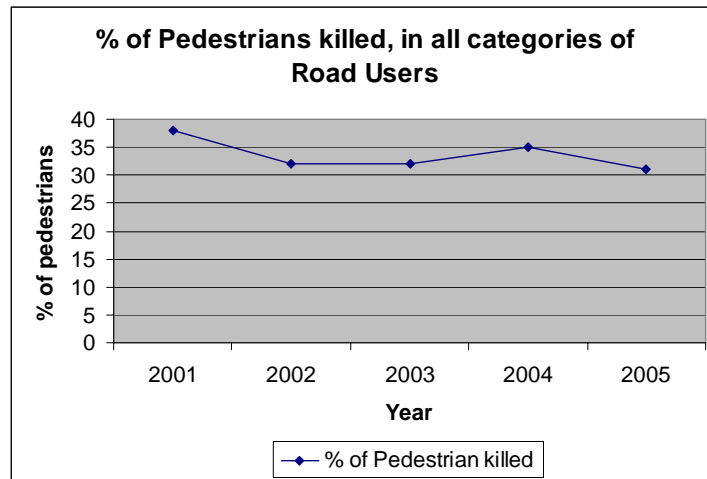
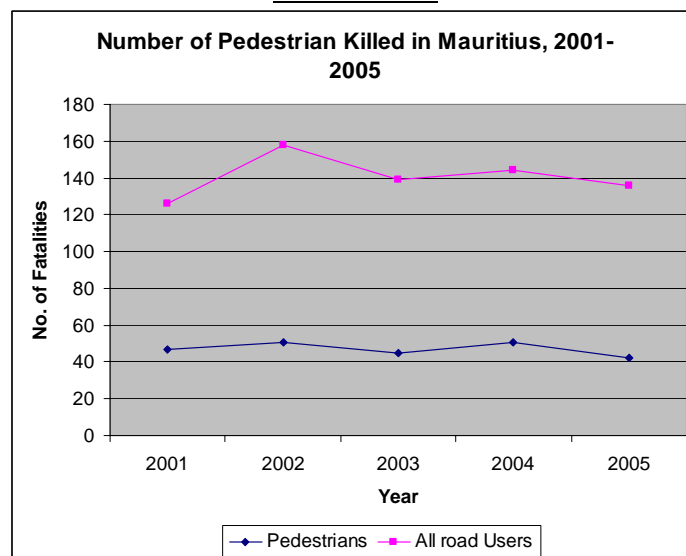


Chart 'XI C' shows the number of pedestrians killed on our roads over a period of five years from 2001 to 2005, in comparison to the total number road users killed.

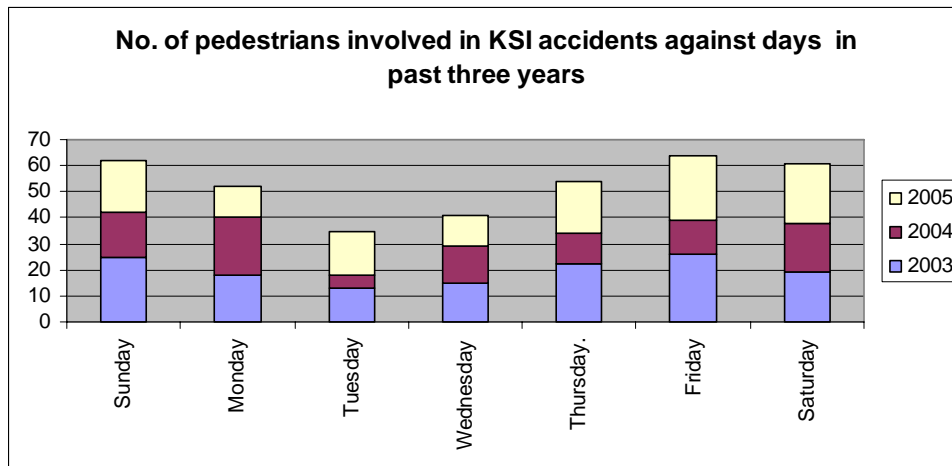
CHART XI C



### 11.1 Time Factor

Chart XI D shows the frequency of pedestrian casualties (KSI) during each day of the week. The chart shows that from Thursday to Sunday the risk of having pedestrians involved in KSI accidents is quite high as compared to the other days.

