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ACCIDENT STUDY FOR PUNJAB

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INTRODUCTION

One of the principal services performed by the Transportation System is to provide a safe, convenient and efficient means of moving people and goods. Of the above three basic functions, safety is of prime importance, not only to the users but also to engineers, planners and decision makers associated with operation, improvement and development of transportation system. The engineers particularly have been conscious of the safety aspect of transportation for a long time and have been constantly striving to make the system safer. Because of the socio-economic and human factors involved, the safety aspect of transportation has been attracting greater and greater attention from people from all walks of life all over the world.

The safety score card of Pakistan is a mixed bag. Some sectors of the transportation system of Pakistan namely Air and Sea Transport have safety record equal to any in the world, while the Railway also provide service with acceptable degree of risk although there is considerable room for improvement. However, the safety record of the Road Transport, which carries the bulk of passenger and goods traffic, leaves much to be desired.

An accident is defined as an occurrence which could not be foreseen or a result not designated. This implies an unexpected but harmful turn in the course of

an event which from all outward indicators looked normal. This also implies a degree of innocence and helplessness on the part of the agent as regards the responsibility for the mishap and assumes that all possible precautionary measures were taken and no undesirable action was taken by the agent to deliberately cause the mishap.

An accident is, therefore, distinct from somebody putting a gun to his head, jumping from a cliff, running his vehicle into a wall or getting involved in a mishap dis-regarding the rules of the road. How many of the so called 'accidents' happening on our roads and highways can actually be called accidents will become clear as a result of this Study.

A close look at the phenomenon of highway 'accident' reveals that it the result of an error in 'driver-vehicle-roadway system'. An accident will occur when one or more of these three elements fail to perform their specific functions. It may, however, be recognized that accidents are bound to happen as long as there is traffic on the highways and an accident-free day could only be achieved if all the traffic were brought to a complete halt for a full twenty-four hours period.

Keeping in view the fact that traffic engineer has little or no control on the first two elements of the system, namely; driver and vehicle, his efforts in the past have been mainly directed towards improving the

safety aspect of the roadway designs. Unfortunately, the huge cost of building roadway facilities with high levels of safety does not permit every roadway facility to be brought upto that level, although the state of the art does make it possible to build such facilities, at least theoretically. Therefore, a degree of lack of complete safety in road transport is inevitable and has to be tolerated.

To bring the degree of risk in any roadway system to tolerable limits, the traditional approach has been to analyse the highway system as a whole to locate the critical areas. Conventionally, this has been achieved by evaluating the safety level of individual segments of the system and ranking them in order of declining accident rate. Detailed investigation of accident experience is made for critical locations only. In view of the uniqueness of each accident, it is possible to identify the driver, vehicle and roadway factors responsible for the mishap and to suggest ways and means to minimise the problem. This enables the decision maker to determine the priorities of improvements and allocate the highway funds to maximize benefits.

The ever-increasing accident rate on our highway system has been the cause of concern for everyone for many years but no worthwhile efforts have been made in the past to study this phenomenon so as to pin-point the factors responsible for it. The present Study is aimed at filling this gap.

PURPOSE OF STUDY

The Study was initiated with a view to achieve the following objectives :-

1. Tabulate traffic accident statistics for the Study Area.
2. Identify highest accident locations in the Study Area.
3. Determine the probable causes of these accidents.
4. Suggest measures to rectify the problem.
5. Determine priority of the needed improvements.
6. Evolve a system for carrying out such studies on a continuing basis.

SCOPE OF STUDY

The Study has been limited to the Province of Punjab. Only the accidents on rural roads have been considered. The Study provides accident statistics for all system intersections and roadway sections in the Study Area and is primarily oriented towards identifying hazardous locations, physical deficiencies of the highway system, and developing a system of priorities for remedial actions.

STUDY AREA PROFILE

According to 1972 census, the total population of the province of Punjab was 37.744 million, spread over an area of 79.284 thousand square miles which gives a density of 475 persons per square mile compared to 212 persons per square mile for the country as a whole. Out of

the total population, 28.486 million i.e. 75% live in rural areas versus 75% for the country. The total number of vehicles on roads in Punjab on 30.12.1972, stood at 109,871 which were vehicle population for the country. The total 49% of the total/mileage of roads in the province stood at 20,000, out of which 7,400 miles were black topped roads and about 12,600 miles of low-type roads. The mileage of roads in Punjab was 39% of the total mileage of roads in the country, while the black topped and the low-type roads constituted 52% and 35% respectively.

The population of the Study Area lives in five Divisions comprising of nineteen districts (1972), seventy-four tehsils and about 24,996 villages. The number of villages situated on a metalled road stood at 15.6% versus 14% for the country.

THE PROBLEM

A total of 1,302 intercity accidents were reported in the Study Area during the year 1972 out of which 719 were fatality accidents, 489 were injury accidents and 94 were property damage accidents constituting about 55.2%, 37.6% and 7.2% respectively. As regards the district-wise distribution, the highest number of (195) accidents were recorded in Sahiwal district. The lowest number of accidents were in Mianwali district (20).

The number of fatal accidents varied typically from 40% to 75% for the various districts whereas injury accidents constituted about 20% to 45% of the total number of accidents, The remaining (about 5% to 15%) were the property damage accidents. Such a high percentage of fatal accidents may be due to the fact that most of the injury and property damage accidents are never reported to the Police. Nevertheless these figures do give an idea regarding the magnitude of the accident problem on our roadway system in the Study Area. Table 1 gives the detailed breakdown of various types of accidents in the Study Area.

The accident problem in the Study Area has worsened over the year beyond the period under review i.e. 1972, as can be seen from Table 2. During the five year period 1972-1977 the total accidents have increased by approximately 80%, while the fatal accidents have registered an increase of 51%. Injury accidents have shown an increase of 67%. The number of persons killed have increased by 47% while the number of people injured have registered an increase of 45%. These statistics are flabbergasting by any standards and shows the rapid rate at which the accident problem is increasing.

METHODOLOGY

The accident data on original reporting forms (Appendix - A) were obtained from the office of A.I.G. Traffic, Government of Punjab while the data regarding highway and traffic was collected from the Punjab Highways Department.

Electronic Data Processing equipment was used to compile the information presented in this Study. In order to make use of this high speed equipment, it was

TABLE - 1

ACCIDENT PROBLEM - STUDY AREA

Sl. No.	Name of District	Total No. of Accidents	Accidents (Number)			Accidents (Percent)		
			Fatal	Injury	Property Damage	Fatal	Injury	Property Damage
1.	Sahiwal	195	104	84	7	53.3	43.1	3.6
2.	Sheikhupura	127	73	49	5	57.5	38.6	3.9
3.	Multan	127	72	47	8	56.7	37.0	6.3
4.	Gujrat	124	62	54	8	50.0	43.5	6.5
5.	Jhang	91	48	39	4	52.7	42.9	4.4
6.	Lahore	73	36	25	12	49.3	34.2	16.5
7.	Rawalpindi	69	28	30	11	40.6	43.5	15.9
8.	Campbellpur	65	28	25	12	43.1	38.5	18.4
9.	Iyallpur (Faisalabad)	62	51	11	-	82.3	17.7	-
10.	Jhelum	55	23	24	8	41.8	43.6	14.6
11.	Muzaffargarh	53	38	14	1	71.7	26.4	1.9
12.	Bahawalpur	48	24	16	8	50.0	33.3	16.7
13.	Sargodha	45	30	13	2	66.7	28.9	4.4
14.	Rahimyarkhan	35	22	13	-	62.9	37.1	-
15.	Gujranwala	32	25	6	1	78.1	18.8	3.1
16.	Bahawalnagar	30	15	13	2	50.0	43.3	6.7
17.	Dera Ghazi Khan	29	14	12	3	48.3	41.4	10.3
18.	Sialkot	22	16	5	1	72.7	22.7	4.6
19.	Mianwali	20	10	9	1	50.0	45.0	5.0
PUNJAB PROVINCE:		1,302	719	489	94	55.2	37.6	7.2

TABLE - 2

PUNJAB ACCIDENTS STATISTICS *

1972 - 1977

YEAR	NUMBER OF ACCIDENTS				NUMBER OF PERSONS			
	FATAL	NON-FATAL	OTHERS	TOTAL	KILLED	INJURED	OTHERS	TOTAL
1972 (%)	1,054 (46)	1,226 (54)	-	2,280	1,237 (32)	2,610 (68)	-	3,847
1973 (%)	1,171 (48)	1,265 (52)	-	2,436	1,408 (32)	2,940 (68)	-	4,348
1974 (%)	1,136 (42)	1,340 (50)	198 (8)	2,674	1,324 (30)	2,905 (66)	192 (4)	4,421
1975 (%)	1,205 (40)	1,498 (49)	347 (11)	3,050	1,437 (30)	3,028 (63)	342 (7)	4,807
1976 (%)	1,375 (37)	1,862 (50)	507 (13)	3,745	1,612 (31)	3,569 (69)		5,181
1977 (%)	1,593 (39)	2,042 (50)	444 (11)	4,079	1,815 (32)	3,793 (68)		5,608

* The total number of urban and rural accidents have been given in this table.

necessary to transcribe all relevant information about every accident on a punched card from the First Investigation Reports (FIRs) of about 2,000 accidents. This was done by devising a suitable code (Appendix - B) for various elements related to the accident phenomenon and transferring detailed information to a standard coding sheet (Appendix - C). The information from these coding sheets was then key punched on cards for use in the computer.

For the accurate identification of the accident locations a Link-Node System was used. A 'Link' is described by two nodes, one at either end while the 'nodes' are infact the intersections of two or more links or a link and the boundary of the Study Area. Numeric & alphanumeric codes were used to represent the links and nodes respectively.

The total number of links and nodes amounted to 1,033 and 634 respectively. A 'LINK & NODE DICTIONARY' was prepared (Appendices - D&E). Nineteen Road maps showing links and nodes were prepared on district basis on a scale of 1" = 5.26 miles. The accident statistics were also compiled on district basis and a set of 28 different tables were obtained from the computer. The maps and tables, being quite voluminous, have not been added with this Report and may be provided on loan basis on special request. The Study Area map on a scale of 1" = 15.78 miles showing ^{important links and nodes} alongwith the number of accidents may be seen in Appendix - F.

NUMBER OF ACCIDENTS VERSUS ACCIDENTS RATE: Before going into the detailed discussion of accident statistics for the Study Area, it may be recognized that number of accidents and accident rates are two distinct phenomena and are not interchangeable. The highest number of accidents does not necessarily imply the highest accident rate. The number of accidents occurring in any geographical unit in a given time period, is an absolute quantity and indicates the size of the problem and is useful in determining the socio-economic and human costs suffered by that geographical unit. On the other hand, the accident rate for a geographical unit for a given period of time, is a measure of the seriousness of the problem faced by the region as compared with similar regions with identical socio-economic conditions.

ANALYSIS : In order to fully gauge the accident problem of the Study Area, it would be necessary to carry-out accident analysis both of regional and local levels i.e. macro and micro analysis. It is only by this method that the accident problem can be brought in complete focus.

MACRO ANALYSIS : The accident problem of the area is to be investigated at macro as well as micro level. At macro level, the Study would reveal the condition prevailing in various sub-regions of the Study Area. The macro analysis consist of the following two types :

1. ACCIDENT RATE BASED ON 100,000 POPULATION : This is used for macro analysis of the accident problem. The result of

the analysis linking number of accidents with 100,000 population for the year 1972, for the Study Area on district basis may be seen at Table 3. The analysis shows that the size of the population has no direct relationship with the number of highway accidents. For example, a million people living on an island with no road vehicles would be completely safe from highway accidents.

The analysis shows that Sheikhpura district suffered the highest number of accidents per 100,000 population although it had the 10th highest population, while similarly the district with highest population namely Lyallpur (Faisalabad) (population 4.240 million) had 17th highest accident rate. Similarly the district with lowest population had 3rd highest accident rate while, the district with lowest accident rate had 5th highest population.

Another weakness in the analysis is the fact that it does not take into consideration the degree of risk involved in highway travel. Obviously the accident rate based on certain unit of population for any area could be usefully compared with other such regions only, provided the average number of person-trips, i.e. number of miles a person, statistically speaking, can travel without meeting with an accident, are known. A population group of 100,000 who suffers say 100 accidents per year is not any worse off as compared with another population group of 100,000 who suffers only 50 accidents per year

TABLE - 3

ACCIDENT RATE BASED ON 100,000 POPULATION

Sl. No.	Name of District	Total Population	Total No. of Accidents.	Accident Rate per 100,000 Population
1.	Sheikhupura	1,635,831	127	7.8
2.	Sahiwal	2,808,777	195	6.9
3.	Campbellpur	983,355	65	6.6
4.	Gujrat	1,885,364	124	6.6
5.	Jhang	1,548,646	91	5.9
6.	Jhelum	1,048,032	55	5.3
7.	Bahawalpur	1,072,975	48	4.4
8.	Rawalpindi	1,990,412	69	3.5
9.	Muzaffargarh	1,553,642	53	3.4
10.	Multan	4,011,794	127	3.2
11.	Bahawalnagar	1,078,513	30	2.8
12.	Dera Ghazi Khan	1,133,865	29	2.6
13.	Rahim Yar Khan	1,401,667	35	2.5
14.	Sargodha	2,093,661	45	2.1
15.	Lahore	3,772,172	73	2.0
16.	Mianwali	1,097,705	20	1.8
17.	Gujranwala	2,048,746	32	1.6
18.	Lyallpur (Faisalabad)	4,240,224	62	1.5
19.	Sialkot	2,338,293	22	0.9
PUNJAB PROVINCE		37,743,604	1,302	3.4

but has only half the person trips per year. The U.S. for instance suffer 52,000 casualties per year compared to only 4,000 in Pakistan but person trips per year in U.S. being many times higher than Pakistan, the problem in U.S. is far less serious.

2. ACCIDENT RATE BASED ON VEHICLES-ON-ROAD ; This method is also used for macro analysis. The analysis at macro level has the same weakness as exhibited by the accident rate based on population. Therefore, any result derived from the analysis cannot be taken to reflect the true picture of the seriousness of the situation. Also the analysis shows that accident rate for the Study Area (macro level) is not directly related to the number of vehicles on road in the area, as is evident from Table 4. Jhang district shows the highest accident rate but has the 14th lowest number of vehicles on road. Similarly, Lahore district with highest number of vehicles on road, had the lowest accident rate. The method is, therefore, not suitable for our purpose.

ACCIDENT CAUSE ANALYSIS

It is not enough to find out about the number of accidents occurring at a given location, unless information regarding the type of accidents, environmental factors and physical characteristics of the road and the drivers involved in those accidents is also known.

TABLE - 4

ACCIDENT RATE BASED ON 1,000 VEHICLES-ON-ROAD

SI. No.	Name of District	Estimated Number of Vehicles on Road.	Total Number of accidents.	Accidents Per 1,000 Vehicles on road.
1.	Jhang	851	91	106.9
2.	Campbellpur	643	65	101.1
3.	Sheikhupura	1,485	127	85.6
4.	Gujrat	1,637	124	75.8
5.	Muzaffargarh	712	53	74.5
6.	Bahawalnagar	526	30	57.0
7.	Sahiwal	3,564	195	54.8
8.	Dera Ghazi Khan	846	29	34.2
9.	Mianwali	650	20	30.7
10.	Rahim Yar Khan	1,231	35	28.5
11.	Jhelum	2,220	55	24.8
12.	Bahawalpur	2,717	48	17.6
13.	Multan	8,421	127	15.2
14.	Sargodha	3,293	45	13.6
15.	Gujranwala	2,565	32	12.4
16.	Sialkot	2,247	22	9.7
17.	Lyallpur (Faisalabad)	8,366	62	7.4
18.	Rawalpindi	22,146	69	3.1
19.	Lahore	45,751	74	1.6
Total		109,871	1,302	11.9

Accidents do not happen by themselves but are caused by the extraneous factors.

An 'accident' is defined as an error in driver-vehicle-roadway system and it must be recognized that different types of accidents are caused due to different factors. It is usually possible to identify the cause of accidents at any given location by the predominant type of accidents occurring at that location, namely; rear-end, side-swipes, head-on, night-time, bad-weather, etc. For instance, predominance of rear-end accidents will indicate slippery pavement whereby the drivers have difficulty in stopping in time. Side-swipe accidents will indicate ambiguous traffic control devices, causing confusion among the drivers regarding right-of-way. Head-on collisions signify lack of adequate sight distances at the location. Predominance of night-time accidents at the location will indicate serious problems with night time visibility. Bad-weather accidents can result due to a road pavement which becomes dangerously slippery when wet or it may be due to inadequate signs for inclement weather. Similarly, there are numerous other types of accidents which occur due to a variety of reasons. The job of the accident analyst is, therefore, to relate the accidents experience at any location to one or more causes. The state of the art permit such treatments. The tools normally employed are, Accident Spot Maps, Condition Diagrams and Collision Diagrams etc.

In order to enable the engineer to determine what improvements should be made to alleviate the accident problem at any given location, it is essential that he be furnished with a complete record of accident experience at that location. The record should be precise, unambiguous, and encompassing all aspects of the problem. At macro level, the following accident cause analysis has been carried out :

1. LOCATION VERSUS TYPE OF ACCIDENTS : In the Study Area, during the period under review, the majority of the accidents occurred along links as compared to the nodes (intersections) and predominant type of accident was excessive speed. The summary of the accident location by type may be seen in Table 5 :

TABLE 5

ACCIDENT LOCATION VERSUS TYPE

S1. No.	Cause of Accident	Link Accidents	Node Accidents	Percent
1.	Exceeding speed limit or excessive speed.	458	24	37.0
2.	On wrong side of the road.	226	9	18.0
3.	Following too closely	159	2	12.4
4.	Trying to overtake	65	1	5.1
5.	Persons improperly carried.	45	5	3.8
6.	Improper parking	28	2	2.3
7.	Miscellaneous	102	28	10.0
8.	Not stated	144	4	11.4
	Total	1,227	75	100.0

A cluster of accidents at any given location resulting from the same cause would give an idea of the type of deficiency in the driver-highway-vehicle system in a particular area. The problem can, therefore, be alleviated by rectifying the deficiency. Following is an explanation of accident causes, their relationship with system deficiencies and the probable remedial measures which would improve the situation in the Study-Area.

- (i) EXCESSIVE SPEED : This problem has its roots in three different areas. To a great extent it suggests lack of proper enforcement, whereby the motorists feel free to drive at the speed of their own choice and disregard the speed limit. It can also happen due to lack of appreciation on the part of the driver regarding environmental factors, namely; geometry of the road, traffic, light or surface condition of the road. In the Study Area both the factors are responsible for the accident problem.
- (ii) ON WRONG SIDE OF THE ROAD : This is probably due to the fact that most of the drivers in the Study-Area have learnt their driving on or usually ply on single lane roads where the normal rules of driving on the left does not apply. The poor enforcement is a contributory factor to a large degree and is the root cause of the poor road behaviour by the road users.

