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ACCIDENT RATES RELATED TO RURAL ROAD GEOMETRY ELEMENTS AND DAILY TRAFFIC

Prepared on behalf of the SOUTH AFRICAN ROADS BOARD

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SINOPSIS (AFR.)

Die beskikbare databasis vir ongelukke, pad geometrie (foto-loguitvloei), en verkeerstellings is saamgestel en ongelukskoerse is vasgestel vir twee laan, vier laan en ses laan pad kategorieë asook vir 22 geometriese element kategorieë. 'n Analise van die padkilometer afstand per ongeluk is ook onderneem. Vir sekere padgedeeltes was ongelukke oor-verteenwoordig op die volle en half kilometer afstandpunte en vir ander dele was brugpunte oor-verteenwoordig. Die berekende ongelukskoerse vir geometriese elemente geplot teenoor die verkeersvolumes het swak korrelasie koëffisiënte vir reglynige verlope gegee. Aanbevelings word gemaak vir meer akkurate ongeluk afstands verslaggewing.

SYNOPSIS (ENG.)

The available data bases for accidents, road geometry (photolog output) and traffic counts were combined and the accident rates determined for two lane, four lane and six lane road categories as well as for 22 geometric element categories. An analysis of the road kilometre distances reported for accidents was also undertaken. For some sections of road, the recording of accidents was over represented at the whole and half kilometre distance points and for other sections bridge points were over represented. The accident rates calculated for geometric elements plotted against traffic volumes gave poor correlation co-efficients for linear trends. Recommendations are made for more accurate accident distance reporting.

TREFWOORDE
KEYWORDS Accident rates, Geometric elements, Rural roads, Traffic volumes

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DISCLAIMER

The views and options expressed in this report are those of the author and do not represent Department of Transport Policy

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1. INTRODUCTION

Road accidents form part of the quality evaluation sub system in the larger road planning, design, construction and operation system applicable to road networks. In all such man-machine systems, accidents occur. The mature stage of such systems is reached when cost effective design changes are achieved which take into account not only the causes of road accidents but also the vehicle movements which frequently result from human error (see Figure 1). Seat belts, airbags and vehicle bodies which absorb energy on impact are examples already incorporated in the design of vehicles. Similarly safe road designs for flat side slopes in cuttings, embankments and drainage ditches parallel to the road and relatively safe guard rail and concrete barrier designs have been developed. In South Africa an immature design stage however still prevails, in that the latter designs are not selectively utilised in a cost effective manner despite the large number of accidents which occur, due to the road accident rate being among the highest in the world.

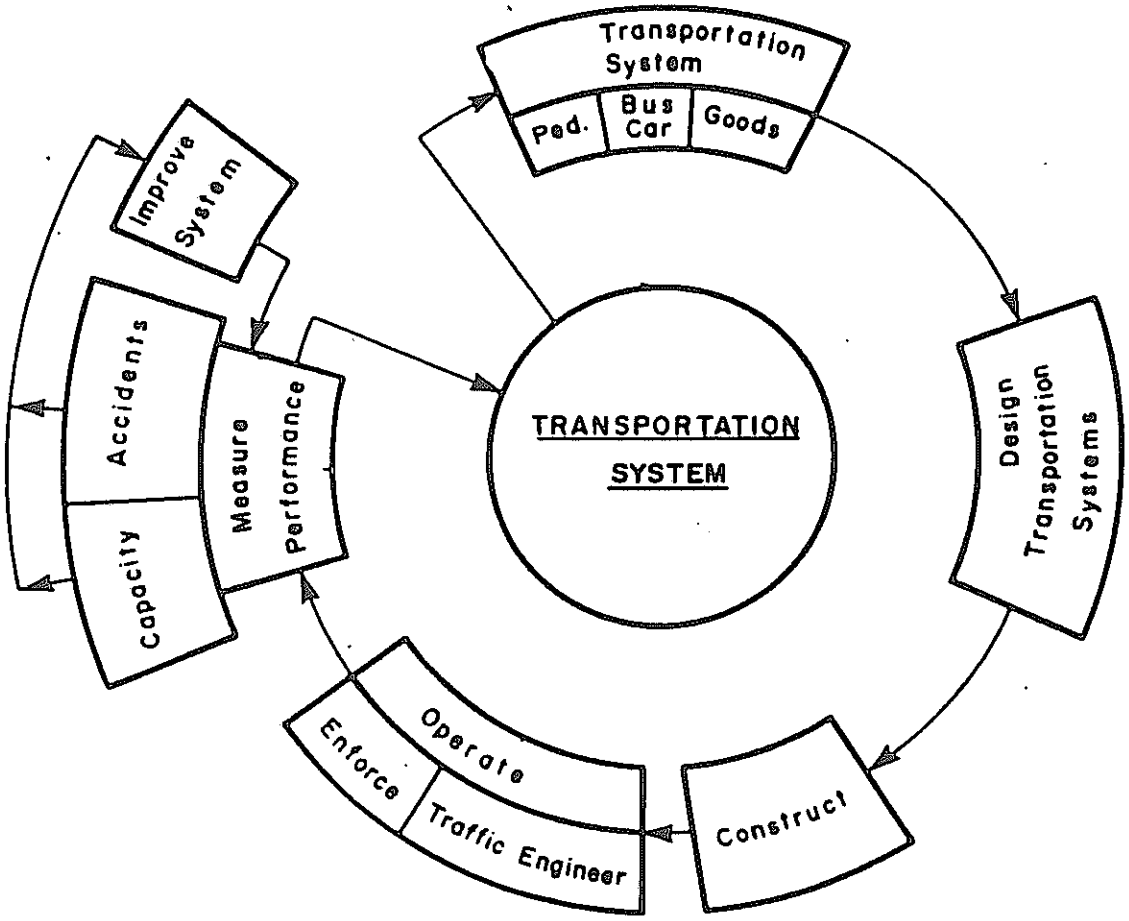
A fundamental reason for this situation has been the lack of an accurate accident data base. Two Provinces now have accident data bases and are already past the stages of initial refinement and unfriendly access to users.

The purpose of this research project is to determine the unique South African road accident rates per million vehicle kilometres for different road geometric elements and traffic volumes on two-way, single carriageway paved rural roads and dual carriageway freeways from readily available data sources.

The research is aimed at identifying the types of road geometry which are associated with higher accident rates, to enable attention to be focused on methods of designing a more "forgiving" road environment at these particular geometric elements, so that the number and severity of accidents can be reduced.

The geometric elements selected in this project for the research of accident rates related to traffic volume were horizontal curves, vertical curves, grades, intersections and structures. Accident rates for these elements were determined for individual elements as well as various combinations of these elements.

This project excluded an investigation of the relationship between accident rates and road cross-section, that is, lane width and shoulder width, as this was covered in detail in a previous research project.



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ROAD ACCIDENTS AS A MEASURE OF PERFORMANCE IN THE TRANSPORTATION SYSTEM

FIG 1.1

2. PREVIOUS RESEARCH

2.1 International research

Road safety research has historically been dominated by the United States which has the largest road network and vehicle fleet in the world. The findings from research carried out before the year 1950 were incorporated into the Geometric Design Manuals produced by the American Association of State Highway Officials. Since the advent around 1970 of large scale computerised road geometry and accident data bases, and the total number of deaths on United States roads exceeding 50 000 per year, wide spread accident research was undertaken in the USA which has provided road designers with a host of safety designs. Clear roadsides, break away sign bases and crash cushions are but a few examples. In 1983 a literature review of road safety designs available, referred to 36 studies (1).

A particularly relevant study in the USA examined the accident rates related to design elements of rural highways (2). The States who first developed accident data bases, California, Ohio and Florida were used for a mammoth analysis. A comparison with the South African data is made in Chapter 6 of this report.

The South African vehicle fleet is much different from the United States where comparatively large passenger cars are driven with very low person occupancies. Driver training and experience is also of a much higher standard in the USA and traffic volumes are generally higher. These factors combined, result in the United States fatal accident rate being 3 to 4 times lower than the South African rate.

2.2 South African research

There are only three known studies on accident rates in South Africa. The first involved the development of a model of the relationship between geometric standards and accidents on rural roads in South Africa (3), for use in the RODES (4) suite of computer programs, developed by the former National Institute for Transport and Road Research (NITTR) at the CSIR, for the economic analysis of alternative road proposals. The model was based on overseas research and utilised the concept of base accident rates for different road types and adjustment factors for road standards such as lane width, shoulder width, shoulder surface, horizontal curvature and steep negative gradients. Overseas accident rates had to be used because of the lack of an adequate and accurate data base of accident records on South African rural roads, particularly with regard to the specific road location of each accident site.

In 1986, the Cape Provincial Roads Department undertook a study of the accident rates on selected rural road types in the province, utilising the computerised accident report data base which they had developed (5). This study determined accident rates for different categories of roads, such as dual carriageways, two-lane single carriageways with and without paved shoulders, mountain passes and gravel roads.

A subsequent study, carried out in 1988 (6), using the Cape Roads Department's accident data base for the years 1984, 1985 and 1986, focused on two-lane, two-way trunk roads and determined accident rates in relation to the following geometric variables : lane width, shoulder width, shoulder surface, hilliness, bendiness and average daily traffic. The average length of the 175 road sections analysed in the study was 40,7 km. Hilliness was measured by the sum of the vertical rise plus fall in metres per kilometre over the section length and bendiness was measured by the sum of the horizontal deflections in degrees/km. The main findings of the study were summarised as follows:

(a) The bendiness of a road section is the single most important geometric variable for describing the variability in the accident rate.

(b) As the lane width increases, the accident rate decreases.

(c) The shoulder width alone does not have a significant effect on the accident rate.

(d) For roads with wide lanes, the accident rate is lower for those sections with an ADT of more than 1 000 than those with ADT of less than 1 000.

(e) Roads with wide paved shoulders may have a higher accident rate than roads with gravel shoulders.

The study considered it a major shortcoming, that there were such a limited number of road sections in the sample with specific combinations of geometric features. Although this could have been overcome with further subdivision of selected section lengths, this was not done because of uncertainty at the time about the accuracy of the exact location of reported accidents.

Concerning the accuracy of accident data for this research project discussions were held with officials from the Cape and Natal Roads Departments responsible for their computerised accident records. It appears that particular attention has been given, since about 1986, to checking the accuracy of the location of each reported accident. If uncertainty exists about the accuracy of a reported accident location, it is excluded from the computerised accident data bases of the Cape and Natal Roads Departments until the local traffic police have confirmed the location with sufficient accuracy.

Studies on single vehicle accidents have been undertaken by the CSIR (7) but the emphasis has been on driver behaviour more than road geometry.

The analysis of the occurrence of South African road accidents with respect to road geometry is a vital gap missing in the South African road research system. This research project serves as an initial attempt in that direction.

3. DATA COLLECTION

In order to attain this research project's objective of determining accident rates for specific types of road geometric elements in relation to traffic volumes, three data bases were required, namely:

(i) Accident records related to specific road locations.

(ii) Geometric details of the specific road locations along which accidents occurred.

(iii) Traffic volumes on the sections of road where the accidents occurred.

3.1 Accident Data

Only the Cape and Natal Roads Departments keep computerised records of the specific locations of reported accidents on all national and provincial roads in their respective provinces. The location of each accident, as reported on the standard South African Police accident report form, is checked by officers of the Provincial Traffic Inspectorate and estimated to the nearest 10 metres, from the 200 metre route distance markers on the roadside. All the details of each recorded accident are then entered on the Roads Departments computers and processed for extraction in various report formats.

For the purpose of this research project, processed computer reports giving the number of accidents recorded on each 10 km section of rural road in the Cape during the 4 year period 1986-1989 and Natal during the 3 year period 1986 to 1988 were used for identifying the roads on which most accidents were occurring. It was decided not to use accident records before 1986 for this research project because of uncertainty as to the accuracy of the reported accident locations, prior to this time and also that older records are down loaded from the computer to archive record systems.

The number of accidents recorded per kilometre for each of the 50 roads in the Cape and Natal were then obtained and the specific start and end of fifty 10km sections of these roads where unusually high numbers of accidents occurred were identified.

This gave a total length of 1 000 km of rural main roads with the highest accident occurrence, which served as the initial accident data base for the research project. An example of 20 individual 10 km road lengths of road with the accidents/km per annum listed in descending order are listed in Table 3.1.

TABLE 3.1: MAIN ROAD SECTIONS IN THE CAPE AND NATAL WITH THE HIGHEST AVERAGE ACCIDENTS/KM PER ANNUM (1986-1989)

CAPE			NATAL		
Road	**Sctn (km)**	**Acc/km/pa**	**Road**	**Sctn (km)**	**Acc/km/pa**
N1/1	0-10	22,28	P2/2	0-10	18,13
N2/1	10-17	20,46	P82	0-12	12,33
N2/1	0-10	18,26	P1/1	11-21	11,42
N1/1	10-20	9,74	P395	31-40	10,83
N2/1	38-42	7,45	N3/1	8-18	10,40
N2/1	28-38	5,95	N2/25	21-29	9,59
TR1/1	22-24	5,42	N3/3	0-10	9,40
TR2/10	0-10	4,60	N2/25	11-20	9,33
TR11/1	0-10	4,55	N3/4	0-10	8,77
TR2/10	10-20	4,40	P1/1	0-10	8,70
TR9/2	0-10	4,05	P3/1	0-10	8,33
TR81/1	10-20	4,00	P2/2	31-40	7,97
TR2/10	30-40	3,75	N2/25	0-10	7,77
N2/1	17-27	3,65	P1/2	0-10	7,77
TR15/1	0-10	2,75	N3/2	0-10	7,50
TR2/11	20-30	2,57	P2/1	0-10	7,40
TR2/11	10-20	2,45	P2/2	11-20	7,37
TR45/4	69-70	2,44	N3/3	11-20	7,37
TR1/1	12-22	2,32	P4/1	0-10	6,53
TR2/11	0-10	2,02	P1/13	0-10	6,40

The accident records available in Natal were subdivided into single vehicle, casualty, (fatal or serious), intersection, dark or wet road accidents. For the Cape, the full range of categories from the SAP accident form was available.

3.2 Geometric Data

(a) By road route number and section

Geometric data on the sections of rural main roads identified for the initial accident data base (described above) were available from the following sources:

- As built drawings or microfilms kept by the Provincial Roads Department
- Photologger data on most of the trunk/main roads, kept by the CSIR
- Road logs of intersections, structures and services crossings on trunk/main roads kept by the Provincial Roads Departments

The photologger data and road logs were the most readily available sources of geometric data as they were computerised and could be printed out for any specified road section. The photologger output consisted of plotted horizontal geometry and vertical profile with a listing of horizontal and vertical curve data, including beginning and end points of each curve, radius of horizontal curve and percentage grade including vertical curves.

Unfortunately, not all the road sections identified for the initial accident data base have been photologged by the CSIR. In fact, only about 65 percent of the 1 000 km of trunk/main roads with the highest accident records (in the Cape and Natal) have been photologged. An attempt was made to obtain the geometric data for the high accident roads not photologged, by inspecting the as-built drawings at the Provincial Roads Departments. This proved to be a very tedious and time consuming process, complicated by the fact that the drawings for the older roads were in imperial units. It was therefore decided to limit the research data base for this project to the lengths of roads for which photologger data were available. In total 629 km of photologged road data was available, of which 354 km were in the Cape and 254 km in Natal. The descriptions of these roads are listed in Tables 3.2 and 3.3.

TABLE 3.2: LENGTHS OF CAPE ROADS FROM THE INITIAL ACCIDENT DATA BASE FOR WHICH PHOTOLOGGED GEOMETRIC DATA WERE AVAILABLE

	Route/Section	Description	km
1	N 1/1	Cape Town - Paarl	47
2	N 2/1	Cape Town - Somerset West	42
3	TR 1/1	George - Holgaten	15
4	TR 2/10	George - Knysna	60
5	TR 2/11	Knysna - Plettenberg Bay	30
6	TR 2/15	Port Elizabeth - Grahamstown	30
7	TR 9/2	Paarl - Worcester	40
8	TR 9/7	Three Sisters - Richmond	30
9	TR 11/1	Cape Town - Malmesbury	30
10	TR 45/4	Keiskamma - East London	30
	TOTAL CAPE		**354**

TABLE 3.3: LENGTHS OF NATAL ROADS FROM THE INITIAL ACCIDENT DATA BASE FOR WHICH PHOTOLOGGED GEOMETRIC DATA WERE AVAILABLE

	Route/Section	Description	km
11	N 2/24	Umkomaas River - Winkelspruit	10
12	N 2/25	Isipingo - Umhlanga	30
13	N 2/26	Umhlanga - Tongaat River	10
14	N 3/1	Westville - Emberton	20
15	N 3/2	Shongweni - Inchanga	30
16	N 3/3	Ashburton - Hilton	27
17	N 3/4	Hilton - Estcourt	30
18	P 1/10	Colenso - Ladysmith	10
19	P 1/12	Mkunzi - Newcastle	11
20	P 1/13	Newcastle - Volksrust	8
21	P 2/2	Verulam - New Guelderland	36
22	P 4/1	Port Shepstone - Izingolweni	10
23	P 31	Ladysmith - Van Reenen	30
24	P 395	Ramsgate - Shelley Beach	13
	TOTAL NATAL		**275**

(b) By geometric element

Previous research in the United States has indicated that even with their mature accident reporting and data base systems they were not able to identify accident rates for specific geometric elements but rather in more general group categories (2). In the case of gradients for example, no significant difference in accident rates had been identified for the +3% to -3% range, whereas over 6% grades showed increased accident rates. Using this experience the following seven broad geometric element categories were established for this research project:

(1) Straight alignment with different grade categories.

(2) Straight alignment with crest vertical curves.

(3) Gentle curved alignment (radius 1000 to 500m) and different grade categories.

(4) Sharp curved alignment (radius less than 500m) and different grade categories.

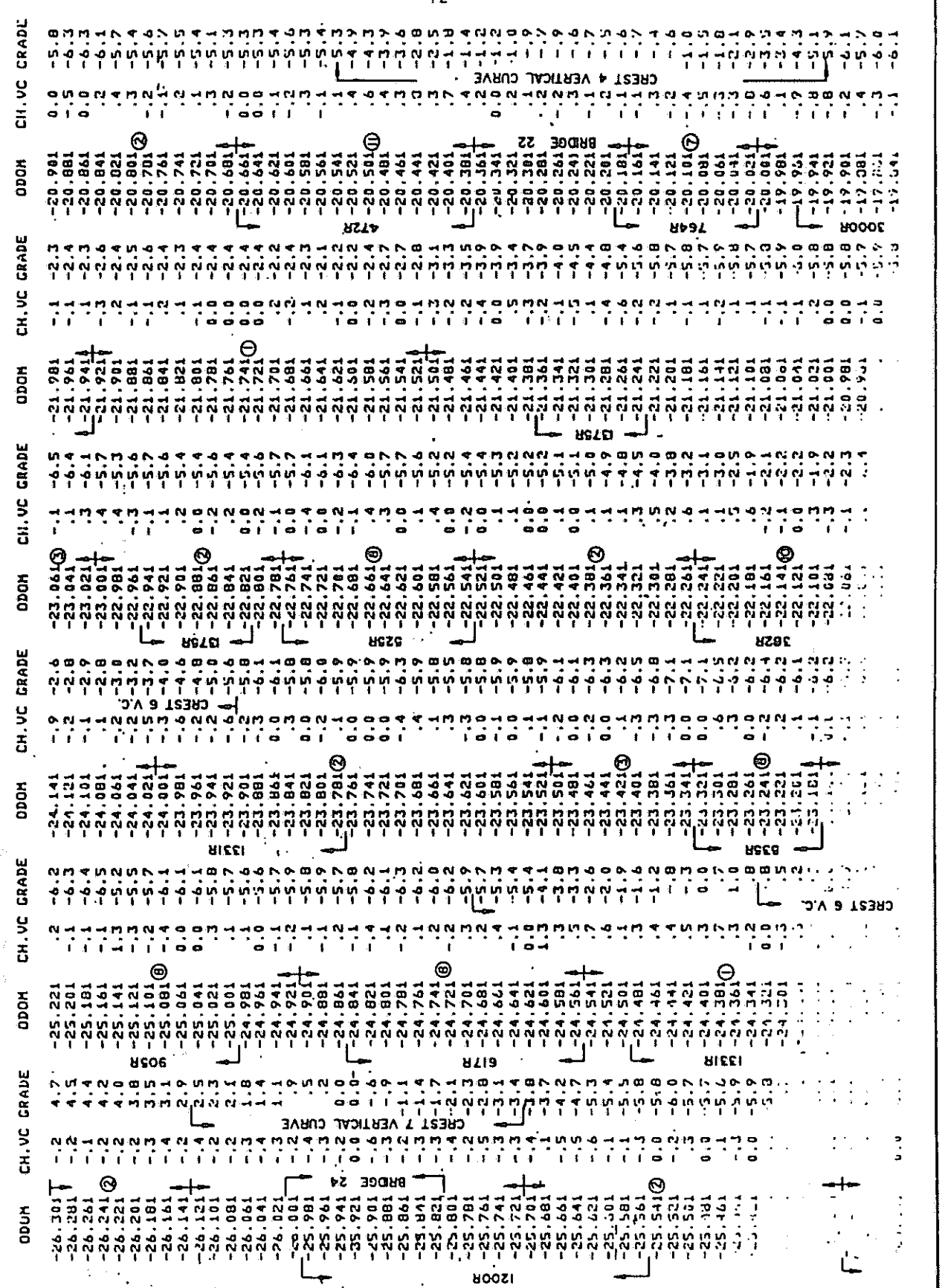
(5) Intersections or on-off freeway ramps on straight with different grade categories.

(6) Intersections or on-off freeway ramps on curved alignments with different grade categories.

(7) Bridge structures (road, rail, river) or interchange structures occurring in the section in combination with straight, horizontal and vertical curves.

Altogether a total of 22 sub-geometric elements comprising combinations of the above categories were used in this research project.

The lengths of road for which photologger data (horizontal and vertical geometry) and road log data (intersection and structure locations) were available, were subdivided into one of 22 types of geometric elements, covering most of the possible combinations of road geometry, intersections and structures for single and dual carriageway roads. A typical example of a photolog page sub-divided into elements is shown in Figure 3.1. Typical examples of the photolog horizontal and vertical geometry are shown in Figures 3.2 and 3.3. The number of road sections falling into each of the 22 geometric element types for single and dual carriageways, is shown in Table 3.4. The average section length for the geometric elements was 0,66 km and the range in element lengths was from 0,18 km to 7,84 km.



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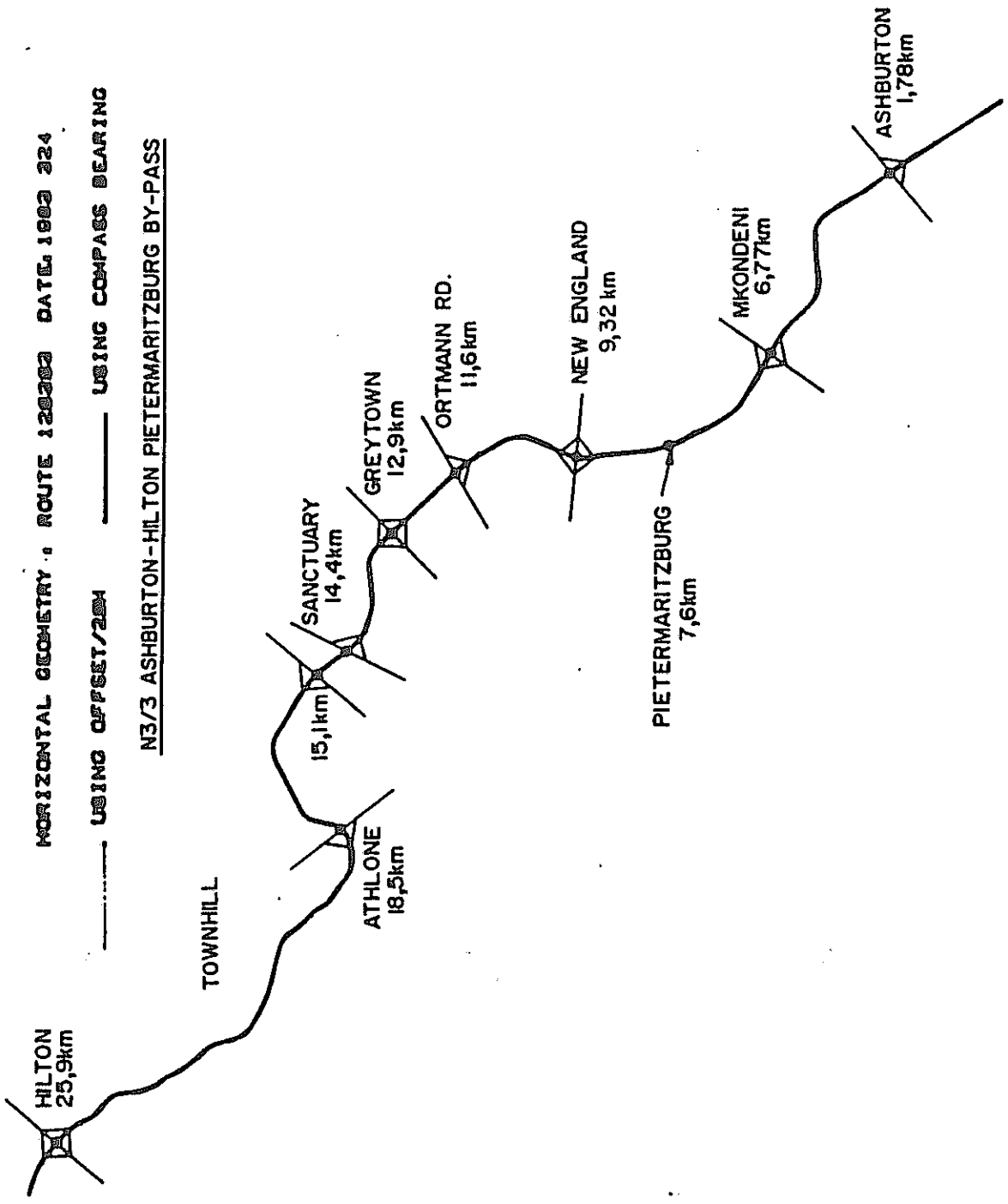
TYPICAL PAGE OF THE PHOTOLOG INTEGER OUTPUT ANALYSED INTO GEOMETRIC ELEMENTS

FIG 3.1



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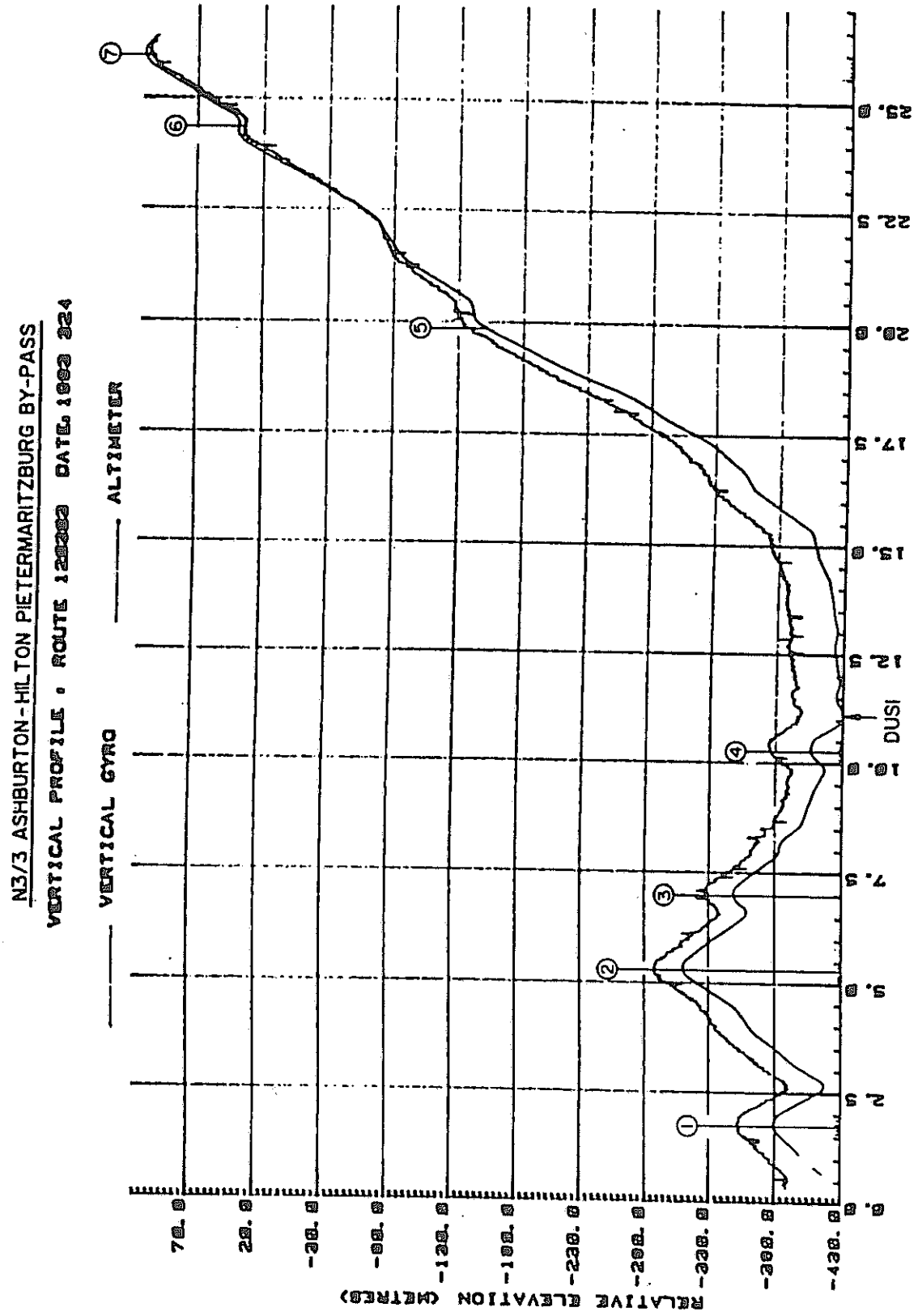
TYPICAL HORIZONTAL GEOMETRY
GRAPHICAL OUTPUT

FIG 3.2



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TYPICAL VERTICAL GEOMETRY
GRAPHICAL OUTPUT

FIG 3.3

3.3 Traffic Data

Annual average daily traffic (AADT) volumes were required for each of the data base road sections being analysed in order to calculate the accident rate per million vehicle km for each geometric element type.

All available traffic counts were obtained on the main roads for which accident records and geometric data had been collected. On some provincial roads, traffic is counted on an annual basis, while other roads are counted less frequently. On road sections where no counts were taken for the period for which accident records were obtained (1986-1989), a traffic growth rate from the nearest annual count station was applied to the most recent count to estimate the total traffic using the road section during the 3 or 4 year accident record period.

TABLE 3.4: TOTAL NUMBER OF ROAD SECTIONS FOR EACH GEOMETRIC ELEMENT TYPE IN THE INITIAL RESEARCH DATA BASE

	GEOMETRIC ELEMENT	NUMBER OF SECTIONS		
		SINGLE CARRIAGEWAY	DUAL CARRIAGEWAY FREEWAY	
A	STRAIGHT WITH GRADES			
	1. Grades less than 3%	143		43
	2. Grades between 3% and 6%	101		59
	3. Grades greater than 6%	25		10
B	STRAIGHT WITH CREST VERTICAL CURVES			
	4. K-value 120-80	10		5
	5. K-value 80-40	19		10
	6. K-value less than 40	11		0
C	HORIZONTAL CURVE RADIUS BETWEEN 1000-500m WITH GRADES			
	7. Grades less than 3%	38		14
	8. Grades greater than 3%	34		21
	9. Crest vertical curves	0		6
D	HORIZONTAL CURVE RADIUS LESS THAN 500m WITH			
	10. Grades less than 3%	20		7
	11. Grades more than 3%	38		22
	12. Crest vertical curves	5		5
E	SUCCESSIVE CRESTS AND DIPS (ROLLING)			
	13. Straight and R>1000			
	14. Horizontal curve R1000-500			
	15. Horizontal curve R<500			
F	INTERSECTIONS OR FREEWAY RAMPS ON STRAIGHT WITH			
	16. Grades less than 3%	46		33
	17. Grades more than 3%	40		15
	18. Crest vertical curves	5		2
G	INTERSECTIONS OR FREEWAY RAMPS ON CURVE WITH RADIUS LESS THAN 1000m			
	19. Grades less than 3%	15		7
	20. Grades greater than 3%	22		7
	21. Crest vertical curve	6		1
H	STRUCTURES IN COMBINATION WITH			Interchanges
	ROADS INTERCHANGES			
	22. Straight 42	27	29	18
	23. Horizontal curve 43	6	16	7
	24. Vertical curve 44	5	7	4
	25. Intersection	7	5	4
	TOTAL	623		300

4. DATA PROCESSING

4.1 Photolog data

Before matching photolog geometric data with accidents the relevance especially of the old photolog data was examined.

In the Cape the following roads have been reconstructed, mostly on new alignment since the photologging was undertaken:

George - Knysna
Port Elizabeth - Grahamstown
Cape Town - Malmesburg (portion only)
Keiskamma - East London

Except for the Refinery interchange section of the Cape Town Malmesbury road these lengths of road had to be abandoned from the data base, as no current photolog data was available.

In Natal three portions of three sections of road were reconstructed as follows:

Umkomaas - Umgababa
Westville - Mariannhill Toll Road
Key Ridge - Mariannhill Toll Road

The Umkomaas - Umgababa section (5,2 km) was excluded from the data base but a new chainage datum had to be determined to match the accident data base.

When the new Marianhill Toll Road was constructed the original N3 route past Pinetown and Fields Hill was changed to route R613 and accident records were collected on the Provincial road number P1-1. At the Key Ridge connection between the old and new N3 routes a similar situation occurred. The old N3 photolog data was used with the accident records of the P1-1 however a new chainage datum had to be determined.

4.2 Exclusion of urban sections

Traffic signals, frequent access points and on-street parking, which all occur in most urban areas cause a major portion of urban road accidents which will distort the accidents which result from road geometry. Checking each section of road resulted in excluding the following urban sections or portions of sections of roads:

Mkunzi - Newcastle	-	52 to 55 km
Newcastle - Volksrust	-	0 to 5 km
Verulam - New Guelderland	-	9 to 15 km
Port Shepstone - Izingolweni	-	0 to 4 km
Ladysmith - Keeversfontein	-	0 to 4 km
Ramsgate - Shelley Beach	-	entire section (28km)

4.3 Road categories

Single carriageway two lane two-way rural roads without access control represents the largest distance category of rural roads and should therefore be a major road category.

Four lane divided rural roads without access control occur relatively frequently in the Transvaal where greater rural traffic volumes occur. Only one section was represented in the initial research data base. TR11/1 Wingfield to Malmesbury is now of this category from 6,1 to 19 km. One section was considered inadequate for analysis and consequently these sections of road were omitted from the final research data base.

Four lane undivided rural roads with full access control have only recently been constructed and will require at least three years of accident records. No such roads were included in the initial research data base.

Four and six lane freeways were adequately represented in the sample and analysed as separate categories.

4.4 Methodology for the evaluation of road kilometre distance accuracy of accident records

Reasonable accuracy of recording the distance along a road section where an accident occurred is most important for this project. In the first generation of computerised accident records this was known to be a problem, since then however, a quality check procedure was developed by the Provinces which is described in Section 2.2 of this report. It was decided however to rather quantify the distribution of accidents for each section of road considered to establish if there were any over concentration of accidents at whole or half kilometre road distances. For analysis purposes a table was prepared with the first column representing the increasing whole kilometre road distances actually displayed along the road. The successive columns reflect the increasing road distances in tenth of kilometre divisions. The number of accidents occurring during the three or four year period, recorded for each one tenth kilometre distance was entered in the appropriate block. The total number and percentage of accidents occurring for each tenth kilometre distance is set out along the bottom rows. One of the most uniform distribution of accidents was obtained for the Hilton - Tweedie section of the N3 in Natal. The results are set out in Table 4.1. In the above case a minimum of 6% of all accidents was recorded at the 0,80 to 0,89km category and 15% for the 0,20 to 0,29km category.

In Appendix A, the distribution of accidents recorded according to the tenth of kilometre distance as obtained from the provincial accident data bases is included for all the road sections. A summary of the bottom line for the sections used in the data base is set out in Table 4.2. Another factor identified in the sections of road was the tendency to record accidents relative to the nearest bridge structure. The percentage of all accidents reported at bridge kilometre distances is shown in Table 4.2 as well as the accident categories for Natal data.

TABLE 4.1: EXAMPLE OF ANALYSIS OF DISTRIBUTION OF ACCIDENTS RECORDED BY TENTH KILOMETRE ROAD DISTANCE **N3/4 HILTON TO TWEEDIE 19,6KM**

	ROAD DISTANCE IN TENTH KILOMETRES										
Road distance in whole kilometres	0	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	Total accidents per whole kilometre
0	x	x	x	x	x	2	6	2	2	12	24
1	3	-	-	5	2	1	1	11	3	5	31
2	6	2	8	-	4	5	-	9	-	1	35
3	1	-	-	1	2	1	7	1	1	-	14
4	1	3	11	-	2	8	-	-	-	-	25
5	10	3	1	4	12	2	-	6	-	-	38
6	-	8	2	1	-	-	-	1	4	1	17
7	3	-	15	-	-	-	1	-	1	1	21
8	3	-	1	1	1	-	11	-	-	-	17
9	1	6	3	-	-	6	2	-	6	2	26
10	4	-	-	-	1	5	2	-	-	-	12
11	10	7	1	7	-	-	-	6	-	4	35
12	2	-	1	7	-	-	4	4	-	18	36
13	1	4	-	1	1	-	-	-	5	-	12
14	-	-	6	-	2	3	1	-	1	1	14
15	-	4	-	-	1	1	-	2	2	1	11
16	1	-	-	1	1	3	-	4	-	1	11
17	1	-	1	1	1	2	1	-	1	2	10
18	-	-	1	-	1	-	-	-	-	10	12
19	-	1	7	1	-	7	2	4	-	-	22
20	1	x	x	x	x	x	x	x	x	x	1
TOTAL ACCIDENTS PER TENTH KM	48	38	58	30	31	46	38	50	26	59	424
%	11%	9%	14%	7%	7%	11%	9%	12%	6%	14%	100%

TABLE 4.2: SUMMARY OF DISTRIBUTION OF ACCIDENTS BY TENTH OF KILOMETRE ROAD DISTANCE AND ACCIDENT CATEGORY

	Road Section	Dist. km	Accidents No.	0 %	0,1 %	0,2 %	0,3 %	0,4 %	0,5 %	0,6 %	0,7 %	0,8 %	0,9 %	Total %	Bridges %	ACCIDENT CATEGORY		
																Single %	Dark %	Wet %
N2/24	Umnini to Winkelspruit	8.8	174	49	6	6	8	1	17	3	1	6	3	100	19	34	46	15
N2/25	Isipingo to Durban N boundary	29.5	770	10	4	10	8	8	5	17	21	7	10	100	47	19	30	25
N2/26	Durban N boundary to Umdloti	7.0	74	7	5	8	50	11	0	7	3	1	7	99	77	32	32	32
N3/1	N2 to Paradise Valley	8.0	269	14	2	5	3	14	12	1	46	3	1	101	67	31	33	31
P1/1	Westville to Emberton	11.5	418	10	8	13	22	7	15	9	7	8	1	100	39	27	28	31
N3/2	Key Ridge to Inchanga	9.9	226	20	4	8	8	9	6	35	2	3	4	99	5	41	50	19
N3/3	Ashburton to Hilton	26.3	622	18	9	10	7	8	10	10	15	3	9	99	33	39	50	32
N3/4	Hilton to Tweedie	19.6	424	11	9	14	7	7	11	9	12	6	14	100	13	46	49	30
N3/4	Mooi River	10.0	193	12	2	24	3	20	7	13	5	9	4	102	13	54	65	31
TR9/2	Du Toits Kloof	39.2	548	49	10	6	7	5	7	4	5	6	1	100	-	-	-	-
TR9/7	Three Sisters to Richmond	29.6	124	4	7	15	20	10	15	15	11	2	-	99	-	-	-	-
TR2/11	Knysna to Plettenberg	27.0	301	81	4	3	3	3	2	1	2	2	-	100	-	-	-	-
TR1/1	George to Outeniqua	21.5	281	37	5	7	17	7	7	7	3	2	11	100	-	-	-	-
N1/1	Koeberg to Bellville	15.5	1 042	19	9	10	6	7	9	10	8	10	12	100	4	-	-	-
TR11/1	Wingfield to Refinery	6.1	186	15	19	35	9	6	4	1	5	3	3	100	27	-	-	-
P4/1	Izingolweni to Port Shepstone	6.6	124	25	5	7	2	8	24	2	19	4	4	100	3	21	40	24
P2/2	(2) Verulam to New Guelderland	12.3	268	27	7	4	16	11	7	7	6	6	10	101		17	36	16

(a) **Kilometre distance location analysis**

From the Umnini section, 49% and 17% of all accidents were recorded on a whole of half kilometre distance post respectively. Nineteen percent of all accidents were recorded at bridge locations. As curve or gradient geometry changes do not predominate at these fixed locations it has been presumed that the exact distance location of most of the accidents over this section are not known. In attempting to identify the location of an accident not visited by a police officer it appears that recourse is first made to the nearest whole kilometre, bridge or nearest half kilometre distance. This unfortunately results in over concentration of accidents at locations irrespective of the geometry as reflected in this section.

