

Transport and Transportation in KwaZulu-Natal

2002 Facts & Figures

T² Centre



SECTION 1 – GENERAL

1.1 INTRODUCTION

The KwaZulu-Natal Department of Transport is responsible for the construction and maintenance of provincial, district and local roads in the province. In addition to these functions, the department administers, regulates and develops policies with respect to public transport, freight, and vehicle licensing. The Transportation Statistics handbook is a compilation of the latest facts and figures on the various aspects of the department's business. It is intended to be the premier source of "on the fly" data for managers in and outside the department. The handbook deals with roads, bridges, rail, harbours, airports as well as public transport. It was prepared by Africon Engineering International (Pty) Ltd in collaboration with the T² Centre.

1.2 DEPARTMENTAL BUDGETS

Programme	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Administration	50,849	42,758	49,176	66,500	76,387	96,884
Roads	466,008	371,151	504,449	654,539	851,096	877,763
Road Traffic	68,201	100,983	123,819	156,247	158,550	187,893
Public Transport	0	0	20,015	17,915	19,704	19,739
Auxilliary Services	12,772	1,780	7,624	10,158	9,088	7,837
Total	597,830	516,672	705,083	905,359	1,114,825	1,190,116

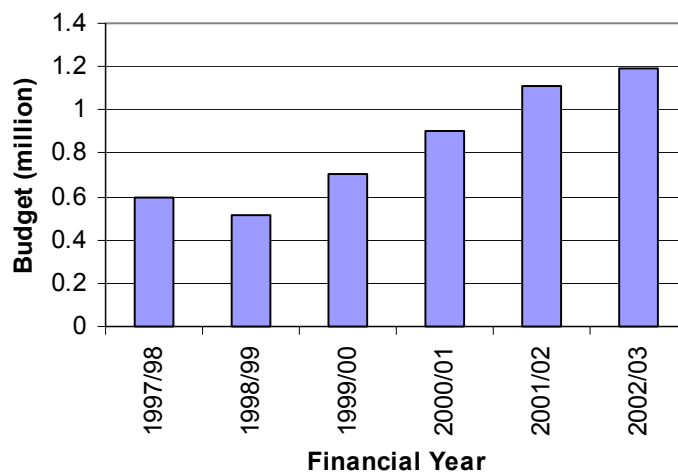


Figure 1.1: Departmental budgets

1.3 COST OF PETROL

The cost of petrol has a significant influence on almost all aspects of transportation. There has been a steady increase in the price of petrol over the last five years. As depicted in Figure 1.2, the price of petrol has increased at an average annual rate of about 15%.

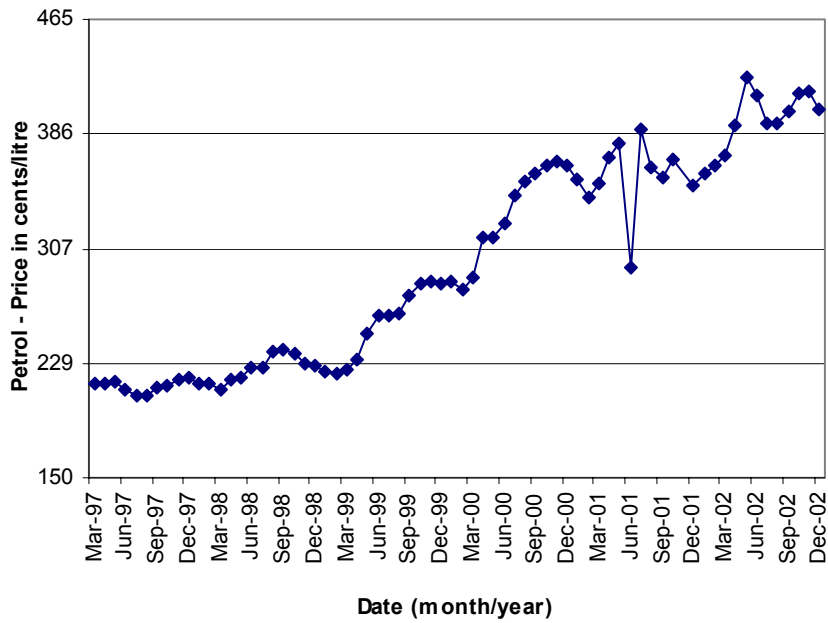


Figure 1.2: Variations in the cost of petrol (Source: M. Perkins).

SECTION 2 - ROAD NETWORK

2.1 LENGTH OF NETWORK

The KwaZulu-Natal Department of Transport is responsible for about 33 000 km of paved, gravel and earth roads (Table 2.1). Blacktop roads account for 6 626 km distributed amongst the four regions as given in Table 2.1. Ninety six percent (96%) of the blacktop roads are classified as provincial and the rest as district roads (Table 2.2). Provincial roads carry the bulk of traffic in the province.

Region	Blacktop	Gravel	Earth	Total
Durban	1446	2986	2169	6601
Empangeni	1722	5774	4953	12449
Ladysmith	1983	3512	1639	7134
Pietermarizburg	1475	3822	1656	6953
Total	6626	16094	10417	33137

Region	Main Roads	District Roads	Total
Durban	1330	116	1446
Empangeni	1696	26	1722
Ladysmith	1898	85	1983
Pietermarizburg	1437	38	1475
Total	6361	265	6626

Kwazulu-Natal, like many other mainly rural provinces, has more kilometres of gravel roads than blacktop roads. Road lengths in provinces are compared to population and number of vehicles in Figure 2.2. Gauteng has the highest concentration of vehicles on its roads while the Northern Cape has the highest length of paved roads per person.

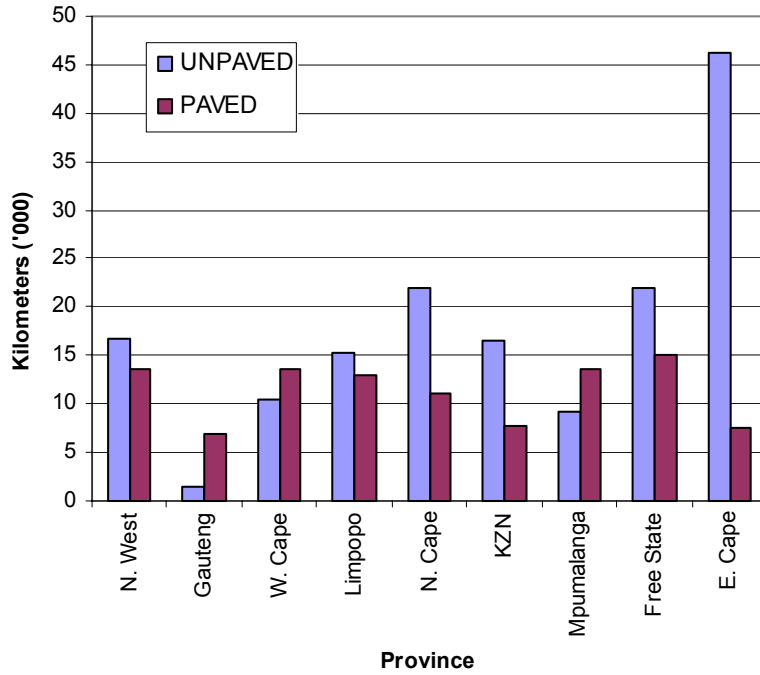


Figure 2.1: Length of paved and unpaved roads in other provinces (Source: NDoT)

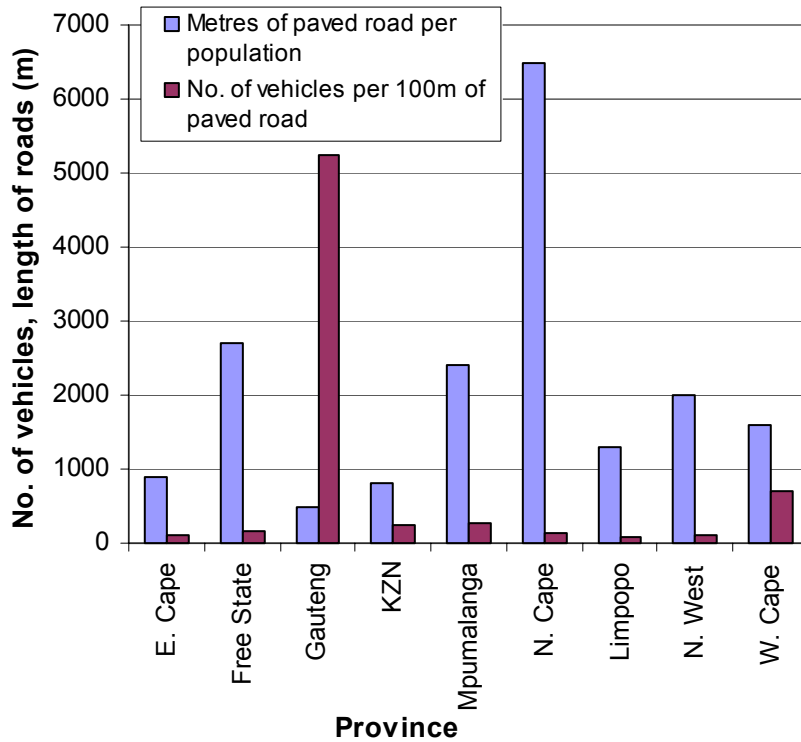


Figure 2.2: Paved roads in proportion to number of vehicles and population (Source: NDoT).