- (iii) FOLLOWING TOO CLOSELY : This is mainly a driver education problem whereby drivers are unaware of the safe following distance requirements and the implications of following too closely behind another vehicle. It also reflects lack of strict enforcement on the part of the Traffic Police.
- (iv) TRYING TO OVERTAKE : This is a driver education problem. It is quite common to observe drivers attempting to overtake by flashing their high-beam in the face of on-coming vehicles. Till recently this was well established rule that one could do so provided he flashed first. So much so that even the Traffic Police believed this to be the rule.
- (v) PERSONS IMPROPERLY CARRIED : This is mainly due to shortage of transport whereby people are forced to travel on roof-tops and hanging from the vehicles. It is also due to lack of education on the part of the travelling public regarding the risks involved in travelling when exposed to dangers. The problem can also be attributed to lack of enforcement.
- (vi) IMPROPER PARKING : This is mainly due to driver education problem who does not comprehend the implication of improper parking. Great many accidents occur, especially at night time, due to

vehicle left standing on the road. This is also due to lack of enforcement.

2. ACCIDENTS VERSUS LIGHT CONDITIONS : Based on light conditions (dawn, morning, dusk and night), the maximum number of accidents constituting about 63.0 percent of the total number of accidents were recorded during morning and under good light condition, followed by 17.7% during night, 6.5% during dusk and 3.3% during dawn. The light conditions have not been mentioned in 126 accidents which form about 9.7% of the total number of accidents. The predominance of day time pedestrian accidents indicate reduced pedestrian activity on the roads during hours after dark. The break-up of statistics by type of accidents has been given in Table 6.

TABLE - 6

ACCIDENTS BY LIGHT CONDITION

Sl. No.	Type of accident	Overall	LIGHT CONDITION				
			Day	Night	Dusk	Dawn	Not stated
1.	Pedestrian	497	354	48	32	10	53
2.	Rear end	236	112	63	20	12	29
3.	Head-on	230	138	54	17	11	10
4.	Side swipe	76	52	17	1	3	3
5.	Overtuned in roadway	68	46	11	1	1	9
6.	Ran off road	64	40	10	4	4	6
7.	Others	54	30	7	4	1	12
8.	Fell from moving vehicle	52	32	12	3	1	4
9.	Angle	25	15	8	2	-	-
Total :		1,302	819	230	84	43	126

3. ACCIDENT BY TYPE OF LOCALITY : The analysis is handicapped by the fact that the information regarding location of the majority of the accidents (61%) is not known. Of the known locations, majority of the intercity accidents seems to have happened along open country roads (333), followed by shopping areas (84), industrial areas (50) and residential areas (35).

Table 7 gives the detailed break down of the location of various types of accidents.

TABLE - 7

ACCIDENTS VERSUS TYPE OF LOCALITY

Sl. No.	Type of Accident	Over-all	TYPE OF LOCALITY					
			Indus-trial	Shopp-ing	Residen-tial	Sch-ool pla-y gr-ound	Open coun-try	Oth-ers
1.	Pedestrian	497	18	46	27	-	100	306
2.	Rear end	236	12	11	3	-	70	140
3.	Head on	230	12	7	3	-	69	139
4.	Side swipe	76	1	6	-	2	25	42
5.	Overturnd in Roadway.	68	1	-	-	-	21	46
6.	Ran off road	64	3	4	-	-	18	39
7.	Others	54	2	2	1	-	6	43
8.	Fell from moving vehicle.	52	-	3	-	-	19	30
9.	Angle	25	1	5	1	1	5	12
Total		1,302	50	84	35	3	333	797

The predominance of all types of accidents in 'open country' is indicative of the following factors :

- (i) Lack of proper enforcement of traffic rules, whereby the motorists tend to disregard the traffic safety rules.
- (ii) Lack of traffic safety education on the part of all the road users.

These views are supported by the fact that in localities such as industrial, school/playground, shopping (business, residential areas), the number of accidents were far less as compared with the open country as the drivers tend to drive with care, when they pass through such localities.

4. ACCIDENTS BY TYPE OF ROAD : In the Study Area, during the period under review, most of the accidents (95%) occurred on black-top roads followed by 3% on other unspecified road surfaces.

The overwhelming majority of accidents on black-top roads is mainly due to the reason that the black-topped roads carry bulk of the traffic. This, coupled with the tendency of motorists to drive recklessly and at excessive speed on relatively better road surface cause most accidents. Prima-facie evidence, therefore, exists that by providing better surface standards, the number of accidents would not decrease if such factors as proper enforcement and driver education are not properly taken care of. Table No. 8, gives details of accidents in the

TABLE - 8

ACCIDENTS BY TYPE OF ROAD

Sl. No.	Type of Accident	Overall	TYPE OF ROAD SURFACE					
			Black-top Road.	Concrete Road	Brick Road	Gravel Road	Kacha Road	Oth-ers
1.	Pedestrian	497	465	7	-	6	4	15
2.	Rear end	236	231	2	1	-	-	2
3.	Head on	230	219	3	-	1	2	55
4.	Side swipe	76	75	1	-	-	-	--
5.	Overtuned in road-way	68	66	-	1	-	-	1
6.	Ran off Road	64	61	1	-	-	1	1
7.	Others	54	43	1	-	1	-	9
8.	Fell from moving vehicle.	52	49	-	1	-	1	1
9.	Angle	25	25	-	-	-	-	--
Total		1,302	1,234	15	3	8	8	34

Study Area, during the period under review by type of road.

5. PEDESTRIAN ACCIDENTS : In the Study Area, during the period under review, a total of 497 pedestrian accidents occurred. The majority of these accidents were caused due to un-successful attempt on the part of the pedestrian to cross a road at 'places other than specified location', followed by 'walking along the road'. Both these indicate recklessness and disregard for self safety on the part of the pedestrian. It may be noted that in almost all the, cases of pedestrian accidents, the responsibility for the accidents lies on the pedestrian. Few exceptions could be a pedestrian killed while walking on a footpath. In case a pedestrian decides to walk on the roadway proper and share the right-of-way with the motorists, the primary responsibility for his own safety lies on himself. It seems that the general impression in the minds of the pedestrian persist that the roads are basically meant for their use and the vehicular drivers should yield the right-of-way. This obviously is due to lack of the knowledge regarding right-of-way for various road users as provided under the law. The poor enforcement of rules regarding pedestrian road users does not help the matters either. Table 9 gives details of pedestrian action causing accidents in the Study Area, during the period under review.

Table - 9

PEDESTRIAN ACCIDENTS

Sl. No.	Pedestrian Action	PEDESTRIAN ACCIDENTS		
		Number of Accidents	Number Dead	Number Injured
1.	Crossing at other location.	156	117	43
2.	Not stated	131	81	49
3.	Walking in road- with traffic.	69	58	16
4.	Not in roadway	55	45	20
5.	Working/Walking in roadway	30	20	10
6.	Walking in road- against traffic.	18	12	7
7.	Playing in roadway	15	10	5
8.	Crossing at inter- section	18	7	11
9.	Crossing from behind parked car.	2	1	3
10.	Other action	2	2	-
11.	Sleeping in roadway	1	3	-
Total		497	356	164

6. ACCIDENTS BY WEATHER CONDITION : In the Study Area, during the period under review, the largest chunk of accidents (38%) occurred under dry weather conditions. However, the analysis is handicapped to some extent by lack of data regarding weather conditions for majority of accidents (61%). It can, however, be safely assumed that the failure to report on weather condition in fact indicates clear weather conditions, because any serious problem with the weather condition would have been reported. Alternately, the failure to report could be treated as random phenomenon and thus not likely to affect the overall results. Table 10 gives detailed analysis of the accidents by weather condition.

7. ACCIDENTS BY ROAD CONDITION : The lack of information regarding majority of the cases (63%) makes it difficult to project a clear picture regarding predominant road conditions causing accident. However, it is assumed that the lack of reporting regarding the surface condition is either a random phenomenon or it indicates lack of any problem with the road condition, which would not affect the results.

Based on these assumptions, it can be seen that majority of the accidents (97%) took place on dry roads. Table 11, gives details of accidents as related to road surface conditions, in the Study Area, during the period under review.

TABLE - 10

ACCIDENTS BY WEATHER CONDITION

Sl. No.	Type of Accident	Over-all	WEATHER CONDITIONS					Not stated
			Clear	Rain	Cloudy	Fog	Others	
1.	Pedestrian	497	185	2	1	1	1	307
2.	Rear end	236	82	3	1	-	-	150
3.	Head-on	230	93	1	1	2	1	132
4.	Side swipe	76	30	-	-	-	-	46
5.	Overtuned in roadway	68	27	1	-	-	-	40
6.	Ran off road	64	25	2	1	-	-	36
7.	Others	54	18	1	-	-	-	35
8.	Fell from moving vehicle	52	24	-	-	-	-	28
9.	Angle	25	11	-	-	-	-	14
Total :		1,302	495	10	4	3	2	788

TABLE - 11

ACCIDENTS BY ROAD CONDITION

Sl. No.	Type of Accident	Over-all	ROAD CONDITION						
			Dry	Muddy	Wet	Holes, deep ruts	Defective Berms	Loose material on surface	Not stated.
1.	Pedestrian	497	168	5	3	1	-	-	320
2.	Rear end	236	79	1	3	-	1	-	152
3.	Head-on	230	84	6	1	-	-	1	135
4.	Side swipe	76	27	1	-	-	-	-	48
5.	Overtuned in Roadway	68	21	-	1	1	-	-	44
6.	Ran off road	64	21	2	3	-	-	-	38
7.	Others	54	19	-	1	-	-	-	34
8.	Fell from moving-vehicle	52	21	-	-	-	-	-	31
9.	Angle	25	11	-	-	-	-	-	14
Total		1,302	451	15	12	2	1	1	816

8. ACCIDENTS BY TYPE OF ACCIDENT : Taking only the fatal and injury accidents it seems that the head-on type accidents were the most predominant type of accidents in the Study Area, followed by pedestrian and rear-end; over-turned in road and ran-off the road. Predominance of these accidents shows disregard for traffic safety rules and lack of traffic enforcement. Single vehicle accident such as over-turned in road, ran off the road etc., also show lack of competence of driving skills and disregard for traffic and environmental factors while driving. Table 12 gives details of damage caused by various types of accidents in the Study-Area during the period under review.

9. ACCIDENTS BY TYPE OF VEHICLE : In the Study Area, during the period under review, more than 50% fatal accidents involved buses, and nearly 50% of buses were involved in head-on type collision resulting in loss of life, which is a sad reflection on the quality of drivers engaged on Public Service vehicles. This may be compared with the developed countries of the West, where bus accidents and especially buses involving head-on type accidents is totally un-heard of.

Table 13 show the details of accident involvement by type of the vehicle.

10. ACCIDENTS BY WEEK DAY : There does not seem to be any particular trend in the number of accidents with regard to the day of the week. For obvious reasons, Monday which at the time was the first working day of the week, experienced relatively greater number of accidents than the rest of the days. Friday was rather surprisingly the safest day.

TABLE - 12

DAMAGE BY TYPE OF ACCIDENTS

Sl. No.	Type of Accident	Overall No.	DEAD		INJURED	
			No.	%	No.	%
1.	Head-on	579	176	20.1	403	26.5
2.	Pedestrian	520	356	40.6	164	10.8
3.	Rear end	397	114	13.0	283	18.6
4.	Ran off road	282	45	5.1	237	15.6
5.	Overturned in Roadway	277	54	6.2	223	14.6
6.	Side swipe	164	43	4.9	121	7.9
7.	Other	80	37	4.2	43	2.8
8.	Passenger fell from moving vehicle	53	38	4.3	15	1.0
9.	Angle	48	14	1.6	34	2.2
Total		2,400	877	100	1,523	100

TABLE - 13

ACCIDENTS BY TYPE OF VEHICLE

Sl. No.	Type of Vehicle	Over-all	TYPE OF ACCIDENT								
			Pedes-trian	Rear-end	Head-on	Side-swipe	Over-turn+ ed in Road-way	Ran-off road	An-gle	Fell from mov-ing vehi-cle.	Oth-ers
1.	Bus	627	222	120	101	32	46	36	13	30	27
2.	Truck	323	95	64	76	28	12	16	8	10	14
3.	Passenger Car/ Jeep	246	137	41	35	10	5	8	2	-	8
4.	Farm Tractor	60	20	6	7	3	4	2	2	12	4
5.	Motor-cycle/ Scooter	23	15	3	3	1	-	1	-	-	-
6.	Tanker	18	7	1	5	2	1	1	-	-	1
7.	Animal drawn	3	1	-	2	-	-	-	-	-	-
8.	Drawn	1	-	-	1	-	-	-	-	-	-
9.	Bicycle	1	-	1	-	-	-	-	-	-	-
Total		1,302	497	236	230	76	68	64	25	52	54

Table 14 gives details of the accidents with regard to the day-of-week.

11. ACCIDENTS BY TRAFFIC VOLUME : There also does not appear to be any relationship between number of vehicles going over a given link during one 24 hours period and the total number or any type of accidents occurring, as can be seen from Table 15. Absence of any accident on links with traffic-volume ranging from 7501-8000, and 8501-9000 vehicle per day, merely indicates that in our data file, there was no link with these particular volume ranges.

TABLE - 14

ACCIDENTS BY WEEK-DAY

Sl. No.	Type of Accident	Over-all	W e e k - D a y						
			Monday	Wednes-day	Sunday	Tues-day	Thur-day	Satur-day	Fri-day
1.	Pedestrian	497	82	75	79	59	77	67	58
2.	Rear end	236	38	34	31	40	29	29	35
3.	Head-on	230	47	28	30	37	25	31	32
4.	Side-swipe	76	11	18	8	11	12	9	7
5.	Overtuned in roadway	68	16	9	10	5	7	10	11
6.	Ran off road	64	12	9	9	10	11	7	6
7.	Others	54	15	5	7	5	8	9	5
8.	Fell from moving vehicle	52	8	10	5	12	7	4	6
9.	Angle	25	5	2	6	5	1	4	2
Total		1,302	234	190	185	184	177	170	162

TABLE - 15

TRAFFIC VOLUME VERSUS TYPE OF ACCIDENT

Sl. No.	Average daily Traffic (PCUs)	No. of Accidents*	TYPE OF ACCIDENT								
			Pedes-trian	Rear end	Head on	Side swipe	Over- turned in road-way	Ran- off road	Passe- nger improp- erly carri- ed	Angle	Oth- ers.
1.	NOT AVAILABLE	105	45	15	15	3	9	5	6	1	6
2.	0001-0500	26	11	3	3	-	1	2	1	-	5
3.	0501-1000	94	31	15	12	5	7	8	10	2	4
4.	1001-1500	72	33	9	10	2	7	5	4	1	1
5.	1501-2000	90	37	18	10	10	5	2	6	1	1
6.	2001-2500	65	27	6	18	3	4	-	3	-	4
7.	2501-3000	65	22	15	14	6	1	3	1	1	2
8.	3001-3500	59	21	3	14	4	2	9	-	-	6
9.	3501-4000	74	29	14	6	8	6	5	2	1	3
10.	4001-4500	41	12	10	7	-	4	1	1	1	3
11.	4501-5000	71	26	15	5	7	3	5	3	1	6
12.	5001-5500	45	20	8	6	-	6	3	1	-	1
13.	5501-6000	56	28	10	8	2	1	2	-	3	2
14.	6001-6500	30	10	4	10	1	1	1	-	2	1
15.	6501-7000	29	10	2	7	4	2	3	-	1	2
16.	7001-7500	13	5	5	2	1	-	-	-	-	-
17.	7501-8000	-	-	-	-	-	-	-	-	-	-
18.	8001-8500	171	49	49	37	14	5	7	5	1	4
19.	8501-9000	-	-	-	-	-	-	-	-	-	-
20.	9001-9500	121	46	30	32	4	1	2	4	1	1
Total :		1,227	462	231	216	74	65	63	47	17	52

*Only the 'Link accidents' have been considered.

MICRO ANALYSIS

At micro level, a number of different methods are available to determine the severity of accident problem. Each method has certain advantages and disadvantages and is designed to achieve a definite objective. The choice of method, therefore, becomes very important.

In the present Study, we are interested in the severity of accidents at identifiable locations which could be further studied in detail for designing the improvement to rectify the problem. For our purpose, therefore, it would be essential to have a measure of accident rate as well as absolute number of accidents at links and intersections.

LINK ACCIDENTS

The link accident can be expressed in terms of absolute number as well as with respect to some defined parameter, as detailed below :

1. LINK ACCIDENT RATE BASED ON VEHICLE MILES

The relationship of accident experience to quantity of travel along a stretch of road section is most often expressed in units of accidents per million vehicle miles. However, the resulting rates do not always give an accurate or meaningful impression of accident experience, because :

- i) Vehicle miles are not always known for specific locations or for specific situations, such as night hours.

- ii) The potential conflicts within the intersection depend on proportion of traffic approaching from each leg, turning movements, etc., none of which are represented in the vehicle-mile figures.
- iii) Exposure to pedestrians etc. is not reflected in vehicle miles.
- iv) Extremely short link length and or very low traffic volume could yield very high accident rates even with few accidents. Therefore, in certain cases ranking of accident locations based solely on number of accidents per million vehicle-miles may be misleading.

The following formula is generally used to compute the accident rate.

$$AR = \frac{NA \times 10^6}{V \times L \times 365}$$

AR = Accident rate per million vehicle-miles.

NA = Number of accidents per year.

V = Sum of two-way average daily traffic.

L = Length of the section.

The average Daily Traffic (ADT) figures were converted into Passenger Car Units (PCUs) by using the following conversion factors :

1. Bicycle	0.3	PCU
2. Animal drawn vehicle	7	"
3. Motorcycle, rickshaw and scooter.	0.5	"
4. Motor Car.	1	"
5. Station Wagon	2	PCUs
6. Bus	3	"
7. Truck	3	"

Table 16 shows the listing of the highest accident location links in the Study Area.