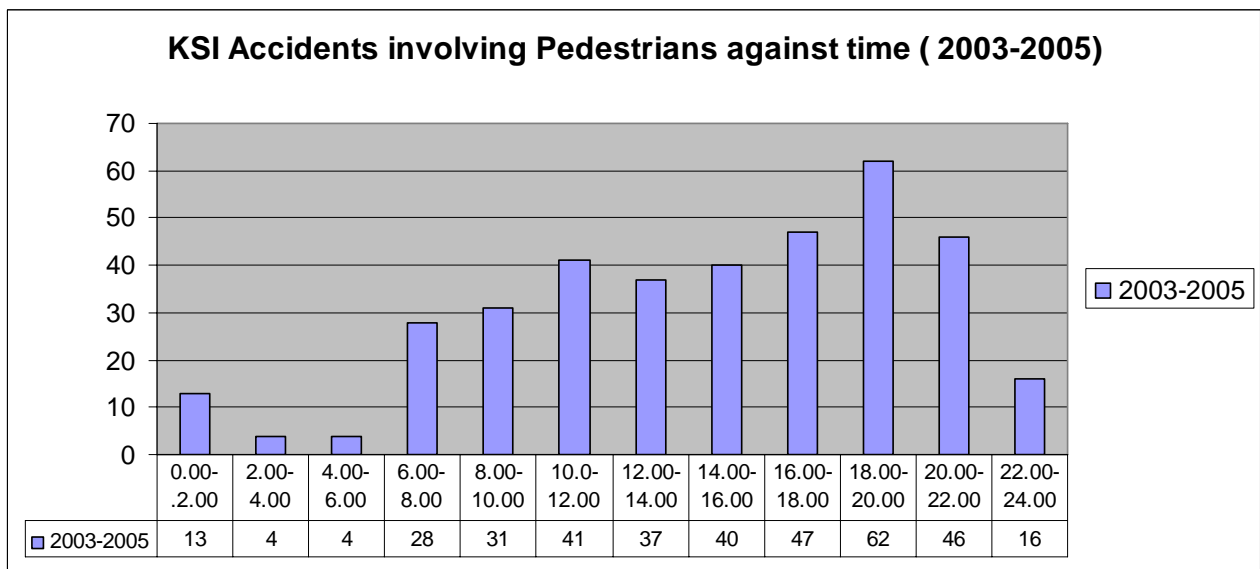
CHART XI D



From Chart 'XIE', it may be observed that pedestrian accidents occur during all times of the day but they are over-represented between 16.00 and 22.00. Of all the KSI accidents which occurred during the past three years 42 % occurred during these hours.

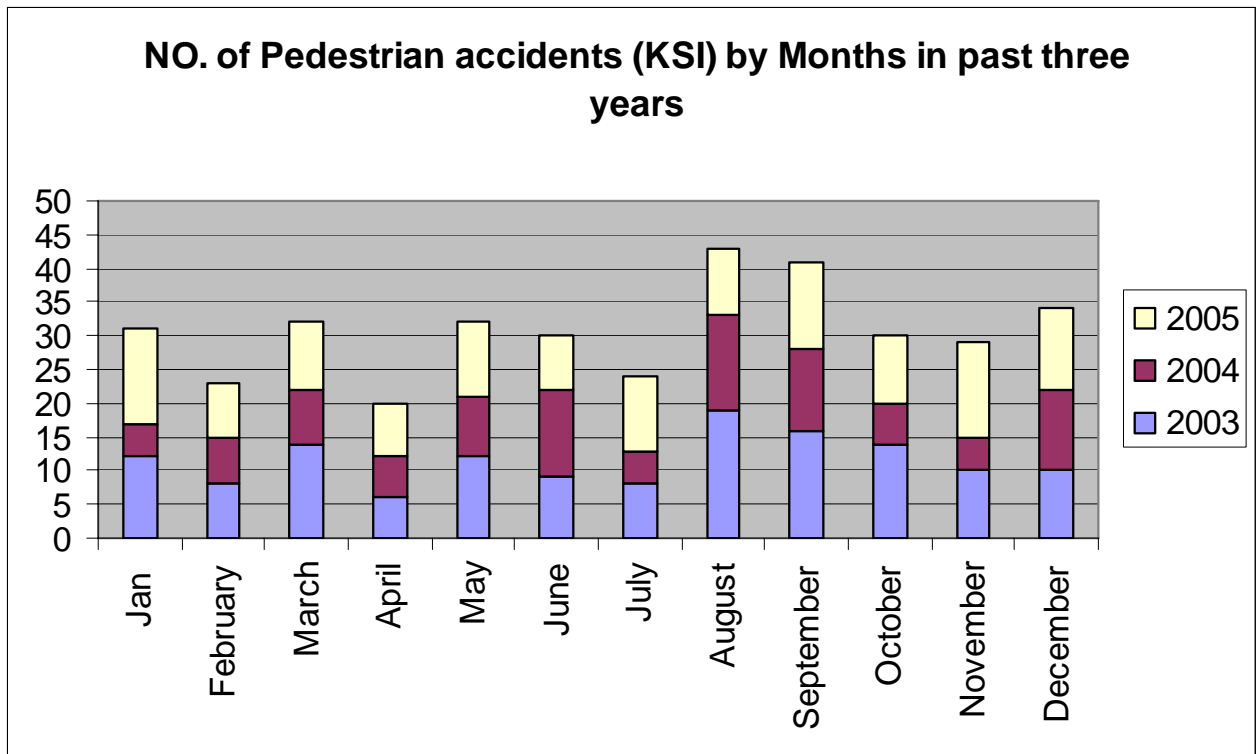
The peak between 18.00 and 20.00 hours is particularly a high-risk time for pedestrians, because of the high level of pedestrian activities coupled with nightfall.

