

URBANISATION AND TRAFFIC MANAGEMENT IN AIZAWL CITY

**Dissertation Submitted in Partial Fulfillment for the Award of the
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By

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DECLARATION

I, Laltleipua, hereby declare that the subject matter of this dissertation is the record of work done by me, that the contents of this dissertation did not form the basis the award of any previous degree to me or to the best of my knowledge or anybody else, and that the dissertation has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Master of Philosophy in Public Administration.

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Research Scholar

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ABBREVIATIONS

AMC - Aizawl Municipal Corporation
ASI - Additional Superintendent of Police
ASP – Additional Superintendent of Police
BRT - Bus Rapid Transit
CORS – Committee on Road Safety
DOT- Department of transport
DSP - Deputy Superintendent of Police
E&N - Excise & Narcotics
F&ES – Fire and Emergency Service
GOM – Government of Mizoram
HMTV – Heavy Motor vehicle
HOV - High-Occupancy Vehicle
LMV – Light Motor Vehicle
MJA – Mizoram Journalist Association
MPS – Mizoram Police Service
MV – Motor Vehicle
MZU – Mizoram University
OC - Officer-in-Charge
P&E – Power and Electricity
P.W.D - Public Works Department
R.O. – Research Officer
S.I – Sub Inspector
S.P - Superintendent of Police
T.O – Town Officer
TCC- Traffic Coordination Committee
TSI - Town Sub inspector

Introduction Chapter 1

1.1 Introduction

With the growth of urbanization one of the big concerns for the residents and public officials round the world is traffic congestions. Society demands certain sets of rules in order to survive and prosper with these issues. Laws as well as the enforcement of these, has been a leading component for many societies and are among the most critical indicators that act as the foundation of its success. Traffic regulations differ in all states but, they serve the same function. That purpose would be to provide and preserve safety to motorists. Success Traffic laws are an essential element of regulation. But it would be simply impossible for the globe to be without traffic and driving rules, especially in today's world, a fast paced society where you will find large amounts of vehicles on roads everywhere.

Traffic laws really are an essential element of regulation. It would be simply impossible for the globe to be without traffic and driving rules, especially in today world a fast paced society where you will find large amounts of vehicles on roads everywhere. These regulations are enforced by the specific traffic control organizations and differ from state to state. It is necessary to learn concerning the traffic rules and regulations of the state where you live also to follow them correctly to be able to have safe road traveling. These regulations cover numerous areas such as speed limitations, traveling directions and other relevant issues. Suitable training and awareness efforts are designed as a way to ensure that these regulations are fully understood and followed. Traffic indications are a valuable area of the visitor's rules and one need to truly have a thorough comprehension of the rules. These laws ensure the easy flow of traffic and security of the pedestrians and travelers in busy traffic places. The driving laws and the visitors laws are almost exactly the same thing as the road safety requirements are covered by them.

Traffic laws were created in ways, which makes it easier for the motorists in addition to other road-users to carry out their routine traveling in a more convenient and safe mode. Nevertheless, driving laws are somewhat more

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associated to the unique behavioral patterns and approaches of motorists which may be a threat for them-and others. A guideline is provided by these rules to motorists making sure they drive in a safer fashion and obey all traffic laws and regulations. The execution of the laws is vital and it is not an easy endeavor. The rising amount of road injuries is a significant issue for all. Driving accidents are one of most the typical reasons behind increased number of unexpected departures. Traffic and driving regulations help to ensure traffic set up. Traffic laws were created in ways which makes it easier for the motorists in addition to other road-users to carry out their routine traveling in a more convenient and safe mode. Now, with the ever-increasing number of vehicles in the roads, it is crucial to design and enforce smart and user-friendly rules in order to maintain safe roadway.

Aizawl, the capital city of the Indian north eastern State, Mizoram, like many other Indian major cities, has been experiencing economic development and fast process of urbanization.¹ At the same time, many urban transport problems have emerged which decreases the quality of people's life and a threats to sustainable development of economy. This thesis is a study on the Aizawl traffic management vis-à-vis its urbanization.

In this chapter, some basic information about Aizawl city will be introduced, such as growth of population and growth of vehicles. In addition, it comes to the current situation of Aizawl traffic problems. Then the study is going to list policy and planning both from national government and local government. At last it will come up with the thesis research question. With the increase of urbanization traffic congestions are one of the big concerns for the residents and public officials round the world. Developments of economy and technology have also led to rapid growth of private vehicles in the first decade of 21th century. Aizawl is a typical one of

¹ Mizoram Forced Urbanisation
http://www.epw.in/system/files/pdf/1981_16/36/mizoram_forced_urbanisation.pdf accessed on 23/10/2017

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those cities, which also is in the process of urbanization especially in the latest decades.

1.2 Level of Urbanization and Population Growth in Aizawl

Aizawl is the oldest and the biggest urban centre in the state of Mizoram. It has an area of 3,576 sq km with a population of 4, 00,309 and population density per sq km of 11 (Census 2011).² Aizawl has been in existence since 1951 and has passed through evolutionary process. In the last six decades it has recorded unprecedented growth and attained the status of class I city in 1991. Among the North-Eastern States, Mizoram is most urbanized with 51.5 per cent urban population, though in terms of absolute contribution to total urban population in the country, Mizoram's contribution is just 0.1 percent. There has been a sharp increase in urban population since 1951 as can be seen from table 1.2. Such demographic changes is perhaps said to be one of the inevitable consequences of the measures to contain insurgency in Mizoram, including the programmed of regrouping of villages.³ Besides, there are a number of factors responsible for the high growth of urban population in the state. Migration of people from rural areas to urban areas in search of livelihood is one of the major reasons. Natural growth of population; i.e. birth rate is higher than death rate in urban areas, expansion of town areas especially addition of new towns to the already existing ones in 1981.

Differential provision of physical infrastructure near roads and high differential development investment in Aizawl district are some of the factors responsible for the growth of urban population. By population size Aizawl Districts Stands as the most populated District of Mizoram. In terms of literacy, Aizawl district with a literacy rate of 97.9 against 91.3 % of the states and occupies at number one among all eight districts of the state.

² Census of India (2011) *Mizoram District Census Handbook*. Directorate of Census Operation Mizoram

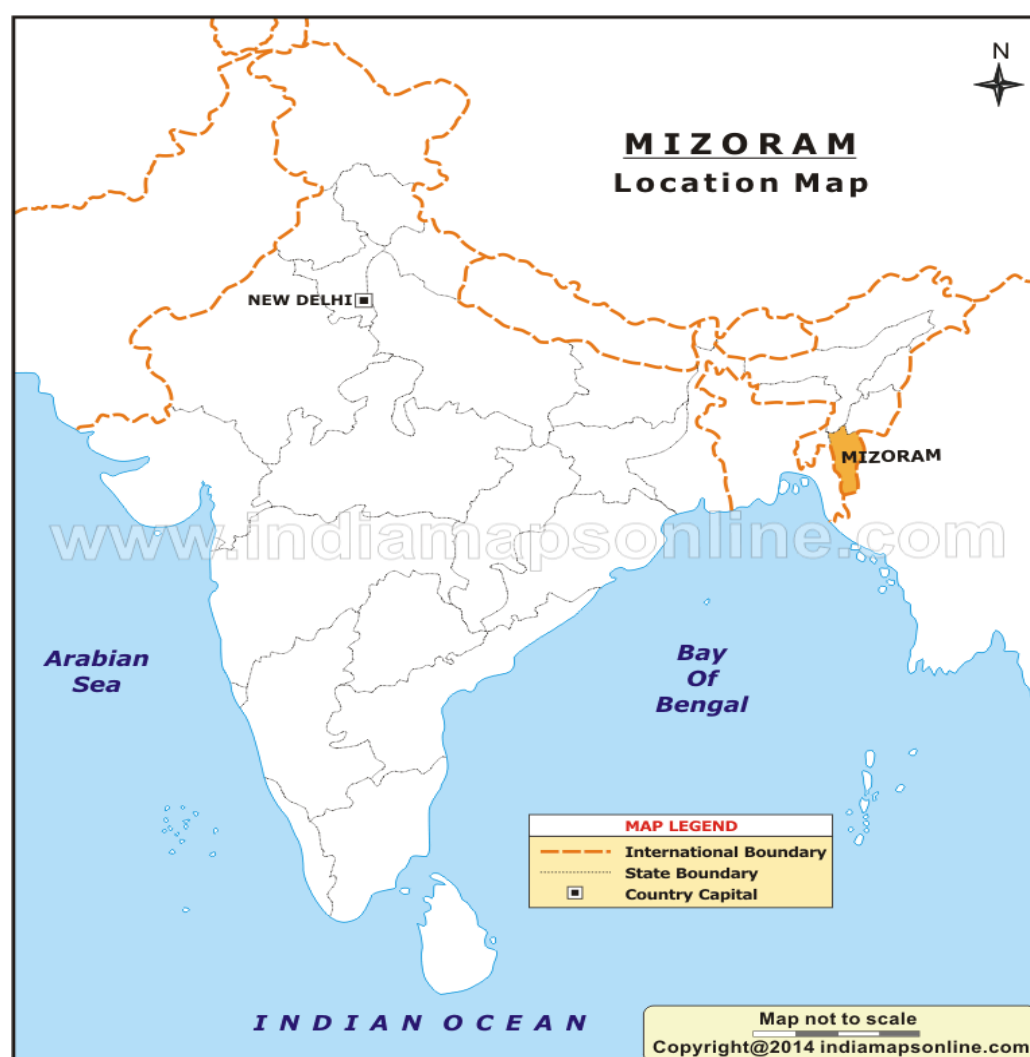
³ Mizoram Forced Urbanisation

http://www.epw.in/system/files/pdf/1981_16/36/mizoram_forced_urbanisation.pdf accessed on 23/10/2017

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The percentage growth of population of Aizawl Town/City during 2001-2011 has been found to be 22.9 % against the average decadal growth of 23.5 % for the whole Eight District. Out of 23 notified Towns in Mizoram, there are 4 such towns in the district and there was no change in this total Number of towns.

MAP 1: Political Map of Mizoram in India



(Source: www.indiamapsonline.com) accessed on 22.10.2017

Village Sihphir with a population of 6,528 is the most populous village and Village Edenthar with a population of 25 is the least populated in the District. Out of 126 uninhabited villages in the State, there are only 10 such villages in the District.

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MAP 2: Aizawl District Map.



(Ref: <http://sericulture.mizoram.gov.in/uploads/file/aizawl-dist-map.jpg>) accessed on 22.10.2017.

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TABLE 1. Urbanization of Mizoram: 1951-2011

Year	No. of Towns	Total Population	Urban Population	Percentage of Urban Population
1951	1	1,96,202	6,956	3.54
1961	1	2,66,063	14,257	5.34
1971	2	3,32,390	37,759	11.36
1981	6	4,93,757	1,21,814	24.67
1991	22	6,89,756	3,17,946	46.20
2001	23	8,88,573	4,41,006	49.63
2011	23	10,91,014	5,61,977	51.51

Source: *Directorate of Economics and Statistics, Government of Mizoram, Statistical Handbook, Mizoram 2014.*

The density of population of Aizawl District is 112 against the average density of 52 for the whole state and it ranks number 1 among the districts of Mizoram.⁴

TABLE 2: District wise area, distribution of population, decadal growth rate, sex ratio and population density (2011 census)

District	Area (Sq. km)	Population			% decadal growth rate of population	Sex Ratio Females per 1000 males	Population Density (per sq.km)
		Persons	Males	Females			
1	2	3	4	5	6	7	8
Mamit	3,025	86,364	44,828	41,536	37.56	927	29
Kolasib	1,386	83,955	42,918	41,037	27.28	956	61
Aizawl	3,576	4,00,309	1,99,270	2,01,039	22.92	1,009	112
Champhai	3,185	1,25,745	63,388	62,357	16.01	984	39

⁴ Government of Mizoram, *Statistical Handbook Mizoram 2017*

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Serchhip	1,421	64,937	32,851	32,086	20.56	977	46
Lunglei	4,536	1,61,428	82,891	78,537	17.64	947	36
Lawngtlai	2,557	1,17,894	60,599	57,295	60.14	945	46
Siaha	1,399	56,574	28,594	27,980	-7.34	979	40
Total	21,081	10,97,206	5,55,339	541,867	23.48	976	52
<i>Source: Directorate of Census Operations, Mizoram</i>							

Aizawl was categorized as a class V town. It was upgraded to class IV town population of 14257 in 1961. Its population increased by 105.14 percent during 1951-1961, as against 35.61 percent increased in total population. In 1971, the population of Aizawl increased further to about 32000 persons with a percentage increase of 122.6 during 1961-1971 and the town was categorized as class III town.⁵ Aizawl was categorized as class II town after its population increased to 74.5 thousand persons as per the 1981 census. In 1991, its population further increased to 1.55 lakhs and the town was upgraded to class I. Lunglei also witnessed rapid population growth having 17 thousand populations according to 1981 census and 30.56 thousand populations in 1991 census. With the increase in population as stated by the 1981 Census, four towns of Mizoram namely, Kolasib, Champhai, Serchhip and Siaha were upgrade to class V town. The number of towns suddenly jumped up to 22, as order new towns like Thenzawl, Darlawn, Mamit Saitual, Khawzawl etc..., were included and categorized as class V towns.⁶

Traffic congestion happened in Aizawl, is partly caused by the growing number of three kinds of populations, which encourages further growing of transportation in different ways. Firstly the growth of permanent residents created more private cars; second the growth of mobile population increased the number public transit, since mobile population mostly came from relatively poor areas and they earned lower income in Aizawl; and third the growth of tourists put much more pressure on

⁵ Prasad, R.N and Agarwal, A.K (2003) *Modernization of The Mizo Society*, New Delhi Publications

⁶ Prasad, R.N and Agarwal, A.K (2003) *Modernization of The Mizo Society*, New Delhi Publications

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public transits system also, as most tourists come from other cities to Aizawl and they usually travel by public buses or taxi in Aizawl urban districts.



Pic: View of Aizawl City, (credit Johnny)

1.3 Growth of vehicles

When compared with the growth of population, growth of vehicles have more influence on traffic system directly. It has been growing rapidly in the past ten years, since the growing number of population and more related to people's growing incomes. As we see in table 3 number of vehicle registered government and private the number of vehicles has been increased from year to year. The number of vehicles from the year 2005 compare to 2015 tremendously increased. Among the registered vehicles private motor cars are much higher than government vehicles.

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In 2015-2016, the number of new vehicle registered in Aizawl shot up to 1, 65,694, from 1, 21,330 in 2012-2013, according to the Aizawl Statistical Handbook. Out of total registered vehicles, the number of cars, motorcycle is 1, 00,270 said the handbook (2016), prepared by the Directorate of Economics & Statistics, Government Mizoram. According to Transport Department data, two-wheeler continue to dominate the city roads (over 1, 00,270) followed by cars (21065). The city has seen a steady increase in the number of vehicles being registered from 6059(2005) to 15,928 on August 2017 as we see in Table 4. Transport Department officials said at least 3120 more vehicles had been added to this tally this December.

These statistics validate a study, ‘urban mobility trends in Indian cities and its implications’ (Published in Developing Country perspective on public service Delivery), which noted an ‘alarming’ shift towards private vehicles in Aizawl.

TABLE 3: Number of vehicles on road during 1st April 2015 to 31st March 2016 Mizoram

Sl.No	Type of Vehicle	Registered during the year 2015-2016		Progressive total vehicle on road up to 31 st March 2016		Grand total
		Private	Govt.	Private	Govt.	
1	TT of two Wheelers	10087	61	99170	1100	100270
2	Auto Rickshaw	257	-	4840	2	4842
3	Auto Rickshaw(G)	-	-	118	2	120
4	Motor Cab	149	-	8073	-	8073
5	Maxi Cab	163	-	2958	1	2959
6	Motor Cars	1782	7	20724	341	21065
7	Jeep	1173	60	14211	1360	11571
8	Gypsy	10	10	2914	1145	4059
9	Stage Carriage	33	4	951	317	1268
10	Ambulance	7	1	31	48	79

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11	Fire Fighter	-	-	1	20	21
12	Recovery Van	-	-	14	3	17
13	Truck & Lorries	270	3	5107	490	5597
14	Tractors	18	-	293	40	333
15	Trailers	-	-	80	23	103
16	Excavator	108	-	1196	11	1027
17	Prison Van	-	-	-	7	7
18	Mac Crane	1	-	8	9	37
19	Others	4	-	61	5	66
	TOTAL	14062	146	160770	924	65694

Source: Director, Transport Department (-) Nil

TABLE 4: Number of Vehicles Registered Private and Government (2005-2015)

SI	Year	No of Private vehicles	No of Govt vehicles	Total
1	2	3	4	5
1	2005-2006	5,869	190	6,059
2	2006-2007	5,570	98	5,668
3	2007-2008	4,746	204	4,950
4	2008-2009	7,377	168	7,545
5	2009-2010	10,004	302	10,306
6	2010-2011	11,506	228	11,734
7	2011-2012	14,052	193	14,245
8	2012-2013	15,073	152	15,225
9	2013-2014	15,736	159	15,895
10	2014-2015	15,736	192	15,928

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TABLE 5: Growth of vehicles in Aizawl city. (April 2016-2017August)

Vehicle Code No.	Name of Vehicle	Aizawl District		
		Non Gov't Vehicle	Gov't Vehicle	Total as on 31.3.2017
1 to 8	Two Wheeler	82036	1020	83056
15	LMV(Car)	18141	286	18427
16	LMV (Imported)	1	0	1
17	LMV(Van)	695	17	712
18	LMV(Jeep)	4436	851	5287
19	LMV(Gypsy)	2403	856	3259
25	Invalid Carriages	7	1	8
26	Three wheeler private	1	2	3
30	Trailer with private Vehicle	4	1	5
33	Light Tractor	1	1	2
34	Medium Tractor	0	0	0
35	Heavy Tractor(Agri)	0	0	0
37	Excavator	707	0	712
38	Recovery Van	8	2	10
39	Black Hole Loader	1	0	1
40	Compactor Roller	1	0	1
41	Motor Grader	0	0	0
42	Mac Crane	14	9	23
45	Self Loding	3	0	3
51	Auto Rikshow	773	0	773
52	Jeep Taxi	8	0	8
53	Motor Cab (Taxi)	4484	0	4484
56	Maxi Cab	1400	1	1401
57	Tourist Taxi	11	0	11
58	Tourist Maxi Cab	3	0	3
59	Tourist Buss	7	0	7
60	Tourist LMV	109	0	109
61	Maxi Taxi	1	0	1
66	Prison Van	0	7	7
71	Mini Bus	219	5	294

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75	Delux Bus	0	0	0
82	Medium Bus	323	6	409
84	Heavy Bus	164	24	288
86	Medium Education Bus	0	1	1
87	Mini Education Bus	4	0	4
101	Three Wheeler (Goods)	38	1	39
102	Light Tractor	84	4	98
103	Medium tractor	35	1	46
104	Trailers	42	5	57
105	Light Goods Vehicle(LGV)	4987	8	5295
106	Medium Goods vehicle(MGV)	608	49	757
107	Heavy Good Vehicle(HGV)	2382	32	2614
110	Tanker	177		199
116	Postal Van	0	2	2
118	Delivery Van	0	0	0
119	Trailer (Agri)	16	7	23
129	Power Tiller (Agri)	1	0	1
130	Heavy Tractor	25	0	25
203	Multi Axle Goods Vehicle	0	0	0
204	Fire Fighter	0	0	20
206	Wheel Loader	17	4	21
207	JCB	0	0	0
208	Ambulance (LGV)	25	4	49
209	Ambulance (MGV)	1	0	1
210	Ambulance (HGV)	1	6	27
216	Road Roller	0	0	0
218	Hearse Van (LMV)	2	0	2
210	Hearse Van (MMV)	1	0	1
223	Articulated Vehicle	1	0	1
	Other code no.73,80,81,108)	0	0	0
	TOTAL	124407	180	128588

1.4 Current situations of Aizawl traffic problems.

The rapid growing number of vehicles has not been followed by increased roads capacity. As a result, more and more vehicles are congested on the roads. For the administrative convenience and effective management of traffic the entire Aizawl City is divided into Six Zones. A Zonal Officer is entrusted to look after a Zone and is responsible for ensuring a smooth flow of traffic in the Zone. He is also responsible for supervision and maintenance of discipline of his field staff and looking into all traffic related problems, including investigation of accident cases.