TABLE - 16

HIGHEST ACCIDENT RATE - LINKS

Sl. No.	Link No.	Nodal Points	Description	Link length(Miles)	Average Daily-Traffic (PCUs)	Yearly Accidents.	Accident Rate.
1	2	3	4	5	6	7	8
1.	276	N157 & N153	Dauna - Taunsa	5.18	195	2	5.42
2.	702	N382 & N383	Bhagtanwala-Pindi-Bhattian Section.	12.58	171	3	3.82
3.	314	N177 & N178	Sahiwal - Arifwala-Section	2.59	1,676	6	3.78
4.	997	N534 & N535	Hazro - Campbellpur-Section.	5.92	253	2	3.65
5.	1018	N150 & N148	D.G. Khan - Draman-Section.	2.96	349	1	2.65
6.	316	N178 & N179	Arifwala - Machi-Singh.	11.84	290	3	2.39
7.	291	N165 & N89	Sheikh Fazil - Mandi-Burewala.	11.84	387	4	2.39
8.	620	N341 & N342	Faisalabad - Chiniot-Section.	2.96	5,091	13	2.36
9.	118	N66 & N65	Basti Maluk - Lodhran Section.	3.70	2,532	8	2.33
10.	207	N119 & N120	Kot Addu - Daira Din-Panah.	4.44	647	2	1.90
11.	157	N86 & N89	Gaggo - Mandi Burewala Section.	2.96	1,955	4	1.89
12.	701	N382 & N378	Bhagtanwala - Sargodha.	17.75	171	2	1.80
13.	175	N101 & N99	Sarai Sidhu - Kabirwala.	13.32	1,263	11	1.79
14.	85	N44 & N46	Khairpur - Qaimpur-Hasilpur.	22.93	695	10	1.71
15.	906	N485 & N482	Choa Saidan Shah - Dina Section.	4.44	752	2	1.64
16.	822	N443 & N444	Kalabagh - Daudkhel.	5.92	573	2	1.61

1	2	3	4	5	6	7	8
17.	796	N428 & N432	Intersection point of Mianwali and Dullewala Road - Nawan-Jandarwala.	6.74	260	1	1.56
18.	1019	N147 & N150	D.G. Khan - Kot - Chutta Section.	3.70	972	2	1.52
19.	139	N77 & N78	Multan - Makhdum-Rashid Section.	2.96	1,837	3	1.51

2. LINK ACCIDENT RATE BASED ON NUMBER OF ACCIDENTS

Some times the severity of accident situation can also be determined by taking into account the number of accidents occurring along a section of the road over a period of time. The method has the disadvantage as it does not take into account the number of vehicles along the stretch.

Table 17 gives the highest accident links based on the number of accidents occurring along the section over a period of time.

NODE ACCIDENTS

The accident rate at an intersection can be expressed either in terms of number of accidents per million-vehicles or in terms of total number of accidents over a period of time.

1. NODE ACCIDENT RATE BASED ON TRAFFIC VOLUME

This is primarily used for accident rate analysis of intersections. In such cases the accident rate is generally computed by the following formula:

$$AR = \frac{NA \times 10^6}{V \times 365}$$

AR = Number of Accidents per million vehicles
NA = Number of Accidents per year.
V = Sum of approach volumes in passenger car units per day.

This was the formula used for determining the accident rates for the intersections in the Study Area. However,

TABLE-17

HIGHEST ACCIDENT FREQUENCY - LINKS

Sl. No.	Link No.	Nodal Points	Description	Total accidents
1.	856	N451 & N459	Gujrat - Lalamusa	45
2.	453	N250 & N253	Shahdara - Muridke	37
3.	998	N535 & N518	Hasan Abdal - Attock- Section.	33
4.	456	N255 & N250	Sheikhupura - Dhana	24
5.	459	N255 & N256	Sheikhupura - Mananwala	22
6.	161	N92 & N93	Multan - Muzaffargarh	21
7.	342	N189 & N191	Gaimbai - Okara	19
8.	904	N484 & N467	Jhelum - Sarai Alamgir	16
9.	902	N484 & N482	Jhelum - Dina	16
10.	296	N162 & N168	Chichawatni - Mian Channun	15
11.	302	N171 & N168	Sahiwal - Chichawatni- Section.	14
12.	360	N201 & N191	Renala Khurd - Okara	13
13.	678	N370 & N371	Lalian - Chiniot	13
14.	605	N334 & N329	Dijkot - Samundri	13
15.	620	N341 & N342	Faisalabad - Chiniot Section	13
16.	309	N175 & N171	Sahiwal - Chichawatni Section	12
17.	683	N372 & N371	Rajoa - Chiniot	11
18.	175	N101 & N99	Sarai Sidhu - Kabirwala	11
19.	397	N221 & N211	Balloki - Pattoki	10
20.	85	N44 & N46	Khairpur - Qaimpur - Hasilpur	10
21.	172	N99 & N100	Kabirwala - Khanewal	10

the analysis also has the weakness that at very high volumes, the accident rate tends to decrease, probably because of congestion.

Table 18 gives highest accident location intersections in the Study Area.

2. NODE ACCIDENT RATE BASED ON NUMBER OF ACCIDENTS

This method is similar to one used for link accidents and suffers from the same drawbacks.

Table 19 gives the listing of highest accident nodes based on the number of accidents over a period of time.

ANALYSIS OF RESULTS

The Study was greatly handicapped by inadequacies encountered in the data. The Study was primarily based on the Accident Reporting Form used by the Traffic Police. Although the primary form which is in use, is not all that lacking in the requisite information, unfortunately, the standard of recording accident information is extremely poor. The extent of the deficiencies in the recording can be seen from the fact that out of 1,302 accident cases, reported during 1972 in the Study Area, 'Road Alignment' has not been mentioned in 839 cases (64%), 'Traffic Control' has not been stated in 1282 cases, (98%) 'Kind of Locality' has not been given in 797 cases (61%) 'Road Condition' has not been mentioned in 816 cases (63%) 'Weather Condition' ignored in 788 cases (61%) 'Light Condition'

TABLE-18

HIGHEST ACCIDENT RATE - NODES

Sl. No.	Node No.	Description	Sum of approach volumes.	Yearly accidents.	Accident rate
1	2	3	4	5	6
1.	N148	Intersection of Sakhi Sarwar Road with D.G. Khan - Draman Road.	349	1	7.85
2.	N463	Mandi Bahauddin	1,036	2	5.28
3.	N251	Kot Chutta	880	1	3.11
4.	N510	Near Talizabad Chowk	2,669	3	3.07
5.	N131	Karor	974	1	2.81
6.	N150	Dera Ghazi Khan	1,100	1	2.40
7.	N006	Rahim Yar Khan	2,354	2	2.32
8.	N492	Mandra - Daudial-Road.	1,265	1	2.16
9.	N525	Talagang	2,555	2	2.14
10.	N435	Intersection of Quaid-a-bad Piplan-Road with Mianwali-Dullewala Road.	1,490	1	1.83
11.	N119	Intersection of Shadan Lund link Road with Daira-Din Panah - Kot Addu Road.	1,505	1	1.82
12.	N460	Kharian	9,628	6	1.70
13.	N193	Intersection of Haveli Road with Dipalpur - Pak-Pattan Road.	1,647	1	1.66

1.	2	3	4	5	6
14.	N177	Near Arifwala on Arifwala - Sahiwal Road.	1,676	1	1.63
15.	N008	Kot Samaba	1,747	1	1.56
16.	N168	Chichawatni	5,900	3	1.39
17.	N533	Campbellpur	2,102	1	1.30
18.	N020	Liaquatpur	2,268	1	1.20
19.	N388	Near Bhalwal on Shahpur - Miana- Gondal Road.	2,290	1	1.19
20.	N201	Renala Khurd	6,900	3	1.12
21.	N482	Dina	7,251	3	1.10

TABLE - 19

HIGHEST ACCIDENT FREQUENCY - NODES

Sl. No.	Node No.	Description	Total Accidents
1.	N460	Kharian	6
2.	N518	Hasan Abdal	3
3.	N510	Near Faizabad Chowk	3
4.	N482	Dina	3
5.	N168	Chichawatni	3
6.	N201	Renala Khurd	3
7.	N535	Intersection of G.T.Road with Hazro Road.	2
8.	N451	Gujrat	2
9.	N516	Taxila	2
10.	N006	Rahim Yar Khan	2
11.	N463	Mandi Bahauddin	2
12.	N459	Lala Musa	2
13.	N525	Talagang	2

not stated in 126 cases (10%), 'Violation of Driver' in 148 cases (11%) and 'Condition of Driver' in 1165 cases (89%).

Another very serious problem with data recording which came to light during analysis was that in majority of the cases, the place of accident was inaccurately recorded with respect to the nearest milestone. This made the identification of the location of the exact spot of accident very difficult.

The third major problem with the data was inaccurate diagnosis of the causes of the accident. Most common cause of the accident was described as speeding, reckless and negligent driving, without substantiating these with the facts. Invariably the conclusions of this sort seemed to be intuitive.

Last and not the least was the hurdle of appropriate size base map. The desirable size of map for this purpose would have been one inch equal to one mile, preferably one inch equal to half a mile. The smallest map available had a scale of one inch equal to 5.26 miles. This not only made the task of locating the exact spot of the accident almost impossible, even location of closely spaced intersection was very difficult. At many points, two or three closely spaced intersections had to be treated as one intersection. As a result, some accidents which otherwise would have been considered as link accident were treated as node accidents, thus un-necessarily exaggerating the node-accident problem at those places.

Recording of full particulars of the accident including location of the accident is of critical importance in such studies, because any suggested improvement regarding road alignment or road condition can only be carried out if the exact location of the place of accident is known and the factors contributing to the accident are known. In the present case neither was done very carefully. This indicates one of the following two or both :

- i) The person responsible for filling the form was not fully conversant with the filling procedures.
- ii) The importance of the filling was not impressed upon him.

CONCLUSION

In view of the incomplete and fragmentary nature of data available in the accident reports, the desired results have not been fully achieved. Nevertheless the importance of carrying out such a Study cannot be denied. The Study has established broad premises for carrying out future studies and improving upon the existing format of the accident reports. The present system of recording accidents is totally inadequate and as such the training of traffic police officials who fill up these forms is un-avoidable. Needless to point out that the importance of this Study can only be realised if such accident studies are done on a continuing basis. The quantum of work required for carrying out future studies can be substantially reduced if the present methodology is used in future as well as appropriate computer programmes have been developed for

this purpose.

For locating the hazardous sections, the method of links and nodes has been used which have to be further refined in order to pin-point the exact location of the place of accident. This would warrant using detailed maps on a scale of 1" = 400' for urbanized areas and 1" = 2000' for rural areas as is the general practice.

The Study is primarily meant for rural roads. A similar Study is also needed for individual major urban areas.

SUPPLEMENTARY REPORT

The scope of the present Study is limited to identification of highest accident nodes and links. The detailed investigation of the accidents at these locations would be carried out in a supplementary report, which would identify the causes of the problem at each location and suggest remedial measures.

<p>WHAT DRIVERS WERE DOING (TICK ONE FOR EACH DRIVER)</p> <p>VEHICLE 1 2 3</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1. GOING STRAIGHT AHEAD.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2. MAKING RIGHT TURN.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 3. MAKING LEFT TURN.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4. MAKING U TURN.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5. SLOWING OR STOP.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 6. STARTING IN TRAFFIC LANE.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 7. STARTING FROM PARKED POSITION.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8. STOPPED IN TRAFFIC LANE.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 9. PARKED.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 10. BACKING.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 11. PASSING.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 12. AVOIDING VEH. OBJ. OR PEDEST.</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 13. HIT AND RUN.</p>	<p>DRIVER VIOLATIONS INDICATED (TICK ONE OR MORE FOR EACH VEHICLE)</p> <p>VEHICLE 1 2 3</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1. EXCEEDING LAWFUL SPEED-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2. FOLLOWING TOO CLOSELY-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 3. PASSING ON HILL-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4. PASSING ON CURVE-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5. ON WRONG SIDE OF ROAD-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 6. FAILURE TO SIGNAL IMPROPER SIGNAL-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 7. IMPROPER TURN WIDE TURN-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 8. SAME-TURNED FROM WRONG LANE-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 9. DISREGARD POLICE MAN-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 10. OTHER IMPROPER ACTION-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 11. NO IMPROPER DRIVING INDICATED-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 12. PASSENGERS IMPROPERLY CARRIED-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 13. EXCESSIVE LOAD-----</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 14. EXPLAIN OTHER VIOLATIONS-----</p>	<p>SPEED (FILL IN FIVE ITEMS FOR EACH VEHICLE)</p> <p>VEHICLE 1 VEHICLE 2 VEHICLE 3</p> <p>1. DISTANCE DANGER OF ACCIDENT FIRST NOTICED (FEET) -----</p> <p>2. ESTIMATED SPEED AT THAT TIME -----</p> <p>3. ESTIMATED SPEED AT MOMENT OF ACCIDENT -----</p> <p>4. STATED SPEED LIMIT -----</p> <p>5. MAXIMUM SAFE SPEED UNDER CONDITIONS PREVAILING -----</p> <p>6. DISTANCE OF VEHICLE TRAVELLED AFTER IMPACT -----</p>
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<p>SITE OF ACCIDENT.</p> <p>THE SKETCHES BELOW REPRESENT A NUMBER OF DIFFERENT ROAD SITUATIONS. IF THE ACCIDENT OCCURRED AT ANY SITUATION ILLUSTRATED IN THE SKETCH, MARK AS NEAR AS YOU CAN THE POSITION AND DIRECTION OF THE VEHICLE OR VEHICLES IMMEDIATELY BEFORE THE ACCIDENT WITH AN ARROW-HEAD AND THE LETTER P OR S FOR 'VEHICLE PRIMARY' OR VEHICLE 'SECONDARY' CONCERNED.</p>	
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<p>CONDITION OF DRIVER AND PEDESTRIAN</p> <p>DRIVER (TICK ONE OR MORE)</p> <p>1 2 3 PED</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1. PHYSICAL DEFECT (EYE SIGHT ETC.)</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2. FATIGUED OR ASLEEP</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 3. APPARENTLY NORMAL</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4. CONDITIONS NOT KNOWN</p> <p>WEARING GLASSES</p>	<p>DRIVER (TICK ONE)</p> <p>1 2 3 PED</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1. HAD BEEN DRINKING</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2. NOT KNOWN WHETHER DRINKING</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> CERTIFICATE OF REGISTRATION IN ORDER</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> CERTIFICATE OF INSURANCE IN ORDER.</p>	<p>VEHICLE CONDITIONS</p> <p>1 2 3 (TICK ONE OR MORE)</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1. DEFECTIVE BRAKES</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2. IMPROPER LIGHTS</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 3. DEF: STEERING MECHANISM</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 4. DEFECTIVE TYRES</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 5. OTHER DEFECTS</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 6. NOT KNOWN</p> <p>(EXPLAIN FULLY IN REMARKS)</p>
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<p>DRIVER VISION OBSCURED (TICK ONE OR MORE FOR EACH)</p> <p>VEHICLE 1 2</p> <p><input type="checkbox"/> <input type="checkbox"/> 1. RAIN FOG ETC. OR WIND HELD</p> <p><input type="checkbox"/> <input type="checkbox"/> 2. VISION OBSCURED</p> <p><input type="checkbox"/> <input type="checkbox"/> 3. VISION NOT OBSCURED</p>	<p>ROAD CHARACTER (TICK ONE FOR EACH VEH:)</p> <p>VEHICLE 1 2</p> <p><input type="checkbox"/> <input type="checkbox"/> 1. STRAIGHT ROAD</p> <p><input type="checkbox"/> <input type="checkbox"/> 2. SHARP CURVE OR TURN</p> <p>(TICK ONE FOR EACH VEH:)</p> <p><input type="checkbox"/> <input type="checkbox"/> 1. LEVEL ROAD</p> <p><input type="checkbox"/> <input type="checkbox"/> 2. UP GRADE</p> <p><input type="checkbox"/> <input type="checkbox"/> 3. HILL CREST</p> <p><input type="checkbox"/> <input type="checkbox"/> 4. DOWN GRADE</p> <p><input type="checkbox"/> <input type="checkbox"/> 5. HUMP BRIDGE</p> <p><input type="checkbox"/> <input type="checkbox"/> 6. NARROW BRIDGE</p>	<p>ROAD SURFACE (TICK ONE)</p> <p><input type="checkbox"/> 1. CONCRETE</p> <p><input type="checkbox"/> 2. BLACK TOP</p> <p><input type="checkbox"/> 3. BRICK</p> <p><input type="checkbox"/> 4. GRAVEL</p> <p><input type="checkbox"/> 5. DIRT OR SAND</p>	<p>ROAD CONDITION (TICK ONE)</p> <p><input type="checkbox"/> 1. DRY</p> <p><input type="checkbox"/> 2. WET</p> <p><input type="checkbox"/> 3. MUDDY</p> <p><input type="checkbox"/> 4. SNOWY</p> <p><input type="checkbox"/> ROAD UNDER CONSTRUCTION</p> <p><input type="checkbox"/> DIVISION</p>
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<p>FUNCTIONING (TICK ONE OR MORE)</p> <p><input type="checkbox"/> 1. POLICE-MAN.</p> <p><input type="checkbox"/> 2. WARNING SIGN OR SIGNAL.</p> <p><input type="checkbox"/> 3. R.R. CROSSING GATES.</p> <p><input type="checkbox"/> 4. (SPECIFY OTHERS)</p>	<p>TRAFFIC CONTROL (TICK ONE OR MORE)</p> <p><input type="checkbox"/> 1. INDUSTRIAL</p> <p><input type="checkbox"/> 2. SHOPPING OR BUSINESS</p> <p><input type="checkbox"/> 3. RESIDENTIAL DIST:</p> <p><input type="checkbox"/> 4. SCHOOL OR PLAY GROUND.</p> <p><input type="checkbox"/> 5. OPEN COUNTRY.</p> <p><input type="checkbox"/> 6. (SPECIFY OTHERS)</p>	<p>KIND OF LOCALITY (TICK ONE)</p> <p><input type="checkbox"/> 1. INDUSTRIAL</p> <p><input type="checkbox"/> 2. SHOPPING OR BUSINESS</p> <p><input type="checkbox"/> 3. RESIDENTIAL DIST:</p> <p><input type="checkbox"/> 4. SCHOOL OR PLAY GROUND.</p> <p><input type="checkbox"/> 5. OPEN COUNTRY.</p> <p><input type="checkbox"/> 6. (SPECIFY OTHERS)</p>	<p>LIGHT (TICK ONE)</p> <p><input type="checkbox"/> 1. DAY LIGHT</p> <p><input type="checkbox"/> 2. DUSK.</p> <p><input type="checkbox"/> 3. DAWN DARKNESS WITH</p> <p><input type="checkbox"/> 4. STREET OR HIGHWAY LIGHTED.</p> <p><input type="checkbox"/> 5. STREET OR HIGHWAY NOT LIGHTED.</p> <p><input type="checkbox"/> 6. NOT LIGHTING SYSTEM</p>	<p>WEATHER (TICK ONE)</p> <p><input type="checkbox"/> 1. CLEAR</p> <p><input type="checkbox"/> 2. CLOUDY</p> <p><input type="checkbox"/> 3. RAINING</p> <p><input type="checkbox"/> 4. FOG</p> <p><input type="checkbox"/> 5. (SPECIFY OTHERS)</p>	<p>ROAD WIDTHS AND LANES</p> <p>1. WIDTH OF PAVEMENT OR ROAD SURFACE FOR VEHICULAR TRAFFIC ----- FT.</p> <p>2. ADDITIONAL WIDTH OF SHOULDERS ----- FT.</p> <p>3. TOTAL NUMBER OF TRAFFIC LANES -----</p> <p>4. WERE LANES MARKED? YES NO <input type="checkbox"/> <input type="checkbox"/></p> <p>5. WERE OPPOSING LANES SEPARATED? <input type="checkbox"/> <input type="checkbox"/></p> <p>6. WAS IT A ONE-WAY STREET? <input type="checkbox"/> <input type="checkbox"/></p>
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WITNESSES: (IF ANY) _____ WHERE WAS WITNESS? _____

NAME _____ ADDRESS _____

NAME _____ ADDRESS _____

DESCRIBE WHAT HAPPENED?