The problem of over representation at whole number kilometre distance points also occurs on the Inchanga section (20%), du Toits Kloof section (46%), Knysna (81%), Outeniqua (51%) and Koeberg section (19%).

On road sections where accidents were recorded predominantly on whole kilometre distances, the road geometry element category was revised to reflect the most common element occurring 250 m on either side of the whole kilometre distance.

On the N2/1 Cape Town to Somerset West section many changes to the starting kilometre point have been made. On the accident output obtained for this section, 80% of all the accidents were recorded at five distance locations. This section was therefore omitted entirely from the final data base.

(b) **Bridge location analysis**

On sections of freeway with many bridges (road, river or rail) or interchange bridges it appears that accidents are recorded predominantly relative to bridge distance location rather than the exact kilometre distance. On the Durban outer ring road (N2/26) and the N3 from the N2 to Paradise Valley 77% and 67% of all accidents were recorded at bridge distances (see Table 4.2). Again if the exact distance of an accident is not known, the nearest bridge appears to be identified and recorded as the location.

The predominance of accidents recorded at bridges could not be compensated on the adjacent geometric element as bridges are irregularly and infrequently positioned along a length of road.

4.5 Length of geometric elements

The lengths of the geometric elements identified according to the categories A to H shown in Table 3.4 varied considerably. For straights between curves the length varies from 200 to 3 000 m. Some curves were 200 m long and others 800 m long. Lengths of crest vertical curves also varied considerably as did distances between interchange on-off ramp nose points.

In order to render comparisons of different geometric sections more valid it was decided to keep the length of all geometric sections as near equal as possible. Similar research in the United States used 0,3 miles as the basic element length which is equivalent to 0,49 kilometres. A length of 500 m was adopted for the final research data base.

The application of this principle resulted in long lengths of straights being sub-divided into 500 m lengths. Where there was a predominance of whole km accident recording, the sections were divided at the 0,25 and 0,75 km points. Lengths of straights less than 250 m were included in the adjacent curve if the curve was long enough. Conversely short lengths of curve (less than 200 m) were included in the straight section.

Interchange on-off ramp sections were recorded as 100 m from the nose point towards the interchange bridge and 400 m from the nose point away from the bridge direction (see Figure 4.1).

The distance between the two nearest ramp nose points was used for the length of interchange bridge sections. On freeways with high design standards this distance was more than 800 m, those with lower standards were as short as 200 m.

4.6 Accident categories

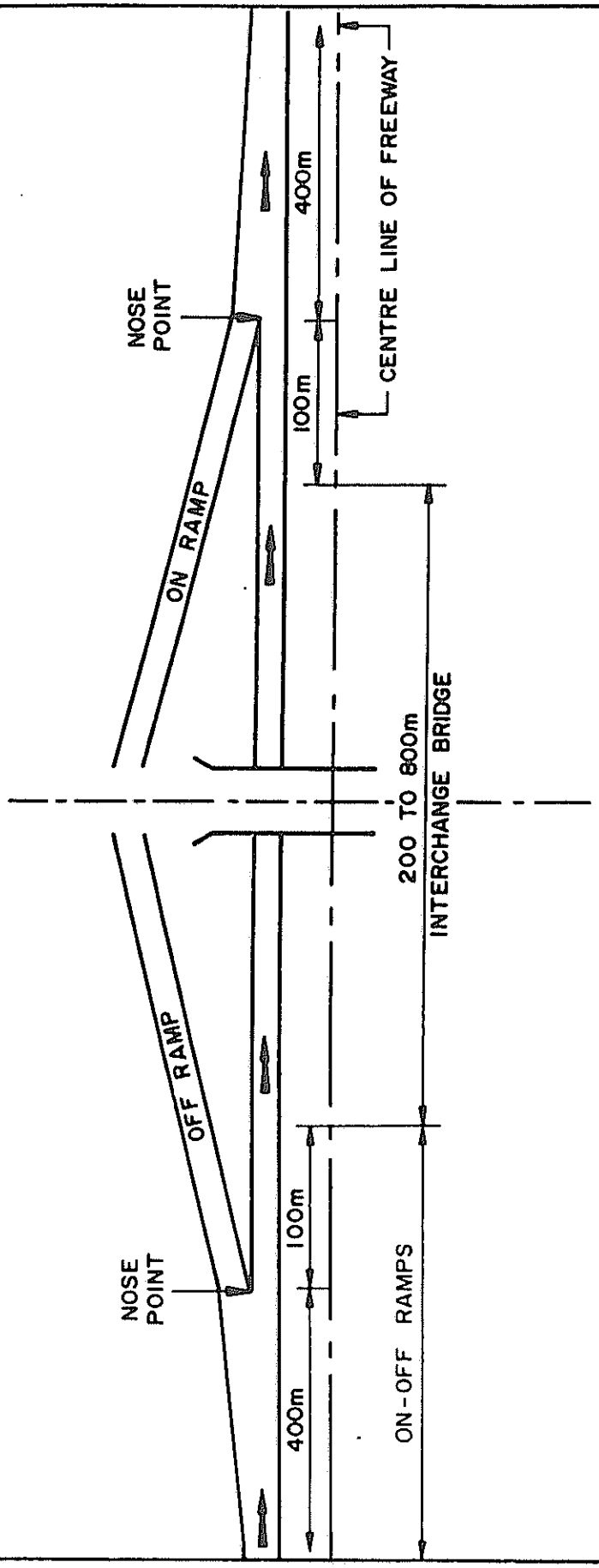
While the goal of this project is to determine accident rates irrespective of the actual category of accident, from the Natal accident data, it was relatively easy to obtain the percent of:

(i) Single vehicle accidents

(ii) Accidents which occur in the dark

(iii) Accidents which occur when the road is wet

The percentage of accidents for each length of road in Natal are set out in Table 4.2. Sections with high dark and wet percentages, which could indicate the circumstances contributing to the cause of the accident have been shown shaded in Table 4.2.



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LENGTH OF GEOMETRIC ELEMENTS AT FREEWAY INTERCHANGES

FIG 4.1

4.7 Final research data base

After undertaking the above activities the final research data base contained only 347 km and a total of 6 685 accidents. Details of each road section are set out in Table 4.3.

The revised number of geometric elements each about 500 m long grouped according to two lane two way roads or four or six lane freeways are set out in Table 4.4. A total of 311 elements for two lane and a total of 331 for four lane and six lane combined sections comprised the final data base.

The 1986 traffic volumes for each section was used to calculate the number of vehicle kilometres travelled over the section for the 3 or 4 year accident duration using appropriate traffic growth factors. The accident rate for each element was then calculated using dBase 3 computer programme. The output for each section of road sub-divided into the various geometric elements according to increasing distance along the road is included in Appendix B.

In order to evaluate groups of the same geometric element a computerised sort of the data base was undertaken. All the same elements were listed according to increasing daily traffic for two lane roads, four lane and six lane freeways. The details for each element group are included in Appendix C.

TABLE 4.3: ROAD SECTIONS AND ACCIDENTS INCLUDED IN FINAL RESEARCH DATA BASE

Road Category and Section	Distance km	Accidents Number
Two lane two way		
TR9/2 Du Toits Kloof	39,2	570
TR9/7 Three Sisters	29,6	120
TR2/11 Knysna to Plettenberg Bay	27,0	269
P4/1 Izingolweni to Port Shepstone	6,6	124
P1/13 Volksrust to Newcastle	3,2	50
P1/12 Mkunzi to Newcastle	7,8	98
P31 Ladysmith to Keeversfontein	22,9	237
P2/2 (1) Verulam to New Guelderland	3,6	48
P2/2 (2) Verulam to New Guelderland	12,3	268
TR1/1 Outeniqua Pass	21,5	207
P1/10 Colenso	10,0	147
SUB TOTAL	183,7	2 138
Four lane freeway		
N2/24 Umnini to Winkelspruit	8,8	174
N2/26 Umdloti	7,0	74
P1/1 Westville to Emberton	11,0	416
N3/4 Hilton to Tweedie	19,6	427
TR11/1 Wingfield to Refinery	6,1	171
N3/4 Mooi River	10,0	193
N3/3 Asburton to Hilton	26,3	696
N3/2 Key Ridge to Inchanga	9,9	226
TR81/1 N2 to N1	10,8	89
SUB TOTAL	109,5	2 466
Six lane freeway		
N2/25 Isipingo to Durban North	29,5	770
N3/1 N2 to Paradise	8,5	269
N1/1 Koeberg to Belville	15,5	1 042
SUB TOTAL	53,5	2 081
GRAND TOTAL	346,7	6 685

TABLE 4.4: TOTAL NUMBER OF ROAD SECTIONS FOR EACH GEOMETRIC ELEMENT TYPE IN THE FINAL RESEARCH DATA BASE

	GEOMETRIC ELEMENT	NUMBER OF SECTIONS			
		SINGLE CARRIAGEWAY	DUAL CARRIAGEWAY FREEWAY		
A	STRAIGHT WITH GRADES				
	1. Grades less than 3%	99		40	17
	2. Grades between 3% and 6%	42		25	11
	3. Grades greater than 6%	11		6	-
B	STRAIGHT WITH CREST VERTICAL CURVES				
	4. K-value 120-80	7		2	1
	5. K-value 80-40	6		3	1
	6. K-value less than 40	6		-	-
C	HORIZONTAL CURVE RADIUS BETWEEN 1000-500m WITH GRADES				
	7. Grades less than 3%	23		6	2
	8. Grades greater than 3%	26		4	4
	9. Crest vertical curves	4		3	-
D	HORIZONTAL CURVE RADIUS LESS THAN 500m WITH				
	10. Grades less than 3%	6		6	
	11. Grades more than 3%	17		14	
	12. Crest vertical curves	6		3	
E	SUCCESSIVE CRESTS AND DIPS (ROLLING)				
	13. Straight and R > 1000	5			
	14. Horizontal curve R1000-500	1			
	15. Horizontal curve R < 500	-			
F	INTERSECTIONS OR FREEWAY RAMPS ON STRAIGHT WITH				
	16. Grades less than 3%	15		31	14
	17. Grades more than 3%	7		11	4
	18. Crest vertical curves	3		3	1
G	INTERSECTIONS OR FREEWAY RAMPS ON CURVE WITH RADIUS LESS THAN 1000m				
	19. Grades less than 3%	3		5	5
	20. Grades greater than 3%	8		3	4
	21. Crest vertical curve	2		-	-
H	BRIDGES IN COMBINATION WITH			Interchanges	
	ROADS INTERCHANGES				
	22. Straight 42	8	45	31	
	23. Horizontal curve 43	4	8	11	
	24. Vertical curve 44	-	3	4	
	25. Intersection	2	-	-	
	TOTAL	311	331		

5. ANALYSIS OF RESULTS

5.1 Road category accident rates relative to daily traffic

Before analysing the accident rates of particular elements, the average accident rates for the various road categories for lengths varying from 3 to 30 km were calculated and compared. The distance weighted average accident rate for each road category was also calculated. The two lane road accident rates are set out in Table 5.1 and the 4 lane and 6 lane freeway rates in Tables 5.2 and 5.3

TABLE 5.1: TWO LANE ROAD ACCIDENT RATES RELATIVE TO DAILY TRAFFIC

No.	Road Section	Total accidents	AADT	Accidents per km per year	3 or 4* year total traffic Veh.kmx10^4	Accident Rate per veh.kmx10^4
1.	Three Sisters	120*	1 300	1,0	57*	2,1
2.	Outeniqua	207*	2 100	2,4	66*	3,2
3.	Knysna	269*	3 300	2,5	130*	2,3
4.	Ladysmith	237	4 200	3,4	105	2,2
5.	Mkunzi	98	4 200	4,2	36	2,7
6.	Du Toits Kloof	570*	4 500	3,4	256*	2,2
7.	Verulam (2)	268	5 000	7,3	67	4,0
8.	Izingolweni	124	5 200	6,3	38	3,3
9.	Verulam (1)	48	6 500	4,4	26	1,8
10.	Colenso	147	7 000	4,9	77	1,9
11.	Volksrus	50	7 000	5,2	25	2,0
Distance weighted average (excluding sections 7 and 8)						2,3

* four year

	TABLE 5.2: FOUR LANE FREEWAY ACCIDENT RATES RELATIVE TO DAILY TRAFFIC					
No.	**Road Section**	**Total accidents**	**AADT**	**Accidents per km per year**	**3 or 4* year total traffic Veh.kmx10⁶**	**Accident Rate per Veh.kmx10⁶**
1.	Mooi River	193	7 600	6,4	83	2,3
2.	Umdloti	74	9 000	3,5	69	1,1
3.	Tweedie	427	9 000	7,3	193	2,2
4.	PMB Grey to Ath	116	10 000	6,5	65	1,8
5.	PMB to Grey	87	12 000	6,0	63	1,4
6.	Wingfield	171*	12 600	7,0	112*	1,5
7.	Umnini	174	14 000	6,6	135	1,3
8.	PMB Town Hill	289	14 000	12,5	118	2,4
9.	Emberton	346	17 000	12,8	167	2,1
10.	PMB Asburton	222	18 000	9,5	153	1,5
11.	Inchanga	226	20 500	7,8	215	1,1
12.	Westville	72	30 000	9,6	82	0,9
Distance weighted average						1,7

* four year

TABLE 5.3: SIX LANE FREEWAY ACCIDENT RATES RELATIVE TO DAILY TRAFFIC					
Road Section	**Total accidents**	**AADT**	**Accidents per km per year**	**3 or 4* year total traffic Veh.kmx10⁶**	**Accident Rate per Veh.kmx10⁶**
S. Freeway - Chatsworth	35	30 000	5,6	69	0,51
Chatsworth - 4 level	315	36 000	9,5	433	0,73
4 level - Paradise	269	48 000	11,2	420	0,64
4 level - Avoca	301	52 000	8,3	683	0,44
Isipingo - S freeway	121	54 000	6,3	378	0,32
Koeberg	1 042*	70 000	16,8	1 584*	0,66
Distance weighted average					0,6

* four year

The accident rates from Tables 5.1 to 5.3 are shown in Figure 5.1. For the two lane road section, the points 3,2 (Outeniqua Pass) 4,0 (Verulam (2)) and 3.3 (Izingolweni) could be regarded as abnormally high accident rate roads and the visually estimated dotted line could reflect an average accident rate for two lane roads which decreases with increasing daily traffic.

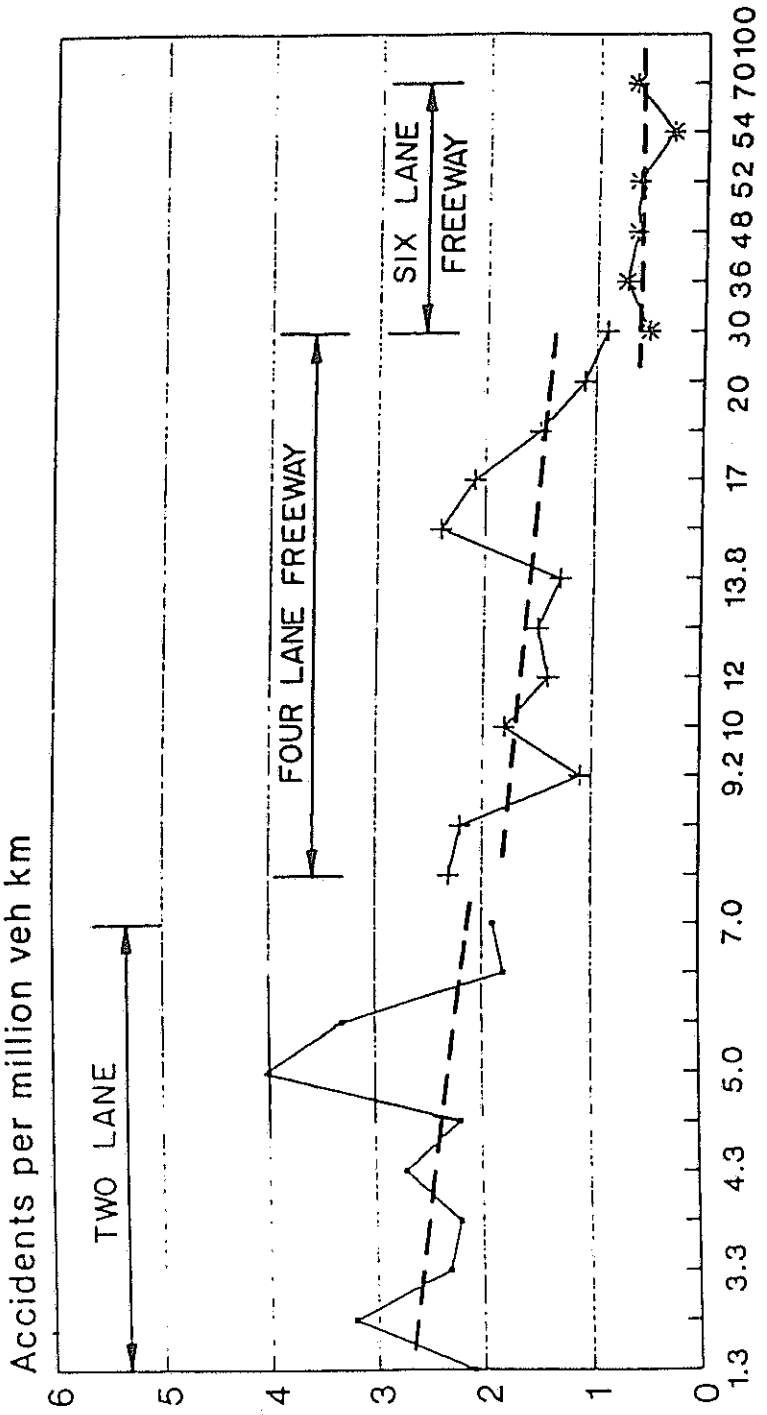
The graph for four lane freeways also shows a decrease in accident rate with increasing daily traffic. Again some points 1,1 (Umdloti) the rate is especially low, while points 2,4 (Town Hill Pietermaritzburg) and 2,1 (Fields Hill Emberton) are especially high. The visually estimated dotted line could represent the maximum average accident rate for four lane roads.

The graph for six lane freeways shows the accident rate almost constant for the range of traffic volumes except for especially low point 0,32 (Isipingo - Southern Freeway) where there are 8 lanes past the airport.

Based on the trend of decreasing accident rate with increasing daily traffic the possible average accident rates for the range of traffic volumes obtained from the final research data base for the various road categories are set out in Table 5.4.

TABLE 5.4: POSSIBLE AVERAGE ACCIDENT RATES FOR ROAD CATEGORIES

Road category	Average daily traffic veh/day	Average accident rate per million veh. km
TWO LANE RURAL (No access control)	1 500 7 000	2,5 2,0
FOUR LANE FREEWAY (Rural)	7 000 20 000	1,6 1,2
SIX LANE FREEWAY (semi rural)	30 000 40 000 70 000	0,5 0,5 0,6



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AVERAGE ACCIDENT RATES FOR TWO-FOUR AND SIX LANE ROADS RELATED TO DAILY TRAFFIC

FIG 5.1

5.2 Analysis of two lane road geometric elements

The data sorted by geometric element included in Appendix C was plotted according to daily traffic groups. In all such plots a number of sections had excessively high accident rates (outliers) these were grouped by inspection and identified within a dotted boundary line. Within the same section of road the same geometric element at different locations sometimes had different accident rates. The weighted average accident rate for that element for that section of road was calculated.

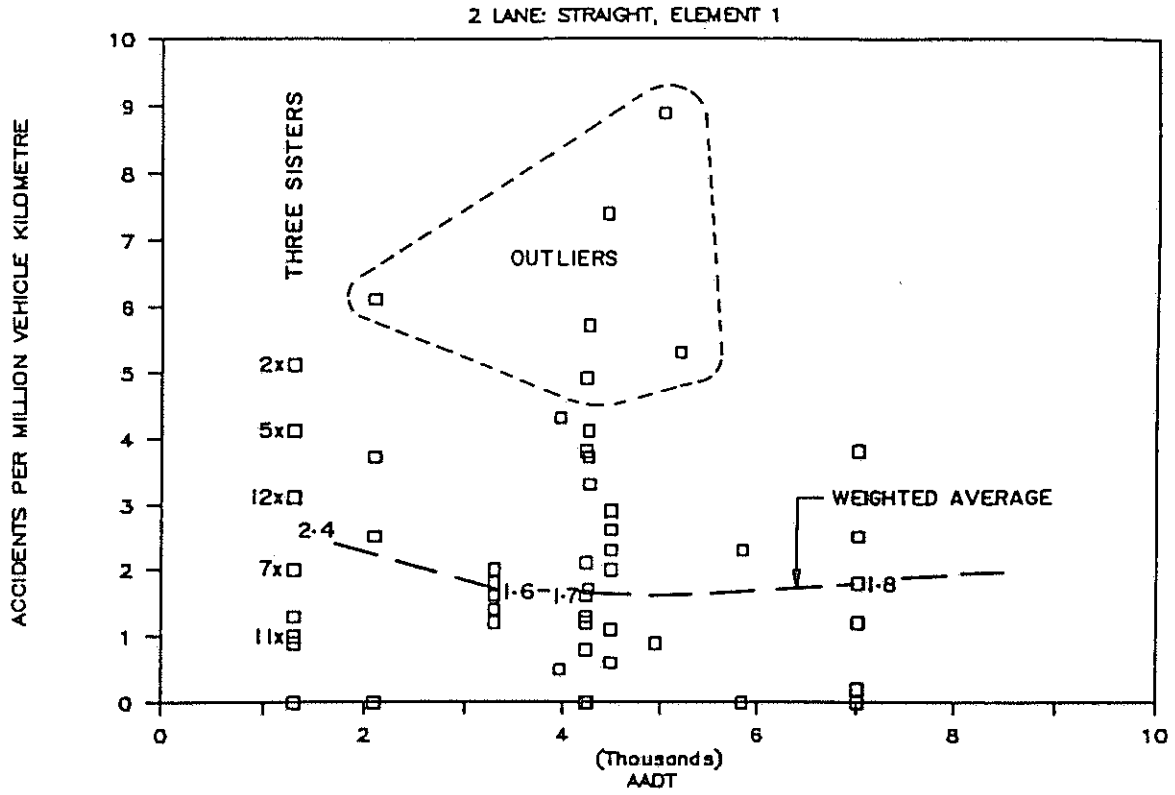
In general the number of points available for most elements was inadequate to indicate clear trends for increasing average daily traffic, consequently regression analysis was not carried out.

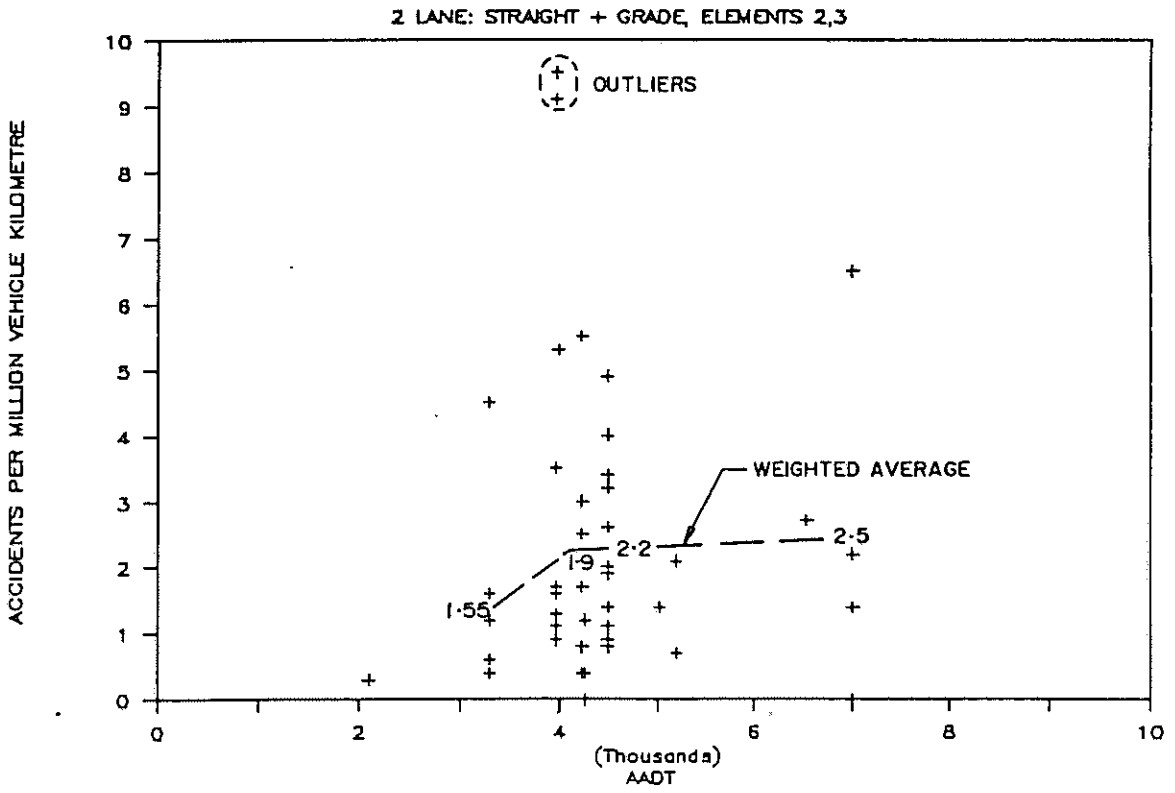
The results for straight lengths of road with grades between - 3% and + 3% (element 1) and grades more than 3% (elements 2 and 3) are shown in Figure 5.2. The weighted average accident rate is shown by a dashed line. As expected the accident rate for a straight level road ($\pm$ 1,7) is lower than the possible distance weighted average rate for two lane roads (2,3), with the accident rate for the steeper grades also lower than the average rate at about 2,2.

The results for curves greater than or less than 500m radius are shown in Figure 5.3. The weighted average for the former shows a decrease with daily traffic, while no apparent trend occurs for curves with a smaller radius. Both values are less than 2,3 the possible distance weighted average for two lane roads, which is not what was expected.

The results for intersections on straight or curved alignment are shown in Figure 5.4. As expected the rate for intersections on curves is higher than for straights. The rates for a length of road containing an intersection are higher than the possible distance weighted average for a two lane road. This indicates that the number of intersections along a rural two lane road has a considerable effect on the average accident rate. No account was taken of the number of vehicles using the crossing road. Most of the intersections however were minor roads with very low daily traffic.

Shown in Figure 5.5 are the results of lengths of road with crest vertical curves or with a bridge structure. A relatively strong decline in the accident rate with increased daily traffic occurs for crest curves. The structure accident rates are without any trend and of relatively high values. Sections of road containing a bridge would appear to be one of the most dangerous road elements. The preponderance of accidents recorded at bridge distances (see Table 4.2) is probably due to bridges being the most identifiable location along a road, these bridge values are considered to be too high.





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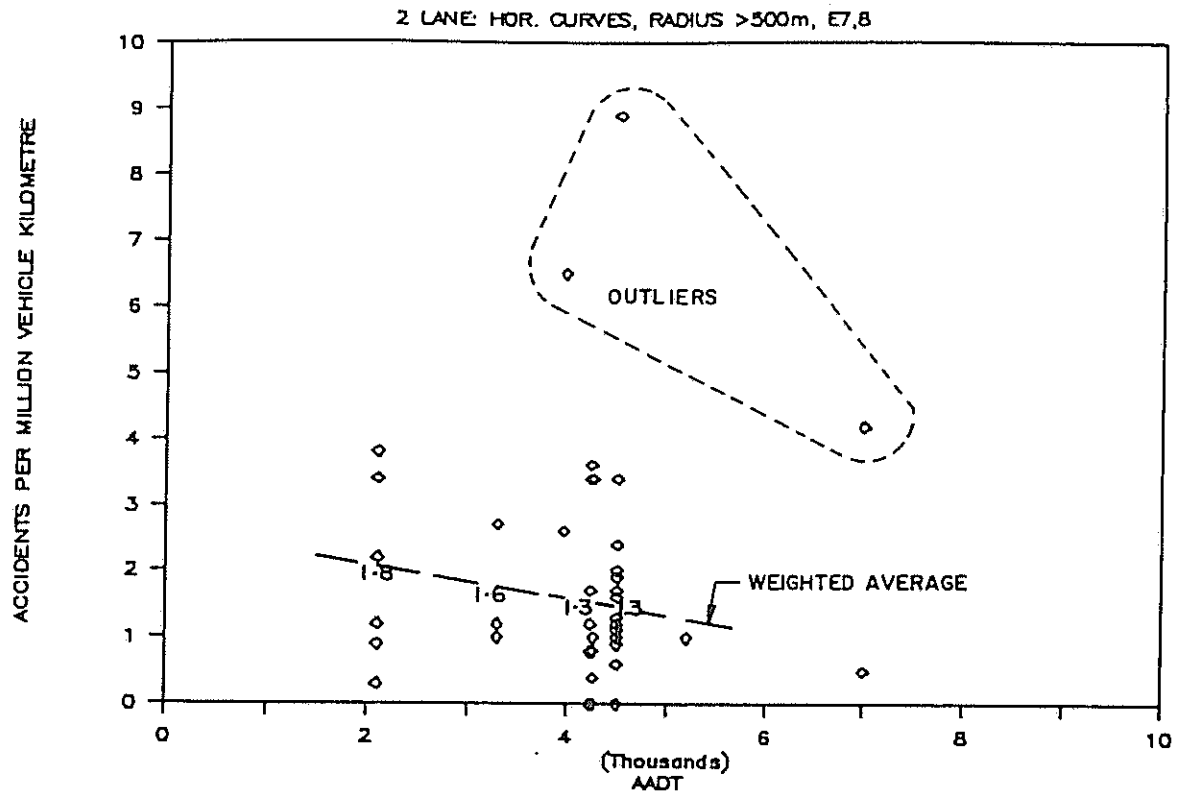
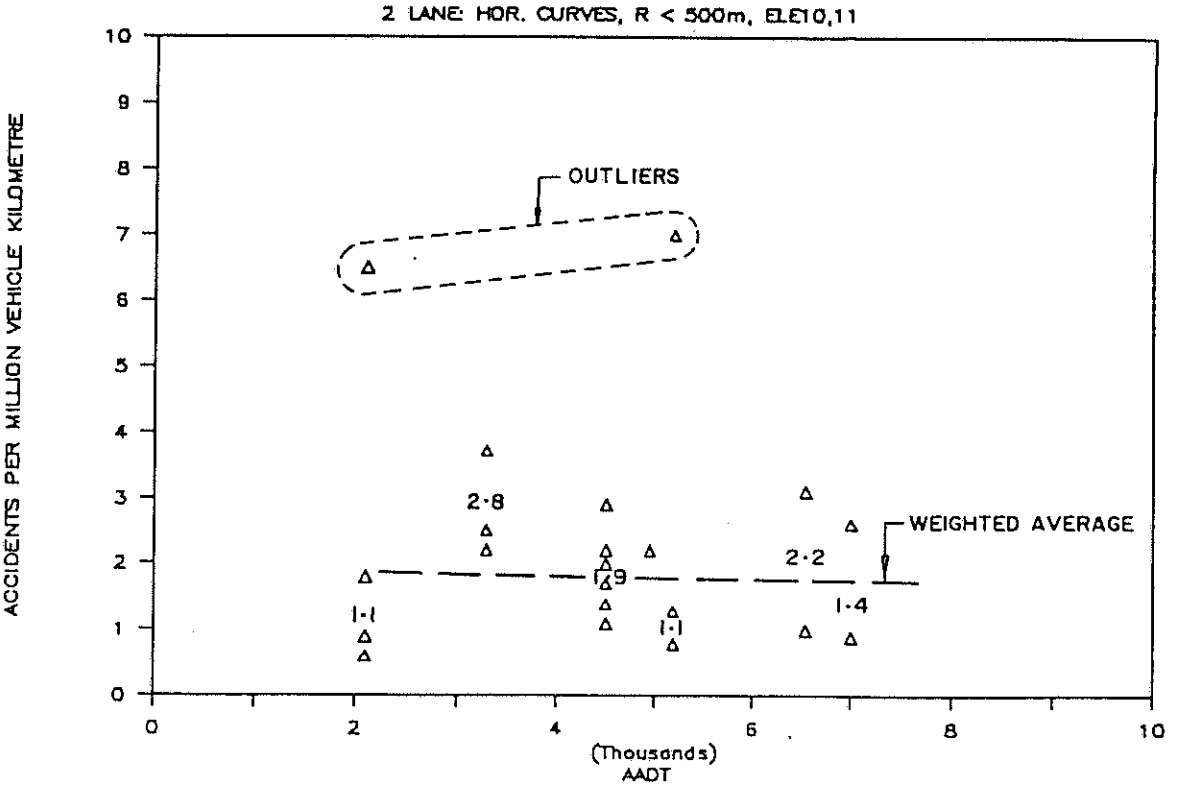
TWO LANE ROAD ACCIDENT RATE FOR STRAIGHTS AND GRADES MORE THAN THREE PER CENT

FIG 5.2





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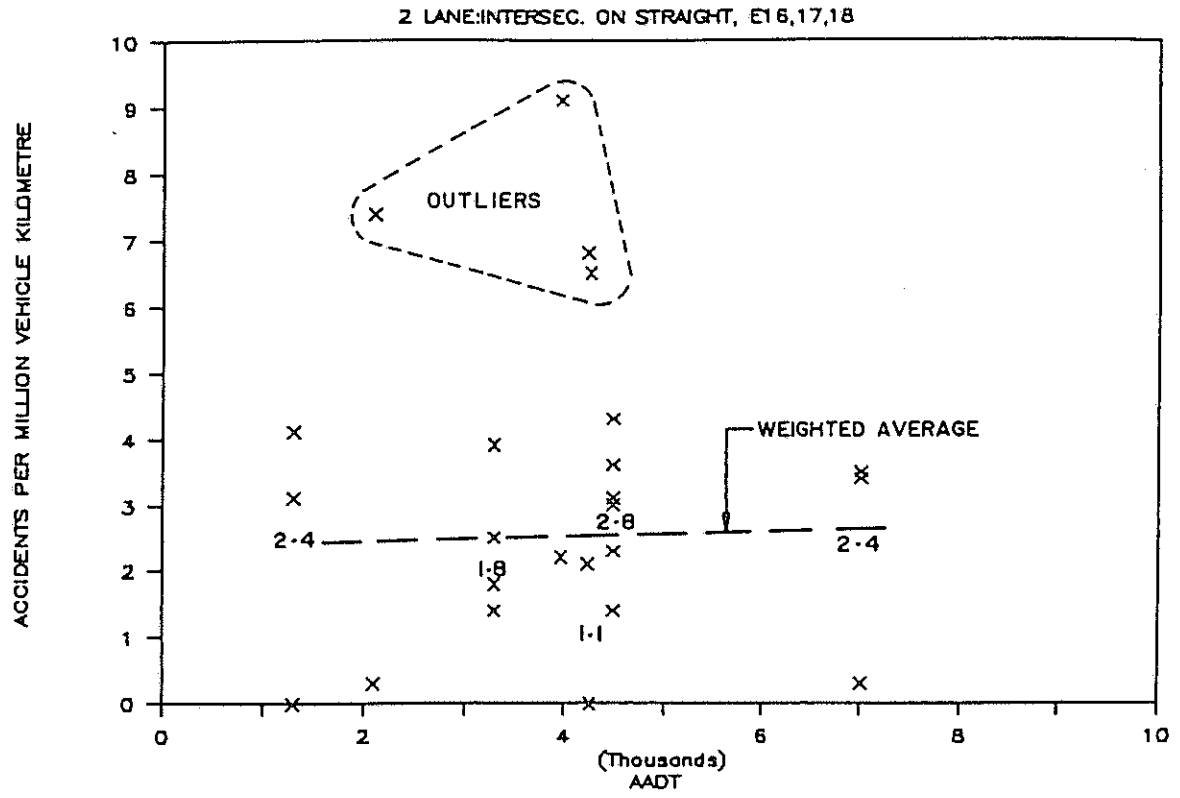
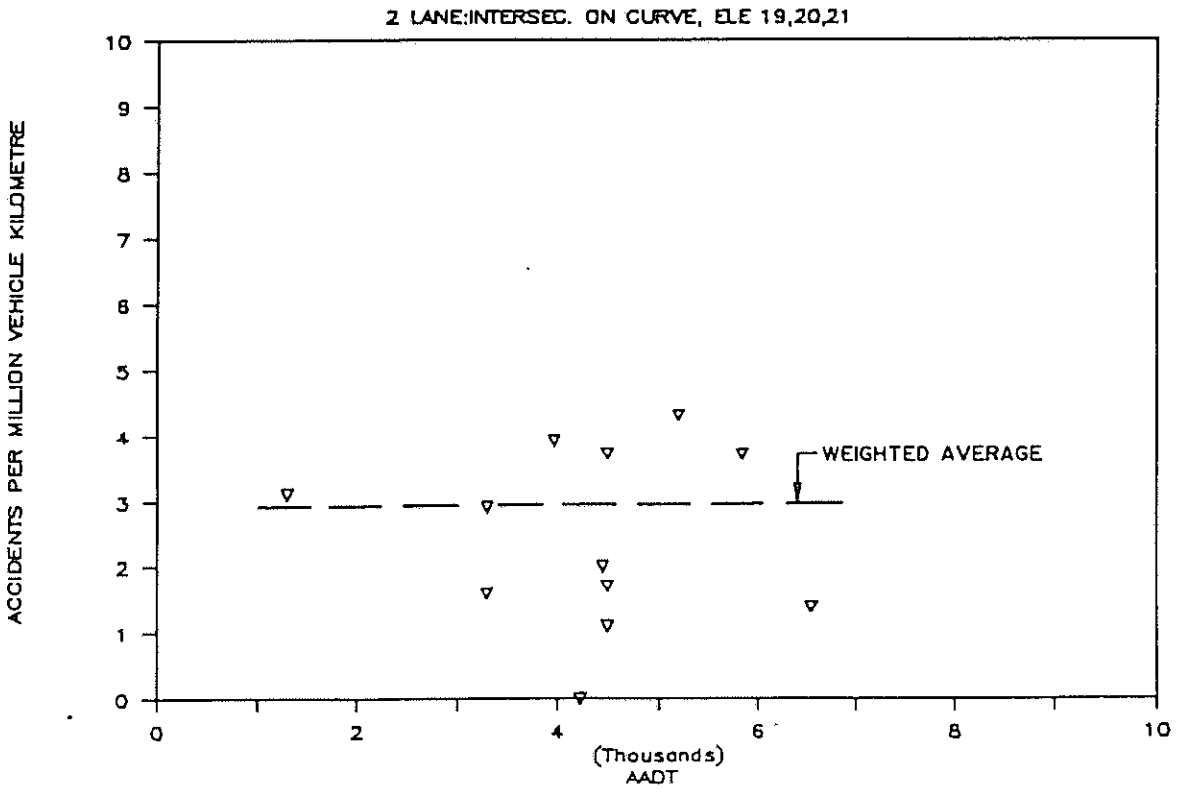
TWO LANE ROAD ACCIDENT RATE FOR HORIZONTAL CURVES

FIG 5.3





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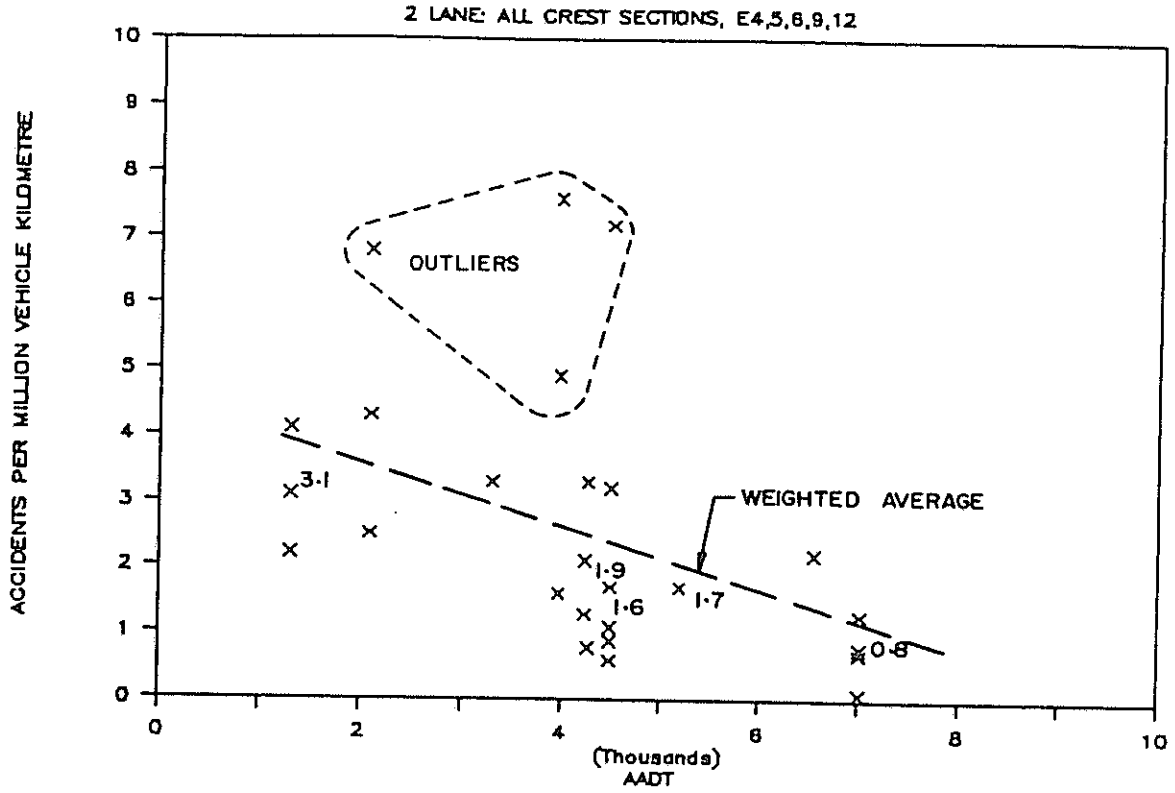
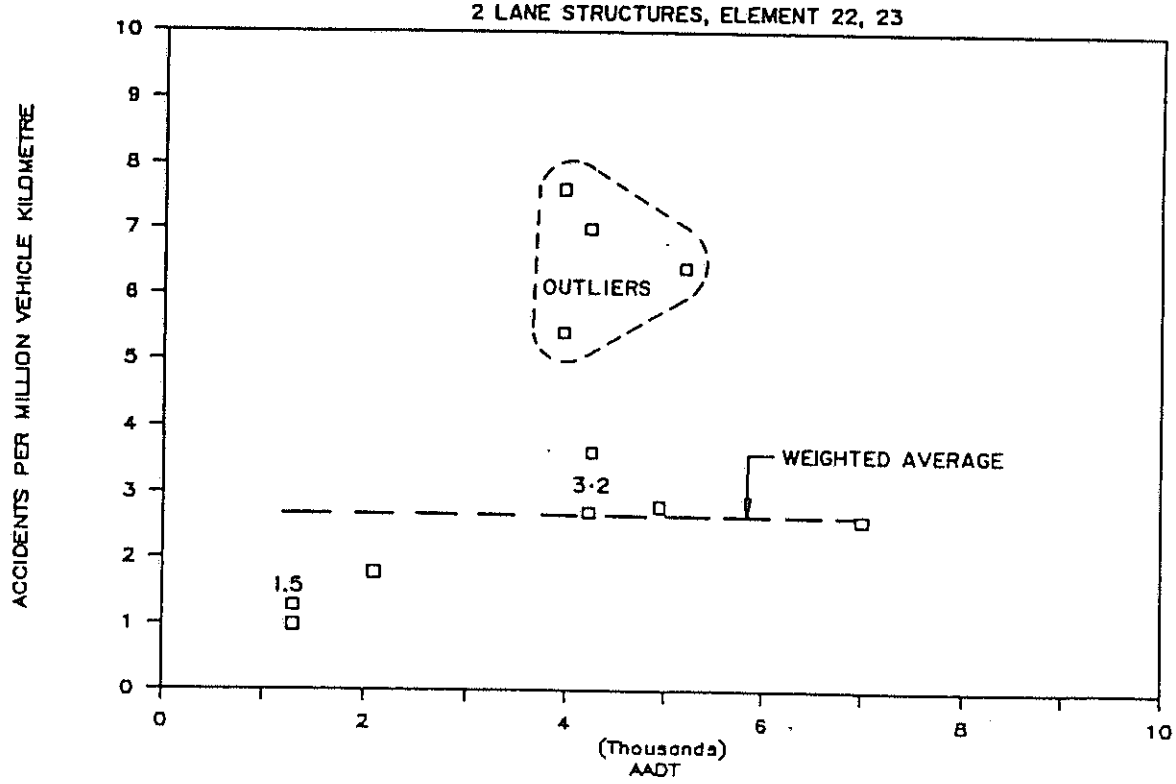
TWO LANE ROAD ACCIDENT RATE FOR INTERSECTIONS ON STRAIGHTS AND CURVES

FIG 5.4





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TWO LANE ROAD ACCIDENT RATE FOR CREST CURVES AND SECTIONS WITH BRIDGES

FIG 5.5

5.3 Analysis of four lane freeway geometric elements

The same procedures described in the analysis of two lane roads (Section 5.2) were applied to the results of four lane freeways.

