AYUNTAMIENTO CHIHUAHUA 2013 - 2016

GRUPO VIVERO IMPERIAL

CONSTRUIMOS FUTURO

Reforestation Program

"Chihuahua, Oak City"

Chihuahua, Chih. México

La Ciudad del Encino

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Municipality of Chihuahua, México.

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Introduction

The Municipality of Chihuahua is located in the center of the State, 28° 38’ North Latitude and 106° 04’ West Longitude.

Its territory is 9,219.3 Km2.

Hydrography

The Municipality of Chihuahua is part of the western watershed, represented by the Conchos River; consequently all the main currents are branches of it.

There are three dams: the Chihuahua Dam that holds the main flow of the Chuviscar River, and is located about 10 km west of the City of Chihuahua; the Chuviscar and Rejon Dams, located within the city limits, were built mainly to supply fresh water to the urban population. Nowadays, only the Chihuahua and Rejon are still in use, because the Chuviscar, built in 1908, is no longer functional due to silt accumulation.

Weather

It is typical plateau weather: extreme temperatures range from -7.4°C to 39.0°C. The highest recorded temperature occurred in 2008, with 42.5°C and the lowest was in 2011, with -18°C. Droughts are common, and the rain season is from July thru September.

Use and Reuse of Water

The fresh water and sewage system coverage are 96.3% and 92%; nevertheless, leakage represents 10 to 30% of the total volume. The recycled water system consists of around 143 km.

Metropolitan Park, Presa el Rejón, Chihuahua

Chihuahua City, Mexico

Water treatment plants:
North Plant: 1,200 l/s
South Plant: 2,500 l/s

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Environmental Contingency 2011

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Due to the historic low temperatures registered in February of 2011, the city suffered ecological damages of gigantic proportions, with the death of around 25 thousand trees located on median strips, sidewalks, parks, schools and institutions. The main species affected were eucalyptus, grevillea, casuarinas, palm trees, elder, citric and many plants.

According to studies by the faculty of Agro-technological Science of the Chihuahua State University, as well as suggestions, inspections and written communications by the State and Municipal Civil Protection Offices, it was determined that these species could not recover, because the freezing temperatures had caused the death of a high percentage of the urban flora, putting at risk people´s lives, considering the location of the trees as well as their size. Therefore, the City and State governments began the task of removing them, with an extraordinary expense of 15 million pesos.

The city lost 70% of its trees that helped purify the air, causing an increase in pollution as well as higher temperatures in the city, with 2°C over the planets increased temperature.


USEO DE HIDALGO


EL DIARIO

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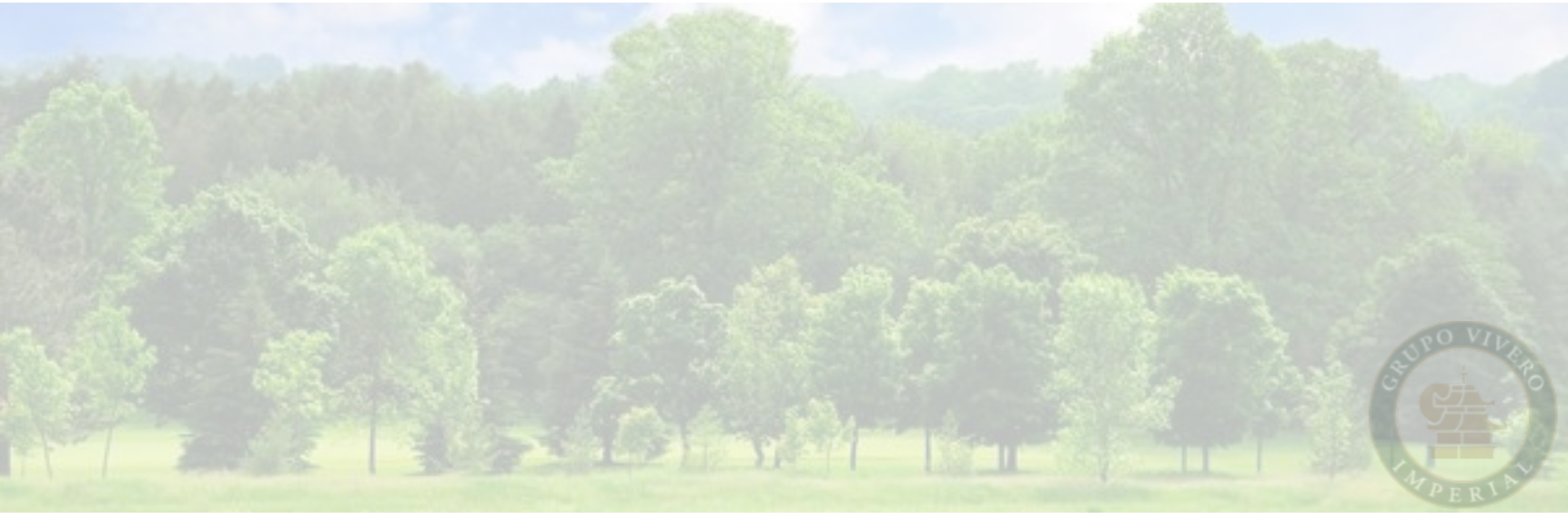
JUSTIFICATION (arguments)