NAME _____ CHARGE _____

TIME NOTIFIED OF ACCIDENT DATE _____ HOUR _____

A.M. INVESTIGATION MADE

P.M. AT SCENE OF ACCIDENT DATE _____ HOUR _____

A.M. DRIVER REPORT FROM DRIVER 1

P.M. FURNISHED TO DRIVER 2

WHERE ELSE WAS INVESTIGATION MADE? _____ WERE PHOTO-GRAPHS TAKEN YES NO IS INVESTIGATION COMPLETE? _____

SIGNATURE _____ INVESTIGATOR RANK _____ DEPARTMENT _____ DATE OF REPORT _____

L O C A T I O N	ACCIDENT OCCURRED ON -----
	TICK ONE
ACCIDENT INVOLVED <input type="checkbox"/> PEDES <input type="checkbox"/> ANIMA <input type="checkbox"/> OTHER	
V E H I C L E S	VEHICLE
	YEAR MAKE -----
	GOING NORTH, E, -----
	DRIVER -----
	DRIVING EXPER -----
	VEHICLE OWNED -----
	VEHICLE REMOV -----
	VEHICLE
	YEAR MAKE -----
	GOING NORTH -----
	DRIVER -----
	DRIV. TAKEN -----
	1. NAME -----
	2. AGE -----
	3. AGE -----
	4. TAKEN TO -----
	I N J U

WHAT DRIVERS WERE DOING
(TICK ONE FOR EACH DRIVER)

VEHICLE 1	<input type="checkbox"/>	1. GOING STRAIGHT AHEAD.	VEH 1
2	<input type="checkbox"/>	2. MAKING RIGHT TURN.	<input type="checkbox"/>
3	<input type="checkbox"/>	3. MAKING LEFT TURN.	<input type="checkbox"/>
	<input type="checkbox"/>	4. MAKING U TURN.	<input type="checkbox"/>
	<input type="checkbox"/>	5. SLOWING OR STOP.	<input type="checkbox"/>
	<input type="checkbox"/>	6. STARTING IN TRAFFIC LANE.	<input type="checkbox"/>
	<input type="checkbox"/>	7. STARTING FROM PARKED POSITION.	<input type="checkbox"/>
	<input type="checkbox"/>	8. STOPPED IN TRAFFIC LANE.	<input type="checkbox"/>
	<input type="checkbox"/>	9. PARKED.	<input type="checkbox"/>
	<input type="checkbox"/>	10. BACKING.	<input type="checkbox"/>
	<input type="checkbox"/>	11. PASSING.	<input type="checkbox"/>
	<input type="checkbox"/>	12. AVOIDING VEH. OBJ. OR PEDEST.	<input type="checkbox"/>
	<input type="checkbox"/>	13. HIT AND RUN.	<input type="checkbox"/>

SITE OF ACCIDENT.
THE SKETCHES BELOW REPRESENT
A NUMBER OF DIFFERENT ROAD
SITUATIONS. IF THE ACCIDENT
OCCURRED AT ANY SITUATION
ILLUSTRATED IN THE SKETCH,
MARK AS NEAR AS YOU CAN THE
POSITION AND DIRECTION OF THE
VEHICLE OR VEHICLES IMMEDIATELY
BEFORE THE ACCIDENT WITH AN AR
HEAD AND THE LETTER P OR S FOR
'VEHICLE PRIMARY' OR VEHICLE
'SECONDARY' CONCERNED.

CONDITION OF DRIVER

DRIVER 1	<input type="checkbox"/>	1. PHYSICAL DEFECT (EYE SIGHT ETC.)	DR: 1
2	<input type="checkbox"/>	2. FATIGUED OR ASLEEP	<input type="checkbox"/>
3	<input type="checkbox"/>	3. APPARENTLY NORMAL	<input type="checkbox"/>
4	<input type="checkbox"/>	4. CONDITIONS NOT KNOWN WEARING GLASSES	<input type="checkbox"/>

DRIVER VISION OBSCURED
(TICK ONE OR MORE FOR EACH)

VEHICLE 1	<input type="checkbox"/>	1. RAIN FOG ETC. OR WIND HELD	VEHICLE 2	<input type="checkbox"/>
2	<input type="checkbox"/>	2. VISION OBSCURED	<input type="checkbox"/>	
	<input type="checkbox"/>	3. VISION NOT OBSCURED	<input type="checkbox"/>	
	<input type="checkbox"/>		<input type="checkbox"/>	
	<input type="checkbox"/>		<input type="checkbox"/>	

COLUMN NO.

FIELD DESCRIPTION

COLUMN NO.

FIELD DESCRIPTION

19-24

Date Example 15th Sept. 1974 150974

34-35

Violations - Driver No. 1

25-30

Time Example 8 15 AM 0815 AM

31

Weekday:

- 1- Monday
- 2- Tuesday
- 3- Wednesday
- 4- Thursday
- 5- Friday
- 6- Saturday
- 7- Sunday

32

Type of Vehicle:

- 1- Passenger car/jeep
- 2- Truck
- 3- Bus
- 4- Motorcycle/scooter
- 5- Farm tractor
- 6- Bicycle
- 7- Animal drawn
- 8- Drawn
- 9- Tanker

36-37

Violations - Driver No. 2

(Same as violations - Driver No. 1)

38-39

Object hit:

- 1- Head on
- 2- Sideswipe
- 3- Angle
- 4- Rear end
- 5- overturned in roadway
- 6- Ran off road
- 7- Pedestrian
- 8- Other
- 9- Passenger

33

Type of Accident:

- 01- Pedestrian
- 02- Bicycle
- 03- Scooter/motorcycle
- 04- Motor vehicle
- 05- Train
- 06- Animal drawn vehicle
- 07- Fixed object
- 08- Animal
- 09- Heavy equipment, farm tractor etc.
- 10- Other objects
- 11- Bus

COLUMN NO.	FIELD DESCRIPTION	COLUMN NO.	FIELD DESCRIPTION
40	<u>Condition of driver:</u>	50-51	<u>Pedestrian action:</u>
	1- Had been drinking		01- Crossing at intersection
	2- Physical defect		02- Crossing at other location
	3- Illness		03- Crossing from behind parked car
	4- Fatigue		04- Walking in road- with traffic
	5- Fell asleep		05- Walking in road-against traffic
	6- Normal		06- Playing in roadway
	7- Other		07- Working/walking in roadway
	8- Not stated		08- Not in roadway
41	<u>Damage type:</u>		09- Other action
	1- Property		10- Not stated
	2- Injuries	52	11- Sleeping in roadway
	3- Fatalities	53	Urban/rural accident code
42-43	Number dead	54-57	Link/node accident code
44-45	Number injured		Beginning node No.
46-49	Estimated property damage (thousand rupees)	58-61	Ending node No.
		62-65	Link No.
		66-69	Node No.
		70-80	Blank

ACCIDENT STUDY

PROVINCE _____

NATIONAL TRANSPORTATION RESEARCH CENTER

SHEET NO _____

ATA IDENTIFICATION

ACIDENT NUMBER

OF

DISTRICT OF

THE

CITY OF

TOWN

NAME OF LOCALITY

ROAD SURFACE

ROAD CONDITION

ROAD ALIGNMENT

TRAFFIC CONTROL

WEATHER CONDITION

LIGHT CONDITION

DATE

TIME

WEEK DAY

TYPE OF VEHICLE

TYPE OF ACCIDENT

VIOLATIONS-DRIVER NO.1

VIOLATIONS-DRIVER NO.2

OBJECT HIT

CONDITION OF DRIVER

DAMAGE TYPE

NUMBER DEAD

NUMBER INJURED

ESTIMATED PROPERTY DAMAGE (Thousand Rupees)

PEDESTRIAN LOCATION

URBAN / RURAL

LINK / NODE

BEGINNING NODE NUMBER

ENDING NODE NUMBER

LINK NUMBER

NODE NUMBER

REG A B

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4
24.	N11 & N551	Near Ghauspur - Khacharan	Rahim Yar Khan
25.	N11 & N13	Near Ghauspur - Node No. 13	-do-
26.	N13 & N14	Node No. 13 - Node No. 14	-do-
27.	N14 & N12	Node No. 14 - Khanpur	-do-
28.	N13 & N15	Node No. 13 - Khan Bela	-do-
29.	N15 & N16	Khan Bela - Allahabad	-do-
30.	N16 & N14	Allahabad - Node No. 14	-do-
31.	N14 & N17	Node No. 14 - Near Firoza	-do-
32.	N17 & N12	Near Firoza - Khanpur	-do-
33.	N15 & N18	Khan Bela - Jampur	-do-
34.	N18 & N19	Jampur - Node No. 19	-do-
35.	N19 & N16	Node No. 19 - Allahabad	-do-
36.	N19 & N20	Node No. 19 - Liaqatpur	-do-
37.	N20 & N17	Liaqatpur - Near Firoza	-do-
38.	N18 & N21	Jampur - Node No. 21	-do-
39.	N21 & N22	Node No. 21 - Node No. 22	Bahawalpur
40.	N22 & N23	Node No. 22 - Node No. 23	-do-
41.	N23 & N19	Node No. 23 - Allahabad	Partially in B.W.P. District & partially in Rahim Yar Khan District.
42.	N22 & N24	Node No. 22 - Chanigoth	Bahawalpur
43.	N24 & N23	Chanigoth - Node No. 23	-do-
44.	N23 & N20	Node No. 23 - Liaqatpur	Partially in R.Y.Khan & partially in BWP. Distt:
45.	N20 & N252	Liaqatpur - Derawa Fort.	-do-
46.	N21 & N25	Node No. 21 - Node No. 25	-do-
47.	N25 & N22	Node No. 25 - Near Chanigoth	-do-
48.	N25 & N26	Node No. 25 - Node No. 26	-do-
49.	N26 & N24	Node No. 26 - Node No. 24	-do-
50.	N13 & N26	Node No. 13 - Near UCH	Partially in R.Y. Khan and partially in Bahawalpur.
51.	N26 & N27	Node No. 26 - UCH	Bahawalpur
52.	N27 & N28	UCH - Node No. 28	-do-
53.	N28 & N24	Node No. 28 - Chanigoth	-do-

1	2	3	4
54.	N28 & N29	Node No. 28 - Ahmedpur East	Bahawalpur
55.	N29 & N252	Ahmadpur East - Derawar Fort	-do-
56.	N252 & N30	Derawar Fort - Khangarh	-do-
57.	N30 & N31	Khangarh - Node No. 31	-do-
58.	N31 & N32	Node No. 31 - Navakot	-do-
59.	N32 & N252	Navakot - Derawar Fort	-do-
60.	N252 & N553	Derawar Fort - Dingarh	-do-
61.	N30 & N552	Khangarh - Rukanpur - Indian-Border (Node No. 552)	-do-
62.	N31 & N550	Node No. 31 - Bijnot - Indian-Border (Node No. 550)	-do-
63.	N32 & N549	Navakot - Gujranwala - Indian-Border (Node No. 549)	-do-
64.	N27 & N33	Uch - Khairpur Dha.	-do-
65.	N33 & N34	Khairpur Dha. - Node No. 34	-do-
66.	N34 & N29	Node No. 34 - Ahmadpur East	-do-
67.	N34 & N35	Node No. 34 - Nurpur	-do-
68.	N35 & N29	Nurpur - Ahmadpur East	-do-
69.	N33 & N36	Khairpur Dha. - Node No. 36	-do-
70.	N36 & N35	Node No. 36 - Nurpur	-do-
71.	N36 & N37	Node No. 36 - Bahawalpur	-do-
72.	N37 & N38	Bahawalpur - Node No. 38	-do-
73.	N38 & N39	Node No. 38 - Guddal (Kutcha Link)	-do-
74.	N38 & N39	Node No. 38 - Yazman - Guddal	-do-
75.	N45 & N607	Node No 45 - Marot.	-do-
76.	N37 & N41	Bahawalpur - Chak 373 - Node No. 41	-do-
77.	N41 & N42	Node No. 41 - Node No. 42	-do-
78.	N42 & N39	Node No. 42 - Guddul	-do-
79.	N42 & N603	Node No. 42 - Mojgarh - Node No. 603	-do-
80.	N26 & N43	Node No. 26 - Uch	-do-
81.	N27 & N43	Uch - Node No. 43	-do-

1	2	3	4
82.	N37 & N44	Bahawalpur - Khairpur	Bahawalpur
83.	N44 & N45	Khairpur - Rodewala Toba - Marrot	Partially in BWP & Bahawalnagar Distt:
84.	N45 & N41	Marrot - Node No. 41	-do-
85.	N44 & N46	Khairpur - Qaimpur - Hasilpur	Bahawalpur
86.	N46 & N608	Hasilpur - Rawanwala - Chak 187	-do-
87.	N47 & N604	Node No. 47 - Node No. 604	-do-
88.	N46 & N47	Hasilpur - Node No. 47	-do-
89.	N47 & N48	Node No. 47 - Node No. 48	Bahawalnagar
90.	N48 & N49	Node No. 48 - Chistian Mandi	-do-
91.	N49 & N50	Chistian Mandi - Node No. 50	-do-
92.	N50 & N46	Node No. 50 - Bakhshan Khan	-do-
93.	N49 & N51	Chistian Mandi - Node No. 51	-do-
94.	N51 & N52	Node No. 51 - Harunabad	-do-
95.	N52 & N50	Harunabad - Chak 174 - Node No. 50	-do-
96.	N52 & N53	Harunabad - Faqirwali - Node No. 53	-do-
97.	N53 & N54	Node No. 53 - Walan - Node No. 54	-do-
98.	N54 & N55	Node No. 54 - Phulra	-do-
99.	N53 & N55	Node No. 53 - Phulra	-do-
100.	N55 & N45	Phulra - Marot	-do-
101.	N48 & N56	Node No. 48 - Qarinka - Node No.56	-do-
102.	N56 & N57	Node No. 56 - Bahawalnagar	-do-
103.	N57 & N49	Bahawalnagar - Takhto Mahal - Chistian Mandi	-do-
104.	N57 & N51	Bahawalnagar - Dunga Bunga - Node No. 51.	-do-
105.	N58 & N54	Node No. 58 - Near Wallan	-do-
106.	N56 & N59	Node No. 56 - Node No. 59	-do-
107.	N59 & N60	Node No. 59 - Minchinabad	-do-
108.	N60 & N61	Minchinabad - Node No. 61	-do-
109.	N61 & N57	Node No. 61 - Bahawalnagar	-do-
110.	N60 & N62	Minchinabad - Near Amruka	-do-

1	2	3	4
111.	N62 & N63	Node No. 62 - Amruka	Bahawalnagar
112.	N63 & N61	Amruka - Mandi Sadiqqanj - Node No. 61	-do-
113.	N63 & N58	Amruka - Node No. 58	-do-
114.	N33 & N64	Khairpur - Jalalpur Pirwala	Partially in Bahawalpur and partially in Multan District.
115.	N64 & N65	Jalalpur Pirwala - Lodhran	Multan
116.	N65 & N37	Lodhran - Bahawalpur	Partially in Bahawalpur and partially in Multan District
117.	N64 & N66	Jalalpur Pirwala - Node No. 66	Multan District
118.	N66 & N65	Node No. 66 - Lodhran	-do-
119.	N66 & N67	Node No. 66 - Kahrora Pakka	-do-
120.	N67 & N65	Kahrora Pakka - Lodhran	-do-
121.	N67 & N68	Kahrora Pakka - Mailsi	-do-
122.	N68 & N44	Mailsi - Khairpur	Partially in Multan District and partially Bahawalpur Distt
123.	N68 & N605	Mailsi - Fatehpur	Multan
124.	N68 & N69	Mailsi - Karampur	-do-
125.	N69 & N70	Karampur - Luddan	-do-
126.	N70 & N47	Luddan - Islam Headworks	Partially in Multan District and partially in Bahawalpur District.
127.	N64 & N71	Jalalpur Pirwala - Shujabad	Multan
128.	N71 & N66	Shujabad - Near Lodhran	-do-
129.	N71 & N72	Shujabad - Node No. 72	-do-
130.	N72 & N73	Near Shujabad - Basti Maluk	-do-
131.	N73 & N66	Basti Maluk - Near Lodhran	-do-
132.	N73 & N74	Basti Maluk - Duniyapur	-do-
133.	N74 & N67	Duniyapur - Kahrora Pakka	-do-
134.	N74 & N75	Duniyapur - Node No. 75	-do-

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135.	N75 & N68	Node No. 75 - Mailsi	Multan
136.	N76 & N74	Dunyapur - Tibba	- do -
137.	N76 & N75	Tibba - Node No. 75	- do -
138.	N71 & N77	Shujaabad - Node No. 77	- do -
139.	N77 & N78	Node No. 77 - Node No. 78	- do -
140.	N78 & N79	Node No. 78 - Node No. 79	- do -
141.	N79 & N72	Node No. 79 - Node No. 72	- do -
142.	N79 & N73	Node No. 79 - Basti Maluk	- do -
143.	N78 & N74	Node No. 78 - Dunyapur	- do -
144.	N78 & N76	Node No. 78 - Makhdum Rashid - Tibba	- do -
145.	N76 & N80	Tibba - Node No. 80	- do -
146.	N80 & N81	Node No. 80 - Node No. 81	- do -
147.	N81 & N82	Node No. 81 - Node No. 82	- do -
148.	N82 & N76	Node No. 82 - Mitru - Tibba	- do -
149.	N81 & N83	Node No. 81 - Vihari	- do -
150.	N83 & N70	Vihari - Luddan	- do -
151.	N69 & N82	Karampur - Node No. 82	- do -
152.	N84 & N85	Node No. 84 - Node No. 85	- do -
153.	N85 & N86	Node No. 85 - Node No. 86	- do -
154.	N86 & N87	Node No. 86 - Node No. 87	Multan
155.	N87 & N88	Node No. 87 - Node No. 88	- do -
156.	N88 & N70	Node No. 88 - Luddan	- do -
157.	N86 & N89	Node No. 86 - Mandi Burewala	- do -
158.	N84 & N90	Node No. 84 - Node No. 90	- do -
159.	N90 & N91	Node No. 90 - Node No. 91	Sahiwal Distt.
160.	N91 & N85	Node No. 91 - Node No. 85	Partially in Multan Distt. partially in Sahiwal Distt.
161.	N92 & N93	Multan - Muzaffargarh	Multan & Muzaffargarh Distt.
162.	N93 & N94	Node No. 93 - Node No. 94	Muzaffargarh Distt.
163.	N94 & N95	Node No. 94 - Langar Sarai	- do -
164.	N95 & N92	Langar Sarai - Multan	Muzaffargarh Distt. Multan Distt.
165.	N92 & N77	Multan - Node No. 77	Multan Distt.