2.2 CONDITION OF NETWORK

The condition of the paved roads based of visual assessments of the network carried out in 2001 are summarized in Table 2.3 in terms of the length of roads classified as very poor to very good condition per region. The visual condition rating for the whole provincial network is summarized in Figure 2.3. About 60 percent of the roads are rated as in very poor to poor condition.

REGION	LEGEND	VERY POOR	POOR	FAIR	GOOD	VERY GOOD	TOTAL
Durban	Length (km)	179.78	721.27	408.48	124.87	4.90	1,439.29
	% of Total	12.49	50.11	28.38	8.68	0.34	100.00
Empangeni	Length (km)	379.65	688.11	404.11	127.06	0.00	1,598.93
	% of Total	23.74	43.04	25.27	7.95	0.00	100.00
Ladysmith	Length (km)	185.84	661.18	680.41	274.51	1.91	1,803.84
	% of Total	10.30	36.65	37.72	15.22	0.11	100.00
Pmb	Length (km)	274.63	653.14	373.39	103.13	0.00	1,404.30
	% of Total	19.56	46.51	26.59	7.34	0.00	100.00
Province	Length (km)	1,019.90	2,723.70	1,866.38	629.57	6.81	6,246.36
	% of Total	16.33	43.60	29.88	10.08	0.11	100.00

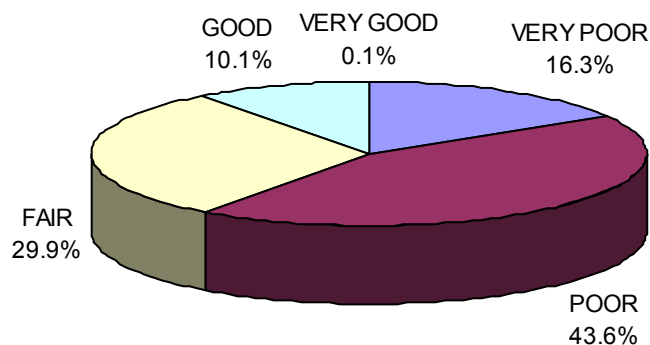


Figure 2.3: Visual condition rating for the provincial blacktop network

Visual condition ratings for regional networks are compared in Figure 2.4. The overall network condition for Empangeni, Durban and Pietermaritzburg regions are lower than the provincial average. Ladysmith region has visual condition rating much higher than the provincial average, with only 47% of the roads classifying as being in poor to very poor visual condition.

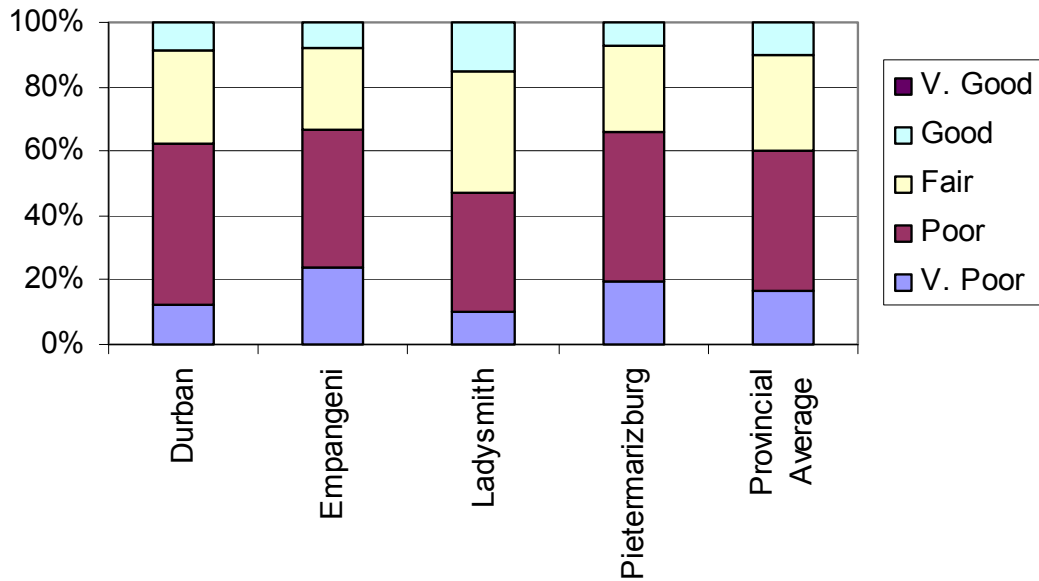


Figure 2.4: Visual condition comparison between regions.

Visual condition rating results from 1996 to 2001 are compared in Figure 2.5. There has been a steady decline in the visual condition rating of the overall network between 1996 and 2000.

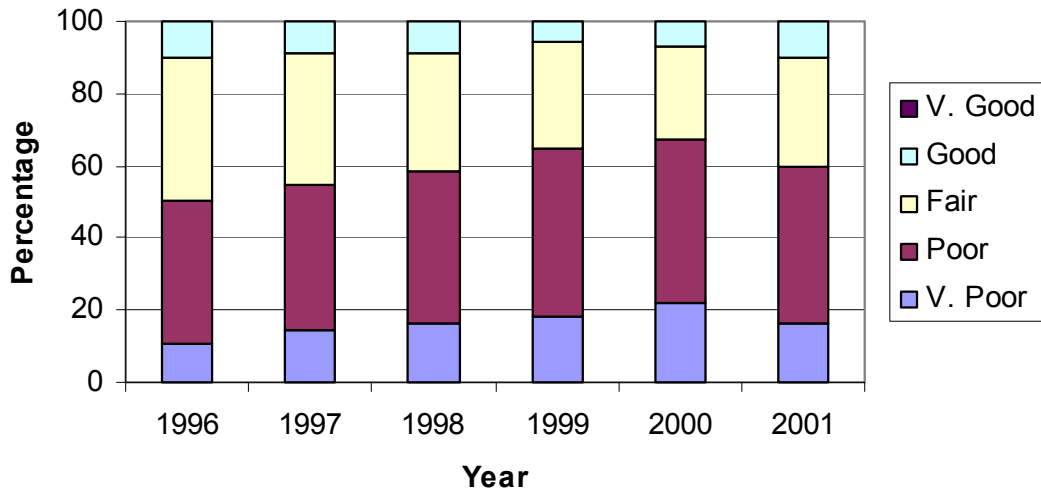


Figure 2.5: Variation of Visual Condition Rating with time.

SECTION 3 – LICENSING AND VEHICLE REGISTRATION

3.1 VEHICLE OWNERSHIP

A summary of the number of vehicles of different categories registered in the province is shown in Table 3.1. There appears to be no particular trend in the data.

Year	Heavy Load Vehicles(GVM> 3500kg)	Light Load Vehicle GVM< 3500kg)	Heavy Passenger vehicle (Persons>12)	Light passenger vehicle (Persons<12)	Minibus	Motor cycle	Special Vehicle
1998	63008	255958	30368	597172	0	25865	47720
1999	61016	255950	31696	590049	0	23884	42859
2000	59098	257697	32489	591958	2	22875	40165
2001	59205	262669	4738	586032	40191	22109	39145
2002	57968	264110	4628	589139	39036	21540	37810
2003	58258	265649	4723	594725	38743	20902	36445

3.2 PER CAPITA VEHICLE POPULATION

The number of vehicles per capita in the 9 provinces are compared in Figure 3.1. Vehicles per capita is an indication of the level of economic activity. Gauteng province has more than three times the average number of vehicles per capita in South Africa.

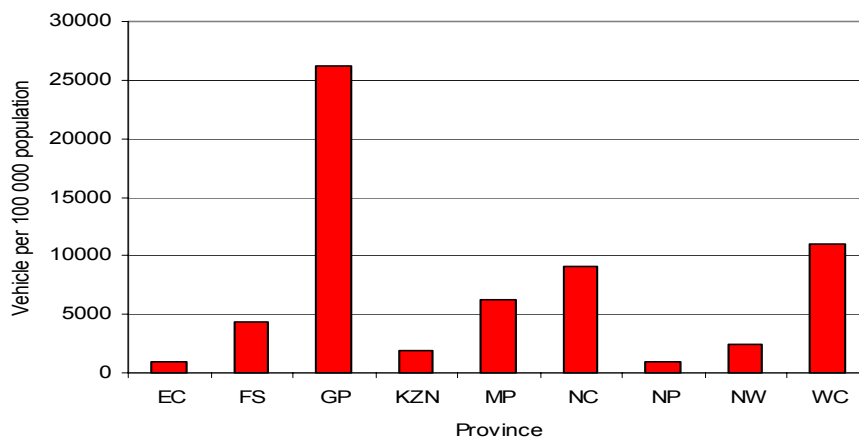


Figure 3.1: Vehicle per 100 000 population (Source: Intergovernmental Fiscal Review 2001).

3.3 LICENSED DRIVERS

There are about 999 500 licensed drivers in the provincial database of which 68 percent are male. The distribution of licensed drivers by age and gender is given in Figure 3.2.

The majority of drivers fall in the 30-40 year age group. There is an unusually high number of licensed drivers over 70 in the database. This can be attributed to the bigger range of years covered by this last category and also to the fact that deceased drivers are not deleted from the database.