The afforestation of the urban ecosystem originally damaged, located in the semi-desert, is a difficult task, considering the area's natural conditions, such as: extreme weather; scarce water; thin, poor and contaminated soil. That is why any project to establish, maintain and increase vegetation in the urban area, must be encouraged and backed by all public and private institutions, as well as by society in general.



AFFORESTATION

The strategy is to substitute, not remove. That is, there will be no removal without substituting it with a new element, at least 2.5 m high, native to the area.

The Urban Tree Management Committee has determined that one of the ideal genus is the Oak (Quercus spp) in its different species, as the main substitute tree for urban areas due to its biodiversity and environmental potential, its beauty, longevity and resistance, amongst others.

ENVIRONMENTAL ADVANTAGES

Oaks are considered, in ecology, a key species. They are very important in ecosystems because they form a vast and complex network of interaction with other organisms like, fungi, bacteria and insects.

COMPLEMENTARY SPECIES

We have also contemplated using other tree species to be planted for certain areas that require special morphology, such as bushes, creeping or trailing plants, wind breakers, and others, but always keeping within the local species criteria.

Advantages and Goodness

Sustainable Afforestation

Afforestation of the urban areas of Chihuahua, in a sustainable manner, is vital in obtaining real and lasting effects that will better the city's environment.

Planting trees of the right species and size will contribute immediately to lowering temperature and gas emission.

Planting 6 to 8 meter high (or more) oak trees brings immediate environmental benefits because, from the very first moment, they will be at their full capacity for absorbing carbon dioxide (CO_2) and producing oxygen.

Trees emit oxygen, helping create a microclimate to mitigate contamination and lower temperatures, providing a cleaner, fresher and more pleasant environment.

Blvd. Antonio Ortiz Mena

Perif. De la Juventud - C. Antonio de Montes

4.5 Kilometers

294

evergreen Oak

Afforestation Graph

Length	Quantity
Periferico de la Juventud - C. Oceano Pacifico	73
C. Océano Pacifico - Av. Politécnico Nacional	47
Av. Politécnico Nacional - C. Al Campestre	73
C. Al Campestre - Av. Mirador	56
Av. Mirador - C. Antonio de Montes	45
TOTAL	294

294

4.5 Kilometers

Before

After

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294 Evergreen Oak

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Before

After

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294 Evergreen Oak

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Before

After

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294 Evergreen Oak

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Ave. Tecnológico

Av. Pascual Orozco - Av. Zaragoza

1.9 Kilometers

98

red Oak

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Afforestation Graph

Length	Quantity
Av. Pascual Orozco - C. Mercurio	36
C. Mercurio - C. Sicomoro	47
C. Sicomoro - Av. Zaragoza	15
TOTAL	98