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166.	N92 & N609	Multan - Nawabpur - Bozan	Multan Distt:
167.	N92 & N96	Multan - Node No. 96	-do-
168.	N96 & N98	Node No. 96 - Node No. 98	-do-
169.	N97 & N98	Node No. 97 - Node No. 98	-do-
170.	N98 & N80	Node No. 98 - Node No. 80	-do-
171.	N97 & N99	Qadirpur Ran - Kabirwala	-do-
172.	N99 & N100	Kabirwala - Khanewal	-do-
173.	N100 & N98	Khanewal - Node No. 98	-do-
174.	N96 & N101	Node No. 96 - Fazilshah - Sarai Sidhu	-do-
175.	N101 & N99	Sarai Sidhu - Kabirwala	-do-
176.	N101 & N102	Sarai Sidhu - Node No. 102	-do-
177.	N102 & N103	Node No. 102 - Talamba	-do-
178.	N103 & N104	Talamba - Mian Channun	-do-
179.	N104 & N105	Mian Channun - Node No. 105	-do-
180.	N105 & N100	Node No. 105 - Khanewal	-do-
181.	N104 & N90	Mian Channun - Near Chak 94	-do-
182.	N105 & N83	Node No. 105 - Vihari	-do-
183.	N106 & N611	Alipur - Sitpur	Muzzafargarh
184.	N106 & N107	Alipur - Jatoi Janubi	-do-
185.	N107 & N108	Jatoi Janubi - Node No. 108	-do-
186.	N108 & N106	Node No. 108 - Alipur	-do-
187.	N107 & N109	Jatoi Janubi - Shahr Sultan	-do-
188.	N109 & N108	Shahr Sultan - Node No. 108	-do-
189.	N107 & N110	Jatoi Janubi - Node No. 110	-do-
190.	N110 & N109	Node No. 110 - Shahr Sultan	-do-
191.	N110 & N111	Node No. 110 - Kinjar Khas	-do-
192.	N111 & N112	Kinjar Khas - Khangari	-do-
193.	N112 & N109	Khangari - Shahr Sultan	-do-
194.	N111 & N113	Kinjar Khas - Node No. 113	-do-
195.	N113 & N93	Node No. 113 - Muzzafargarh	-do-
196.	N113 & N114	Node No. 113 - Ghazi Ghat	-do-
197.	N114 & N115	Ghazi Ghat - Node No. 115	-do-
198.	N115 & N113	Node No. 115 - Node No. 113	-do-
199.	N115 & N116	Node No. 115 - Node No. 116	-do-
200.	N116 & N93	Node No. 116 - Muzzafargarh	-do-
201.	N115 & N117	Node No. 115 - Sanawan	-do-
202.	N117 & N116	Sanawan - Node No. 116	-do-

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203.	N117 & N118	Sanawan - Node No. 118	Muzzafargarh
204.	N118 & N94	Node No. 118 - Node No. 94	-do-
205.	N118 & N95	Node No. 118 - Langar Sarai	-do-
206.	N117 & N119	Sanawan - Node No. 119	-do-
207.	N119 & N120	Node No. 119 - Dera Din Panah	-do-
208.	N120 & N121	Dera Din Panah - Node No. 121	-do-
209.	N121 & N122	Node No. 121 - Node No. 122	-do-
210.	N122 & N118	Node No. 122 - Node No. 118	-do-
211.	N121 & N123	Node No. 121 - Munda	-do-
212.	N123 & N122	Munda - Node No. 122	-do-
213.	N123 & N124	Munda - Rangpur	-do-
214.	N124 & N125	Rangpur - Node No. 125	-do-
215.	N125 & N122	Node No. 125 - Node No. 122	-do-
216.	N125 & N95	Node No. 125 - Langar Sarai	-do-
217.	N120 & N126	Dera Din Panah - Leiah	-do-
218.	N126 & N121	Leiah - Node No. 121	-do-
219.	N126 & N127	Leiah - Node No. 127	-do-
220.	N127 & N123	Node No. 127 - Node No. 123	-do-
221.	N127 & N128	Node No. 127 - Chaubara	-do-
222.	N128 & N124	Chaubara - Rangpur	-do-
223.	N128 & N129	Chaubara - Ahmadpur Sial	-do-
224.	N129 & N124	Ahmadpur Sial-Rangpur	-do-
225.	N128 & N130	Chaubara - Near Garh Mahraja	Partially in Jhang District and partially in M. Garh District.
226.	N130 & N129	Near Garh Mahraja - Node No.129	Muzzafargarh
227.	N126 & N131	Leiah - Doratta - Karor	-do-
228.	N131 & N132	Karor - Fatehpur	-do-
229.	N132 & N126	Fatehpur - Leiah	-do-
230.	N132 & N133	Fatehpur - Node No. 133	-do-
231.	N133 & N126	Node No. 133 - Leiah	-do-
232.	N133 & N127	Node No. 133 - Node No. 127	-do-
233.	N133 & N134	Node No. 133 - Nawankot	-do-
234.	N134 & N128	Nawankot - Chaubara	-do-
235.	N135 & N556	Bhandowali - Border of Baluchistan (Node No. 556)	Dera Ghazi Khan
236.	N135 & N136	Bhandowali - Node No. 136	-do-
237.	N136 & N555	Node No. 136 - Kin - Shahwali	-do-
238.	N135 & N137	Bhandowali - Kot Rum	-do-

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239.	N137 & N138	Kot Rum - Rajanpur	Muzaffargarh District
240.	N138 & N139	Rajanpur - Asni	
241.	N139 & N136	Asni - Murghai - Node No. 136	-do-
242.	N139 & N554	Node No. 139 - Mithankot	-do-
243.	N137 & N140	Kot Rum - Hajipur	-do-
244.	N140 & N138	Hajipur - Rajanpur	-do-
245.	N140 & N141	Hajipur - Fazilpur	-do-
246.	N141 & N138	Fazilpur - Rajanpur	-do-
247.	N137 & N142	Kot Rum - Node No. 142	-do-
248.	N142 & N143	Node No. 142 - Harrand	-do-
249.	N143 & N144	Node No. 143 - Dajal	Dera Ghazi Khan
250.	N144 & N140	Dajal - Hajipur	-do-
251.	N142 & N557	Node No. 142 - Node No. 557	-do-
252.	N144 & N145	Dajal - Jampur	-do-
253.	N145 & N146	Jampur - Node No. 146	-do-
254.	N145 & N146	Byepass Jampur - Node No. 146	-do-
255.	N146 & N141	Node No. 146 - Fazilpur	-do-
256.	N145 & N107	Jampur - Jatoi Janubi	Partially in Muzaffargarh District and partially in D.G. Khan District.
257.	N145 & N606	Jampur - Sehru	D.G.Khan Distt:
258.	N143 & N251	Near Harrand - Choti - Kot Chutta	-do-
259.	N251 & N145	Kot Chutta - Jampur	-do-
260.	N251 & N147	Kot Chutta - Node No. 147	-do-
261.	N147 & N148	Node No. 147 - Node No. 148	-do-
262.	N148 & N149	Node No. 148 - Draman	-do-
263.	N149 & N251	Draman - Kot Chutta	-do-
264.	N147 & N558	Node No. 147 - Sakhi Sarwar - Node No. 558	-do-
265.	N150 & N151	Dera Ghazi Khan - Kharar	-do-
266.	N151 & N152	Kharar - Hanghura - Node No. 152	-do-
267.	N152 & N153	Node No. 152 - Taunsa	-do-
268.	N153 & N154	Taunsa - Shadan Lund	-do-

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269.	N154 & N155	Shadan Lund - Node No: 155	-do-
270.	N155 & N150	Node No: 155 - D.G. Khan	-do-
271.	N154 & N119	Shadan Lund - Node No: 119	-do-
272.	N155 & N149	Node No: 155 - Draman	-do-
273.	N149 & N114	Draman - Ghazi Ghat	-do-
274.	N152 & N156	Node No: 152 - Node No: 156	-do-
275.	N156 & N157	Node No: 156 - Jhok Bodo - near Dauna	-do-
276.	N157 & N153	near Dauna - Taunsa	-do-
277.	N156 & N157	Node No: 156 - Vehowa	-do-
278.	N158 & N159	Vehowa - Node No: 159	-do-
279.	N159 & N160	Node No: 159 - Tibbi Qaiserani	Dera Ghazi Khan
280.	N160 & N157	Tibbi Qaiserani - near Dauna	-do-
281.	N158 & N559	Vehowa to Punjab border (Node No: 559)	-do-
282.	N158 & N560	Vehowa to Punjab border (Node No: 560)	-do-
283.	N159 & N561	Node No: 159 - Node No: 561	-do-
284.	N160 & N126	Tibbi Qaiserani - Leiah	-do-
285.	N104 & N161	Node No: 104 - Mian Channun	Sahiwal District
286.	N161 & N91	Mian Channun - Node No: 91	-do-
287.	N161 & N162	Node No: 161 - Node No: 162	-do-
288.	N162 & N163	Node No: 162 - Node No: 163	-do-
289.	N163 & N164	Node No: 163 - Node No: 164	-do-
290.	N164 & N165	Node No: 164 - Sheikh Fazil	-do-
291.	N165 & N89	Sheikh Fazil - Mandi Burewala	-do-
292.	N165 & N166	Sheikh Fazil - Gaggo	-do-
293.	N166 & N89	Gaggo - Mandi Burewala	-do-
294.	N166 & N167	Gaggo - Node No: 167	-do-
295.	N167 & N89	Node No: 167 - Mandi Burewala	-do-
296.	N162 & N168	Node No: 162 - Chichawatni	-do-
297.	N168 & N163	Chichawatni - Node No: 163	-do-
298.	N168 & N164	Chichawatni - Node No: 164	-do-
299.	N168 & N169	Chichawatni - Harappa Road	-do-
300.	N169 & N170	Harappa Road-upto Harappa	-do-
301.	N170 & N171	Harappa - Node No: 171	-do-
302.	N171 & N168	Node No: 171 - Chichawatni	-do-
303.	N171 & N172	Node No: 171 - Node No: 172	-do-
304.	N172 & N173	Node No: 172 - Node No: 173	-do-
305.	N173 & N174	Node No: 173 - Node No: 174	-do-
306.	N174 & N166	Node No: 174 - Gaggo	-do-

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307.	N174 & N167	Node No: 174 - Node No: 167	-do-
308.	N170 & N175	Harappa - Node No: 175	-do-
309.	N175 & N171	Node No: 175 - Node No: 171	-do-
310.	N175 & N176	Node No: 175 - Node No: 176	Sahiwal District
311.	N176 & N172	Node No: 176 - Node No: 172	-do-
312.	N176 & N177	Node No: 176 - Node No: 177	-do-
313.	N177 & N173	Node No: 177 - Node No: 173	-do-
314.	N177 & N178	Node No: 177 - Arifwala	-do-
315.	N178 & N174	Arifwala - Node No: 174	-do-
316.	N178 & N179	Arifwala - Node No; 179	-do-
317.	N179 & N87	Node No: 179 - near Sahuka	-do-
318.	N175 & N180	Node No: 175 - near Malka Hans	-do-
319.	N180 & N181	Node No: 180 - Node No: 181	-do-
320.	N181 & N176	Node No. 181 - Node No: 176	-do-
321.	N181 & N178	Node No: 181 - Arifwala	-do-
322.	N181 & N182	Node No: 181 - Pakpattan	-do-
323.	N182 & N183	Pakpattan - Node No: 183	-do-
324.	N183 & N178	Node No: 183 - Node No: 178	-do-
325.	N180 & N182	Node No: 180 - Pakpattan	-do-
326.	N180 & N184	Node No: 180 - Node No. 184	-do-
327.	N184 & N182	Node No: 184 - Node No: 182	-do-
328.	N184 & N185	Node No: 184 - Node No: 185	-do-
329.	N185 & N182	Node No: 185 - Pakpatta	-do-
330.	N183 & N179	Node No: 183 - Node No: 179	-do-
331.	N183 & N186	Node No: 183 - Node No: 186	-do-
332.	N186 & N59	Node No: 186 - Node No: 59	-do-
333.	N56 & N179	Node No: 56 - Node No: 179	-do-
334.	N182 & N186	Pakpattan - Node No: 186	-do-
335.	N175 & N187	Node No: 175 - Node No: 187	-do-
336.	N187 & N188	Node No: 187 - Node No: 188	-do-
337.	N188 & N184	Node No: 188 - Node No: 184	-do-
338.	N187 & N189	Node No: 187 - Node No: 189	-do-
339.	N189 & N190	Node No: 189 - Node No: 190	-do-
340.	N190 & N187	Node No: 190 - Node No: 187	-do-
341.	N190 & N188	Node No: 190 - Node No: 188	-do-
342.	N186 & N191	Node No: 189 - Node No: 191	-do-
343.	N191 & N192	Node No: 191 - Dipalpur	Sahiwal District

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344	N192 & N190	Dipalpur - Node No: 190	-do-
345	N192 & N193	Dipalpur - Node No: 193	-do-
346	N193 & N188	Node No: 193 - Node No: 188	-do-
347	N193 & N185	Node No: 193 - Node No: 185	-do-
348	N194 & N175	Node No: 194 - Nurshah - Sahiwal	-do-
349	N194 & N189	Node No: 194 - Node No: 189	-do-
350	N194 & N195	Node No: 194 - Node No: 195	-do-
351	N195 & N196	Node No: 195 - Okara	-do-
352	N194 & N197	Node No: 194 - Sadr Gugera	-do-
353	N197 & N195	Sadr Gugera - Node No: 195	-do-
354	N197 & N198	Sadr Gugera - Node No: 198	-do-
355	N198 & N199	Jandraka - Node No: 199	-do-
356	N199 & N195	Node No: 199 - Node No: 195	-do-
357	N199 & N200	Node No: 199 - Satghara	-do-
358	N200 & N196	Satghara - Okara	-do-
359	N200 & N201	Satghara - Renala Khurd	-do-
360	N201 & N191	Renala Khurd - Node No: 191	-do-
361	N201 & N202	Renala Khurd - Sher Goth	-do-
362	N202 & N192	Node No: 202 - Dipalpur	-do-
363	N202 & N203	Node No: 202 - Hujra	-do-
364	N203 & N204	Hujra - Basirpur	-do-
365	N204 & N192	Basirpur - Dipalpur	-do-
366	N204 & N205	Basirpur - Haveli	-do-
367	N205 & N193	Haveli - Node No: 193	-do-
368	N205 & N182	Haveli - Pakpattan	-do-
369	N205 & N206	Haveli - Node No: 206	-do-
370	N206 & N62	Node No: 206 - Node No: 62	-do-
371	N201 & N207	Renala Khurd - Distt. Sahiwal Boundry	-do-
372	N203 & N208	Hujra - Atari	-do-
373	N208 & N209	Atari - Node No: 209	-do-
374	N209 & N204	Node No: 209 - Basirpur	-do-
375	N209 & N205	Node No: 209 - Haveli	-do-
376	N198 & N210	Jandraka - Saiyidwala	-do-

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377.	N207 & N211	Node No: 207 - Pattoki	Lahore District
378.	N211 & N212	Pattoki - Chunian	-do-
379.	N212 & N207	Chunian - Node No: 207	-do-
380.	N212 & N213	Chunian - Node No: 213	-do-
381.	N213 & N203	Node No: 213 - Hujra	-do-
382.	N213 & N202	Node No: 213 - Node No: 202	-do-
383.	N212 & N214	Chunian - Node No: 214	-do-
384.	N214 & N213	Node No: 214 - Node No: 213	-do-
385.	N212 & N215	Chunian - Khudian.	-do-
386.	N215 & N214	Khudian - Node No: 214	-do-
387.	N215 & N216	Khudian - Kanganpur	-do-
388.	N216 & N214	Kanganpur - Node No: 214	-do-
389.	N215 & N217	Khudian - Kasur	-do-
390.	N217 & N218	Kasur - Node No: 218	-do-
391.	N218 & N215	Node No: 218 - Khudian	-do-
392.	N217 & N599	Kasur - Indian Border (Node No:599)	-do-
393.	N218 & N600	Node No: 218 - Node No: 600	-do-
394.	N211 & N219	Pattoki- Node No: 219	-do-
395.	N219 & N220	Node No: 219 - near Balloki	-do-
396.	N220 & N221	Near Balloki - Node No. 221	-do-
397.	N221 & N211	Node No. 211 - Pattoki	-do-
398.	N221 & N614	Node No. 221 - Kot Radha Kishan	-do-
399.	N221 & N222	Node No. 221 - Node No. 222	-do-
400.	N222 & N212	Node No. 222 - Chunian.	-do-
401.	N220 & N223	Node No. 220 - Node No. 223	-do-
402.	N223 & N225	Node No. 223 - Near Raiwind	-do-
403.	N223 & N224	Node No. 223 - Node No. 224	-do-
404.	N224 & N225	Node No. 224 - Near Raiwind	-do-
405.	N224 & N226	Node No. 224 - Node No. 226	-do-
406.	N226 & N227	Node No. 226 - Node No. 227	-do-
407.	N227 & N223	Node No. 227 - Near Raiwind	-do-
408.	N226 & N227	Node No. 226 - Node No. 227	-do-
409.	N226 & N227	Node No. 226 - Node No. 227	Lahore District
410.	N228 & N229	Node No. 228 - Node No. 229	-do-
411.	N226 & N230	Node No. 226 - Lahore	-do-