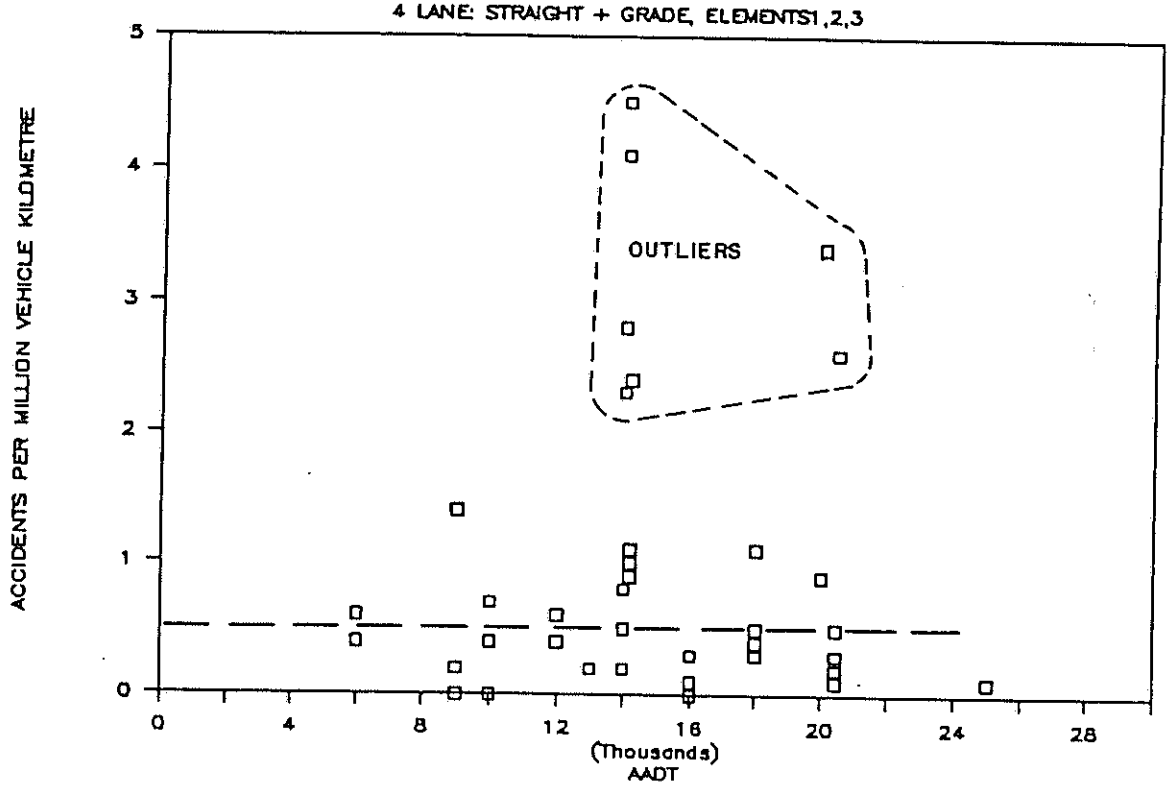
Unfortunately not many four lane freeways in the Cape or Natal function at traffic levels greater than 18 000 vehicles per day which is about 50% of capacity. A further problem already identified in Section 4.4 (b) is the over recording of accidents at bridge locations. Freeways have more bridge structures and this effect is particularly significant in semi urban areas where more crossing road bridges occur. It is considered therefore that many of the geometric element accident rates are unduly low and the rates for bridges and interchange bridges unduly high.

No discernable difference in accident rates could be identified for straight road sections with gentle and steep grades consequently the results are shown combined in Figure 5.6. The accident rate appears to be insensitive to daily traffic. The average accident rate for straight sections of road (0,5) is considerably less than the four lane freeway weighted average rate of 1,7 for all sections.

The results for sections of 4 lane freeway with curves greater than or less than 500 m radius and gradients are shown in Figure 5.7. The weighted average for curves less than 500 m radius and gradients (1,0) is lower than for curves greater than 500 m radius and gradients (1,8) which is contrary to expectations.

The results of on-off ramps with freeway grades less than 3% or more than 3% are shown in Figure 5.8. Many sections have accident rates lower than the weighted average for four lane freeways of (1,7). While the traffic volumes on the ramps were not included in the analysis this could be due to very low daily traffic using the rural ramps. The weighted average dashed line indicates a low accident rate for ramps of gradients less than 3% of about 1,4 (Graph A). It is suggested that this is because on-off ramp accidents tend to be recorded at the nearest bridge location. A similar situation but even more pronounced occurs for freeway grades of more than 3% (Graph B) with the unexpected rate of 0,9 being lower than the rate for ramps on and off freeways on grades less than 3%.

The results for bridges and interchange bridges are shown in Figure 5.9. Again, sections of roads with bridges appear to have the highest accident rate due to the over recording previously mentioned (Graph A). The rate for interchange bridges decreases with increasing daily traffic with a similar trend to Figure 5.8B for interchange ramps.



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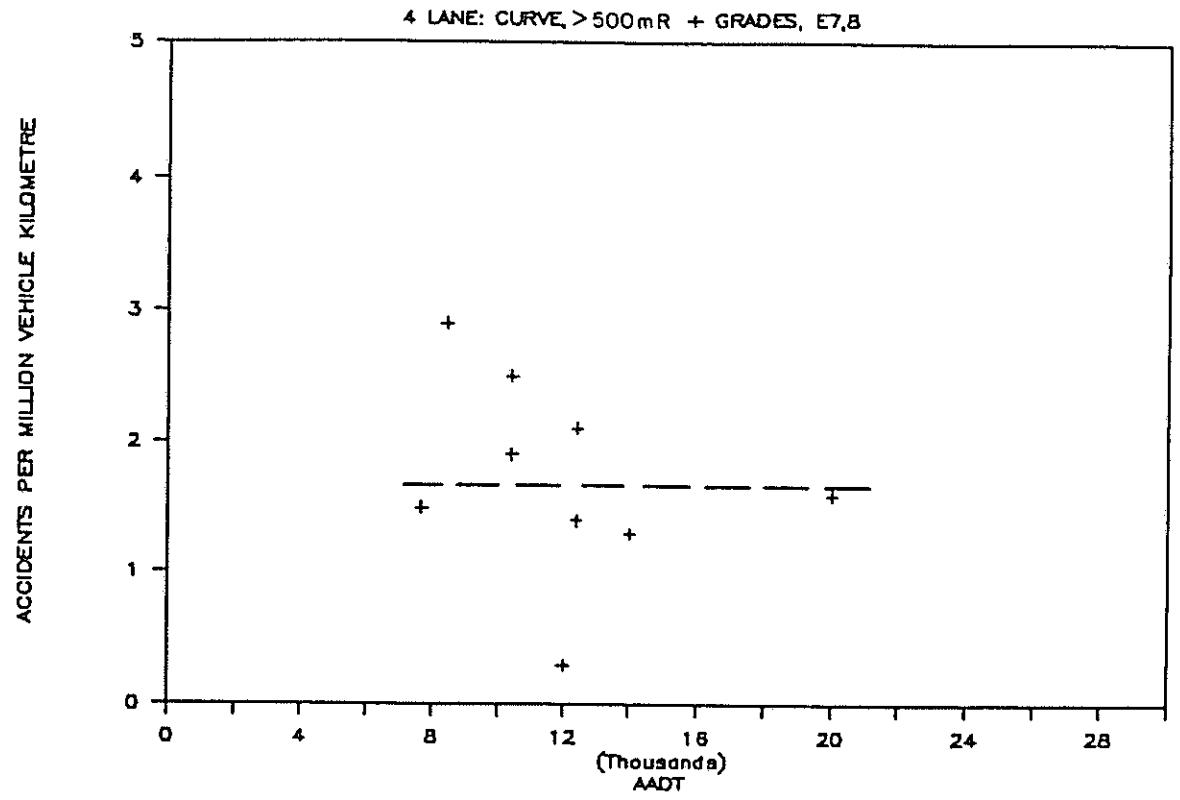
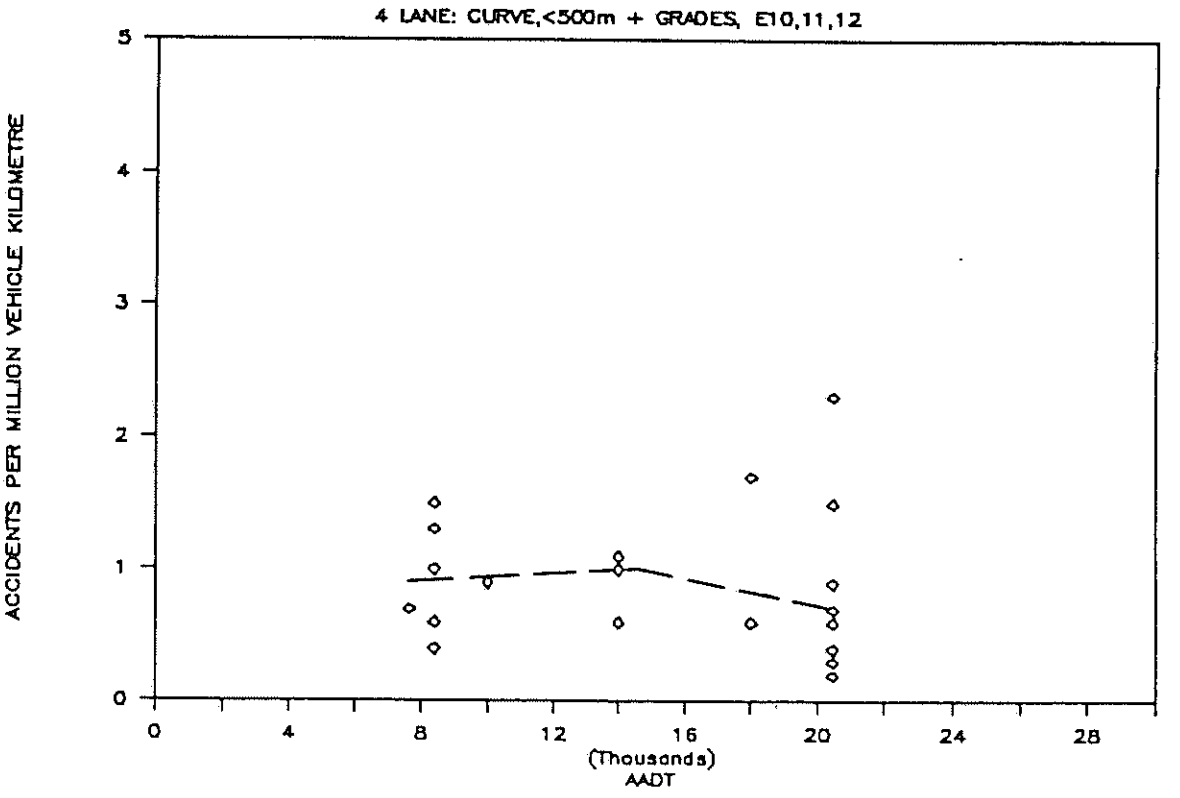
FOUR LANE FREEWAY ACCIDENT RATE FOR STRAIGHT SECTIONS

FIG 5.6





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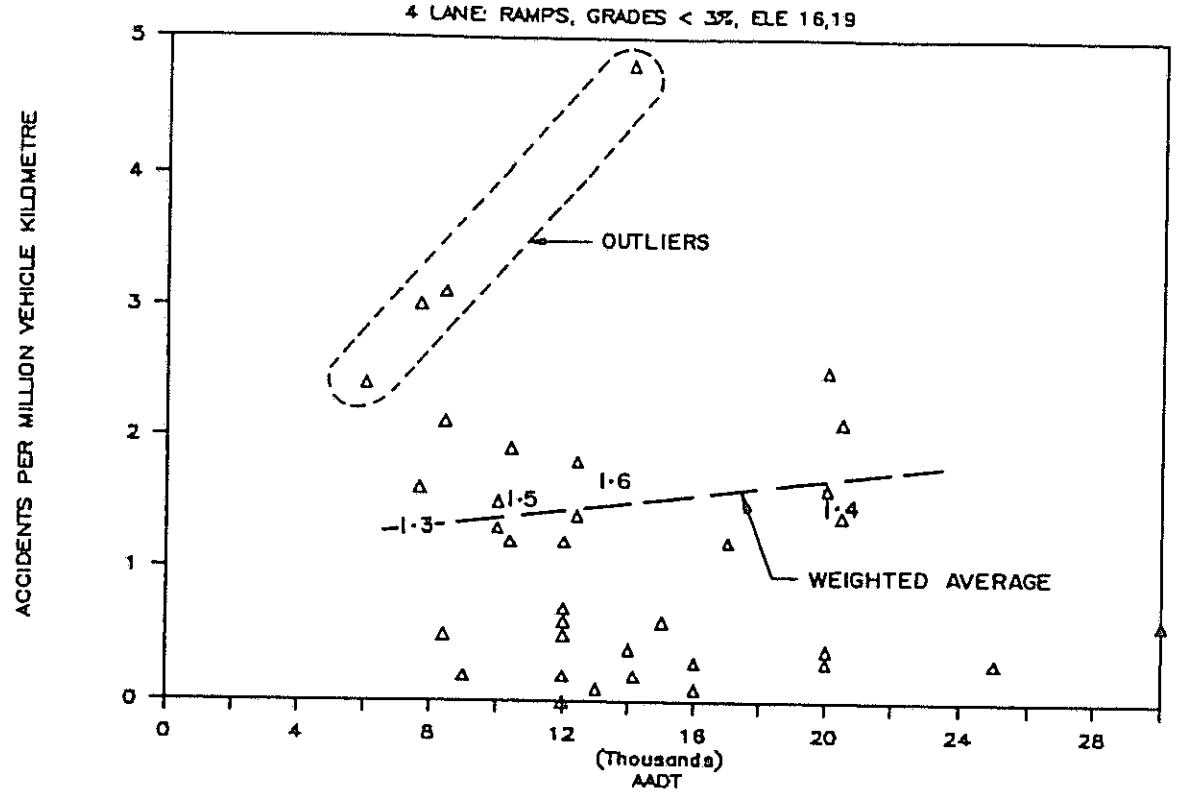
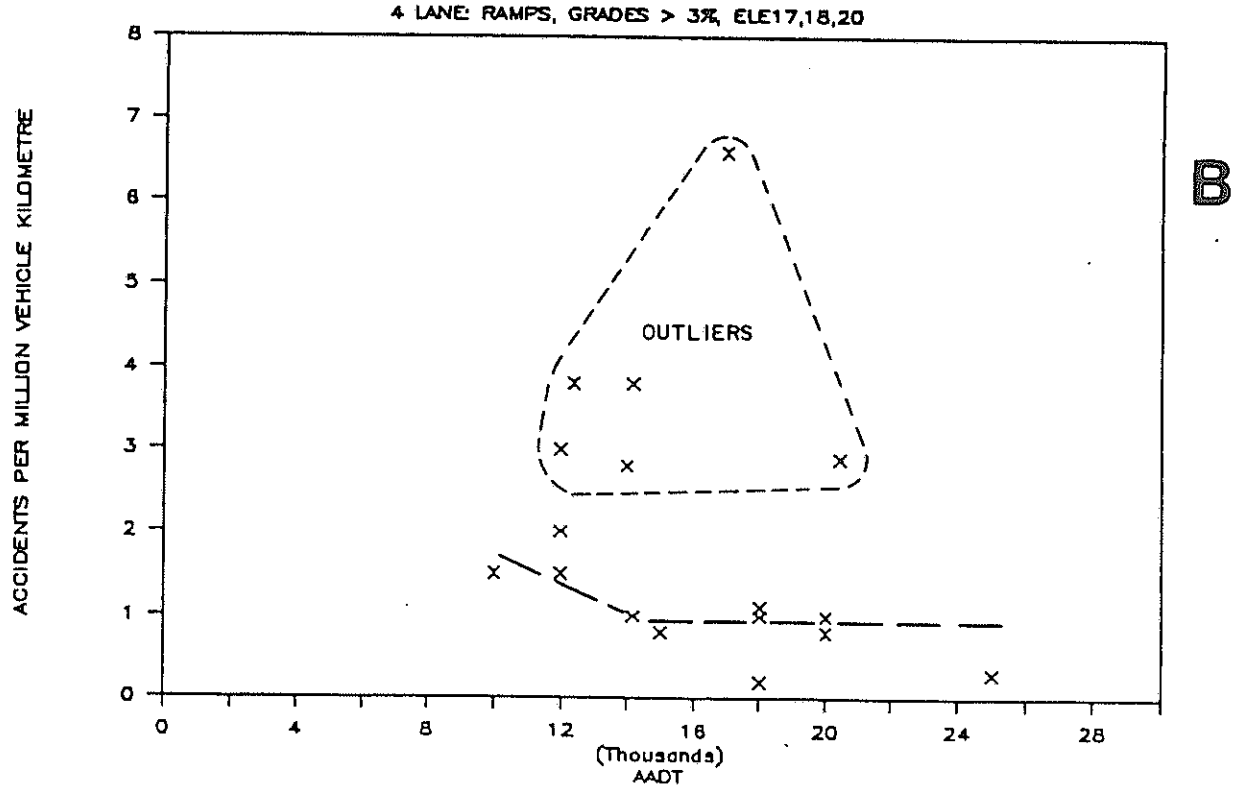
FOUR LANE FREEWAY ACCIDENT RATE FOR HORIZONTAL CURVES

FIG 5.7





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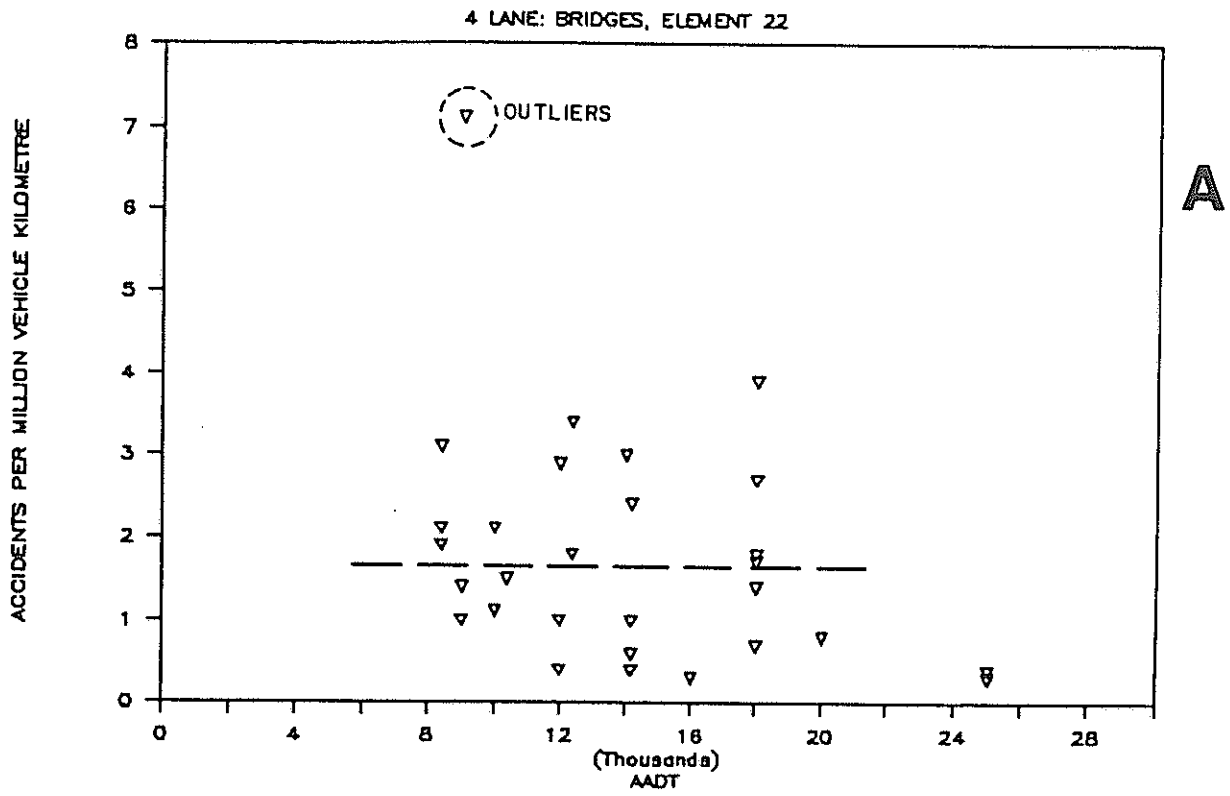
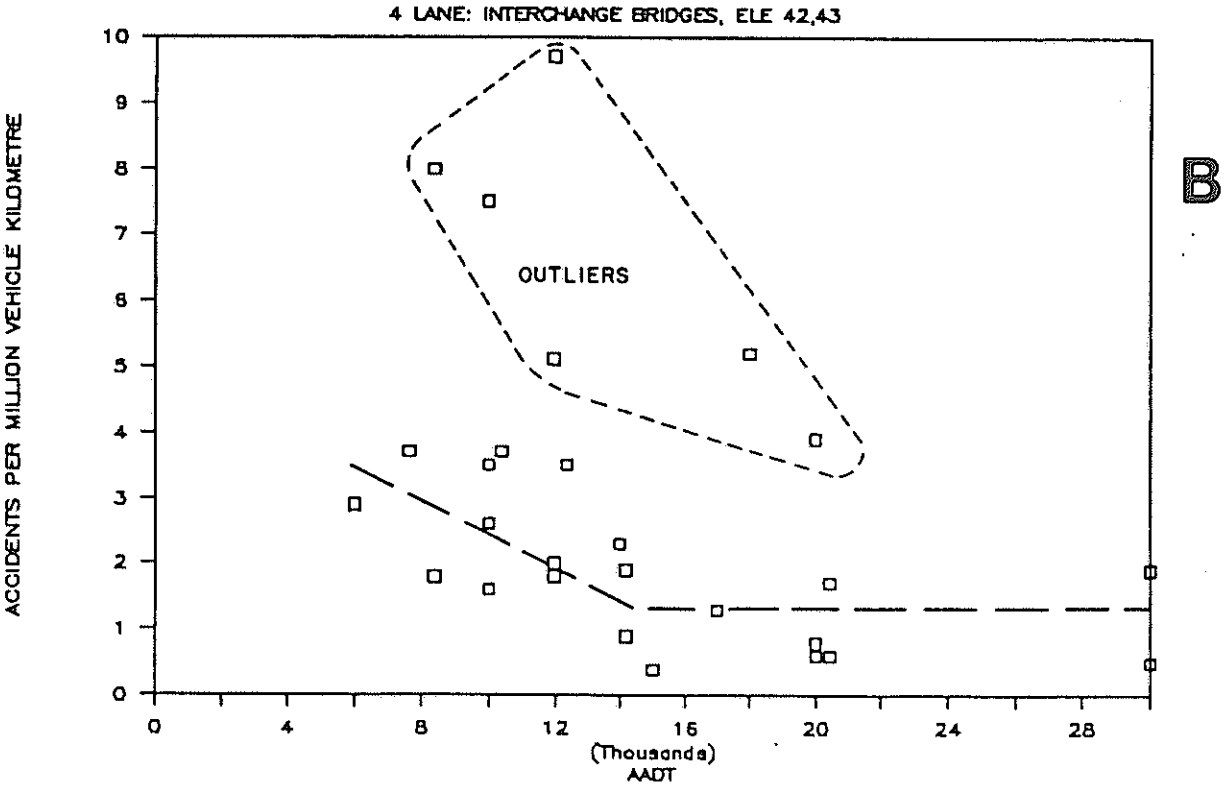
FOUR LANE FREEWAY ACCIDENT RATE FOR ON-OFF RAMPS WITH DIFFERENT GRADIENTS

FIG 5.8





SCOTT & DE WAAL

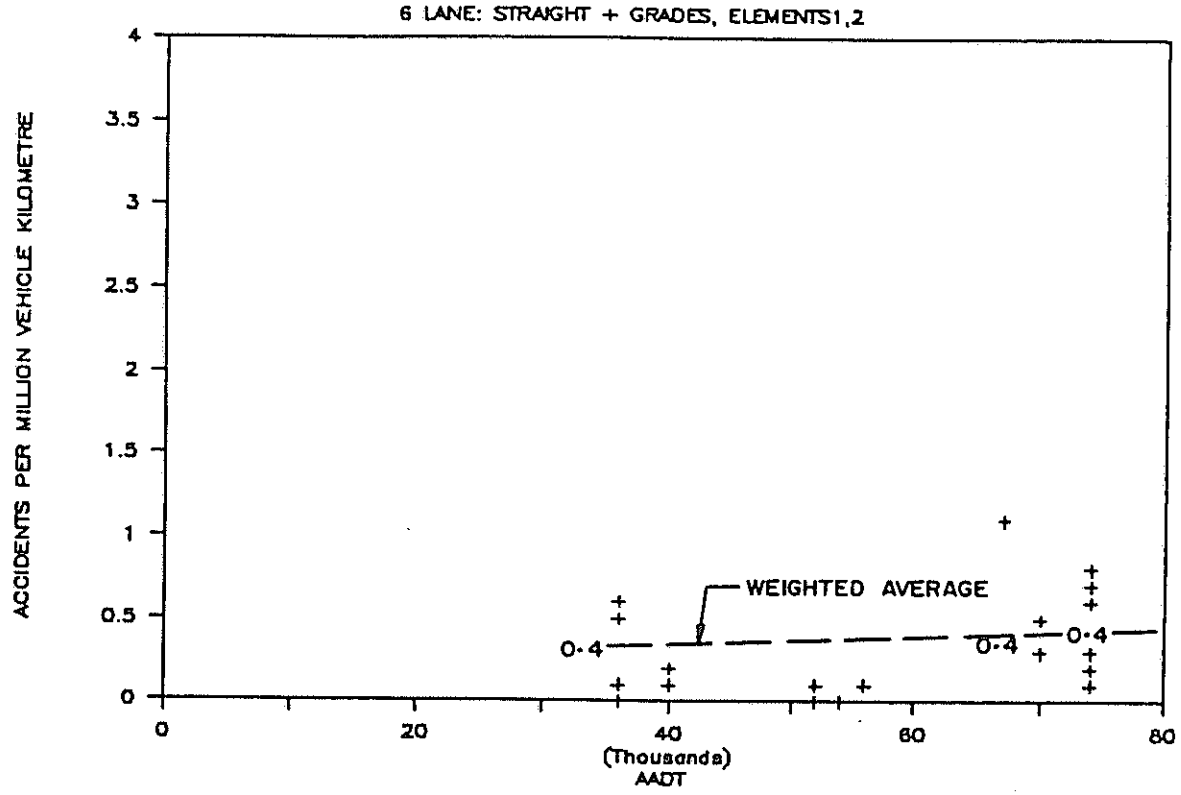
FOUR LANE FREEWAY ACCIDENT RATE FOR ROAD SECTIONS WITH A BRIDGE OR INTERCHANGE BRIDGE

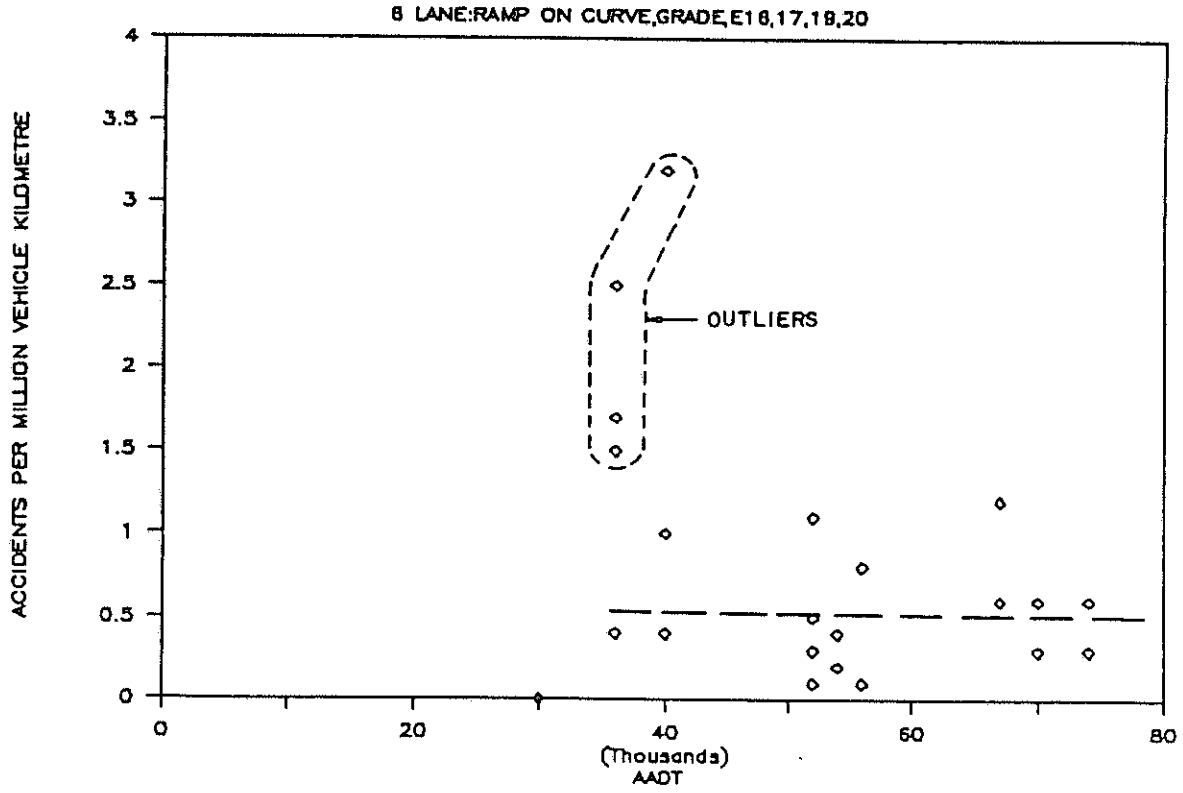
FIG 5.9

5.4 Analysis of six lane freeway geometric elements

The results of the accident rate for straight sections of road up to 6% grades and on-off ramps on curves with gradients, are shown in Figure 5.10. Neither elements appear to be sensitive to daily traffic with ramps (0,6) being slightly higher than straight sections (0,4) and considerably lower than the weighted average rate of 0,62 for six lane freeways.

The results for bridges and interchange bridges are shown in Figure 5.11. Interchange bridges appear to have the highest accident rate of all other elements due to the over representation of bridge locations on the accident reports.





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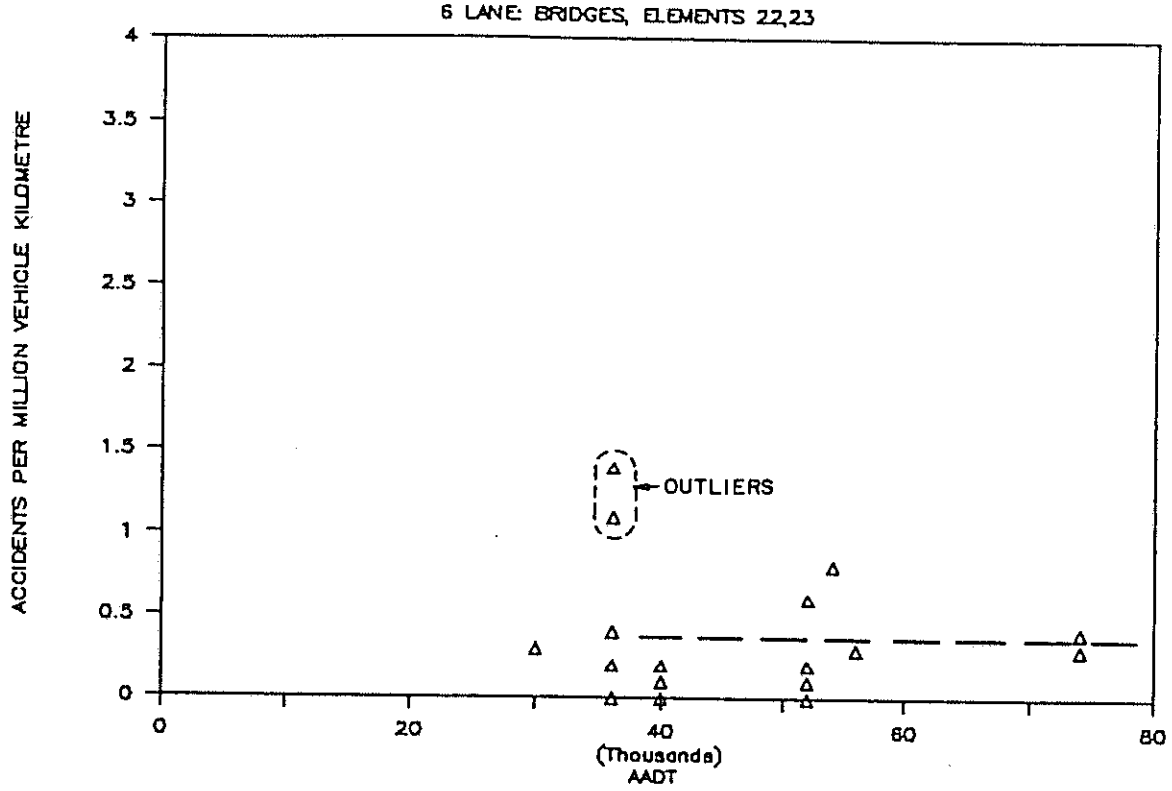
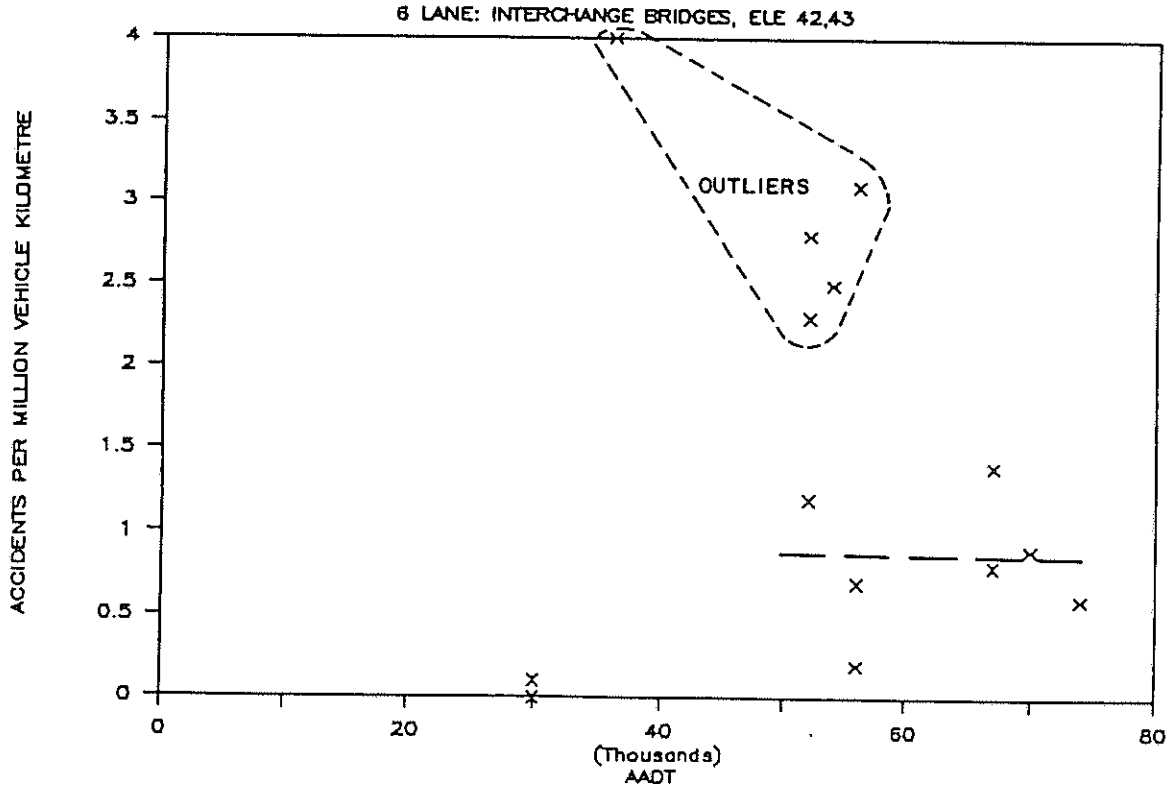
SIX LANE FREEWAY ACCIDENT RATE FOR STRAIGHT AND ON-OFF RAMP SECTIONS

FIG 5.10





SCOTT & DE WAAL

SIX LANE FREEWAY ACCIDENT RATE FOR ROAD SECTIONS WITH A BRIDGE OR INTERCHANGE BRIDGE

FIG 5.11

6. DISCUSSION OF FINDINGS

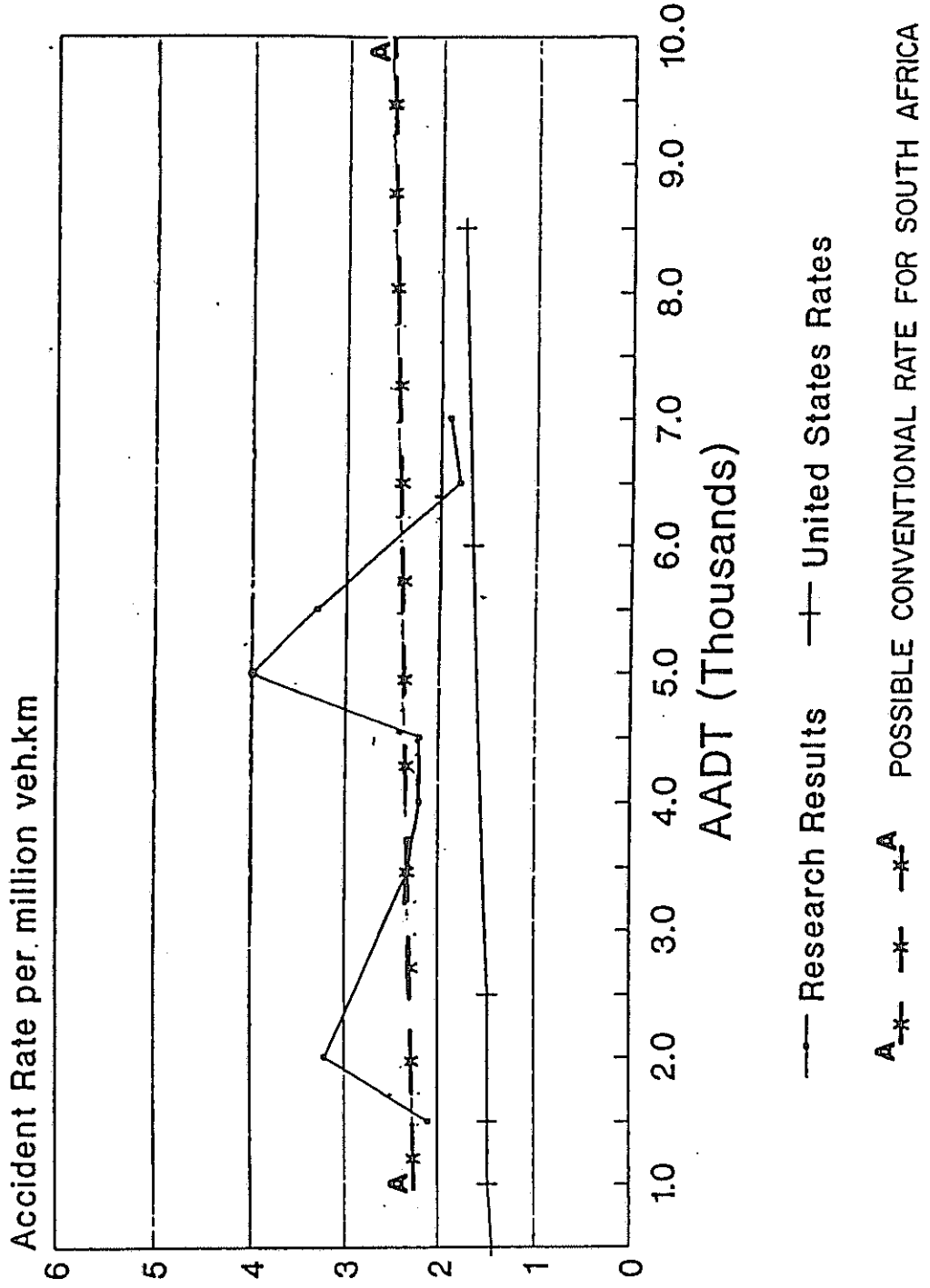
6.1 Two lane roads

(a) Average accident rate

Although the data base included sections of road with the highest number of accidents, this does not necessarily mean that the data is biased to include only high accident rate sections. The AADT also needs to be included when calculating accident rates.