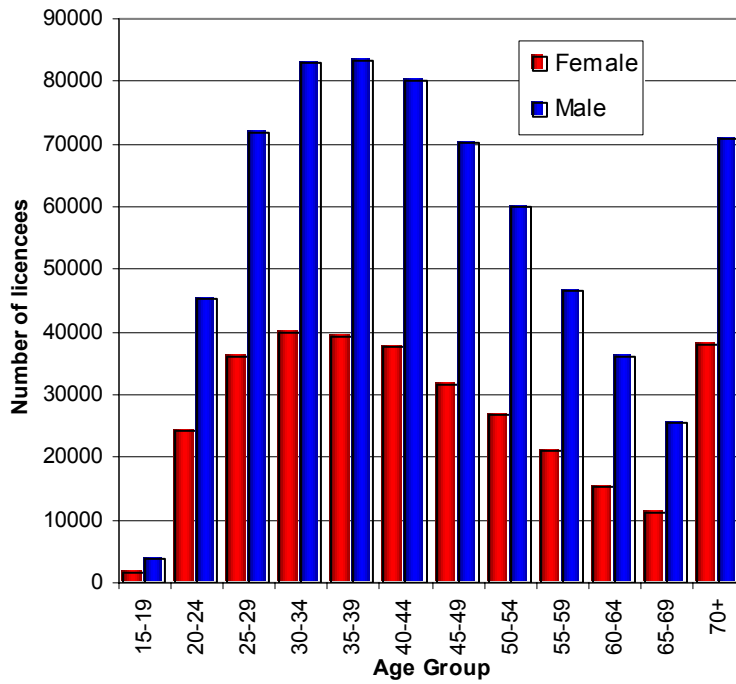


Figure 3.2: Distribution of licensed drivers by age and gender.

SECTION 4 - TRAFFIC ACCIDENTS

4.1 NUMBER OF ACCIDENTS

Over 90 000 accidents occur in KwaZulu-Natal roads every year. The actual number varies from year to year. The majority of the accidents that occur are damage only, however, accidents also result in fatalities and injuries. A typical distribution of the consequences of accidents is shown in Figure 4.1

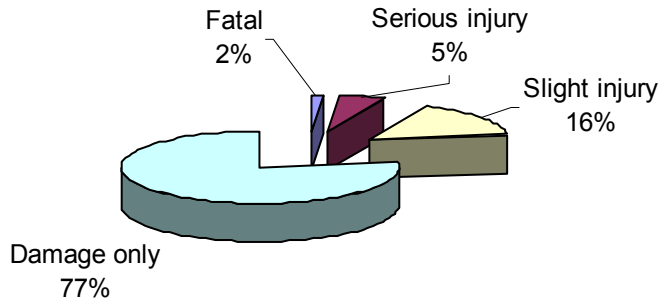


Figure 4.1: Consequence of accidents in KwaZulu-Natal (based on 2002 data)

Although only about 2 percent of accidents are fatal, over 1 500 people die on the provinces roads. Pedestrians account for the majority of the deaths (Figure 4.2).

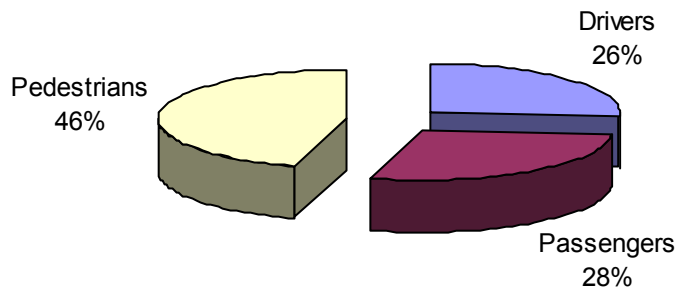


Figure 4.2: Category of people killed in accidents (based on 2002 data).

The number of fatal road accidents has been increasing every year. Fatal accidents that occurred between 1998 and 2002 are given in Figure 4.3.

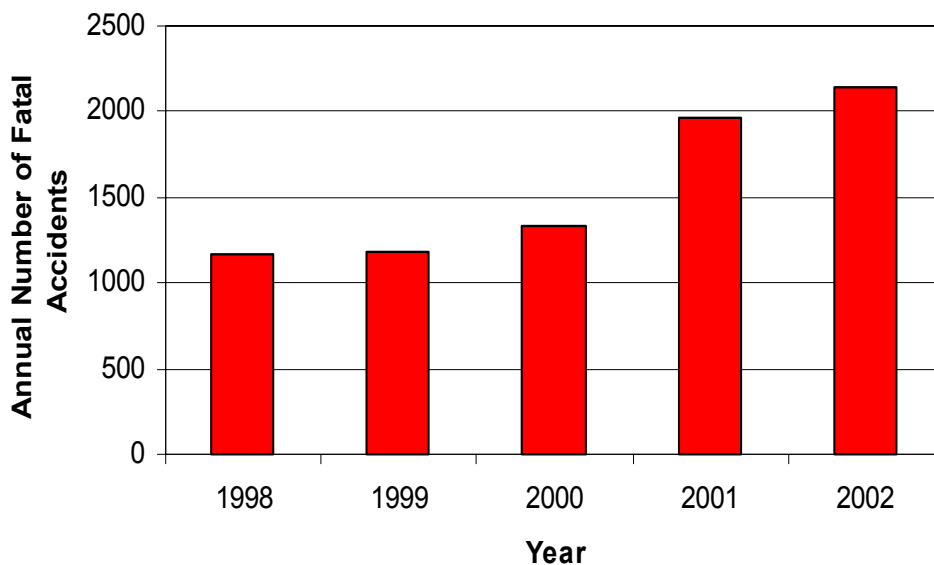


Figure 4.3: Annual number of fatal accidents in KwaZulu-Natal

The number of fatal accidents per one million vehicle kilometres travelled is a good measure fatal accident prevalence that can be used to compare different regions. Fatal accidents per one million vehicle kilometres for KwaZulu-Natal are compared to those of Gauteng and Western Cape in Figure 4.4.

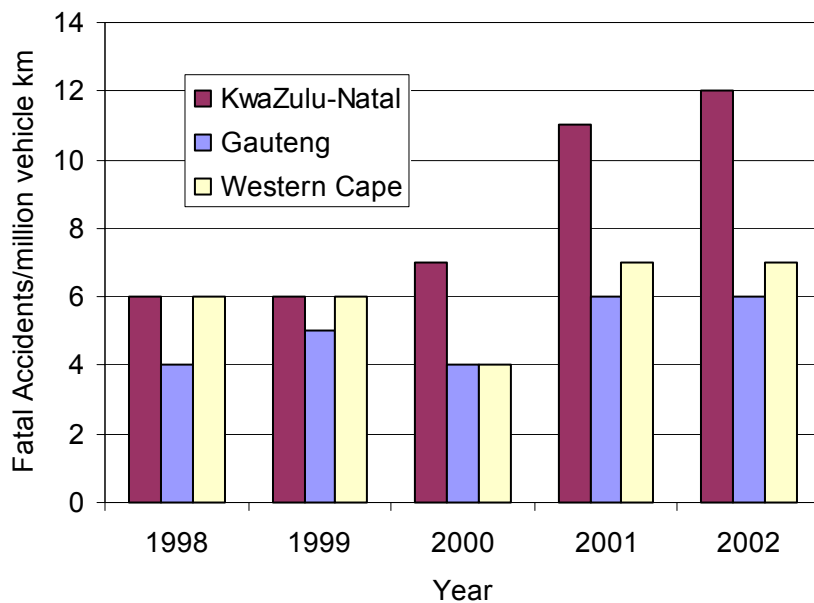


Figure 4.4: Fatal accidents per one million vehicle km (Source: NDoT).

Fatal accidents numbers can also be normalised for comparison purposes using population. Fatal accidents per 100 000 population in KwaZulu-Natal are compared to those in Gauteng and Western Cape in Figure 4.5.

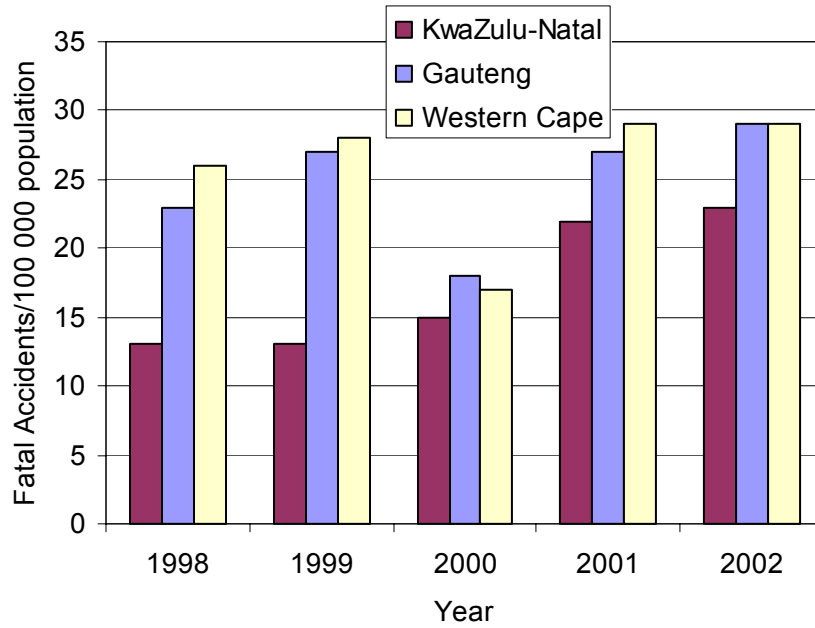


Figure 4.5: Fatal accidents per 100 000 population (Source: NDoT).