1	2	3	4
412.	N230 & N231	Lahore - Node No: 231	-do-
413.	N231 & N232	Node No: 231 - Model Town	-do-
414.	N232 & N228	Node No: 232 - Node No: 228	-do-
415.	N231 & N615	Node No: 231 - Node No: 615	-do-
416.	N231 & N234	Node No: 231 - Node No: 234	-do-
417.	N234 & N232	Node No: 234 - Model Town	-do-
418.	N234 & N235	Node No: 234 - Node No: 235	-do-
419.	N235 & N228	Node No: 235 - Node No: 228	-do-
420.	N232 & N233	Model Town - Node No: 233	-do-
421.	N233 & N229	Node No: 233 - Kahna	-do-
422.	N229 & N236	Kahna - near Luliani	-do-
423.	N236 & N217	near Luliani - Kasur	-do-
424.	N217 & N237	Kasur - Node No: 237	-do-
425.	N237 & N236	Node No: 237 - near Luliani	-do-
426.	N237 & N222	Node No: 237 - Node No: 222	-do-
427.	N235 & N238	Node No: 235 - Node No: 238	-do-
428.	N238 & N236	Node No: 238 - Node No: 236	-do-
429.	N238 & N598	Node No: 238 - Indian Border (Node No:598)	-do-
430.	N230 & N239	Node No: 230 - Node No: 239	Lahore (District)
431.	N239 & N240	Node No: 239 - Node No: 240	-do-
432.	N240 & N235	Node No: 240 - Node No: 235	-do-
433.	N239 & N241	Node No: 239 - Node No: 241	-do-
434.	N241 & N240	Node No: 241 - Node No: 240	-do-
435.	N241 & N596	Node No: 241 - Wagha	-do-
436.	N219 & N199	Node No: 219 - Node No: 199	-do-
437.	N210 & N242	Saiyidiwala - Bucheke	Sheikhupura District.
438.	N242 & N219	Bucheke - Node No: 219	Partially in Sheikhupura district and partially in Lahore District.
439.	N242 & N243	Bucheke - Jallal Kohna	Sheikhupura District
440.	N243 & N220	Jallal Kohna - near Balloki	-do-
441.	N242 & N244	Bucheke - Nankana Sahib	-do-
442.	N244 & N245	Nankana Sahib-Mangtanwala	-do-
443.	N244 & N246	Nankana Sahib-Ganger Hakimwala	-do-
444.	N245 & N246	Mangtanwala-Ganger Hakimwala	-do-
445.	N245 & N243	Mangtanwala-Jallal Kohna	-do-
446.	N245 & N247	Mangtanwala - Rehanwala	-do-

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447. N247 & N223	Rehanwala - Node No: 223	Partially in Sheikhupura District and partially in Lahore District.
448. N247 & N248	Rehanwala - Sharqpur	Sheikhupura District
449. N248 & N249	Sharqpur - Traidewall	-do-
450. N249 & N411	Traidewall - Node No: 411	Partially in Sheikhupura district & partially in Lahore District.
451. N249 & N250	Traidewall - Dhana	Sheikhupura District.
452. N250 & N239	Dhana - Node No: 239	Partially in Sheikhupura district & partially in Lahore District.
453. N250 & N253	Shadra-Muridke (Grand Trunk Road)	Sheikhupura District.
454. N253 & N254	Muridke-Dhirda	-do-
455. N254 & N255	Dhirda-Sheikhupura	-do-
456. N255 & N250	Sheikhupura-Dhana	-do-
457. N255 & N248	Sheikhupura-Sharqpur	-do-
458. N255 & N246	Sheikhupura - Ganger Hakimwala	-do-
459. N255 & N256	Sheikhupura-Mananwala	-do-
460. N256 & N257	Mananwala-Shahkot.	-do-
461. N257 & N258	Shahkot-Sangla Hill	-do-
462. N258 & N259	Sangla Hill - Node No: 259	-do-
463. N259 & N257	Node No: 259 - Shahkot	Sheikhupura
464. N260 & N261	Mahash - Khangah Dogran	-do-
465. N261 & N256	Khangah Dogran-Mananwala	-do-
466. N261 & N262	Khangah Dogran-Kalsian	-do-
467. N262 & N263	Kalsian-Chuhar Kana	-do-
468. N263 & N261	Chuhar Kana - Khangah Dogran	-do-
469. N263 & N256	Chuhar Kana - Mananwala	-do-
470. N262 & N264	Kalsian - Ajnianwala	-do-
471. N264 & N265	Ajnianwala - Warn	-do-
472. N265 & N266	Warn - Node No: 266	-do-
473. N266 & N263	Node No: 266 - Chuhar Kana	-do-
474. N266 & N267	Node No: 266 - Node No: 267	-do-
475. N267 & N263	Node No: 267 - Chuhar Kana	-do-
476. N267 & N255	Node No: 267 - Sheikhupura	-do-
477. N253 & N268	Muridke-Kot Ahadian	-do-
478. N268 & N269	Kot Ahadian - Dede	-do-
479. N269 & N239	Dede-Shahdra	-do-

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480.	N261 & N270	Khangah Degran - Pindi Bhattian	Gujranwala (Distt.
481.	N270 & N260	Pindi Bhattian - Node No: 260	-do-
482.	N270 & N271	Pindi Bhattian - Jallalpur Nau	-do-
483.	N271 & N272	Jalalpur Nau - Hafizabad	-do-
484.	N272 & N264	Hafizabad - Ajnianwala	-do-
485.	N271 & N273	Jalalpur Nau - Vanike	-do-
486.	N273 & N272	Vanike - Hafizabad	-do-
487.	N273 & N274	Vanike - Node No: 274	-do-
488.	N274 & N275	Node No: 274 - Akalgarh	-do-
489.	N275 & N272	Akalgarh - Hafizabad	-do-
490.	N274 & N276	Node No: 274 - Rasulnagar	-do-
491.	N276 & N275	Rasulnagar - Akalgarh	-do-
492.	N276 & N277	Rasulnagar - Node No: 277	-do-
493.	N277 & N278	Node No: 277 - Node No: 278	-do-
494.	N278 & N275	Node No: 278 - Akalgarh	-do-
495.	N277 & N616	Node No: 277 - Khanki	-do-
496.	N277 & N279	Node No: 277 - Node No: 279	-do-
497.	N279 & N280	Node No: 279 - Gujranwala	-do-
498.	N280 & N278	Gujranwala - Node No: 278	-do-
499.	N280 & N272	Gujranwala - Hafizabad	-do-
500.	N280 & N264	Gujranwala - Ajnianwala	-do-
501.	N280 & N281	Gujranwala - Node No: 280	-do-
502.	N281 & N264	Node No: 281 - Ajnianwala	-do-
503.	N281 & N265	Node No: 281 - Node No: 265	Gujranwala District
504.	N280 & N282	Gujranwala - Node No: 282	-do-
505.	N282 & N281	Node No: 282 - Node No: 281	-do-
506.	N282 & N254	Node No: 282 - Node No: 254	-do-
507.	N280 & N283	Gujranwala - Eminabad	-do-
508.	N283 & N284	Eminabad - Node No: 284	-do-
509.	N284 & N280	Node No: 284 - Gujranwala (Grand Trunk Road)	-do-
510.	N284 & N285	Node No: 284 - Node No: 285 (Grand Trunk Road)	-do-
511.	N285 & N282	Node No: 285 - Node No: 282 (Grand Trunk Road)	-do-
512.	N285 & N253	Node No: 285 - Muridke (Grand Trunk Road)	Partially in Sheikhupura Distt, and Partially in Distt. Gujranwala District.
513.	N283 & N617	Eminabad - Wahndo	Gujranwala District.
514.	N283 & N268	Node No: 283 - Node No: 268	Partially in Sheikhupura Distt. Partially in Gujranwala Distt.

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515.	N279 & N286	Node No. 279 - Node No. 286	Gujranwala District
516.	N286 & N287	Wazirabad - Node No. 287	-do-
517.	N287 & N288	Wazirabad - Node No. 288	Sialkot Distt:
518.	N288 & N289	Node No. 288 - Sambarial	-do-
519.	N289 & N290	Sambarial - Node No. 290	-do-
520.	N290 & N291	Node No. 290 - Daska	-do-
521.	N291 & N280	Daska - Gujranwala	Partially in Gujranwala District and partially in Sialkot Distt:
522.	N288 & N292	Node No. 288 - Node No. 292	Sialkot Distt:
523.	N292 & N294	Node No. 292 - Node No. 294	-do-
524.	N288 & N294	Node No. 288 - Node No. 294	-do-
525.	N292 & N293	Node No. 292 - Dhallewali	-do-
526.	N293 & N294	Dhallewali - Node No. 294	-do-
527.	N293 & N295	Dhallewali - Node No. 295	-do-
528.	N295 & N296	Node No. 295 - Node No. 296	-do-
529.	N296 & N296	Node No. 296 - Node No. 294	-do-
530.	N295 & H589	Dhallewali - Node No. 589	-do-
531.	N295 & N590	Dhallewali - Chaprar	-do-
532.	N296 & N591	Node No. 296 - Node No. 591	-do-
533.	N294 & N296	Node No. 294 - Node No. 296	-do-
534.	N297 & N298	Sialkot - Node No. 298	-do-
535.	N289 & N298	Node No. 289 - Node No. 298	-do-
536.	N298 & N299	Node No. 298 - Node No. 299	-do-
537.	N299 & N290	Node No. 299 - Node No. 290	-do-
538.	N293 & N291	Node No. 293 - Daska	-do-
539.	N297 & N300	Sialkot - Node No. 300	-do-
540.	N300 & N301	Node No. 300 - Node No. 301	-do-
541.	N301 & N298	Node No. 301 - Node No. 298	-do-
542.	N301 & N302	Node No. 301 - Node No. 302	-do-
543.	N302 & N303	Node No. 302 - Node No. 303	-do-
544.	N303 & N304	Node No. 303 - Node No. 304	-do-
545.	N302 & N304	Node No. 302 - Node No. 304	-do-

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546.	N304 & N291	Node No. 304 - Daska	Sialkot Distt.
547.	N300 & N305	Node No. 300 - Node No.305	-do-
548.	N305 & N301	Node No. 305 - Node No.301	-do-
549.	N305 & N306	Node No. 305 - Badiana	-do-
550.	N306 & N302	Badiana - Node No. 302	-do-
551.	N306 & N307	Node No. 306 - Pasroor	-do-
552.	N307 & N303	Pasroor - Node No. 303	-do-
553.	N307 & N280	Pasroor - Satrah - Gujranwala	Partially in Sialkot & Partially in Gujranwala Dist
554.	N297 & N308	Sialkot - Node No.308	Sialkot Distt:
555.	N308 & N309	Node No. 308 - Phillore	-do-
556.	N309 & N310	Phillore - Chawinda	-do-
557.	N310 & N306	Chawinda - Badiana	-do-
558.	N310 & N307	Chawinda - Pasroor	-do-
559.	N309 & N311	Phillore - Node No.311	-do-
560.	N311 & N310	Node No. 311 - Chawinda	-do-
561.	N303 & N312	Node No. 303 - Node No.312	-do-
562.	N312 & N309	Node No. 312 - Phillore	-do-
563.	N312 & N313	Node No. 312 - Zaffarwal	-do-
564.	N313 & N311	Zafarwal - Node No.311	-do-
565.	N313 & N314	Zafarwal - Narowal	-do-
566.	N314 & N307	Narowal - Pasroor	-do-
567.	N314 & N315	Narowal - Node No. 315	-do-
568.	N315 & N307	Node No. 315 - Node No.307	-do-
569.	N314 & N316	Narowal - Raya	-do-
570.	N316 & N315	Raya - Node No. 315	-do-
571.	N316 & N269	Raya - Node No. 269	-do-
572.	N313 & N317	Zafarwal - Shakargarh	-do-
573.	N317 & N318	Shakargarh - Jassar	-do-
574.	N318 & N314	Jassar - Narowal	-do-
575.	N317 & N592	Shakargarh - Nainakot	-do-
576.	N318 & N593	Jassar - Node No. 593	-do-
577.	N316 & N594	Raya - Node No. 594	-do-
578.	N319 & N320	Toba Tek singh-Node No.320	Faisalabad(Lyallp
579.	N320 & N321	Node No. 320 - Pir Mahal	-do-

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580.	N321 & N322	Pir Mahal - Node No. 322	Lyallpur
581.	N322 & N539	Node No. 322 - Node No. 539	-do-
582.	N539 & N319	Node No. 539 - Toba Tek Sing	-do-
583.	N320 & N323	Node No. 320 - Kamalia	-do-
584.	N323 & N324	Kamalia - Node No. 324	-do-
585.	N324 & N321	Node No. 324 - Pir Mahal	-do-
586.	N324 & N322	Node No. 324 - Node No. 322	-do-
587.	N323 & N169	Kamalia - Harappa Road	Partially in Lyallpur District and partially in Sahiwal District.
588.	N169 & N103	Node No. 169 - Talamba (Harappa Road).	Partially in Sahiwal and partially in Multan District.
589.	N269 & N595	Node No. 269 - Indian Border (Node No. 595)	Sheikhupura Distt
590.	N319 & N325	Toba Tek Sing - Gojra	Lyallpur
591.	N325 & N326	Gojra - Node No. 326	-do-
592.	N326 & N327	Node No. 326 - Node No. 327	-do-
593.	N327 & N328	Node No. 327 - Node No. 328	-do-
594.	N328 & N320	Node No. 328 - Node No. 320	-do-
595.	N326 & N329	Node No. 326 - Samundri	-do-
596.	N329 & N330	Samundri - Node No. 330	-do-
597.	N330 & N327	Node No. 330 - Node No. 327	-do-
598.	N330 & N331	Node No. 330 - Node No. 331	-do-
599.	N331 & N328	Node No. 331 - Node No. 328	-do-
600.	N331 & N323	Node No. 331 - Kamalia	-do-
601.	N325 & N332	Gojra - Babbalpur	-do-
602.	N332 & N333	Node No. 332 - Node No. 333	-do-
603.	N333 & N326	Node No. 333 - Node No. 326	-do-
604.	N333 & N334	Node No. 333 - Dijkot	-do-
605.	N334 & N329	Dijkot - Samundri	-do-
606.	N334 & N335	Node No. 334 - Node No. 335	-do-
607.	N335 & N329	Node No. 335 - Samundri	-do-
608.	N335 & N336	Node No. 335 - Node No. 336	-do-
609.	N336 & N337	Node No. 336 - Satiana	-do-
610.	N337 & N338	Satiana - Tandianwala	-do-

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611.	N338 & N336	Tandlianwala - Node No. 336	-do-
612.	N335 & N197	Node No. 335 - Sadr gujra	Partially in Lyallpur Distt: and partially in Sahiwal District.
613.	N332 & N339	Bahbalpur - Node No. 339	-do-
614.	N339 & N333	Node No. 339 - Node No. 333	-do-
615.	N339 & N618	Node No. 339 - Fanepura	-do-
616.	N339 & N340	Node No. 339 - Node No. 340	-do-
617.	N340 & N341	Node No. 340 - Lyallpur	-do-
618.	N341 & N339	Lyallpur - Node No. 339	-do-
619.	N340 & N342	Node No. 340 - Node Node No. 342	-do-
620.	N341 & N342	Lyallpur - Node No. 342	-do-
621.	N342 & N343	Node No. 342 - Node No. 343	-do-
622.	N343 & N344	Node No. 343 - Node No. 344	-do-
623.	N340 & N344	Node No. 340 - Node No. 344	-do-
624.	N344 & N345	Node No. 344 - Node No. 345	-do-
625.	N345 & N341	Node No. 345 - Lyallpur	-do-
626.	N341 & N337	Lyallpur - Node No. 337	-do-
627.	N341 & N334	Lyallpur - Node No. 334	-do-
628.	N343 & N348	Node No. 343 - Node No. 348	Lyallpur
629.	N348 & N346	Node No. 348 - Chak Jhumra	-do-
630.	N346 & N347	Chak Jhumra - Node No. 347	-do-
631.	N347 & N348	Node No. 347 - Node No. 348	-do-
632.	N347 & N349	Node No. 347 - Node No. 349	-do-
633.	N348 & N350	Node No. 348 - Node No. 350	-do-
634.	N350 & N347	Node No. 350 - Node No. 347	-do-
635.	N350 & N257	Node No. 350 - Shah Kot	-do-
636.	N257 & N351	Node No. 257 - Node No. 351	-do-
637.	N351 & N348	Khurrianwala - Node No. 348	-do-
638.	N351 & N343	Khurrianwala - Node No. 343	-do-
639.	N349 & N258	Node No. 349 - Sangla Hill	Partially in Lyallpur Distt: and partially in Sheikhpura District.
640.	N257 & N352	Shah Kot - Node No. 352	Sheikhpura District.