The average two lane road research results have been compared with United States results (2) (8) for daily traffic and is shown in Figure 6.1. All United States results show the accident rate uniformly increasing with increasing daily traffic as shown on the graph which appears logical. Line A-A represents a visual estimate for South African data which is about 0,8 accidents per million vehicle kilometres higher than the United States values.

Verulam (4,0) Izingolweni (3,3) and Outeniqua (3,2) are such sections which reflect the high peaks in Figure 6.1 A regression analysis was carried out for the remaining data points. A y- intercept of 2,8 and a R squared value of 0,37 was obtained indicating a decrease with increasing daily traffic but with poor correlation.



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POSSIBLE ACCIDENT RATES FOR TWO LANE ROADS

FIG 6.1

(b) Geometric element accident rate for two lane roads

The weighted average values and best fit lines shown in Figures 5.2 to 5.5 were used to quantify the research results for the various geometric elements. The possible values are set out in Table 6.1. Due to the relatively small data base several of the elements have insufficient sections to generate good averages. These element values have been shown in brackets. Some elements also have inconsistent values either too high or too low. These have been indicated with an asterisk in Table 6.1. For instance for elements 7 and 8, horizontal curve (4 000 ADT) the value of 1,3 is less than the 1,7 for the straight and level geometric element. The effect of daily traffic on particular geometric elements varies with some increasing with increasing daily traffic, some constant and some decreasing.

TABLE 6.1: POSSIBLE ACCIDENT RATES FOR TWO LANE ROAD GEOMETRIC ELEMENTS
(Accidents per million vehicle kilometres)

GEOMETRIC ELEMENT		AVERAGE DAILY TRAFFIC		
No.	Description	2000	4000	6000
1	Straight and level	2,4*	1,7	1,8
2/3	Straight grades > 3%	-	2,2	2,5
4/5/6/9/12	Vertical crests	3,6	3,2	1,7
7/8	Horizontal curve > 500m R	1,8	1,3*	(1,0)*
10/11	Horizontal curve < 500m R	1,9	1,9	1,9
16/17	Intersections on straight	2,4	2,4	-
19/20	Intersection on curve	-	2,9	-
22/23	Bridges	(1,5)	(3,2)	-
	Average of 10 km lengths	2,5	2,3	1,9

* inconsistent value

(c) Accident rate for a hypothetical road

A hypothetical two lane road with horizontal and vertical geometry is shown in Figure 6.2. Using the values from Table 6.1 the accident rates for the geometric sections are also shown with a range of 3,2 to 1,7. The average accident rate for the entire length of road is 2,15.

It is submitted that average accident rate really only gives a crude indication of the relative safety of the road geometry. In order to be specific the accident rate should be qualified by broad geometric categories similar to those used in the research data base.

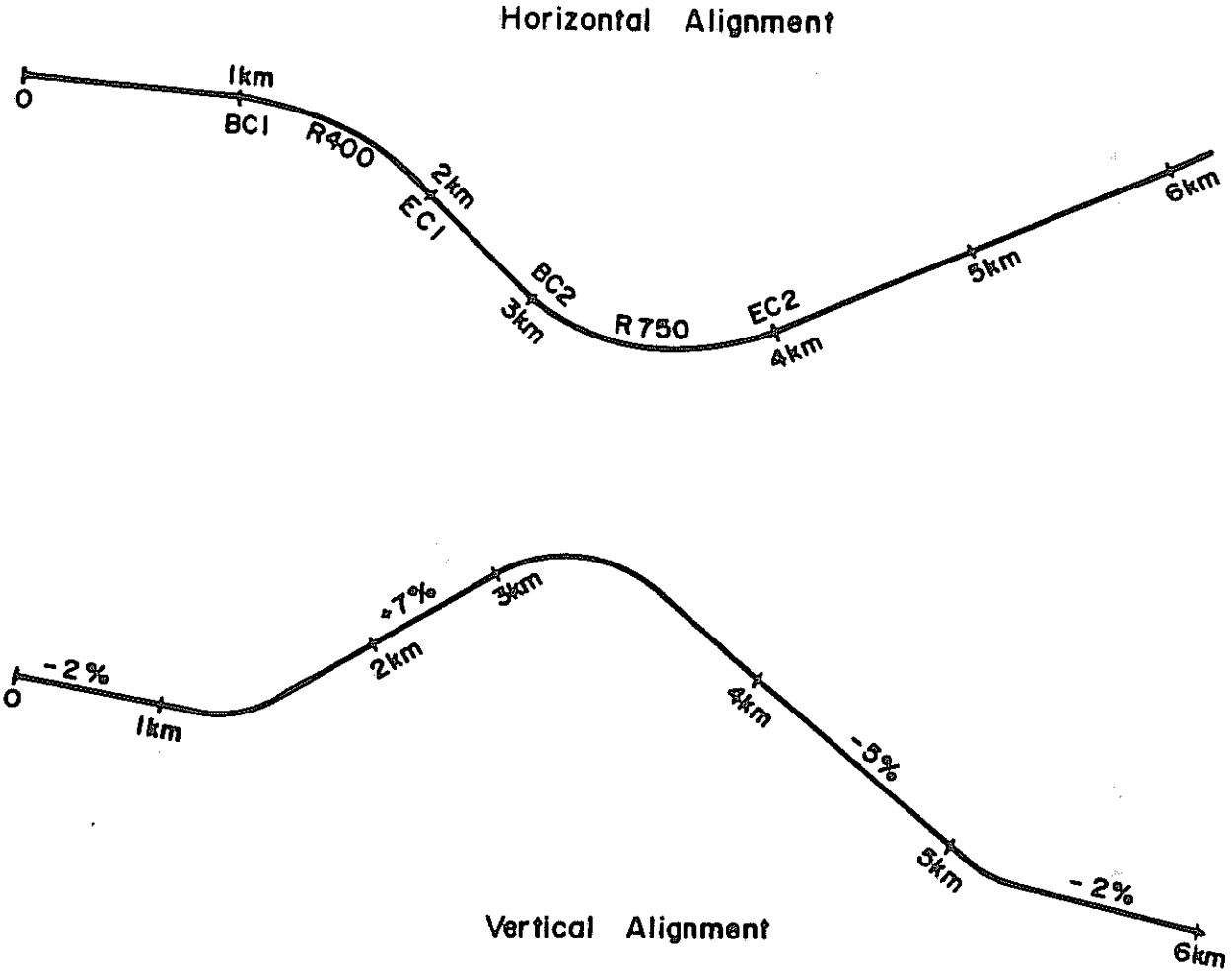
6.2 Four lane freeways

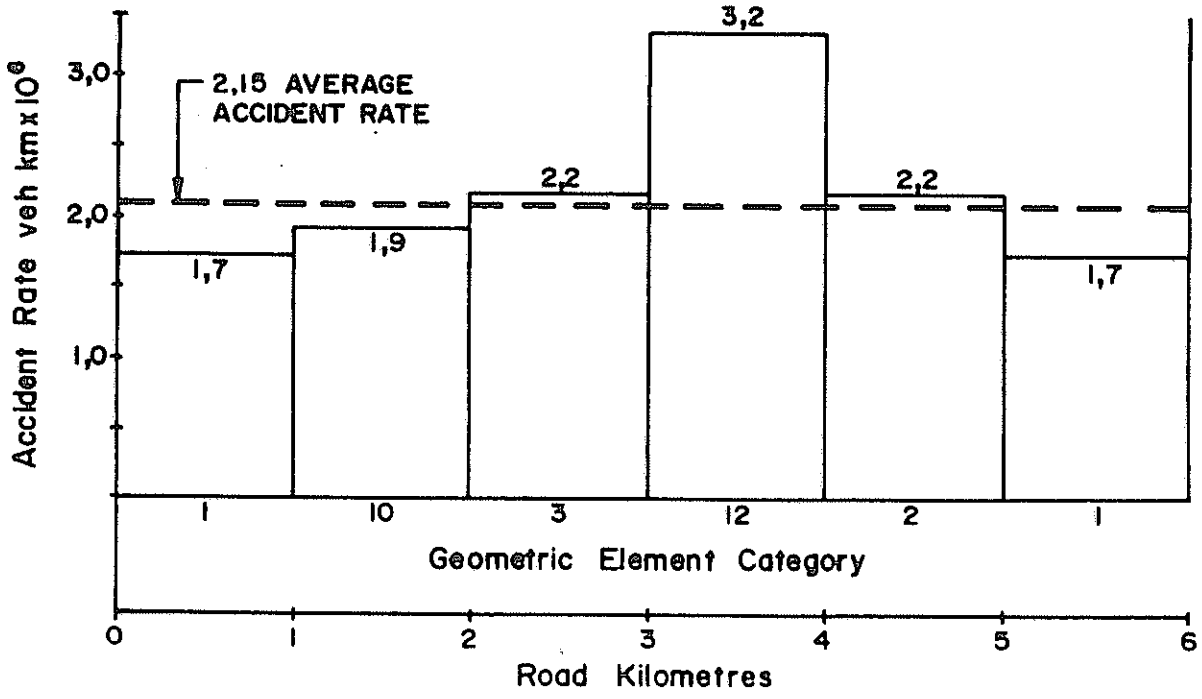
(a) Average accident rate

The four lane average accident rate from the research data is compared in Figure 6.3 with data from the United States. Two possible interpretations can be given to the South African results. At low daily traffic values, South African accident rates are unduly high due possibly to very low speed limit enforcement and therefore vehicle speeds are higher. As the daily traffic increases on a road the average vehicle speed reduces and due to more vehicles being present on the road the driving task is less boring. This could result in the initially higher accident rate reducing with daily traffic until a volume capacity ratio of about 0,5 whereafter the accident rate increases with daily traffic similar to the experience of the United States. Such an interpretation is shown as line A-A in Figure 6.3. A second interpretation could be that irrespective of daily traffic South African accident rates are always higher than the United States. This is represented by line B-B. It is proposed that the second interpretation be accepted based on the logical United States results of increasing accident rate with daily traffic.

The high value for the first point at Mooi River (2,3) is difficult to explain as there are no known abnormal circumstances along this section. The 2,2 for the Tweedie section is possibly due to the reconstruction of the surface during the accident period 1986 to 1988. The 2,4 value is for the notorious Town Hill section just outside Pietermaritzburg. The 2,1 value is for the Fields Hill section near Pinetown which is well known to be of lower geometric standards than the rest of the sections in the data base.

Omitting these sections a regression analysis was undertaken. A y- intercept value of 1,8 and R squared value of 0,17 was obtained indicating a decreasing accident rate with increasing daily traffic but with poor correlation.





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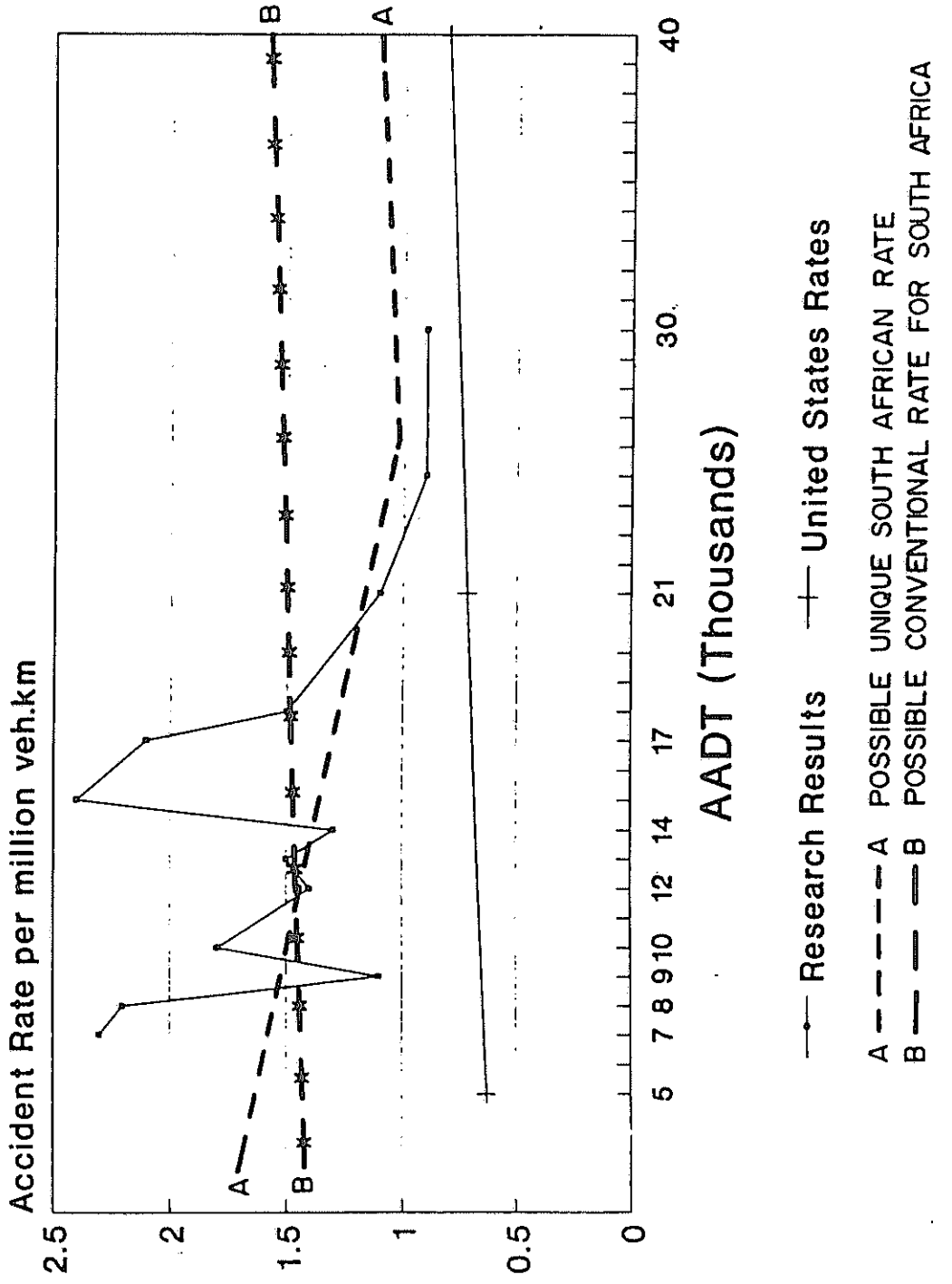
HYPOTHETICAL TWO LANE ROAD AVERAGE AND COMPOSITE ACCIDENT RATE

FIG 6.2



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POSSIBLE ACCIDENT RATES FOR FOUR LANE FREEWAYS

FIG 6.3

(b) Geometric element accident rate for four lane freeways

The best fit line values indicated on Figures 5.6 to 5.9 were used to quantify the research results for the various geometric elements. The sample size for the elements set out in Table 4.4 limited the number of results. The possible values are set out in Table 6.2. Inconsistently high bridge and interchange bridge sections and low curve data have been identified by an asterisk.

TABLE 6.2: POSSIBLE ACCIDENT RATES FOR FOUR LANE FREEWAY GEOMETRIC ELEMENTS
(Accidents per million vehicle kilometres)

GEOMETRIC ELEMENT		AVERAGE DAILY TRAFFIC		
No.	**Description**	**8000**	**14000**	**20000**
1/2/3	Straight	0,5	0,5	0,5
7/8	Horizontal curve > 500m R	1,7	1,7	-
10/11	Horizontal curve < 500m R	-	(1,0)*	-
16/19	On-off ramps on straight	(2,0)	1,0	1,0
22	Bridges	(1,7)*	(1,7)*	(1,7)*
42/43	Interchange bridges	(3,0)*	1,4*	1,4*
	Average for 10 km lengths	1,35	1,42	1,50

* inconsistent values

6.3 Six lane freeways

(a) Average accident rate

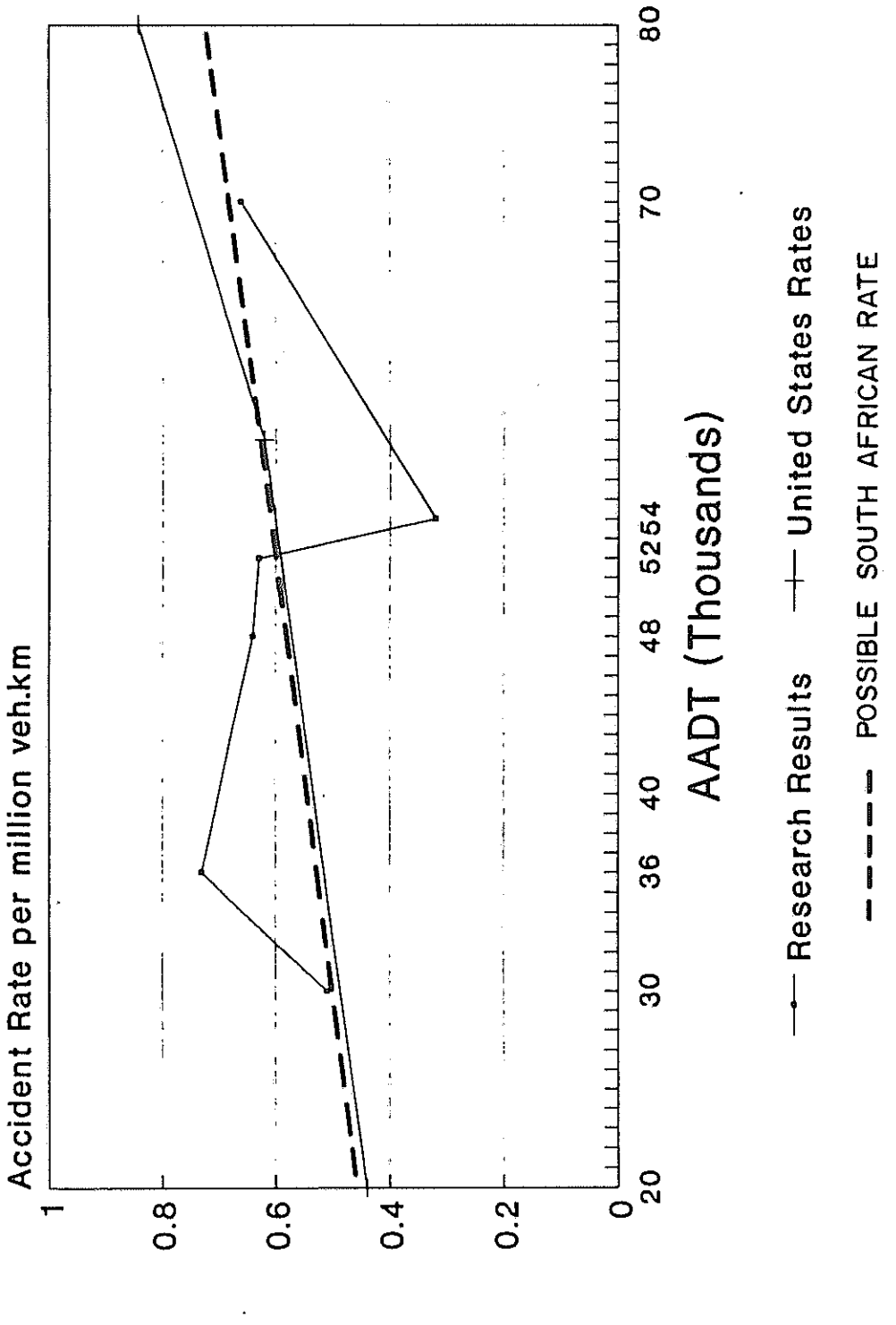
The six lane freeway average accident rate from the research data is compared with data from the United States in Figure 6.4. Unlike the two and four lane roads the research results are of similar values with the high 0,73 point (N2-Chatsworth) and low 0,32 point (N2-Isipingo) being extreme sections. The latter involves an eight lane section of road and the former includes many steep grades and interchanges. The average accident rate of 0,6 per million vehicle kilometres reflects the design quality of a six lane freeway.

(b) Geometric element accident rate of six lane freeways

The best fit line values indicated on Figures 5.10 and 5.11 were used to quantify the research results for a limited number of geometric elements due to the relatively small six lane data base (see Table 4.4). The possible values are set out in Table 6.3.

TABLE 6.3: POSSIBLE ACCIDENT RATES FOR SIX LANE FREEWAY GEOMETRIC ELEMENTS
(Accidents per million vehicle kilometres)

GEOMETRIC ELEMENT		AVERAGE DAILY TRAFFIC		
No.	Description	40000	60000	80000
1/2/	Straight and grades	0,4	0,4	0,4
16/17	On-off ramps on straight	-	(0,5)	(0,5)
22	Bridges	(0,35)	(0,35)	-
42/43	Interchange bridges	-	0,85	(0,85)
	Average for 10 km lengths	0,55	0,64	0,73



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POSSIBLE ACCIDENT RATES FOR SIX LANE FREEWAYS

FIG 6.4

7. CONCLUSIONS

1. Data systems are in place in the Cape and Natal and are readily accessible for the analysis of road accidents by geometric element.

2. In general the accuracy of recording the location of the accidents is still not sufficiently adequate for the determination of accident rates for 500 metre lengths of road with different geometric elements.

3. Accidents tend to be over recorded at bridge, intersection or whole number kilometre distances and consequently the accident rates for bridges are unrealistically high and other elements consequently too low.

4. For the levels of average daily traffic occurring in South Africa, the possible average accident rate for two lane roads is 2,3, for four lane freeways 1,5 and for six lane freeways 0,6 accidents per million vehicle kilometres.

5. The average accident rate of a road actually represents a composite number of accident rates for different geometric elements (see Figure 6.2). The actual accident rate of these respective elements is a better measure of the safety of a road.

7. The increase in daily traffic along a road with different geometric sections appears to cause different relative increases in the accident rate for each geometric section (see Table 6.1).

8. Straight level lengths of roads have the lowest accident rates which generally increases with grades, curves and intersections or on-off ramps.

8. RECOMMENDATIONS

1. The Cape and Natal Roads Departments introduce a system of monitoring the distance location of accident records with the object of identifying and correcting over representation of accidents at bridge, intersection or whole kilometre distances particularly on sections of roads identified as having a high accident rate.

2. The Orange Free State and particularly the Transvaal with a greater number of roads with higher traffic volumes, produce the necessary data systems to facilitate a larger and more representative data base for the more accurate determination of road accident rates related to geometric elements and subsequent identification of high accident locations.

3. The photolog data output be arranged to alert the user when dual carriageways are at different levels or where dual carriageways end or start.

4. High accident rates should be a criteria in allocating sections of roads for new photologging.

5. A project of a similar nature be repeated in several years time when more accurate data from all the Provinces is available.

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APPENDIX A: DISTRIBUTION OF ACCIDENTS RECORDED BY TENTH KILOMETRE ROAD DISTANCES

NATAL SECTIONS

CAPE SECTIONS

N2/24 UMINI TO WINKELSPRUIT 8,8KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
5KM			2	4	1	1					8
6	10		1		5						16
7	13	6			1			1			21
8	3				4	1		2	1		11
9	6	1	1			1	1				10
10	9				2						11
11	7		1		3	1		3			15
12	11	5	1		6	1		1	3		28
13	22	5	5	1	8			1	3		45
14	7										7
TOTAL	86	10	10	14	2	29	5	2	10	6	174
	49%	6%	6%	8%	1%	17%	3%	1%	6%	3%	100%

A2

N2/25 ISIPINGO TO DURBAN N BOUNDARY 29,5KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
0KM	3			1	1	5	67				77
1	7	4									11
2							25	2	1		28
3	1	4		1							6
4	2		1				5				8
5	1					1		1			3
6	37	1	8		5			4		5	60
7	2						1				3
8	1										1
9					27	1			2	2	32
10					1			1	1		3
11	5	2		2	4						13
12	1		1	6		6	4	2	32	22	96
13	55		6	7	1				2		35
14				3	2						5
15			20	5						10	35
16	1		1		7	7	1	19	2		38
17			43			2		7			43
18	3				2			1			6
19					2	2	2				6
20			5								5

A3

N2/25 ISIPINGO TO DURBAN N BOUNDARY 29,5KM (continued)

	0	1	2	3	4	5	6	7	8	9	TOTAL
21KM			2		6		7	76	8		99
22		6				4				18	28
23											
24	1			7						3	11
25					4				4		8
26				6							6
27				1	1						2
28		8	1	22		7	46			18	102
TOTAL	74	34	80	61	60	38	133	160	52	78	770
	10%	4%	10%	8%	8%	5%	17%	21%	7%	10%	100%

A4

N2/26 DURBAN N BOUNDARY TO UMDLOTI 7,0KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
2KM										1	1
3		2	1				7				10
4	1			1							2
5	1									4	5
6	1										1
7	1		6		7				1		15
8											0
9				36		1					37
10	2	1									3
TOTAL	5	4	6	37	8	1	5	2	1	5	74
	7%	5%	8%	50%	11%	0%	7%	3%	1%	7%	99%

A5

N3/1 N2 TO PARADISE VALLEY 8,5KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
9KM	1		1		1	1					4
10	21			1	2	3		3			30
11	1	1	3			1		4	6		16
12	15		3	9	2			95	1		125
13	2	1	4	1				3	1		12
14			1	2		1		1			5
15			2	3						1	6
16	3				25	25		18			71
TOTAL	38	5	13	8	37	33	2	124	8	1	269
	14%	2%	5%	3%	14%	12%	1%	46%	3%	1%	101%

P1/1 WESTVILLE TO EMBERTON 11,0KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
8KM			3		2		6	16			27
9	5		3								8
10	6	4					30	1	1		42
11	13	15			1		3		5		37
12			4	7		40		4			55
13		1			17		1		9		28
14	1		5	32	3	5		2			48
15		7	2	39	9						57
16	7	2	5		8	1	1			3	27
17	1		1	3	1	1			16	1	24
18			1	1							2
19	10	36	2	1	1	1		6	1	1	59
20	4										4
TOTAL	43	32	53	91	30	61	39	31	32	6	418
	10%	8%	13%	22%	7%	15%	9%	7%	8%	1%	100%

A7

N3/2 KEY RIDGE TO INCHANGA 9,9KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
0KM			5			5					10
1	2		1	1	2	1	1		3	1	12
2	3	1	4		4						12
3	13							1		2	16
4	2				3		1				6
5	16		4	16		2	3				41
6		1	2		1	2	21	4		5	36
7	8		2		2		17				29
8	1				4	4	19		1		29
9	1	8	1		5		17	1	2		35
10											
TOTAL	46	10	19	17	21	14	79	5	7	8	226
	20%	4%	8%	8%	9%	6%	35%	2%	3%	4%	99%

N3/3 ASHBURTON TO HILTON 26,3KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
0KM	1	1	1		1	4		2			10
1	3		1	2		6		31		1	44
2	1	8					16	6			31
3	2		1			1	4	1			9
4	3	15		2	3		9	3			35
5	14							2		10	26
6	2		1	1		2	3	28	1	9	47
7		7	1			1	2	8	1		20
8	8	1	1	1	1	1		1			17
9		3	1	23		4					33
10	2			2			1		1	3	9
11	12		2		1		11				26
12		2					3	1	8		14
13	4	4		1							9
14	2	4	1	1	5	5	1	1			20
15	1	8	3	1	2	1	1	2			19
16						8					8
17	3	3			1	1	2	1	1	1	14
18	2		1	1	16	14	3	5		11	53
19	6		18		7		2		2		35
20	6		16	5	2	1				1	31

N3/3 ASHBURTON TO HILTON 26,3KM (continued)

	0	1	2	3	4	5	6	7	8	9	TOTAL
22	6				2	1	5		3	4	21
23	29			1		2	1		1	1	35
24					17	1				3	21
25	7			1	1	36			2	11	58
26		3	6							1	10
TOTAL	114	59	62	46	50	62	64	92	20	57	622
	18%	9%	10%	7%	8%	10%	10%	15%	3%	9%	99%

N3/4 HILTON TO TWEEDIE 19,6KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
OKM						2	6	2	2	12	24
1	3			5	2	1	1	11	3	5	31
2	6	2	8		4	5		9		1	35
3	1			1	2	1	7	1	1		14
4	1	3	11		2	8					25
5	10	3	1	4	12	2		6			38
6		8	2	1				1	4	1	17
7	3		15				1		1	1	21
8	3		1	1	1		11				17
9	1	6	3			6	2		6	2	26
10	4				1	5	2				12
11	10	7	1	7				6		4	35
12	2		1	7			4	4		18	36
13	1	4		1	1				5		12
14			6		2	3	1		1	1	14
15		4			1	1		2	2	1	11
16	1			1	1	3		4		1	11
17	1		1	1	1	2	1		1	2	10
18			1		1					10	12
19		1	7	1		7	2	4			22
20	1										1
TOTAL	48	38	58	30	31	46	38	50	26	59	424
	11%	9%	14%	7%	7%	11%	9%	12%	6%	14%	100%

N3/4 MOOI RIVER 10,0KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
40KM	6		5		1	2	4		1		19
41	3		1	2	3	4	4	2			19
42	1		5	2		1	1		3		13
43	1	3	8		10	1	3	1	9		36
44	3		3		15		3		1		25
45	2		1		2	4	4		1		14
46			3		2		1	1	1		8
47		1	2	2	3		1			6	15
48	3		4		2		2	1			12
49	3		14		1	1	3	5	2	2	31
50	1										1
TOTAL	23	4	46	6	39	13	26	10	18	8	193
	12%	2%	24%	3%	20%	7%	13%	5%	9%	4%	102%

A12

P4/1 IZINGOLWENI TO PORT SHEPSTONE 3,4 TO 10KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
3KM						3	2			1	6
4	3	3			7	9		13		1	36
5	2	2	1	1							6
6	2	1	1			4		1			9
7	2					2			1		5
8	18		7		3	11		6	3	1	49
9	3			1		1		4	1	2	12
10	1										1
TOTAL	31	6	9	2	10	30	2	24	5	5	124
	25%	5%	7%	2%	8%	25%	2%	19%	4%	4%	101%

P2/2 VERULAM TO NEW GUELDERLAND 27 TO 41 KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
27KM	1			1				3	1		7
28	7			5							12
30	8		1				2				11
31	2	1				2		1	1	1	8
32	13	1	2				1	1	11		29
33	10		13		1	9			1		25
34	4		1		17		1		1		15
35	3		2		1		8				14
36	3			7						5	50
37	3	16		14	2	4		9		2	22
38	4				15	1	1	1			11
39	2				1	4	3	1			47
40	10			17			2			18	3
41	3										
TOTAL	72	18	10	44	29	20	18	16	15	26	269
	27%	7%	4%	16%	11%	7%	7%	6%	6%	10%	101%

TR 9/2 DU TOITS KLOOF 39.2KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
O to ,9KM	2					1					3
1,0 to 1,9	4	4		7				1	2		18
2	4	9		1		6	5				25
3	5	3	2		4		1				15
4	4	1		3		2					10
5	11	1		2		1		1	1		17
6	14	1		1					4		20
7	9	2	1		1	1	1		2		17
8	4		2	2				2			10
9	7	1	1	1		4			1		15
10	2		2			2		1			7
11	6		2	1		4			1		14
12	7					3					10
13	3		1		1	2	1	6			14
14	7		4			1			1	1	14
15	11	3		1			5		2		22
16	10				1				1		12
17	9				3						12
18	7		3	1	4					1	16

TR 9/2 DU TOITS KLOOF 39,2KM (continued)

	0	1	2	3	4	5	6	7	8	9	TOTAL
19KM	3		1	1	4	1	1	1	2		15
20	3	5	2	6		3	3	9	6	2	39
21	9	4	3			1		1	1		19
22	4				3	1	1	1		3	13
23		2				1	1	1			5
24		6	2					1	1	1	11
25	6	6	2			1		1			16
26	2	3	3	1	2	4	1	1			17
27	7	2	1		1						11
28	3		1			1					5
29	2			1		1		1	1		6
30	5										5
31	6								1		7
32	14			1					1		16
33	9										9
34	8			2					1		11
35	13			1							14
36	7			2							9
37	7								1		8
38	9			3					2		14
39	13			1							14
40	13										13
TOTAL	269	53	33	39	25	41	20	28	32	8	548
	49%	10%	6%	7%	5%	7%	4%	5%	6%	1%	100%

TR 9/7 THREE SISTERS TO RICHMOND 29,6KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
60KM				1		1					2
61		1		1							2
62											
63				1		1	1				3
64	1		2				1				4
65			1	1							2
66		1	2	1		1	2				7
67			1		1	1		1			4
68				3			1				4
69		1	1		2						4
70		1	2								3
71				3		1	1	1			6
72	1	1						2			4
73	3					1	1				5
74		1				2					3
75		1	1	1		2	1	1			7
76		1	1								2
77			1	1				1			3
78			1	3		1					5
79			2	1		2		2			7
80			1	1		3	1				6

TR 9/7 THREE SISTERS TO RICHMOND 29,6KM (continued)

	0	1	2	3	4	5	6	7	8	9	TOTAL
81KM					1		1				2
82				1	1	1	2	2			7
83					1		2		1		4
84				2		1					3
85				1	2		1	2	1		7
86			1	1	1						3
87					4		1				5
88			2	1			1	1			5
89						1					1
90				1			2	1			4
TOTAL	5	8	19	25	13	19	19	14	2	0	124
	4%	7%	15%	20%	10%	15%	15%	11%	2%		99%

TR 2/11 KNYSNA TO PLETTENBURG BAY 27,0KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
0KM	9										10
1	2		1				1				4
2	2				1	1					4
3	2		1								3
4	1		1								2
5	6	1		1	1						9
6	4	1	1		1						7
7	8	6	4				1				19
8	8	1			1	1	1				12
9				1		3			1		5
10	18			1				1			20
11	7										7
12	10		1	1	1	1			1		15
13	1	1		1	1		1		1		6
14	2				1						3
15	14							3			17
16	16			1							17
17	6										6
18	7										7
19	10								1		11
20	11				1						12

TR 2/11 KNYSNA TO PLETTENBURG BAY 27,0KM (continued)

	0	1	2	3	4	5	6	7	8	9	TOTAL
21KM	7										7
22	6										6
23	8										8
24	8										8
25	9										9
26	9										9
27	9	1									10
28	15			2				2			19
29	13										13
30	15									1	16
TOTAL	243	11	9	8	8	6	4	6	5	1	301
	81%	4%	3%	3%	3%	2%	1%	2%	3%		101%

TR 1/1 GEORGE TO OUTENIQUA 21.5KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
3KM	1										1
4	4										4
5	11										11
6				6						6	12
7	4										4
8	6										6
9	3										3
10	21										21
11						11					11
12	3										3
13	1										1
14	4										4
15	7										7
16				16							16
17	1										1
18							18			18	36
19	4		4	1	4	3	1	2	4	3	26
20	13		2	5	4	1		4	2		31
21	5		10	6	4	4	1			3	33
22	4					1				1	6
23	5	2	2		3	1		2			15
24	6	3	2	14	4						29
TOTAL	103	5	20	48	19	21	20	8	6	31	281
	37%	2%	7%	17%	7%	7%	7%	3%	2%	11%	100%

N1/1 KOEBERG TO BELVILLE 15,5KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
8 to 8.9KM	12	14	28	7	9	3	14	10	7	5	109
9	10	3	3	3	5	6		4	3	5	42
10	23	3	2	5	3				3	6	50
11	13	9	4	6	12	9	16	13	4	2	97
12	7		4		2	3	2	4	8		30
13	5	1	2	8	3	10	10	7	5	6	57
14	9	8	10	4	6	6	12	8	2	3	77
15	3	1					1	7	13	16	41
16	9	5									14
TOTAL	193	95	104	61	74	93	107	83	106	126	1042
	19%	9%	10%	6%	7%	9%	10%	8%	10%	12%	100%

TR 11/1 WINGFIELD TO REFINERY 6,1KM

	0	1	2	3	4	5	6	7	8	9	TOTAL
0KM	4	9	6	1	2	3				2	27
1	11	6	42	9	4	1	1	1	1	1	77
2	5	3	4	1		1		3			17
3	1	1	3		1	1		1	2	1	11
4		12	4	3	3	1	1	3	1	1	29
5	5		1	1	1				1		9
6		4	1	1		1			1	1	9
7			1								1
8	1		2						1		4
9	1	1									2
TOTAL	28	36	64	16	11	8	2	8	7	6	186
	15%	19%	35%	9%	6%	4%	1%	5%	3%	3%	100%