SECTION 5 - TRAFFIC MONITORING

5.1 OVERLOADING CONTROL

Overloading control in the province is the responsibility of the Department of Transport through the Road Traffic Inspectorate. Weighbridges are located along the main freight corridors for this purpose. Most of the weighbridges are located along the N3 and to a lesser extent along the N2.

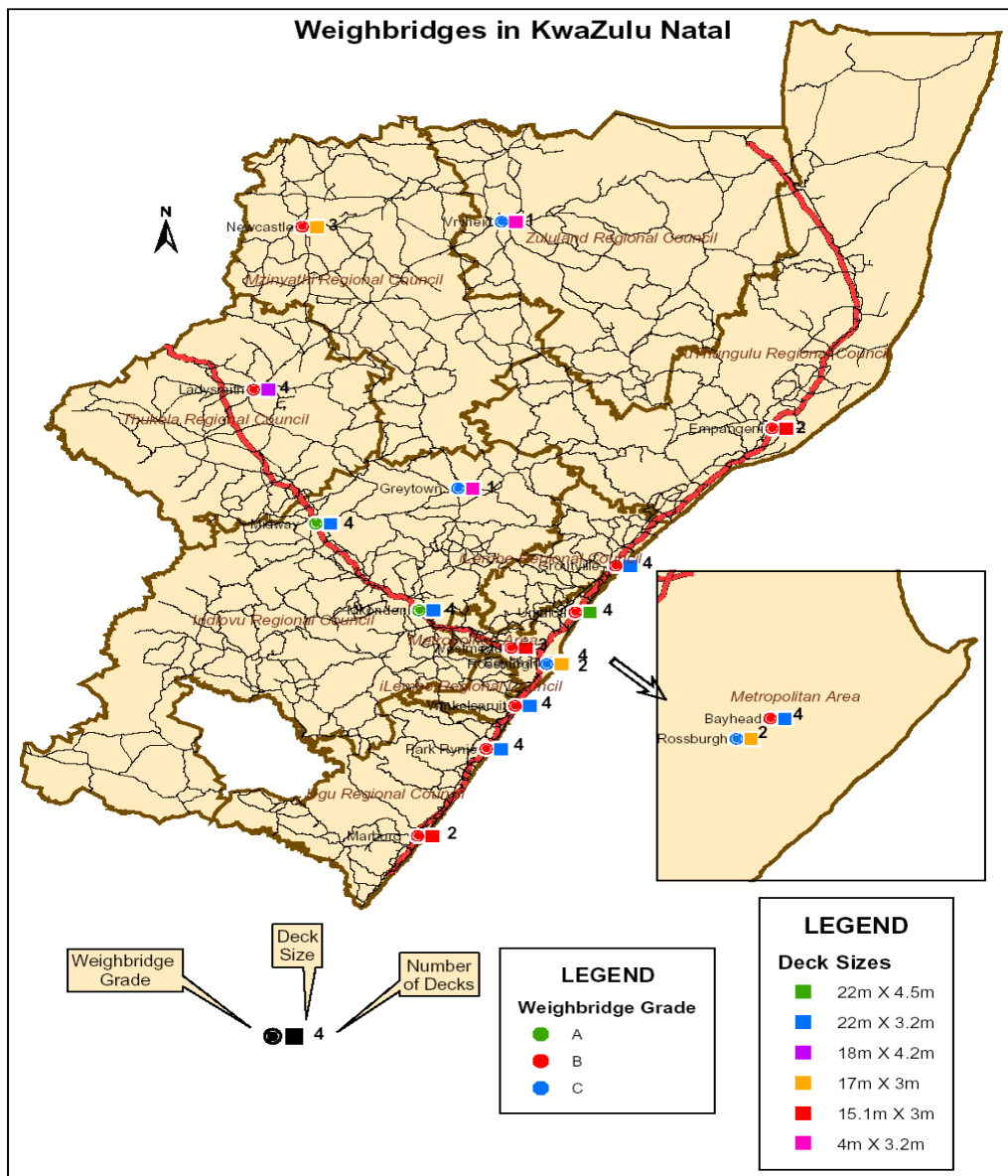
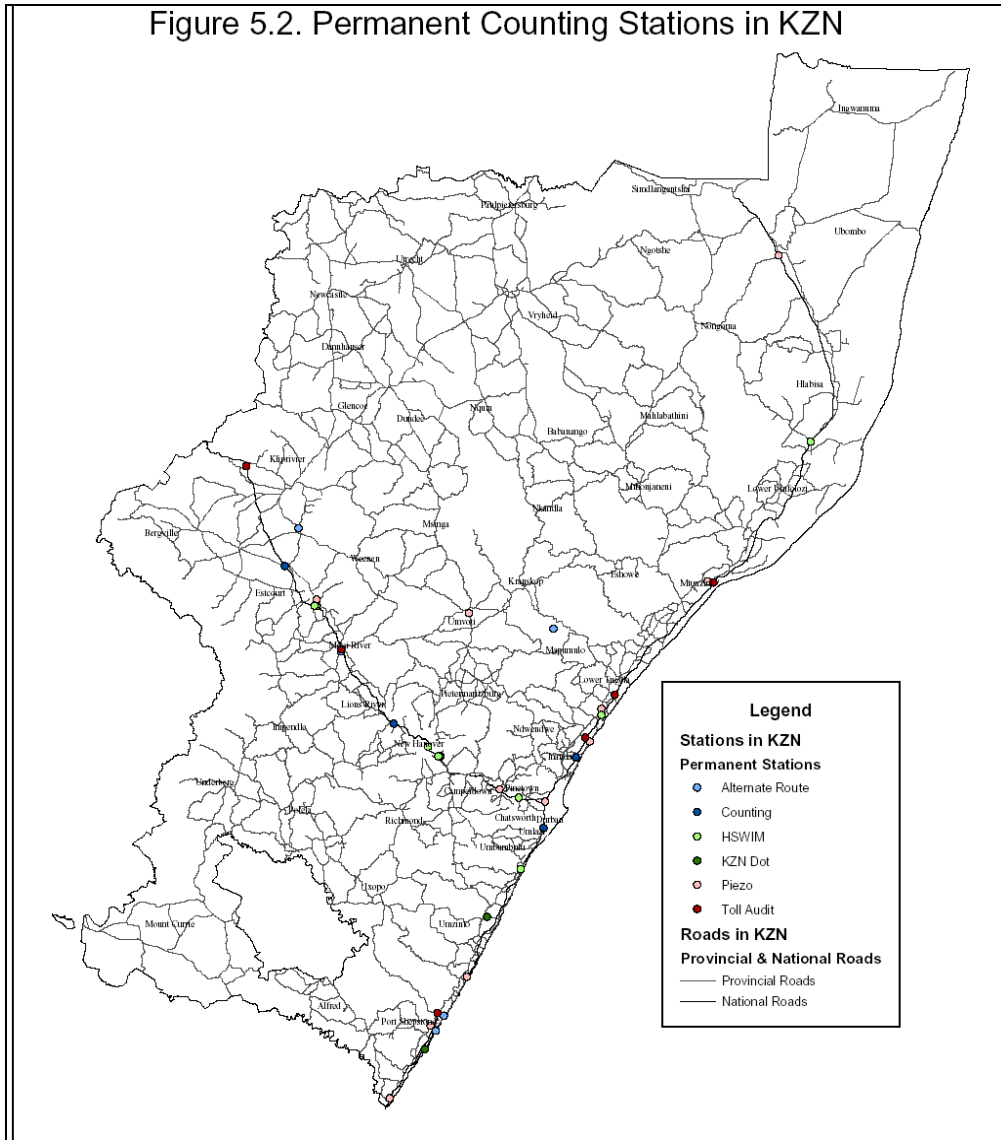


Figure 5.1: Size and Location of weighbridges in KwaZulu-Natal

5.2 PERMANENT COUNTING STATIONS

Traffic counts are needed for pavement and traffic engineering, accident data analysis as well as for law enforcement. Permanent counting stations are constructed and monitored through out the year on heavily trafficked roads. Periodic 48 hour counts are carried out on the other roads. The location of permanent counting stations in the province is shown in Figure 5.2.



SECTION 6 - ROAD FREIGHT

6.1 MAJOR FREIGHT ROUTES

The department commissioned a study of freight transport in 2003. As part of this study a survey was carried to determine the volume and type of freight on the major freight routes. Estimates of annual freight vehicle numbers and tonnage are given in Figures 6.1 and 6.2. More detailed information is presented in Tables 6.1 and 6.2.