In the capital city Aizawl, traffic jam is still an unavoidable daily occurrence on all the roads. But the observance of strict traffic rules by the drivers hardly cause any sort of inconvenience to the people. Ever vigilant traffic police are also there to control the traffic flow and pull up any traffic violators. One of the main traffic problems in Aizawl city is road congestion. The length and breadth of Aizawl city remains the same but the growth of population along with the number of vehicles is tremendously increasing at a high rate. The narrow road in the city is without separate path for pedestrian. The inadequacy of road network with the rapid growth of vehicles rises to serious congestion problem in Aizawl city. The density of traffic during the working hours of a day in the heart of the day is very high.

However the Government has taken remedial measures following the decision made by the Coordination Committee on Traffic Management, a 'No tolerance drive' was launched in Aizawl district on 14th Dec 2016, which was also attended by Traffic Superintendent of Police C. Lalthanmawia.⁷ The committee consists of representatives from the Public Works Department, Aizawl Municipal Corporation, state transport department and traffic police.

During the drive, the Traffic Police will conduct mass-checking on violation of traffic rules, especially for drunken driving, using mobile while driving. Under the new system launched on 1st September 2016, around 3,526 registered taxis were

⁷ https://www.telegraphindia.com/1161022/jsp/northeast/story_114878.jsp#.WMn0QThvBUN (accessed on 28th March, 2017)

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divided into three groups - A, B and C - and were asked to carry passengers on alternate days. The plan was drawn up by the Mizoram traffic police department in consultation with the government. Traffic police are mulling launching another system in Aizawl, according to which vehicles whose registration numbers end with 1 will not be allowed to ply on dates like 1, 11, 21 and 31 of a month; similarly, vehicles whose registration numbers end with 2 would not be allowed to move on 2, 12 and 22 of a month.

According to the committee held by Traffic coordination Committee on 27.10.2017 and powers given by the Mizoram Government Notification No.B 12021/10/04-TRP Dt.22.8.2008 and section 115 of MV Act, 1988⁸ the Government has taken remedial measures for public safety and to reduce traffic congestion. Under the new system launched on 1st October 2017 all the registered private vehicles inside Aizawl and vehicle registered from another district entering Aizawl are also included. This plan was drawn up by the Mizoram traffic police department in consultation with the government. Traffic police are launching another system in Aizawl, according to which vehicles whose registration numbers end with 1 will not be allowed to ply on dates like 4, 14 and 24 of a month; similarly, vehicles whose registration numbers end with 2 would not be allowed to move on 2, 12 and 22 of a month. This system is valid from 8:30 am to 5:30 pm and does not apply on Sunday.

However, this system does not include Governor, Chief Minister (related cadre), Public service vehicle like City bus/Maxi Cab/Sumo, Auto Rickshaw, Institution Bus, Department Bus, Two wheeler taxis. Police department motor duty, traffic police duty, Fire (F&ES) motor, Excise & Narcotics motor duty, Medical & Hospital Emergency duty, Ambulance/morgue van, Executive Magistrate law and order duty and emergency duty, PHE water distributors, Media (MJA journalist), P&E emergency duty, Milk distributor, Newspaper distributor, AMC sanitation

⁸ According to the committee held by Traffic coordination Committee on 27.10.2017 and powers given by the Mizoram Government Notification No.B 12021/10/04-TRP Dt.22.8.2008 and section 115 of MV Act.

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motor duty, Army and Para-military Force, Government Department/Office Dispatch Rider and Special vehicle driven by Persons with disabilities.

Therefore a need arises to study the role, functions, and technique of traffic management in the present scenario. This study attempts to study the technique of handling traffic congestion in a small city like Aizawl and how to develop future actions and plans for traffic administration.

The many causes of traffic congestion in Aizawl includes the fact that it is the central business district so many people work there and the road system is very narrow. The city does not promote walking so, for example a no vehicles zone does not exist. Also there is a shortage in the availability of off street parking so people park in the streets blocking the roads creating traffic jam. With an increasing population more people owned and choose private vehicles and disregard public.

Traffic congestion can have serious negative impacts. The most obvious one being a stressed and frustrated motorist as time is wasted and in this case may result in late arrivals to meetings or employment causing loss of jobs or disciplinary actions to be taken against them. Additionally it reduces regional economic health and results in a loss of the country's productivity. Furthermore the most detrimental impact is its effect on the environment. Vehicles are left idling for hours releasing greenhouse gases into the atmosphere and increases air pollution. With the pressing issue of climate change and global warming we see how this can be a problem. It can result in the wearing and tearing of vehicles due to idling and an increase chance of accidents because vehicles are in such close proximity and motorists get tired.⁹

To fix this problem a serious study must be done and the attitude of people must change. An efficient and reliable public transportation system must exist. We must promote a walking society instead of a 'sit in our cars' "society just to get to the

⁹ <http://negativeurbanisation.blogspot.in/2013/03/the-dark-side-of-congestion-nobody.html>
accessed on 22.10.2017

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grocery or down the road. Furthermore the city should be zoned so that private vehicles are not allowed in various parts.

1.5 Review of Literature

A thorough review of literature forms an important part of research. It helps in the success of the research and to develop knowledge in the area related to my study. Some of the books which are important for the proposed studies are reviewed as follows:

R.N Prasad and A.K Agarwal (2003) *Modernization of The Mizo Society* book Chapter 16 Need for Urban Local self Government by C Lalkima discussed about the disproportionate growth of personalized vehicles in the Indian cities which led to congestion, reduction in speed, increase in accidents, increase energy consumption and emission of population. The book talks about the road congestion problem in Aizawl where traffic jams and discomfort movement has caused unsafe particularly for pedestrians in the absence of footpath all along the road. It points out the functions of Village Council in the city where it could no more cope up with the administrative requirements.

Ram Narayan Prasad (2006) in his book *Urban Local self Government in India* chapter 19 Traffic Problems in Aizawl Remedial Measures by AK Mehta discussed about the urgent need to study the problem of traffic and transportation of Aizawl City. It talks about the numbers of vehicles in Aizawl. The maximum number of population and population and vehicles in the city are concentrated within the area of 4km, from Chanmari to Mission veng. The book talks about its remedial measures where the main cause of traffic jams in Aizawl is pedestrian crossing the roads. It is suggested that flyover to be constructed and also suggested that all government offices have garage facilities.

B.C. Vaidya (2003) in his book *Geography of Transport Development In India* mentions that India is a large country with various types of geographical terrains. The present project tries to open new direction on transport aspect at national,

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regional and at the level of metropolitan cities to understand their intra and inter-linkages with other nodes, junctions, ports and airports. The present book studies the various facets of road and rail transport in India with giving geographical significance in the region. From this point this volume carries immense value and provides the base for understanding transport development and would be sound enough to provide background of transport to the Indian transport in general.

Dilip Halder (2006) in his book *Urban Transport in India Crisis and Cure* draws attention to the problem and difficulties faced in developing India's urban transport, with particular reference to the problem of Kolkata India's largest metropolitan city. He points out the difficulties faced in obtaining reliable estimates of urban transport demand. He is not only concerned with the lack of financial resources needed to build India's urban transport infrastructure. In the third chapter the author mention that transport facilities should be developed in accordance with people's modal choice. He also maintains that the inability of the Indian transport planners to provide transport services in accordance with people's modal choice is the prime cause of congestion and overcrowding on the existing transport network. In the fourth chapter the author talks about congestion and overcrowding which affects both private car users and the users of public transport. Congestion prolongs transit times and increases fuel consumption more than what is really required. In the two final chapters, the author make a case of budgetary support for Kolkata's suburban rail service on the round that they generate considerable external benefits, which are not readily internalized by the railway in the form of operating revenue. The major findings of the study in this book are the problem of urbanisation in the city of Kolkata which is the largest metropolitan city in India. The book also concerned with traffic management in urban areas where traffic congestion is the major problem.

V.K Mandal (2008) in his book *Travel and Transport Agency* discussed about modern tourism and travel, the types of travel condition and the size of tourism market. He also talks about the change in travel technology which has been dramatic since World War II. The author talks about Indian road tourism, the

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Haryana Government was the first to notice the change and they have did the pioneering the work then by developing roadside complexes. They developed manmade lakes at some places in the state and put up neat hotels and motels on the Grand Trunk Road.

Richard Kim (2014) in his article *Journal of Traffic and Transportation Engineering* in the book of International Journal for Science and Technology for Transportation provides a platform for exchange and discussion of novel and creative ideas on theoretical and experimental researches in transportation field. It publishes high-quality peer-reviewed papers on engineering, planning, management, and information technology of transportation. The journal committed to rapid peer-review and publication. One of the important suggestions of this article study the technique of Traffic management. The engineering, planning of road infrastructure helps in enduring traffic Congestion.

Dr P.K Rai, Biku Moni Chutia, Sagolsim Priyokumar Singh and Lalnunthari (2015) in their article *Study of noise pollution in Aizawl City and mizoram University campus, Tanhril ,Mizoram , Northeast India* in the book of Multilogic of Science concerned with the concept of noise pollution in Aizawl city due to increase of vehicles and Traffic congestion. The study was carried out from different parts of Aizawl city. Four different zones are selected based on this guidelines recommended by the Noise pollution (regulation and control) rules 2000. This article highlights the status of urbanisation in Mizoram. This article focuses on the need of development in proper management in controlling noise pollution caused by vehicles. One of the important suggestions of this article is to reduce the noise pollution caused by Motor vehicles by maintaining proper Traffic management system technique.

After going through the above mentioned books, we have found that very few books and articles are available on Urbanization and traffic management in general and particular to that in relation to the capital Aizawl. The above literature has discussed several facets of Traffic management in Aizawl. These facets include firstly the

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problem of urbanization which leads to growth of personalized increased vehicles, secondly congestion problem and the absence of footpaths, thirdly the number of vehicles concentrated within the area of 4km. Some of the authors also suggested that flyover bridge to be constructed and all government should have garage facilities. These are the studies which are previously done and various approaches have been made over the past years, the findings from the previous years are true but it lacked technical support. So, the proposed study would be to study the technique of handling traffic congestion, to study the problem of urbanization, to study the functions of Traffic Coordination Committee and the problems faced by traffic personnel in Aizawl. Finally, the study will look into all necessary aspects to arrive conclusions and suggestions.

1.6 Objectives of Study

The main objectives of the study are as follows:

1. To study the current volume of vehicles vis-a-vis urbanization rate in Aizawl.
2. To study the technique of handling traffic congestion and safety.
3. To study the corresponding conduct and behavior of the personnel to achieve the goal.
4. To study the challenges and problems in achieving organizational goals.

1.7 Research questions

The following research questions will be formulated for the proposed study to achieve its objectives.

1. What are the major problems and challenges faced by traffic personnel?
2. What are the suggested remedial measures for traffic management in Aizawl?

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3. What are the role and functions of Traffic Coordination Committee in Aizawl?
4. What are the measures required to make Traffic management more effective?
5. Have any steps already been taken to improve the technique of handling traffic congestion?
6. What is the current volume of vehicles in Aizawl City?

1.8 Methodology

The methodology used for the present research will be a case study which will be descriptive in nature. Primary and Secondary method of data collection will be used for the purpose of the study. Primary data will be collected from the 15 officials associated with the department of Traffic Police and from 20 random people who are daily road users in Aizawl city and also through formal and informal interview.

The Secondary data will be collected from the official journals, relevant book, handbook and records of Traffic management about traffic related problems and articles related to traffic in Aizawl , pamphlets, books and sources from related websites. All the available data will be analyzed through both qualitative and quantitative method.

1.9 Chapterization Plan

- CHAPTER I - Introduction.
- CHAPTER II - Urban Administration and Traffic Management.
- CHAPTER III - Organization and working of Traffic Police Department in Aizawl.
- CHAPTER IV - Issues and challenges of traffic management in Aizawl.
- CHAPTER V - Conclusion.

1.10 Scope of study

The study cover the concept of traffic management in Aizawl city and focus mainly to study the conduct and discipline of the traffic personnel, traffic congestion and safety as well as power, role and functions of Traffic personnel. The origin and organizational setup and the problems faced by traffic management in Aizawl will also be studied. The study will point out the different problems faced by traffic police and suggested remedial measures for their improvement.

2.1 Introduction

The chapter will discuss the theories and different tools used to enforce traffic rules and regulations. The chapter will then discuss about the urban governance institutions related to traffic management in particular focusing on Aizawl city.

In this chapter the definition of traffic congestion would be discussed. In addition, it talks about reasons for traffic congestion and then it also presents some important principles or phenomenon which should not be ignored when dealing with traffic congestion. Finally, theoretical methods of reducing traffic congestion would be discussed. This discussion is divided into three main parts: physical based instruments, market based instruments, and regulatory based instruments. Also those instruments could be classified in another way: supply side approaches and demand side approaches.

2.2 Traffic congestion

Metro Cities like Delhi, Mumbai, Kolkata, etc and small cities like Guwahati have all had to deal with numbers of vehicle running through their streets each day. Traffic congestion is a major problems everyone within the city. More cars, poor road management and poor practices on behalf of employers are the main reason for Traffic congestion. The city doesn't expand along with an increasingly car reliant population. Alternate routes are also a problem; cities have limited capacity to expand due to poor funding and planning restrictions preventing building on green belt spaces.

Navigation Company Tom-Toms has published a list of the most congested cities in the world. The most top 5 congested Cities were 1. Mexico City 66% 2. Bangkok 61% 3. Jakarta 58 % 4. Chongqing % 5. Bucharest 50%. The Tom-Toms Traffic index is based on 19 trillion data points collected over nine years from 390 cities, according to the Dutch company. Each city's congestion level was given a percentage score out of 100, with levels ranging from 66% in the most congested cities to 9% in the least. Among the Indian cities Mumbai, Pune, Kolkata, Bangalore and New Delhi are the worst traffic congested cities⁹.

⁹ www.worldblaze.in (accessed on 11/10/2017)

Downs (2003) has believed that the traffic on any given artery can be considered congested when it is moving at speeds below the artery's designed capacity because drivers are unable to go faster¹⁰. If there is a street designed 50 miles per hour, and most of vehicles' speeds on this street are lower than 50 miles per hour, there is traffic congestion. So in Downs' opinion, traffic congestion is closely related with designed standard. Generally speaking, it could be defined as vehicles blocked on the street and their average speed lower than one level or people spend much more time on the road which is unendurable.

2.3 Causes of traffic congestion

Earlier the middle of the 19th century, all cities in the world were designed or developed on the base of walking. From the time of 1860s, many cities' structures were changed in the force of industrialization. Narrow streets were collapsed and replaced by wider roads which are suitable for car. But with more and more cars appearing on the streets, traffic congestion became a problem in many cities in the world since 1945.¹¹

The use of vehicles plays an important role in the history of cities' economic development. Since vehicles make people's moving more conveniently, powerfully, flexibly and efficiently, people want to have their own cars when they get enough incomes.

Newman and Ken worthy (1999) mainly stress on reduction of automobile dependence through three main approaches: technological improvements, economic instruments, and planning mechanisms.¹² Tactics listed in the market based part usually include regulatory factors. Such as HOT lane set aside the

¹⁰ Downs, A., 2003. *Still Stuck in Traffic : Coping with Peak-Hour Traffic Congestion*. Washington, DC:Brookings Institution Press.

¹¹ Traffic congestion in Hangzhou. Available at:
<http://hznews.hangzhou.com.cn/chengshi/content/2011-04/05/content_3681202.htm
> [Accessed 12 May 2011]

¹² Newman, P., Kenworthy, J. 1999. *Sustainability and cities—Overcoming automobile dependence*. Washington, DC: Island Press.

alternative expressway is a regulatory tactics that have to be imposed by regulations. Newman and Kenworthy tactics were summarized as economic instruments. Some other way to resolve the congestion problems is to classify approaches into three parts: physical based instruments, market based instruments, and regulatory based instruments.

Physical approaches mean reduction of traffic congestion by all kinds of resources. Such as expanding roads capacity, improving the quality of public buses, and building a metro system. These are the most essential ways to deal with traffic congestions and always to be the first choice when traffic congestion was emerged in cities.

Market approaches, also known as economic instruments, are intent to influence travelers choice of types of trips through monetary value in order to make full use of scarce resources such as road capacity. Different travel models are charged based on how scarce their capacities are. The residents are expected to pick the type of travel that gives them most benefits or has the lowest price. One example is that drivers choose way which is for free and not a toll road that across a congested area during the peak circuit. The central point of market based approaches is that when people use some scarce facilities have to pay fee.

Regulatory approaches means to regulate traffic or to reduce traffic congestion by economic and regulatory instruments for road traffic like road pricing (e.g. road tolls) increase the costs of vehicle used within a specific area or on specific stretch of road. Prohibiting certain license numbers from driving on specific days, making HOV lane and ramp metering on expressways are most used regulatory instruments.

2.4 Physical based instruments

Physical instruments decrease traffic congestion normally by improving something or building something. The main used physical instruments are increasing road traffic capacity, building more transit facilities and upgrading existing city streets and increasing service and amenities, clustering high-density housing around transit stops.

TABLE: 6 Instruments for Reducing Traffic Congestion Classification of instruments for reducing traffic congestion.

