

**Analysis of Vehicular Pollution in Chandigarh****Bhavana Arora<sup>1</sup>, Madhu Malini<sup>2</sup> and Ayush Vashisth<sup>3</sup>**

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**ABSTRACT**

Human well being is intricately linked with the well being of the environment. In his effort to 'develop', man has been constantly interacting with his environment, the extent of interaction changing over space and time. In fact the knowledge and utilization of resources has determined the stages of development of civilization. However, over the years, progressive pressure on environment and natural resources has led to environmental damage thereby reducing the benefits of development. The realization that the biosphere has a finite resource base and thereof a limited carrying capacity, is just dawning when the effects of over utilization are beginning to strain the ecological balance. Hence it becomes imperative to not only take precautionary measures to avoid further degeneration of environmental quality, but to improve it and also to neutralize past lapses. This paper reveals that multi prolonged approach can be adopted only after making conscious efforts to understand the root causes and extent of environmental crises and design a considered strategy towards its protection.

**Key words:** 1. Environment 2. Vehicles

**Sub Area** : Environment Engineering

**Broad Area** :Civil Engineering

**INTRODUCTION**

In India, now days, two wheelers, which have generally two stroke engines are getting increasingly popular because of:

- Greater fuel economy
- Better specific power
- Lower operational and maintenance costs
- Lower production costs

With a large and expanding population of uncontrolled two wheelers, it is apparent that their emission can be significant. Two wheelers account for more than 50% of country's gasoline consumption and with their rapidly growing number, they pose serious air pollution problems in time to come.

The increase has been particularly marked in the number of city diesel buses and the two stroke engine powered scooters, motor cycles and three wheelers. The contribution of vehicle emissions i.e. CO, HC and black smoke to air pollution in the congested areas of the major town has thus increased rapidly over the years. Today there are over three hundred million passenger cars, trucks and buses whole over the world and their number is increasing rapidly, keeping pace with the industrial and social progress. Vehicles plying in the major metropolitan cities of India are estimated to account for about 70% of all CO, 50% of all HC, 30% to 40% of all oxides of nitrogen, 30% of all suspended particulate and 10% of all SO<sub>2</sub> pollution in these cities. The most damaging pollutants come from petrol driven cars and two wheelers. This problem is causing concern and has brought to focus the urgent need for effective steps to control vehicular emissions and to keep the air quality levels within acceptable limits specified by Pollution Control Boards.

### **City Beautiful Fast Becoming a City of Vehicles**

City of vehicles? This is what the city beautiful is fast becoming, going by the figures on local traffic rush. Even as the city is among the top Indian cities to have an average of one vehicle per one and a half person on the basis of all time vehicles plying on the city roads at present. The trend of annual increase in the vehicles in Chandigarh is still alarming.

Records with the Chandigarh Registration Authority in Estate Office say that a hundred new vehicles are being added to the city everyday, showing an annual trend of around ten percent increase in the daily registration of the new vehicles since 1995.

### **Increase in the number of vehicles:**

The number of motor vehicles per thousand population went up steadily, from three in 1971-72 to about 25 in 1990-90, an increase of more than eight times. The number of vehicles increased from 0.3 million in 1951 to 30.3 million in 1995 ( Ministry of surface transport 1996 ). Of that total, 32% are concentrated in 23 metropolitan cities. Delhi has registered a phenomenal increase in the number of vehicles. Chennai, Hyderabad, Bangalore and Mumbai have also shown considerably high growth. In Delhi, 95% of the total registered vehicles are personal transport vehicles with the share of two wheeled vehicles ( scooters, motorcycles etc ) being 70%.

With the steep increase in the number of vehicles, the emissions of different pollutants have also increased considerably. Vehicles in major metropolitan cities of India are estimated to account for 70% of CO, 50% of HC, 30-40% of NO<sub>x</sub>, 30% of SPM, 10% of SO<sub>2</sub> pollution in these cities.