98

2 Kilometers

Before

After

Av. Tecnológico

98 Red Oak

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Before

After

Av. Tecnológico

98 Red Oak

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Before

After

Av. Tecnológico

98 Red Oak

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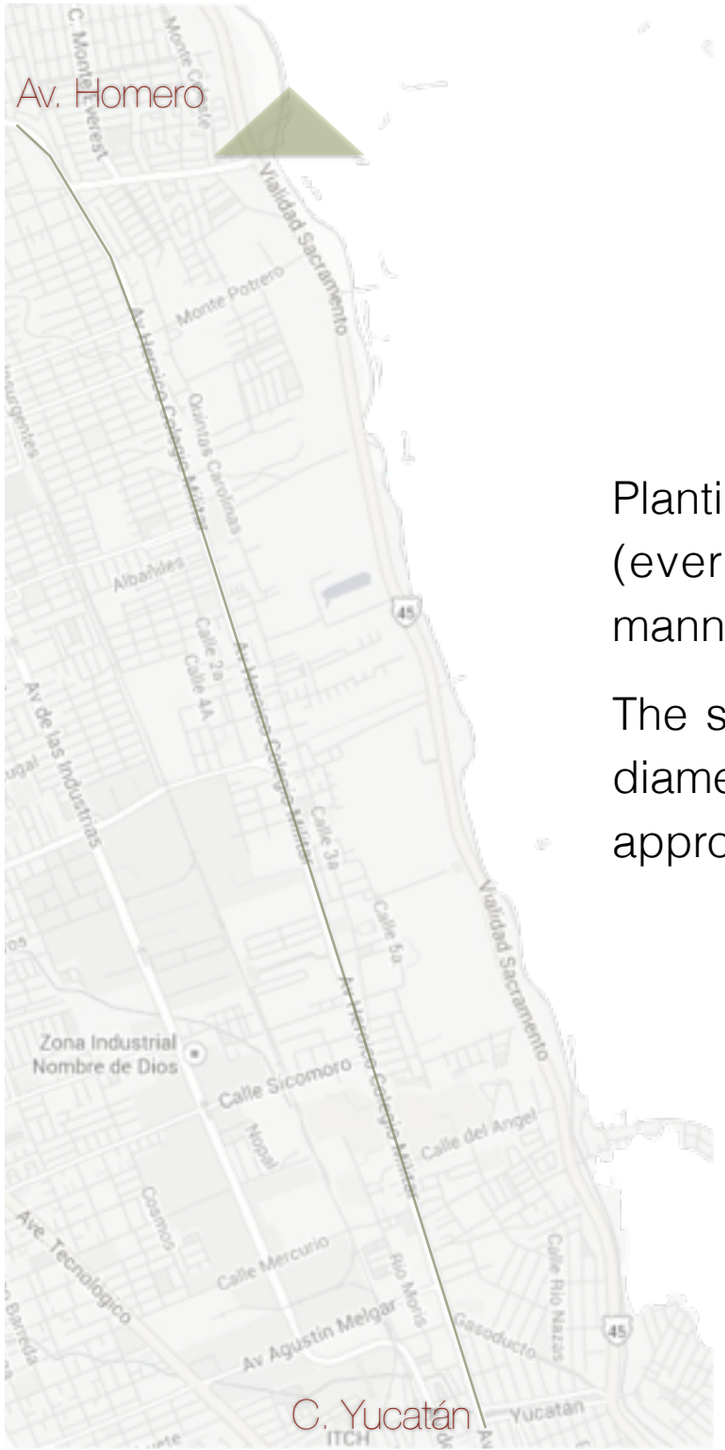

Av. Heróico Colegio Militar

C. Yucatán - Av. Homero

6.4 Kilometers

Planting of 373 oak of two different varieties (evergreen and red), in an alternate manner.

The size of the oaks varies from 5 to 6” in diameter of the trunk, with a height of approximately 6 to 7 meters.

Variety	Quantity
Evergreen Oak	186
Red Oak	187
TOTAL	373

Afforestation Graph

Length	Quantity
C. Yucatán - C. Del Angel	73
C. Del Angel - C. Pablo Banuet	58
C. Pablo Banuet - C. Álvaro Obregón	66
C. Plutarco Elías Calles - C. Cd. Camargo	80
C. 19 de Julio - Av. Homero	96
TOTAL	373

373

6.4 Kilometers

Before

After

Av. Heróico Colegio Militar

373 Oak

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Before

After

Av. Heróico Colegio Militar

373 Oak

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Before

After

Av. Heróico Colegio Militar

373 Oak

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Thank You.

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