	Supply side	Demand side
Physical Instrument	<ul style="list-style-type: none"> -Building more roads or expanding existing ones -Building more transit facilities and increasing service and amenities in existing transit systems -Improving highway maintenance -Adding rowing response teams to remove accidents -Upgrading existing city streets -Developing means of transit feasible in low-density areas 	<ul style="list-style-type: none"> -Building special roads for trucks only -Clustering high-density housing around transit stops -Using traffic-calming devices to slow flows
Market based instrument	<ul style="list-style-type: none"> -Converting free HOV lanes to HOT lanes 	<ul style="list-style-type: none"> -Road pricing with tolls set to raise peak-hour flows -Commuting allowance for employees -Charging high taxes on gasoline, parking during peak hours -Eliminating tax deductibility for employers for providing free parking -Increasing automobile license fees -Cashing out free parking provided by employers

Regulatory based Instrument	<ul style="list-style-type: none"> -Traffic management centers -ITS mechanisms for speeding traffic flows -Deregulating public transit activities -Staggering work hours for more workers 	<ul style="list-style-type: none"> -Prohibiting certain license numbers from driving on specific days -Changing deferral work laws that discourage people from working at home -Ramp metering on expressways -Encouraging more people to work at home -Keeping minimum residential densities higher -Limiting growth and development in local communities -Improving the jobs/housing balance -Concentrating jobs in a few suburban clusters -Making some lanes HOV lanes.
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Source: Wenjie Zhang (Managing Traffic Congestion Case study of Hangzhou)

2.5 Increasing road traffic capacity

When cities are trying to shrink urban traffic congestion, building more roads, to allow increasing traffic volumes is often the first idea. The more capacity of roads net, the more traffic flows in each period. Improving the old roads net or supplying more roads capacity seems practicable and necessary in the areas at a rapid growing of population or vehicles. However, traffic flow would even go worse than before if the increasing of roads capacity does not catch up with the growing rate of population and vehicles, Perhaps the traffic congestion would be reduced once there is peak hour traffic congestion in a city's roads net by expanding road capacity in a short term. But this effect could be offset by many factors. First one is that rapid growing of population and number of vehicles

could easily increase traffic loads, particularly in cities of developing countries. Besides, triple convergence could put much more pressure on expanded roads net. Most of driver will switch their travelling time, travelling routes when they realize new roads can save much time, they, and even travelling modes to this improved road, thus the intensity of traffic congestion will come back to the level as before in the near future. What's more, expanded road even induce more people settle down near those new roads in long term. By the influence of those reasons, reducing traffic congestion through enlarging road capacity is undefined. It is very hard to evaluate what extent the benefits of expanding a road will be outgrowth by the added demands it stimulate in the long run (Downs, 2003).

2.6 Improving public transport

In most cities buses, light rail or railways are the main public transport. An essential requirement for any urban area is providing for convenient, safe, regular and reliable public transport (Richards, 1990). According to various situations, there are different priorities in various cities.

Public transportation has quite different effects on reducing urban traffic congestions when compared with other kinds of instruments. Theoretically its huge capacity and high rate of using road resources makes it become the most efficient way to cut down traffic problems. Especially in developing countries' cities its cheap price will make it affordable for almost everyone. If people choose public buses for commuting, it seems there would be no traffic congestion at all.

On the contrary, a world without a public transportation would be a disaster. As Bunting (2004) said replicating present American mobility everywhere would expand the world fleet of vehicle to 4.52 billion. And the vehicles on streets of metropolises would just block without moving. Public transport seems to be a savior in many cities filled with private cars.

So to reduce traffic congestion building more or improving existing public transits and facilities could be a useful way to. But in most of cities the

development of public transport does not run smoothly. People who choose to travel with public buses have to go to the bus station, wait for the bus, and the trip takes comparatively long time because the bus would stop at many stops before the destinations is reached, while drivers of private cars could save such time.

One significant reason is that most people prefer private cars to public transits, because of the accessibility and the flexibility of private cars, which have discussed above. For example, theoretically drivers of private cars always have the advantages of saving time compared to people in public buses on the same route.

Bus Rapid Transit (BRT) is a high quality based transit system that delivers fast, comfortable and cost effective service it may remove this disadvantages of public bus, since it has buses only right-of-ways, which were regulated only available for public buses. Through this bus only way, buses could not be blocked on the normal routes with private cars, which encourage more people to choose BRT instead of private cars. In this case, the design of bus only right-of-ways is more closely related to regulatory instruments rather than physical instrument. Other kinds of vehicles can share this bus only way if there is an emergency, such as ambulance, fire truck and so on.

Traffic congestion may not be eliminate by all this public transports, but they reduce the potential congestion which would emerge without them, and may reduce traffic congestion to the level that driving vehicles cost same time as public transportations, if there is enough capacity of public transports. One more important argument for expanding public transport may be that it expands the total capacity of traffic flow, which is key point for development of society.

2.7 Bicycle policies

Cycling is now considered by policy makers in many cities as a suitable way of city's transport. There are several good examples of cycling in cities, since it could be enjoyable, healthy and cheap to use. Copenhagen and Amsterdam, whose sizes of population are much bigger than Richards' scale, have created bicycle systems that are quite popular.

Bicycle/electrical bicycle don't have tailpipes belching poisonous fumes into atmosphere. They also eliminate the oil, fuel and hydraulic fluids dripped by automobiles into the road surface which means less toxic runoff into local waterways.

Cycling is something you can enjoy no matter what your age. It is truly as close as we get to a lifelong sport says internationally known athletes trainer Andy Pruitt, Edt ,founder of the University of Colorado Sport Medicine and Performance Center always says Even if you can't walk or hobble, you can still ride a bike.¹³

As Richards (1990) said cycles normally require the provision of objects to which they can be locked on the street, as theft is universal, except in China, where cycles are licensed. Actually, cycles thefts still exist in China, although they are licensed, there are not enough efforts to stop stealing the most efficient way is provide a safe parking space¹⁴.

All these physical instruments are the number one step to handle with urban traffic congestions, and most of them are designed to meet people's desire of travelling. Physical instruments would reduce those expected congestions caused by rapid growth. Also when they are combined with market based instruments or regulatory instruments physical instruments would have more effects on reducing traffic congestion.

2.8 Market based instruments

Market based instruments has normally been used on the base of physical instruments, Seeing that most of them are listed in demand side, being used to degrade people's desire to use private cars in specific time or specific area and encourage them to choose more effective way for trips. Market instruments contain road pricing, parking pricing, fuel taxation, and so on.

¹³ www.bicycling.co.za (accessed on 26.10.2017)

¹⁴ Richards, B., 1990. *Transport in cities*. London: Architecture Design and Technology Press.

2.9 Taxes

In many cities around the world taxing has been used as a instrument to handle traffic demand. Transport demand consists of a group of factors generating the total volume of travel (Potter, 2007),¹⁵ which contains travel modes, travel length, number of routes time of trips and so on. Taxation instrument for reducing congestion also involved in almost every factor of transport demand management.

The taxation instruments can be divided into three main parts: tax on the initial purchase of a vehicle; ‘circulation’ tax on the ownership of vehicles (annual registration tax and company car taxation); tax on the use of vehicles (fuel, tolls, road space and parking). Obviously, purchase tax has an influence on people’s choice of travelling modes. Also circulation tax such as registration tax influences the choice of travelling modes. For the use of vehicles there are many more kinds of taxes compared with the purchase tax, which includes fuel, road space, tolls and parking taxes.

To reduce traffic congestion, purchase taxation instrument has been used mostly in many countries to reduce environmental impacts. Consumers will pay higher tax when they choose big engine vehicle, which is encouraging people to choose vehicles with low emissions. When dealing with traffic congestion purchase taxation will discourage people to buy a vehicle, while people who have vehicles it has no effect. Circulation tax has more influence on reducing the use of vehicles. When the circulation tax is high enough it may encourage drivers to sell their vehicles. And will decrease automobile ownership ratio.

Theoretically, all these taxes will reduce traffic congestion. To all drivers tax instruments have an effect, and may even have negative effect on economy development. To drivers who don't travel on congested roads in peak hours it

¹⁵ Potter, S. 2007, Sustainability, energy conservation and personal transport. Oxford: Oxford University Press.

seems unfair. During peak hours rather than reducing using of vehicles the instruments shall focus on reducing traffic congestion everywhere.

2.10 Road user charging

In many cities road pricing is used to reduce traffic congestion, centers or expressways through charging fees from drivers. The main argument for charges on express ways is to finance the investment in the express way normally not an ambition to reduce traffic congestion. Since the road tolls, a large number of vehicles would not move onto those roads. Theoretically, due to higher road pricing, less people would choose this pricing route. Thus, traffic congestion on those roads net would decrease. More vehicles could use roads net per hour as traffic flows would be improved. According to this, as soon as there is enough high road pricing traffic congestion would be reduced. The road traffic flow would be more efficient, as more drivers switch travel time from peak hour to non-peak hour, even shift travel mode from vehicles to other transits, such as bus and taxi.

The main criticism is that to low income drivers it is unfair. How bad this effect is depends on the specific context. For those people if the road pricing is not affordable, they might have the notion that the roads were designed for only rich people. But in many cities as traffic congestion become worse and worse, policy makers are still widely accepted road pricing despite withdraws.

The types of road pricing could be classified into two main kinds: area pricing and roadway facility pricing (Downs, 2003).¹⁶ In the type of area pricing there is specific area, mostly cities' downtown with congestion problems, ruled by policy makers. Vehicles moved into cordon line around the area should be charged. But it is free or at a low pricing rate for residents that lives in the area using vehicles and it should be also free for buses, and other public transits.

2.11 Parking policy on traffic congestion

Parking and traffic congestion is synonymous to each other because failure to meet parking demand of people in a city lead to on-street parking that result to traffic congestion. The availability of less space in urban areas has increased

¹⁶ Downs, A., 1962. The Law of Peak-Hour Expressway Congestion. *Traffic Quarterly*, vol. 16, pp. 393– 409.

demand of parking space especially in central business area. Inadequate off-street parking in most of our urban centers has metamorphosed to the problem of on street parking coupled with inadequate traffic management commonly experience today in most India There are various types of parking policies, which focused on different factors such as parking location, parking supply, and parking price. Thus the results of those policies usually vary between each other. Mc Shane and Meyer (1982) argue that some of these goals are certain to conflict while others may be served concurrently.¹⁷

To reduce and control parking space in city's downtown areas many parking policies are designed. Employers supply a large share of the parking space to employees. With free parking space, employees are encouraged by company go to work by private vehicles, especially in downtown area when the price for parking spaces is high. In theory, the number of people commuting by vehicles would decrease, which was a quite big part of traffic flows in peak hour. So the total traffic volumes could be lower than before, and there will be a more efficient traffic flows.

2.12 Regulatory based instruments

Like market instruments, most regulatory based instruments could be list in demand side approaches, being used to control the use of private cars in specific time or specific areas. Ramp metering on expressways, HOV lanes, prohibiting certain license numbers from driving on specific days are most used regulatory instruments.

2.13 Ramp metering

An instrument used to increase the traffic capacity of expressways or freeways is called ramp metering. Ramp metering was designed to make full use of expressways, and try to offer a highest traffic flows through ramp metering This system tries to operate the vehicles per time that enter limited access expressways and highways through regulating traffic lights on ramps. Without such a control of traffic flow on ramps, vehicles would move onto those

¹⁷ McShane, M. and Meyer, M. 1982, *Parking Policy and Urban Goals: Linking Strategy to Needs*. Amsterdam: Elsevier Scientific Publishing Company

expressways and slow down former traffic flow. Since there are too many vehicles they will reduce travelling speed automatically especially in peak hour. Such a slow-down leads to a lower vehicles passing rate per hour, then slow down further the road carrying capacity per hour.

Depending on the type of the hardware, strategies used by the implementing agencies, and physical ramp/freeway/ alternative arterial configurations, the general benefits of ramp meters may include¹⁸ (1-8):

1. Increases in freeway productivity, up to 2,700 vehicles per hour per lane (vphpl);
 2. Reductions in stop-and-go traffic;
 3. Reductions in sideswipe or rear-end accidents and fatalities;
 4. Reductions on impacts of recurring congestion due to heavy traffic demand;
 5. Reductions in fuel consumption from stop-and-go travel;
 6. Improvements in air quality and other societal goals;
 7. Delaying or preventing the occurrence of freeway slow speed operations;
 8. Breaking up of vehicle platoons;
 9. Promoting easier and safer merging from ramps;
 10. Reducing emergency or vehicle breakdown response time;
 11. Encouraging motorists on shorter trips to use arterials; and
 12. Encouraging motorists to shift travel times or change travel modes.
13. On the other hand, disadvantages of ramp metering include (1, 2, 4, and 7):

Delays and increased emissions at the ramps – Although the overall travel time is improved and overall emissions are reduced, ramps experience increases in delay time and emissions. Furthermore, time spent waiting at the ramps is normally perceived to be longer, lowering its perceived benefits by the motorists.

2.14 Using High-Occupancy Vehicle (HOV) Lanes

High-Occupancy Vehicle lanes are designed only for those vehicles carrying more than two or three persons and for public bus. Most people prefer to drive alone, since it is more comfortable, more convenient. But road carrying capacity

¹⁸ <https://www.ncdot.gov/projects/onrampsignals> (accessed on 28.10.2017)

would drop to a very low level, if a large number of single drivers travel on the roads net. HOV lanes encourage those single drivers to participate in car pools, in order to reduce the number of vehicles without decreasing traffic capacity. Also with the improvement of traffic flows, there will be more vehicles attracted to move onto roads net especially during peak hour. Also this instrument would shorten the periods of peak congestion.

Pic: High Occupancy Lane in California.



Source: <http://www.scpr.org/blogs/environment/2011/11/30/3910/car-usage-us-continues-decline>, accessed on 29.10.2017.

“High-Occupancy” standards are different in different areas, but mostly the demand is two or more than two persons in each vehicle. High occupancy lanes, which are built aside the normal lanes, will encourage drivers to switch onto this HOV road, which is faster than lanes beside distinctly. During peak hours HOV lane will have obvious advantage in saving time when normal lanes beside are heavily congested. One significant thing is that drivers would not choose HOV lane, if traffic congestion on general travel lanes is not bad enough. The vital element for HOV lanes is time saving Once drivers have shifted from general lanes and realize that congested lanes have improved, they will shift back onto general lanes again. Since there is such equilibrium HOV lane could not

improve traffic flow remarkably. A vital factor of HOV lanes is how intensively transit vehicles such as large buses are using those (Downs, 2003)¹⁹. When the HOV lane fully can be used by public transits the road carrying capacity would be highly improved compared with adjacent general lanes. As public transits could carry many more persons than other vehicles, and there is faster traffic flows on HOV lane, when public transport moving on HOV lane.

2.15 Aizawl Municipal Corporation as urban Local Body

Urbanization mainly refers to an increase in number of population who are living in urban areas due to economic or industrial revolution. Urbanisation is the process where population migrates from rural areas to urban towns and cities which are the major financial and employment centres in the economy. Thus urbanisation can be defined as a process by which man transforms his primitive practices in rural habitat in to an essentially more economic and modern urban functions and places.²⁰ Urban Governance institutions consist of bodies like Municipal Corporation and Municipalities. Municipal Corporation is found in the larger cities like Delhi, Kolkata, Chennai and other places. Municipalities exists in smaller towns and cities. Urban administration is necessary to provide the basic amenities like street lights, garbage collection, water supply, keeping the streets and market clean, collecting of house tax and water tax etc. It had made possible for regulating the urban development and local management of civic facilities.

The Aizawl Municipal Corporation is the authority of civic administration of Aizawl city. It was formed in 2010 with 19 Members when the Congress-ZNP party coalition was voted to power in the state legislative assembly.²¹ The Aizawl Municipal Corporation (AMC), which has been upgraded to a Corporation as per Government of Mizoram Notification No.B.13017/2015-UD&PA dated the 15th October, 2015, is the authority for civic administration of

¹⁹ Downs, A., 2003. *Still Stuck in Traffic: Coping with Peak-Hour Traffic Congestion*. Washington, DC:Brookings Institution Press.

²⁰ Agarwal, A.K. (1995) "*A study in Urbanisation Pattern in Mizoram*" in Ganguly, J.B.(ed), *Urbanisation and Development in North East India – Trends and Policy implications*, Deep and Deep Publications, New Delhi

²¹ <http://amc.mizoran.gov.in/> (accessed on 28.10.2017)

Aizawl city.²² The AMC office is being administered by one council Chairman, Vice-Chairman and three executive members. It consists of 19 elected members representing 19 wards of the city and others appointed by the Governor of Mizoram. One-third of the total membership is reserved for women; these six seats shall be rotated after every five years. The tenure of the council is five years. There is a Ward Committee in every ward that consists of a Chairman, who is an elected councilor from that ward, and two members each from all the local council within the ward. There are 78 local councils having a term of 5 years.

2.16 Aizawl municipal Corporation roles vis-à-vis traffic management

Traffic Management related functions are defined in Part iv of Powers and functions of Municipalities” under The Municipality Act 2007. Under these transport system accessories including traffic engineering schemes, street furniture, street lighting, parking areas and bus stops all falls under the purview of AMC. Since the emergence and functional of Aizawl Municipal Corporation, it became a key stake-holder in control of parking as provided in “Control of Parking and Collection of Parking Fees Regulations, 2015”. The AMC, by its own capacity, with a power vested by the said regulation, specify all the Public parking places and also stands/stops for commercial vehicles as well as public transport vehicles respectively within Aizawl Municipal areas.

In the last decade the population of the city has nearly doubled up and is increasing day by day. Due to explosion of population and rapid urbanization the transportation in the city increased to un-imaginary height. The explosion of population, and highest growth rate in vehicle population made the traffic problems complicated.

Aizawl Municipal Cooperation have prepared a master plan, initiative plan for traffic & transportation some of the recommendation were implemented. However, such traffic plans are not ultimate weapon to fight the massive traffic problems in the city. The traffic problem can't be solved with some Traffic

²² As per Government of Mizoram Notification No.B.13017/2015-UD&PA dated the 15th October, 2015.

roundabouts, drivers, signals and flyovers: but it requires an integrated parking system where all the vehicles parking on the roadside would be removed.

We can say road transport is a fundamental need of the human society. Keeping all these in mind, Aizawl Municipal Corporation has started the exercise to solve the traffic problems for the next decade as well as near future. For this study Aizawl Municipal Corporation 2012 (control of parking and collection of parking fees) is being carried out.

2.17 Others various stake-holders involved in handling traffic in Aizawl.

There are various stake-holders of Traffic handling in Aizawl City such as Traffic Police and Aizawl Municipal Council as follows :-

Traffic Police: Traffic Police is the main stake-holder of Traffic handling. Its main duties and responsibilities are as below:-

1. A minute to minute regulation of Traffic flow in regards of mainly on vehicular Traffic and even to the pedestrian in a pedestrian crossing.
2. Proclamation of order and notice to public as per need to the effect of one way vehicular traffic, no entry, periodic no entry in certain roads, no parking, no stopping zone, dropping zone and other means of regulating vehicular traffic under the provision of Sec 115, 116, & 117 of MV Act.
3. Erection of Traffic signage's supplementing the orders and notices issued in a places/zone/roads listed in serial No. 1 (ii)
4. Enforcement and execution of applicable laws upon the violators of Traffic rules and regulations.
5. Towing away of vehicles found parked in such a way that obstruction to the free flow of traffic which lying unattended along the roads.

Transport Department: Department of transport in consultation with other transport agency establish arrangements that assure comprehensive public consultation on transport issues and problems and also develops a plan for vehicle. Transport department can control issuing of driving license, testing and insurance of learner's license. In terms of registration of vehicles and permit

Transport department can take measures like setting a limit for issuing of permit and registration for a year.

Land Revenue & Settlement Department: Verification, survey and demarcation of land parcels, settlements of land, maintenance of land records, mortgage and transfer of land are the main functions of Land Revenue & Settlement Department which is needed in traffic management for allotment of parking places, government institution and for shifting market places.

Information & Public Relation Department: Provides press coverage of official Government functions and programmes, disseminating policies and programmes of the Government through print, electronic media advertisement, exhibitions, and publications. It also creates awareness among the people particularly among the urban masses about traffic regulations through publicity.

Public Work Department: Public Works Department helps in planning, design, construction and maintenance of government buildings like residential quarters, office building, stadiums, educational institution, and building of parking areas for vehicle, widening of narrow road and leveling.