APPENDIX B DATABASE GEOMETRY INFORMATION AND ACCIDENT RATES BY ROAD SECTION

Two Lane Roads

[illegible]	ROAD	DESCRIP	START	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
1	TR9/2	DU TOITSKLOOF	0	540	2	S	4500	1.040	4.246	6.974	3	540	0.4	0.8
2	TR9/2	DU TOITSKLOOF	540	1080	2	S	4500	1.040	4.246	6.974	4	540	0.6	1.1
3	TR9/2	DU TOITSKLOOF	1080	1600	16	S	4500	1.040	4.246	6.974	11	520	1.6	3.0
4	TR9/2	DU TOITSKLOOF	1600	2100	10	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
5	TR9/2	DU TOITSKLOOF	2100	2500	17	S	4500	1.040	4.246	6.974	10	400	1.4	3.6
6	TR9/2	DU TOITSKLOOF	2500	3000	3	S	4500	1.040	4.246	6.974	12	500	1.7	3.4
7	TR9/2	DU TOITSKLOOF	3000	3500	20	S	4500	1.040	4.246	6.974	13	500	1.9	3.7
8	TR9/2	DU TOITSKLOOF	3500	4000	9	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
9	TR9/2	DU TOITSKLOOF	4000	4300	7	S	4500	1.040	4.246	6.974	5	300	0.7	2.4
10	TR9/2	DU TOITSKLOOF	4300	4800	11	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
11	TR9/2	DU TOITSKLOOF	4800	5400	17	S	4500	1.040	4.246	6.974	13	600	1.9	3.1
12	TR9/2	DU TOITSKLOOF	5400	5900	8	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
13	TR9/2	DU TOITSKLOOF	5900	6400	2	S	4500	1.040	4.246	6.974	17	500	2.4	4.9
14	TR9/2	DU TOITSKLOOF	6400	6800	8	S	4500	1.040	4.246	6.974	0	400	0.0	0.0
15	TR9/2	DU TOITSKLOOF	6800	7300	12	S	4500	1.040	4.246	6.974	25	500	3.6	7.2
16	TR9/2	DU TOITSKLOOF	7300	7800	2	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
17	TR9/2	DU TOITSKLOOF	7800	8300	17	S	4500	1.040	4.246	6.974	8	500	1.1	2.3
18	TR9/2	DU TOITSKLOOF	8300	8900	8	S	4500	1.040	4.246	6.974	4	600	0.6	1.0
19	TR9/2	DU TOITSKLOOF	8900	9400	11	S	4500	1.040	4.246	6.974	10	500	1.4	2.9
20	TR9/2	DU TOITSKLOOF	9400	9900	11	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
21	TR9/2	DU TOITSKLOOF	9900	10500	8	S	4500	1.040	4.246	6.974	5	600	0.7	1.2
22	TR9/2	DU TOITSKLOOF	10500	11000	8	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
23	TR9/2	DU TOITSKLOOF	11000	11500	2	S	4500	1.040	4.246	6.974	9	500	1.3	2.6
24	TR9/2	DU TOITSKLOOF	11500	12000	2	S	4500	1.040	4.246	6.974	5	500	0.7	1.4
25	TR9/2	DU TOITSKLOOF	12000	12500	2	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
26	TR9/2	DU TOITSKLOOF	12500	13000	3	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
27	TR9/2	DU TOITSKLOOF	13000	13500	2	S	4500	1.040	4.246	6.974	5	500	0.7	1.4
28	TR9/2	DU TOITSKLOOF	13500	14000	2	S	4500	1.040	4.246	6.974	9	500	1.3	2.6
29	TR9/2	DU TOITSKLOOF	14000	14600	11	S	4500	1.040	4.246	6.974	12	600	1.7	2.9
30	TR9/2	DU TOITSKLOOF	14600	15100	12	S	4500	1.040	4.246	6.974	11	500	1.6	3.2
31	TR9/2	DU TOITSKLOOF	15100	15600	20	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
32	TR9/2	DU TOITSKLOOF	15600	16600	2	S	4500	1.040	4.246	6.974	18	1000	2.6	2.6
33	TR9/2	DU TOITSKLOOF	16600	17600	2	S	4500	1.040	4.246	6.974	13	1000	1.9	1.9
34	TR9/2	DU TOITSKLOOF	17600	18100	8	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
35	TR9/2	DU TOITSKLOOF	18100	18600	2	S	4500	1.040	4.246	6.974	9	500	1.3	2.6
36	TR9/2	DU TOITSKLOOF	18600	19100	3	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
37	TR9/2	DU TOITSKLOOF	19100	19700	8	S	4500	1.040	4.246	6.974	8	600	1.1	1.9
38	TR9/2	DU TOITSKLOOF	19700	20200	8	S	4500	1.040	4.246	6.974	12	500	1.7	3.4
39	TR9/2	DU TOITSKLOOF	20200	20700	2	S	4500	1.040	4.246	6.974	14	500	2.0	4.0
40	TR9/2	DU TOITSKLOOF	20700	21200	8	S	4500	1.040	4.246	6.974	31	500	4.4	8.9
41	TR9/2	DU TOITSKLOOF	21200	21700	12	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
42	TR9/2	DU TOITSKLOOF	21700	22200	11	S	4500	1.040	4.246	6.974	5	500	0.7	1.4
43	TR9/2	DU TOITSKLOOF	22200	22700	20	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
44	TR9/2	DU TOITSKLOOF	22700	23200	1	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
45	TR9/2	DU TOITSKLOOF	23200	23700	1	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
46	TR9/2	DU TOITSKLOOF	23700	24200	1	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
47	TR9/2	DU TOITSKLOOF	24200	24700	9	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
48	TR9/2	DU TOITSKLOOF	24700	25200	16	S	4500	1.040	4.246	6.974	15	500	2.2	4.3
49	TR9/2	DU TOITSKLOOF	25200	25700	4	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
50	TR9/2	DU TOITSKLOOF	25700	26200	12	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
51	TR9/2	DU TOITSKLOOF	26200	26700	2	S	4500	1.040	4.246	6.974	11	500	1.6	3.2
52	TR9/2	DU TOITSKLOOF	26700	27200	1	S	4500	1.040	4.246	6.974	10	500	1.4	2.9
53	TR9/2	DU TOITSKLOOF	27200	27700	1	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
54	TR9/2	DU TOITSKLOOF	27700	28200	10	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
55	TR9/2	DU TOITSKLOOF	28200	28700	7	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
56	TR9/2	DU TOITSKLOOF	28700	29200	7	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
57	TR9/2	DU TOITSKLOOF	29200	29700	7	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
58	TR9/2	DU TOITSKLOOF	29700	30200	7	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
59	TR9/2	DU TOITSKLOOF	30200	31200	7	S	4500	1.040	4.246	6.974	6	1000	0.9	0.9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Roads

Record£	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHEN
61	TR9/2	DU TOITSKLOOF	32200	33200	8	S	4500	1.040	4.246	6.974	11	1000	1.6	1.6
62	TR9/2	DU TOITSKLOOF	33200	34200	8	S	4500	1.040	4.246	6.974	8	1000	1.1	1.1
63	TR9/2	DU TOITSKLOOF	34200	35200	1	S	4500	1.040	4.246	6.974	16	1000	2.3	2.3
64	TR9/2	DU TOITSKLOOF	35200	36200	1	S	4500	1.040	4.246	6.974	8	1000	1.1	1.1
65	TR9/2	DU TOITSKLOOF	36200	37200	7	S	4500	1.040	4.246	6.974	9	1000	1.3	1.3
66	TR9/2	DU TOITSKLOOF	37200	38200	16	S	4500	1.040	4.246	6.974	10	1000	1.4	1.4
67	TR9/2	DU TOITSKLOOF	38200	39200	1	S	4500	1.040	4.246	6.974	18	1000	2.6	2.6
68	TR9/7	THREE SISTERS	60000	60500	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
69	TR9/7	THREE SISTERS	60500	60900	1	S	1300	1.020	4.122	1.956	1	400	0.5	1.3
70	TR9/7	THREE SISTERS	60900	61300	22	S	1300	1.020	4.122	1.956	1	400	0.5	1.3
71	TR9/7	THREE SISTERS	61300	61800	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
72	TR9/7	THREE SISTERS	61800	62500	1	S	1300	1.020	4.122	1.956	0	700	0.0	0.0
73	TR9/7	THREE SISTERS	62500	63000	18	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
74	TR9/7	THREE SISTERS	63000	63500	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
75	TR9/7	THREE SISTERS	63500	64000	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
76	TR9/7	THREE SISTERS	64000	64500	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
77	TR9/7	THREE SISTERS	64500	65900	13	S	1300	1.020	4.122	1.956	3	1400	1.5	1.1
78	TR9/7	THREE SISTERS	65900	66400	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
79	TR9/7	THREE SISTERS	66400	66900	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
80	TR9/7	THREE SISTERS	66900	67400	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
81	TR9/7	THREE SISTERS	67400	68100	4	S	1300	1.020	4.122	1.956	3	700	1.5	2.2
82	TR9/7	THREE SISTERS	68100	68600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
83	TR9/7	THREE SISTERS	68600	69200	1	S	1300	1.020	4.122	1.956	1	600	0.5	0.9
84	TR9/7	THREE SISTERS	69200	69600	1	S	1300	1.020	4.122	1.956	4	400	2.0	5.1
85	TR9/7	THREE SISTERS	69600	71100	1	S	1300	1.020	4.122	1.956	0	1500	0.0	0.0
86	TR9/7	THREE SISTERS	71100	71600	19	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
87	TR9/7	THREE SISTERS	71600	72100	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
88	TR9/7	THREE SISTERS	72100	72600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
89	TR9/7	THREE SISTERS	72600	73100	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
90	TR9/7	THREE SISTERS	73100	73600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
91	TR9/7	THREE SISTERS	73600	74100	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
92	TR9/7	THREE SISTERS	74100	74600	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
93	TR9/7	THREE SISTERS	74600	75100	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
94	TR9/7	THREE SISTERS	75100	75600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
95	TR9/7	THREE SISTERS	75600	76100	16	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
96	TR9/7	THREE SISTERS	76100	76600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
97	TR9/7	THREE SISTERS	76600	77100	1	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
98	TR9/7	THREE SISTERS	77100	77600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
99	TR9/7	THREE SISTERS	77600	78100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
100	TR9/7	THREE SISTERS	78100	78600	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
101	TR9/7	THREE SISTERS	78600	79100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
102	TR9/7	THREE SISTERS	79100	79600	16	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
103	TR9/7	THREE SISTERS	79600	80100	25	S	1300	1.020	4.122	1.956	5	500	2.6	5.1
104	TR9/7	THREE SISTERS	80100	80600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
105	TR9/7	THREE SISTERS	80600	81100	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
106	TR9/7	THREE SISTERS	81100	81600	22	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
107	TR9/7	THREE SISTERS	81600	82100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
108	TR9/7	THREE SISTERS	82100	82600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
109	TR9/7	THREE SISTERS	82600	83100	4	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
110	TR9/7	THREE SISTERS	83100	83600	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
111	TR9/7	THREE SISTERS	83600	84100	4	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
112	TR9/7	THREE SISTERS	84100	84600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
113	TR9/7	THREE SISTERS	84600	85100	1	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
114	TR9/7	THREE SISTERS	85100	85600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
115	TR9/7	THREE SISTERS	85600	86100	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
116	TR9/7	THREE SISTERS	86100	86600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
117	TR9/7	THREE SISTERS	86600	87100	1	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
118	TR9/7	THREE SISTERS	87100	87600	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
119	TR9/7	THREE SISTERS	87600	88100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0

Two Lane Roads

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHLN
121	TR9/5	THREE SISTERS	88600	89100	25	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
122	TR9/7	THREE SISTERS	89100	89600	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
123	TR2/11	KHYSNA TO PLETTENBURG BAY	2500	3500	13	S	3300	1.040	4.246	5.114	5	1000	1.0	1.0
124	TR2/11	KHYSNA TO PLETTENBURG BAY	3500	4500	2	S	3300	1.040	4.246	5.114	2	1000	0.4	0.4
125	TR2/11	KHYSNA TO PLETTENBURG BAY	4500	5500	3	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
126	TR2/11	KHYSNA TO PLETTENBURG BAY	5500	6500	17	S	3300	1.040	4.246	5.114	7	1000	1.4	1.4
127	TR2/11	KHYSNA TO PLETTENBURG BAY	6500	7500	11	S	3300	1.040	4.246	5.114	19	1000	3.7	3.7
128	TR2/11	KHYSNA TO PLETTENBURG BAY	7500	8500	11	S	3300	1.040	4.246	5.114	11	1000	2.2	2.2
129	TR2/11	KHYSNA TO PLETTENBURG BAY	8500	9500	2	S	3300	1.040	4.246	5.114	3	1000	0.6	0.6
130	TR2/11	KHYSNA TO PLETTENBURG BAY	9500	10500	2	S	3300	1.040	4.246	5.114	23	1000	4.5	4.5
131	TR2/11	KHYSNA TO PLETTENBURG BAY	10500	11500	19	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
132	TR2/11	KHYSNA TO PLETTENBURG BAY	11500	12500	10	S	3300	1.040	4.246	5.114	13	1000	2.5	2.5
133	TR2/11	KHYSNA TO PLETTENBURG BAY	12500	13500	8	S	3300	1.040	4.246	5.114	6	1000	1.2	1.2
134	TR2/11	KHYSNA TO PLETTENBURG BAY	13500	14500	7	S	3300	1.040	4.246	5.114	5	1000	1.0	1.0
135	TR2/11	KHYSNA TO PLETTENBURG BAY	14500	15500	7	S	3300	1.040	4.246	5.114	14	1000	2.7	2.7
136	TR2/11	KHYSNA TO PLETTENBURG BAY	15500	16500	16	S	3300	1.040	4.246	5.114	20	1000	3.9	3.9
137	TR2/11	KHYSNA TO PLETTENBURG BAY	16500	17500	2	S	3300	1.040	4.246	5.114	6	1000	1.2	1.2
138	TR2/11	KHYSNA TO PLETTENBURG BAY	17500	18500	18	S	3300	1.040	4.246	5.114	7	1000	1.4	1.4
139	TR2/11	KHYSNA TO PLETTENBURG BAY	18500	19500	1	S	3300	1.040	4.246	5.114	10	1000	2.0	2.0
140	TR2/11	KHYSNA TO PLETTENBURG BAY	19500	20500	18	S	3300	1.040	4.246	5.114	13	1000	2.5	2.5
141	TR2/11	KHYSNA TO PLETTENBURG BAY	20500	21500	1	S	3300	1.040	4.246	5.114	7	1000	1.4	1.4
142	TR2/11	KHYSNA TO PLETTENBURG BAY	21500	22500	1	S	3300	1.040	4.246	5.114	6	1000	1.2	1.2
143	TR2/11	KHYSNA TO PLETTENBURG BAY	22500	23500	1	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
144	TR2/11	KHYSNA TO PLETTENBURG BAY	23500	24500	1	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
145	TR2/11	KHYSNA TO PLETTENBURG BAY	24500	25500	1	S	3300	1.040	4.246	5.114	9	1000	1.8	1.8
146	TR2/11	KHYSNA TO PLETTENBURG BAY	25500	26500	16	S	3300	1.040	4.246	5.114	9	1000	1.8	1.8
147	TR2/11	KHYSNA TO PLETTENBURG BAY	26500	27500	1	S	3300	1.040	4.246	5.114	10	1000	2.0	2.0
148	TR2/11	KHYSNA TO PLETTENBURG BAY	27500	28500	9	S	3300	1.040	4.246	5.114	17	1000	3.3	3.3
149	TR2/11	KHYSNA TO PLETTENBURG BAY	28500	29500	20	S	3300	1.040	4.246	5.114	15	1000	2.9	2.9
150	P4/1	IZINGOLWENI TO PORT SHEPSTONE	3400	4000	20	S	4452	1.020	3.060	4.972	6	600	1.2	2.0
151	P4/1	IZINGOLWENI TO PORT SHEPSTONE	4000	4600	1	S	4452	1.020	3.060	4.972	22	600	4.4	7.4
152	P4/1	IZINGOLWENI TO PORT SHEPSTONE	4600	5100	1	S	5198	1.050	3.153	5.982	16	500	2.7	5.3
153	P4/1	IZINGOLWENI TO PORT SHEPSTONE	5100	5600	11	S	5198	1.050	3.153	5.982	4	500	0.7	1.3
154	P4/1	IZINGOLWENI TO PORT SHEPSTONE	5600	6200	11	S	5198	1.050	3.153	5.982	3	600	0.5	0.8
155	P4/1	IZINGOLWENI TO PORT SHEPSTONE	6200	6700	5	S	5198	1.050	3.153	5.982	5	500	0.8	1.7
156	P4/1	IZINGOLWENI TO PORT SHEPSTONE	6700	7200	8	S	5198	1.050	3.153	5.982	3	500	0.5	1.0
157	P4/1	IZINGOLWENI TO PORT SHEPSTONE	7200	7700	2	S	5198	1.050	3.153	5.982	2	500	0.3	0.7
158	P4/1	IZINGOLWENI TO PORT SHEPSTONE	7700	8200	22	S	5198	1.050	3.153	5.982	19	500	3.2	6.4
159	P4/1	IZINGOLWENI TO PORT SHEPSTONE	8200	8700	11	S	5198	1.050	3.153	5.982	21	500	3.5	7.0
160	P4/1	IZINGOLWENI TO PORT SHEPSTONE	8700	9200	19	S	5198	1.050	3.153	5.982	13	500	2.2	4.3
161	P4/1	IZINGOLWENI TO PORT SHEPSTONE	9200	10000	3	S	5198	1.050	3.153	5.982	10	800	1.7	2.1
162	P1/13	VOLKSRUST TO NEWCASTLE	4800	5300	1	S	7000	1.040	3.122	7.977	7	500	0.9	1.8
163	P1/13	VOLKSRUST TO NEWCASTLE	5300	5800	7	S	7000	1.040	3.122	7.977	2	500	0.3	0.5
164	P1/13	VOLKSRUST TO NEWCASTLE	5800	6400	5	S	7000	1.040	3.122	7.977	4	600	0.5	0.8
165	P1/13	VOLKSRUST TO NEWCASTLE	6400	7000	1	S	7000	1.040	3.122	7.977	12	600	1.5	2.5
166	P1/13	VOLKSRUST TO NEWCASTLE	7000	7500	2	S	4000	1.040	3.122	4.558	12	500	2.6	5.3
167	P1/13	VOLKSRUST TO NEWCASTLE	7500	8000	13	S	4000	1.040	3.122	4.558	13	500	2.9	5.7
168	P1/12	NEWZI TO NEWCASTLE	44000	44500	2	S	4233	1.020	3.060	4.728	2	500	0.4	0.8
169	P1/12	NEWZI TO NEWCASTLE	44500	45000	5	S	4233	1.020	3.060	4.728	3	500	0.6	1.3
170	P1/12	NEWZI TO NEWCASTLE	45000	45500	17	S	4233	1.020	3.060	4.728	16	500	3.4	6.8
171	P1/12	NEWZI TO NEWCASTLE	45500	46000	2	S	4233	1.020	3.060	4.728	2	500	0.4	0.8
172	P1/12	NEWZI TO NEWCASTLE	46000	46500	2	S	4233	1.020	3.060	4.728	1	500	0.2	0.4
173	P1/12	NEWZI TO NEWCASTLE	46500	47000	6	S	4233	1.020	3.060	4.728	4	500	0.8	1.7
174	P1/12	NEWZI TO NEWCASTLE	47000	47500	1	S	4233	1.020	3.060	4.728	3	500	0.6	1.3
175	P1/12	NEWZI TO NEWCASTLE	47500	48000	2	S	4233	1.020	3.060	4.728	1	500	0.2	0.4
176	P1/12	NEWZI TO NEWCASTLE	48000	48500	2	S	4233	1.020	3.060	4.728	7	500	1.5	3.0
177	P1/12	NEWZI TO NEWCASTLE	48500	49000	2	S	4233	1.020	3.060	4.728	4	500	0.8	1.7
178	P1/12	NEWZI TO NEWCASTLE	49000	49500	3	S	4233	1.020	3.060	4.728	6	500	1.3	2.5
179	P1/12	NEWZI TO NEWCASTLE	49500	50000	13	S	4233	1.020	3.060	4.728	5	500	1.1	2.1

Two Lane Roads

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
161	P1/12	NEWDZI TO NEWCASTLE	50500	51000	2	S	4233	1.020	3.060	4.728	4	500	0.8	1.7
162	P1/12	NEWDZI TO NEWCASTLE	51000	51500	2	S	4233	1.020	3.060	4.728	13	500	2.7	5.5
163	P1/12	NEWDZI TO NEWCASTLE	51500	52000	2	S	5026	1.020	3.060	5.614	4	500	0.7	1.4
164	P1/12	NEWDZI TO NEWCASTLE	52000	52300	1	S	5026	1.020	3.060	5.614	15	300	2.7	8.9
165	P31	LADYSMITH TO KEEVERSPORTEIN	4100	4600	1	S	4268	1.050	3.153	4.912	8	500	1.6	3.3
166	P31	LADYSMITH TO KEEVERSPORTEIN	4600	5100	5	S	4268	1.050	3.153	4.912	2	500	0.4	0.8
167	P31	LADYSMITH TO KEEVERSPORTEIN	5100	5600	1	S	4265	1.050	3.153	4.908	14	500	2.9	5.7
168	P31	LADYSMITH TO KEEVERSPORTEIN	5600	6100	7	S	4265	1.050	3.153	4.908	1	500	0.2	0.4
169	P31	LADYSMITH TO KEEVERSPORTEIN	6100	6500	1	S	4265	1.050	3.153	4.908	8	400	1.6	4.1
170	P31	LADYSMITH TO KEEVERSPORTEIN	6500	7000	7	S	4265	1.050	3.153	4.908	1	500	0.2	0.4
171	P31	LADYSMITH TO KEEVERSPORTEIN	7000	7400	23	S	4265	1.050	3.153	4.908	7	400	1.4	3.6
172	P31	LADYSMITH TO KEEVERSPORTEIN	7400	7900	7	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
173	P31	LADYSMITH TO KEEVERSPORTEIN	7900	8400	7	S	4265	1.050	3.153	4.908	2	500	0.4	0.8
174	P31	LADYSMITH TO KEEVERSPORTEIN	8400	8900	1	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
175	P31	LADYSMITH TO KEEVERSPORTEIN	8900	9400	1	S	4265	1.050	3.153	4.908	9	500	1.8	3.7
176	P31	LADYSMITH TO KEEVERSPORTEIN	9400	9800	17	S	4265	1.050	3.153	4.908	0	400	0.0	0.0
177	P31	LADYSMITH TO KEEVERSPORTEIN	9800	10300	5	S	4265	1.050	3.153	4.908	8	500	1.6	3.3
178	P31	LADYSMITH TO KEEVERSPORTEIN	10300	10800	16	S	4265	1.050	3.153	4.908	16	500	3.3	6.5
179	P31	LADYSMITH TO KEEVERSPORTEIN	10800	11300	2	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
180	P31	LADYSMITH TO KEEVERSPORTEIN	11300	11800	7	S	4265	1.050	3.153	4.908	2	500	0.4	0.8
181	P31	LADYSMITH TO KEEVERSPORTEIN	11800	12300	2	S	4265	1.050	3.153	4.908	3	500	0.6	1.2
182	P31	LADYSMITH TO KEEVERSPORTEIN	12300	12900	1	S	4265	1.050	3.153	4.908	5	600	1.0	1.7
183	P31	LADYSMITH TO KEEVERSPORTEIN	12900	13500	1	S	4265	1.050	3.153	4.908	0	600	0.0	0.0
184	P31	LADYSMITH TO KEEVERSPORTEIN	13500	14000	7	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
185	P31	LADYSMITH TO KEEVERSPORTEIN	14000	14500	1	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
186	P31	LADYSMITH TO KEEVERSPORTEIN	14500	15000	2	S	4265	1.050	3.153	4.908	1	500	0.2	0.4
187	P31	LADYSMITH TO KEEVERSPORTEIN	15000	15500	2	S	4265	1.050	3.153	4.908	25	500	5.1	10.2
188	P31	LADYSMITH TO KEEVERSPORTEIN	15500	16000	14	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
189	P31	LADYSMITH TO KEEVERSPORTEIN	16000	16300	7	S	4265	1.050	3.153	4.908	5	300	1.0	3.4
190	P31	LADYSMITH TO KEEVERSPORTEIN	16300	16800	1	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
191	P31	LADYSMITH TO KEEVERSPORTEIN	16800	17200	7	S	4265	1.050	3.153	4.908	2	400	0.4	1.0
192	P31	LADYSMITH TO KEEVERSPORTEIN	17200	17700	1	S	4233	1.050	3.153	4.872	4	500	0.8	1.6
193	P31	LADYSMITH TO KEEVERSPORTEIN	17700	18200	1	S	4233	1.050	3.153	4.872	3	500	0.6	1.2
194	P31	LADYSMITH TO KEEVERSPORTEIN	18200	18700	1	S	4233	1.050	3.153	4.872	4	500	0.8	1.6
195	P31	LADYSMITH TO KEEVERSPORTEIN	18700	19200	8	S	4233	1.050	3.153	4.872	3	500	0.6	1.2
196	P31	LADYSMITH TO KEEVERSPORTEIN	19200	19600	7	S	4233	1.050	3.153	4.872	7	400	1.4	3.6
197	P31	LADYSMITH TO KEEVERSPORTEIN	19600	20000	7	S	4233	1.050	3.153	4.872	0	400	0.0	0.0
198	P31	LADYSMITH TO KEEVERSPORTEIN	20000	20400	9	S	4233	1.050	3.153	4.872	31	400	6.4	15.9
199	P31	LADYSMITH TO KEEVERSPORTEIN	20400	20800	21	S	4233	1.050	3.153	4.872	0	400	0.0	0.0
200	P31	LADYSMITH TO KEEVERSPORTEIN	20800	21300	7	S	4233	1.050	3.153	4.872	2	500	0.4	0.8
221	P31	LADYSMITH TO KEEVERSPORTEIN	21300	21800	1	S	4233	1.050	3.153	4.872	0	500	0.0	0.0
222	P31	LADYSMITH TO KEEVERSPORTEIN	21800	22300	1	S	4233	1.050	3.153	4.872	12	500	2.5	4.9
223	P31	LADYSMITH TO KEEVERSPORTEIN	22300	22800	16	S	4233	1.050	3.153	4.872	5	500	1.0	2.1
224	P31	LADYSMITH TO KEEVERSPORTEIN	22800	23300	1	S	4233	1.050	3.153	4.872	4	500	0.8	1.6
225	P31	LADYSMITH TO KEEVERSPORTEIN	23300	23800	1	S	4233	1.050	3.153	4.872	2	500	0.4	0.8
226	P31	LADYSMITH TO KEEVERSPORTEIN	23800	24300	1	S	4233	1.050	3.153	4.872	0	500	0.0	0.0
227	P31	LADYSMITH TO KEEVERSPORTEIN	24300	24800	1	S	4233	1.050	3.153	4.872	0	500	0.0	0.0
228	P31	LADYSMITH TO KEEVERSPORTEIN	24800	25300	22	S	4233	1.050	3.153	4.872	17	500	3.5	7.0
229	P31	LADYSMITH TO KEEVERSPORTEIN	25300	25800	1	S	4233	1.050	3.153	4.872	5	500	1.0	2.1
230	P31	LADYSMITH TO KEEVERSPORTEIN	25800	26400	22	S	4233	1.050	3.153	4.872	8	600	1.6	2.7
231	P31	LADYSMITH TO KEEVERSPORTEIN	26400	27000	1	S	4233	1.050	3.153	4.872	11	600	2.3	3.8
232	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	5000	5400	1	S	5839	1.020	3.060	6.522	6	400	0.9	2.3
233	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	5400	5800	1	S	5839	1.020	3.060	6.522	0	400	0.0	0.0
234	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	5800	6300	20	S	5839	1.020	3.060	6.522	12	500	1.8	3.7
235	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	6300	6800	20	S	6534	1.020	3.060	7.298	5	500	0.7	1.4
236	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	6800	7300	2	S	6534	1.020	3.060	7.298	10	500	1.4	2.7
237	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	7300	7800	6	S	6534	1.020	3.060	7.298	8	500	1.1	2.2
238	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	7800	8200	10	S	6534	1.020	3.060	7.298	9	400	1.2	3.1
239	P2/2[illegible]	VERULAM TO NEWGUELDERLAND	8200	8600	10	S	6534	1.020	3.060	7.298	3	400	0.4	1.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Roads

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
241	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	27400	27800	10	S	4954	1.060	3.184	5.757	5	400	0.9	2.2
242	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	27800	28300	22	S	4954	1.060	3.184	5.757	8	500	1.4	2.8
243	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	30000	30500	20	S	3969	1.060	3.184	4.613	9	500	2.0	3.9
244	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	30500	31000	2	S	3969	1.060	3.184	4.613	2	500	0.4	0.9
245	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	31000	31400	6	S	3969	1.060	3.184	4.613	3	400	0.7	1.6
246	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	31400	31900	2	S	3969	1.060	3.184	4.613	4	500	0.9	1.7
247	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	31900	32300	23	S	3969	1.060	3.184	4.613	14	400	3.0	7.6
248	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	32300	32700	3	S	3969	1.060	3.184	4.613	3	400	0.7	1.6
249	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	32700	33200	3	S	3969	1.060	3.184	4.613	22	500	4.8	9.5
250	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	33200	33600	6	S	3969	1.060	3.184	4.613	14	400	3.0	7.6
251	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	33600	34000	1	S	3969	1.060	3.184	4.613	1	400	0.2	0.5
252	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	34000	34500	13	S	3969	1.060	3.184	4.613	13	500	2.8	5.6
253	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	34500	35000	13	S	3969	1.060	3.184	4.613	2	500	0.4	0.9
254	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	35000	35500	8	S	3969	1.060	3.184	4.613	6	500	1.3	2.6
255	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	35500	36000	3	S	3969	1.060	3.184	4.613	8	500	1.7	3.5
256	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	36000	36500	1	S	3969	1.060	3.184	4.613	10	500	2.2	4.3
257	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	36500	37000	17	S	3969	1.060	3.184	4.613	5	500	1.1	2.2
258	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	37000	37500	22	S	3969	1.060	3.184	4.613	35	500	7.6	15.2
259	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	37500	38000	7	S	3969	1.060	3.184	4.613	15	500	3.3	6.5
260	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	38000	38500	16	S	3969	1.060	3.184	4.613	21	500	4.6	9.1
261	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	38500	39000	3	S	3969	1.060	3.184	4.613	3	500	0.7	1.3
262	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	39000	39400	3	S	3969	1.060	3.184	4.613	2	400	0.4	1.1
263	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	39400	39800	6	S	3969	1.060	3.184	4.613	9	400	2.0	4.9
264	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	39800	40200	23	S	3969	1.060	3.184	4.613	10	400	2.2	5.4
265	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	40200	40700	2	S	3969	1.060	3.184	4.613	21	500	4.6	9.1
266	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	40700	41000	8	S	3969	1.060	3.184	4.613	21	300	4.6	15.2
267	TR1/1	OUTENIQUA	3500	4500	8	S	2100	1.040	4.246	3.255	4	1000	1.2	1.2
268	TR1/1	OUTENIQUA	4500	5500	8	S	2100	1.040	4.246	3.255	11	1000	3.4	3.4
269	TR1/1	OUTENIQUA	5500	6500	23	S	2100	1.040	4.246	3.255	6	1000	1.8	1.8
270	TR1/1	OUTENIQUA	6500	7500	8	S	2100	1.040	4.246	3.255	4	1000	1.2	1.2
271	TR1/1	OUTENIQUA	7500	8500	11	S	2100	1.040	4.246	3.255	6	1000	1.8	1.8
272	TR1/1	OUTENIQUA	8500	9500	11	S	2100	1.040	4.246	3.255	3	1000	0.9	0.9
273	TR1/1	OUTENIQUA	9500	10500	11	S	2100	1.040	4.246	3.255	21	1000	6.5	6.5
274	TR1/1	OUTENIQUA	10500	11500	11	S	2100	1.040	4.246	3.255	2	1000	0.6	0.6
275	TR1/1	OUTENIQUA	11500	12500	8	S	2100	1.040	4.246	3.255	3	1000	0.9	0.9
276	TR1/1	OUTENIQUA	12500	13500	8	S	2100	1.040	4.246	3.255	1	1000	0.3	0.3
277	TR1/1	OUTENIQUA	13500	14500	8	S	2100	1.040	4.246	3.255	4	1000	1.2	1.2
278	TR1/1	OUTENIQUA	14500	15500	8	S	2100	1.040	4.246	3.255	7	1000	2.2	2.2
279	TR1/1	OUTENIQUA	15500	16500	2	S	2100	1.040	4.246	3.255	1	1000	0.3	0.3
280	TR1/1	OUTENIQUA	16500	17500	16	S	2100	1.040	4.246	3.255	1	1000	0.3	0.3
281	TR1/1	OUTENIQUA	17500	18500	1	S	2100	1.040	4.246	3.255	0	1000	0.0	0.0
282	TR1/1	OUTENIQUA	18500	19400	8	S	2100	1.040	4.246	3.255	11	900	3.4	3.8
283	TR1/1	OUTENIQUA	19400	19900	1	S	2100	1.040	4.246	3.255	10	500	3.1	6.1
284	TR1/1	OUTENIQUA	19900	20400	1	S	2100	1.040	4.246	3.255	20	500	6.1	12.3
285	TR1/1	OUTENIQUA	20400	20900	4	S	2100	1.040	4.246	3.255	11	500	3.4	6.8
286	TR1/1	OUTENIQUA	20900	21400	1	S	2100	1.040	4.246	3.255	21	500	6.5	12.9
287	TR1/1	OUTENIQUA	21400	21900	16	S	2100	1.040	4.246	3.255	12	500	3.7	7.4
288	TR1/1	OUTENIQUA	21900	22400	1	S	2100	1.040	4.246	3.255	4	500	1.2	2.5
289	TR1/1	OUTENIQUA	22400	22900	4	S	2100	1.040	4.246	3.255	4	500	1.2	2.5
290	TR1/1	OUTENIQUA	22900	23400	6	S	2100	1.040	4.246	3.255	7	500	2.2	4.3
291	TR1/1	OUTENIQUA	23400	23900	1	S	2100	1.040	4.246	3.255	6	500	1.8	3.7
292	TR1/1	OUTENIQUA	23900	24500	21	S	2100	1.040	4.246	3.255	29	600	8.9	14.8
293	P1/10	COLENSO	0	720	16	S	7000	1.040	3.122	7.977	2	720	0.3	0.3
294	P1/10	COLENSO	720	1260	22	S	7000	1.040	3.122	7.977	11	540	1.4	2.6
295	P1/10	COLENSO	1260	1680	1	S	7000	1.040	3.122	7.977	4	420	0.5	1.2
296	P1/10	COLENSO	1680	2180	16	S	7000	1.040	3.122	7.977	14	500	1.8	3.5
297	P1/10	COLENSO	2180	2710	1	S	7000	1.040	3.122	7.977	1	530	0.1	0.2
298	P1/10	COLENSO	2710	3300	16	S	7000	1.040	3.122	7.977	16	590	2.0	3.4
299	P1/10	COLENSO	3300	3800	2	S	7000	1.040	3.122	7.977	0	500	0.0	0.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Road

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	YEAR1986	GROWTH	YGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCYEAR	ACCYEARM
301	P1/10	COLEMSO	4300	4800	1	S	7000	1.040	3.122	7.977	0	500	0.0	0.0
302	P1/10	COLEMSO	4800	5200	1	S	7000	1.040	3.122	7.977	12	400	1.5	3.8
303	P1/10	COLEMSO	5200	5680	2	S	7000	1.040	3.122	7.977	25	480	3.1	6.5
304	P1/10	COLEMSO	5680	6120	11	S	7000	1.040	3.122	7.977	3	440	0.4	0.9
305	P1/10	COLEMSO	6120	6600	11	S	7000	1.040	3.122	7.977	10	480	1.3	2.6
306	P1/10	COLEMSO	6600	6940	12	S	7000	1.040	3.122	7.977	2	340	0.3	0.7
307	P1/10	COLEMSO	6940	7600	7	S	7000	1.040	3.122	7.977	22	660	2.8	4.2
308	P1/10	COLEMSO	7600	8000	2	S	7000	1.040	3.122	7.977	7	400	0.9	2.2
309	P1/10	COLEMSO	8000	8600	5	S	7000	1.040	3.122	7.977	6	600	0.8	1.3
310	P1/10	COLEMSO	8600	9480	6	S	7000	1.040	3.122	7.977	1	880	0.1	0.1
311	P1/10	COLEMSO	9480	10000	2	S	7000	1.040	3.122	7.977	6	520	0.8	1.4

4 Lane Freeway

Recordi	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	YRH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCYRH	ACCYRHKM
1	H2/24	UNIBI TO WINKELSPRUIT	5200	5700	22	D	14158	1.040	3.122	16.133	8	500	0.5	1.0
2	H2/24	UNIBI TO WINKELSPRUIT	5700	6300	2	D	14158	1.040	3.122	16.133	10	600	0.6	1.0
3	H2/24	UNIBI TO WINKELSPRUIT	6300	6800	5	D	14158	1.040	3.122	16.133	6	500	0.4	0.7
4	H2/24	UNIBI TO WINKELSPRUIT	6800	7300	22	D	14158	1.040	3.122	16.133	19	500	1.2	2.4
5	H2/24	UNIBI TO WINKELSPRUIT	7300	7900	16	D	14158	1.040	3.122	16.133	2	600	0.1	0.2
6	H2/24	UNIBI TO WINKELSPRUIT	7900	8500	42	D	14158	1.040	3.122	16.133	9	600	0.6	0.9
7	H2/24	UNIBI TO WINKELSPRUIT	8500	9100	17	D	14158	1.040	3.122	16.133	10	600	0.6	1.0
8	H2/24	UNIBI TO WINKELSPRUIT	9100	9700	22	D	14158	1.040	3.122	16.133	4	600	0.2	0.4
9	H2/24	UNIBI TO WINKELSPRUIT	9700	10200	2	D	14158	1.040	3.122	16.133	9	500	0.6	1.1
10	H2/24	UNIBI TO WINKELSPRUIT	10200	10760	4	D	14158	1.040	3.122	16.133	2	560	0.1	0.2
11	H2/24	UNIBI TO WINKELSPRUIT	10760	11260	2	D	14158	1.040	3.122	16.133	7	500	0.4	0.9
12	H2/24	UNIBI TO WINKELSPRUIT	11260	11760	22	D	14158	1.040	3.122	16.133	5	500	0.3	0.6
13	H2/24	UNIBI TO WINKELSPRUIT	11760	12260	1	D	14158	1.040	3.122	16.133	19	500	1.2	2.4
14	H2/24	UNIBI TO WINKELSPRUIT	12260	12760	1	D	14158	1.040	3.122	16.133	8	500	0.5	1.0
15	H2/24	UNIBI TO WINKELSPRUIT	12760	13350	17	D	14158	1.040	3.122	16.133	36	590	2.2	3.8
16	H2/24	UNIBI TO WINKELSPRUIT	13350	14000	43	D	14158	1.040	3.122	16.133	20	650	1.2	1.9
17	U	UNDLOTI	2870	3370	16	D	20000	1.030	3.091	22.564	3	500	0.1	0.3
18	U	UNDLOTI	3370	3870	42	D	20000	1.030	3.091	22.564	7	500	0.3	0.6
19	U	UNDLOTI	3870	4370	16	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
20	U	UNDLOTI	4370	4870	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
21	U	UNDLOTI	4870	5370	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
22	U	UNDLOTI	5370	5870	2	D	9000	1.030	3.091	10.154	0	500	0.0	0.0
23	U	UNDLOTI	5870	6370	22	D	9000	1.030	3.091	10.154	5	500	0.5	1.0
24	U	UNDLOTI	6370	6870	2	D	9000	1.030	3.091	10.154	0	500	0.0	0.0
25	U	UNDLOTI	6870	7370	22	D	9000	1.030	3.091	10.154	7	500	0.7	1.4
26	U	UNDLOTI	7370	7870	1	D	9000	1.030	3.091	10.154	7	500	0.7	1.4
27	U	UNDLOTI	7870	8370	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
28	U	UNDLOTI	8370	8870	2	D	9000	1.030	3.091	10.154	0	500	0.0	0.0
29	U	UNDLOTI	8870	9370	22	D	9000	1.030	3.091	10.154	36	500	3.5	7.1
30	U	UNDLOTI	9370	9870	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
31	H3/1	WESTVILLE TO EMBERTON	17500	18000	42	D	30000	1.030	3.091	33.846	8	500	0.2	0.5
32	H3/1	WESTVILLE TO EMBERTON	18000	18500	9	D	30000	1.030	3.091	33.846	0	500	0.0	0.0
33	H3/1	WESTVILLE TO EMBERTON	18500	19000	16	D	30000	1.030	3.091	33.846	10	500	0.3	0.6
34	H3/1	WESTVILLE TO EMBERTON	19000	19500	42	D	30000	1.030	3.091	33.846	32	500	0.9	1.9
35	H3/1	WESTVILLE TO EMBERTON	19500	20000	16	D	20000	1.030	3.091	22.564	28	500	1.2	2.5
36	H3/1	WESTVILLE TO EMBERTON	20000	20500	7	D	20000	1.030	3.091	22.564	9	500	0.4	0.8
37	H3/1	WESTVILLE TO EMBERTON	20500	21000	17	D	20000	1.030	3.091	22.564	11	500	0.5	1.0
38	H3/1	WESTVILLE TO EMBERTON	21000	21500	42	D	20000	1.030	3.091	22.564	44	500	2.0	3.9
39	H3/1	WESTVILLE TO EMBERTON	21500	22000	8	D	20000	1.020	3.060	22.338	18	500	0.8	1.6
40	H3/1	WESTVILLE TO EMBERTON	22000	22500	3	D	20000	1.020	3.060	22.338	10	500	0.4	0.9
41	H3/1	WESTVILLE TO EMBERTON	22500	23000	3	D	20000	1.020	3.060	22.338	38	500	1.7	3.4
42	H3/1	WESTVILLE TO EMBERTON	23000	23400	17	D	20000	1.020	3.060	22.338	7	400	0.3	0.8
43	H3/1	WESTVILLE TO EMBERTON	23400	23800	42	D	20000	1.020	3.060	22.338	7	400	0.3	0.8
44	H3/1	WESTVILLE TO EMBERTON	23800	24200	17	D	17000	1.020	3.060	18.987	50	400	2.6	6.6
45	H3/1	WESTVILLE TO EMBERTON	24200	24500	19	D	17000	1.020	3.060	18.987	7	300	0.4	1.2
46	H3/1	WESTVILLE TO EMBERTON	24500	24800	16	D	17000	1.020	3.060	18.987	7	300	0.4	1.2
47	H3/1	WESTVILLE TO EMBERTON	24800	25200	42	D	17000	1.020	3.060	18.987	10	400	0.5	1.3
48	H3/1	WESTVILLE TO EMBERTON	25200	25600	16	D	15000	1.020	3.060	16.753	4	400	0.2	0.6
49	H3/1	WESTVILLE TO EMBERTON	25600	25900	17	D	15000	1.020	3.060	16.753	4	300	0.2	0.8
50	H3/1	WESTVILLE TO EMBERTON	25900	26200	42	D	15000	1.020	3.060	16.753	2	300	0.1	0.4
51	H3/1	WESTVILLE TO EMBERTON	26200	26600	17	D	12000	1.020	3.060	13.403	16	400	1.2	3.0
52	H3/1	WESTVILLE TO EMBERTON	26600	27100	7	D	12000	1.020	3.060	13.403	2	500	0.1	0.3
53	H3/1	WESTVILLE TO EMBERTON	27100	27600	20	D	12000	1.020	3.060	13.403	10	500	0.7	1.5
54	H3/1	WESTVILLE TO EMBERTON	27600	27900	42	D	12000	1.020	3.060	13.403	39	300	2.9	9.7
55	H3/1	WESTVILLE TO EMBERTON	27900	28500	22	D	10000	1.020	3.060	11.169	14	600	1.3	2.1
56	H3/4	HILTON TO TWEEDIE	380	860	2	D	12375	1.040	3.122	14.102	12	480	0.9	1.8
57	H3/4	HILTON TO TWEEDIE	860	1360	7	D	12375	1.040	3.122	14.102	15	500	1.1	2.1
58	H3/4	HILTON TO TWEEDIE	1360	1860	20	D	12375	1.040	3.122	14.102	27	500	1.9	3.8
59	H3/4	HILTON TO TWEEDIE	1860	2260	43	D	12375	1.040	3.122	14.102	20	400	1.4	3.5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

