

## **PART 1**

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# **GENERAL INFORMATION ABOUT THIS STUDY**

## **1- PURPOSE OF STUDY**

Following are the main purpose of the study.

- (i) To research the current problems related to environmental affairs of urbanization, which are related to social circumstances and development plan.
- (ii) To understand the efforts of Central, Provincial as well as District governments in solving the environmental problems.
- (iii) To carry out site investigation in Hayatabad township (a study area) to grasp the actual contaminated conditions caused by waste water discharges from industrial, domestic and human waste.
- (iv) To investigate the solid waste Management conditions in Hayatabad and to measure the quantity of dumped waste by applying the topographic survey on landfill site.
- (v) To determine the chemical and biological characteristics of the leachate sample and wastewater samples collected from pre- selected sites.
- (vi) To investigate the water demand from the usage and distribution system of the city water.
- (vii) To investigate the quality and quantity of Solid waste picked from different categories of homes, collection points and disposal site and also find out the recycle route and value.

## **2- BACKGROUND OF PESHAWAR CITY**

The Peshawar valley appears first in history as forming part of the ancient kingdom of Gandahra. In 16<sup>th</sup> Century, the Emperor Babar had invaded Peshawar and took this route on his march down into subcontinent.

Peshawar is the Provincial Capital of the North West Frontier Province (NWFP). Peshawar is a frontier town, the meeting place of the sub-continent and central Asia. It is also a place where ancient traditions mix with those of today, where the bazaar in the old city has changed little in the past hundred years. Until the mid fifties Peshawar was enclosed with in a city wall and sixteen gates. Of the old city gates the most famous was the Kabuli Gate but only the name remain now. Across the railway line was built the new modern Peshawar, the cantonment, like the ones which the British built near every major city for their administrative offices, military barracks, residences, parks and shops.

The Peshawar “Sadder” (Cantonment) is a spaciouly laid out neat and clean township. The Peshawar of the British Period (1849 to 1947) is the Cantonment but the Peshawar of independent Pakistan is the vast extension of the city west and east. Westward, on the road to the Khyber Pass, stretches a long line of educational and research institutions.

**The main features of Peshawar city are summarized as:**

- 1. The walled city:**  
The area within the wall constructed in 1840.
- 2. The Cantonment:**  
The area including the military establishment, low density residential areas, the government enclosures and the Saddar and regional area bazaars.
- 3. Areas around the Walled City:**  
In the early twentieth century, expansion of the areas around the walled city includes Sikandar Pura, Nishatarabad, Gulbahar, in the north east and Dabgari gardens in the west.
- 4. The Traditional Villages:**  
Including Hassan Garhi, Nothia, Dheri Baghbanan, Nawan Killi, Tehkal Payan, Tehkal Bala and Pawake.
- 5. University Town:**  
The low density residential area created for the elites.
- 6. Hayatabad:**  
The satellite town developed by the Peshawar Development Authority (PDA), having all the modern services, infrastructures and facilities for its inhabitants.
- 7. Kacha Garhi Camp:**  
The largest Afghan Refuges camp within the limits of the metropolitan. The city is now 25 Km from East to West and further expansion is not possible on this direction as it has reached the boundary of the tribal areas other than the Planned expansion at Hayatabad in the west unplanned and haphazard expansion is occurring in the various directions i.e., towards Dalazak road etc.
- 8. Regi Model Town:**  
Regi Model township scheme is in progress. More than double in size of Hyatabad, Containing modern facilities developed by the City Development and Municipal Department (CD & MD) in the best interest of the government servants of the Province. The development work is in progress but it will take another 10 years for the town to be fully inhabited.

9. Population of Peshawar:

**TABLE-1**

**POPULATION OF URBAN AND RURAL AREAS OF PESHAWAR, 1981 AND 1998 CENSUSES.**

| 1981    |        |        | 1998    |        |         | % change<br>in<br>population<br>% age | Sex ratio<br>(males per<br>100 females) |      |
|---------|--------|--------|---------|--------|---------|---------------------------------------|---|------|
| Total   | Urban  | Rural  | Total   | Urban  | Rural   |                                       | 1981                                    | 1998 |
| 1084347 | 566248 | 518099 | 2019118 | 982816 | 1036302 | 53.7                                  | 112                                     | 111  |

Source: Population Census Organization, Govt. of Pakistan, Islamabad.

**TABLE-2**

**PESHAWAR MID YEAR ESTIMATED POPULATION BY SEX, 1997-98 TO 2002-2003**

(In Thousands)

| 1997-98  |      |        | 1998-99  |      |        | 1999-2000 |      |        | 2000-2001 |      |        | 2001-2002 |      |        | 2002-2003 |      |        |
|----------|------|--------|----------|------|--------|-----------|------|--------|-----------|------|--------|-----------|------|--------|-----------|------|--------|
| Both sex | Male | Female | Both sex | Male | Female | Both sex  | Male | Female | Both sex  | Male | Female | Both sex  | Male | Female | Both sex  | Male | Female |
| 2007     | 1055 | 952    | 2079     | 1093 | 986    | 2153      | 1131 | 1022   | 2229      | 1171 | 1058   | 2309      | 1213 | 1096   | 2391      | 1257 | 1134   |

Source: 1998 District census reports of NWFP, Population Census organization, Govt. of Pakistan.

### **10. Mean Temperature and Rainfall:**

The altitude of Peshawar is 352 meters from Mean Sea Level (MSL). The mean maximum and mean minimum temperature of Peshawar are 31°C and 16°C respectively. The monthly mean rainfall in Peshawar is 40 millimeter (mm).

## **3- IMPLEMENTATION OF PAK-EPA AND NWFP-EPA**

### **3.1 Organization on this study**

Figure-1 shows the organization chart of this study. This study was carried out with total management and overall Planning by Pak-EPA. Pak-EPA with collaboration of NWFP-EPA conducted survey on urbanization, water environment, solid waste management and topographic survey of dumping site to find out the total dumped volume of the solid waste.

Japanese Ministry of Environment asked OECC to dispatch the study team to Pakistan to examine the Japan's assistance to Pakistan for its environment and sustainable development in the early 21<sup>st</sup> century.

Six members OECC study mission headed by Katsuhiko YAMAMOTO and Hironori KUROKI Visited Pakistan w.e.f. October 6, 2003 to October 19, 2003 to hold meetings with Pakistan Ministry of Environment, Director General Pak-EPA and Other related agencies/organizations. They also visited the study area (Hayatabad, Peshawar) and physically examined the environmental related problems over there and hold meetings with civic agencies, institutions and NWFP government officials. A memorandum of agreement was signed between head of OECC mission and Director General, Pak-EPA to research on the field survey for urban environmental problems in Pakistan (A case study of water environment in Hayatabad, Peshawar).

### **3-2 Location of the Study Area**

#### **i) Project Offices:**

Main at Pak-EPA, coordination with NWFP-EPA in conducting the survey on water pollution, solid waste management and topographic survey of solid waste dumping site.

#### **ii) Study Area Location:**

Hayatabad township is situated approximately 15 Km south-west of the main center. The scheme is spread over an area of more than three thousands acres of land containing 22503 residential and about 300 commercial plots.

### **3-3 Scope of the Study**

The survey executed on the following categories in Hayatabad as a model area in Peshawar city.

#### **1- Urbanization**