Trade and Commerce Department: Trade and Commerce Department plays an important role in formulating trade policy, market regulations, market rules, border trade, establishment of market yards and trade centers also responsibilities in maintenance of various market places like clearing of new market area to reduce traffic congestion in a City.

Finance Department: Finance department also plays an important role in traffic management their duty include financial planning, reporting and control short and long term investments, cash management, auditing and accounting. So in term of traffic management to implement initiative plans policies large amount of funds would be needed so necessary steps are required to be taken care by Finance Department.

2.18 Traffic Coordination Committee

On 28th August 2000 the Governor of Mizoram has constitute a Co-ordination committee on traffic management to take appropriate steps for improvement of traffic in the Aizawl City. The main task of coordination body is to initiate and monitor the safety measure and other activities in the field of road safety, to direct and coordinate activities related to reduction of traffic congestion, accidents and their consequences and to improve traffic safety. Traffic Coordination Committee is poised to enter a new era in effective and efficient road traffic management in Aizawl City. The main mission is to provide, in the public interest, for co-operation and coordination strategic planning, regulation, facilitation and law enforcement in respect of traffic matters by the national, provincial and local spheres of government. The main vision is to overcome the fragmentation of traffic management functions across different areas and local authorities and institute to bring a new professional coherence and moral into the entire road traffic system with a view towards a greatly improved law compliance and a reduction in road traffic accidents,

Members are:

- | | |
|-------------------------------------|--------------------|
| 1. Hon'ble Minister of Transport | – Chairman |
| 2. Commissioner/Secretary Transport | - Member secretary |
| 3. Director, LAD | - Member |
| 4. Director, Transport | - member |
| 5. CE, PWD Zone I | -member |
| 6. D.C | - member |
| 7. S.P, Aizawl | - member |
| 8. Director, IPR | - member |
| 9. Deputy Secretary | - member |

However, according to the Mizoram Gazette notification no. D 32021/2/2014-HM(TM), on 9th April the Governor has re constituted Co-ordination committee to take appropriate steps for improvement of Traffic in Aizawl City.²³

Members are:

- | | |
|--------------------------|------------|
| 1. Hon'ble Home Minister | - Chairman |
|--------------------------|------------|

²³ According to the Mizoram Gazette notification no. D 32021/2/2014-HM(TM),

2. Hon'ble Parliamentary Secretary Home department Vice	- Chairman
3. Director, Transport Department	- Member
4. Director LAD	- Member
5. Director, LR&S Department	- Member
6. Director I&PR Department	- Member
7. Chief Engineer, PWD (Building)	- Member
8. Director T&C Department	- Member
9. Director UD&PA Department	- Member
10. Superintendent of Police, Aizawl	- Member
11. Superintendent of Police (Traffic)	- Member
12. President Mizoram Journalist Association	- Member
Joint Secretary, Home Department	Member Secretary

However, Traffic coordination committee is formed by different stakeholders there are about 20 committee members from different field. The Governor authorized the Superintendent of Police Traffic, Aizawl District to exercise the powers under section 112,115,117 and 201 of the Motor Vehicle Act 1983 in place of S.P Aizawl District with immediate effect, and until further order. On 9.4.2014, the Governor of Mizoram includes the following officials as member of Coordination Committee on Traffic Management with immediate effect.²⁴

1. Mayor, AMC
2. AMC Councilor i/c Traffic
3. Inspector General of Police, PHQ

2.19 Conclusion

Aizawl city is in the process of urbanization, the growth rate of vehicles and population are tremendously increasing which has become a huge problem. The chapter deals with various instruments and methods for reducing traffic congestion. In order to manage situation in traffic congestion Aizawl also used various instruments and methods, traffic coordination committee took various steps and action necessary to reduce traffic related problem and for the safety of people. The next chapter will deal exclusively about the detail of traffic police department, their roles and responsibilities in traffic management.

²⁴ Notification to the Department, no. B. 12021/10/04-TRP: Date 25.9.0. 7

3.1 Introduction

Traffic management of Aizawl City is predominantly manned by Aizawl Traffic Police. Since the establishment and functioning of AMC from the year 2012, they took part in specifying parking area and stand/station of public Transport Vehicles. Being a hill station lying upon a rugged topography, this unplanned city, with its narrow road is unable to bear with the increase of vehicles and its ever-growing inhabitants in an alarming rate of leaps and bounds. Hence, management of traffic in Aizawl City became an uphill task and a man-power-consuming work which has been done by Aizawl Traffic Police Department since 1956.

Pic : Aizawl Police Station.



Credit: Laltleipua, taken on 19.10.2017

3.2 Brief history of Traffic Police department

During the year 1956 Government of Mizo District and Police department officials realized that it is necessary for Aizawl to have a trained traffic police.²⁴ In the year 1957 head constable Pataia and Chalhnuna started learning traffic signals and necessary

²⁴ During 1956, Mizoram Government was under Assam Government as one of the district.

information needed for handling traffic and eventually started applying for the first time on Bazar Bungkawn. Due to less number of vehicles it was incapable to continue.

In the late 1970 a petition was made that the newly trained Police should be used for Traffic police. Under the supervision of Aizawl Police Station a new traffic point was build, it has been used up until now. They are :

1. Bazar Bungkawn point.
2. Darawti point (Near Dawrpui church) and
3. Chanmari point.

In the beginning of 1971 among the trained police few were selected for traffic police. During that time Town Sub inspector (TSI) S.I Singh was the officer in charge, Aizawl Police Station and was under the supervision of S.I NN Kotoki. During this year more traffic point were created like Bawngkawn Sairang road, Chaltlang Dawrkawn, Cinema,Hall Point and Sikulpuikawn Point. In the year 1974 S.I S.Gogoi was appointed to Town Sub Inspector and during this year, number of Traffic point was increased as:

- 1) Zarkawt Point
- 2) AOC Point
- 3) Treasury Square Point
- 4) Governor Gate Point
- 5) SBI Point
- 6) Khatla Point
- 7) Kapsanga Point ((A) Temple)
- 8) Bawngkawn Silchar Road
- 9) Israela Point
- 10) Rimawirun Point

In the year 1976 S.I S.Gogoi and three other police were sent for training to learn traffic control and regulations. In 1977 S.I S.Gogoi was replaced by S.I M.Lalthanzuala (Pu Puia). In 1979 S.I Gogoi was reinstate to Town Sub inspector (TSI), in the same year Traffic Police which was called Town staff was changed to Traffic Branch , S.I Gogoi was the first Traffic Police Officer In charge. During this time due to insufficiency of traffic police number of police were being attached from MAP and Home Guard police. In 1983 S.I S.Gogoi, O/Charge, Traffic was replaced by S.I M.Lalthanzuala, and in 1987 S.I M. Lalmanzuala was replaced by S.I K. Lalruata. In the year 1990 August 27, four selected Police were sent for Traffic Control training. Until now there are about 17 police who had held the post of Traffic Officer in charge, among them Mr H.Laltanpuia held the post of Senior Traffic Inspector/OC up to this time.

In 1985 Mr Doliana was the first person appointed for the post of Deputy Superintendent of Traffic. Till now 15 persons has held the post of Deputy SP. At present Mr C. Vanlalvena, MPS and Mrs. Jenny R.Lalremliani, MPS hold the post of Deputy SP Traffic.

Government of Mizoram has created the post of one SP Traffic Police since 2007.²⁵ And from this onwards Traffic Police has separate SP and could function as a separate traffic unit for Aizawl city.²⁶ Government of Mizoram stated that SP traffic should enforced section 112,115,116,117 & 201 of the MV Act, 1983 until further notice.²⁷

POLICE PRESS HANDOUT vides No.CB/PR/2008/71 Dt. 4.7.2008 stated about the Superintendent of Police, Traffic regarding the recruitment and posting at SP, Aizawl Office Conference Hall. SP, Aizawl Mr LT Hrangchal, MPS and our first Traffic SP *Mr Lallianmawia*, MPS gives a short speech.

The post of SP and Addl SP, Traffic are listed as follows:

- **Superintendent of Police**

- Pu Lallianmawia, MPS (4.7.2008 to 23.9.2008)
- Pu Lalbiakzama, MPS (23.9.2008 to 18.6.2012)
- Pu Lallianmawia, MPS (18.6.2012 to 6.5.2015)
- Pu C.Lalthanmawia, MPS (6.5.2015 to till date)

- **Additional Superintendent of Police**

- Pu Laldawngliana, MPS (1.6.2000 to 26.7.2002)
- Pu Lallianmawia, MPS (26.7.2002 to 17.1.2005)
- Pu Dingluaia, MPS (17.1.2005 to 7.9.2005)
- Pu C.Lalzahngoa, MPS (7.9.2005 to 7.11.2008)
- Pu H.Lalchhuanliana, MPS (7.11.2008 to 3.11.2009)
- Pu JL Thangluaia, MPS (27.11.2009 to 31.3.2010)
- Pu MS Dawngkima, MPS (8.4.2010 to 2.7.2010)
- Pu Lalsanglura, MPS (2.7.2010 to 7.10.2011)
- Pu Ruatsanga Ralte, MPS (7.10.201 to 30.4.2015)

²⁵ Government of Mizoram, order No.A-11013/16/92-HMP Dt. 23.7.2007

²⁶ And Government of Mizoram notification No.A-11013/23/94-HMP Dt.21.8.2008

²⁷ GOM, notification No.B.12021/10/04-TRP Dt.22.8.2008

- Pu Zoramthanga Pautu, MPS (28.7.2015 to till date)

3.3 Responsibilities and functions of Deputy Superintendent of Traffic Police

The Deputy Superintendent of Police under Traffic Unit, Aizawl shall be designated as Deputy Superintendent of Police, Traffic. His responsibilities and functions are given below:-

- The Deputy Superintendent of Police, Traffic is the Field Officer at the spot to ensure efficient performance of all types of Traffic Police work in his jurisdiction and is responsible to the Superintendent of Police, Traffic for all aspects of function of the Traffic Police within his jurisdiction.

- He shall be responsible and accountable for the supervision of all the works of the Field Staff.

- He shall supervise the investigation and enquiry carried out by sub-ordinate officers working under him and any other task assigned to the Field Staff working under him. He shall ensure that investigating officers/Enquiry/Zonal officers perform their duty with the sense of responsibility and not delay, who so ever are the caused, in attending to reports of traffic related crime or incidents of disorder.

- He shall ensure that all kinds of activities of Field Staff Traffic Police are carried out in a sense of responsibility, dedication and without fear or favor. He shall distribute works for a particular individual or groups working under him. He should firmly deal with officers who are negligent in this manner.

- He shall ensure that the records of the Police Station are kept in a proper manner and that reports and all returns are submitted to the office of the Superintendent of Police, Traffic.

- He shall develop intimate knowledge of all the personal, at least of the sub-ordinate officers, posted as Field Staff so that he can make full use of their potential.

- He shall grant Casual Leave application of Head Constables and Constables of Traffic Police Station and forward leave application of Inspectors, Sub-Inspectors and Asst. Sub-Inspectors of Traffic Police Station to Superintendent of Police, Traffic.

- Practical Training in actual traffic control, traffic signals, street lining, vehicle parking, traffic awareness campaign, training on Motor Vehicle Act and Rules

for Field Staff should be organised by Deputy Superintendent of Police, Traffic in coordination with Officer-In-Charge with the permission of Superintendent of Police, Traffic.

- He shall visit the place of fatal accident in his respective traffic region.
- He shall scrutinized various files of different desk of Field Office and submit to the superiors.
- He shall keep his Superintendent of Police, Traffic informed of all developments in his jurisdiction.
- He shall carry out any duty assigned to him by the Superintendent of Police, Traffic.

3.4 Responsibilities and functions of Officer-in –Charge of Traffic Police

The Officer-in-Charge of Traffic Police Station is normally an Inspector of Police in Aizawl City. He is assisted by a number of Sub-Inspectors, Asst. Sub-Inspectors, Head Constables and Constables. In absence of the Officer-in-Charge any Police officers above the rank of Constable who is the senior most shall assume the charge of a Police Station. Police Officers superior in the rank to the Officer-in-Charge is empowered to exercise the same powers as the Officer-in-Charge throughout the local area to which they are appointed.

General duty and responsibilities of Officer-in-Charge of Traffic Police

- He shall be in charge of regulation of vehicular and pedestrian traffic, reduction of accidents, and enforcement of Motor Vehicle Acts, Rules free and uninterrupted movement of VVIPs/VIPs within Aizawl City and shall carry out any other order and notification issued by competent authority.
- Officer-in-Charge of a Traffic Police Station is responsible for the effective working and management of the Police Sub-Ordinate to him, for regulation of vehicular and pedestrian traffic, reduction of accidents, and enforcement of Motor Vehicle Act, Rules, free and uninterrupted movement of VVIPs/VIPs within Aizawl City and shall carry out any other order and notification issued by competent authority.
- Officer-in-Charge of a Police Station should neglect none of these and by constantly moving about within the limits of his jurisdiction and especially by visiting sensitive and Traffic congestion and prone areas thereby making necessary immediate

arrangement. He shall also ensure that discipline of all staff within his jurisdiction is properly maintained at all cost and any indiscipline act shall be immediately reported to Deputy Superintendent of Police, Traffic

- He must ensure that all registers and records are properly maintained and kept up-to-date and all returns are submitted regularly. He shall sign the General Diary and a copy shall be furnished to Deputy Superintendent of Police Traffic, arrange for the duties of the day and give any direction that may be required. He shall inspect the Malkhana once a month and generally look into it once a week. He shall check the cash book and verify the cash balance daily if possible, but weekly at any rate. The Sherista of Traffic Police Station will inform the condition of all properties to the Officer-in-Charge every day. The Officer-in-Charge shall keep all his sub-ordinates acquainted with their duties under the law, every change in the law which directly concerns them and every circular issued by superior officers. He shall inspect the kit bi-monthly.

- Officer-in-Charge of Traffic Police Station is responsible that the Sub-inspectors, Asst. Sub-Inspectors, Head Constables and Constables under him are acquainted with their powers and duties under the laws and orders in force. These must be repeatedly read out and explained to these men until they thoroughly understood, including every change or orders/notifications issued which directly concerns them and every circular order issued by the superior officer which is likely to be useful to them. The instructions should be accompanied by explanation and illustration to ensure that the men understand the practical applications of law and orders/notifications so explained. He must also see that the Constables know the areas, notifications and orders issued in relation to Traffic Rules, Regulation and Management.

- He shall communicate to the Superintendent of Police, Traffic, Addl. Superintendent of Police, Traffic, and Deputy Superintendent of Police, Traffic a daily Traffic situation report by wireless and any other important matter and take necessary supervision and instruction from them.

- He shall prepare draft notification and deployment order which should be put up before Superintendent of Police, Traffic through Deputy Superintendent of Police, Traffic for further necessary action.

- He shall forward Casual Leave application of Head Constables and Constables posted as Traffic Field Staff to Deputy Superintendent of Police, Traffic for granting and leave application of Inspectors, Sub-Inspectors and Asst. Sub-Inspectors

working under him to Superintendent of Police, Traffic through Deputy Superintendent of Police, Traffic.

- He shall assist Deputy Superintendent of Police, Traffic in Traffic management and control and shall carry out any duties assigned to him by his superiors.
- He shall visit the place of fatal accidents in his respective traffic region.

The duties and responsibilities of the Dy.Superintendent of Police, Traffic (Field) and Officer-in-Charge, Traffic Station-cum-Control Room, Aizawl are not exhaustive and subject to change as per the need that arises from time to time.

The Addl. Superintendent of Police, Traffic, Aizawl will be responsible for close supervision under the over-all supervision of the undersigned.

3.5 Traffic police at present scenario (up to 29.9.2017)

At present Traffic Unit section strength is 270 but there are only 230 traffic personnel. It is clear that in Traffic Unit-there are about 67 posts vacant. Eventually from 203 trained police about 23 were being attached to different Unit.

However, the total number of Traffic Unit including Superintendent and IV Grade are 286 while the original Traffic unit are only 203 the other 99 are form different Battalions, MRHG who are post attached. Present scenario of Traffic Unit is:

Superintendent of Police	-	1
Addl. Superintendent of Police	-	1
Dy. Superintendent of Police	-	2 (1 attached from 2 nd IR)
Inspector of Police	-	2
Sub-Inspector of Police	-	7
Asst. Sub-Inspector of Police	-	4 (2 attached from Aizawl DEF)
Steno Grade III	-	1
Sub-Inspector (Ministerial)	-	2
Asst. Sub-Inspector (Ministerial)	-	2
Head Constable	-	20
Havildar (<i>attached from other Unit</i>)	-	
	•	3 1 st Bn. MAP

		<ul style="list-style-type: none"> • 3 3rd Bn. MAP • 1 1st IR.Bn • 1 2nd IR.Bn • 2 4th IR.Bn • 4 5th IR.Bn
Total	-	14
Constables & Naiks -		156 (Traffic)
		13 (1 st MAP)
		8 (3 rd MAP)
		10 (1 st IR)
		6 (2 nd IR)
		3 (3 rd IR)
		12 (4 th IR)
		7 (5 th IR)
		26 (MRHG)
Total	=	241
• Driver	-	4 (Traffic)
		1 (1 st Bn.MAP)
		1 (2 nd IR.Bn)
		2 (4 th IR.Bn)
		1 (5 th IR.Bn)
Total	=	9
• IV Grade	-	3

Management of Traffic in Aizawl City is being taken care by deploying traffic police who manually regulate a flow of vehicular as well as pedestrian traffic, establishment of Traffic Control Room, utilization of tow vehicles to do away the unattended vehicles left in an obstructive position. Monitoring of CCTV coverage is recently initiated in 10 (Ten) selected important junctions. This will be able to provide visual evidence to

support how and when accident had happened or violated traffic rules in these particular junctions. Enforcement Squad and compounding of violators as below:

3.6 Traffic management area-wise functional set up

Area-wise management system is done by setting up a broader specified area called Zone and sub-division named as Sector and Beat. There are also vital functionaries called traffic point duty which is manned by constables who takes care such junctions as a static point duty. Aizawl City is divided into Zone 5 – Central Zone, North Zone, South Zone, East Zone and West Zone. These different Zones have separate Zonal Officer. Under this Zonal Officer there are Sector, Beat and Point duty.

Zone: Aizawl is broadly divided into 6 (six) Zones. Each zone covers a cluster of areas, i.e., a particular Local Panchayat named here a Local Council. Zones are administered by a Zonal Officer with a rank of Sub Inspector or Asst Sub – Inspector who is responsible for supervising the execution of work by Sector within its particular Zone working as mobile patrolling officer. He is also responsible for Inquiry and investigation of cases that occurred in its area.

Sector: A zone is divided into several areas called Sector under the administration of Non Commissioned Officers (NCO) i.e. an elite constables. The City is divided into 22 sectors. Sector Officers are working as a foot patrolling officer and given necessary instruction to the Beat and Point duty at the spot within their respective areas. They were equipped with a WT set which they have a second-to-second monitoring on it and used to exchange and share necessary information's with other Sector Officer and Beat Officer of other areas as per need. They are also responsible for attending accident cases occurred within their respective areas and to preserve its scene before the arrival of Zonal Officer.

Beat: A Sector is again sub-divided into two or three Beat areas comprising 64 Beats which are look after by senior constables. Functional of Beat officer is more or less the same with Sector Officer, however working closely with Traffic Point Static duty. All Beat and Sector officers are equipped with WT Set for quick and easy communication to share all necessary information regarding traffic flow in every nook and corners in the city.