4 Lane Freeway

RecordE	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
61	H3/4	HILTON TO TWEEDIE	2660	3100	22	D	12375	1.040	3.122	14.102	11	440	0.8	1.8
62	H3/4	HILTON TO TWEEDIE	3100	3600	1	D	12375	1.040	3.122	14.102	4	500	0.3	0.6
63	H3/4	HILTON TO TWEEDIE	3600	4100	7	D	12375	1.040	3.122	14.102	10	500	0.7	1.4
64	H3/4	HILTON TO TWEEDIE	4100	4600	22	D	12375	1.040	3.122	14.102	24	500	1.7	3.4
65	H3/4	HILTON TO TWEEDIE	4600	5100	16	D	12375	1.040	3.122	14.102	10	500	0.7	1.4
66	H3/4	HILTON TO TWEEDIE	5100	5600	43	D	10375	1.040	3.122	11.823	22	500	1.9	3.7
67	H3/4	HILTON TO TWEEDIE	5600	6100	16	D	10375	1.040	3.122	11.823	7	500	0.6	1.2
68	H3/4	HILTON TO TWEEDIE	6100	6600	8	D	10375	1.040	3.122	11.823	11	500	0.9	1.9
69	H3/4	HILTON TO TWEEDIE	6600	7100	22	D	10375	1.040	3.122	11.823	9	500	0.8	1.5
70	H3/4	HILTON TO TWEEDIE	7100	7600	1	D	10375	1.040	3.122	11.823	15	500	1.3	2.5
71	H3/4	HILTON TO TWEEDIE	7600	8100	1	D	10375	1.040	3.122	11.823	6	500	0.5	1.0
72	H3/4	HILTON TO TWEEDIE	8100	8600	1	D	10375	1.040	3.122	11.823	3	500	0.3	0.5
73	H3/4	HILTON TO TWEEDIE	8600	9000	7	D	10375	1.040	3.122	11.823	12	400	1.0	2.5
74	H3/4	HILTON TO TWEEDIE	9000	9400	16	D	10375	1.040	3.122	11.823	9	400	0.8	1.9
75	H3/4	HILTON TO TWEEDIE	9400	9800	42	D	8375	1.040	3.122	9.544	7	400	0.7	1.8
76	H3/4	HILTON TO TWEEDIE	9800	10200	16	D	8375	1.040	3.122	9.544	12	400	1.3	3.1
77	H3/4	HILTON TO TWEEDIE	10200	10700	1	D	8375	1.040	3.122	9.544	8	500	0.8	1.7
78	H3/4	HILTON TO TWEEDIE	10700	11200	1	D	8375	1.040	3.122	9.544	16	500	1.7	3.4
79	H3/4	HILTON TO TWEEDIE	11200	11600	22	D	8375	1.040	3.122	9.544	8	400	0.8	2.1
80	H3/4	HILTON TO TWEEDIE	11600	12000	22	D	8375	1.040	3.122	9.544	12	400	1.3	3.1
81	H3/4	HILTON TO TWEEDIE	12000	12500	1	D	8375	1.040	3.122	9.544	8	500	0.8	1.7
82	H3/4	HILTON TO TWEEDIE	12500	12900	16	D	8375	1.040	3.122	9.544	8	400	0.8	2.1
83	H3/4	HILTON TO TWEEDIE	12900	13200	42	D	8375	1.040	3.122	9.544	23	300	2.4	8.0
84	H3/4	HILTON TO TWEEDIE	13200	13600	16	D	8375	1.040	3.122	9.544	2	400	0.2	0.5
85	H3/4	HILTON TO TWEEDIE	13600	14100	1	D	8375	1.040	3.122	9.544	5	500	0.5	1.0
86	H3/4	HILTON TO TWEEDIE	14100	14600	2	D	8375	1.040	3.122	9.544	11	500	1.2	2.3
87	H3/4	HILTON TO TWEEDIE	14600	15000	23	D	8375	1.040	3.122	9.544	3	400	0.3	0.8
88	H3/4	HILTON TO TWEEDIE	15000	15500	11	D	8375	1.040	3.122	9.544	5	500	0.5	1.0
89	H3/4	HILTON TO TWEEDIE	15500	16000	11	D	8375	1.040	3.122	9.544	7	500	0.7	1.5
90	H3/4	HILTON TO TWEEDIE	16000	16500	11	D	8375	1.040	3.122	9.544	2	500	0.2	0.4
91	H3/4	HILTON TO TWEEDIE	16500	17000	24	D	8375	1.040	3.122	9.544	9	500	0.9	1.9
92	H3/4	HILTON TO TWEEDIE	17000	17500	10	D	8375	1.040	3.122	9.544	3	500	0.3	0.6
93	H3/4	HILTON TO TWEEDIE	17500	18000	10	D	8375	1.040	3.122	9.544	6	500	0.6	1.3
94	H3/4	HILTON TO TWEEDIE	18000	18500	2	D	8375	1.040	3.122	9.544	2	500	0.2	0.4
95	H3/4	HILTON TO TWEEDIE	18500	19000	2	D	8375	1.040	3.122	9.544	10	500	1.0	2.1
96	H3/4	HILTON TO TWEEDIE	19000	19500	22	D	8375	1.040	3.122	9.544	9	500	0.9	1.9
97	H3/4	HILTON TO TWEEDIE	19500	20000	8	D	8375	1.040	3.122	9.544	14	500	1.5	2.9
98	TR11/1	WINGFIELD TO REFINERY	0	400	19	D	20000	1.040	4.246	30.996	20	400	0.6	1.6
99	TR11/1	WINGFIELD TO REFINERY	400	850	16	D	20000	1.040	4.246	30.996	5	450	0.2	0.4
100	TR11/1	WINGFIELD TO REFINERY	850	1650	42	D	12000	1.040	4.246	18.597	76	800	4.1	5.1
101	TR11/1	WINGFIELD TO REFINERY	1650	2150	16	D	12000	1.040	4.246	18.597	11	500	0.6	1.2
102	TR11/1	WINGFIELD TO REFINERY	2150	2650	1	D	12000	1.040	4.246	18.597	6	500	0.3	0.6
103	TR11/1	WINGFIELD TO REFINERY	2650	3150	1	D	12000	1.040	4.246	18.597	4	500	0.2	0.4
104	TR11/1	WINGFIELD TO REFINERY	3150	3650	16	D	12000	1.040	4.246	18.597	6	500	0.3	0.6
105	TR11/1	WINGFIELD TO REFINERY	3650	4650	42	D	6000	1.040	4.246	9.299	27	1000	2.9	2.9
106	TR11/1	WINGFIELD TO REFINERY	4650	5150	16	D	6000	1.040	4.246	9.299	11	500	1.2	2.4
107	TR11/1	WINGFIELD TO REFINERY	5150	5650	1	D	6000	1.040	4.246	9.299	3	500	0.3	0.6
108	TR11/1	WINGFIELD TO REFINERY	5650	6150	1	D	6000	1.040	4.246	9.299	2	500	0.2	0.4
109	H3/4	NOOI RIVER	40000	40380	1	D	7638	1.040	3.122	8.704	11	380	1.3	3.3
110	H3/4	NOOI RIVER	40380	40760	1	D	7638	1.040	3.122	8.704	7	380	0.8	2.1
111	H3/4	NOOI RIVER	40760	41060	7	D	7638	1.040	3.122	8.704	4	300	0.5	1.5
112	H3/4	NOOI RIVER	41060	41560	1	D	7638	1.040	3.122	8.704	9	500	1.0	2.1
113	H3/4	NOOI RIVER	41560	42060	1	D	7638	1.040	3.122	8.704	8	500	0.9	1.8
114	H3/4	NOOI RIVER	42060	42560	2	D	7638	1.040	3.122	8.704	8	500	0.9	1.8
115	H3/4	NOOI RIVER	42560	43060	2	D	7638	1.040	3.122	8.704	5	500	0.6	1.1
116	H3/4	NOOI RIVER	43060	43560	1	D	7638	1.040	3.122	8.704	22	500	2.5	5.1
117	H3/4	NOOI RIVER	43560	44060	9	D	7638	1.040	3.122	8.704	16	500	1.8	3.7
118	H3/4	NOOI RIVER	44060	44560	1	D	7638	1.040	3.122	8.704	15	500	1.7	3.4
119	H3/4	NOOI RIVER	44560	45060	1	D	7638	1.040	3.122	8.704	6	500	0.7	1.4

4 Lane Freeway

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	YGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
121	M3/4	MOOI RIVER	45560	46060	2	D	7638	1.040	3.122	8.704	7	500	0.8	1.6
122	M3/4	MOOI RIVER	46060	46560	1	D	7638	1.040	3.122	8.704	5	500	0.6	1.1
123	M3/4	MOOI RIVER	46560	47060	10	D	7638	1.040	3.122	8.704	3	500	0.3	0.7
124	M3/4	MOOI RIVER	47060	47560	4	D	7638	1.040	3.122	8.704	8	500	0.9	1.8
125	M3/4	MOOI RIVER	47560	48060	2	D	7639	1.040	3.122	8.704	10	500	1.1	2.3
126	M3/4	MOOI RIVER	48060	48560	2	D	7638	1.040	3.122	8.704	6	500	0.7	1.4
127	M3/4	MOOI RIVER	48560	49000	16	D	7638	1.040	3.122	8.704	6	440	0.7	1.6
128	M3/4	MOOI RIVER	49000	49500	42	D	7638	1.040	3.122	8.704	16	500	1.8	3.7
129	M3/4	MOOI RIVER	49500	50000	16	D	7638	1.040	3.122	8.704	13	500	1.5	3.0
130	M3/3	ASHBURTON TO HILTON	0	310	2	D	18000	1.040	3.122	20.512	3	310	0.1	0.5
131	M3/3	ASHBURTON TO HILTON	310	810	22	D	18000	1.040	3.122	20.512	7	500	0.3	0.7
132	M3/3	ASHBURTON TO HILTON	810	1210	2	D	18000	1.040	3.122	20.512	3	400	0.1	0.4
133	M3/3	ASHBURTON TO HILTON	1210	1600	17	D	18000	1.040	3.122	20.512	9	390	0.4	1.1
134	M3/3	ASHBURTON TO HILTON	1600	2000	22	D	18000	1.040	3.122	20.512	32	400	1.6	3.9
135	M3/3	ASHBURTON TO HILTON	2000	2400	2	D	18000	1.040	3.122	20.512	9	400	0.4	1.1
136	M3/3	ASHBURTON TO HILTON	2400	2800	22	D	18000	1.040	3.122	20.512	22	400	1.1	2.7
137	M3/3	ASHBURTON TO HILTON	2800	3300	2	D	18000	1.040	3.122	20.512	3	500	0.1	0.3
138	M3/3	ASHBURTON TO HILTON	3300	3800	11	D	18000	1.040	3.122	20.512	6	500	0.3	0.6
139	M3/3	ASHBURTON TO HILTON	3800	4300	22	D	18000	1.040	3.122	20.512	18	500	0.9	1.8
140	M3/3	ASHBURTON TO HILTON	4300	4800	11	D	18000	1.040	3.122	20.512	17	500	0.8	1.7
141	M3/3	ASHBURTON TO HILTON	4800	5200	22	D	18000	1.040	3.122	20.512	14	400	0.7	1.7
142	M3/3	ASHBURTON TO HILTON	5200	5700	9	D	18000	1.040	3.122	20.512	0	500	0.0	0.0
143	M3/3	ASHBURTON TO HILTON	5700	6200	22	D	18000	1.040	3.122	20.512	14	500	0.7	1.4
144	M3/3	ASHBURTON TO HILTON	6200	6600	17	D	18000	1.040	3.122	20.512	2	400	0.1	0.2
145	M3/3	ASHBURTON TO HILTON	6600	7000	43	D	18000	1.040	3.122	20.512	43	400	2.1	5.2
146	M3/3	ASHBURTON TO HILTON	7000	7400	18	D	18000	1.040	3.122	20.512	8	400	0.4	1.0
147	M3/3	ASHBURTON TO HILTON	7400	7800	17	D	12000	1.040	3.122	13.674	11	400	0.8	2.0
148	M3/3	ASHBURTON TO HILTON	7800	8200	42	D	12000	1.040	3.122	13.674	10	400	0.7	1.8
149	M3/3	ASHBURTON TO HILTON	8200	8700	22	D	12000	1.040	3.122	13.674	7	500	0.5	1.0
150	M3/3	ASHBURTON TO HILTON	8700	9100	16	D	12000	1.040	3.122	13.674	1	400	0.1	0.2
151	M3/3	ASHBURTON TO HILTON	9100	9400	44	D	12000	1.040	3.122	13.674	29	300	2.1	7.1
152	M3/3	ASHBURTON TO HILTON	9400	9800	16	D	12000	1.040	3.122	13.674	4	400	0.3	0.7
153	M3/3	ASHBURTON TO HILTON	9800	10200	5	D	12000	1.040	3.122	13.674	2	400	0.1	0.4
154	M3/3	ASHBURTON TO HILTON	10200	10700	22	D	12000	1.040	3.122	13.674	3	500	0.2	0.4
155	M3/3	ASHBURTON TO HILTON	10700	11100	22	D	12000	1.040	3.122	13.674	16	400	1.2	2.9
156	M3/3	ASHBURTON TO HILTON	11100	11500	19	D	12000	1.040	3.122	13.674	3	400	0.2	0.5
157	M3/3	ASHBURTON TO HILTON	11500	11900	42	D	12000	1.040	3.122	13.674	11	400	0.8	2.0
158	M3/3	ASHBURTON TO HILTON	11900	12300	1	D	12000	1.040	3.122	13.674	2	400	0.1	0.4
159	M3/3	ASHBURTON TO HILTON	12300	12700	16	D	12000	1.040	3.122	13.674	0	400	0.0	0.0
160	M3/3	ASHBURTON TO HILTON	12700	13100	42	D	10000	1.040	3.122	11.395	16	400	1.4	3.5
161	M3/3	ASHBURTON TO HILTON	13100	13400	19	D	10000	1.040	3.122	11.395	5	300	0.4	1.5
162	M3/3	ASHBURTON TO HILTON	13400	13800	1	D	10000	1.040	3.122	11.395	0	400	0.0	0.0
163	M3/3	ASHBURTON TO HILTON	13800	14200	16	D	10000	1.040	3.122	11.395	6	400	0.5	1.3
164	M3/3	ASHBURTON TO HILTON	14200	14600	42	D	10000	1.040	3.122	11.395	12	400	1.1	2.6
165	M3/3	ASHBURTON TO HILTON	14600	15200	42	D	10000	1.040	3.122	11.395	11	600	1.0	1.6
166	M3/3	ASHBURTON TO HILTON	15200	15600	17	D	10000	1.040	3.122	11.395	7	400	0.6	1.5
167	M3/3	ASHBURTON TO HILTON	15600	16200	2	D	10000	1.040	3.122	11.395	3	600	0.3	0.4
168	M3/3	ASHBURTON TO HILTON	16200	16700	23	D	10000	1.040	3.122	11.395	8	500	0.7	1.4
169	M3/3	ASHBURTON TO HILTON	16700	17200	22	D	10000	1.040	3.122	11.395	6	500	0.5	1.1
170	M3/3	ASHBURTON TO HILTON	17200	17700	3	D	10000	1.040	3.122	11.395	4	500	0.4	0.7
171	M3/3	ASHBURTON TO HILTON	17700	18300	11	D	10000	1.040	3.122	11.395	6	600	0.5	0.9
172	M3/3	ASHBURTON TO HILTON	18300	18700	43	D	10000	1.040	3.122	11.395	34	400	3.0	7.5
173	M3/3	ASHBURTON TO HILTON	18700	19200	20	D	14000	1.040	3.122	15.953	22	500	1.4	2.8
174	M3/3	ASHBURTON TO HILTON	19200	19800	3	D	14000	1.040	3.122	15.953	27	600	1.7	2.8
175	M3/3	ASHBURTON TO HILTON	19800	20400	22	D	14000	1.040	3.122	15.953	29	600	1.8	3.0
176	M3/3	ASHBURTON TO HILTON	20400	20700	10	D	14000	1.040	3.122	15.953	3	300	0.2	0.6
177	M3/3	ASHBURTON TO HILTON	20700	21200	2	D	14000	1.040	3.122	15.953	6	500	0.4	0.8
178	M3/3	ASHBURTON TO HILTON	21200	21700	1	D	14000	1.040	3.122	15.953	33	500	2.1	4.1
179	M3/3	ASHBURTON TO HILTON	21700	22200	10	D	14000	1.040	3.122	15.953	9	500	0.6	1.1
180	M3/3	ASHBURTON TO HILTON	22200	22700	11	D	14000	1.040	3.122	15.953	8	500	0.5	1.0

4 Lane Freeway

Record#	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
181	H3/3	ASHBURTON TO HILTON	22700	23200	3	D	14000	1.040	3.122	15.953	36	500	2.3	4.5
182	H3/3	ASHBURTON TO HILTON	23200	23700	3	D	14000	1.040	3.122	15.953	4	500	0.3	0.5
183	H3/3	ASHBURTON TO HILTON	23700	24200	5	D	14000	1.040	3.122	15.953	2	500	0.1	0.3
184	H3/3	ASHBURTON TO HILTON	24200	24700	1	D	14000	1.040	3.122	15.953	18	500	1.1	2.3
185	H3/3	ASHBURTON TO HILTON	24700	25200	8	D	14000	1.040	3.122	15.953	10	500	0.6	1.3
186	H3/3	ASHBURTON TO HILTON	25200	25700	16	D	14000	1.040	3.122	15.953	38	500	2.4	4.8
187	H3/3	ASHBURTON TO HILTON	25700	26300	42	D	14000	1.040	3.122	15.953	22	600	1.4	2.3
188	H3/2	KEY RIDGE TO INCHANGA	200	680	12	D	20453	1.040	3.122	23.307	5	480	0.2	0.4
189	H3/2	KEY RIDGE TO INCHANGA	680	1200	2	D	20453	1.040	3.122	23.307	2	520	0.1	0.2
190	H3/2	KEY RIDGE TO INCHANGA	1200	1640	11	D	20453	1.040	3.122	23.307	6	440	0.3	0.6
191	H3/2	KEY RIDGE TO INCHANGA	1640	2000	11	D	20453	1.040	3.122	23.307	6	360	0.3	0.7
192	H3/2	KEY RIDGE TO INCHANGA	2000	2480	11	D	20453	1.040	3.122	23.307	10	480	0.4	0.9
193	H3/2	KEY RIDGE TO INCHANGA	2480	3040	12	D	20453	1.040	3.122	23.307	2	560	0.1	0.2
194	H3/2	KEY RIDGE TO INCHANGA	3040	3580	11	D	20453	1.040	3.122	23.307	11	540	0.5	0.9
195	H3/2	KEY RIDGE TO INCHANGA	3580	4060	10	D	20453	1.040	3.122	23.307	5	480	0.2	0.4
196	H3/2	KEY RIDGE TO INCHANGA	4060	4700	11	D	20453	1.040	3.122	23.307	4	640	0.2	0.3
197	H3/2	KEY RIDGE TO INCHANGA	4700	5280	11	D	20453	1.040	3.122	23.307	20	580	0.9	1.5
198	H3/2	KEY RIDGE TO INCHANGA	5280	5680	11	D	20453	1.040	3.122	23.307	21	400	0.9	2.3
199	H3/2	KEY RIDGE TO INCHANGA	5680	6180	2	D	20453	1.040	3.122	23.307	1	500	0.0	0.1
200	H3/2	KEY RIDGE TO INCHANGA	6180	6720	16	D	20453	1.040	3.122	23.307	27	540	1.2	2.1
201	H3/2	KEY RIDGE TO INCHANGA	6720	7120	42	D	20453	1.040	3.122	23.307	16	400	0.7	1.7
202	H3/2	KEY RIDGE TO INCHANGA	7120	7460	2	D	20453	1.040	3.122	23.307	4	340	0.2	0.5
203	H3/2	KEY RIDGE TO INCHANGA	7460	7960	12	D	20453	1.040	3.122	23.307	17	500	0.7	1.5
204	H3/2	KEY RIDGE TO INCHANGA	7960	8480	1	D	20453	1.040	3.122	23.307	4	520	0.2	0.3
205	H3/2	KEY RIDGE TO INCHANGA	8480	8880	1	D	20453	1.040	3.122	23.307	24	400	1.0	2.6
206	H3/2	KEY RIDGE TO INCHANGA	8880	9220	19	D	20453	1.040	3.122	23.307	11	340	0.5	1.4
207	H3/2	KEY RIDGE TO INCHANGA	9220	9560	43	D	20453	1.040	3.122	23.307	5	340	0.2	0.6
208	H3/2	KEY RIDGE TO INCHANGA	9560	9860	18	D	20453	1.040	3.122	23.307	20	300	0.9	2.9
209	H2-H1	H2 TO H1	19250	19840	1	D	13000	1.040	4.246	20.147	2	590	0.1	0.2
210	H2-H1	H2 TO H1	19840	20340	16	D	13000	1.040	4.246	20.147	1	500	0.0	0.1
211	H2-H1	H2 TO H1	20340	21340	44	D	13000	1.040	4.246	20.147	10	1000	0.5	0.5
212	H2-H1	H2 TO H1	21340	21840	16	D	16000	1.040	4.246	24.797	4	500	0.8	0.3
213	H2-H1	H2 TO H1	21840	22340	1	D	16000	1.040	4.246	24.797	0	500	0.0	0.0
214	H2-H1	H2 TO H1	22340	22840	1	D	16000	1.040	4.246	24.797	1	500	0.0	0.1
215	H2-H1	H2 TO H1	22840	23340	1	D	16000	1.040	4.246	24.797	4	500	0.2	0.3
216	H2-H1	H2 TO H1	23340	23840	1	D	16000	1.040	4.246	24.797	1	500	0.0	0.1
217	H2-H1	H2 TO H1	23840	24500	22	D	16000	1.040	4.246	24.797	5	660	0.2	0.3
218	H2-H1	H2 TO H1	24500	25000	16	D	16000	1.040	4.246	24.797	1	500	0.0	0.1
219	H2-H1	H2 TO H1	25000	25750	44	D	25000	1.040	4.246	38.745	3	750	0.1	0.1
220	H2-H1	H2 TO H1	25750	26160	16	D	25000	1.040	4.246	38.745	5	410	0.1	0.3
221	H2-H1	H2 TO H1	26160	26820	22	D	25000	1.040	4.246	38.745	9	660	0.2	0.4
222	H2-H1	H2 TO H1	26820	27370	22	D	25000	1.040	4.246	38.745	7	550	0.2	0.3
223	H2-H1	H2 TO H1	27370	27950	1	D	25000	1.040	4.246	38.745	3	580	0.1	0.1
224	H2-H1	H2 TO H1	27950	28450	18	D	25000	1.040	4.246	38.745	6	500	0.2	0.3
225	H2-H1	H2 TO H1	28450	28950	44	D	14000	1.040	4.246	21.697	13	500	0.6	1.2
226	H2-H1	H2 TO H1	28950	29520	1	D	14000	1.040	4.246	21.697	2	570	0.1	0.2
227	H2-H1	H2 TO H1	29520	30050	16	D	14000	1.040	4.246	21.697	5	530	0.2	0.4

Six Lane Freeway

Record#	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
1	N2/25	ISIPINGO TO DURBAN	0	400	16	D	54000	1.040	3.122	61.535	5	400	0.1	0.2
2	N2/25	ISIPINGO TO DURBAN	400	870	42	D	54000	1.040	3.122	61.535	72	470	1.2	2.5
3	N2/25	ISIPINGO TO DURBAN	870	1270	16	D	54000	1.040	3.122	61.535	11	400	0.2	0.4
4	N2/25	ISIPINGO TO DURBAN	1270	1770	1	D	54000	1.040	3.122	61.535	0	500	0.0	0.0
5	N2/25	ISIPINGO TO DURBAN	1770	2270	1	D	54000	1.040	3.122	61.535	0	500	0.0	0.0
6	N2/25	ISIPINGO TO DURBAN	2270	2770	22	D	54000	1.040	3.122	61.535	26	500	0.4	0.8
7	N2/25	ISIPINGO TO DURBAN	2770	3270	16	D	54000	1.040	3.122	61.535	7	500	0.1	0.2
8	N2/25	ISIPINGO TO DURBAN	3270	3870	43	D	30000	1.040	3.122	34.186	1	600	0.0	0.0
9	N2/25	ISIPINGO TO DURBAN	3870	4370	7	D	30000	1.040	3.122	34.186	3	500	0.1	0.2
10	N2/25	ISIPINGO TO DURBAN	4370	4870	22	D	30000	1.040	3.122	34.186	5	500	0.1	0.3
11	N2/25	ISIPINGO TO DURBAN	4870	5470	19	D	30000	1.040	3.122	34.186	1	600	0.0	0.0
12	N2/25	ISIPINGO TO DURBAN	5470	5970	43	D	30000	1.040	3.122	34.186	2	500	0.1	0.1
13	N2/25	ISIPINGO TO DURBAN	5970	6420	20	D	36000	1.050	3.153	41.430	46	450	1.1	2.5
14	N2/25	ISIPINGO TO DURBAN	6420	7070	2	D	36000	1.050	3.153	41.430	16	650	0.4	0.6
15	N2/25	ISIPINGO TO DURBAN	7070	7570	2	D	36000	1.050	3.153	41.430	0	500	0.0	0.0
16	N2/25	ISIPINGO TO DURBAN	7570	8070	4	D	36000	1.050	3.153	41.430	2	500	0.0	0.1
17	N2/25	ISIPINGO TO DURBAN	8070	8570	2	D	36000	1.050	3.153	41.430	0	500	0.0	0.0
18	N2/25	ISIPINGO TO DURBAN	8570	9070	2	D	36000	1.050	3.153	41.430	0	500	0.0	0.0
19	N2/25	ISIPINGO TO DURBAN	9070	9570	22	D	36000	1.050	3.153	41.430	28	500	0.7	1.4
20	N2/25	ISIPINGO TO DURBAN	9570	10070	23	D	36000	1.050	3.153	41.430	4	500	0.1	0.2
21	N2/25	ISIPINGO TO DURBAN	10070	10570	22	D	36000	1.050	3.153	41.430	1	500	0.0	0.0
22	N2/25	ISIPINGO TO DURBAN	10570	11070	8	D	36000	1.050	3.153	41.430	7	500	0.2	0.3
23	N2/25	ISIPINGO TO DURBAN	11070	11570	24	D	36000	1.050	3.153	41.430	8	500	0.2	0.4
24	N2/25	ISIPINGO TO DURBAN	11570	12000	8	D	36000	1.050	3.153	41.430	0	430	0.0	0.0
25	N2/25	ISIPINGO TO DURBAN	12000	12500	19	D	36000	1.050	3.153	41.430	8	500	0.2	0.4
26	N2/25	ISIPINGO TO DURBAN	12500	13000	42	D	36000	1.100	3.310	43.493	88	500	2.0	4.0
27	N2/25	ISIPINGO TO DURBAN	13000	13500	20	D	36000	1.100	3.310	43.493	32	500	0.7	1.5
28	N2/25	ISIPINGO TO DURBAN	13500	14000	2	D	36000	1.100	3.310	43.493	3	500	0.1	0.1
29	N2/25	ISIPINGO TO DURBAN	14000	14500	24	D	36000	1.100	3.310	43.493	5	500	0.1	0.2
30	N2/25	ISIPINGO TO DURBAN	14500	15000	2	D	36000	1.100	3.310	43.493	0	500	0.0	0.0
31	N2/25	ISIPINGO TO DURBAN	15000	15500	22	D	36000	1.100	3.310	43.493	25	500	0.6	1.1
32	N2/25	ISIPINGO TO DURBAN	15500	16000	1	D	36000	1.100	3.310	43.493	10	500	0.2	0.5
33	N2/25	ISIPINGO TO DURBAN	16000	16500	23	D	36000	1.100	3.310	43.493	9	500	0.2	0.4
34	N2/25	ISIPINGO TO DURBAN	16500	16900	16	D	36000	1.100	3.310	43.493	29	400	0.7	1.7
35	N2/25	ISIPINGO TO DURBAN	16900	17400	42	D	52000	1.030	3.091	58.667	34	500	0.6	1.2
36	N2/25	ISIPINGO TO DURBAN	17400	17900	17	D	52000	1.030	3.091	58.667	9	500	0.2	0.3
37	N2/25	ISIPINGO TO DURBAN	17900	18400	2	D	52000	1.030	3.091	58.667	3	500	0.1	0.1
38	N2/25	ISIPINGO TO DURBAN	18400	18900	5	D	52000	1.030	3.091	58.667	3	500	0.1	0.1
39	N2/25	ISIPINGO TO DURBAN	18900	19400	8	D	52000	1.030	3.091	58.667	2	500	0.0	0.1
40	N2/25	ISIPINGO TO DURBAN	19400	19900	22	D	52000	1.030	3.091	58.667	4	500	0.1	0.1
41	N2/25	ISIPINGO TO DURBAN	19900	20400	22	D	52000	1.030	3.091	58.667	5	500	0.1	0.2
42	N2/25	ISIPINGO TO DURBAN	20400	20900	8	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
43	N2/25	ISIPINGO TO DURBAN	20900	21400	17	D	52000	1.030	3.091	58.667	2	500	0.0	0.1
44	N2/25	ISIPINGO TO DURBAN	21400	22000	42	D	52000	1.030	3.091	58.667	97	600	1.7	2.8
45	N2/25	ISIPINGO TO DURBAN	22000	22600	16	D	52000	1.030	3.091	58.667	10	600	0.2	0.3
46	N2/25	ISIPINGO TO DURBAN	22600	23100	22	D	52000	1.030	3.091	58.667	18	500	0.3	0.6
47	N2/25	ISIPINGO TO DURBAN	23100	23600	7	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
48	N2/25	ISIPINGO TO DURBAN	23600	24100	1	D	52000	1.030	3.091	58.667	1	500	0.0	0.0
49	N2/25	ISIPINGO TO DURBAN	24100	24600	22	D	52000	1.030	3.091	58.667	7	500	0.1	0.2
50	N2/25	ISIPINGO TO DURBAN	24600	25100	22	D	52000	1.030	3.091	58.667	3	500	0.1	0.1
51	N2/25	ISIPINGO TO DURBAN	25100	25500	22	D	52000	1.030	3.091	58.667	4	400	0.1	0.2
52	N2/25	ISIPINGO TO DURBAN	25500	26000	22	D	52000	1.030	3.091	58.667	4	500	0.1	0.1
53	N2/25	ISIPINGO TO DURBAN	26000	26500	23	D	52000	1.030	3.091	58.667	6	500	0.1	0.2
54	N2/25	ISIPINGO TO DURBAN	26500	27000	1	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
55	N2/25	ISIPINGO TO DURBAN	27000	27500	22	D	52000	1.030	3.091	58.667	2	500	0.0	0.1
56	N2/25	ISIPINGO TO DURBAN	27500	28000	22	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
57	N2/25	ISIPINGO TO DURBAN	28000	28500	16	D	52000	1.030	3.091	58.667	31	500	0.5	1.1
58	N2/25	ISIPINGO TO DURBAN	28500	28900	42	D	52000	1.030	3.091	58.667	53	400	0.9	2.3
59	N2/25	ISIPINGO TO DURBAN	28900	29500	16	D	52000	1.030	3.091	58.667	18	600	0.3	0.5
60	N2/1	WESTVILLE TO EMPERTO	9000	9500	16	E	56000	1.040	3.122	61.535	1	500	0.0	0.1

Six Lane Freeway

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHLN
61	M3/1	WESTVILLE TO EMBERTO	9500	10000	43	D	56000	1.040	3.122	63.814	21	500	0.3	0.7
62	M3/1	WESTVILLE TO EMBERTO	10000	10500	43	D	56000	1.040	3.122	63.814	6	500	0.1	0.2
63	M3/1	WESTVILLE TO EMBERTO	10500	11000	20	D	56000	1.040	3.122	63.814	3	500	0.0	0.1
64	M3/1	WESTVILLE TO EMBERTO	11000	11500	2	D	56000	1.040	3.122	63.814	4	500	0.1	0.1
65	M3/1	WESTVILLE TO EMBERTO	11500	12000	23	D	56000	1.040	3.122	63.814	11	500	0.2	0.3
66	M3/1	WESTVILLE TO EMBERTO	12000	12500	17	D	56000	1.040	3.122	63.814	27	500	0.4	0.8
67	M3/1	WESTVILLE TO EMBERTO	12500	13000	42	D	56000	1.040	3.122	63.814	98	500	1.5	3.1
68	M3/1	WESTVILLE TO EMBERTO	13000	13500	17	D	40000	1.040	3.122	45.581	8	500	0.2	0.4
69	M3/1	WESTVILLE TO EMBERTO	13500	14000	2	D	40000	1.040	3.122	45.581	4	500	0.1	0.2
70	M3/1	WESTVILLE TO EMBERTO	14000	14500	1	D	40000	1.040	3.122	45.581	3	500	0.1	0.1
71	M3/1	WESTVILLE TO EMBERTO	14500	15000	23	D	40000	1.040	3.122	45.581	2	500	0.0	0.1
72	M3/1	WESTVILLE TO EMBERTO	15000	15500	22	D	40000	1.040	3.122	45.581	5	500	0.1	0.2
73	M3/1	WESTVILLE TO EMBERTO	15500	16000	23	D	40000	1.040	3.122	45.581	1	500	0.0	0.0
74	M3/1	WESTVILLE TO EMBERTO	16000	16500	1	D	40000	1.040	3.122	45.581	3	500	0.1	0.1
75	M3/1	WESTVILLE TO EMBERTO	16500	17000	16	D	40000	1.040	3.122	45.581	73	500	1.6	3.2
76	M3/1	WESTVILLE TO EMBERTO	17000	17500	16	D	40000	1.040	3.122	45.581	22	500	0.5	1.0
77	E-B	KOEBERG TO BELLVILLE	800	1300	1	D	74000	1.060	4.375	118.169	14	500	0.1	0.2
78	E-B	KOEBERG TO BELLVILLE	1300	1800	1	D	74000	1.060	4.375	118.169	33	500	0.3	0.6
79	E-B	KOEBERG TO BELLVILLE	1800	2300	1	D	74000	1.060	4.375	118.169	41	500	0.3	0.7
80	E-B	KOEBERG TO BELLVILLE	2300	2800	1	D	74000	1.060	4.375	118.169	20	500	0.2	0.3
81	E-B	KOEBERG TO BELLVILLE	2800	3300	1	D	74000	1.060	4.375	118.169	47	500	0.4	0.8
82	E-B	KOEBERG TO BELLVILLE	3300	3800	1	D	74000	1.060	4.375	118.169	18	500	0.2	0.3
83	E-B	KOEBERG TO BELLVILLE	3800	4300	22	D	74000	1.060	4.375	118.169	17	500	0.1	0.3
84	E-B	KOEBERG TO BELLVILLE	4300	4800	1	D	74000	1.060	4.375	118.169	4	500	0.0	0.1
85	E-B	KOEBERG TO BELLVILLE	4800	5300	22	D	74000	1.060	4.375	118.169	23	500	0.2	0.4
86	E-B	KOEBERG TO BELLVILLE	5300	5900	19	D	67000	1.060	4.375	106.991	41	600	0.4	0.6
87	E-B	KOEBERG TO BELLVILLE	5900	6500	43	D	67000	1.060	4.375	106.991	87	600	0.8	1.4
88	E-B	KOEBERG TO BELLVILLE	6500	7100	19	D	67000	1.060	4.375	106.991	76	600	0.7	1.2
89	E-B	KOEBERG TO BELLVILLE	7100	7700	1	D	67000	1.060	4.375	106.991	72	600	0.7	1.1
90	E-B	KOEBERG TO BELLVILLE	7700	8300	19	D	67000	1.060	4.375	106.991	75	600	0.7	1.2
91	E-B	KOEBERG TO BELLVILLE	8300	8700	42	D	67000	1.060	4.375	106.991	33	400	0.3	0.8
92	E-B	KOEBERG TO BELLVILLE	8700	9200	16	D	70000	1.060	4.375	111.781	35	500	0.3	0.6
93	E-B	KOEBERG TO BELLVILLE	9200	9800	1	D	70000	1.060	4.375	111.781	21	600	0.2	0.3
94	E-B	KOEBERG TO BELLVILLE	9800	10500	1	D	70000	1.060	4.375	111.781	41	700	0.4	0.5
95	E-B	KOEBERG TO BELLVILLE	10500	11000	16	D	70000	1.060	4.375	111.781	14	500	0.1	0.3
96	E-B	KOEBERG TO BELLVILLE	11000	11600	42	D	70000	1.060	4.375	111.781	62	600	0.6	0.9
97	E-B	KOEBERG TO BELLVILLE	11600	12200	20	D	74000	1.060	4.375	118.169	42	600	0.4	0.6
98	E-B	KOEBERG TO BELLVILLE	12200	12700	2	D	74000	1.060	4.375	118.169	13	500	0.1	0.2
99	E-B	KOEBERG TO BELLVILLE	12700	13400	16	D	74000	1.060	4.375	118.169	28	700	0.2	0.3
100	E-B	KOEBERG TO BELLVILLE	13400	14200	42	D	74000	1.060	4.375	118.169	58	800	0.5	0.6
101	E-B	KOEBERG TO BELLVILLE	14200	14800	16	D	74000	1.060	4.375	118.169	46	600	0.4	0.6
102	E-B	KOEBERG TO BELLVILLE	14800	15400	2	D	74000	1.060	4.375	118.169	18	600	0.2	0.3
103	E-B	KOEBERG TO BELLVILLE	15400	15900	18	D	74000	1.060	4.375	118.169	21	500	0.2	0.4
104	E-B	KOEBERG TO BELLVILLE	15900	16300	42	D	74000	1.060	4.375	118.169	30	400	0.3	0.6