CHART XI E



KSI accidents involving pedestrians are quite evenly distributed over all months of the year but are highest during the month of August and September as shown in the chart 'XIF' below.

CHART XI F



**11.2 GENDER AND AGE-GROUP**

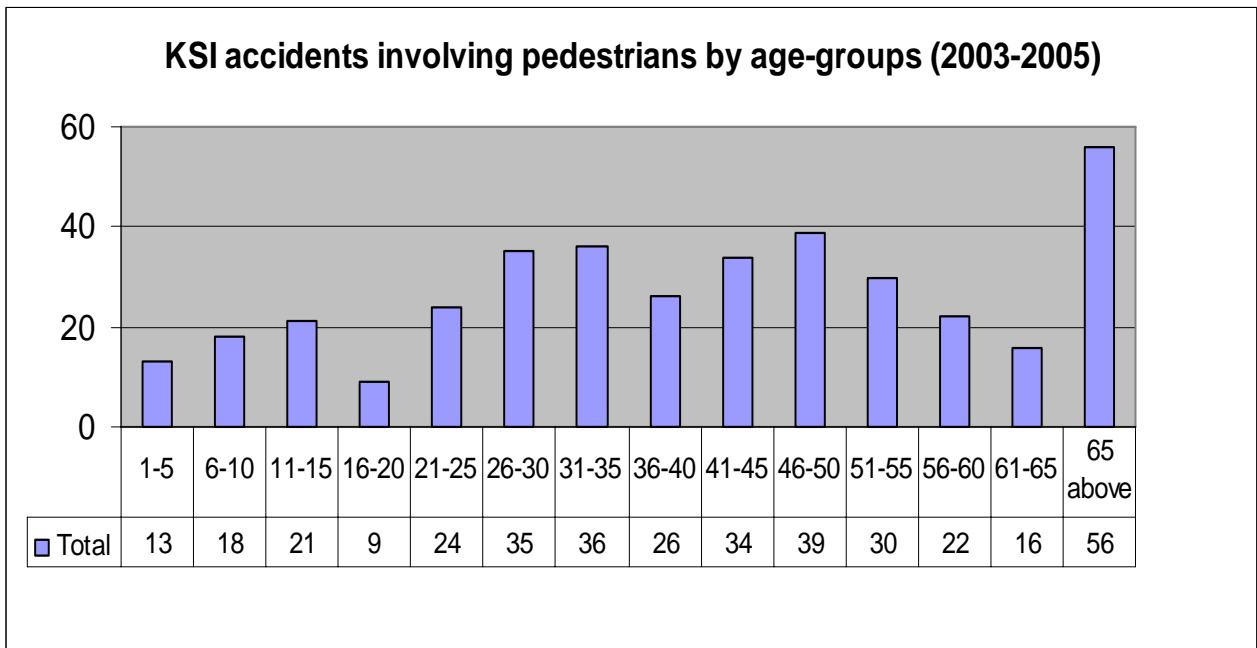
Over the past three years, the number of male pedestrians ‘killed and seriously injured’ was far higher than that of their female counterpart. The male represented 68% while the females 32%.