Traffic Duty Point: A static duty points have been set up in almost all important junctions as the basic form of regulating a traffic flow. The point duties systematically used to regulate a vehicular traffic under the close supervision of Beat officers who monitor the flow of traffic within the whole city with WT Set.

There are 24 Static Points under umbrella and another 13 Junctions manned without umbrella.

- **Mobile Duty:** A squad called Mobile Duty is utilized to ensure no vehicle is plying in a road or park in the roadside in an obstructive manner likely to make a hindrance to smooth flow of traffic. These mobile officers are responsible for clearing obstructive activities and to apprehend the rules violators. These mobile officers are deployed only in places where traffic congestion is high in a bottleneck points and selected busiest junctions always cause a traffic jam.

- **Enforcement Squad:** It was formed to focus on apprehending illegal parking. They used to conduct a special drive of road clearance. Apart from their basic duty, they are also utilize for route clearance squad for a route of VIP movement and also cover unscheduled function or gathering as a reserve force.

- **Traffic Control room:** Traffic Control Room is the heart for regulation of all vehicular movement in the city which is physically administered by Officer in charge of Traffic Police station or its Second-in-Command run 24 hours a day. The Control Room monitored all the activities of field officers and pass necessary directions through WT Set. All the important information gathered from field officers are entered in a control log book

- **Towing of Vehicles:** Traffic Police is having two Mini Tow Trucks for causing towing away of obstructive/illegal parking of unattended vehicles. The average number of vehicles towed in this manner is 25 vehicles a month.

- **Investigation of accident cases:** Traffic Police has its own police station since 1st August 2012. Since then, all cases relating to vehicular accident within Aizawl

City have been taken up by Traffic Police. There are round the clock Duty Officer with the rank of Sub-Inspector or Asst. Sub-Inspector

• **Compounding:** The violators of Traffic rules excluding those who are involved in an accident cases are compounded by way of fine as per rate fixed under applicable rules. The below table shows number of vehicle compounded and amount of fine realized from violators for the last five years :-

1	2	3
Year	No. Of vehicles compounded	Amount of fine realized from violators
2010	7026	Rs. 20,87,365/-
2011	8043	Rs. 27,38,155/-
2012	8726	Rs. 26,61,285/-
2013	9454	Rs. 22,53,072/-
2014	9537	Rs. 27,30,800/-

3.7 Achievements

From 1.11.1990 onwards Traffic Police were given powers to collect fines on the spot, in this year 366 vehicle were arrested due to certain violations and collected the amount of Rs 33,946 from fines. Amount of fines collected from Vehicle and traffic violation 2012 from 2015

(Up to august, 2017)

- Total number of violators ` - 8726
- Total amount of fines - Rs 26,61,285/-
- Vehicles arrested during the year of 2013
- Total number of violators - 9458
- Total amount of fines - Rs 22,53,072/-

- Vehicles arrested during the year of 2014
- Total number of violators - 19070
- Total amount of fines - Rs 27,30,800/-

- Vehicles arrested during the year of 2015:
- Total number of violators - 17726
- Total amount of fines - Rs 39,91,000/-

- Vehicles arrested during the year of 2016:
- Total number of violators - 10969
- Total amount of fines - Rs 40,61,300/-

- Vehicles arrested during the year of 2017 (up to August)
- Total number of violators - 7395
- Total amount of fines - Rs 22,16,950/-

TABLE 7: Top 5 Traffic violators from 2012 to 2017 (up to August, 2017)

Year	No Parking	Without driving License	No Entry	Drunken Driving	Wrong side Traffic
2012	1253	378	283	265	161
2013	3852	901	572	280	722
2014	3886	1133	545	523	285

2015	5351	1658	662	817	455
2016	5368	1767	861	692	492
2017(up to August)	2337	1095	600	293	392

TABLE 8: Vehicle impound from 2012 to 2017 (up to August, 2017)

Year	Two wheeler	LMV	TAXI	MMV	HMV	BUS
2012	3839	2511	1550	33	652	141
2013	4189	2229	2282	0	576	182
2014	4604	2211	2180	0	426	112
2015	10594	3479	2622	0	941	90
2016	5867	2308	1922	1	732	129
2017	4217	1498	1159	0	415	102

3.8 Conclusion

In the third we have discussed about the organization and working of traffic police, role, responsibilities and functions of Officer in charge of Traffic Police. This study has provided with vital information regarding the duties and responsibilities of Traffic Police it also provide us a vital inputs which can lead to further studies and analysis of Traffic Police administration. Again, we have study and analyze the responses of police personnel themselves in the context of nature and functioning of Traffic police in Aizawl. The next chapter will deal with the issues and challenges face by traffic personnel and public in traffic management.

4.1 Introduction

It is understandable that many people consider congestion a significant problem. Traffic congestion reduces travel speed, creates uncertainty and requires more driver effort. It is said that high volume of vehicles, the inadequate infrastructure and the irrigrational distribution of the development are the main reasons for increasing traffic congestion. In Aizawl there are no written rules about speed limit but Traffic SP can made recommendation on speed limit like in Aizawl AMC area speed limit should be 20km/hr and in other area 30 km/hr. The major cause leading to traffic congestion is the high number of vehicle which was caused by the population and the development of economy. If you live near urban area, traffic congestion can be a major daily headache. It is bad enough that there isn't enough road capacity for the increasing number of vehicle travelling on them, and rude and aggressive drivers make a bad situation even worse.

In Aizawl traffic problem is getting worst with every coming day especially in the area like Dawrpui, Hospital road, Treasury square, Chanmari and Vaivakawn and many other more.

Table 9: The comparative numbers of vehicles (LMV) moving from Treasury Square to Chanmari.

Date	Time	Vehicles from north	Vehicles from south
9.10.17(Monday)			
Am	9:45 to 10:45	534	575
Pm	4:30 to 5:30	827	677
10.10.17(Tuesday)			
Am	9:30 to 10:45	1025	820
Pm	4:30 to 5:30	983	745
11.10.17(Wednesday)			
		975	750

Am	9:30 to 10:30		
Pm	4:30 to 5:30	983	745
12.10.17(Thursday)		986	821
Am	:30 to 10:30		
Pm	4:30 to 5:30	1375	1150
13.10.17(Friday)		920	715
Am	9:30 to 10:30		
Pm	4:30 to 5:30	857	870
14.10.17(Saturday)		825	713
Am	9:30 to 10:30		
Pm	4:30 to 5:30	912	740

Source: Traffic police department.

Government is doing many efforts to avoid traffic jams and other traffic problems. According to traffic police record, in Aizawl one of the most congested areas in term of vehicles passes through is between Treasury square and Chanmari. Vehicles coming from north to south are recorded weekly during the peak hour as shown in table 9. This indicates that vehicles are bottlenecks due to unavailability to choose another route. To deal with traffic related problems in Aizawl city Traffic Coordination was set up. With the help of AMC, Local Council, UD&PA, LAD, PWD, Revenue, Finance Department and Home Department

4.2 Nature of Traffic congestion

The major causes for traffic congestion in Aizawl are as follows:

1. Narrow and steep roads: Small road for a number of cars and motor cycles especially streets of Aizawl are not that wide spread, due to illegal possession on the road they are getting narrow and becoming a reason behind traffic jam.

2. Rapid growth of vehicle: Rapid growth of the population, as a result of this, the number of cars is increasing annually. The increase in number of commercial vehicle which lead to loading unloading of goods , and blocking traffic .Old cars and other vehicle even 50 years old cars are still running on roads.

Pic: Aizawl City traffic jam.



Credit Laltleipua, taken on 22.10.2017.

3. Illegal Parking :In Aizawl city one of the most important things which cause traffic jam is illegal parking or parking on the road has been creating congestion every day. Traffic jam from Mizo Fed petrol pump to Vaivakawn area and from Bawngkawn to Dawrpui during the rush hour it almost took an hour to reach our destination. The road are steep and narrow so due to this on road parking of vehicles is one of the main reasons behind serious traffic congestion on different part of Aizawl city.

Pic: Aizawl City roadside parking.



Credit Laltleipuia, taken on 22.10.2017.

4. Higher Purchasing power of the public: Due to higher purchasing power of the citizen of Aizawl city the popularity of private transportation is increasing but existing roads and highway are not supportive or changing according to the increasing number of vehicle. In Aizawl two-wheeler is tremendously increasing As a result vehicle congestion is increasing at an alarming rate.

5. Improper lane Management: Land management is an important fact in managing the traffic in Aizawl city. Much type of vehicles tries to overtake the vehicle even in the single undivided road. In Aizawl widening of roads is impossible and there is only few roads to select main road is fully congested. This is the main reason that the city roads are unequipped with the lane dividers which divide the lane into incoming and outgoing traffic.

6. Improper planning of city development:In Aizawl, city development planning is a long term development plan. But that planning is not proper. Most of the time it is seen that some illegally ceased roadside land, but due to the

vague development plan these kinds of movements is going in vain. The Government has a proposed plan for traffic management which will be initiated soon.

7. Lack of Enforcement of traffic discipline

Pic: Traffic discipline on road.



c

Credit: Laltleipuia, taken on 22.10.2017

Lack of knowledge among the common people and lack of enforcement of traffic rules by the police are the main reasons behind the accelerating rate of accident and traffic jams. There are many rules and regulation which are not known majority to us Traffic discipline aims at dealing with a wide range of component pre-requisites with singular goal of ensuring smooth and safe flow of traffic on road. Improper checking the mechanical fitness of the vehicle moving on road create problem on road. Unensuring of speed limit of vehicle, unverified the required eligibility of drivers, improper controlling and aggressive overtaking tendency of the driver leads to accident which create delays on road.

4.3 Interpretation of Questionnaire from public

Table 10: Impact of Traffic congestion from Public

Questions	Answers	No of people	Percentage%
Is traffic congestion part of your daily life?	Yes	40	80%
	No	2	4%
	Can't say	8	16%
In your opinion what causes Traffic Congestion?	Vehicle density	12	24%
	Illegal parking	20	40%
	Narrow road	9	18%
	Urbanization	9	18%
What part of the area in Aizawl do you think is the worst for traffic jams?	Chanmari	7	14%
	Dawrpui	20	40%
	Treasury square	13	26%
	Vaivakawn	10	20%
Do you think public transports such as Town bus and Taxi are reducing traffic jam?	Yes	20	40%
	No	18	36%
	Cant say	12	24%

Source: Field work

From the above table 7 impact of traffic congestion in Aizawl the table indicates that 80 percent from public face the problem of traffic congestion in their daily life, only 4 percent and 16 percent from public doesn't have any problem. The second questions regarding the opinion what causes traffic congestion 40 percent are affirmative and said that it is illegal parking. 24 percent claimed it is due to vehicle density, 18 percent from the public states it is caused by narrow road and urbanization. When asked about the worst area for traffic jams, 40% responds that Dawrpui Area is the worst which is followed by Treasury square which is 26% , Vaivakawn 20%, Chanmari 14% the respondent said that during rush hour from 9:00am to 11:00am and 4:30pm to 6:00pm vehicles are fully congested in these Areas especially from treasury

square to Chanmari. The question regarding public transport are reducing traffic jams 40% of the respondent are aware that public transport reduce traffic jams, private vehicles are the ones that cause traffic jams. 36% believed that public transport especially taxis causes traffic jams. Picking up and dropping of passengers create jams and delay for other vehicles.

TABLE: 11 People’s perception about Traffic personnel and Government.

Questions	Answer	No of people	Percentage%
Do you think traffic police are good enough for maintaining public safety on roads?	Yes	25	50%
	No	13	26%
	Can’t say	12	24%
Do you think traffic police are good enough for maintaining public safety on roads?	Yes	26	52%
	No	12	24%
	Can’t say	12	24%
Do you think Traffic coordination committee is necessary to solve traffic related problems?	Yes	25	50%
	No	8	16%
	Can’t say	17	34%
Do you think traffic police are free from corruption and bribery?	Yes	19	38%
	No	18	36%
	Can’t say	13	26%
The Government has taken many steps on reducing traffic jams lik changing school hour, taxi service system,	Yes	30	60%
	No	9	18%

regulating private motor vehicles do you think these reduce traffic congestion?	Can't say	11	22%
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Source: Field work

In the above table 8 the respondents were asked about their perception towards Traffic personnel and government in managing traffic 50% of the public thinks that traffic police are good enough in handling traffic and maintaining road safety while 26% criticize about the working of traffic police. 52% states that the government is aware and taking initial actions for road traffic violation. The respondents were further asked if the Traffic coordination committee is necessary to solve traffic problems 50% of them respond necessary while 34% have no idea about its functioning. On being asked if Traffic police are free from bribery 36% of the respondents claimed that police involved in bribery. The government new policy which recently launched to apply on public transport taxis and private vehicles to reduce traffic congestion 60% of the respondents said that it actually reduce traffic jam in most places, while 18% criticize and state that it does not affect on VIP and government Officials which is unfair.

TABLE: 12 Traffic personnel Perception on organization

Question	Answer	No.	Percentage
Are you satisfied with your clothing and article supplied?	Yes	30	60%
	No	20	40%
If no give reason	Procurement of standardize material	4	8%
	Superiors do not care for quality	7	14%
	Paucity of funds	5	10%
	No replacement in time	2	4%
	Corrupt practices procurement	2	4%
	others	0	0

Issues and challenges of traffic management in Aizawl Chapter 4

Are you satisfied with your equipments weapons?	Yes	19	38%
	No	31	2%
If no give reason	Obsolete and outdated equipments	9	18%
	Not suitable for duty	6	12%
	Inadequate in quantity	12	24%
	Others	4	8%
Weather availability of resource is sufficient?	Yes	0	0
	No	0	0
Staff	Yes	15	30%
	No	35	70%
Weapons	Yes	17	34%
	No	33	66%
Communication Infrastructures	Yes	9	18%
	No	41	82%
What are the major challenges in implementing traffic rule?	Lack of public cooperation	34	68%
	Lack of traffic personnel	4	8%
	Lack of training	12	24%
Do you think people have enough awareness of traffic rules?	Yes	26	52%
	No	20	20%
	Cant say	4	8%
Do you think public follows lane discipline in Mizoram?	Yes	30	60%
	No	25	50%
	Follows only during duty hours	8	16%

If no give reason	Lack of awareness	6	12%
	Lack of traffic police to vigilate	11	22%
What are the various health problems face by traffic police?	Heart	15	30%
	Lungs	20	40%
	Others	15	30%

Source: Field work

Where there is paucity of resource no organization can function in a satisfactory manner. The lack of infrastructure equipment has led to perform their day today duties. The respondents were asked if they face problems in their duties 60% of the respondents said that they are not satisfied with the clothing and article supplied, 40% replied that they did not faced any kind of problems. The respondents were asked to mention their other day today practical problem faced by them. 62% of the respondents are not satisfied with the available equipment weapons 14% said that it is not suitable for duty and 24% replied inadequate quantity. The respondents were asked whether availability resource is sufficient 82% of the respondent relied communication infrastructure are unavailable.70% of the respondents said that there is no enough manpower and lack on staff. The respondents were asked about the major challenges in implementing traffic rule 68% of the respondents answered lack of cooperation from public one of the respondent also mention that too much VIPs on road disturb the traffic flow and two wheeler overtake other vehicles create problem in traffic flow. 28% of the respondent replied lack of training is the main reason for lack of follows lane discipline. When the respondents were asked about the people regarding awareness on traffic rules 50% replied that they are aware and 20% of the respondents think they are not. The respondents were asked whether public follows lane discipline 60% of the respondents thinks they follow and 22% of the respondents replied that they did not follow lane discipline due to lack of traffic police duty. The respondents were further asked about the various health problems face by them 40% of the respondents claimed to have a Lungs problem due to air pollution and smoke emitted from vehicles and 30% of the respondents also claimed to have heart problem the other 30% of the

respondents replied they have skin disease, nasal polyps and sun burn due to long hours exposed to direct sunlight.

4.4 CHALLENGES

The number of vehicles of Aizawl increases rapidly so as the population but the size of the road is constant. As visualized in the past, today there are vehicles which cannot be utilized properly due to congested road traffic. It is estimated that there are about 60,000 to 70,000 motor vehicles within Aizawl city and out of these vehicles about 50,000 vehicles are mobilized every day. To manage the movement of these vehicles, there are about 150 traffic police officers who can perform their job every day and it is calculated that one traffic police officer manages the movement of about 333 vehicles within the city. It is also estimated that the length of the road in which vehicles move every day within the city is about 50 km only but in contrast the length 50,000 vehicles is about 250 kms and this clearly show the problem of traffic management within Aizawl city. Therefore, planning for proper management of traffic within Aizawl city at a large scale is badly needed.

Traffic Police department has made a proposed plan for Planning and management of traffic which is divided in to three categories on the basis of the time required for the implementation of the plans viz. These are the challenges:

- Short term.
- Medium term.
- Long term.

A. SHORT TERM PLAN:

Under this plan, there are proposals which can be implemented during a short period of time.

1) Shifting of obstructive electric and telephone poles:

There are many electric and telephone poles along the side of the road within the city which are obstructive for the free movement of pedestrian as well as road traffic and even some telephone poles are not used properly. It will be very helpful for the improvement of road traffic if these poles are removed or shifted to other convenient places. The matter regarding shifting of these poles has been conveyed to concerned authorities.

TABLE 13: Electric and Telephone poles to be shifted.

Electric Poles proposed to be shifted	Telephone Poles proposed to be shifted
Kulikawn Area- 6 (six) nos.	Kulikawn Area- 5(five) nos.
Mission Vengthlang Area- 1(one) no.	Mission Veng Area- 1 (one) no.
Tuikhuahtlang Area- 1(one) no.	Mission Vengthlang Area- 1 (one) no.
Khatla Area (MG) road- 2 (two) nos.	Tuikhuahtlang Area- 2 (two) nos.
Peter Street- 3 (three) nos.	Khatla Area (MG Road)- 6 (six) nos.
Tuikual Area- 1 (one) no.	Peter Street Area- 4(four) nos.
Dawrpui Area- 1 (one) no.	Khatla Kawn Area- 3 (three) nos.
Chanmari Area- 5 (five) no.	Venghlui Area- 1 (one) no.
Ramhlun Venglai Area- 1 (one) no.	Tuikual Area- 3 (three) nos.
Ramhlun North Area- 1 (one) no.	Chanmari Area- 1 (one) no.
Thuampui Area- 2 (two) nos.	Chanmari West Area- 1 (one) no.
Zemabawk Area- 1 (one) no.	Lower Zarkawt Area- 1 (one) No.
	Vaivakawn Area- 2 (two) Nos.
	Thuampui Area- 2 (two) nos.

2) Automobile Workshops:

Along the road within the city, there are many automobile workshops in the narrow portions of the road which are causing road traffic problems. In this connection, though coordination committee issued instruction to close these automobile workshops, but they are not closed till date. It is proposed that for compelling of those workshops which were identified by coordination committee; the committee has to move eviction order in judicial court.

3) Hawkers:

There are hawkers who are selling their articles along the road in the main center of the city and these hawkers make the road congested and hamper road traffic. Though, it appears that these hawkers themselves are not obstructive for road traffic, but there have been their customers in front of them extending to about 2/3 feet; beside their customers there have been pedestrians and these are obstructive to road traffic. These hawkers make the city congested and unhygienic.