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641.	N352 & N351	Node No: 352 - Khurrianwala	-do-
642.	N352 & N353	Node No: 352 - Jaranwala	-do-
643.	N353 & N349	Jaranwala - Bucheke	Partially in Lyallpur District Partially in Sheik- hupura District.
644.	N353 & N210	Jaranwala - Saujidiwala	-do-
645.	N353 & N345	Jaranwala - Node No: 345	-do-
646.	N325 & N354	Gojra - Mochiwala	Jhang.
647.	N354 & N332	Mochiwala - Bahbalpur	Partially in Lyallpur District Partially in Jhang District.
648.	N354 & N355	Mochiwala - Jhang Sadar	-do-
649.	N355 & N325	Jhang Sadar - Gojra	-do-
650.	N355 & N319	Baghi - Toba Tek singh	Partially in Lyallpur District Partially in Jhang District.
651.	N355 & N356	Jhang - Sadar - Node No: 356	Jhang District.
652.	N356 & N357	Node No: 356 - Shorkot	-do-
653.	N357 & N130	Shorkot - Garh Maluager - Node No:130	-do-
654.	N130 & N358	Node No: 130 - Node No: 358	-do-
655.	N358 & N359	Node No: 358 - Athoaran Hazari	-do-
656.	N359 & N360	Atharan Hazari - Node No: 360	-do-
657.	N360 & N356	Node No: 360 - Node No: 356	-do-
658.	N358 & N621	Node No; 358 - Node No: 621	-do-
659.	N357 & N539	Shorkot - Node No: 539	-do-
660.	N362.& N361	Node No: 362 - Node No: 361	Partially in Jhang District and Partially in Multan District.
661.	N361 & N102	Node No: 361 - Sarai Sidhu	Multan District.
662.	N361 & N101	Node No: 361 - Node No: 101	-do-
663.	N362 & N622	Node No: 362 - Basti Islam	Jhang District.
664.	N357 & N362	Shorkot - Node No: 362	-do-
665.	N359 & N363	AtharanHazari - Node No: 363	-do-
666.	N363 & N364	Node No: 363 - Node No: 364	-do-
667.	N364 & N360	Node No: 364 - Node No: 360	-do-
668.	N355 &N613	Jhang - Sadar - Massan	Jhang

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669.	N355 & N365	Node No: 355 - Node No: 365	-do-
670.	N365 & N366	Node No: 365 - Node No: 366	-do-
671.	N366 & N367	Chund - Kot Isa shah	-do-
672.	N367 & N368	Kot Isa Shah - Node No: 368	-do-
673.	N368 & N366	Node No: 368 - Chund	-do-
674.	N367 & N369	Kot Isa Shah - Node No: 369	-do-
675.	N369 & N368	Node No: 369 - Node No: 368	-do-
676.	N365 & N540	Node No: 365 - Barana	-do-
677.	N540 & N620	Barana - Node No: 620	-do-
678.	N370 & N371	Lalian - Chiniot	-do-
679.	N371 & N270	Chiniot - Pindi Bhattian	Partially in Gujranwala District Partially in Jhang District.
680.	N371 & N346	Chiniot - Chak Jhumra	Partially in Lyallpur District & Partially in Jhang District
681.	N372 & N342.	Node No: 372 - Node No: 342	-do-
682.	N372 & N623	Node No: 372 - Rajoa	Jhang District.
683.	N372 & N371	Node No: 372 - Chiniot	-do-
684.	N371 & N373	Chiniot - Ahawana	-do-
685.	N373 & N619	Ahawana - Node No: 619	-do-
686.	N373 & N332	Bhawana - Bahbalpur	Partially in Jhang District & Partially in Lyallpur District.
687.	N373 & N355	Bhanwana - Khiwa - Jhang - Sadar	Jhang District.
688.	N369 & N374	Node No: 369 - Sahiwal	Sargodha
689.	N374 & N375	Sahiwal - Faruka - Node No: 375	-do-
690.	N375 & N376	Node No; 375 - Node No: 376	-do-
691.	N376 & N366	Node No: 376 - Chund	Partially in Jhang District & Partially in Sargodha District.
692.	N375 & N377	Node No: 375 Sillanwali	Sargodha District.
693.	N377 & N540	Node No: 377 - Barana	-do-
694.	N374 & N378	Sahiwal - Sargodha	-do-
695.	N378 & N377	Sargodha - Node No: 377	-do-
696.	N378 & N370	Sargodha - Lalian	Partial in Sargodha District & Partially in Jhang District.

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697.	N378 & N379	Sargodha - Node No: 379	Sargodha
698.	N379 & N380	Node No: 379 - Node No: 380	-do-
699.	N380 & N381	Node No: 380 - Mitha Lak	-do-
700.	N381 & N382	Mitha Lak - Bhagatanwala	-do-
701.	N382 & N378	Bhagatanwala - Sargodha	-do-
702.	N382 & N383	Bhagatanwala - Node No: 383	-do-
703.	N383 & N370	Node No: 383 - Kalawal - Lalian	Partially in Sargodha District & Partially in Jhang District.
704.	N383 & N270	Node No: 383 - Pindi Bhattian	Partially in Sargodha District & Partially in Gujranwala District.
705.	N374 & N384	Sahiwal - Shahpur	Sargodha District.
706.	N384 & N379	Shahpur - Node No: 379	-do-
707.	N384 & N385	Shahpur - Node No: 385	-do-
708.	N385 & N379	Node No: 385 - Node No: 379	-do-
709.	N384 & N386	Shahpur - Jhawarian	Sargodha
710.	N386 & N385	Jhawarian - Node No: 385	-do-
711.	N386 & N387	Jhawarian - Node No: 387	-do-
712.	N387 & N388	Node No: 387 - Node No: 388	-do-
713.	N388 & N385	Node No: 388 - Node No: 385	-do-
714.	N387 & N389	Node No: 387 - Bhera	-do-
715.	N389 & N390	Bhera - Node No: 390	-do-
716.	N390 & N388	Bhalwal - Node No: 388	-do-
717.	N390 & N395	Bhalwal- Miana Gondal	-do-
718.	N390 & N393	Bhalwal - Kot Mumin	-do-
719.	N393 & N381	Kot Mumin - Mitha Lak	-do-
720.	N380 & N390	Node No: 380 - Bhalwal	-do-
721.	N389 & N391	Bhera - Miani	-do-
722.	N391 & N392	Miani - Miana Gordial	Partially in Sargodha District & Partially in Gujrat District.
723.	N392 & N541	Miana Gondal - Node No: 541	Partially in Sargodha District & Partially in Gujrat District.
724.	N541 & N394	Node No: 541 - Midh Rangah	Sargodha District.
725.	N394 & N393	Midh Ranjah - Kot Mumin	-do-
726.	N394 & N383	Midh Ranjah - Node No: 388	-do-

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727.	N392 & N395	Miana Gondal - Phularwan	-do-
728.	N395 & N390	Phularwan - Bhalwar	-do-
729.	N364 & N396	Node No: 364 - Jamali	Partially in Jhang District & Partially in Sargodha District.
730.	N396 & N397	Jamali - Node No: 397	Sargodha District.
731.	N397 & N398	Node No: 397 - Khushab	-do-
732.	N398 & N399	Jauharabad - Khushab	-do-
733.	N399 & N397	Khushab - Girot - Node No: 397	-do-
734.	N399 & N400	Khushab - Dhak	-do-
735.	N400 & N386	Dhak - Jhawarian	-do-
736.	N399 & N384	Khushab - Shahpur	-do-
737.	N399 & N401	Node No: 399 - Katha Saghral	-do-
738.	N401 & N400	Katha Saghral - Dhak	-do-
739.	N401 & N402	Katha Saghral - Node No: 400	-do-
740.	N402 & N403	Node No: 402 - Node No: 403	-do-
741.	N403 & N404	Node No: 403 - Node No: 404	Sargodha District
742.	N404 & N405	Node No: 404 - Naushahra	-do-
743.	N405 & N406	Naushahra - Node No: 406	-do-
744.	N405 & N399	Node No: 406 - Khushab	-do-
745.	N406 & N407	Node No: 406 - Node No: 407	-do-
746.	N407 & N408	Node No: 407 - Sokesar	-do-
747.	N408 & N409	Sokesar - Quaid-a-bad (Gunjyal)	-do-
748.	N409 & N410	Qaid-a-bad (Gunjyal) - Node No: 410	-do-
749.	N410 & N411	Node No: 410 - Node No: 411	Sargodha
750.	N411 & N624	Node No: 411 - Tabbi	-do-
751.	N411 & N398	Node No: 411 - Jauharabad	-do-
752.	N461 & N457	Node No: 461 - Kotla	Gujrat District
753.	N410 & N412	Node No: 410 & Node No: 412	Sargodha District.
754.	N412 & N413	Node No: 412 - Node No: 413	-do-
755.	N413 & N626	Node No: 413 - Node No: 626	-do-
756.	N413 & N414	Node No: 413 - Roda	-
757.	N414 & N397	Node No: 414 - Node No: 397	-do-
758.	N413 & N415	Node No: 413 - Node No: 415	-do-
759.	N415 & N416	Node No: 415 - Node No: 416	-do-
760.	N416 & N418	Node No: 416 - Baland	-do-

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761.	N416 & N396	Node No. 416 - Jamali	Sargodha
762.	N416 & N417	Nurpur - Node No. 417	-do-
763.	N417 & N418	Node No. 415 - Baland	-do-
764.	N418 & N414	Baland - Roda	-do-
765.	N132 & N419	Karor - Bhakkar	Partially in M.garh Distt: & partially in Mianwali Distt:
766.	N419 & N420	Bhakkar - Node No. 420	Mianwali Distt:
767.	N420 & N132	Node No. 420 - Fatehpur	Partially in Mianwali Distt: & M. garh Distt:
768.	N420 & N421	Node No. 420 - Mankera	Mianwali Distt:
769.	N421 & N132	Mankera - Node No. 132	Partially in Mianwali Distt and partially in M. garh Distt:
770.	N421 & N422	Mankera - Haiderabad	Mianwali Distt:
771.	N422 & N134	Haiderabad - Nawankot	Partially in Mianwali Distt: partially in M. garh District.
772.	N134 & N421	Nawankot - Kamyab - Mankera	-do-
773.	N422 & N363	Haiderabad - Attaran Hazari	Mianwali Distt:
774.	N134 & N359	Nawankot - Attaran Hazari	Partially in M. garh Distt: & partially in Jhang District.
775.	N419 & N423	Bhakkar - Node No. 423	Mianwali
776.	N423 & N424	Node No. 423 - Dullewala	-do-
777.	N424 & N425	Dullewala - Node No. 425	-do-
778.	N425 & N419	Node No. 425 - Bhakkar	-do-
779.	N423 & N562	Bhakkar - Border of Punjab (Node No. 562)	-do-
780.	N425 & N420	Node No. 425 - Node No. 420	-do-
781.	N424 & N417	Dullewala - Node No. 417	-do-
782.	N417 & N426	Node No. 417 - Gaurarwala	-do-
783.	N426 & N 425	Gaurarwala - Node No. 425	-do-
784.	N426 & N422	Gaurarwala - Mankera	-do-
785.	N426 & N 422	Gaurarwala - Kahuwala - Haiderabad	-do-
786.	N426 & N416	Gaurarwala - Node No. 416	-do-

1	2	3	4
787.	N423 & N427	Node No. 423 - Near Kalu Kot	Mianwali Dist
788.	N427 & N428	Near Kalu Kot - Node No. 428	-do-
789.	N428 & N429	Node No. 428 - Node No. 429	-do-
790.	N429 & N423	Node No. 429 - Node No. 423	-do-
791.	N429 & N424	Node No. 429 - Dullewala	-do-
792.	N427 & N430	Near Kalur Kot - Piplan Dab	-do-
793.	N430 & N431	Piplan Dab - Node No. 431	-do-
794.	N431 & N428	Node No. 431 - Node No. 428	-do-
795.	N431 & N432	Node No. 431 - Nawankot	-do-
796.	N428 & N432	Node No. 428 - Nawankot	-do-
797.	N429 & N432	Node No. 432 - Nawankot	-do-
798.	N432 & N424	Nawankot - Dullewala	-do-
799.	N430 & N433	Piplan Dab - Kundian	-do-
800.	N433 & N434	Node No. 433 - Node No. 434	-do-
801.	N434 & N435	Node No. 434 - Node No. 435	-do-
802.	N430 & N435	Node No. 430 - Node No. 435	-do-
803.	N435 & N431	Node No. 435 - Node No. 431	-do-
804.	N433 & N436	Node NO. 433 & Mianwali	-do-
805.	N436 & N437	Mianwali - Node No. 437	-do-
806.	N437 & N434	Mianwali - Node No. 434	-do-
807.	N437 & N438	Node No. 437 - Node No. 438	-do-
808.	N438 & N627	Node No. 438 - Node No. 627	-do-
809.	N438 & N439	Node No. 438 - Node No. 439	-do-
810.	N439 & N435	Node No. 439 - Node No. 435	-do-
811.	N438 & N409	Node No. 438 - Quaid-a-bad (Gunjijal)	-do-
812.	N412 & N439	Node No. 412 - Node No. 439	-do-
813.	N432 & N439	Nawan Jandanwala - Node No. 439	-do-
814.	N432 & N413	Nawan Jandanwala - Node No. 413	-do-
815.	N432 & N415	Nawan Jandanwala - Node No. 415	-do-
816.	N436 & N440	Node No. 436 - Isakhel	-do-
817.	N440 & N563	Isakhel - Node No. 563	-do-
818.	N440 & N441	Node No. 440 - Mushani	-do-
819.	N441 & N564	Mushani - Kamar Makarwal	-do-
820.	N441 & N442	Mushani - Node No. 442	-do-
821.	N442 & N443	Node No. 442 - Kalabagh	-do-
822.	N443 & N444	Kalabagh - Node No. 444	-do-

1	2	3	4
823.	N444 & N442	Node No. 444 - Node No. 442	Mianwali Distt:
824.	N443 & N565	Kalabagh - Node No. 565	-do-
825.	N444 & N445	Node No. 444 - Node No. 445	-do-
826.	N445 & N436	Node No. 445 - Mianwali	-do-
827.	N445 & N436	Node No. 445 - Mianwali	-do-
828.	N436 & N446	Mianwali - Musa Khel	-do-
829.	N446 & N408	Musa Khel - Sakaser	-do-
830.	N446 & N447	Musa Khel - Node No. 447	-do-
831.	N447 & N625	Node No. 447 - Chakrala - Node No. 625.	-do-
832.	N541 & N448	Node No. 541 - Node No. 448	Gujrat
833.	N448 & N628	Node No. 448 - Qadirabad (Node No. 628).	-do-
834.	N448 & N449	Node No. 448 - Node No. 449	-do-
835.	N449 & N450	Node No. 449 - Node No. 450	-do-
836.	N450 & N542	Node No. 450 - Node No. 542	-do-
837.	N542 & N276	Rasulnagar - Node No. 276	Partially in Gujrat and partially in Gujranwala Distt.
838.	N274 & N542	Node No. 274 - Node No. 451	Gujrat
839.	N287 & N291	Wazirabad - Daska	Partially in Gujranwala Distt: & partially in Sialkot District.
840.	N450 & N451	Node No. 450 - Kunjah Gujrat.	Gujrat
841.	N451 & N286	Gujrat - Node No. 286	-do-
842.	N451 & N452	Node No. 451 - Node No. 452	-do-
843.	N452 & N453	Node No. 452 - Jalalpur	-do-
844.	N453 & N451	Node No. 453 - Gujrat	-do-
845.	N453 & N454	Jalalpur - Node No. 454	-do-
846.	N454 & N455	Node No. 454 - Node No. 455	-do-
847.	N455 & N587	Node No. 455 - Tanda	-do-
848.	N455 & N588	Node No. 455 - Node No. 588	-do-
849.	N451 & N456	Node No. 451 - Daulat Nagar	-do-
850.	N456 & N452	Daulat Nagar - Node No. 452	-do-
851.	N456 & N457	Daulat Nagar - Kotla	-do-
852.	N457 & N458	Kotla - Karianwala	-do-

1	2	3	4
853.	N458 & N586	Karianwala - Node No. 586	Gujrat
854.	N458 & N454	Karianwala - Node No. 454	-do-
855.	N457 & N585	Kotla - Node No. 585	-do-
856.	N451 & N459	Gujrat - Lala Musa	-do-
857.	N459 & N460	Lala Musa - Kharian	-do-
858.	N460 & N461	Kharian - Node No. 461	-do-
859.	N461 & N456	Node No. 461 - Daulat Nagar	-do-
860.	N392 & N462	Mianagondal - Node No. 462	-do-
861.	N462 & N449	Node No. 462 - Node No. 449	-do-
862.	N462 & N463	Node No. 462 - Mandi Bahauddin	-do-
863.	N463 & N449	Mandi Bahauddin - Node No. 449	-do-
864.	N464 & N463	Node No. 464 - Mandi Bahauddin	-do-
865.	N464 & N465	Node No. 464 - Near Malakwal	-do-
866.	N465 & N462	Node No. 465 - Node No. 462	-do-
867.	N391 & N465	Miani - Node No. 465	Sargodha Distt:
868.	N464 & N466	Node No. 464 - Node No. 466	Gujrat
869.	N466 & N463	Node No. 466 - Mandi Burewala	-do-
870.	N466 & N467	Node No. 466 - Rasul - Sarai Alamgir	-do-
871.	N467 & N460	Sarai Alamgir - Kharian	-do-
872.	N460 & N 468	Kharian - Dinga	-do-
873.	N468 & N465	Dinga - Chilianwala - Node No. 466	-do-
874.	N468 & N459	Dinga - Lal Musa	-do-
875.	N468 & N450	Dinga - Node No. 450	-do-
876.	N467 & N583	Sarai Alamgir - Node No. 583	-do-
877.	N467 & N584	Sarai Alamgir - Node No. 584	-do-
878.	N403 & N543	Node No. 403 - Node No. 543	Partially in Sargodha and partially in Jhelum Distt:
		Kattha Saghral	
879.	N402 & N543	/Node No. 402 - Node No. 543	-do-
880.	N543 & N469	Node No. 543 - Buchal Khan - Kallar Kahar.	Jhelum Distt:
881.	N469 & N470	Kallar Kahar - Choa Saidan Shah	-do-
882.	N470 & N471	Choa Saidan Shah - Pind Dadan Khan	-do-
883.	N471 & N472	Pind Dadan Khan - Node No. 472	-do-
884.	N472 & N629	Node No. 472 - Lilla	-do-
885.	N472 & N400	Node No. 472 - Dhak	-do-

1	2	3	4
886.	N469 & N473	Kallar Kahar - Bhaun - Chakwal	Jhelum District
887.	N473 & N474	Chakwal - Node No. 474	--do--
888.	N474 & N470	Node No. 474 - Choa Saidan Shah	--do--
889.	N473 & N475	Chakwal - Node No. 475	--do--
890.	N475 & N476	Node No. 475 - Node No. 476	--do--
891.	N476 & N631	Node No. 476 - Nila	--do--
892.	N474 & N477	Node No. 474 - Node No. 477	--do--
893.	N477 & N478	Node No. 477 - Node No. 478	--do--
894.	N478 & N479	Node No. 478 - Near Sohawa	--do--
895.	N479 & N480	Near Sohawa - Node No. 480	--do--
896.	N480 & N630	Node No. 480 - Domelli	--do--
897.	N480 & N481	Node No. 480 - Node No. 481	--do--
898.	N481 & N581	Node No. 481 - Node No. 581	--do--
899.	N481 & N482	Node No. 481 - Node No. 482	--do--
900.	N482 & N483	Node No. 482 - Dina	--do--
901.	N483 & N484	Dina - Jhelum	--do--
902.	N484 & N482	Jhelum - Node No. 482	--do--
903.	N483 & N582	Dina - Mangla	--do--
904.	N484 & N467	Jhelum - Sarai Alamgir	Partially in Jhelum & partially in Gujrat Distt.
905.	N484 & N485	Jhelum - Node No. 485	Jhelum District
906.	N485 & N482	Node No. 485 - Dina	--do--
907.	N485 & N470	Node No. 485 - Choa Saidan Shah	--do--
908.	N484 & N471	Node No. 484 - Pind Dadan Khan	--do--
909.	N471 & N391	Pind Dadan Khan - Miani	Partially in Jhelum District & partially in Sargodha Distt:
910.	N476 & N486	Node No. 476 - Chakri	Rawalpindi/Islama- bad.
911.	N486 & N487	Chakri - Node No. 487	--do--
912.	N487 & N488	Node No. 487- Chaunta - Node No. 488	--do--
913.	N488 & N486	Node No. 488 - Chakri	--do--
914.	N488 & N489	Node No. 488 - Riwat	--do--
915.	N489 & N490	Riwat - Mandra	--do--
916.	N490 & N491	Mandra - Node No. 491	--do--
917.	N491 & N492	Node No. 491 - Node No. 492	--do--