**Automobile Sales Figures**

<b>SCOOTERS</b>	<b>APRIL-JULY'98-99'</b>	<b>APRIL-JULY '99-2000'</b>
<b>Bajaj auto</b>	218139	178216
<b>Kinetic Honda</b>	25581	33952
<b>LML Vespa</b>	113623	96623
<b>TVS Suzuki</b>	27797	40241
<b>Maharashtra Scooters</b>	60193	46357
<b>TOTAL</b>	445333	395389

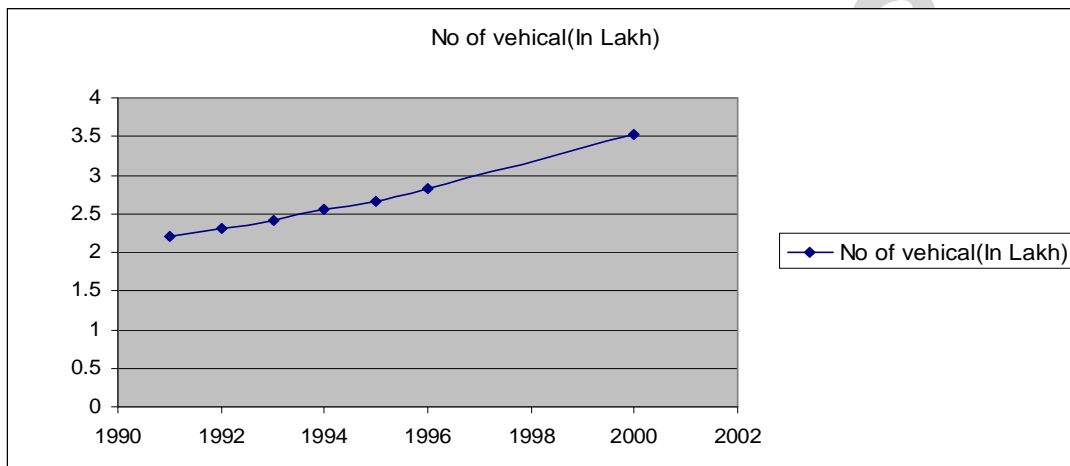
<b>MOTORCYCLES</b>	<b>APRIL-JULY'98-99'</b>	<b>APRIL-JULY '99-2000'</b>
<b>Bajaj auto</b>	110125	105392
<b>Escorts</b>	56909	73628
<b>Hero Honda</b>	159112	219234
<b>Royal Enfield</b>	7718	7555
<b>TVS Suzuki</b>	80653	104504
<b>TOTAL</b>	414517	510313

<b>MOPEDS</b>	<b>APRIL-JULY'98-99'</b>	<b>APRIL-JULY '99-2000'</b>
<b>Bajaj auto</b>	19390	17503
<b>Escorts</b>	3130	72
<b>Kinetic Engineering</b>	48864	45078
<b>Majestic Auto</b>	40358	34251
<b>TVS Suzuki</b>	107266	124628
<b>TOTAL</b>	219008	221532

<b>THREE WHEELERS</b>	<b>APRIL-JULY'98-99'</b>	<b>APRIL-JULY '99-2000'</b>
<b>Bajaj auto</b>	53425	52459
<b>Bajaj Tempo</b>	3538	5090
<b>Scooters India</b>	4233	4627
<b>TOTAL</b>	61196	62177

LCV's	APRIL-JULY'98-99'	APRIL-JULY '99-2000'
Ashok Leyland	161	57
Bajaj Tempo	928	1400
Eicher	1385	1630
M&M	1499	1971
Swaraj Mazda	922	981
Telco	11764	10608
<b>TOTAL</b>	<b>16659</b>	<b>16647</b>

CARS	APRIL-JULY'98-99'	APRIL-JULY '99-2000'
Daewoo	3404	8640
Ford India	1298	935
General Motors	1323	832
H M	6171	7699
Honda Siel	3377	2914
Hyundai Motor	0	17633
Ind Auto	2376	6441
Maruti Udyog	110403	126535
Mercedes Benz	436	350
PAL Peugeot	360	9
Premier Auto	1413	60
Telco	936	12010
<b>TOTAL</b>	<b>131497</b>	<b>184058</b>



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