

# Water Stress: Installation of a Community Water Tank in Los Cedros Neighborhood in Paraná

Tomás Gastiazoro<sup>1</sup> – Constanza Vivas<sup>2</sup>

Civil and Electromechanical Engineering Department, Facultad Regional Paraná, Universidad Tecnológica Nacional  
1033 Almafuerde A, Paraná Entre Ríos, Argentina

<sup>1</sup> tomasgastiazoro@alu.frp.utn.edu.ar

<sup>2</sup> constanzavivas@alu.frp.utn.edu.ar

**Summary**— In this work we are going to address a highly frequent problem in the city of Paraná, which is water stress. This problem mainly occurs in the highest areas of the city. Los Cedros neighborhood generally faces this situation. The purpose of this work is to sort out the low water pressure problem in Los Cedros neighborhood in the city of Paraná. To fulfill this aim, we are going to propose the installation of a community storage tank in a strategic point of the neighborhood.

**Resumen**— En este trabajo vamos a abordar un problema muy frecuente en la ciudad de Paraná, que es el estrés hídrico. Este problema se presenta principalmente en las zonas más altas de la ciudad. El barrio Los Cedros generalmente enfrenta esta situación. El objetivo de este trabajo es solucionar el problema de baja presión de agua en el barrio Los Cedros de la ciudad de Paraná. Para cumplir con este objetivo, vamos a proponer la instalación de un tanque de almacenamiento comunitario en un punto estratégico del barrio.

## I. INTRODUCTION

In this work we are going to address a highly frequent problem in the city of Paraná, which is water stress. This problem mainly occurs in the highest areas of the city.

Los Cedros neighborhood generally faces this situation. The people that live in this place never have access to drinking water, so they are very desperate with this issue. It is an urgent issue to be tackled as soon as possible because water is the principal natural resource that we use for life.

The purpose of this work is to sort out the low water pressure problem in Los Cedros neighborhood in the city of Paraná. To fulfill this aim, we are going to propose the installation of a community storage tank in a strategic point of the neighborhood.

## II. PROBLEM DEFINITION AND ANALYSIS

### A. Description of the Context

Los Cedros neighborhood is located in the southern region of Paraná. This neighborhood is surrounded by 1700 Street, 35 Street and 1640 Street. Also, Los Cedros neighborhood is limited by Juan Garrigó Street and Lisandro de la Torre Street. This neighborhood is found on the way to Oro Verde town, which is near the city of Paraná.

Los Cedros is a little neighborhood surrounded by five blocks. In this place, there are a few new houses or houses that are still under construction. Although this neighborhood is quickly growing, there are not many stores so the people that live there have to go shopping to Paraná or Oro Verde.

### B. Problem Statement

We want to address the water shortages issue that people from Los Cedros neighborhood usually deal with. The people that live in this place have bad living and sanitation conditions as a result of water stress. Furthermore, this situation worsens because there are many houses that do not have water storage tanks. Moreover, this neighborhood is located in a high area and is one of the furthest neighborhoods in the city. Consequently, the water pressure does not reach there.

### C. Description of Scenes that Help Picture the Problematic Situation

As we can see in Fig. 2, there are not many houses and several of these houses are in construction because this is a new neighborhood in the city. All the houses are standard and they are constructed with brick and concrete.

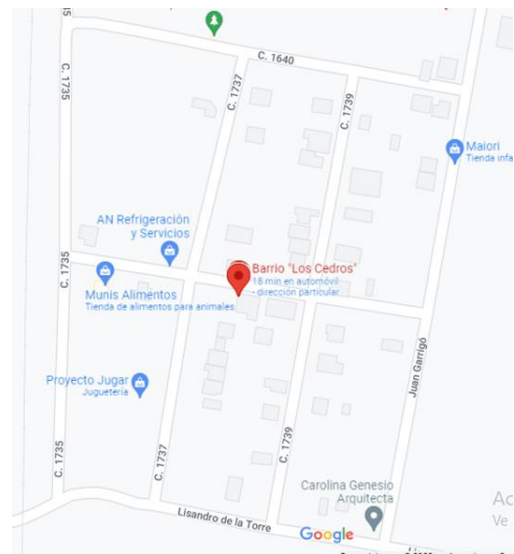


Fig. 1. Map of Los Cedros neighborhood and surrounding areas.



> THIS IS AN ENGLISH AS A FOREIGN LANGUAGE ENGINEERING STUDENT PAPER. READERS MAY MAKE USE OF THIS MATERIAL AT THEIR OWN DISCRETION<

Fig. 2. Houses that are under construction in Los Cedros neighborhood



Fig. 3. Small roof water storage tank systems.

#### D. Identification and Description of the Consequences

Although this issue has several consequences, the most important ones are the lack of sanitary conditions and poor nutrition since the residents of Los Cedros cannot drink water, cook, take a bath, clean or carry out any normal activity on a daily basis. All this can end in diseases that can lead to death

### III. THE WAY FORWARD

#### A. Problem Approach

Given this lack of water in Los Cedros neighborhood, a possible solution is the installation of a large community water storage tank. This tank acts as a backup water source provides a fair amount of water for the subsistence of the people who live in the neighborhood.

This tank should be located at a strategic point in the neighborhood, The land plot should belong to the Municipality, independent owners are not needed to allow

the construction of the structure. This water storage tank should be located at a significant height from the ground on a metal-reinforced concrete structure.

These are the steps to be followed to carry out this project. First, the project has to be proposed to the municipal government, which owns the land where the structure is to be installed. Then, the Municipality buys the construction materials. After this, the Municipal employees begin building the water storage tank

The community water storage tank function is to provide water to all homes through underground intakes connected to the water supply system. However, as it is such an urgent problem, it can be momentarily solved by placing the tank, connected to a public tap, where all the neighbors can go to collect water when there is water stress.

#### B. Strengths and Weaknesses of the Proposal

This solution has both some positive and negative aspects. In relation to the positive aspects, people can carry out common daily activities without any problem during the execution of the project. During there are not many inconveniences because the company employees work in a strategic point of the neighborhood and it is not necessary to use noisy machines so the neighbors are not disturbed.

As regards the negative aspects, as it was mentioned before, this is a temporary solution;. The water storage tank is not able to provide water for all the families in the neighborhood to bathe twice a day or wash their cars two or three times a week. Despite having access to water thanks to this solution, every home has to take great care of it because the tank has a limited capacity.

### IV. CONCLUSION

The effort is maximum because it is not easy to present a project and have it approved. However, it will be worth it for the suffering souls in this neighborhood.

#### ACKNOWLEDGMENT

The authors would like to thank Mercaich Sartore Edith for her collaboration in the writing of this project.

Tomás Gastiazoro is an Electromechanical Engineering student at UTN FRP: [tomasgastiazoro@alu.frp.utn.edu.ar](mailto:tomasgastiazoro@alu.frp.utn.edu.ar). Constanza Vivas is a Civil Engineering student at UTN FRP: [constanzavivas@alu.frp.utn.edu.ar](mailto:constanzavivas@alu.frp.utn.edu.ar).

The present project is a skills integration activity in Inglés I at Universidad Tecnológica Nacional, Facultad Regional Paraná, carried out by EFL engineering students. The yearlong project requires students to delve into a problem in the city where they live and to address it by means of a simple project in English. Should the reader have any questions regarding this work, please contact Graciela Yugdar Tófaló, Senior Lecturer, at [gyugdar@frp.utn.edu.ar](mailto:gyugdar@frp.utn.edu.ar).