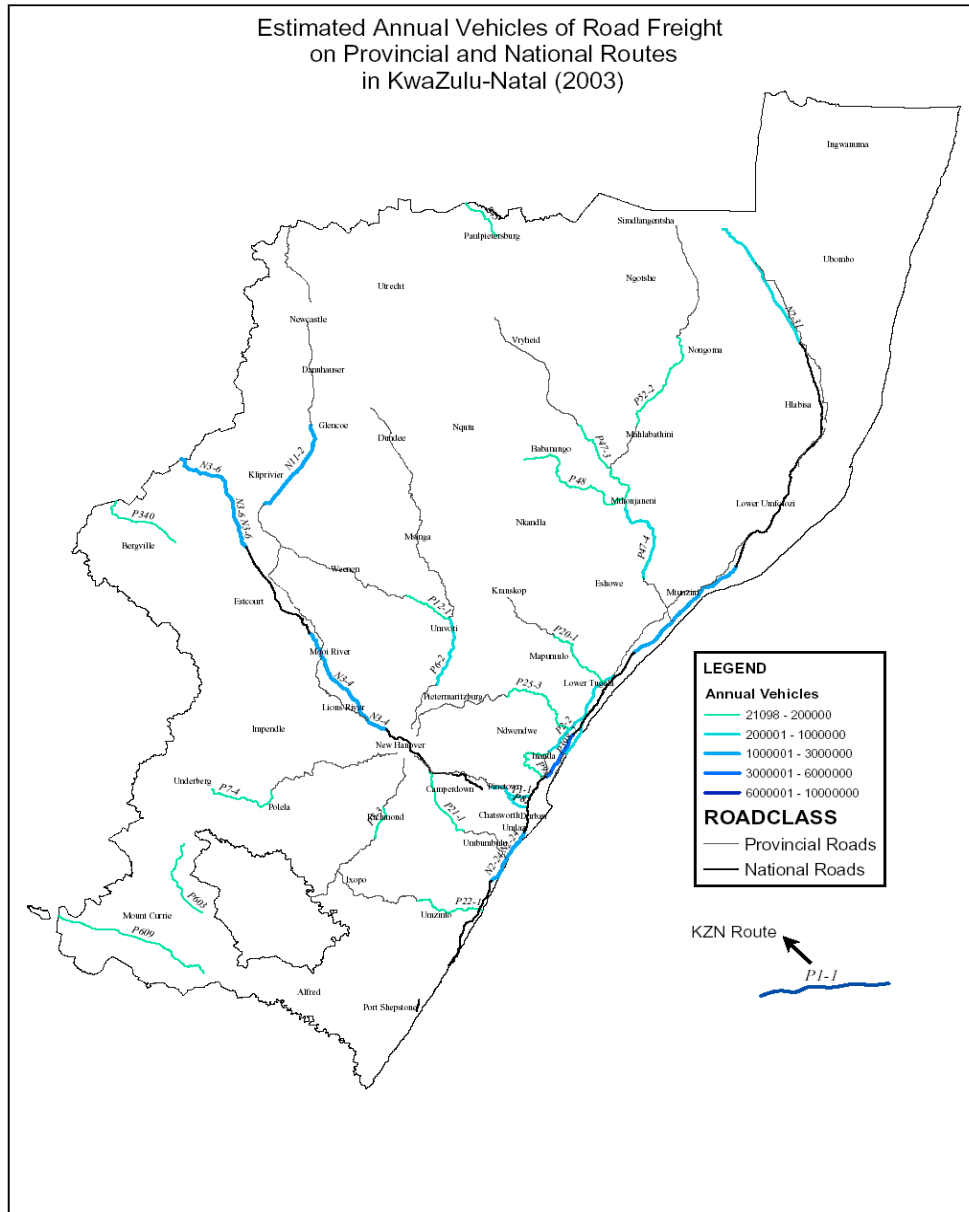


Figure 6.1: Estimated annual number of road freight vehicles

Table 6.1: Estimated annual number of road freight vehicles

KZN Route Ref. No.	Checkpoint Description	01 LDV	02 Rigid	03 5 Axle	04 6 Axle	05 7+ Axle	06 Bus	Total (veh. p.a.)
P1-1	M13 Pinetown - Shongweni	8,220	277,836	44,388	41,922	54,526	50,416	477,308
P2-2	M4 Old Main Road Shakaskraal - Stanger	104,120	39,730	42,744	17,262	35,346	16,166	255,368
P5-3	R56 Richmond - Ixopo	2,466	38,360	7,398	7,124	15,618	9,316	80,282
P6-2	R33 Sevenoaks - Greytown	3,562	50,690	12,330	2,192	11,234	0	80,008
P7-4	R617 Bulwer - Underberg	1,918	18,632	8,768	3,014	17,536	7,398	57,266
P12-1	R74 Muden - Greytown	12,330	37,812	4,932	822	7,946	1,370	65,212
P20-1	R74 Mapumulo - Doornkop	3,836	30,414	3,836	4,932	4,110	14,522	61,650
P21-1	R603 Umbumbulu - Umlaas Road	274	38,908	3,836	2,466	45,210	3,288	93,982
P22-1	R612 Umzinto - Ixopo	548	16,988	5,754	5,754	81,926	9,864	120,834
P25-3	R614 Nzuze - Tongaat	3,562	30,688	2,740	1,644	3,288	23,838	65,760
P45	R33 Paulpietersburg - Vryheid	5,206	16,168	5,480	3,014	13,974	1,918	45,760
P47-3	R34 Vryheid - Ulundi	29,044	40,826	16,988	9,864	46,032	53,704	196,458
P47-4	R34 Nkwalini	50,370	159,870	31,390	8,395	159,870	102,565	512,460
P48	R68 Ngutu - Babanango	7,124	8,768	1,370	274	3,014	548	21,098
P52-2	R66 Mahlabatini - Nongoma	13,426	31,510	4,932	2,740	7,124	12,878	72,610
P82	M7 Queensburgh - Mariannhill	42,196	333,184	105,764	160,838	252,354	9,590	903,926
P93	M4 Ottawa - Verulam	11,782	142,754	6,028	2,192	2,192	18,906	183,854
P340	R74 Bergville - Winterton	1,370	27,126	4,658	4,110	9,042	1,918	48,224
P398-2	M4 Ballito - Umdloti	17,810	175,360	35,620	19,728	29,592	13,700	291,810
P603	R617 Swartberg - Underberg	274	15,070	1,918	1,370	10,960	4,110	33,702
P609	R56 Kokstad - Matatiele	1,096	55,896	8,768	3,562	7,946	5,754	83,022
N2-21	N2 South - Paddock - Kokstad	1,096	88,776	34,250	30,962	128,506	32,880	316,470
N2-31	N2 North - Mkuze	16,166	72,884	21,646	45,210	124,670	11,782	292,358
N11-2	N11 Elandslaagte - Ladysmith	1,213,152	147,888	21,276	64,216	106,872	7,263	1,560,667
N2-24	N2 Port Shepstone (Oribi) Toll Plaza	1,480,327	108,898	11,758	18,088	52,814	19,572	1,691,457
N2-26	N2 Tongaat Toll	4,860,956	269,348	36,300	44,663	168,769	14,619	5,394,655
N2-28	N2 Mtunzini Toll	1,520,358	134,799	26,195	15,218	9,229	9,229	1,715,028
N3-1	M3 Marianhill Toll Plaza	8,678,748	682,344	98,748	251,420	528,372	51,637	10,291,269
N3-4	N3 Mool River Toll Plaza	1,334,903	383,747	59,939	182,943	414,182	45,029	2,420,743
N3-6	N3 Tugela Toll Plaza	1,830,185	221,741	42,407	166,272	394,662	36,953	2,692,220

Table 6.2: Estimated annual tonnage of vehicle freight.

KZN Route Ref. No.	Checkpoint Description	01 LDV	02 Rigid	03 5 Axle	04 6 Axle	05 7+ Axle	06 Bus	Total (tons p.a.)
P1-1	M13 Pinetown - Shongweni	0	1,582,624	861,458	890,500	1,166,144	0	4,500,726
P2-2	M4 Old Main Road Shakaskraal - Stanger	0	238,928	697,056	342,500	652,120	0	1,930,604
P5-3	R56 Richmond - Ixopo	0	217,008	131,520	130,150	276,192	0	754,870
P6-2	R33 Sevenoaks - Greytown	0	265,232	184,128	47,950	122,752	0	620,062
P7-4	R617 Bulwer - Underberg	0	85,488	118,368	41,100	322,224	0	567,180
P12-1	R74 Muden - Greytown	0	199,472	46,032	6,850	153,440	0	405,794
P20-1	R74 Mapumulo - Doornkop	0	170,978	59,184	82,200	92,064	0	404,426
P21-1	R603 Umbumbulu - Umlaas Road	0	140,288	65,760	47,950	606,088	0	860,086
P22-1	R612 Umzinto - Ixopo	0	78,912	98,640	102,750	1,196,832	0	1,477,134
P25-3	R614 Nzuze - Tongaat	0	177,552	46,032	41,100	69,048	0	333,732
P45	R33 Paulpietersburg - Vryheid	0	98,640	85,488	47,950	237,832	0	469,910
P47-3	R34 Vryheid - Ulundi	0	225,776	302,496	164,400	805,560	0	1,498,232
P47-4	R34 Nkwalini	0	884,270	438,000	155,125	3,303,010	0	4,780,405
P48	R68 Ngutu - Babanango	0	35,072	13,152	6,850	53,704	0	108,778
P52-2	R66 Mahlabatini - Nongoma	0	179,744	98,640	41,100	115,080	0	434,564
P82	M7 Queensburgh - Mariannhill	0	2,099,936	2,281,872	3,493,500	6,252,680	0	14,127,988
P93	M4 Ottawa - Verulam	0	659,792	105,216	27,400	30,688	0	823,096
P340	R74 Bergville - Winterton	0	157,824	78,912	89,050	207,144	0	532,930
P398-2	M4 Ballito - Umdloti	0	992,976	552,384	411,000	690,480	0	2,646,840
P603	R617 Swartberg - Underberg	0	74,528	32,880	34,250	260,848	0	402,506
P609	R56 Kokstad - Matatiele	0	282,768	138,096	54,800	130,424	0	606,088
N2-21	N2 South - Paddock - Kokstad	0	506,352	552,384	548,000	2,447,368	0	4,054,104
N2-31	N2 North - Mkuze	0	434,016	414,288	986,400	2,731,232	0	4,565,936
N11-2	N11 Elandslaagte - Ladysmith	0	1,183,104	510,624	1,605,400	2,992,416	0	6,291,544
Total Provincial Roads		0	10,971,280	7,912,610	9,398,275	24,915,370	0	53,197,535
<i>Percentages by Vehicle Group (%)</i>		0	21	15	18	47	0	
N2-24	N2 Port Shepstone (Oribi) Toll Plaza	0	871,184	282,192	452,200	1,478,792	0	3,084,368
N2-26	N2 Tongaat Toll	0	2,154,784	871,200	1,116,575	4,725,532	0	8,868,091
N2-28	N2 Mtunzini Toll	0	1,078,392	628,680	380,450	3,431,568	0	5,519,090
N3-1	M3 Marianhill Toll Plaza	0	5,458,752	2,369,952	6,285,500	14,794,416	0	28,908,620
N3-4	N3 Mool River Toll Plaza	0	3,069,976	1,438,536	4,836,400	11,597,096	0	20,942,008
N3-6	N3 Tugela Toll Plaza	0	1,773,928	1,017,768	4,156,800	11,050,536	0	17,999,032