Pic: Aizawl city roadside hawkers.



Credit: Lattleipuaia, taken on 18.10.2017

It is proposed that the licenses of these hawkers be cancelled by concerned authorities. The matter to revise for cancelling the licenses or shifting of more obstructive hawkers is conveyed to Local Administration Department/ Aizawl Municipal Council

4) Licensing/ Driving School:

More care and attention be paid while issuing driving license. Many driving license holders can hardly drive vehicles and they do not have the knowledge of driving manners and responsibilities of driver and this not only disturbs road traffic, but also not safety for themselves as well as other people. It is proposed that the following are to be kept in mind while examining driving license applicants, and if the applicant fails to meet any of the following criteria, license is not to be issued to such applicant:

- Driving skill.
- The rules of road regulation.
- Traffic signal and signs.
- Driving etiquette.

- Road signs.
- First Aid.

For this purpose, it is also proposed that government has to set up reliable Driving School. Besides, government has to carefully monitor the existing driving schools run by private parties and if such driving schools do not meet the norms set by government, their license be cancelled. If the licensing is regulated in this manner, road traffic problem and road accident will be minimized to a considerable extent.

5) Issuance of vehicles' fitness certificate:

A long period of traffic jam can be somehow avoided within Aizawl city if there is no immovable vehicles in the road or if vehicles can run normally within the city. But there are some vehicles which are old and not properly fit and if these vehicles are out of order while running inside the city, the consequence will be tremendous road traffic jam affecting the entire city and last for a long period of time. So, while checking the fitness of vehicles and issuing of fitness certificates, the concerned department is to be more careful and stringent.

B. MEDIUM TERM PLAN:

1) Widening of narrow road and leveling:

There are some parts of the road within the city which are narrower than other parts and there are some portions which are not leveled properly and the surfacing is not satisfactory. These portions of the roads can hamper proper road traffic flow and are also not safety. Widening and proper leveling of these portions of road can solve the problem of road traffic management to a considerable extent and for this purpose written information is submitted to Engineer-in-Chief, Public Works Department for necessary action. The portions of road proposed for widening and leveling are:

Upper Khatla MG Road near Central YMA Office towards Sikulpuikawn.

- Tuikual below Excise Department's Canteen.

- Chanmari West road near Quality Tours and Travels.
- AOC Junction.
- Dawrpui near Maj. Laldailova Points.
- Ramhlun North near Hniartei Point Junction.
- Vaivakawn towards Hunthar Junction.
- Vaivakawn Seventh Day Tlang Junction.
- Vaivakawn towards Bazar Bungkawn Junction.
- Vaivakawn near Zonunsanga Market.
- Bawngkawn Bazar Road Junction.
- Thuampui below Helipad.

2) Garage:

One of the most obstructive and causes unnecessary Traffic Jam within Aizawl city is parking of vehicles throughout the whole night and this often causes road accidents. It is proposed that the government has to issue stringent order to have garages for each vehicle and AMC has to take the matter as it's most important project and local councils be more empowered in this regard. Presently, there are some local councils issuing order to each vehicle owner to have garage and prohibit parking of vehicles at road side throughout the night.

It is also proposed that Government has to issue order that each private buildings or Government buildings occupied for Government offices should have garage; those government offices located at the main center of the city be shifted to the outskirts of the city and all road side parking places in between Chanmari and Raj Bhawan be cancelled and converted for dropping zone.

3) Site for Impounding Towed Vehicles:

There is no proper site for keeping towed vehicles within Aizawl city and those towed vehicles are usually kept on the road side below OPD Building, Civil Hospital, Aizawl and only about 5(five) vehicles can be located at this spot. There were some occasions when the violator of traffic rules fled away and failed to pay their fines and was very difficult to locate such violators.

Pic: Traffic violator being fined by traffic police.



Credit: Lattleipuaia, taken on 26.10.2017.

It is proposed that convenient place at New Capital Complex be utilized for the site of impounding towed vehicles and police officer be detailed for guard duty at the site. Besides, there are only two Tow Trucks- TATA 407, Truck and TATA Xenon Truck available for towing of vehicles and are not sufficient and at least 4(four) Tow Trucks is required for efficiency in moving of vehicles offending rules and this will prevent violation of rules. Better wheel clamp is also required.

4) Strengthening Man Power:

In the present context, there is no sufficient man power and traffic police cannot be detailed to perform duty in many points due to insufficiency of man power. If at least 150 additional man power is available, traffic police will be able to cover more points and this will prevent violation of traffic rules and this will result in better flow of road traffic.

5) Education:

Many drivers/riders of vehicles within Aizawl city are not aware of traffic rules and regulations and many of them are negligent and due to this reason, it is proposed that one subject of Traffic Rules and Road Signs be imparted at Primary School and Middle School. Besides, awareness campaigns be conducted at High School and College Level. Mass media be utilized for disseminating awareness regarding traffic rules and road signs to the general public.

C. LONG TERM PLAN:

There are some plans which require longer term for the implementation of such plan.

1) Utilization of Ropeway system:

For solving the problem of traffic management in Aizawl city, construction of rope way will be very helpful. In the context of Aizawl city, it seems that extensions of road, construction of elevated road, and construction of tunnel are not practicable. It is required to take step for the construction of rope way like Shimla and Gangtok for proper management of road traffic within Aizawl city. One of the most important places in Aizawl city is New Secretariat Complex and for approaching this place rope way service be introduced to avoid road traffic jam to provide easy access even from far off places.

While mentioning about rope way system, it is proposed that there will be the base station at the convenient place near Dawrpui Multi Purpose Center and the site of Multi Purpose Center be leveled down and prepared to accommodate at least 500 LMVs. Again, sub-station be set up at other important places of Aizawl city – New Secretarial Complex, Khatla, Durtlang, Laipuitlang, Thuampui, MZU (Tanhril) and other convenient places of eastern and western Aizawl linking with the main base station at Dawrpui. Rope way system will not only bring improvement in traffic management, but also attract more tourists and will raise state's revenue.

2) Pedestrian Over Bridge:

Pic: Pedestrian over bridge in Aizawl



Credit: Laltleipuia, taken on 20.10.2017.

It is often said that one of the causes of road traffic jam and road accident is absence of proper site for crossing the road by pedestrians. Therefore it is proposed in between Raj Bhavan and Chanmari pedestrian over bridges are to be constructed for crossing of road by pedestrian in the following places- Treasury Square, Zodin, Bazar Bungkawn, Upper Bazar, Millennium Center, linking Israel Point Junction, Zarkawt, linking Chanmari kawn and Chanmari West Junction. It is again proposed that all these foot over bridges are to be constructed by using steel structures to occupy less space.

Besides the above mentioned places, it is proposed that foot over bridges are to be constructed at other convenient places and ceasing of road traffic flow as well as accidents caused due to crossing of road by pedestrian will be avoided at a considerable extent. One of the reasons of road traffic jam in Aizawl city is that many pedestrian cross the road at Upper Bazar, Babutlang Peng and

around Millennium Center and this can be avoided if feet over bridges are constructed at these places.

3) Clearing of road in between Treasury Square and Chanmari:

One of the main reasons of the problem of traffic management in Aizawl city is that commercial activities are carried out in the area between Zodin, Dawrpui and Chanmari and in this area stores selling essential commodities, fashion and garments, electronic goods, construction materials, ornaments etc and also Hospitals, Doctor's Clinic and drugs store are located. So, most of the people not only from Aizawl city, but also from other places of Mizoram gather in and around this area and make this place congested and enhances the problem of traffic management. The following proposals are laid for solving this problem:

- 1) All parking places in between Treasury Square and Chanmari Presbyterian Church are to be cancelled and these parking places are to be converted into dropping zone.
- 2) For the implementation of the above mentioned point, there is a need for suitable parking places at the south end of Treasury Square and North end of Chanmari.

Treasury Square, Transport Department's site near Vanapa Hall, and Rural Development Department Office Building at Chanmari are to be utilized for constructing site for multi storey parking and the concerned department are to be shifted to New Secretariat Complex or other convenient places.

If the above proposal is implemented, those who are working in the area or other people to visit the area will park their vehicles in the above mentioned parking places and shall approach the area by foot, and those who require entering the area by vehicles will follow dropping and pick up system. It will also convenient for those who reside in the area, those who have to trespass the area and also for those who have to park their vehicles at millennium center garage.

Moreover, multi storey parking sites at the north end and at the south end will be a suitable source of revenue for the government. The reasons for proposing government's building/site for parking places are that it will be less expensive than using privates' building and immediate action can be taken if the government decides to implement.

4) Clearing of New Market Area:

It is found that better and effective planning is required for proper management of traffic at New Market area and its surrounding areas. For this purpose, the following proposal is laid which are found feasible and can be implemented:

Police Family Lane and site between old power house and bazaar road at electric veng are to be utilized for the construction of multi storey car parking. In those multi storey car parking, all vehicles parked at the road side around New Market areas (Lower Zarkawt, Electric Veng, Saron Veng and Chhinga Veng) are to be shifted and all parking places in these area are to be used only for dropping zone and the present problems of road traffic management will be solved to a great extent.

As mentioned in the previous point, construction of multi storey car parking site will be a suitable source of revenue for the government. The concerned government will be allotted another site at New Secretariat Complex or other convenient places.

If the above proposals are accepted and implemented, the congested road traffic within Aizawl city, enormous road traffic jam, queuing of vehicles up to Upper Khatla which are running towards the south and up to Chanmari which are directed towards the north will be avoided.

5. Setting up of Traffic Institute:

Due to the increasing problem of road traffic management within Aizawl city, there is a need for well equipped traffic institute which will be beneficial for proper management of road traffic not only within Aizawl City, but also in other towns of Mizoram as the problem of road traffic management is becoming rampant in such towns. We need to have well equipped traffic institute like those traffic institutes in Delhi, Mumbai, Kolkata etc. which will be worthy to be visited from other states. For this purpose, there is a need to prepare Traffic Police site at New Secretariat Complex, Khatla. Widening of the approaching road to four lanes is required and there is also a need for preparation of site for conducting vehicles inspection, keeping of towed and seized vehicles and parking place for customer.

6. Shifting of important institutions and centers:

As mentioned in the previous points, almost all important institutions and center locate in between Treasury Square and Chanmari and because of this it is inevitable for everyone to approach this area but the area cannot accommodate in the present context causing road traffic management problem. For this, important institutions and center viz shopping mall, Government Offices, Hospital etc are to be shifted to other convenient places. If some important departments of Aizawl Civil Hospital are shifted to Falkawn Referral Hospital, the consequences will be that doctors' clinic and many drugs store will automatically move to Falkawn from upper Bazar and this will result in better road traffic management of the area. Again, if large shopping malls (market buildings) are available at Zemabawk (Zuangtui) and Falkawn, it will automatically reduces congested road traffic within the center of the city.

7. Well Equipped Traffic Control Room:

Presently, CCTV Cameras are installed at some important junctions within Aizawl City under Aizawl City Surveillance Project, beside this step has been taken to install another CCTV Cameras at all other important junctions within the city. The present CCTV facility is limited only to security and detection of crime. Since the control room of these CCTV Cameras locates at SP's Office, Aizawl, traffic police less utilized this facility. It is proposed that well equipped control room be set up at Aizawl Traffic Police Station by using this Aizawl City Surveillance server covering all important junctions for monitoring the traffic flow and traffic police personnel who are specifically to monitor the equipment are to be imparted proper training in this regard. Besides, more CCTV be installed covering strategic places even in some straight road for complete covering of traffic flow for proper monitoring of road traffic flow and it will facilitate investigation of road traffic accident cases.

4.5 Initiative taken to improve Road Safety in Mizoram during 2016 as follows:-

1. The 27th Road Safety Week was observed in Mizoram from 8th – 12th February, 2016. In order to highlight and emphasize the need for Road Safety,

all the concerned agencies like Traffic Police, Transport Authorities and Drivers Community etc. took part in the Road Safety Week Programme.

2. On the directions of Supreme Court Committee on Road Safety Special Drive against traffic rules violators viz drunken driving, over speeding etc...Compounded and fined in Aizawl City during 2016

TABLE: 14 Compounded and fined in Aizawl City during 2016

Month	Drunken Driving	Over Speeding (Dangerous Driving)	Red-light jumping (Disobey Signal)	Use of Mobile phone	Without helmet
January	55	10	66	5	6
February	78	11	80	10	13
March	50	12	66	9	6
April	73	18	87	18	15
May	87	18	93	18	10
June	60	45	86	15	21
July	60	29	66	17	20
August	61	46	92	18	34
September	48	32	44	10	14
October	39	26	93	19	15
November	32	15	66	16	19
December	38	29	87	16	30
TOTAL	681	291	926	171	203

Source: Traffic police department.

3. Road Safety Awareness Campaign was conducted by Traffic Police in coordination with Transport Department in a selected Schools and Colleges in Aizawl city and other district capital of Mizoram in a weekly basis throughout the year 2016.

4. Road Safety Awareness Campaign was also launched as many as possible for the general public through print media, electronic media like DDK, AIR, Aizawl and local cable network in the form of publicity by means of live

phone-in discussion and talks available in Aizawl city and other district capital and sub-divisions.

5. Road Safety awareness programme was also organized at least once in a month in cooperation with driver community like Zoram Drivers Union, Aizawl City Bus Owners Association, and Mizoram Taxi Association etc...

6. Since the Media plays an important role in disseminating information about Road Safety and Traffic Rules, Road Safety Awareness for Media & Role of Media in Road Safety Awareness Campaign was held on 29.8.2016 @ Aizawl Press Club with Mizoram Journalist Association at the initiative of Aizawl City Traffic Police.

7. Special and extra efforts were made by Aizawl City Traffic Police in Aizawl City by conducting “*No Tolerance Drive/Checking against violators of Traffic offences*” w.e.f 12.12.2016 with special focus on *drunken driving, smoking while driving, over speeding and using mobile phone while driving*. The same has been carried out in every district capital of Mizoram.

8. Leaflet/Pamphlets containing important traffic rules, road safety rules, driving manners and important do’s and dont’s for the drivers and for the public members are occasionally distributed free of cost in Aizawl City and other district capitals during the year, 2016.

9. As per the directive of the Supreme Court Committee on Road Safety (CoRS) constituted by Honble Supreme Court of India in 2012, the following committees has been constituted by Transport Department, Govt of Mizoram with Transport Department as the Nodal Department :-

(a) The Mizoram State Road Safety Council.

(b) District Road Safety Committees.

(c) Lead Agency/Secretariat of State Road Safety Council.

10. In relation to Road Safety issues, the state of Mizoram has undergone the following developments, since the re-vitalization /re-constitution of State Road Safety Council and the various District Level Committees:

(a) Meeting of the Mizoram State Road Safety Council was held on 20.12.2016.

(b) Action Taken Report was submitted to the Secretary Supreme Court Committee on Road Safety (CoRS) on 30.12.2016.

(c) A committee to identify hoardings and sign board was constituted on 21.12.2016 whose prime duty/responsibility is to inspect hoardings and objects that obstruct driving or distract drivers and ensure its removal. It is contemplated that this Committee be augmented to include identification of Black Spots and other accident prone areas and devise formal protocols for minimization of road accidents and fatalities.

(d) The Excise & Narcotics Department of Government of Mizoram had been informed to strictly enforce 'Ban' on the sale of alcohol alongside the National Highways and State Highways and to ensure strict follow-up actions.

(e) For establishment of Automated Vehicle Inspection & Certification Centre, DPR amounting to Rs. 15.50 Crore had been submitted to MoRTH on 29.7.2016 for sanction and a request for follow-up action for the same was submitted to MoRTH on 4.11.2016.

(f) The Mizoram State Road Safety Action Plan will be finalized soon.

(g) Active effort is undertaken to see that the proposed Bill for the Mizoram State Road Safety Council is ready and the same be laid in the State Legislative Assembly in its nearest sitting.

4.6 CONCLUSION

To reduce traffic jam in Aizawl city and decrease the duration of traffic flow Traffic police department initiate traffic jam free Action plan like to reduce the problem of vehicle population which create air pollution in Aizawl city, to increase more public transport and provide better opportunities for easy accessibility, availability of 24x7 public motor services and reduce private motor vehicle and to create availability of 24x7 public or private car services. Traffic police proposed plan for Aizawl city as we have seen in the above will be helpful for the improvement of road traffic management

but all the plans may not be successfully implemented due to various reasons like in Medium term plan widening of road and leveling of road may not be possible among the specific areas due to lack of funds and high compensation. Second is Garage for parking. The Government has taken certain measures in utilizing certain areas for parking space AMC with the help of local council are now implementing parking regulation Act where all the registered vehicles should have parking garage by the end of November 2017 which will be strictly observe and monitor. In the long term plan utilization of Ropeway system will be very helpful if it's possible but construction of ropeway like Shimla and Gangtok will need more time to implement in a City like Aizawl. Clearing of road between Treasury Square and Chanmari, Shifting of important institution this proposal is for long term and to successfully implement this type of big project in Aizawl it would take a decade so regarding shifting of institution might not be possible in a near future.

5.1 INTRODUCTION

Though the roads in Mizoram are narrow and steep, there is discipline among the driver of various vehicles plying on the road. One of the main problems that the Government and the people alike face in Aizawl everyday is traffic jam on the narrow and steep roads criss-crossing the length and breathe of the state capital, but the driver maintain strict discipline and could hardly see anyone honking their vehicles. In Aizawl, traffic jam is an unavoidable daily occurrence on all roads. But the observance of strict traffic rules by the drivers hardly cause any sort of inconveniences to the people. Aizawl has become the first Indian city to adopt a no-honking policy, that too without any official help or legislation. Metropolitan cities such as Mumbai Delhi and Kolkata, everyone seems to be in a rush and the honking never seems to stop, Aizawl has set an example for the entire country to follow.

5.2 Major findings of Research questions and Research objectives

The following will attempt to give the answer to the proposed research questions and objectives through this study. The research questions are as follows, “What are the major problems and challenges faced by traffic personnel?” the study found that there are several problems faced by traffic personnel in law enforcement due to lack of cooperation from public and lack of manpower. Lack of knowledge among the common people and lack of enforcement of traffic rules by the police are the main reasons behind the accelerating rate of accident and traffic jams. The police have to work under continued stress and strain but they continued to work to adhere to the code of conduct as it is the duty of every citizen to obey traffic rules and not violate them.

However, as a response to our second research questions “What are the suggested remedial measures for traffic management in Aizawl?” The suggested remedial measures for traffic Management in Aizawl are divided into three term plan which are as follows:

A. SHORT TERM PLAN

- 1) Shifting of obstructive electric and telephone poles
- 2) Shifting of Automobile Workshops

- 3) Shifting of Hawkers
- 5) Issuance of vehicles' fitness certificate

B. MEDIUM TERM PLAN:

- 1) Widening of narrow road and leveling
- 2) Garage for all vehicles.
- 3) Site for Impounding Towed Vehicles
- 4) Strengthening Man Power**
- 5) Education awareness campaign on road safety

C. LONG TERM PLAN:

- 1) Utilization of Ropeway system
- 2) Construct Pedestrian Over Bridge
3. Clearing of road in between Treasury Square and Chanmari
4. Clearing of New Market Area
5. Setting up of Traffic Institute
6. Shifting of important institutions and centers
7. Well Equipped Traffic Control Room

“What are the role and functions of Traffic Coordination Committee in Aizawl? The main task of coordination body is to initiate and monitor the safety measure and other activities in the field of road safety, to direct and coordinate activities related to reduction of traffic congestion, accidents and their consequences and to improve traffic safety.

