



The Problem of Water Treatment in Mexico City (Nezahualcoyotl)

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Mexico City has always been the very heart of Mexico as well as the historical and cultural capital of the Americas since its foundation by the Aztecs in 1325. It is also considered a meeting place for diverse cultures and is one of the largest and most dynamic cities on the planet. This conglomeration of legendary as well as modern cultural-origin myths is today the federal capital of the country. In its impressive urbanization process, the adjacent areas played a major role.

Mexico City is located in the Valley of Mexico surrounded by mountains that rise from the remains of ancient lakebeds and has an average elevation of 2300 m above sea level. Mexico State borders to the north, east and west; the state of Morelos borders to the south.

In 1950 the population of the metropolitan area increased from 3.1 million inhabitants to over 18.5 million. It was soon noticed that the federal capital's spatial expansion process would not be confined to the Federal District. In due course more and more municipalities of the adjacent State of Mexico would become incorporated in the Metropolitan Zone of Mexico City. Today, this metropolitan area comprises the 16 Delegaciones of the Federal District and 41 municipalities of the State of Mexico, and one from the State of Hidalgo. Mexico City metropolitan area population is 21.2 million people making it the largest metropolitan area in the Americas and the fifth largest agglomeration in the World. Nezahualcóyotl obtained the municipal status in 1963 and is now a highly region and is one of the largest municipalities of the State of Mexico.

Today it faces many water problems due to several factors such as: unplanned and unorganized urban settlement that initiated in the 1950's with low income invading families from the central city and migrants from other regions, weather hazards like extreme and convective rain, geological agents such as seismic activity (since located on a volcanic belt) and human influence such as the drained of the lake (initiated in the 17th century) among others.

The municipality is mainly situated on top of the Texcoco Lake, a shallow lake that originally was not perceived suitable for human settlement. Here, Nezahualcóyotl became the first nucleus East of the central City and at present it copes with different water problems that influence the water treatment used for such as high chlorine content since the city rests on its heavily saturated clay, garbage, pollution, etc. The area has no natural drainage outlet for the waters that flow from the mountainsides, making the place vulnerable to flooding. This soft base is collapsing due to the over-extraction of groundwater and since the beginning of the 20th century; the city has sunk by a few meters in some areas. This sinking is causing problems with runoff and wastewater management, leading to flooding problems, especially during the rainy season. The entire lakebed is now paved over and most of the city's remaining forested areas lie in the southern boroughs of Milpa Alta, Tlalpan and Xochimilco.

This paper exposes today's problems related to water treatment in the municipality of Nezahualcoyotl, which is part of the metropolitan area of Mexico City. Some consequences of these problems are flooding, cracking in households, city structures, sinking, collapsing piping systems, high levels of different pollutants and salinity content in water supply, etc. An example of the situation will also be explored.