SECTION 7 - BRIDGES

Table 7.1 Length of Bridges

TOTAL LENGTH OF BRIDGES(m)				
Type of Bridge	Empangeni	Durban	Pmb	Ladysmith
ARCH	407. 9	864.	993. 4	577. 5
CULVERT	4504. 2	2761. 7	4570.	5392. 5
FRAME	845.	1228. 4	1434. 1	1268. 9
GIRDER	99. 7	1107. 2	123. 8	887. 3
SIMPLY SUPPORTED CONCRETE SLAB	8472. 3	10470. 9	4829. 8	6679.
OTHER	3249. 3	5073. 8	2394. 9	4323. 2

Table 7.2 Number of Bridges

NUMBER OF BRIDGES				
Type of Bridge	Empangeni	Durban	Pmb	Ladysmith
ARCH	24	15	40	31
CULVERT	285	186	263	332
FRAME	53	61	84	72
GIRDER	2	12	4	16
SIMPLY SUPPORTED CONCRETE SLAB	243	240	268	278
OTHER	73	102	83	112

SECTION 8 - RAIL

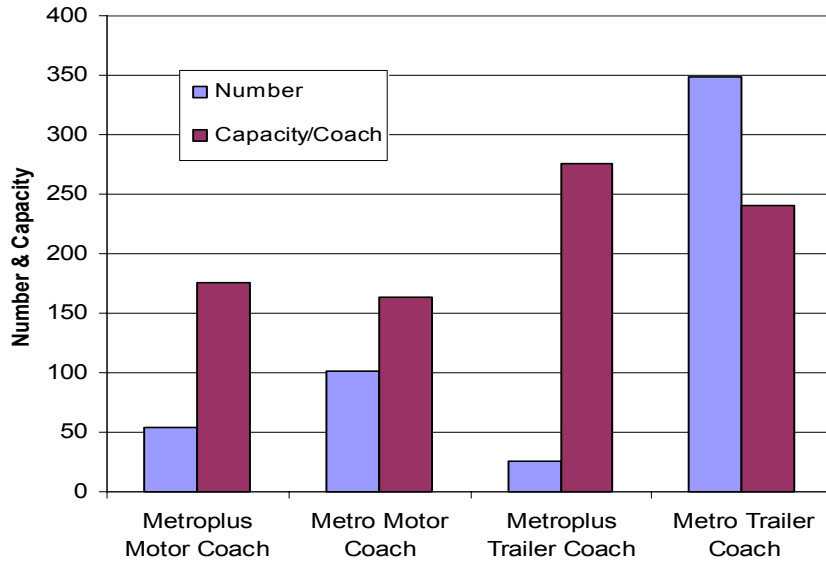


Figure 8.2 Carrying Capacity of Durban Operational Fleet (Source: SARCC)

The Durban fleet has a total of 238 motor coaches and 563 trailer coaches. The Metro Trailer Fleet has the highest number of coaches, but the Metroplus Trailer Fleet, which has the lowest number of coaches, has the highest capacity per coach.

8.2 FREIGHT

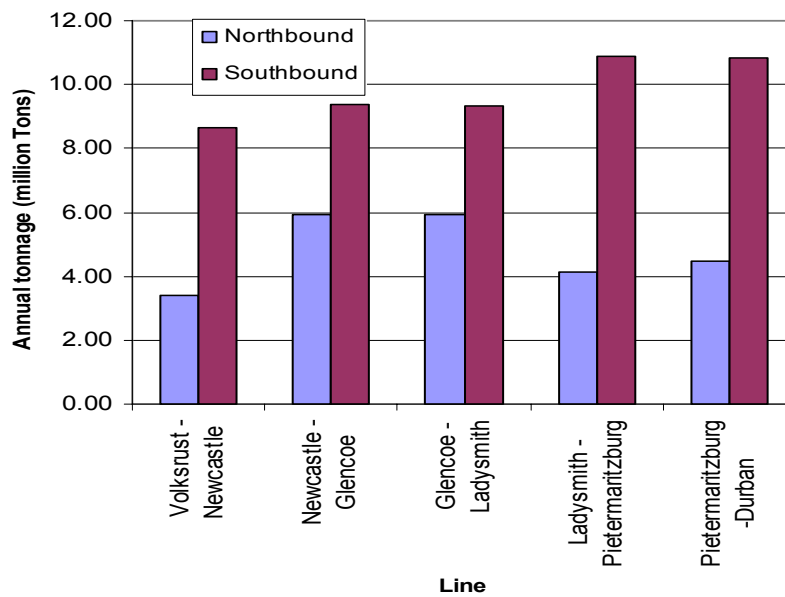


Figure 8.3: Annual freight tonnage on the Durban-Gauteng line

SECTION 9 - HARBOURS

9.1 HARBOUR SIZE AND QUANTITY

Two of the eight harbours in South Africa are situated in KwaZulu-Natal (Durban and Richard's Bay). The Port of Durban has 57 berths and the Port of Richard's Bay has 26 berths.

9.2 OPERATIONAL FACILITIES

The Port of Durban has 20 terminals and is the largest container terminal in the Southern Hemisphere. The Port of Richards Bay has five terminals.

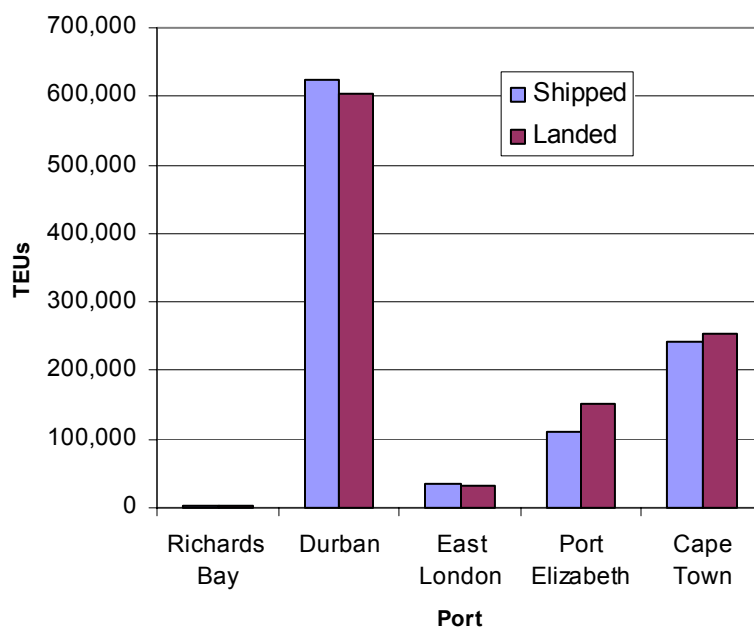


Figure 9.1: Summary of TEUs handled at South African port during 2001/2002 (Source: National Ports Authority).

9.3 FREIGHT

Although Richard's Bay handles very few containers, it actually handles the highest tonnage of cargo. This is because the port of Richards Bay mainly handles coal in the form of bulk cargo.