“Have any steps already been taken to improve the technique of handling traffic congestion?” Yes the Government has taken remedial measures following the decision made by the Coordination Committee on Traffic Management; a 'No tolerance drive' was launched in Aizawl district on 14th Dec 2016, which was also attended by Traffic Superintendent of Police C. Lalthanmawia. The committee consists of representatives from the Public Works Department, Aizawl Municipal Corporation, state transport department and traffic police. During the drive, the Traffic Police will conduct mass-checking on violation of traffic rules, especially for drunken driving, using mobile while driving. Under

the new system launched on 1st September 2016, around 3,526 registered taxis were divided into three groups - A, B and C - and were asked to carry passengers on alternate days. The plan was drawn up by the Mizoram traffic police department in consultation with the government. Traffic police are mulling launching another system in Aizawl, according to which vehicles whose registration numbers end with 1 will not be allowed to ply on dates like 1, 11, 21 and 31 of a month; similarly, vehicles whose registration numbers end with 2 would not be allowed to move on 2, 12 and 22 of a month. Under the new system launched on 1st October 2017 all the registered private vehicles inside Aizawl and vehicle registered from another district entering Aizawl are also included. This plan was drawn up by the Mizoram traffic police department in consultation with the government. Traffic police are launching another system in Aizawl, according to which vehicles whose registration numbers end with 1 will not be allowed to ply on dates like 4, 14 and 24 of a month; similarly, vehicles whose registration numbers end with 2 would not be allowed to move on 2, 12 and 22 of a month. This system is valid from 8:30 am to 5:30 pm and does not apply on Sunday.

During the course of present study, we have found out the answer to our research objectives. The first objective was, “To study the current volume of vehicles viz-a-viz urbanization rate in Aizawl” From the study we have found that the current volume of vehicles in Aizawl city is 128588 which is shown in table 3. The second objective was, “To study the technique of handling traffic congestion and safety” the Government has taken remedial measures following the decision made by the Coordination Committee on Traffic Management like no tolerance drive which was launched in Aizawl on Dec 2014. In Aizawl 3,526 registered taxis were divided into three groups - A, B and C - and were asked to carry passengers on alternate days. Traffic police are launching another system in Aizawl, according to which vehicles whose registration numbers end with 1 will not be allowed to ply on dates like 4, 14 and 24 of a month; similarly, vehicles whose registration numbers end with 2 would not be allowed to move on 2, 12 and 22 of a month. This system is valid from 8:30 am to 5:30 pm and does not apply on Sunday. According to Traffic Coordination committee ‘No garage, No car’ rule is implemented from 1st November 2017 all the vehicles

should have parking garage without fail. AMC have instructed all the local council within Aizawl Municipal Corporation area and started inspecting whether all the vehicle owners in their jurisdictions have garage. The third objective was, “To study the corresponding conduct and behavior of the personnel to achieve the goals” The details are being discussed in chapter three. The last objective was, “To study the challenges and problems in achieving organizational goals” Traffic police department has initiative plan and those plan should be used in achieving organizational goals which are being discussed in chapter four.

From the above research question and objectives the study found that the major problems regarding traffic congestion is lack of cooperation between the traffic personnel and public. Lack of knowledge among the common people and lack of enforcement of traffic rules by the police are the main reasons behind the accelerating rate of accident and traffic jams. Due to lack of manpower traffic police are unable to handle traffic jams in most places which results in negligence of traffic rule by the public. According to the Traffic police statement roadside parking is the major cause of traffic jams due to vehicle population and narrow road. Too many cars for the roadway due to inadequate mass transit options or other reasons, obstacle in the road causing a blockage and merger like double parking, road work, lane closure due to utility work, road narrowing down, an accident. Some other causes like too many pedestrian crossing not permitting cars to turn. There is a culture of VIP movements in India and in Aizawl city also, when political leaders and senior government officials are moving on the road, the road they are using might be close to other road users. The effect of such movements and closure of major roads during VIP movement is enormous on traffic; there is usually heavy traffic congestion.

To fix the causes of congestion first there should be a good connection between traffic personnel and public, rule should be strict and fines should be doubled so that violation of traffic rules would be a severe case. Police should give tickets to double parking that cause traffic congestion. Unless the road is widened roadside parking should not be allowed. The only way to reduce the numbers of pedestrians crossing at an intersection is to either add a mid-block crossing or

build a pedestrian overpass. Installation of traffic sensor for traffic monitoring is required to alert authorities. There should be proper traffic control at construction zones in the city.

In Aizawl city tax and fines were also used as a means for handling traffic congestion which is a good means of controlling traffic rules and numbers of vehicles. Using techniques like HOV lane- High-occupancy vehicle lane, carpool lane, Ramp metering, Bus Rapid Transit (BRT), Ramp metering are still not yet implemented, as soon as it is implemented traffic congestion would tremendously decreased.

5.3 RECOMMENDATIONS

The four chapters discussed the instruments Aizawl has adopted and compared it with instruments used in other cities. Combined with the theoretical instruments and principles discussed in chapter two and the background information of Aizawl in the first chapter 2 will give some recommendations both in supply side and demand side for Aizawl transport development in this chapter.

Supply side recommendations

Since the growth of population and the process of urbanization, Aizawl will need to build more roads in future. In my opinion, because the source of lands for building roads is limited and the rate of people who have vehicles is quite high. If roads are built for private cars, more vehicles will be induced by expanded roads capacity. The effect of traffic congestion by expanding roads is determined by the way the road capacity shared between private cars and public transportation. Therefore, new roads should put more priorities on public transport. Some of the new roads should be regulated as buses only right-of-ways not only for BRT system, but also for normal buses. Also more roads should be built for pedestrians and cyclists.

The rate of people who trip by public transport is at present quite low, compared with other cities, in Aizawl. With growing incomes many middle-class families will choose private cars if there is no good and efficient public transport system. Therefore more investments in public transportation are needed. The BRT

system should be introduced in Aizawl with more separated buses only right-of-ways. High-Occupancy Vehicle lanes are designed only for those vehicles carrying more than two or three persons and for public bus. Most people prefer to drive alone, since it is more comfortable, more convenient. But road carrying capacity would drop to a very low level, if a large number of single drivers travel on the roads net. During peak hours HOV lane will have obvious advantage in saving time when normal lanes beside are heavily congested

Demand side recommendations

Supply side instruments alone are not sufficient to resolve the traffic congestion problem. Supply side instruments give people more option when they travel which cause the result that fewer people may choose using private cars. Demand side recommendations mainly focus on how to control the number of cars. Road pricing should be used on Aizawl in some areas. Payments are required when private cars enter these areas, but free for public buses. Some drivers will not pass these districts by cars or choose other kinds of modes when they do not consider it affordable to use private cars. It can be used at peak hours, and then people can change their travel time and there will be less congested during peak hours. In other words, prices should be differentiated based on the traffic volume in order to stimulate people to change the travel habits. Also road pricing could be used 24-hours if the effect of charging only during peak hours is too small.

Parking fee is another useful instrument for Aizawl. Roadside parking is one of the major causes of traffic jams in Aizawl due to its narrow and steep road. Similar to road pricing, when people think it's not affordable for them to park at urban areas, they would not travel by vehicles. So to get people to choose other transport means there should be enough high parking fees and a few parking lots in order.

Besides those market instruments, ramp metering should be used on expressways net. In the next decade, the expressways net will be finished. Since ramp metering control specific number of vehicles driving on roads, traffic flows could move at a high speed.

To meet the goal of reducing traffic congestion in Aizawl the instruments that are discussed should be adopted. Supply side instruments or physical instruments should be improved in the first step, such as public transit. All the other instruments used should be based on these instruments. Since instruments like road pricing, parking fees could not reach their aims without good public transits.

Also when there is a good public transport system, which is accessible for majority of people in city, demand side instrument should be adopted, since demand side instruments both market instrument or regulatory instruments directly put pressure on private vehicles. How big impact the suggested instruments may have on the traffic situation is undefined. Building of BRT system may take five to ten years, and a metro way system will take even longer time. During this period, traffic congestion will not be reduced, even if there are more buses only way for normal buses. And traffic congestions may still exist, also when the BRT and road pricing are finished, since the accessibility of public transport is lower than private cars, especially in Aizawl city.

It is hard to predict whether these instruments will solve the traffic problem or just temporarily reduce it. When people get richer, fees of road pricing and parking fee may not be an economic problem for them. Then there will probably again be traffic congestions. And traffic congestion may be eased temporarily again when government further raise fees of road pricing. But people's salaries continue to grow. So it is hard to know whether traffic congestion is solved forever or just temporarily.

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APPENDIX I

QUESTIONNAIR

The questionnaire on Urbanization and Traffic Management in Aizawl City has been prepared to collect data and information to be used only for academic purposes. This is for the fulfillment and award of Master of Philosophy. The study is being conducted under the supervision of Dr Ningthoujam Irina Devi Assistant Professor, Department of Public Administration, Mizoram University.

The data collected through this questionnaire will be kept strictly confidential and nowhere the personal information or identity to the respondents will be disclosed in any manner. Your kind cooperation is solicited in this academic activity.

Place: Aizawl

LALTLEIPUIA

Regn. No: MZU/M. Phil. / 385 of 22.5.2017

Department of Public Administration

Mizoram University

QUESTIONNAIRE

(For Public)

1. Is traffic congestion part of your daily life?
 - a) Yes
 - b) No
 - c) Can't say
2. In your opinion what causes Traffic Congestion?
 - a) Vehicle density
 - b) Illegal parking
 - c) Narrow road
 - d) Urbanization
3. What part of the area in Aizawl do you think is the worst for traffic jams?
 - a) Chanmari
 - b) Dawrpui
 - c) Treasury square
 - d) Vaivakawn
 - e) Others
4. Do you think public transports such as Town bus and Taxi are reducing traffic jam?
 - a) Yes
 - b) No
 - c) Can't say
5. Do you think traffic police are good enough for maintaining public safety on roads?
 - a) Yes
 - b) No
 - c) Can't say
6. Do you think traffic police are good enough for maintaining public safety on roads?
 - a) Yes
 - b) No
 - c) Can't say
7. Do you think Traffic coordination committee is necessary to solve traffic related problems?
 - a) Yes

b) No

c) Can't say

8. Do you think traffic police are free from corruption and bribery?

a) Yes

b) No

c) Can't say

9. The Government has taken many steps on reducing traffic jams like changing school hour, taxi service system, regulating private motor vehicles do you think these reduce traffic congestion?

a) Yes

b) No

c) Can't say

QUESTIONNAIRE

(For Traffic personnel)

1. Are you satisfied with your clothing and article supplied?

a) Yes

b) No

c) If no give reason

i) Procurement of standardize material

ii) Superiors do not care for quality

iii) Paucity of funds

iv) No replacement in time

v) Corrupt practices procurement

vi) Others

2. Are you satisfied with your equipments weapons?

a) Yes

b) No

c) If no give reason

i) Obsolete and outdated equipments

ii) Not suitable for duty

iii) Inadequate in quantity

iv) Others

3. Whether availability of resource is sufficient?

a) Yes

b) No

4. Staff

a) Yes

b) No

5. Weapons

a) Yes

b) No

4. What are the major challenges in implementing traffic rule?

a) Lack of public awareness

b) Lack of traffic personnel

c) Lack of cooperation

5. Do you think people have enough awareness of traffic rules?

a) Yes

b) No

c) If no give reason

6. Do you think public follows lane discipline in Mizoram?

a) Yes

b) No

c) If no give reason

7. What are the various health problems face by traffic police?

a) Heart

b) Lungs

c) If other mention

APPENDIX 2

AIZAWL MUNICIPAL COUNCIL (CONTROL OF PARKING AND COLLECTION OF PARKING FEES) REGULATIONS, 2012

In exercise of the powers conferred by Section 371 read with clause (vi) of Section 57 of the Mizoram Municipalities Act, 2007 (Act No.6 of 2007), the Aizawl Municipal Council do hereby make the following Regulations, namely :—

1. Short title, extent and commencement. -

- (1) The Regulations may be called the Aizawl Municipal Council (Control of Parking and Collection of Parking Fees) Regulations as amended in 2015
- (2) It shall apply to the whole of Aizawl Municipal Council Area.
- (3) It shall come into force on the date of their publication in the Official Gazette.

2. Definitions. -

- (a) “Act” means the Mizoram Municipalities Act 2007 (Act No.6 of 2007);
- (b) “Chairman” means the Chairman of the Aizawl Municipal Council;
- (c) “Civic Police” means an appointed person who is to carry out the municipal activities.
- (d) “City” means the city of Aizawl;
- (e) “Municipality” means the Aizawl Municipal Council.
- (f) “Place of parking” means the places as notified by the AMC demarcating and specifying within the city on any portion of roads, and open spaces etc., for the purpose of parking of vehicles other than commercial vehicle.
- (g) “Parking means—Bring a vehicle to a halt in Aizawl Municipal area temporarily in a place of parking.
- (h) “Stand” means where the commercial vehicle park at their specified area.
- (i) “Officer “means any officers authorized to carry out realization of fees by the Chairman.
- (j) “Breach of order” means breaking/violating/failure to perform against any order issued by the Chairman.

(k)“Vehicle”means any mechanically propelled vehicle adapted for used upon roads whether the power of propulsion is transmitted there to from external or internal sources and includes bicycle and rickshaws;

(l)All other words and expressions used in these regulations and not defined but defined in the Act, shall have the same meaning as respectively assigned to them in the Act;

3. Prohibition of Parking

No owner or driver in charge of a vehicle shall be allowed to park his vehicle on any public street, thoroughfare or any open space within the limit of municipal area other than the place of parking specified for the purpose from time to time.

4. Specification/removal/alteration of Place of Parking/stands.

The Chairman may with approval of the Board of Councillors specify or remove/alter from time to time of such places or parking of different kinds of Vehicles , Bus stop and stand or halting station of any other public transport system by notification in the Official Gazette or local newspaper.

5. Period of Tender

The Chairman shall have the power to issue Tender on Collection of Parking Fees from various parking areas for one year.

6. Power of Municipality to charge parking fees

The Chairman, with the previous sanction of the Board of Councillors may charge a parking fee on any vehicle for parking on such places specified in the schedules from time to time.

7. Enhancement or reduction of parking fees

The Chairman, with the previous sanction of the Board of Councilors, reduce or enhance the rate of parking fees from time to time as specified in the Table of Schedule I.

8. Declaration of public street etc. for using as places of parking

The Chairman may with the previous sanction of the Board of Councillors from time to time declare any part of public street, road side, or any open space for using as parking place of vehicles of different kinds in consideration of need of shopping

centre, public office, bus stand etc. for free movement of vehicular traffic, pedestrians etc.,

9. Parking place on Government land

The Chairman, in consultation with the Department concerned, may declare any Government land for using as places of parking to collect parking fee.

10. Vehicles exempted from charging parking fees

No parking fees shall be charged from the vehicles of fire brigade, ambulance, police, armed forces, accredited journalists, members of Autonomous District councils which are on duty and vehicles of the Aizawl Municipal Council, AMC Councilors, MLAs and MPs.

11. Prohibition of loading and unloading in any public street

No owner of the vehicle or driver in charge of any vehicle shall park their vehicle, disturbing vehicle

movement for the purpose of loading and unloading on any roads or thoroughfare or any other public places notified by the Chairman Provided that parking for loading and unloading may be allowed between 8:00 PM to 5:00 AM in winter and 9:00 PM to 6:00 AM in summer; or Chairman may fixed from time to time.

12. Display chart of rate of parking fees Municipality

May, display or cause to display the rates of parking fees for different kinds of vehicles and for different period of time in respect of convenient parking place.

13. Issue of Identity Card

Municipality shall issue Identity Card to the officer or officers or agent or agents who are duly authorized to collect parking fee for each parking place wherein names and designations of the officers shall be stated clearly and officer in charge of the parking place is liable to produce his Identity Card as and when demanded. All Collectors appointed under these Regulations shall be issued Identity Card and wear uniform as prescribed by the Municipality from time to time.

14. Penalty

If any vehicle of any kind found parking in a place other than the places or stand shall liable to be punished or prosecuted under the provision of relevant Act and rules.³

15. Refusal of Parking Fee

If any vehicles parking in a place of Parking who refuse to pay parking fee shall be reported to Municipality/ Traffic Police by the concerned parking contractor or his representative or agent to be dealt with under the relevant provision of Motor vehicles Act and Rules.

16. Additional application of these regulations

These regulations shall also extend to such public bus, taxi, Maxi Cab, auto stand, etc., as may be notified within the city from time to time.

17. Restriction for parking at night

As per the relevant Notification of Mizoram Motor Vehicle (Amendment rules, 2010 under notification No D26011/3/94-TRP Dt 13.8.2010 for Motor vehicle registration implemented by the state Government, no vehicle shall be allowed to park at night on any place or any road side at night without prior approval of the Chairman.

18. Every municipal officer or appointed persons as civic police lawfully delegated with the power by the Municipality to realize parking fee as per this regulations, may report and reasonably seek the assistance of any police officer on duty on any matter which tends to violate or is likely to cause breach of order of any of these regulations by any person liable to payment of parking fees and it shall be the duty of every such police officer to assist him and for all such purposes, the police officer shall have the same power which he has in exercise of his ordinary police duties.

19. Any fee and fine provided by these regulations shall be paid by the owner or the driver of the vehicle instantaneously. If he or she fails to pay instantaneously, he or she shall be treated as defaulter, and such Default shall be dealt as per the provisions of Section 374 of the Act.

20. The Municipality shall be co-operated by the police in carrying and enforcing the provisions of the Act and the Regulations made here under for maintaining good order in the matters of control of parking and collection of parking fees as provided in the section 363 of the Act.

21. Day and Night parking fees shall be charged and collected separately as per schedule I and II.

22. The Local Councils in consultation with their respective ward councilor, subject to prior approval of Executive councilor in charge parking may carry out this regulation to minimize illegal road side parking for emergency and better public convenience within their area.

23. The Local Council in consultation with their respective ward councilor, subject to prior approval of Executive councilor in charge parking may remove which may cause /likely to cause obstacle to public convenience for a vehicle parking/Standand removal charge shall be bored by the owners.

24. Any Vehicle parking at unspecified area shall be towed away by the authorize person

/persons appointed by the Chairman and the Municipality shall not be held responsible for any damage. The Levy of towing charge shall be paid by the owners/Driver of the said vehicle as per the rate fixed by the Municipality from time to time.

25. The municipality may classify parking area which may be fixed, schedule d time table or duration of parking time in some certain parking place with rate of parking fee from time to time.

26. Un-authorized road marking and erection of traffic signage for the purpose of parking is strictly prohibited. Removal and dismantle charge shall be borned by the violator.

27. Repeal with effect from the date of commencement of these regulations, the Mizoram (Regulation and Control of Vehicles Parking) Rules, 2000 vide notification no. B. 12021/6/2010– TRT dated Aizawl, the 10th May, 2010 issued by Transport Department shall stand repealed within the Aizawl Municipal Council Area. Not with standing such repeal, anything done or proposed to be done shall be deemed to have been done or proposed to be done under the corresponding provisions of these Regulations

Student concession 50% up to 300 feet from the institution with valid institutional Identity card on working days.