APPENDIX C : DATABASE SORTED BY GEOMETRIC ELEMENT

Two Lane Road

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
1	TR9/1	THREE SISTERS	83100	83600	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
2	TR9/1	THREE SISTERS	81300	81800	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
3	TR9/1	THREE SISTERS	77600	78100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
4	TR9/1	THREE SISTERS	77100	77600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
5	TR9/1	THREE SISTERS	65900	66400	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
6	TR9/1	THREE SISTERS	60500	60900	1	S	1300	1.020	4.122	1.956	1	400	0.5	1.5
7	TR9/1	THREE SISTERS	66400	66900	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
8	TR9/1	THREE SISTERS	63000	63500	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
9	TR9/1	THREE SISTERS	68100	68600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
10	TR9/1	THREE SISTERS	78600	79100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
11	TR9/1	THREE SISTERS	63500	64000	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
12	TR9/1	THREE SISTERS	61800	62500	1	S	1300	1.020	4.122	1.956	0	700	0.0	0.0
13	TR9/1	THREE SISTERS	69200	69600	1	S	1300	1.020	4.122	1.956	4	400	2.0	5.1
14	TR9/1	THREE SISTERS	68600	69200	1	S	1300	1.020	4.122	1.956	1	600	0.5	0.9
15	TR9/1	THREE SISTERS	64000	64500	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
16	TR9/1	THREE SISTERS	71600	72100	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
17	TR9/1	THREE SISTERS	88100	88600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
18	TR9/1	THREE SISTERS	78100	78600	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
19	TR9/1	THREE SISTERS	87100	87600	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
20	TR9/1	THREE SISTERS	72100	72600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
21	TR9/1	THREE SISTERS	86100	86600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
22	TR9/1	THREE SISTERS	60000	60500	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
23	TR9/1	THREE SISTERS	85100	85600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
24	TR9/1	THREE SISTERS	76600	77100	1	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
25	TR9/1	THREE SISTERS	84100	84600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
26	TR9/1	THREE SISTERS	66900	67400	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
27	TR9/1	THREE SISTERS	81600	82100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
28	TR9/1	THREE SISTERS	76100	76600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
29	TR9/1	THREE SISTERS	80100	80600	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
30	TR9/1	THREE SISTERS	75100	75600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
31	TR9/1	THREE SISTERS	69600	71100	1	S	1300	1.020	4.122	1.956	0	1500	0.0	0.0
32	TR9/1	THREE SISTERS	74600	75100	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
33	TR9/1	THREE SISTERS	87600	88100	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
34	TR9/1	THREE SISTERS	89100	89600	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
35	TR9/1	THREE SISTERS	86600	87100	1	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
36	TR9/1	THREE SISTERS	84600	85100	1	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
37	TR9/1	THREE SISTERS	80600	81100	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
38	TR9/1	THREE SISTERS	72600	73100	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
39	TR9/1	THREE SISTERS	82100	82600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
40	TR9/1	THREE SISTERS	85600	86100	1	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
41	TR9/1	THREE SISTERS	74100	74600	1	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
42	TR9/1	THREE SISTERS	73600	74100	1	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
43	TR9/1	THREE SISTERS	73100	73600	1	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
44	TR1/1	OUTENIQUA	23400	23900	1	S	2100	1.040	4.246	3.255	6	500	1.8	3.7
45	TR1/1	OUTENIQUA	20900	21400	1	S	2100	1.040	4.246	3.255	21	500	6.5	12.9
46	TR1/1	OUTENIQUA	21900	22400	1	S	2100	1.040	4.246	3.255	4	500	1.2	2.5
47	TR1/1	OUTENIQUA	19900	20400	1	S	2100	1.040	4.246	3.255	20	500	6.1	12.3
48	TR1/1	OUTENIQUA	19400	19900	1	S	2100	1.040	4.246	3.255	10	500	3.1	6.1
49	TR1/1	OUTENIQUA	17500	18500	1	S	2100	1.040	4.246	3.255	0	1000	0.0	0.0
50	TR2/11	KNYSNA TO PLETTENBURG BAY	20500	21500	1	S	3300	1.040	4.246	5.114	7	1000	1.4	1.4
51	TR2/11	KNYSNA TO PLETTENBURG BAY	24500	25500	1	S	3300	1.040	4.246	5.114	9	1000	1.8	1.8
52	TR2/11	KNYSNA TO PLETTENBURG BAY	26500	27500	1	S	3300	1.040	4.246	5.114	10	1000	2.0	2.0
53	TR2/11	KNYSNA TO PLETTENBURG BAY	23500	24500	1	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
54	TR2/11	KNYSNA TO PLETTENBURG BAY	22500	23500	1	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
55	TR2/11	KNYSNA TO PLETTENBURG BAY	21500	22500	1	S	3300	1.040	4.246	5.114	6	1000	1.2	1.2
56	TR2/11	KNYSNA TO PLETTENBURG BAY	18500	19500	1	S	3300	1.040	4.246	5.114	10	1000	2.0	2.0
57	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	36000	36500	1	S	3969	1.060	3.184	4.613	10	500	2.2	4.3
58	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	33600	34000	1	S	3969	1.060	3.184	4.613	1	400	0.2	0.5
59	P31	LADYSMITH TO KEERSPONTEIN	24300	24800	1	S	4233	1.050	3.153	4.872	0	500	0.0	0.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Road

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
61	P31	LADYSMITH TO KEEVERSPORTEIN	23300	23800	1	S	4233	1.050	3.153	4.872	2	500	0.4	0.8
62	P31	LADYSMITH TO KEEVERSPORTEIN	22800	23300	1	S	4233	1.050	3.153	4.872	4	500	0.8	1.6
63	P1/12	NKUNZI TO NEWCASTLE	47000	47500	1	S	4233	1.020	3.060	4.728	3	500	0.6	1.3
64	P31	LADYSMITH TO KEEVERSPORTEIN	21800	22300	1	S	4233	1.050	3.153	4.872	12	500	2.5	4.9
65	P31	LADYSMITH TO KEEVERSPORTEIN	17200	17700	1	S	4233	1.050	3.153	4.872	4	500	0.8	1.6
66	P31	LADYSMITH TO KEEVERSPORTEIN	17700	18200	1	S	4233	1.050	3.153	4.872	3	500	0.6	1.2
67	P31	LADYSMITH TO KEEVERSPORTEIN	21300	21800	1	S	4233	1.050	3.153	4.872	0	500	0.0	0.0
68	P31	LADYSMITH TO KEEVERSPORTEIN	26400	27000	1	S	4233	1.050	3.153	4.872	11	600	2.3	3.6
69	P31	LADYSMITH TO KEEVERSPORTEIN	18200	18700	1	S	4233	1.050	3.153	4.872	4	500	0.8	1.6
70	P31	LADYSMITH TO KEEVERSPORTEIN	25300	25800	1	S	4233	1.050	3.153	4.872	5	500	1.0	2.1
71	P31	LADYSMITH TO KEEVERSPORTEIN	8900	9400	1	S	4265	1.050	3.153	4.908	9	500	1.8	3.7
72	P31	LADYSMITH TO KEEVERSPORTEIN	16300	16800	1	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
73	P31	LADYSMITH TO KEEVERSPORTEIN	8400	8900	1	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
74	P31	LADYSMITH TO KEEVERSPORTEIN	5100	5600	1	S	4265	1.050	3.153	4.908	14	500	2.9	5.7
75	P31	LADYSMITH TO KEEVERSPORTEIN	6100	6500	1	S	4265	1.050	3.153	4.908	8	400	1.6	4.1
76	P31	LADYSMITH TO KEEVERSPORTEIN	14000	14500	1	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
77	P31	LADYSMITH TO KEEVERSPORTEIN	12900	13500	1	S	4265	1.050	3.153	4.908	0	600	0.0	0.0
78	P31	LADYSMITH TO KEEVERSPORTEIN	12300	12900	1	S	4265	1.050	3.153	4.908	5	600	1.0	1.7
79	P31	LADYSMITH TO KEEVERSPORTEIN	4100	4600	1	S	4268	1.050	3.153	4.912	8	500	1.6	3.3
80	P4/1	IZINGOLWENI TO PORT SHEPSTONE	4000	4600	1	S	4452	1.020	3.060	4.972	22	600	4.4	7.4
81	TR9/2	DU TOITSKLOOF	26700	27200	1	S	4500	1.040	4.246	6.974	10	500	1.4	2.9
82	TR9/2	DU TOITSKLOOF	35200	36200	1	S	4500	1.040	4.246	6.974	8	1000	1.1	1.1
83	TR9/2	DU TOITSKLOOF	27200	27700	1	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
84	TR9/2	DU TOITSKLOOF	23200	23700	1	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
85	TR9/2	DU TOITSKLOOF	38200	39200	1	S	4500	1.040	4.246	6.974	18	1000	2.6	2.6
86	TR9/2	DU TOITSKLOOF	34200	35200	1	S	4500	1.040	4.246	6.974	16	1000	2.3	2.3
87	TR9/2	DU TOITSKLOOF	22700	23200	1	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
88	TR9/2	DU TOITSKLOOF	23700	24200	1	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
89	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	27000	27400	1	S	4954	1.060	3.184	5.757	2	400	0.3	0.9
90	P1/12	NKUNZI TO NEWCASTLE	52000	52300	1	S	5026	1.020	3.060	5.614	15	300	2.7	8.9
91	P4/1	IZINGOLWENI TO PORT SHEPSTONE	4600	5100	1	S	5198	1.050	3.153	5.982	16	500	2.7	5.3
92	P2/2(1)	VERULAM TO NEWGUELDERLAND	5000	5400	1	S	5839	1.020	3.060	6.522	6	400	0.9	2.3
93	P2/2(1)	VERULAM TO NEWGUELDERLAND	5400	5800	1	S	5839	1.020	3.060	6.522	0	400	0.0	0.0
94	P1/10	COLENSO	4300	4800	1	S	7000	1.040	3.122	7.977	0	500	0.0	0.0
95	P1/13	VOLKSRUST TO NEWCASTLE	4800	5300	1	S	7000	1.040	3.122	7.977	7	500	0.9	1.8
96	P1/10	COLENSO	2180	2710	1	S	7000	1.040	3.122	7.977	1	530	0.1	0.2
97	P1/13	VOLKSRUST TO NEWCASTLE	6400	7000	1	S	7000	1.040	3.122	7.977	12	600	1.5	2.5
98	P1/10	COLENSO	1260	1680	1	S	7000	1.040	3.122	7.977	4	420	0.5	1.2
99	P1/10	COLENSO	4800	5200	1	S	7000	1.040	3.122	7.977	12	400	1.5	3.8
100	TR1/1	OUTENIQUA	15500	16500	2	S	2100	1.040	4.246	3.255	1	1000	0.3	0.3
101	TR2/11	KNYSNA TO PLETTENBURG BAY	16500	17500	2	S	3300	1.040	4.246	5.114	6	1000	1.2	1.2
102	TR2/11	KNYSNA TO PLETTENBURG BAY	8500	9500	2	S	3300	1.040	4.246	5.114	3	1000	0.6	0.6
103	TR2/11	KNYSNA TO PLETTENBURG BAY	3500	4500	2	S	3300	1.040	4.246	5.114	2	1000	0.4	0.4
104	TR2/11	KNYSNA TO PLETTENBURG BAY	9500	10500	2	S	3300	1.040	4.246	5.114	23	1000	4.5	4.5
105	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	30500	31000	2	S	3969	1.060	3.184	4.613	2	500	0.4	0.9
106	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	40200	40700	2	S	3969	1.060	3.184	4.613	21	500	4.6	9.1
107	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	31400	31900	2	S	3969	1.060	3.184	4.613	4	500	0.9	1.7
108	P1/13	VOLKSRUST TO NEWCASTLE	7000	7500	2	S	4000	1.040	3.122	4.558	12	500	2.6	5.3
109	P1/12	NKUNZI TO NEWCASTLE	46000	46500	2	S	4233	1.020	3.060	4.728	1	500	0.2	0.4
110	P1/12	NKUNZI TO NEWCASTLE	47500	48000	2	S	4233	1.020	3.060	4.728	1	500	0.2	0.4
111	P1/12	NKUNZI TO NEWCASTLE	45500	46000	2	S	4233	1.020	3.060	4.728	2	500	0.4	0.8
112	P1/12	NKUNZI TO NEWCASTLE	50500	51000	2	S	4233	1.020	3.060	4.728	4	500	0.8	1.7
113	P1/12	NKUNZI TO NEWCASTLE	48000	48500	2	S	4233	1.020	3.060	4.728	7	500	1.5	3.0
114	P1/12	NKUNZI TO NEWCASTLE	48500	49000	2	S	4233	1.020	3.060	4.728	4	500	0.8	1.7
115	P1/12	NKUNZI TO NEWCASTLE	44000	44500	2	S	4233	1.020	3.060	4.728	2	500	0.4	0.8
116	P1/12	NKUNZI TO NEWCASTLE	51000	51500	2	S	4233	1.020	3.060	4.728	13	500	2.7	5.5
117	P31	LADYSMITH TO KEEVERSPORTEIN	10800	11300	2	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
118	P31	LADYSMITH TO KEEVERSPORTEIN	11800	12300	2	S	4265	1.050	3.153	4.908	3	500	0.6	1.2
119	P31	LADYSMITH TO KEEVERSPORTEIN	14500	15000	2	S	4265	1.050	3.153	4.908	1	500	0.2	0.4

Two Lane Road

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
121	TR9/2	DU TOITSKLOOF	0	540	2	S	4500	1.040	4.246	6.974	3	540	0.4	0.8
122	TR9/2	DU TOITSKLOOF	7300	7800	2	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
123	TR9/2	DU TOITSKLOOF	11000	11500	2	S	4500	1.040	4.246	6.974	9	500	1.3	2.6
124	TR9/2	DU TOITSKLOOF	540	1080	2	S	4500	1.040	4.246	6.974	4	540	0.6	1.1
125	TR9/2	DU TOITSKLOOF	13000	13500	2	S	4500	1.040	4.246	6.974	5	500	0.7	1.4
126	TR9/2	DU TOITSKLOOF	13500	14000	2	S	4500	1.040	4.246	6.974	9	500	1.3	2.6
127	TR9/2	DU TOITSKLOOF	26200	26700	2	S	4500	1.040	4.246	6.974	11	500	1.6	3.2
128	TR9/2	DU TOITSKLOOF	16600	17600	2	S	4500	1.040	4.246	6.974	13	1000	1.9	1.9
129	TR9/2	DU TOITSKLOOF	18100	18600	2	S	4500	1.040	4.246	6.974	9	500	1.3	2.6
130	TR9/2	DU TOITSKLOOF	20200	20700	2	S	4500	1.040	4.246	6.974	14	500	2.0	4.0
131	TR9/2	DU TOITSKLOOF	12000	12500	2	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
132	TR9/2	DU TOITSKLOOF	11500	12000	2	S	4500	1.040	4.246	6.974	5	500	0.7	1.4
133	TR9/2	DU TOITSKLOOF	5900	6400	2	S	4500	1.040	4.246	6.974	17	500	2.4	4.9
134	TR9/2	DU TOITSKLOOF	15600	16600	2	S	4500	1.040	4.246	6.974	18	1000	2.6	2.6
135	P1/12	NKUNZI TO NEWCASTLE	51500	52000	2	S	5026	1.020	3.060	5.614	4	500	0.7	1.4
136	P4/1	IZINGOLWENI TO PORT SHEPSTONE	7200	7700	2	S	5198	1.050	3.153	5.982	2	500	0.3	0.7
137	P2/2(1)	VERULAM TO NEWCUELDERLAND	6800	7300	2	S	6534	1.020	3.060	7.298	10	500	1.4	2.7
138	P1/10	COLENSO	3300	3800	2	S	7000	1.040	3.122	7.977	0	500	0.0	0.0
139	P1/10	COLENSO	5200	5680	2	S	7000	1.040	3.122	7.977	25	480	3.1	6.5
140	P1/10	COLENSO	7600	8000	2	S	7000	1.040	3.122	7.977	7	400	0.9	2.2
141	P1/10	COLENSO	9480	10000	2	S	7000	1.040	3.122	7.977	6	520	0.8	1.4
142	TR2/11	KNYSNA TO PLETTENBURG BAY	4500	5500	3	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
143	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	39000	39400	3	S	3969	1.060	3.184	4.613	2	400	0.4	1.1
144	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	32300	32700	3	S	3969	1.060	3.184	4.613	3	400	0.7	1.6
145	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	32700	33200	3	S	3969	1.060	3.184	4.613	22	500	4.6	9.5
146	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	38500	39000	3	S	3969	1.060	3.184	4.613	3	500	0.7	1.3
147	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	35500	36000	3	S	3969	1.060	3.184	4.613	8	500	1.7	3.5
148	P1/12	NKUNZI TO NEWCASTLE	49000	49500	3	S	4233	1.020	3.060	4.728	6	500	1.3	2.5
149	TR9/2	DU TOITSKLOOF	2500	3000	3	S	4500	1.040	4.246	6.974	12	500	1.7	3.4
150	TR9/2	DU TOITSKLOOF	18600	19100	3	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
151	TR9/2	DU TOITSKLOOF	12500	13000	3	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
152	P4/1	IZINGOLWENI TO PORT SHEPSTONE	9200	10000	3	S	5198	1.050	3.153	5.982	10	800	1.7	2.1
153	TR9/7	THREE SISTERS	82600	83100	4	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
154	TR9/7	THREE SISTERS	83600	84100	4	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
155	TR9/7	THREE SISTERS	67400	68100	4	S	1300	1.020	4.122	1.956	3	700	1.5	2.2
156	TR1/1	OUTENIQUA	22400	22900	4	S	2100	1.040	4.246	3.255	4	500	1.2	2.5
157	TR1/1	OUTENIQUA	20400	20900	4	S	2100	1.040	4.246	3.255	11	500	3.4	6.8
158	TR9/2	DU TOITSKLOOF	25200	25700	4	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
159	P1/10	COLENSO	3800	4300	4	S	7000	1.040	3.122	7.977	5	500	0.6	1.3
160	P1/12	NKUNZI TO NEWCASTLE	44500	45000	5	S	4233	1.020	3.060	4.728	3	500	0.6	1.3
161	P31	LADYSMITH TO KEEVERSPONTEIN	9800	10300	5	S	4265	1.050	3.153	4.908	8	500	1.6	3.3
162	P31	LADYSMITH TO KEEVERSPONTEIN	4600	5100	5	S	4268	1.050	3.153	4.912	2	500	0.4	0.8
163	P4/1	IZINGOLWENI TO PORT SHEPSTONE	6200	6700	5	S	5198	1.050	3.153	5.982	5	500	0.8	1.7
164	P1/13	VOLKSRUST TO NEWCASTLE	5800	6400	5	S	7000	1.040	3.122	7.977	4	600	0.5	0.8
165	P1/10	COLENSO	8000	8600	5	S	7000	1.040	3.122	7.977	6	600	0.8	1.3
166	TR1/1	OUTENIQUA	22900	23400	6	S	2100	1.040	4.246	3.255	7	500	2.2	4.3
167	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	31000	31400	6	S	3969	1.060	3.184	4.613	3	400	0.7	1.6
168	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	33200	33600	6	S	3969	1.060	3.184	4.613	14	400	3.0	7.6
169	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	39400	39800	6	S	3969	1.060	3.184	4.613	9	400	2.0	4.9
170	P2/2(1)	VERULAM TO NEWCUELDERLAND	7300	7800	6	S	6534	1.020	3.060	7.298	8	500	1.1	2.2
171	P1/10	COLENSO	8600	9480	6	S	7000	1.040	3.122	7.977	1	880	0.1	0.1
172	TR2/11	KNYSNA TO PLETTENBURG BAY	13500	14500	7	S	3300	1.040	4.246	5.114	5	1000	1.0	1.0
173	TR2/11	KNYSNA TO PLETTENBURG BAY	14500	15500	7	S	3300	1.040	4.246	5.114	14	1000	2.7	2.7
174	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	37500	38000	7	S	3969	1.060	3.184	4.613	15	500	3.3	6.5
175	P31	LADYSMITH TO KEEVERSPONTEIN	13200	13600	7	S	4233	1.050	3.153	4.872	7	400	1.4	3.6
176	P31	LADYSMITH TO KEEVERSPONTEIN	20800	21300	7	S	4233	1.050	3.153	4.872	2	500	0.4	0.8
177	P31	LADYSMITH TO KEEVERSPONTEIN	19600	20000	7	S	4233	1.050	3.153	4.872	0	400	0.0	0.0
178	P31	LADYSMITH TO KEEVERSPONTEIN	7900	8400	7	S	4265	1.050	3.153	4.908	2	500	0.4	0.8
179	P31	LADYSMITH TO KEEVERSPONTEIN	16000	16500	7	S	4265	1.050	3.153	4.908	5	500	1.0	2.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Road

cards	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
181	P31	LADYSMITH TO KEEVERSFONTEIN	16800	17200	7	S	4265	1.050	3.153	4.908	2	400	0.4	1.0
182	P31	LADYSMITH TO KEEVERSFONTEIN	11300	11800	7	S	4265	1.050	3.153	4.908	2	500	0.4	0.8
183	P31	LADYSMITH TO KEEVERSFONTEIN	7400	7900	7	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
184	P31	LADYSMITH TO KEEVERSFONTEIN	5600	6100	7	S	4265	1.050	3.153	4.908	1	500	0.2	0.4
185	P31	LADYSMITH TO KEEVERSFONTEIN	6500	7000	7	S	4265	1.050	3.153	4.908	1	500	0.2	0.4
186	TR9/2	DU TOITSKLOOF	28200	28700	7	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
187	TR9/2	DU TOITSKLOOF	28700	29200	7	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
188	TR9/2	DU TOITSKLOOF	29200	29700	7	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
189	TR9/2	DU TOITSKLOOF	29700	30200	7	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
190	TR9/2	DU TOITSKLOOF	30200	31200	7	S	4500	1.040	4.246	6.974	6	1000	0.9	0.9
191	TR9/2	DU TOITSKLOOF	36200	37200	7	S	4500	1.040	4.246	6.974	9	1000	1.3	1.3
192	TR9/2	DU TOITSKLOOF	4000	4300	7	S	4500	1.040	4.246	6.974	5	300	0.7	2.4
193	P1/13	VOLKSRUST TO NEWCASTLE	5300	5800	7	S	7000	1.040	3.122	7.977	2	500	0.3	0.5
194	P1/10	COLENSO	6940	7600	7	S	7000	1.040	3.122	7.977	22	660	2.8	4.2
195	TR1/1	OUTENIQUA	14500	15500	8	S	2100	1.040	4.246	3.255	7	1000	2.2	2.2
196	TR1/1	OUTENIQUA	13500	14500	8	S	2100	1.040	4.246	3.255	4	1000	1.2	1.2
197	TR1/1	OUTENIQUA	12500	13500	8	S	2100	1.040	4.246	3.255	1	1000	0.3	0.3
198	TR1/1	OUTENIQUA	11500	12500	8	S	2100	1.040	4.246	3.255	3	1000	0.9	0.9
199	TR1/1	OUTENIQUA	18500	19400	8	S	2100	1.040	4.246	3.255	11	900	3.4	3.8
200	TR1/1	OUTENIQUA	4500	5500	8	S	2100	1.040	4.246	3.255	11	1000	3.4	3.4
201	TR1/1	OUTENIQUA	6500	7500	8	S	2100	1.040	4.246	3.255	4	1000	1.2	1.2
202	TR1/1	OUTENIQUA	3500	4500	8	S	2100	1.040	4.246	3.255	4	1000	1.2	1.2
203	TR2/11	KNYSNA TO PLETTENBURG BAY	12500	13500	8	S	3300	1.040	4.246	5.114	6	1000	1.2	1.2
204	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	40700	41000	8	S	3969	1.060	3.184	4.613	21	300	4.6	15.2
205	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	35000	35500	8	S	3969	1.060	3.184	4.613	6	500	1.3	2.6
206	P1/12	NKUNZI TO NEWCASTLE	46500	47000	8	S	4233	1.020	3.060	4.728	4	500	0.8	1.7
207	P1/12	NKUNZI TO NEWCASTLE	50000	50500	8	S	4233	1.020	3.060	4.728	8	500	1.7	3.4
208	P31	LADYSMITH TO KEEVERSFONTEIN	18700	19200	8	S	4233	1.050	3.153	4.872	3	500	0.6	1.2
209	TR9/2	DU TOITSKLOOF	6400	6800	8	S	4500	1.040	4.246	6.974	0	400	0.0	0.0
210	TR9/2	DU TOITSKLOOF	8300	8900	8	S	4500	1.040	4.246	6.974	4	600	0.6	1.0
211	TR9/2	DU TOITSKLOOF	9900	10500	8	S	4500	1.040	4.246	6.974	5	600	0.7	1.2
212	TR9/2	DU TOITSKLOOF	10500	11000	8	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
213	TR9/2	DU TOITSKLOOF	5400	5900	8	S	4500	1.040	4.246	6.974	3	500	0.4	0.9
214	TR9/2	DU TOITSKLOOF	19100	19700	8	S	4500	1.040	4.246	6.974	8	600	1.1	1.9
215	TR9/2	DU TOITSKLOOF	17600	18100	8	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
216	TR9/2	DU TOITSKLOOF	19700	20200	8	S	4500	1.040	4.246	6.974	12	500	1.7	3.4
217	TR9/2	DU TOITSKLOOF	20700	21200	8	S	4500	1.040	4.246	6.974	31	500	4.4	8.9
218	TR9/2	DU TOITSKLOOF	32200	33200	8	S	4500	1.040	4.246	6.974	11	1000	1.6	1.6
219	TR9/2	DU TOITSKLOOF	33200	34200	8	S	4500	1.040	4.246	6.974	8	1000	1.1	1.1
220	P4/1	IZINGOLWENI TO PORT SHEPSTONE	6700	7200	8	S	5198	1.050	3.153	5.982	3	500	0.5	1.0
221	TR2/11	KNYSNA TO PLETTENBURG BAY	27500	28500	9	S	3300	1.040	4.246	5.114	17	1000	3.3	3.3
222	P31	LADYSMITH TO KEEVERSFONTEIN	20000	20400	9	S	4233	1.050	3.153	4.872	31	400	6.4	15.9
223	TR9/2	DU TOITSKLOOF	3500	4000	9	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
224	TR9/2	DU TOITSKLOOF	24200	24700	9	S	4500	1.040	4.246	6.974	2	500	0.3	0.6
225	TR2/11	KNYSNA TO PLETTENBURG BAY	11500	12500	10	S	3300	1.040	4.246	5.114	13	1000	2.5	2.5
226	TR9/2	DU TOITSKLOOF	27700	28200	10	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
227	TR9/2	DU TOITSKLOOF	1600	2100	10	S	4500	1.040	4.246	6.974	7	500	1.0	2.0
228	P2/2(2)	VERULAM TO NEWCUELDERLAND 27-41km	27400	27800	10	S	4954	1.060	3.184	5.757	5	400	0.9	2.2
229	P2/2(1)	VERULAM TO NEWCUELDERLAND	8200	8600	10	S	6534	1.020	3.060	7.298	3	400	0.4	1.0
230	P2/2(1)	VERULAM TO NEWCUELDERLAND	7800	8200	10	S	6534	1.020	3.060	7.298	9	400	1.2	3.1
231	TR1/1	OUTENIQUA	7500	8500	11	S	2100	1.040	4.246	3.255	6	1000	1.8	1.8
232	TR1/1	OUTENIQUA	8500	9500	11	S	2100	1.040	4.246	3.255	3	1000	0.9	0.9
233	TR1/1	OUTENIQUA	9500	10500	11	S	2100	1.040	4.246	3.255	21	1000	6.5	6.5
234	TR1/1	OUTENIQUA	10500	11500	11	S	2100	1.040	4.246	3.255	2	1000	0.6	0.6
235	TR2/11	KNYSNA TO PLETTENBURG BAY	7500	8500	11	S	3300	1.040	4.246	5.114	11	1000	2.2	2.2
236	TR2/11	KNYSNA TO PLETTENBURG BAY	6500	7500	11	S	3300	1.040	4.246	5.114	19	1000	3.7	3.7
237	TR9/2	DU TOITSKLOOF	14000	14600	11	S	4500	1.040	4.246	6.974	12	600	1.7	2.9
238	TR9/2	DU TOITSKLOOF	8900	9400	11	S	4500	1.040	4.246	6.974	10	500	1.4	2.9
239	TR9/2	DU TOITSKLOOF	21700	22200	11	S	4500	1.040	4.246	6.974	5	500	0.7	1.4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Road

Records	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCYEAR	ACCVEHKM
241	TR9/2	DU TOITSKLOOF	9400	9900	11	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
242	TR9/2	DU TOITSKLOOF	4300	4800	11	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
243	P4/1	IZINGOLWENI TO PORT SHEPSTONE	8200	8700	11	S	5198	1.050	3.153	5.982	21	500	3.5	7.0
244	P4/1	IZINGOLWENI TO PORT SHEPSTONE	5100	5600	11	S	5198	1.050	3.153	5.982	4	500	0.7	1.3
245	P4/1	IZINGOLWENI TO PORT SHEPSTONE	5600	6200	11	S	5198	1.050	3.153	5.982	3	600	0.5	0.8
246	P1/10	COLENSO	5680	6120	11	S	7000	1.040	3.122	7.977	3	440	0.4	0.9
247	P1/10	COLENSO	6120	6600	11	S	7000	1.040	3.122	7.977	10	480	1.3	2.6
248	P1/12	NEWBZI TO NEWCASTLE	49500	50000	12	S	4233	1.020	3.060	4.728	5	500	1.1	2.1
249	TR9/2	DU TOITSKLOOF	6800	7300	12	S	4500	1.040	4.246	6.974	25	500	3.6	7.2
250	TR9/2	DU TOITSKLOOF	21200	21700	12	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
251	TR9/2	DU TOITSKLOOF	25700	26200	12	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
252	TR9/2	DU TOITSKLOOF	14600	15100	12	S	4500	1.040	4.246	6.974	11	500	1.6	3.2
253	P1/10	COLENSO	6600	6940	12	S	7000	1.040	3.122	7.977	2	340	0.3	0.7
254	TR9/7	THREE SISTERS	64500	65900	13	S	1300	1.020	4.122	1.956	3	1400	1.5	1.1
255	TR2/11	KNYSNA TO PLETTENBURG BAY	2500	3500	13	S	3300	1.040	4.246	5.114	5	1000	1.0	1.0
256	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	34000	34500	13	S	3969	1.060	3.184	4.613	13	500	2.8	5.6
257	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	34500	35000	13	S	3969	1.060	3.184	4.613	2	500	0.4	0.9
258	P1/13	VOLKSRUST TO NEWCASTLE	7500	8000	13	S	4000	1.040	3.122	4.558	13	500	2.9	5.7
259	P31	LADYSMITH TO KEEVERSPONTEIN	15500	16000	14	S	4265	1.050	3.153	4.908	0	500	0.0	0.0
260	TR9/7	THREE SISTERS	79100	79600	16	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
261	TR9/7	THREE SISTERS	75600	76100	16	S	1300	1.020	4.122	1.956	4	500	2.0	4.1
262	TR1/1	OUTENIQUA	21400	21900	16	S	2100	1.040	4.246	3.255	12	500	3.7	7.4
263	TR1/1	OUTENIQUA	16500	17500	16	S	2100	1.040	4.246	3.255	1	1000	0.3	0.3
264	TR2/11	KNYSNA TO PLETTENBURG BAY	15500	16500	16	S	3300	1.040	4.246	5.114	20	1000	3.9	3.9
265	TR2/11	KNYSNA TO PLETTENBURG BAY	25500	26500	16	S	3300	1.040	4.246	5.114	9	1000	1.8	1.8
266	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	38000	38500	16	S	3969	1.060	3.184	4.613	21	500	4.6	9.1
267	P31	LADYSMITH TO KEEVERSPONTEIN	22300	22800	16	S	4233	1.050	3.153	4.872	5	500	1.0	2.1
268	P31	LADYSMITH TO KEEVERSPONTEIN	10300	10800	16	S	4265	1.050	3.153	4.908	16	500	3.3	6.5
269	TR9/2	DU TOITSKLOOF	1080	1600	16	S	4500	1.040	4.246	6.974	11	520	1.6	3.0
270	TR9/2	DU TOITSKLOOF	24700	25200	16	S	4500	1.040	4.246	6.974	15	500	2.2	4.3
271	TR9/2	DU TOITSKLOOF	37200	38200	16	S	4500	1.040	4.246	6.974	10	1000	1.4	1.4
272	P1/10	COLENSO	2710	3300	16	S	7000	1.040	3.122	7.977	16	590	2.0	3.4
273	P1/10	COLENSO	1680	2180	16	S	7000	1.040	3.122	7.977	14	500	1.8	3.5
274	P1/10	COLENSO	0	720	16	S	7000	1.040	3.122	7.977	2	720	0.3	0.3
275	TR2/11	KNYSNA TO PLETTENBURG BAY	5500	6500	17	S	3300	1.040	4.246	5.114	7	1000	1.4	1.4
276	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	36500	37000	17	S	3969	1.060	3.184	4.613	5	500	1.1	2.2
277	P1/12	NEWBZI TO NEWCASTLE	45000	45500	17	S	4233	1.020	3.060	4.728	16	500	3.4	6.8
278	P31	LADYSMITH TO KEEVERSPONTEIN	9400	9800	17	S	4265	1.050	3.153	4.908	0	400	0.0	0.0
279	TR9/2	DU TOITSKLOOF	2100	2500	17	S	4500	1.040	4.246	6.974	10	400	1.4	3.6
280	TR9/2	DU TOITSKLOOF	4800	5400	17	S	4500	1.040	4.246	6.974	13	600	1.9	3.1
281	TR9/2	DU TOITSKLOOF	7800	8300	17	S	4500	1.040	4.246	6.974	8	500	1.1	2.3
282	TR9/7	THREE SISTERS	62500	63000	18	S	1300	1.020	4.122	1.956	0	500	0.0	0.0
283	TR2/11	KNYSNA TO PLETTENBURG BAY	17500	18500	18	S	3300	1.040	4.246	5.114	7	1000	1.4	1.4
284	TR2/11	KNYSNA TO PLETTENBURG BAY	19500	20500	18	S	3300	1.040	4.246	5.114	13	1000	2.5	2.5
285	TR9/7	THREE SISTERS	71100	71600	19	S	1300	1.020	4.122	1.956	3	500	1.5	3.1
286	TR2/11	KNYSNA TO PLETTENBURG BAY	10500	11500	19	S	3300	1.040	4.246	5.114	8	1000	1.6	1.6
287	P4/1	IZINGOLWENI TO PORT SHEPSTONE	8700	9200	19	S	5198	1.050	3.153	5.982	13	500	2.2	4.3
288	TR2/11	KNYSNA TO PLETTENBURG BAY	28500	29500	20	S	3300	1.040	4.246	5.114	15	1000	2.9	2.9
289	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	30000	30500	20	S	3969	1.060	3.184	4.613	9	500	2.0	3.9
290	P4/1	IZINGOLWENI TO PORT SHEPSTONE	3400	4000	20	S	4452	1.020	3.060	4.972	6	600	1.2	2.0
291	TR9/2	DU TOITSKLOOF	3000	3500	20	S	4500	1.040	4.246	6.974	13	500	1.9	3.7
292	TR9/2	DU TOITSKLOOF	15100	15600	20	S	4500	1.040	4.246	6.974	6	500	0.9	1.7
293	TR9/2	DU TOITSKLOOF	22200	22700	20	S	4500	1.040	4.246	6.974	4	500	0.6	1.1
294	P2/2(1)	VERULAM TO NEWGUELDERLAND	5800	6300	20	S	5839	1.020	3.060	6.522	12	500	1.8	3.7
295	P2/2(1)	VERULAM TO NEWGUELDERLAND	6300	6800	20	S	6534	1.020	3.060	7.298	5	500	0.7	1.4
296	TR1/1	OUTENIQUA	23900	24500	21	S	2100	1.040	4.246	3.255	29	600	8.9	14.8
297	P31	LADYSMITH TO KEEVERSPONTEIN	20400	20800	21	S	4233	1.050	3.153	4.872	0	400	0.0	0.0
298	TR9/7	THREE SISTERS	60900	61300	22	S	1300	1.020	4.122	1.956	1	400	0.5	1.3
299	TR9/7	THREE SISTERS	81100	81600	22	S	1300	1.020	4.122	1.956	1	500	0.5	1.0
[illegible]	[illegible]	VERULAM TO NEWGUELDERLAND 27-41km	[illegible]	[illegible]	[illegible]	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Two Lane Road

Record£	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
301	P31	LADYSMITH TO KEEVERSPOORTEIN	24800	25300	22	S	4233	1.050	3.153	4.872	17	500	3.5	7.0
302	P31	LADYSMITH TO KEEVERSPOORTEIN	25800	26400	22	S	4233	1.050	3.153	4.872	8	600	1.6	2.7
303	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	27800	28300	22	S	4954	1.060	3.184	5.757	8	500	1.4	2.8
304	P4/1	IZINGOLWENI TO PORT SHEPSTONE	7700	8200	22	S	5198	1.050	3.153	5.982	19	500	3.2	6.4
305	P1/10	COLENSO	720	1260	22	S	7000	1.040	3.122	7.977	11	540	1.4	2.6
306	TR1/1	OUTENIQUA	5500	6500	23	S	2100	1.040	4.246	3.255	6	1000	1.8	1.8
307	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	39800	40200	23	S	3969	1.060	3.184	4.613	10	400	2.2	5.4
308	P2/2(2)	VERULAM TO NEWGUELDERLAND 27-41km	31900	32300	23	S	3969	1.060	3.184	4.613	14	400	3.0	7.6
309	P31	LADYSMITH TO KEEVERSPOORTEIN	7000	7400	23	S	4265	1.050	3.153	4.908	7	400	1.4	3.6
310	TR9/7	THREE SISTERS	88600	89100	25	S	1300	1.020	4.122	1.956	2	500	1.0	2.0
311	TR9/7	THREE SISTERS	79600	80100	25	S	1300	1.020	4.122	1.956	5	500	2.6	5.1

Four Lane Freeway

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
1	TR11/1	WINGFIELD TO REFINERY	5650	6150	1	D	6000	1.040	4.246	9.299	2	500	0.2	0.4
2	TR11/1	WINGFIELD TO REFINERY	5150	5650	1	D	6000	1.040	4.246	9.299	3	500	0.3	0.6
3	M3/4	MOOI RIVER	40000	40380	1	D	7638	1.040	3.122	8.704	11	380	1.3	3.3
4	M3/4	MOOI RIVER	41060	41560	1	D	7638	1.040	3.122	8.704	9	500	1.0	2.1
5	M3/4	MOOI RIVER	46060	46560	1	D	7638	1.040	3.122	8.704	5	500	0.6	1.1
6	M3/4	MOOI RIVER	40380	40760	1	D	7638	1.040	3.122	8.704	7	380	0.8	2.1
7	M3/4	MOOI RIVER	41560	42060	1	D	7638	1.040	3.122	8.704	8	500	0.9	1.8
8	M3/4	MOOI RIVER	43060	43560	1	D	7638	1.040	3.122	8.704	22	500	2.5	5.1
9	M3/4	MOOI RIVER	44060	44560	1	D	7638	1.040	3.122	8.704	15	500	1.7	3.4
10	M3/4	MOOI RIVER	44560	45060	1	D	7638	1.040	3.122	8.704	6	500	0.7	1.4
11	M3/4	HILTON TO TWEEDIE	10700	11200	1	D	8375	1.040	3.122	9.544	16	500	1.7	3.4
12	M3/4	HILTON TO TWEEDIE	10200	10700	1	D	8375	1.040	3.122	9.544	8	500	0.8	1.7
13	M3/4	HILTON TO TWEEDIE	12000	12500	1	D	8375	1.040	3.122	9.544	8	500	0.8	1.7
14	M3/4	HILTON TO TWEEDIE	13600	14100	1	D	8375	1.040	3.122	9.544	5	500	0.5	1.0
15	U	UNDLOTI	4370	4870	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
16	U	UNDLOTI	4870	5370	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
17	U	UNDLOTI	7870	8370	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
18	U	UNDLOTI	7370	7870	1	D	9000	1.030	3.091	10.154	7	500	0.7	1.4
19	U	UNDLOTI	9370	9870	1	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
20	M3/3	ASHBURTON TO HILTON	13400	13800	1	D	10000	1.040	3.122	11.395	0	400	0.0	0.0
21	M3/4	HILTON TO TWEEDIE	7600	8100	1	D	10375	1.040	3.122	11.823	6	500	0.5	1.0
22	M3/4	HILTON TO TWEEDIE	8100	8600	1	D	10375	1.040	3.122	11.823	3	500	0.3	0.5
23	M3/4	HILTON TO TWEEDIE	7100	7600	1	D	10375	1.040	3.122	11.823	15	500	1.3	2.5
24	TR11/1	WINGFIELD TO REFINERY	2650	3150	1	D	12000	1.040	4.246	18.597	4	500	0.2	0.4
25	M3/3	ASHBURTON TO HILTON	11900	12300	1	D	12000	1.040	3.122	13.674	2	400	0.1	0.4
26	TR11/1	WINGFIELD TO REFINERY	2150	2650	1	D	12000	1.040	4.246	18.597	6	500	0.3	0.6
27	M3/4	HILTON TO TWEEDIE	3100	3600	1	D	12375	1.040	3.122	14.102	4	500	0.3	0.6
28	M2-M1	M2 TO M1	19250	19840	1	D	13000	1.040	4.246	20.147	2	590	0.1	0.2
29	M2-M1	M2 TO M1	28950	29520	1	D	14000	1.040	4.246	21.697	2	570	0.1	0.2
30	M3/3	ASHBURTON TO HILTON	24200	24700	1	D	14000	1.040	3.122	15.953	18	500	1.1	2.3
31	M3/3	ASHBURTON TO HILTON	21200	21700	1	D	14000	1.040	3.122	15.953	33	500	2.1	4.1
32	M2/24	UNIMI TO WINKELSPRUIT	12260	12760	1	D	14158	1.040	3.122	16.133	8	500	0.5	1.0
33	M2/24	UNIMI TO WINKELSPRUIT	11760	12260	1	D	14158	1.040	3.122	16.133	19	500	1.2	2.4
34	M2-M1	M2 TO M1	22340	22840	1	D	16000	1.040	4.246	24.797	1	500	0.0	0.1
35	M2-M1	M2 TO M1	21840	22340	1	D	16000	1.040	4.246	24.797	0	500	0.0	0.0
36	M2-M1	M2 TO M1	23340	23840	1	D	16000	1.040	4.246	24.797	1	500	0.0	0.1
37	M2-M1	M2 TO M1	22840	23340	1	D	16000	1.040	4.246	24.797	4	500	0.2	0.3
38	M3/2	KEY RIDGE TO INCHANGA	7960	8480	1	D	20453	1.040	3.122	23.307	4	520	0.2	0.3
39	M3/2	KEY RIDGE TO INCHANGA	8480	8880	1	D	20453	1.040	3.122	23.307	24	400	1.0	2.6
40	M2-M1	M2 TO M1	27370	27950	1	D	25000	1.040	4.246	38.745	3	580	0.1	0.1
41	M3/4	MOOI RIVER	42060	42560	2	D	7638	1.040	3.122	8.704	8	500	0.9	1.8
42	M3/4	MOOI RIVER	48060	48560	2	D	7638	1.040	3.122	8.704	6	500	0.7	1.4
43	M3/4	MOOI RIVER	47560	48060	2	D	7638	1.040	3.122	8.704	10	500	1.1	2.3
44	M3/4	MOOI RIVER	45560	46060	2	D	7638	1.040	3.122	8.704	7	500	0.8	1.6
45	M3/4	MOOI RIVER	45060	45560	2	D	7638	1.040	3.122	8.704	5	500	0.6	1.1
46	M3/4	MOOI RIVER	42560	43060	2	D	7638	1.040	3.122	8.704	5	500	0.6	1.1
47	M3/4	HILTON TO TWEEDIE	18500	19000	2	D	8375	1.040	3.122	9.544	10	500	1.0	2.1
48	M3/4	HILTON TO TWEEDIE	18000	18500	2	D	8375	1.040	3.122	9.544	2	500	0.2	0.4
49	M3/4	HILTON TO TWEEDIE	14100	14600	2	D	8375	1.040	3.122	9.544	11	500	1.2	2.3
50	U	UNDLOTI	5370	5870	2	D	9000	1.030	3.091	10.154	0	500	0.0	0.0
51	U	UNDLOTI	6370	6870	2	D	9000	1.030	3.091	10.154	0	500	0.0	0.0
52	U	UNDLOTI	8370	8870	2	D	9000	1.030	3.091	10.154	0	500	0.0	0.0
53	M3/3	ASHBURTON TO HILTON	15600	16200	2	D	10000	1.040	3.122	11.395	3	600	0.3	0.4
54	M3/4	HILTON TO TWEEDIE	380	860	2	D	12375	1.040	3.122	14.102	12	480	0.9	1.8
55	M3/3	ASHBURTON TO HILTON	20700	21200	2	D	14000	1.040	3.122	15.953	6	500	0.4	0.8
56	M2/24	UNIMI TO WINKELSPRUIT	5700	6300	2	D	14158	1.040	3.122	16.133	10	600	0.6	1.0
57	M2/24	UNIMI TO WINKELSPRUIT	10760	11260	2	D	14158	1.040	3.122	16.133	7	500	0.4	0.9
58	M2/24	UNIMI TO WINKELSPRUIT	9700	10200	2	D	14158	1.040	3.122	16.133	9	500	0.6	1.1
59	M3/3	ASHBURTON TO HILTON	810	1210	2	D	18000	1.040	3.122	20.512	3	400	0.1	0.4
[illegible]														