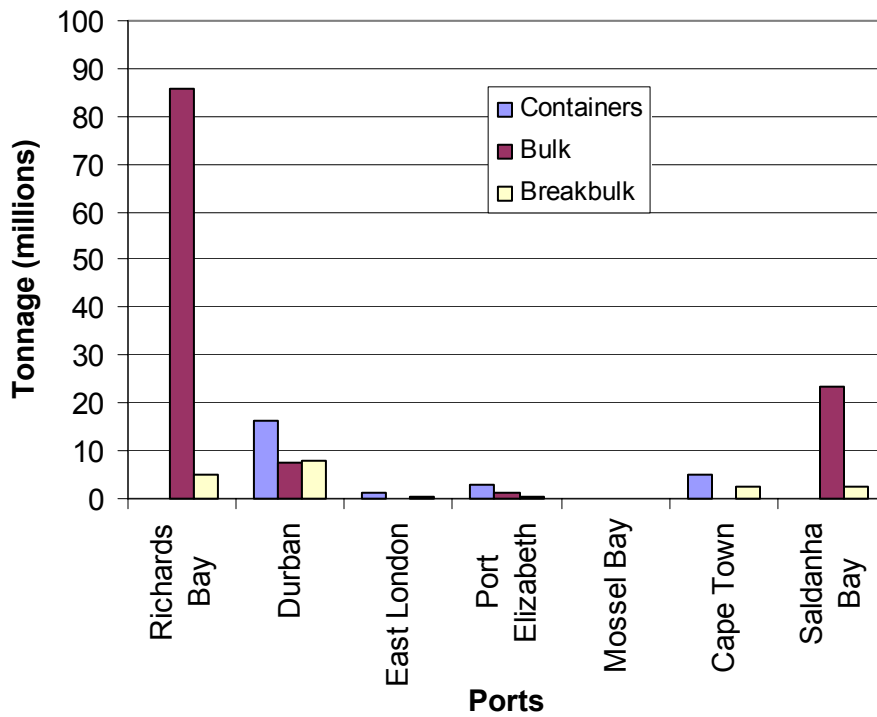


Figure 9.2: Summary of cargo tonnage handled at S. African port during 2001/2002 (Source: National Ports Authority).

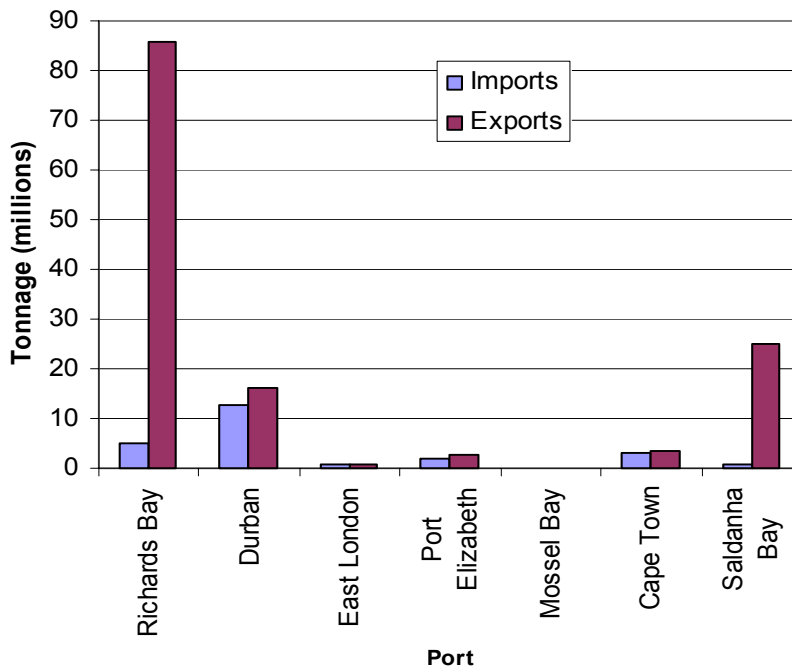


Figure 9.3: Import and export cargo tonnage at S. African ports (Source: National Ports Authority)

Both the Ports of Durban and Richard's Bay handle a large portion of national imports and exports. Richard's Bay exports 64% of the country's cargo, which can be attributed to the large volume of coal that it exports. Durban harbour handles 52% of the country's imports. Altogether, the KwaZulu-Natal harbours are responsible for approximately three quarters of the country's imports and exports.

9.4 ANNUAL TRAFFIC

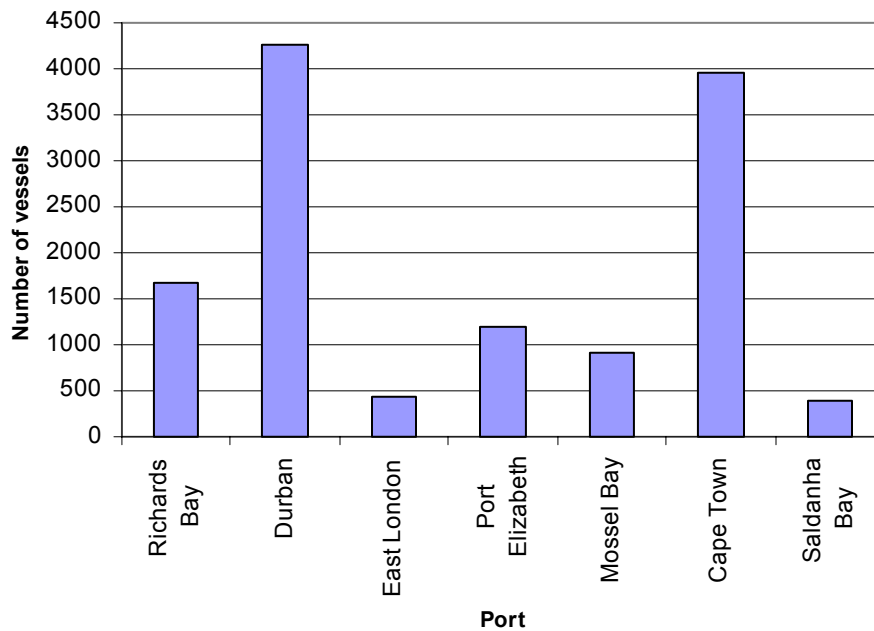


Figure 9.4: Number of vessels arriving in S. African ports during 2002 (Source: National Ports Authority).

SECTION 10 - AIRPORTS

10.1 LOCATION OF AIRPORTS



Figure 10.1: Airports in KwaZulu-Natal (Source: Airport Managers)

10.2 OPERATIONAL FACILITIES

	Durban International	Margate	Virginia	Ulundi	PMB	Richards Bay
Terminals	1	1	1	1	1	1
Runways	1	1	1	2	1	1
Aprons	2	1	1	4	1	
Aircraft Landing/ Parking Slots per Apron	16	3 and numerous on grass		13 main & 7 next to hangar	2 for normal aircrafts 10 for small aircrafts	2

10.2 ANNUAL TRAFFIC

Flight Type	Durban	Margate	Virginia	Ulundi	Pmb	Richards Bay
Domestic	38843	5200	90000	812	2600	9640
Regional	652	0	0	0	0	0
International	930	0	0	0	0	0

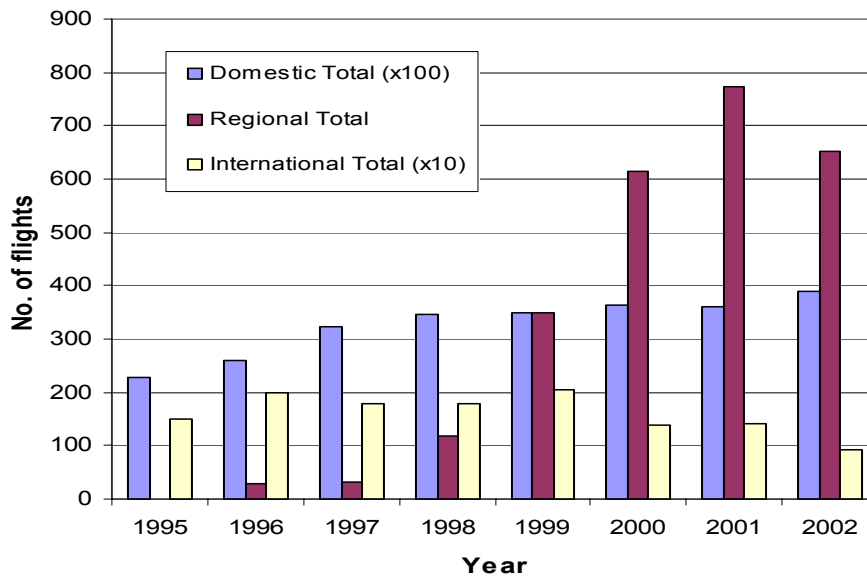


Figure 10.1: Annual air traffic movements from Durban International (Source: ACSA).

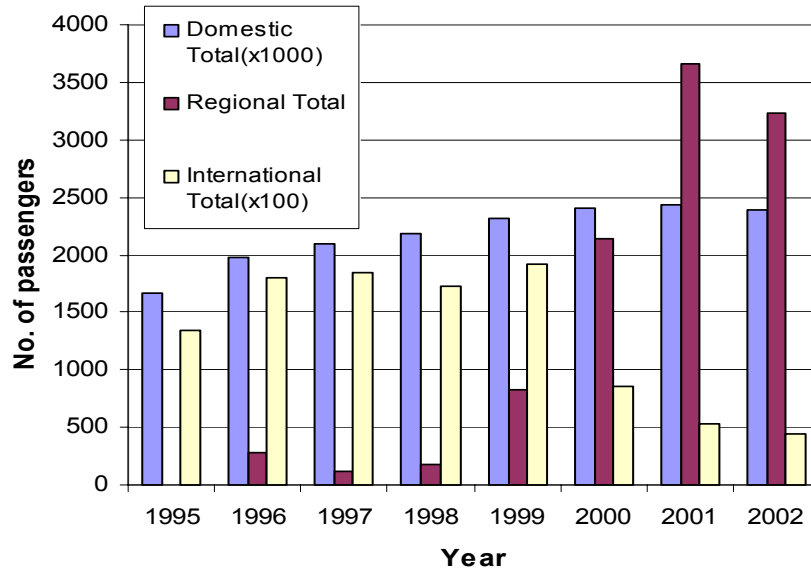


Figure 10.2: Annual passenger traffic movements from Durban International (Source: ACSA).