1. Category-A (Plus Hot Zone),B & C

A .Category A (Plus Hot Zone) consist of

- i. Bawngkawn Durtlang Road Traffic point to Kulikawn Tlangnuam junction via Ramhlun and Upper Bazar Dawrpui.
- ii. Bawngkawn Durtlang Road Traffic point to Chanmari via Chaltlang .
- iii. Chanmari to Israel point via lower Zarkawt.
- iv. Sikulpuikawn to Zodin via Temple Square and Khatla, Tennis Court.
- v. Temple Square to Vaivakawn via Dawrpui vengthar.
- vi. Bazar Bungkawn Traffic point to Sakawrpului Traffic point via Saron veng.
- vii. Treasure square Traffic point to Sikulpuikawn via Upper Republic.

APPENDIX 3

Special report from Traffic SP regarding rotational playing of Taxi service in Aizawl City and its connected issues.

1. The rotational plying of taxi service in Aizawl City was firstly enforced in 2006 (w.e.f 18.3.2006) which was challenged by some of the members from taxi driver owner community in Guwahati High court vide writ petition (C) 6031/2006 but it was dismissed after hearing by the Guwahati High Court on 18.12.2006. The rational Plying of taxi service was discontinued due to certain reasons unknown to the undersigned and thereafter it was continued due to certain reasons w.e.f 14.9.2009 dividing the Taxi service into three categories i.e. (A,B and C) which again divided into 5 categories w.e.f 21.6.2011 but the same was discontinued w.e.f.31.1.2012.

2. The Coordination Committee on Traffic Management under the chairmanship of the Hon'ble Home Minister in its meeting on 29.7.2015 in the office chamber the Home Minister among other agenda, after discussion agreed Rotational plying of taxi in principal which was finally approved in its review meeting held on 19.1.2016 entrusting the SP, Traffic Aizawl to go ahead with the rational plying of taxi service w.e.1.3.2016

3. But while everything is in the pipeline to enforce pipeline to enforce *Taxi intlanhhawk* w.e.f. 1.3.2016 and when more than 1867 stickers were already collected by Taxi drivers, the issue of lifetime tax collection from commercial Vehicles, cancellation of All Mizoram plying permit of maxi cab and taxi and prohibiting replacement of all commercial vehicles with new ones come up from the transport department/STA which according to commercial vehicle-operators greatly affected their business and the so called dormant committee known as the commercial vehicle joint Action Committee(CVJAC) has been revived/reactivated towards seeking for solution of their common problems which finally resulted in "Protest procession " by the ZTDA/ZTOA on 29.2.2016 from Vanapa hall to Chanmari as well as one day strike in the form of non operation of all commercial vehicles in Mizoram on 1.3.2016 which was fully cooperated/supported by majority of commercial vehicle operators especially in Aizawl as well as in other parts of Mizoram.

4. That during the ongoing strike of the Joint Action Committee of Commercial Vehicles the Chief Secretary , Govt of Mizoram had a meeting with the leaders of the said

CVJAC in the late afternoon of 1.3.2016 in the office chamber at 4:30PM in which Addl. Secretary, Home department, Director ,Transport , SP, Aizawl, DC, Aizawl and SP, Traffic were also present . After discussion, it was decided that the ongoing strike would be looked into by the Transport Authority appointed and until such time, Status Quo would be maintained, and as such Taxi intlanchhawk which is already in the pipeline is not yet implemented since 1.3.2016.

5. On 9.3.2106 leaders of ZTOA and ZTDA met in the office chamber and during our meeting they stated that they are still on the same board along with the Commercial vehicles Joint Action Committee unless and until they receive some good result from some of their demands and they made verbal appeal not to enforce '*Taxi intlanchhawk*' till such time that at least any one of their demands/grievances is solved by the concerned authority.

6. In pursuance of the decision made in the meeting with the leaders of the so called "Commercial Vehicle Joint Action Committee" held in the Office chamber of the Chief Secretary on 1.3.2016 at 4:30PM to 6:00PM, the Transport secretary (Dr. Franklin Laltinkhuma) had a meeting with the ZTDA/ZTOA leaders today i.e. 10.3.2016 at 10:00AM in his office chamber and copy of the meeting minutes is hereby attached for information. I am also present in this meeting as a special invitee. In fact, the ZTDA/ZTOA leaders are not fully convinced in this meeting since any one of their demands /grievances is solved. After this meeting , I had a meeting with them in my office chamber this afternoon itself i.e. 10.3.2016 at 1:30PM wherein I tried my level best to cordially convince them but they are still firm on their stand unless and until any one of their demand/grievance is met at least.

In this context it may be out of place to mention that it is not so easy to take or consider the issue of rational Taxi Service as a separate issue as it is interlinked /inter-connected with issues of all other commercial vehicles.

7. In fact, I dare to say that if transport Department had not created issues like viz. Collection of lifetime tax from Commercial Vehicles, Cancellation of all Mizoram Plying Permit and Prohibiting replacement of old Taxi with new one, the issue of "Taxi intlanchhawk " alone would not be a problem and it can be enforced without any hindrances. But as stated above, fresh issues affect the common interest of all

Commercial Vehicles operator that came up from Transport Department revived/reactivated the so-called Commercial Vehicles joint Action Committee (CVJAC) which remains dominant resulting in the present turmoil.

8. The confirm information received that last night i.e. 10.3.2016 the so called CVJAC leaders had a joint meeting with ZTOA/ZTDA and all other commercial vehicles operators” Association and they resolved to organize “Special Assembly” at Aizawl on 17.3.2016 and all the leaders of commercial vehicles Joint Action Committee from 8 districts of Mizoram would attend the special Assembly and it is reportedly learn that in the coming special Assembly they will discuss the current issue and problems they are commonly facing now and to chalk out their future course of action in order to pressurize their demands/grievances.

9. Personal observation, In view of the brewing tension as well as considering the mood of the CVJAC and due to coming State Assembly Budget Session from 15.3.2016, it may not be wise to enforce “*Taxi intlanhhawk*” until such time at least any one of their demands/grievances is met.

APPENDIX 4



The Mizoram Gazette

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NOTIFICATION

No.D. 32021/2/2014-HM(TM), 9th April, 2014. In superseding this Department's Notification No. D. 32021/1/2014-HM(TM) dated 24th March, 2014, the Governor of Mizoram is pleased to constitute a Co-ordination Committee on Traffic Management as indicated below to take appropriate steps for improvement of Traffic in Aizawl City.

Chairman	:	Hon'ble Home Minister
Vice Chairman	:	Hon'ble Parliamentary Secretary, Home Department
Members	:	1. Chief Secretary i/c Home Department 2. Deputy Commissioner, Aizawl 3. Director, Transport Department 4. Director, LAD 5. Director, LR&S Department 6. Director, I&PR Department 7. Chief Engineer, PWD (Building) 8. Director, T & C Department 9. Director, UD & PA Department 10. Superintendent of Police, Aizawl 11. Superintendent of Police (Traffic) 12. President, Mizoram Journalist Association
Member Secretary	:	Joint Secretary, Home Department

L. Tochhong,
Chief Secretary to the Government of Mizoram.

APPENDIX 5

GOVERNMENT OF MIZORAM
TRANSPORT DEPARTMENT

: Dated Aizawl, the 22nd Aug/08

NOTIFICATION

No.B.12021/10/04-TRP : In partial modification of this Deptt's Notification of even No. dt.25.9.07. the Governor of Mizoram is pleased to authorize the Supdt. of Police Traffic, Aizawl District to exercise the powers under section 112, 115, 116, 117 and 201 of the Motor Vehicle Act, 1983 in place of S.P Aizawl District with immediate effect, and until further order.

Sd/-

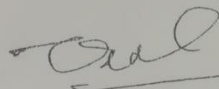
N.ZAHRY

Joint Secretary to the Govt. of Mizoram
Transport Department

Memo No.B.12021/10/04-TRP : Dated Aizawl, the 22nd Aug/08

Copy to :-

1. Secretary to the governor, Mizoram.
2. P.S to Chief Minister, Mizoram
3. P.S to all Ministers/Minister of State, Mizoram.
4. P.S to Chief Secretary, Mizoram.
5. All Admn. Deptt. Mizoram
6. All Head of Deptts. Mizoram
7. Director of Transport, Mizoram
8. All Deputy Commissioners Mizoram
9. S.P Traffic, Aizawl/ S.P Aizawl District.
10. Controller, Printing & Stationeries with 6 (six) spare copies for publication in the Mizoram Gazette.
11. All District Transport Officers, Mizoram.
12. Guard file.

 22/8/08

(C.CHALSAWITHANGA)

Under Secretary to the Govt. of Mizoram
Transport Department

APPENDIX 6

**No. D.32021/1/2014-HM (TM)
GOVERNMENT OF MIZORAM
HOME DEPARTMENT**

NOTIFICATION

Dated Aizawl, the 28th Oct, 2016

No. D: 32021/2/2014-HM(TM) : In continuation of this Department's Notification of even No. dt.9.4.2014, the Governor of Mizoram is pleased to include the following officials as members of Coordination Committee on Traffic Management with immediate effect and until further orders.

1. Mayor, AMC
2. AMC Councillor i/c Traffic.
3. Inspector General of Police, PHQ.

Sd/-Lalhriatpuia

Joint Secretary to the Govt. of Mizoram
Home Department

Memo No. D.32021/1/2014-HM (TM) : Dated Aizawl, the 28th Oct, 2016.

Copy to:-

1. Secretary to the Governor, Mizoram.
2. P.S to Chief Minister, Mizoram.
3. P.S to Speaker/ Dy. Speaker/ Ministers/ Ministers of State/Parliamentary Secretaries, Government of Mizoram.
4. Sr. P.P.S to Chief Secretary, Govt. of Mizoram.
5. All Administrative/Heads of Departments, Government of Mizoram.
6. Contoller, Printing & Stationeries with 5 (five) spare copies for publication in the Mizoram Gazette.
7. All members concerned.
8. Guard file.

(LALHRIATPUIA) 28/10/16

Joint Secretary to the Govt. of Mizoram
Home Department

APPENDIX 7



AIZAWL MUNICIPAL CORPORATION

Thuampui, Aizawl - 796017

No. C.31012/2/2016-AMC : Dated Aizawl, the 26th Sept., 2016

To ✓ The Director
Urban Development & Poverty Alleviation Department
Mizoram : Aizawl

Subject : Proposal for amendment of The AMC Control of Parking & Collection of Parking Fees Regulations, 2012

Sir,
With reference to the subject cited above, I have the honour to send herewith proposal for amendment of The AMC Control of Parking & Collection of Parking Fees Regulations, 2012 for favour of approval of the Government of Mizoram.

This proposal has been approved by the Board of Councillors of the Aizawl Municipal Corporation in its meeting dated 2.9.2016

Encl : As above

Yours faithfully,

24/9/16
JD(A)
27/9/16
DD(A)

(ETHEL ROTHANGPUII)
Secretary,

Aizawl Municipal Corporation

Dated Aizawl, the ___ Sept., 2016

Memo No: No. C.31012/2/2016-AMC

Copy to:

The Secretary, Urban Development & Poverty Alleviation Department,
Mizoram for information.

Estab UD&PA
Receipt No: 1155
Date: 27.9.2016

Report
27/9/16

Secretary,
Aizawl Municipal Corporation

Urban Dev. & Poverty Alleviation Dept.
Receipt No 1568
Date 26.9.16

APPENDIX 8

Particulars of the candidate

Name of the candidate	: Laltleipua
Degree	: M.Phil
Department: Public Administration	: Public Administration
Dissertation	: Urbanization and Traffic Management in Aizawl City
Date of payment of admission	: 8 th August 2016
Commencement of 2 nd semester	: 27 th February, 2017
1. Board of Studies	: 12 th May, 2017
2. School Board	: 22 nd May,2017
3. Registration No & Date	: MZU/M. Phil. / 385 of 22.5.2017
4. Due date of submission	: 14 th December 2017
5. Extension (if any)	: Nil

RESUME

NAME **LALTLEIPUIA**

FATHER'S NAME **VANLALDIKA**

MOTHER'S NAME **LALTHIANGHLIMI**

ADDRESS **VENGLHUI, H/N K-25, AIZAWL**

MIZORAM

Educational Qualification (from matriculation onwards)

SLNO	Exam Passed	Year of passing	Division/Grade
1	H.S.L.C	2007	3rd
2	H.S.S.L.C	2009	2nd
3	B.A	2012	1st
4	M.A	2014	2nd
5	M.PHIL	-	-

(ABSTRACT)

URBANISATION AND TRAFFIC MANAGEMENT IN AIZAWL CITY

Dissertation Submitted in Partial Fulfillment for the Award of the

Degree of Master of Philosophy in Public Administration

School of Social Science, Mizoram University

By

LALTLEIPUIA

MZU/M. Phil. / 385 of 22.5.2017

Supervised by

Dr. NINGTHOUJAM IRINA DEVI

DEPARTMENT OF PUBLIC ADMINISTRATION

SCHOOL OF SOCIAL SCIENCES

MIZORAM UNIVERSITY

AIZAWL, MIZORAM

2017

Introduction

With the increase of urbanization traffic congestions are one of the big concerns for the residents and public officials round the world. Society demands certain sets of rules in order to survive and prosper with these issues. Laws as well as the enforcement of these, has been a leading component for many societies and are among the most critical indicators that act as the foundation of its success. Traffic regulations differ in all states but, they serve the same function. That purpose would be to provide and preserve safety to motorists. Success Traffic laws are an essential element of regulation. But it would be simply impossible for the globe to be without traffic and driving rules, especially in today's world, a fast paced society where you will find large amounts of vehicles on roads everywhere. Traffic laws really are an essential element of regulation. It would be simply impossible for the globe to be without traffic and driving rules, especially in today world a fast paced society where you will find large amounts of vehicles on roads everywhere. These regulations are enforced by the specific traffic control organizations and differ from state to state. It is necessary to learn concerning the traffic rules and regulations of the state where you live also to follow them correctly to be able to have safe road traveling. These regulations cover numerous areas such as speed limitations, traveling directions and other relevant issues. Suitable training and awareness efforts are designed as a way to ensure that these regulations are fully understood and followed. Traffic indications are a valuable area of the visitor's rules and one need to truly have a thorough comprehension of the rules. These laws ensure the easy flow of traffic and security of the pedestrians and travelers in busy traffic places. The driving laws and the visitors laws are almost exactly the same thing as the road safety requirements are covered by them.

Traffic laws were created in ways, which makes it easier for the motorists in addition to other road-users to carry out their routine traveling in a more convenient and safe mode. Nevertheless, driving laws are somewhat more associated to the unique behavioral patterns and approaches of motorists which may be a threat for them-and others. A guideline is provided by these rules to motorists making sure they drive in a safer fashion

and obey all traffic laws and regulations. The execution of the laws is vital and it is not an easy endeavor. The rising amount of road injuries is a significant issue for all. Driving accidents are one of most the typical reasons behind increased number of unexpected departures. Traffic and driving regulations help to ensure traffic set up. Traffic laws were created in ways which makes it easier for the motorists in addition to other road-users to carry out their routine traveling in a more convenient and safe mode. Now, with the ever-increasing number of vehicles in the roads, it is crucial to design and enforce smart and user-friendly rules in order to maintain safe roadway.

Aizawl, the capital city of the Indian north eastern State, Mizoram, like many other Indian major cities, has been experiencing economic development and fast process of urbanization.¹ At the same time, many urban transport problems have emerged which decreases the quality of people's life and a threats to sustainable development of economy. This thesis is a study on the Aizawl traffic management vis-à-vis its urbanization.

Objectives of Study

The main objectives of the study are as follows:

1. To study the current volume of vehicles viz-a-viz urbanization rate in Aizawl.
2. To study the technique of handling traffic congestion and safety.
3. To study the corresponding conduct and behavior of the personnel to achieve the goal.
4. To study the challenges and problems in achieving organizational goals.

Research questions

The following research questions will be formulated for the proposed study to achieve its objectives.

1. What are the major problems and challenges faced by traffic personnel?

¹ Mizoram Forced Urbanisation
http://www.epw.in/system/files/pdf/1981_16/36/mizoram_forced_urbanisation.pdf accessed on 23/10/2017

2. What are the suggested remedial measures for traffic management in Aizawl?
3. What are the role and functions of Traffic Coordination Committee in Aizawl?
4. What are the measures required to make Traffic management more effective?
5. Have any steps already been taken to improve the technique of handling traffic congestion?
6. What is the current volume of vehicles in Aizawl City?

Methodology

The methodology used for the present research will be a case study which will be descriptive in nature. Primary and Secondary method of data collection will be used for the purpose of the study. Primary data will be collected from the 15 officials associated with the department of Traffic Police and from 20 random people who are daily road users in Aizawl city and also through formal and informal interview.

The Secondary data will be collected from the official journals, relevant book, handbook and records of Traffic management about traffic related problems and articles related to traffic in Aizawl , pamphlets, books and sources from related websites. All the available data will be analyzed through both qualitative and quantitative method.

Chapterization Plan

CHAPTER I - Introduction

CHAPTER II - Urban Administration and Traffic Management

CHAPTER III - Organization and working of Traffic Police Department in Aizawl

CHAPTER IV - Issues and challenges of traffic management in Aizawl

CHAPTER V - Conclusion.

Major findings of Research questions and Research objectives

The study covers the concept of traffic management in Aizawl city and focuses mainly on the study of conduct and discipline of the traffic personnel, traffic congestion and safety as well as the power, role and functions of Traffic personnel. The origin and organizational setup and the problems faced by traffic management in Aizawl will be studied. The study will point out the different problems faced by traffic police and suggest remedial measures for their improvement.

From the above research question and objectives the study found that the major problems regarding traffic congestion are lack of cooperation between the traffic personnel and public. Lack of knowledge among the common people and lack of enforcement of traffic rules by the police are the main reasons behind the accelerating rate of accidents and traffic jams. Due to lack of manpower traffic police are unable to handle traffic jams in most places which results in negligence of traffic rules by the public. According to the Traffic police statement roadside parking is the major cause of traffic jams due to vehicle population and narrow roads. Too many cars on the roadway due to inadequate mass transit options or other reasons, obstacles in the road causing a blockage and merger like double parking, road work, lane closure due to utility work, road narrowing down, an accident. Some other causes like too many pedestrians crossing not permitting cars to turn. There is a culture of VIP movements in India and in Aizawl city also, when political leaders and senior government officials are moving on the road, the road they are using might be close to other road users. The effect of such movements and closure of major roads during VIP movement is enormous on traffic; there is usually heavy traffic congestion.

To fix the causes of congestion first there should be a good connection between traffic personnel and public, rules should be strict and fines should be doubled so that violation of traffic rules would be a severe case. Police should give tickets to double parking that causes traffic congestion. Unless the road is widened roadside parking should not be allowed. The only way to reduce the numbers of pedestrians crossing at an intersection is to either add a mid-block crossing or build a pedestrian overpass. Installation of traffic sensor

for traffic monitoring is required to alert authorities. There should be proper traffic control at construction zones in the city.

In Aizawl city tax and fines were also used as a means for handling traffic congestion which is a good means of controlling traffic rules and numbers of vehicles. Using techniques like HOV lane- High-occupancy vehicle lane, carpool lane, Ramp metering, Bus Rapid Transit (BRT), Ramp metering are still not yet implemented, as soon as it is implemented traffic congestion would tremendously decreased.