The age-group of pedestrians running higher risks of being involved in KSI accidents is from 26 to 55 years. However the 65+ are also very much at risk, while youngsters between 16 and 20 years run lesser risk of being involved in a KSI accidents.

TABLE XI B

Gender	Years			Total
	2003	2004	2005	
Male	96	79	82	257 (68%)
Female	42	29	51	122 (32%)

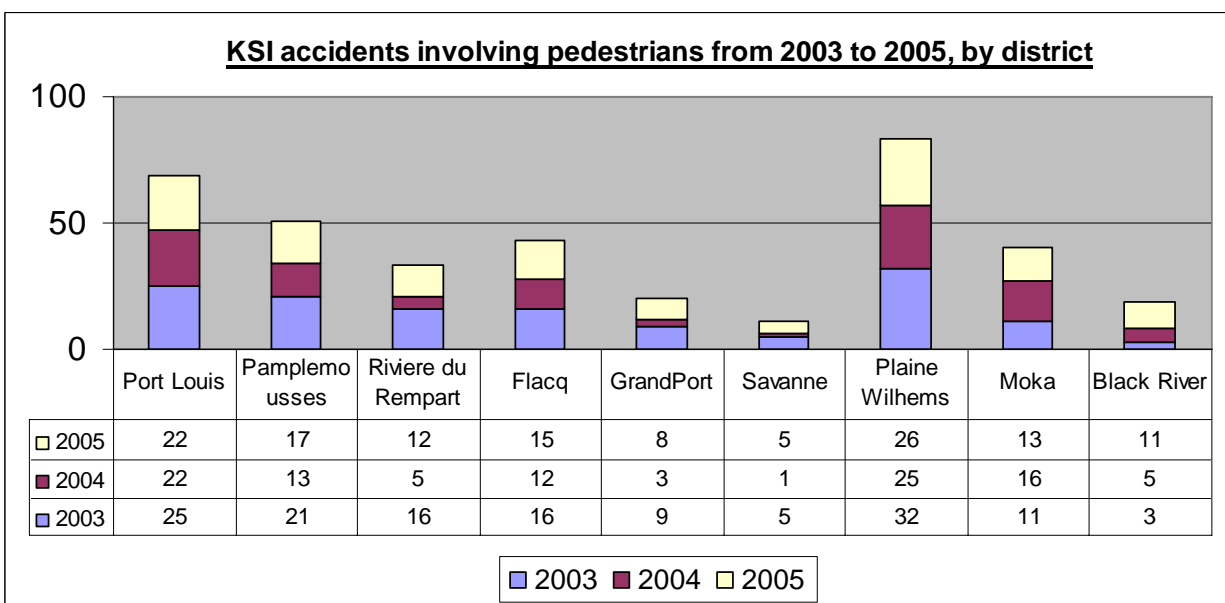
CHART XI G



### 11.3 LOCATION

The district which has recorded the most pedestrians killed and seriously injured is the district of Plaine Wilhems, followed by Port Louis, where pedestrian activities are highest. Savanne is the district having the least Pedestrians involved in KSI accidents.