Four Lane Freeway

Recordi	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHKM
61	M3/3	ASHBURTON TO HILTON	2000	2400	2	D	18000	1.040	3.122	20.512	9	400	0.4	1.1
62	M3/3	ASHBURTON TO HILTON	2800	3300	2	D	18000	1.040	3.122	20.512	3	500	0.1	0.3
63	M1/2	KEY RIDGE TO INCHANGA	7120	7460	2	D	20453	1.040	3.122	23.307	4	340	0.2	0.5
64	M2/2	KEY RIDGE TO INCHANGA	680	1200	2	D	20453	1.040	3.122	23.307	2	520	0.1	0.2
65	M3/2	KEY RIDGE TO INCHANGA	5680	6180	2	D	20453	1.040	3.122	23.307	1	500	0.0	0.1
66	M3/3	ASHBURTON TO HILTON	17200	17700	3	D	10000	1.040	3.122	11.395	4	500	0.4	0.7
67	M3/3	ASHBURTON TO HILTON	19200	19800	3	D	14000	1.040	3.122	15.953	27	600	1.7	2.8
68	M3/3	ASHBURTON TO HILTON	22700	23200	3	D	14000	1.040	3.122	15.953	36	500	2.3	4.5
69	M3/3	ASHBURTON TO HILTON	23200	23700	3	D	14000	1.040	3.122	15.953	4	500	0.3	0.5
70	M3/1	WESTVILLE TO EMBERTON	22500	23000	3	D	20000	1.020	3.060	22.338	38	500	1.7	3.4
71	M3/1	WESTVILLE TO EMBERTON	22000	22500	3	D	20000	1.020	3.060	22.338	10	500	0.4	0.9
72	M3/4	MOOI RIVER	47060	47560	4	D	7638	1.040	3.122	8.704	8	500	0.9	1.8
73	M2/24	UNIONI TO WINKELSPRUIT	10200	10760	4	D	14158	1.040	3.122	16.133	2	560	0.1	0.2
74	M3/3	ASHBURTON TO HILTON	9800	10200	5	D	12000	1.040	3.122	13.674	2	400	0.1	0.4
75	M3/3	ASHBURTON TO HILTON	23700	24200	5	D	14000	1.040	3.122	15.953	2	500	0.1	0.3
76	M2/24	UNIONI TO WINKELSPRUIT	6300	6800	5	D	14158	1.040	3.122	16.133	6	500	0.4	0.7
77	M3/4	MOOI RIVER	40760	41060	7	D	7638	1.040	3.122	8.704	4	300	0.5	1.5
78	M3/4	HILTON TO TWEEDIE	8600	9000	7	D	10375	1.040	3.122	11.823	12	400	1.0	2.5
79	M3/1	WESTVILLE TO EMBERTON	26600	27100	7	D	12000	1.020	3.060	13.403	2	500	0.1	0.3
80	M3/4	HILTON TO TWEEDIE	3600	4100	7	D	12375	1.040	3.122	14.102	10	500	0.7	1.4
81	M3/4	HILTON TO TWEEDIE	860	1360	7	D	12375	1.040	3.122	14.102	15	500	1.1	2.1
82	M3/1	WESTVILLE TO EMBERTON	20000	20500	7	D	20000	1.030	3.091	22.564	9	500	0.4	0.8
83	M3/4	HILTON TO TWEEDIE	19500	20000	8	D	8375	1.040	3.122	9.544	14	500	1.5	2.9
84	M3/4	HILTON TO TWEEDIE	6100	6600	8	D	10375	1.040	3.122	11.823	11	500	0.9	1.9
85	M3/3	ASHBURTON TO HILTON	24700	25200	8	D	14000	1.040	3.122	15.953	10	500	0.6	1.3
86	M3/1	WESTVILLE TO EMBERTON	21500	22000	8	D	20000	1.020	3.060	22.338	18	500	0.8	1.6
87	M3/4	MOOI RIVER	43560	44060	9	D	7638	1.040	3.122	8.704	16	500	1.8	3.7
88	M3/3	ASHBURTON TO HILTON	5200	5700	9	D	18000	1.040	3.122	20.512	0	500	0.0	0.0
89	M3/1	WESTVILLE TO EMBERTON	18000	18500	9	D	30000	1.030	3.091	33.846	0	500	0.0	0.0
90	M3/4	MOOI RIVER	46560	47060	10	D	7638	1.040	3.122	8.704	3	500	0.3	0.7
91	M3/4	HILTON TO TWEEDIE	17500	18000	10	D	8375	1.040	3.122	9.544	6	500	0.6	1.3
92	M3/4	HILTON TO TWEEDIE	17000	17500	10	D	8375	1.040	3.122	9.544	3	500	0.3	0.6
93	M3/3	ASHBURTON TO HILTON	20400	20700	10	D	14000	1.040	3.122	15.953	3	300	0.2	0.6
94	M3/3	ASHBURTON TO HILTON	21700	22200	10	D	14000	1.040	3.122	15.953	9	500	0.6	1.1
95	M3/2	KEY RIDGE TO INCHANGA	3580	4060	10	D	20453	1.040	3.122	23.307	5	480	0.2	0.4
96	M3/4	HILTON TO TWEEDIE	15000	15500	11	D	8375	1.040	3.122	9.544	5	500	0.5	1.0
97	M3/4	HILTON TO TWEEDIE	16000	16500	11	D	8375	1.040	3.122	9.544	2	500	0.2	0.4
98	M3/4	HILTON TO TWEEDIE	15500	16000	11	D	8375	1.040	3.122	9.544	7	500	0.7	1.5
99	M3/3	ASHBURTON TO HILTON	17700	18300	11	D	10000	1.040	3.122	11.395	6	600	0.5	0.9
100	M3/3	ASHBURTON TO HILTON	22200	22700	11	D	14000	1.040	3.122	15.953	8	500	0.5	1.0
101	M3/3	ASHBURTON TO HILTON	3300	3800	11	D	18000	1.040	3.122	20.512	6	500	0.3	0.6
102	M3/3	ASHBURTON TO HILTON	4300	4800	11	D	18000	1.040	3.122	20.512	17	500	0.8	1.7
103	M3/2	KEY RIDGE TO INCHANGA	3040	3580	11	D	20453	1.040	3.122	23.307	11	540	0.5	0.9
104	M3/2	KEY RIDGE TO INCHANGA	2000	2480	11	D	20453	1.040	3.122	23.307	10	480	0.4	0.9
105	M3/2	KEY RIDGE TO INCHANGA	1200	1640	11	D	20453	1.040	3.122	23.307	6	440	0.3	0.6
106	M3/2	KEY RIDGE TO INCHANGA	5280	5680	11	D	20453	1.040	3.122	23.307	21	400	0.9	2.3
107	M3/2	KEY RIDGE TO INCHANGA	4060	4700	11	D	20453	1.040	3.122	23.307	4	640	0.2	0.3
108	M3/2	KEY RIDGE TO INCHANGA	1640	2000	11	D	20453	1.040	3.122	23.307	6	360	0.3	0.7
109	M3/2	KEY RIDGE TO INCHANGA	4700	5280	11	D	20453	1.040	3.122	23.307	20	580	0.9	1.5
110	M3/2	KEY RIDGE TO INCHANGA	7460	7960	12	D	20453	1.040	3.122	23.307	17	500	0.7	1.5
111	M3/2	KEY RIDGE TO INCHANGA	2480	3040	12	D	20453	1.040	3.122	23.307	2	560	0.1	0.2
112	M3/2	KEY RIDGE TO INCHANGA	200	680	12	D	20453	1.040	3.122	23.307	5	480	0.2	0.4
113	[illegible]	WINGFIELD TO REFINERY	4650	5150	16	S	6000	1.040	4.246	8.299	11	500	1.2	2.4
114	M3/4	MOOI RIVER	48560	49000	16	D	7638	1.040	3.122	8.704	6	440	0.7	1.6
115	M3/4	MOOI RIVER	49500	50000	16	D	7638	1.040	3.122	8.704	13	500	1.5	3.0
116	M3/4	HILTON TO TWEEDIE	13200	13600	16	D	8375	1.040	3.122	9.544	2	400	0.2	0.5
117	M3/4	HILTON TO TWEEDIE	12500	12900	16	D	8375	1.040	3.122	9.544	8	400	0.8	2.1
118	M3/4	HILTON TO TWEEDIE	9800	10200	16	D	8375	1.040	3.122	9.544	12	400	1.3	3.1
119	[illegible]	[illegible]	3870	4379	16	D	9000	1.030	3.091	10.154	1	500	0.1	0.2
[illegible]														

Four LAne Freeway

Record#	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGQUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCPERHEH
121	N3/4	HILTON TO TWEEDIE	5600	6100	16	D	10375	1.040	3.122	11.823	7	500	0.6	1.2
122	N3/4	HILTON TO TWEEDIE	9000	9400	16	D	10375	1.040	3.122	11.823	9	400	0.8	1.9
123	N3/3	ASHBURTON TO HILTON	8700	9100	16	D	12000	1.040	3.122	13.674	1	400	0.1	0.2
124	TR11/1	WINGFIELD TO REFINERY	3150	3650	16	D	12000	1.040	4.246	18.597	6	500	0.3	0.6
125	N3/3	ASHBURTON TO HILTON	12300	12700	16	D	12000	1.040	3.122	13.674	0	400	0.0	0.0
126	TR11/1	WINGFIELD TO REFINERY	1650	2150	16	D	12000	1.040	4.246	18.597	11	500	0.6	1.2
127	N3/3	ASHBURTON TO HILTON	9400	9800	16	D	12000	1.040	3.122	13.674	4	400	0.3	0.7
128	N3/4	HILTON TO TWEEDIE	4600	5100	16	D	12375	1.040	3.122	14.102	10	500	0.7	1.4
129	N3/4	HILTON TO TWEEDIE	2260	2660	16	D	12375	1.040	3.122	14.102	10	400	0.7	1.8
130	N2-N1	N2 TO N1	19840	20340	16	D	13000	1.040	4.246	20.147	1	500	0.0	0.1
131	N3/3	ASHBURTON TO HILTON	25200	25700	16	D	14000	1.040	3.122	15.953	38	500	2.4	4.8
132	N2-N1	N2 TO N1	29520	30050	16	D	14000	1.040	4.246	21.697	5	530	0.2	0.4
133	N2/24	UNIHI TO WINKELSPRUIT	7300	7900	16	D	14158	1.040	3.122	16.133	2	600	0.1	0.2
134	N3/1	WESTVILLE TO EMBERTON	25200	25600	16	D	15000	1.020	3.060	16.753	4	400	0.2	0.6
135	N2-N1	N2 TO N1	24500	25000	16	D	16000	1.040	4.246	24.797	1	500	0.0	0.1
136	N2-N1	N2 TO N1	21340	21840	16	D	16000	1.040	4.246	24.797	4	500	0.2	0.3
137	N3/1	WESTVILLE TO EMBERTON	24500	24800	16	D	17000	1.020	3.060	18.987	7	300	0.4	1.2
138	TR11/1	WINGFIELD TO REFINERY	400	850	16	D	20000	1.040	4.246	30.996	5	450	0.2	0.4
139	U	UNDLOTI	2870	3370	16	D	20000	1.030	3.091	22.564	3	500	0.1	0.3
140	N3/1	WESTVILLE TO EMBERTON	19500	20000	16	D	20000	1.030	3.091	22.564	28	500	1.2	2.5
141	N3/2	KEY RIDGE TO INCHANGA	6180	6720	16	D	20453	1.040	3.122	23.307	27	540	1.2	2.1
142	N2-N1	N2 TO N1	25750	26160	16	D	25000	1.040	4.246	38.745	5	410	0.1	0.3
143	N3/1	WESTVILLE TO EMBERTON	18500	19000	16	D	30000	1.030	3.091	33.846	10	500	0.3	0.6
144	N3/3	ASHBURTON TO HILTON	15200	15600	17	D	10000	1.040	3.122	11.395	7	400	0.6	1.5
145	N3/3	ASHBURTON TO HILTON	7400	7800	17	D	12000	1.040	3.122	13.674	11	400	0.8	2.0
146	N3/1	WESTVILLE TO EMBERTON	26200	26600	17	D	12000	1.020	3.060	13.403	16	400	1.2	3.0
147	N2/24	UNIHI TO WINKELSPRUIT	12760	13350	17	D	14158	1.040	3.122	16.133	36	590	2.2	3.8
148	N2/24	UNIHI TO WINKELSPRUIT	8500	9100	17	D	14158	1.040	3.122	16.133	10	600	0.6	1.0
149	N3/1	WESTVILLE TO EMBERTON	25600	25900	17	D	15000	1.020	3.060	16.753	4	300	0.2	0.8
150	N3/1	WESTVILLE TO EMBERTON	23800	24200	17	D	17000	1.020	3.060	18.987	50	400	2.6	6.6
151	N3/3	ASHBURTON TO HILTON	1210	1600	17	D	18000	1.040	3.122	20.512	9	390	0.4	1.1
152	N3/3	ASHBURTON TO HILTON	6200	6600	17	D	18000	1.040	3.122	20.512	2	400	0.1	0.2
153	N3/1	WESTVILLE TO EMBERTON	23000	23400	17	D	20000	1.020	3.060	22.338	7	400	0.3	0.8
154	N3/1	WESTVILLE TO EMBERTON	20500	21000	17	D	20000	1.030	3.091	22.564	11	500	0.5	1.0
155	N3/3	ASHBURTON TO HILTON	7000	7400	18	D	18000	1.040	3.122	20.512	8	400	0.4	1.0
156	N3/2	KEY RIDGE TO INCHANGA	9560	9860	18	D	20453	1.040	3.122	23.307	20	300	0.9	2.9
157	N2-N1	N2 TO N1	27950	28450	18	D	25000	1.040	4.246	38.745	6	500	0.2	0.3
158	N3/3	ASHBURTON TO HILTON	13100	13400	19	D	10000	1.040	3.122	11.395	5	300	0.4	1.5
159	N3/3	ASHBURTON TO HILTON	11100	11500	19	D	12000	1.040	3.122	13.674	3	400	0.2	0.5
160	N3/1	WESTVILLE TO EMBERTON	24200	24500	19	D	17000	1.020	3.060	18.987	7	300	0.4	1.2
161	TR11/1	WINGFIELD TO REFINERY	0	400	19	D	20000	1.040	4.246	30.996	20	400	0.6	1.6
162	N3/2	KEY RIDGE TO INCHANGA	8880	9220	19	D	20453	1.040	3.122	23.307	11	340	0.5	1.4
163	N3/1	WESTVILLE TO EMBERTON	27100	27600	20	D	12000	1.020	3.060	13.403	10	500	0.7	1.5
164	N3/4	HILTON TO TWEEDIE	1360	1860	20	D	12375	1.040	3.122	14.102	27	500	1.9	3.8
165	N3/3	ASHBURTON TO HILTON	18700	19200	20	D	14000	1.040	3.122	15.953	22	500	1.4	2.8
166	N3/4	HILTON TO TWEEDIE	11200	11600	22	D	8375	1.040	3.122	9.544	8	400	0.8	2.1
167	N3/4	HILTON TO TWEEDIE	11600	12000	22	D	8375	1.040	3.122	9.544	12	400	1.3	3.1
168	N3/4	HILTON TO TWEEDIE	19000	19500	22	D	8375	1.040	3.122	9.544	9	500	0.9	1.9
169	U	UNDLOTI	6870	7370	22	D	9000	1.030	3.091	10.154	7	500	0.7	1.4
170	U	UNDLOTI	5870	6370	22	D	9000	1.030	3.091	10.154	5	500	0.5	1.0
171	U	UNDLOTI	8870	9370	22	D	9000	1.030	3.091	10.154	36	500	3.5	7.1
172	N3/3	ASHBURTON TO HILTON	16700	17200	22	D	10000	1.040	3.122	11.395	6	500	0.5	1.1
173	N3/1	WESTVILLE TO EMBERTON	27900	28500	22	D	10000	1.020	3.060	11.169	14	600	1.3	2.1
174	N3/4	HILTON TO TWEEDIE	6600	7100	22	D	10375	1.040	3.122	11.823	9	500	0.8	1.5
175	N3/3	ASHBURTON TO HILTON	10290	10700	22	D	12000	1.040	3.122	13.674	3	500	0.2	0.4
176	N3/3	ASHBURTON TO HILTON	8200	8700	22	D	12000	1.040	3.122	13.674	7	500	0.5	1.0
177	N3/3	ASHBURTON TO HILTON	10700	11100	22	D	12000	1.040	3.122	13.674	16	400	1.2	2.9
178	N3/4	HILTON TO TWEEDIE	2660	3100	22	D	12375	1.040	3.122	14.102	11	440	0.8	1.8
179	N3/4	HILTON TO TWEEDIE	4100	4600	22	D	12375	1.040	3.122	14.102	24	500	1.7	3.4
[illegible]			[illegible]											

Four Lane Freeway

Record	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SIDEDUAL	YEAR1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCYEAR	ACCYEAREN
181	M2/24	UMHBI TO WINKELSPRUIT	11260	11760	22	D	14158	1.040	3.122	16.133	5	500	0.3	0.6
182	M2/24	UMHBI TO WINKELSPRUIT	6800	7300	22	D	14158	1.040	3.122	16.133	19	500	1.2	2.4
183	M2/24	UMHBI TO WINKELSPRUIT	9100	9700	22	D	14158	1.040	3.122	16.133	4	600	0.2	0.4
184	M2/24	UMHBI TO WINKELSPRUIT	5200	5700	22	D	14158	1.040	3.122	16.133	8	500	0.5	1.0
185	M2-M1	M2 TO M1	23840	24500	22	D	16000	1.040	4.246	24.797	5	660	0.2	0.3
186	M3/3	ASHBURTON TO HILTON	4800	5200	22	D	18000	1.040	3.122	20.512	14	400	0.7	1.7
187	M3/3	ASHBURTON TO HILTON	2400	2800	22	D	18000	1.040	3.122	20.512	22	400	1.1	2.7
188	M3/3	ASHBURTON TO HILTON	5700	6200	22	D	18000	1.040	3.122	20.512	14	500	0.7	1.6
189	M3/3	ASHBURTON TO HILTON	3800	4300	22	D	18000	1.040	3.122	20.512	18	500	0.9	1.8
190	M3/3	ASHBURTON TO HILTON	310	810	22	D	18000	1.040	3.122	20.512	7	500	0.3	0.7
191	M3/3	ASHBURTON TO HILTON	1600	2000	22	D	18000	1.040	3.122	20.512	32	400	1.6	3.9
192	M2-M1	M2 TO M1	26160	26820	22	D	25000	1.040	4.246	38.745	9	660	0.2	0.4
193	M2-M1	M2 TO M1	26820	27370	22	D	25000	1.040	4.246	38.745	7	550	0.2	0.3
194	M3/4	HILTON TO TWEEDIE	14600	15000	23	D	8375	1.040	3.122	9.544	3	400	0.3	0.8
195	M3/3	ASHBURTON TO HILTON	16200	16700	23	D	10000	1.040	3.122	11.395	8	500	0.7	1.4
196	M3/4	HILTON TO TWEEDIE	16500	17000	24	D	8375	1.040	3.122	9.544	9	500	0.9	1.9
197	TR11/1	WINGFIELD TO REFINERY	3650	4650	42	D	6000	1.040	4.246	9.299	27	1000	2.9	2.9
198	M3/4	MOOI RIVER	49000	49500	42	D	7638	1.040	3.122	8.704	16	500	1.8	3.7
199	M3/4	HILTON TO TWEEDIE	9400	9800	42	D	8375	1.040	3.122	9.544	7	400	0.7	1.8
200	M3/4	HILTON TO TWEEDIE	12900	13200	42	D	8375	1.040	3.122	9.544	23	300	2.4	8.0
201	M3/3	ASHBURTON TO HILTON	12700	13100	42	D	10000	1.040	3.122	11.395	16	400	1.4	3.5
202	M3/3	ASHBURTON TO HILTON	14200	14600	42	D	10000	1.040	3.122	11.395	12	400	1.1	2.6
203	M3/3	ASHBURTON TO HILTON	14600	15200	42	D	10000	1.040	3.122	11.395	11	600	1.0	1.6
204	M3/3	ASHBURTON TO HILTON	11500	11900	42	D	12000	1.040	3.122	13.674	11	400	0.8	2.0
205	M3/3	ASHBURTON TO HILTON	7800	8200	42	D	12000	1.040	3.122	13.674	10	400	0.7	1.8
206	TR11/1	WINGFIELD TO REFINERY	850	1650	42	D	12000	1.040	4.246	18.597	76	800	4.1	5.1
207	M3/1	WESTVILLE TO ENBERTON	27600	27900	42	D	12000	1.020	3.060	13.403	39	300	2.9	9.7
208	M3/3	ASHBURTON TO HILTON	25700	26300	42	D	14000	1.040	3.122	15.953	22	600	1.4	2.3
209	M2/24	UMHBI TO WINKELSPRUIT	7900	8500	42	D	14158	1.040	3.122	16.133	9	600	0.6	0.9
210	M3/1	WESTVILLE TO ENBERTON	25900	26200	42	D	15000	1.020	3.060	16.753	2	300	0.1	0.4
211	M3/1	WESTVILLE TO ENBERTON	24800	25200	42	D	17000	1.020	3.060	18.987	10	400	0.5	1.3
212	0	UNDLOTI	3370	3870	42	D	20000	1.030	3.091	22.564	7	500	0.3	0.6
213	M3/1	WESTVILLE TO ENBERTON	21000	21500	42	D	20000	1.030	3.091	22.564	44	500	2.0	3.9
214	M3/1	WESTVILLE TO ENBERTON	23400	23800	42	D	20000	1.020	3.060	22.338	7	400	0.3	0.8
215	M3/2	KEY RIDGE TO INCHANGA	6720	7120	42	D	20453	1.040	3.122	23.307	16	400	0.7	1.7
216	M3/1	WESTVILLE TO ENBERTON	17500	18000	42	D	30000	1.030	3.091	33.846	8	500	0.2	0.5
217	M3/1	WESTVILLE TO ENBERTON	19000	19500	42	D	30000	1.030	3.091	33.846	32	500	0.9	1.9
218	M3/3	ASHBURTON TO HILTON	18300	18700	43	D	10000	1.040	3.122	11.395	34	400	3.0	7.5
219	M3/4	HILTON TO TWEEDIE	5100	5600	43	D	10375	1.040	3.122	11.823	22	500	1.9	3.7
220	M3/4	HILTON TO TWEEDIE	1860	2260	43	D	12375	1.040	3.122	14.102	20	400	1.4	3.5
221	M2/24	UMHBI TO WINKELSPRUIT	13350	14000	43	D	14158	1.040	3.122	16.133	20	650	1.2	1.9
222	M3/3	ASHBURTON TO HILTON	6600	7000	43	D	18000	1.040	3.122	20.512	43	400	2.1	5.2
223	M3/2	KEY RIDGE TO INCHANGA	9220	9560	43	D	20453	1.040	3.122	23.307	5	340	0.2	0.6
224	M3/3	ASHBURTON TO HILTON	9100	9400	44	D	12000	1.040	3.122	13.674	29	300	2.1	7.1
225	M2-M1	M2 TO M1	20340	21340	44	D	13000	1.040	4.246	20.147	10	1000	0.5	0.5
226	M2-M1	M2 TO M1	28450	28950	44	D	14000	1.040	4.246	21.697	13	500	0.6	1.2
227	M2-M1	M2 TO M1	25000	25750	44	D	25000	1.040	4.246	38.745	3	750	0.1	0.1

Six Lane Freeway

RecordE	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	VEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCVEH	ACCVEHEH
1	N2/25	ISIPINGO TO DURBAN	15500	16000	1	D	36000	1.100	3.310	43.493	10	500	0.2	0.5
2	N3/1	WESTVILLE TO EMBERTO	16000	16500	1	D	40000	1.040	3.122	45.581	3	500	0.1	0.1
3	N3/1	WESTVILLE TO EMBERTO	14000	14500	1	D	40000	1.040	3.122	45.581	3	500	0.1	0.1
4	N2/25	ISIPINGO TO DURBAN	26500	27000	1	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
5	N2/25	ISIPINGO TO DURBAN	23600	24100	1	D	52000	1.030	3.091	58.667	1	500	0.0	0.0
6	N2/25	ISIPINGO TO DURBAN	1270	1770	1	D	54000	1.040	3.122	61.535	0	500	0.0	0.0
7	N2/25	ISIPINGO TO DURBAN	1770	2270	1	D	54000	1.040	3.122	61.535	0	500	0.0	0.0
8	E-B	KOEBERG TO BELLVILLE	7100	7700	1	D	67000	1.060	4.375	106.991	72	600	0.7	1.1
9	E-B	KOEBERG TO BELLVILLE	9200	9800	1	D	70000	1.060	4.375	111.781	21	600	0.2	0.3
10	E-B	KOEBERG TO BELLVILLE	9800	10500	1	D	70000	1.060	4.375	111.781	41	700	0.4	0.5
11	E-B	KOEBERG TO BELLVILLE	3300	3800	1	D	74000	1.060	4.375	118.169	18	500	0.2	0.3
12	E-B	KOEBERG TO BELLVILLE	1800	2300	1	D	74000	1.060	4.375	118.169	41	500	0.3	0.7
13	E-B	KOEBERG TO BELLVILLE	2800	3300	1	D	74000	1.060	4.375	118.169	47	500	0.4	0.8
14	E-B	KOEBERG TO BELLVILLE	2300	2800	1	D	74000	1.060	4.375	118.169	20	500	0.2	0.3
15	E-B	KOEBERG TO BELLVILLE	1300	1800	1	D	74000	1.060	4.375	118.169	33	500	0.3	0.6
16	E-B	KOEBERG TO BELLVILLE	800	1300	1	D	74000	1.060	4.375	118.169	14	500	0.1	0.2
17	E-B	KOEBERG TO BELLVILLE	4300	4800	1	D	74000	1.060	4.375	118.169	4	500	0.0	0.1
18	N2/25	ISIPINGO TO DURBAN	6420	7070	2	D	36000	1.050	3.153	41.430	16	650	0.4	0.6
19	N2/25	ISIPINGO TO DURBAN	8570	9070	2	D	36000	1.050	3.153	41.430	0	500	0.0	0.0
20	N2/25	ISIPINGO TO DURBAN	7070	7570	2	D	36000	1.050	3.153	41.430	0	500	0.0	0.0
21	N2/25	ISIPINGO TO DURBAN	8070	8570	2	D	36000	1.050	3.153	41.430	0	500	0.0	0.0
22	N2/25	ISIPINGO TO DURBAN	13500	14000	2	D	36000	1.100	3.310	43.493	3	500	0.1	0.1
23	N2/25	ISIPINGO TO DURBAN	14500	15000	2	D	36000	1.100	3.310	43.493	0	500	0.0	0.0
24	N3/1	WESTVILLE TO EMBERTO	13500	14000	2	D	40000	1.040	3.122	45.581	4	500	0.1	0.2
25	N2/25	ISIPINGO TO DURBAN	17900	18400	2	D	52000	1.030	3.091	58.667	3	500	0.1	0.1
26	N3/1	WESTVILLE TO EMBERTO	11000	11500	2	D	56000	1.040	3.122	63.814	4	500	0.1	0.1
27	E-B	KOEBERG TO BELLVILLE	12200	12700	2	D	74000	1.060	4.375	118.169	13	500	0.1	0.2
28	E-B	KOEBERG TO BELLVILLE	14800	15400	2	D	74000	1.060	4.375	118.169	18	600	0.2	0.3
29	N2/25	ISIPINGO TO DURBAN	7570	8070	4	D	36000	1.050	3.153	41.430	2	500	0.0	0.1
30	N2/25	ISIPINGO TO DURBAN	18400	18900	5	D	52000	1.030	3.091	58.667	3	500	0.1	0.1
31	N2/25	ISIPINGO TO DURBAN	3870	4370	7	D	30000	1.040	3.122	34.186	3	500	0.1	0.2
32	N2/25	ISIPINGO TO DURBAN	23100	23600	7	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
33	N2/25	ISIPINGO TO DURBAN	11570	12000	8	D	36000	1.050	3.153	41.430	0	430	0.0	0.0
34	N2/25	ISIPINGO TO DURBAN	10570	11070	8	D	36000	1.050	3.153	41.430	7	500	0.2	0.3
35	N2/25	ISIPINGO TO DURBAN	18900	19400	8	D	52000	1.030	3.091	58.667	2	500	0.0	0.1
36	N2/25	ISIPINGO TO DURBAN	20400	20900	8	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
37	N2/25	ISIPINGO TO DURBAN	16500	16900	16	D	36000	1.100	3.310	43.493	29	400	0.7	1.7
38	N3/1	WESTVILLE TO EMBERTO	17000	17500	16	D	40000	1.040	3.122	45.581	22	500	0.5	1.0
39	N3/1	WESTVILLE TO EMBERTO	16500	17000	16	D	40000	1.040	3.122	45.581	73	500	1.6	3.2
40	N2/25	ISIPINGO TO DURBAN	28000	28500	16	D	52000	1.030	3.091	58.667	31	500	0.5	1.1
41	N2/25	ISIPINGO TO DURBAN	28900	29500	16	D	52000	1.030	3.091	58.667	18	600	0.3	0.5
42	N2/25	ISIPINGO TO DURBAN	22000	22600	16	D	52000	1.030	3.091	58.667	10	600	0.2	0.3
43	N2/25	ISIPINGO TO DURBAN	0	400	16	D	54000	1.040	3.122	61.535	5	400	0.1	0.2
44	N2/25	ISIPINGO TO DURBAN	2770	3270	16	D	54000	1.040	3.122	61.535	7	500	0.1	0.2
45	N2/25	ISIPINGO TO DURBAN	870	1270	16	D	54000	1.040	3.122	61.535	11	400	0.2	0.4
46	N3/1	WESTVILLE TO EMBERTO	9000	9500	16	D	56000	1.040	3.122	63.814	3	500	0.0	0.1
47	E-B	KOEBERG TO BELLVILLE	10500	11000	16	D	70000	1.060	4.375	111.781	14	500	0.1	0.3
48	E-B	KOEBERG TO BELLVILLE	9700	9200	16	D	70000	1.060	4.375	111.781	35	500	0.3	0.6
49	E-B	KOEBERG TO BELLVILLE	12700	13400	16	D	74000	1.060	4.375	118.169	28	700	0.2	0.3
50	E-B	KOEBERG TO BELLVILLE	14200	14800	16	D	74000	1.060	4.375	118.169	46	600	0.4	0.6
51	N3/1	WESTVILLE TO EMBERTO	13000	13500	17	D	40000	1.040	3.122	45.581	8	500	0.2	0.4
52	N2/25	ISIPINGO TO DURBAN	20900	21400	17	D	52000	1.030	3.091	58.667	2	500	0.0	0.1
53	N2/25	ISIPINGO TO DURBAN	17400	17900	17	D	52000	1.030	3.091	58.667	9	500	0.2	0.3
54	N3/1	WESTVILLE TO EMBERTO	12000	12500	17	D	56000	1.040	3.122	63.814	27	500	0.4	0.8
55	E-B	KOEBERG TO BELLVILLE	15400	15900	18	D	74000	1.060	4.375	118.169	21	500	0.2	0.4
56	N2/25	ISIPINGO TO DURBAN	4870	5470	19	D	30000	1.040	3.122	34.186	1	600	0.0	0.0
57	N2/25	ISIPINGO TO DURBAN	12000	12500	19	D	36000	1.050	3.153	41.430	9	500	0.2	0.4
58	E-B	KOEBERG TO BELLVILLE	6500	7100	19	D	67000	1.060	4.375	106.991	76	600	0.7	1.2
59	E-B	KOEBERG TO BELLVILLE	5300	5900	19	D	67000	1.060	4.375	106.991	41	600	0.4	0.6

Six Lane Freeway

Record#	ROAD	DESCRIP	STARTCH	ENDCH	ELEMENT	SINGDUAL	YEH1986	GROWTH	TGROWTH	TRAFFIC	ACCIDENTS	LENGTH	ACCYEAR	ACCYEAR
61	N2/25	ISIPINGO TO DURBAN	13000	13500	20	D	36000	1.100	3.310	43.493	32	500	0.7	1.5
62	N2/25	ISIPINGO TO DURBAN	5970	6420	20	D	36000	1.050	3.153	41.430	46	450	1.1	2.5
63	N3/1	WESTVILLE TO EMBERTO	10500	11000	20	D	56000	1.040	3.122	63.814	3	500	0.0	0.1
64	E-6	KOEBERG TO BELLVILLE	11600	12200	20	D	74000	1.060	4.375	118.169	42	600	0.4	0.6
65	N2/25	ISIPINGO TO DURBAN	4370	4870	22	D	30000	1.040	3.122	34.186	5	500	0.1	0.3
66	N2/25	ISIPINGO TO DURBAN	10070	10570	22	D	36000	1.050	3.153	41.430	1	500	0.0	0.0
67	N2/25	ISIPINGO TO DURBAN	9070	9570	22	D	36000	1.050	3.153	41.430	28	500	0.7	1.4
68	N2/25	ISIPINGO TO DURBAN	15000	15500	22	D	36000	1.100	3.310	43.493	25	500	0.6	1.1
69	N3/1	WESTVILLE TO EMBERTO	15000	15500	22	D	40000	1.040	3.122	45.581	5	500	0.1	0.2
70	N2/25	ISIPINGO TO DURBAN	24100	24600	22	D	52000	1.030	3.091	58.667	7	500	0.1	0.2
71	N2/25	ISIPINGO TO DURBAN	24600	25100	22	D	52000	1.030	3.091	58.667	3	500	0.1	0.1
72	N2/25	ISIPINGO TO DURBAN	22600	23100	22	D	52000	1.030	3.091	58.667	18	500	0.3	0.6
73	N2/25	ISIPINGO TO DURBAN	19900	20400	22	D	52000	1.030	3.091	58.667	5	500	0.1	0.2
74	N2/25	ISIPINGO TO DURBAN	19400	19900	22	D	52000	1.030	3.091	58.667	4	500	0.1	0.1
75	N2/25	ISIPINGO TO DURBAN	25100	25500	22	D	52000	1.030	3.091	58.667	4	400	0.1	0.2
76	N2/25	ISIPINGO TO DURBAN	27000	27500	22	D	52000	1.030	3.091	58.667	2	500	0.0	0.1
77	N2/25	ISIPINGO TO DURBAN	27500	28000	22	D	52000	1.030	3.091	58.667	0	500	0.0	0.0
78	N2/25	ISIPINGO TO DURBAN	25500	26000	22	D	52000	1.030	3.091	58.667	4	500	0.1	0.1
79	N2/25	ISIPINGO TO DURBAN	2270	2770	22	D	54000	1.040	3.122	61.535	26	500	0.4	0.8
80	E-B	KOEBERG TO BELLVILLE	3800	4300	22	D	74000	1.060	4.375	118.169	17	500	0.1	0.3
81	E-B	KOEBERG TO BELLVILLE	4800	5300	22	D	74000	1.060	4.375	118.169	23	500	0.2	0.4
82	N2/25	ISIPINGO TO DURBAN	16000	16500	23	D	36000	1.100	3.310	43.493	9	500	0.2	0.4
83	N2/25	ISIPINGO TO DURBAN	9570	10070	23	D	36000	1.050	3.153	41.430	4	500	0.1	0.2
84	N3/1	WESTVILLE TO EMBERTO	14500	15000	23	D	40000	1.040	3.122	45.581	2	500	0.0	0.1
85	N3/1	WESTVILLE TO EMBERTO	15500	16000	23	D	40000	1.040	3.122	45.581	1	500	0.0	0.0
86	N2/25	ISIPINGO TO DURBAN	26000	26500	23	D	52000	1.030	3.091	58.667	6	500	0.1	0.2
87	N3/1	WESTVILLE TO EMBERTO	11500	12000	23	D	56000	1.040	3.122	63.814	11	500	0.2	0.3
88	N2/25	ISIPINGO TO DURBAN	11070	11570	24	D	36000	1.050	3.153	41.430	8	500	0.2	0.4
89	N2/25	ISIPINGO TO DURBAN	14000	14500	24	D	36000	1.100	3.310	43.493	5	500	0.1	0.2
90	N2/25	ISIPINGO TO DURBAN	12500	13000	42	D	36000	1.100	3.310	43.493	88	500	2.0	4.0
91	N2/25	ISIPINGO TO DURBAN	28500	28900	42	D	52000	1.030	3.091	58.667	53	400	0.9	2.3
92	N2/25	ISIPINGO TO DURBAN	21400	22000	42	D	52000	1.030	3.091	58.667	97	600	1.7	2.8
93	N2/25	ISIPINGO TO DURBAN	16900	17400	42	D	52000	1.030	3.091	58.667	34	500	0.6	1.2
94	N2/25	ISIPINGO TO DURBAN	400	870	42	D	54000	1.040	3.122	61.535	72	470	1.2	2.5
95	N3/1	WESTVILLE TO EMBERTO	12500	13000	42	D	56000	1.040	3.122	63.814	98	500	1.5	3.1
96	E-B	KOEBERG TO BELLVILLE	8300	8700	42	D	67000	1.060	4.375	106.991	33	400	0.3	0.8
97	E-B	KOEBERG TO BELLVILLE	11000	11600	42	D	70000	1.060	4.375	111.781	62	600	0.6	0.9
98	E-B	KOEBERG TO BELLVILLE	13400	14200	42	D	74000	1.060	4.375	118.169	58	800	0.5	0.6
99	E-B	KOEBERG TO BELLVILLE	15900	16300	42	D	74000	1.060	4.375	118.169	30	400	0.3	0.6
100	N2/25	ISIPINGO TO DURBAN	5470	5970	43	D	30000	1.040	3.122	34.186	2	500	0.1	0.1
101	N2/25	ISIPINGO TO DURBAN	3270	3870	43	D	30000	1.040	3.122	34.186	1	600	0.0	0.0
102	N3/1	WESTVILLE TO EMBERTO	9500	10000	43	D	56000	1.040	3.122	63.814	21	500	0.3	0.7
103	N3/1	WESTVILLE TO EMBERTO	10000	10500	43	D	56000	1.040	3.122	63.814	6	500	0.1	0.2
104	E-B	KOEBERG TO BELLVILLE	5900	6500	43	D	67000	1.060	4.375	106.991	87	600	0.8	1.4