

## 2.1 General

In this chapter, the basic data of Dora city will be briefly discussed. The topography, population water consumption, and wastewater production will be briefly presented.

## 2.2 Project Area

Dora situated 9 Km to the west of Hebron city, as shown on the project location plan Figure (2.1), and the location of city respect to other cities is shown on Figure (2.2) .

The average hight of the city is 839 m with respect to sea level, the ground elevations range from 910 m in east of the city to around 700 m in the north part of the city. The topography within the city is mountainous . as shown on Figure (2.3).

The population within the municipal administrative borders in year 2014 is around 27556 persons Living on an area of 15260 donum.. This population is expected to grow substantially up to the year 2039 planning horizon of this project.

## 2.3 Land Use

As mentioned earlier, the land area of Dora city is approximately 15260 donum. There is no clear town plan defining land use in the various zones of Dora. The land use can be distributed as follows:-

1. Old city : This area is consists of old buildings which have a historical importance, these buildings are used as resedinces, workshops, public building, and cemetry. Some of these buildings are very old and need to be maintained.
2. Old city surrounding: is distributed as follow  
:-
3. Residential areas, food stories, workshop building, public buildings.
4. Agricultural areas.
5. Roads.

The land use of Dora shown in Figure (2.4).









## 2.4 Meteorological Data

The hydrology of the region depends primarily on its climate, and secondarily on its topography. Climate is largely dependent on geographical position of the earth surface humidity, temperature, and wind. These factors affect are affecting evaporation and transpiration. So this study will include needed data about these factors, since they play big role in the determination of water demand.

The climate of Dora city tends to be cold in winter with good amount of rain, and warm in summer with relative humid.[4]

### 2.4.1 Temperature

Based on information obtained from Dora municipality ,The temperature is characterized by considerable variation between summer and winter times. The mean temperature values at Dora for the period 1995 to 2000 are given in below.[4]

- The Mean maximum temperature: 31°C
- The Mean minimum temperature: 8°C
- The Mean Maximum temperature record: 30°C
- The Mean Minimum temperature record: 4.4°C

### 2.4.2 Relative Humidity

Since Dora is situated at considerable distance from the sea in a mountains region, Dora has low values of relative humidity compared to those in the plains. The relative humidity in Dora city range from 54-78%, it reaches the maximum value in January (78%).[4]

### 2.4.3 Wind

The directions and velocities of wind vary depending on the season of the year. In winter, the wind blows in the morning from the southwest a rounds noon from southwest and west, and at night from west and northwest. In summer, northeasterly wind blows all day long. According to data obtained from Meteorological Station, average wind in winter is about 9.8km/h and in summer 5.4km/h.[4]

### 2.4.4 Rainfall

Based on information obtained from Dora municipality ,The average annual rainfall in Dora city for the last five year is approximately 400-500 mm. The maximum annual rainfall in the period from 2005 to 2010 is 330.1 mm. This was in year 2005/2006.The minimum annual rainfall is 268.8mm, which was in the year 2009/2010 Table (2.1) shows the monthly rainfall and number of raining days during the period from 2005-2010.[4]

**Table 2.1 Monthly Rainfall And Number Of Raining Days During The Period From 2005-2010**

| Year<br>Month | 2005/2006                 |                           | 2006/2007                 |                           | 2007/2008                 |                           | 2008/2009                 |                           | 2009/2010                 |                           | 5- Years<br>Average<br>Rainfall<br>mm |
|---------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------------------|
|               | Monthly<br>Rainfall<br>mm | No. Of<br>Raining<br>Days | Monthly<br>Rainfall<br>mm | No. Of<br>Raining<br>Days | Monthly<br>Rainfall<br>mm | No. Of<br>Raining<br>Days | Monthly<br>Rainfall<br>mm | No. Of<br>Raining<br>Days | Monthly<br>Rainfall<br>mm | No. Of<br>Raining<br>Days |                                       |
| September     | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                         | 0                                     |
| October       | 5                         | 1                         | 4.5                       | 1                         | 5.5                       | 2                         | 5                         | 1                         | 6                         | 1                         | 5.2                                   |
| November      | 6                         | 2                         | 4                         | 2                         | 5                         | 1                         | 0                         | 0                         | 0                         | 0                         | 3                                     |
| December      | 85                        | 7                         | 80                        | 6                         | 73.5                      | 5                         | 70                        | 5                         | 63.9                      | 4                         | 74.48                                 |
| January       | 79.5                      | 10                        | 75.5                      | 6                         | 72.3                      | 6                         | 70.1                      | 7                         | 70.5                      | 8                         | 73.58                                 |
| February      | 75.5                      | 9                         | 75.1                      | 8                         | 75.5                      | 7                         | 73.1                      | 8                         | 72.4                      | 8                         | 74.32                                 |
| March         | 39.5                      | 5                         | 35.2                      | 3                         | 30.3                      | 2                         | 26.9                      | 3                         | 26.6                      | 4                         | 31.7                                  |
| April         | 35.6                      | 2                         | 31.8                      | 3                         | 29.6                      | 2                         | 31.2                      | 3                         | 29.4                      | 2                         | 31.52                                 |
| May           | 4                         | 1                         | 3                         | 2                         | 2                         | 1                         | 0                         | 0                         | 0                         | 0                         | 1.8                                   |
| Total         | 330.1                     | 37                        | 309.1                     | 31                        | 293.7                     | 26                        | 276.3                     | 27                        | 268.8                     | 27                        | 295.6                                 |