10.3 FREIGHT

	1996	1997	1998
International Freight	4,659	5,760	5,703
Domestic Freight	15,236	14,997	11,853
Mail	313	391	387

SECTION 11 - PUBLIC TRANSPORT

11.1 MODE OF TRAVEL IN KWAZULU-NATAL

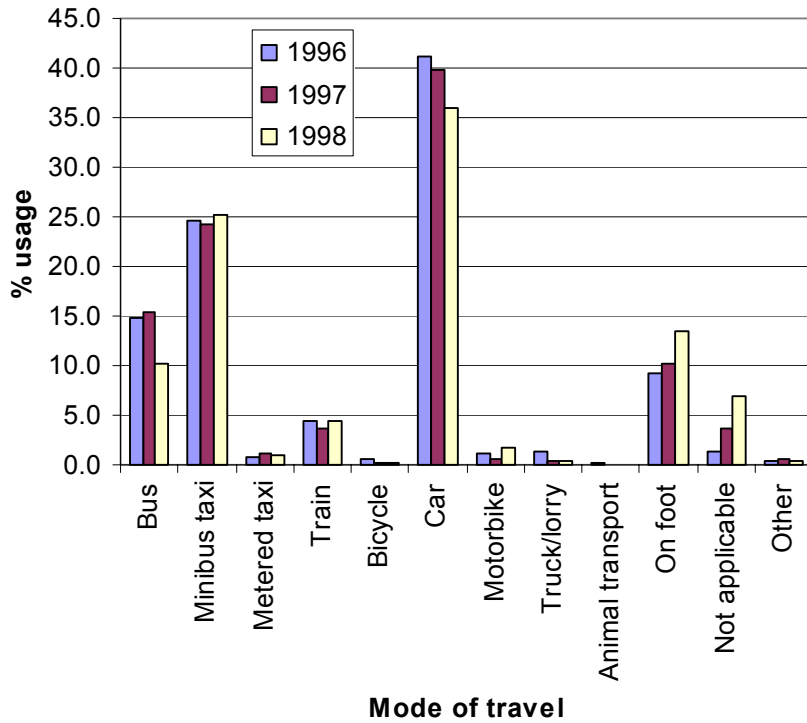


Figure 11.1: Mode of travel in urban areas (Source: Stats SA)

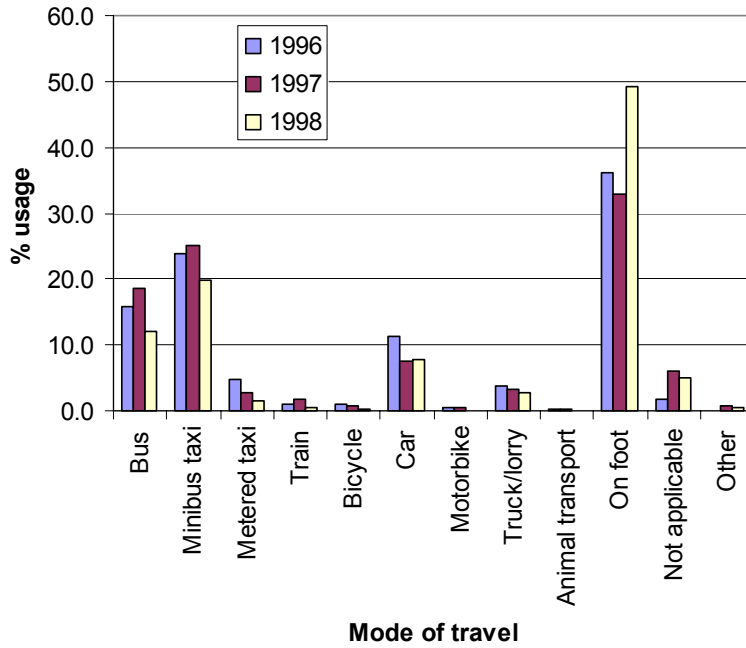


Figure 11.2: Mode of travel in rural areas of KwaZulu-Natal (Source: Stats SA).

11.2 TRAVEL TIME PER SOCIO-ECONOMIC CATEGORY

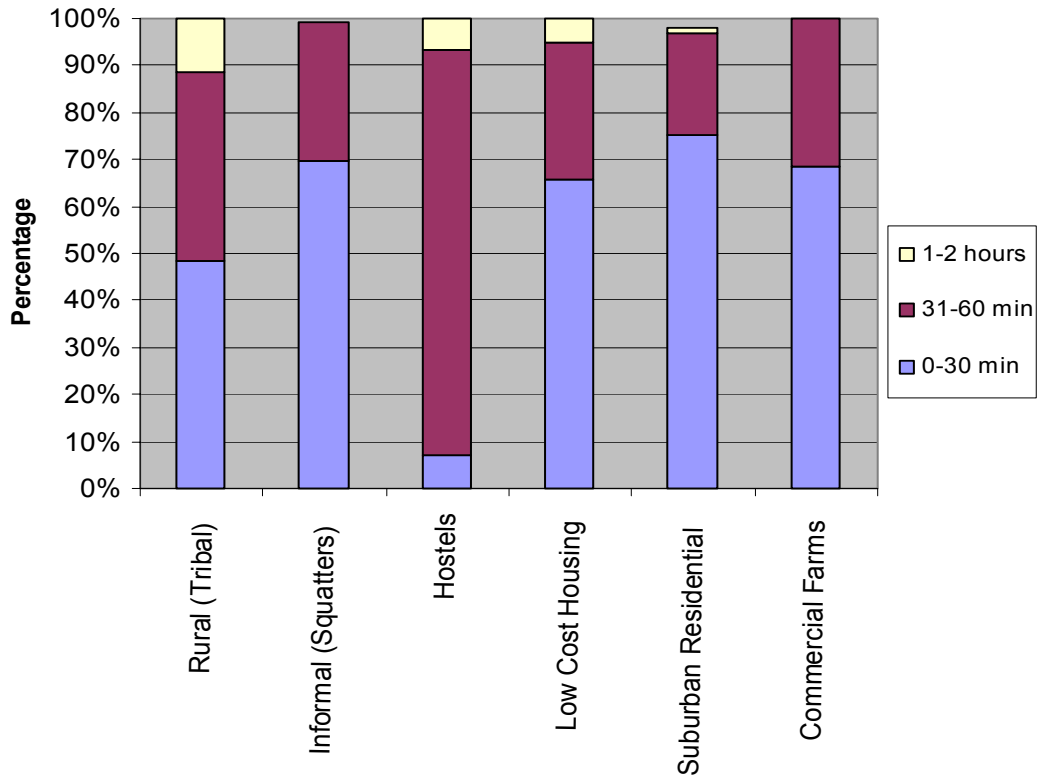


Figure 11.3: Travel time per socio-economic category (Source: MarkData Omnibus)

11.3 BUS SUBSIDIES

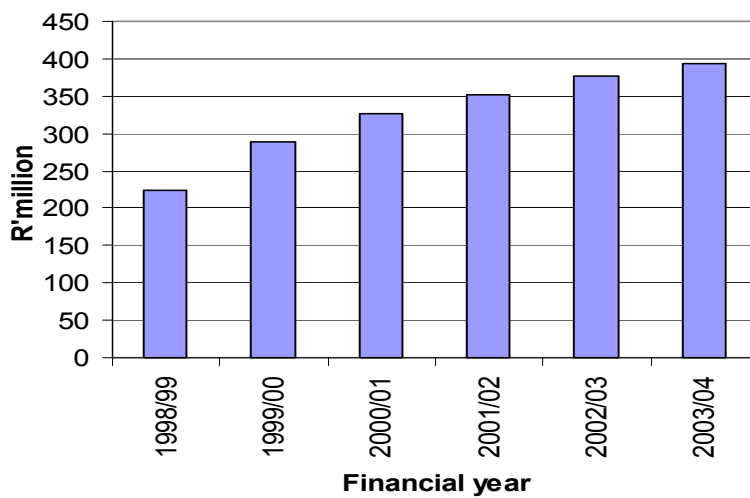


Figure 11.4: Bus subsidies for the province (Source: KZN Dept. of Transport)

11.4 TAXI ASSOCIATIONS

Table 11.9: Taxi Associations, members and routes as of September 2001 (Source: Provincial Tax Registrar)

District	Associations	Members	Vehicles	Routes
DC21	19	1013	1650	204
DC22	43	1774	2674	205
DC23	10	908	1533	218
DC24	10	566	885	96
DC25	6	652	1041	106
DC26	19	1036	1769	240
DC27	9	375	581	179
DC28	14	671	1072	119
DC29	9	556	868	76
DC43	5	345	521	88
Durban	107	5271	8771	648
TOTAL	251	13167	21365	2179

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