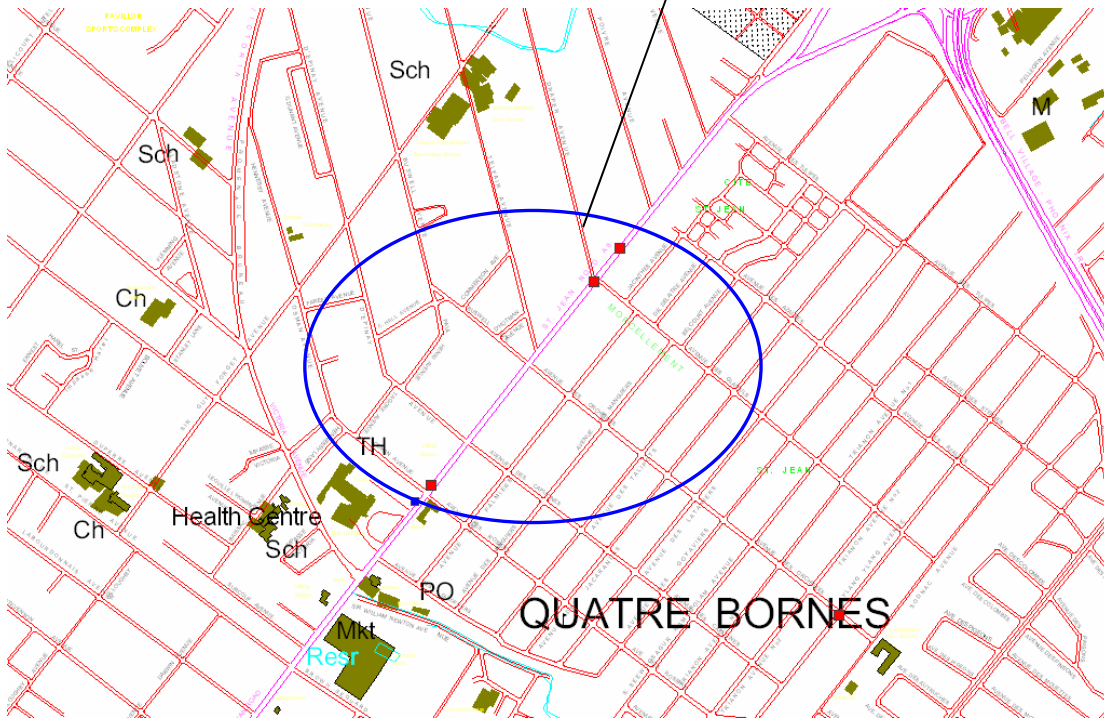
CHART XI H





MAP XI C

ST JEAN ROAD, QUATRE BORNES



## 12. CONCLUSIONS

From the above analysis it is clear that for each category of vehicles and road users, there are specific factors which contribute to their involvement in KSI accidents. These factors can be isolated and treated separately, through the Education, Enforcement or Engineering approach.

Excessive and inappropriate speeding is at the core the road safety problem and is directly related to the severity of accidents (Inappropriate speed refers to speed unsuitable for the prevailing road and traffic conditions).

It is also clear that road accidents is spread over long stretches of roads and do not always occur at a particular spot, hence the concept of black spots does not apply much in the treatment of accidents in Mauritius. However the few black spots which were observed up to now have been treated and are now yielding good results.

It can be concluded that:

- A. Mostly males are involved in accident causation. It can also be concluded that both young age and lack of experience (26-35 years of age) contribute to high risk involvement in KSI accidents of many drivers/riders. Other factors behind the elevated risk of young drivers are as follows:
- Psychological factors (such as risk taking attitude, seeking of thrilling and exciting experiences, etc..).
  - Alcohol and fatigue
  - Excessive speed.
  - Vehicle characteristics and particulars (Contract cars, Brand of cars etc..)
- B. The risk of Unprotected road users ( Pedestrians, Two Wheelers etc..) to be involved in KSI accidents, in mixed traffic conditions is very high, particularly at time of rush. Risk factors associated with unprotected road users include the followings:
- Poor visibility
  - Hours of darkness
  - Clothing and weather conditions
  - Poor understanding of traffic codes

- Non-wearing of protective equipment such as reflectorised jackets/clothing, crash helmets, bicycle helmets etc...

C. From the table XI A, it is concluded that the category of vehicles which has the maximum risk of being involved in KSI accidents are buses, followed by light goods & Heavy goods vehicles.