1	2	3	4
918.	N492 & N493	Node No. 492 - Node No. 493	Rawalpindi/Islamabad.
919.	N493 & N478	Node No. 493 - Node No. 478	Partially in Rawalpindi and partially in Jhelum Distt:
920.	N492 & N473	Node No. 492 - Dhudial - Chakwal	-do-
921.	N491 & N494	Node No. 491 - Gujar Khan	Rawalpindi Distt:
922.	N494 & N495	Gujar Khan - Node No. 495	-do-
923.	N495 & N479	Node No. 495 - Near Sohawa	-do-
924.	N487 & N496	Node No. 487 - Ranial	-do-
925.	N496 & N497	Ranial - Node No. 497	-do-
926.	N497 & N498	Node No. 497 - Node No. 498	-do-
927.	N498 & N499	Node No. 498 - Node No. 499	-do-
928.	N499 & N489	Node No. 499 - Riwat	-do-
929.	N489 & N500	Riwat - Node No. 500	-do-
930.	N500 & N490	Node No. 500 - Node No. 490	-do-
931.	N500 & N501	Node No. 500 - Node No. 501	-do-
932.	N501 & N494	Node No. 501 - Gujar Khan	-do-
933.	N500 & N502	Node No. 500 - Kahutta	-do-
934.	N502 & N503	Kahutta - Node No. 503	-do-
935.	N503 & N501	Node No. 503 - Node No. 501	-do-
936.	N502 & N578	Kahutta - Panjar	-do-
937.	N503 & N579	Node No. 503 - Node No. 579	-do-
938.	N501 & N580	Node No. 501 - Node No. 580	-do-
939.	N502 & N504	Kahutta - Node No. 504	-do-
940.	N504 & N577	Node No. 504 - Lahtrar Bala - Kotli - Node No. 557	-do-
941.	N502 & N505	Kahutta - Node No. 505	Rawalpindi/Islamabad.
942.	N505 & N498	Node No. 505 - Node No. 498	-do-
943.	N505 & N499	Node No. 505 - Node No. 499	-do-
944.	N497 & N632	Node No. 497 - Node No. 632	-do-
945.	N497 & N506	Node No. 497 - Node No. 506	-do-
946.	N506 & N507	Node No. 506 - Rawalpindi	-do-
947.	N507 & N497	Rawalpindi - Node No. 497	-do-
948.	N507 & N508	Rawalpindi - Node No. 508	-do-
949.	N508 & N504	Node No. 508 - Node No. 504	-do-

1	2	3	4
950.	N507 & N509	Rawalpindi - Node No. 509	Rawalpindi/Isলামabad.
951.	N509 & N508	Node No. 509 - Node No. 508	-do-
952.	N509 & N510	Node No. 509 - Node No. 510	-do-
953.	N510 & N511	Node No. 510 - Node No. 511	-do-
954.	N511 & N512	Node No. 511 - Node No. 512	-do-
955.	N512 & N504	Node No. 512 - Ban - Node No. 504	-do-
956.	N511 & N575	Node No. 511 - Node No. 575	-do-
957.	N512 & N576	Node No. 512 - Node No. 576	-do-
958.	N510 & N633	Node No. 510 - Islamabad	-do-
959.	N506 & N513	Node No. 506 - Node No. 513	-do-
960.	N507 & N513	Rawalpindi - Node No. 513	-do-
961.	N513 & N509	Node No. 513 - Node No. 509	-do-
962.	N506 & N514	Node No. 506 - Node No. 514	-do-
963.	N514 & N634	Node No. 514 - Golra	-do-
964.	N506 & N515	Node No. 506 - Node No. 515	-do-
965.	N515 & N516	Node No. 515 - Taxila	-do-
966.	N516 & N574	Taxila - Node No. 574	-do-
967.	N516 & N517	Node No. 516 - Node No. 517	-do-
968.	N517 & N518	Node No. 517 - Hasan Abdal	-do-
969.	N518 & N572	Hasan Abdal - Node No. 572	-do-
970.	N516 & N573	Taxila - Node No. 573	-do-
971.	N404 & N519	Node No. 404 - Chinji	Partially in Sargodha Distt: & partially in Campbellpur Distt:
972.	N519 & N520	Chinji - Dhumal - Node No. 520	Cambellpur District
973.	N520 & N447	Node No. 520 - Node No. 447	Partially in Campbellpur Distt: & partially in Mianwali District.
974.	N520 & N521	Node No. 520 - Pachnand - Trap	Campbellpur Distt:
975.	N521 & N522	Trap - Tamman	-do-
976.	N522 & N523	Node No. 522 - Node No. 523	-do-
977.	N523 & N520	Node No. 523 - Node No. 520	-do-
978.	N521 & N566	Trap - Node No. 566	-do-
979.	N522 & N524	Tamman - Node No. 524	-do-
980.	N524 & N523	Node No. 524 - Node No. 523	-do-
981.	N524 & N525	Node No. 524 - Talagang	-do-
982.	N525 & N519	Talagang - Chinji	-do-

1	2	3	4
983.	N525 & N526	Talagang - Node No. 526	-do-
984.	N526 & N527	Node No. 526 - Node No. 527	-do-
985.	N527 & N40	Node No. 527 - Jabbi	-do-
986.	N527 & N528	Node No. 527 - Near Pindi Gheb	-do-
987.	N528 & N529	Near Pindi Gheb - Hajri - Node No. 529	-do-
988.	N529 & N530	Node No. 529 - Jand	-do-
989.	N530 & N531	Jand - Pind Sultani - Node No. 531	-do-
990.	N531 & N528	Node No. 531 - Mianwali - Node No. 528	-do-
991.	N529 & N567	Node No. 529 - Lakrimar	-do-
992.	N530 & N568	Jand - Node No. 568	-do-
993.	N531 & N532	Pind Sultani - Node No. 532	-do-
994.	N532 & N533	Node No. 532 - Campbellpur	-do-
995.	N532 & N569	Node No. 532 - Nara	-do-
996.	N533 & N534	Campbellpur - Node No. 534	-do-
997.	N534 & N535	Node No. 534 - Node No. 535	-do-
998.	N535 & N518	Node No. 535 - Hasan Abdal	Partially in Campbellpur Distt: & partially in Rawalpindi Distt:
999.	N517 & N536	Node No. 517 - Fatehjang	Campbellpur Distt:
1000.	N536 & N533	Fatehjang - Campbellpur	-do-
1001.	N536 & N531	Fatehjang - Node No. 531	-do-
1002.	N536 & N528	Fatehjang - Near Pindi Gheb	-do-
1003.	N536 & N537	Fatehjang - Galli Jagir	-do-
1004.	N537 & N526	Galli Jagir - Khaur - Node No. 526.	-do-
1005.	N534 & N538	Node No. 534 - Attock	-do-
1006.	N538 & N535	Attock - Node No. 535	-do-
1007.	N538 & N570	Attock - Node No. 570	-do-
1008.	N535 & N571	Node No. 535 - Hazro - Node No. 571.	-do-
1009.	N536 & N515	Fatehjang - Node No. 515	-do-
1010.	N537 & N496	Galli Jagir - Node No. 496	Partially in Campbellpur Distt: and partially in Rawalpindi Distt:
1011.	N537 & N487	Galli Jagir - Node No. 487	-do-
1012.	N525 & N475	Talagang - Bhagwal - Node No. 475	Partially in Campbellpur Distt: and partially in Jhelum District.

1	2	3	4
1013.	N93 & N112	Muzffargarh - Khangarh	Muzaffargarh Distt.
1014.	N112 & N71	Khangarh - Shujaabad	Partially in Muzaffargarh Distt. & Partially in Multan District.
1015.	N106 & N83	Alipur - near Uch	Partially in Muzaffargarh District and partially in Bahawalpur District.
1016.	N106 & N43	Alipur - near Uch	-do-
1017.	N108 & N64	Node No: 108 - Jalalpur Pirwala	Partially in Muzaffargarh District and partially in Multan District.
1018.	N150 & N148	D.G. Khan - Node No: 148	D.G. Khan
1019.	N147 & N150	Node No: 147 - D.G. Khan	D.G. Khan
1020.	N525 & N473	Talagang - Chakwal	Partially in Campbellpur District and Partially in Jhelum District.
1021.	N124 & N612.	Node No: 124 - Rangpur	Muzaffargarh District.
1022.	N196 & N191.	Okara - Node No: 191	Sahiwal District.
1023.	N225 & N237	near Raiwind - Node No: 237	Lahore District.
1024.	N259 & N260.	Node No: 259 - Node No: 260	Sheikhupura District
1025.	N255 & N265.	Node No: 255 - Node No: 265	Sheikhupura District
1026.	N323 & N170	Kamalia - Harappa	Layallpur District.
1027.	N376 & N540	Node No: 376 - Barana	Partially in Jhang Distt. and partially in Sargodha District.
1028.	N378 & N380	Sargodha - Node No: 380	Sargodha District.
1029.	N405 & N407.	Naushehra - Node No: 407	-do-
1030.	N57 & N58	Bahawalnagar - Node No: 58	Bahawalnagar District
1031.	N55 & N602	Fort Abbas - Phulra - Node No: 602	-do-
1032.	N54 & N601	Node No: 54 - Node No: 601	-do-
1033.	N151 & N610	Kharor - Node No: 610	D.G. Khan

PROVINCE OF PUNJAB

1. Total number of Nodes = 634
2. Total number of Links = 1033

*
NODE DICTIONARY
 (PUNJAB PROVINCE)

**

S.NO.	NODE NO.	DESCRIPTION	NAME OF THE DISTRICT
1.	N-005	Intersection of Lamma-Ghauspur Road with link road from Rahim Yar Khan.	Rahim Yar Khan
2.	N-006	Rahim Yar Khan	do
3.	N-008	Kot Samaba	do
4.	N-020	Liaquatpur	do
5.	N-073	Basti Maluk	Multan
6.	N-078	Intersection of Tibba Makhdum Road with Dunyapur Road near Multan.	do
7.	N-104	Mian Channu	do
8.	N-106	Ali Pur	Muzaffargarh.
9.	N-108	Intersection of Shahr-Sultan Alipur Road with link road from Jatoi Janubi.	do
10.	N-119	Intersection of Shahdanlund Link Road with Kot Addu Road Near Daira Din Panah.	do
11.	N-131	Karor	do
12.	N-146	Intersection of Fazilpur Kot Chutta Road with Link Road from Jampur.	Dera Ghazi Khan
13.	N-148	Draman	do
14.	N-150	Intersection of Sakhi Sarwar Shadan Lund Road with Link road from Draman.	do
15.	N-154	Shadan Lund	do
16.	N-164	Intersection of link Road from Mian Channu Chichawatni Road near Shaikh Fazil.	Sahiwal
17.	N-168	Chichawatni	do
18.	N-175	Intersection of link road from Arifwala with G.T. Road near Sahiwal.	do
19.	N-177	Pakka Sidhar	do

S.No.	NODE NO.	DESCRIPTION	NAME OF THE DISTRICT
20.	N-193	Intersection of Pak Pattan-Dipalpur road with link road from Haveli.	Sahiwal
21.	N-201	Renala Khurd	- do -
22.	N-211	Pattoki	Lahore
23.	N-217	Kasur	- do -
24.	N-221	Intersection of Raiwind-Pattoki Road with link road from Kot Radha Krishan	- do -
25.	N-223	Raiwind.	- do -
26.	N-224	Intersection of link road from Raiwind with G.T.Road near Chung.	- do -
27.	N-236	Laliani	- do -
28.	N-251	Kot Chutta	Dera Ghazi Khan.
29.	N-285	Kamoke	Gujranwala.
30.	N-294	Intersection of Link road from Dhallewali with Sambrial - Sialkot Road.	Sialkot
31.	N-297	Sialkot	Sialkot
32.	N-314	Narowal	- do -
33.	N-334	Dijkot	Lyallpur (Faisalabad)
34.	N-342	Intersection of Lyallpur (Faisalabad) Chiniot Road with link road from Khurrianwala	- do -
35.	N-355	Jhang Sadar	Jhang
36.	N-370	Lalian	Sargodha
37.	N-371	Chiniot	Jhang
38.	N-388	Intersection of Bhalwal Shahpur Road with link road from Jhawarrian near Bhalwal.	Sargodha.
39.	N-435	Intersection of Quaidabad Piplan Road with Mianwali Dullewala Road.	- do -
40.	N-450	Intersection of Akalgarh Dinga Road with Phalia Kunjah Road.	Gujrat.

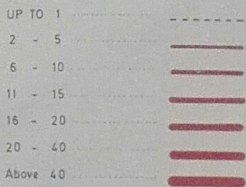
S.NO.	NODE NO.	DESCRIPTION	NAME OF THE DISTRICT
41.	N-451	Gujrat	Gujrat
42.	N-459	Intersection of Link Road from Chilianwala with G.T. Road near Lala Musa	- do -
43.	N-460	Kharian.	- do -
44.	N-463	Mandi Bahauddin	- do -
45.	N-482	Dina	Jhelum.
46.	N-484	Jhelum	- do -
47.	N-492	Intersection of Mandara Dhudial Road with link road from Saiyid.	Rawalpindi
48.	N-494	Gujar Khan	- do -
49.	N-497	Intersection of Link Road from Ranial with G.T. Road near Rawalpindi.	- do -
50.	N-499	Intersection of G.T. Road with Islamabad road near Riwayat.	- do -
51.	N-506	Intersection of G.T. Road with Islamabad road near Kohinoor Mills.	- do -
52.	N-510	Near Faisabad Chowk	- do -
53.	N-514	Intersection of Golra Road with G.T. Road.	- do -
54.	N-516	Intersection of G.T. Road with Haripur Road near Taxila.	- do -
55.	N-518	Hasan Abdal	Campbellpur.
56.	N-525	Talagang	- do -
57.	N-533	Campbellpur	- do -
58.	N-535	Intersection of Hazro Road with G.T. Road	- do -

*Description of only those nodes has been given where accidents were recorded during 1972.

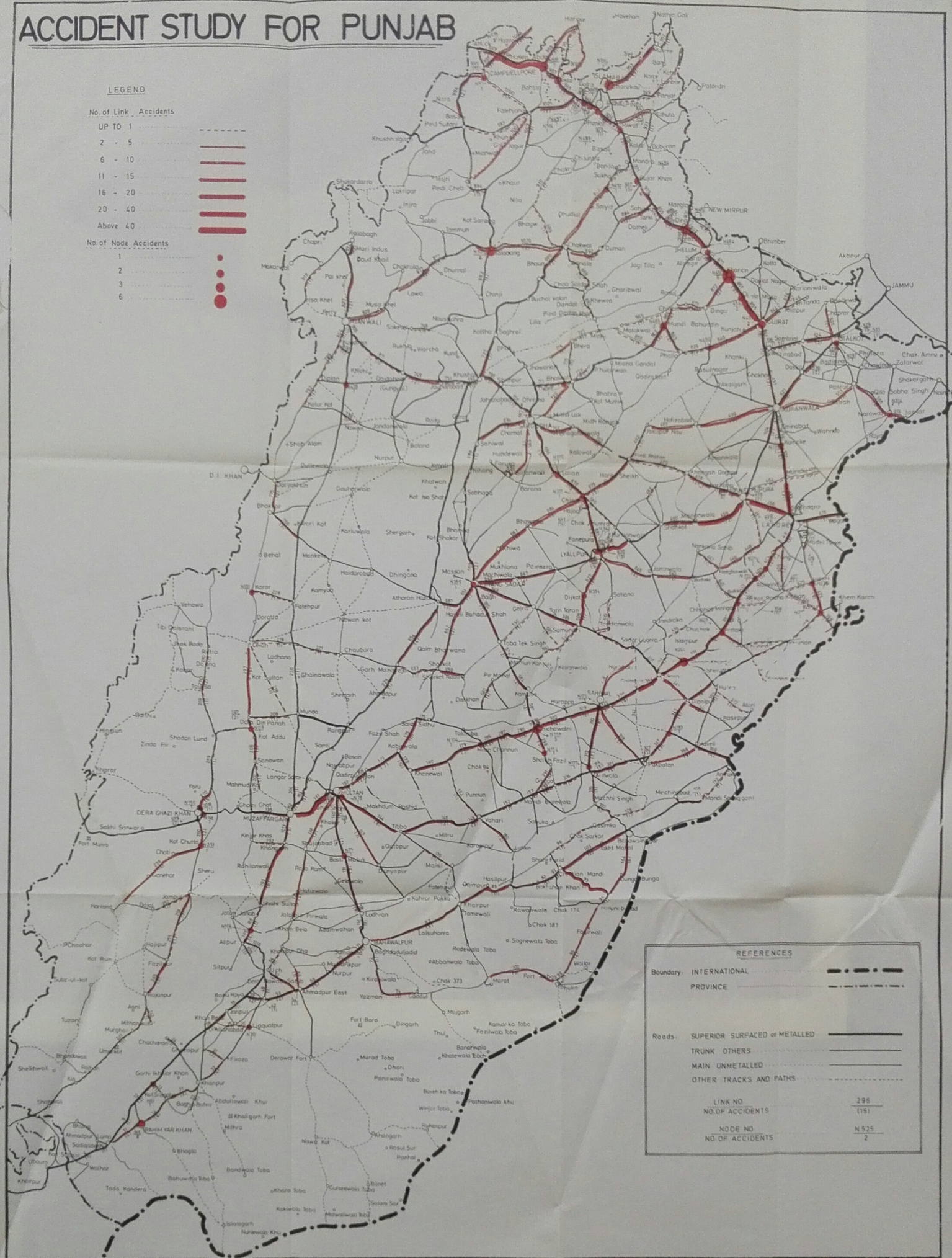
ACCIDENT STUDY FOR PUNJAB

LEGEND

No. of Link Accidents



No. of Node Accidents



REFERENCES

Boundary: INTERNATIONAL	-----
PROVINCE	-----
Roads: SUPERIOR SURFACED or METALLED	=====
TRUNK OTHERS	-----
MAIN UNMETALLED	-----
OTHER TRACKS AND PATHS	-----
LINK NO.	296
NO. OF ACCIDENTS	1151
NODE NO.	N 525
NO. OF ACCIDENTS	2