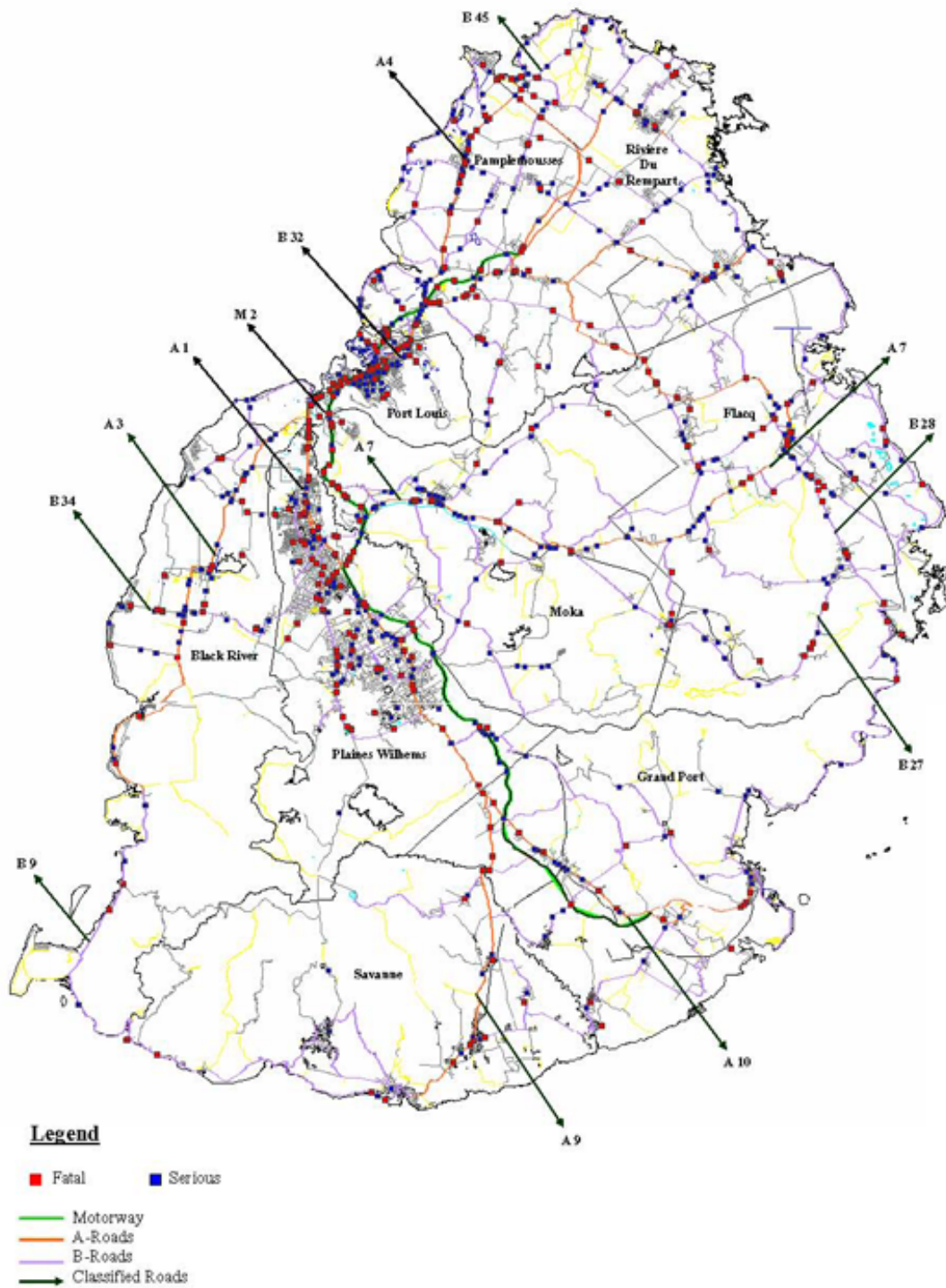
**TABLE XIA**

S.N	Categories of vehicles	Ratio KSI accidents /1000 registered veh	(%)Rate of veh involved in KSI Accidents (Yr 2005)	Remarks
1	Cars ( Private and Taxis)	1.65	35	%Rate of accident ranks 1 <sup>st</sup> , highest.  Risk is low.
2	Auto/Motorcycles	1.42	31	% Rate of accident ranks 2 <sup>nd</sup> .  Risk is low.
3	Light Goods vehicles	3	12	%Rate of accident ranks 3 <sup>rd</sup> .  Risk is high.
4	Buses	17.5	9	%Rate of accident ranks 4 <sup>th</sup> .  Risk of getting involved in KSI Accidents is highest.
5	Heavy Goods Vehicles	2.82	6	%Rate of accident ranks 5 <sup>th</sup> .  Risk is high as compared to above vehicles.

Heavy vehicles and buses involved in road accidents mostly cause injuries to unprotected road users. Drivers of such vehicles often experience poor visibility of other road users from their vehicles, when loaded. They often fail to recognize other road users caught in their blind spots (in the zones at the adjacent sides of their vehicles).

D. This analysis has been carried out to identify the magnitude of the Road Safety Problem in Mauritius. Hopefully the NRSC can assist to reduce the Death and Serious injuries toll by mechanism of partnerships and coordination of road safety activities with all stakeholders.

**KILLED AND SERIOUS INJURY (KSI) ROAD ACCIDENTS (2003-2005)**



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This Report would not have been possible without the collaboration of many people particularly the staff of the Traffic Management and Road Safety Unit and the Central Statistics Office.

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The Police Department also deserve special mention for their collaboration in maintaining the accident database and for the regular submission of Road Accident report form 'PF 178'.

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World Report on road traffic injury prevention, World Health Organisation, Geneva, 2004.