

Prevention of Floods on Almafuerte avenue in Paraná, Entre Ríos: New Drainage System and Rain Gardens

Nation Technological University

Paraná Regional School

Electromechanical Engineering Department

Ingles I

Academic Year: 2023

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- ▶Minni, Pedro.

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Floods on Almafuerte Avenue in Paraná, Entre Ríos



Our purpose

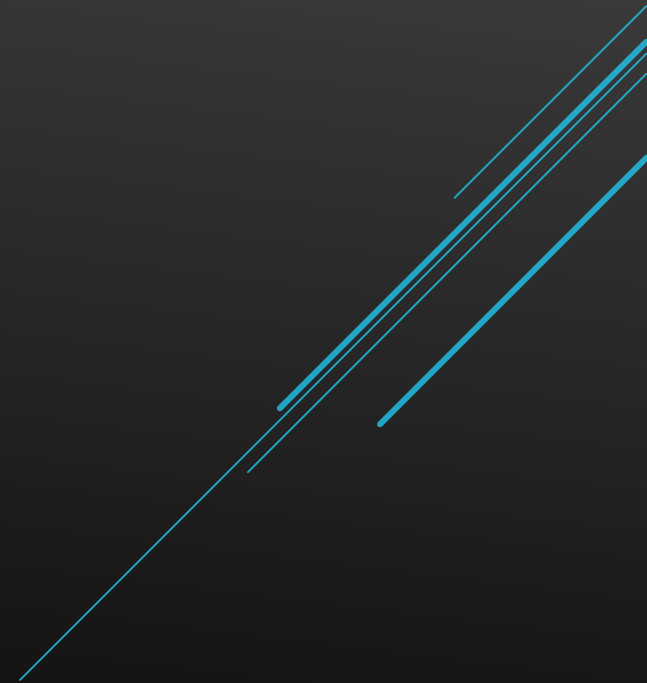
- Study new forms of drainage system.
- Find a way to solve the floods on Almafuerte Av.
- Propose a new drainage system with rain gardens.

Map of the presentation

- Description of the Context
 - Problem Statement
 - Description of Scenes that Help Picture the problematic Situation
 - Identification and Analysis of the Causes that Give rise to the Problem
 - Identification and Description of the Consequences
 - Problem Approach
 - Strengths and Weaknesses of the Proposal
- 

Problem Definition and Analysis:

Description of the Context





Parana City and Almafuerter avenue

- Paraná is a big city in Entre Rios.
- Almafuerter is an avenue in this city.
- Almafuerter Av. starts in the center of Paraná and finishes in the industrial park, which is on the outskirts of the city.

<https://maps.app.goo.gl/2vqesAQNtFUmsEaC6>



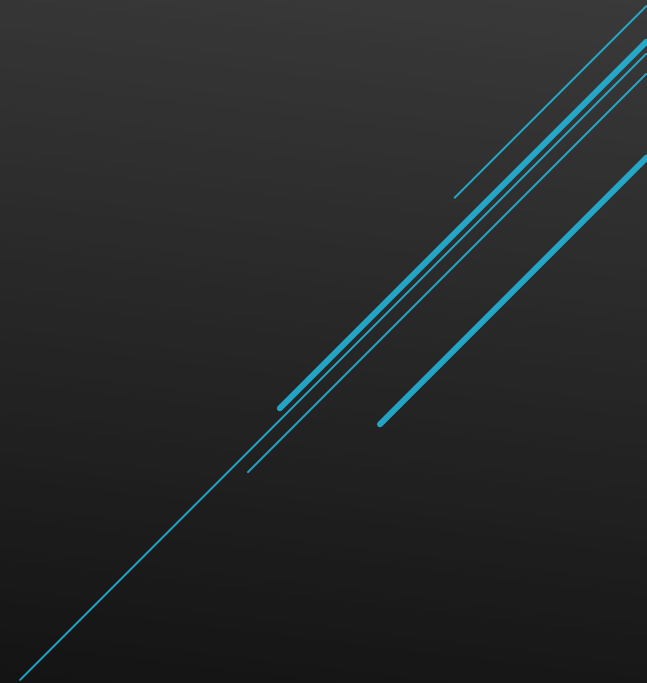
<https://goo.gl/maps/fcjHYsNdY4sDkB4Z7>

- The "Ex Hipodromo" (former racetrack) of Paraná is a green place located on Almafuerte avenue.
- This is a very busy area because there are a lot of shops.

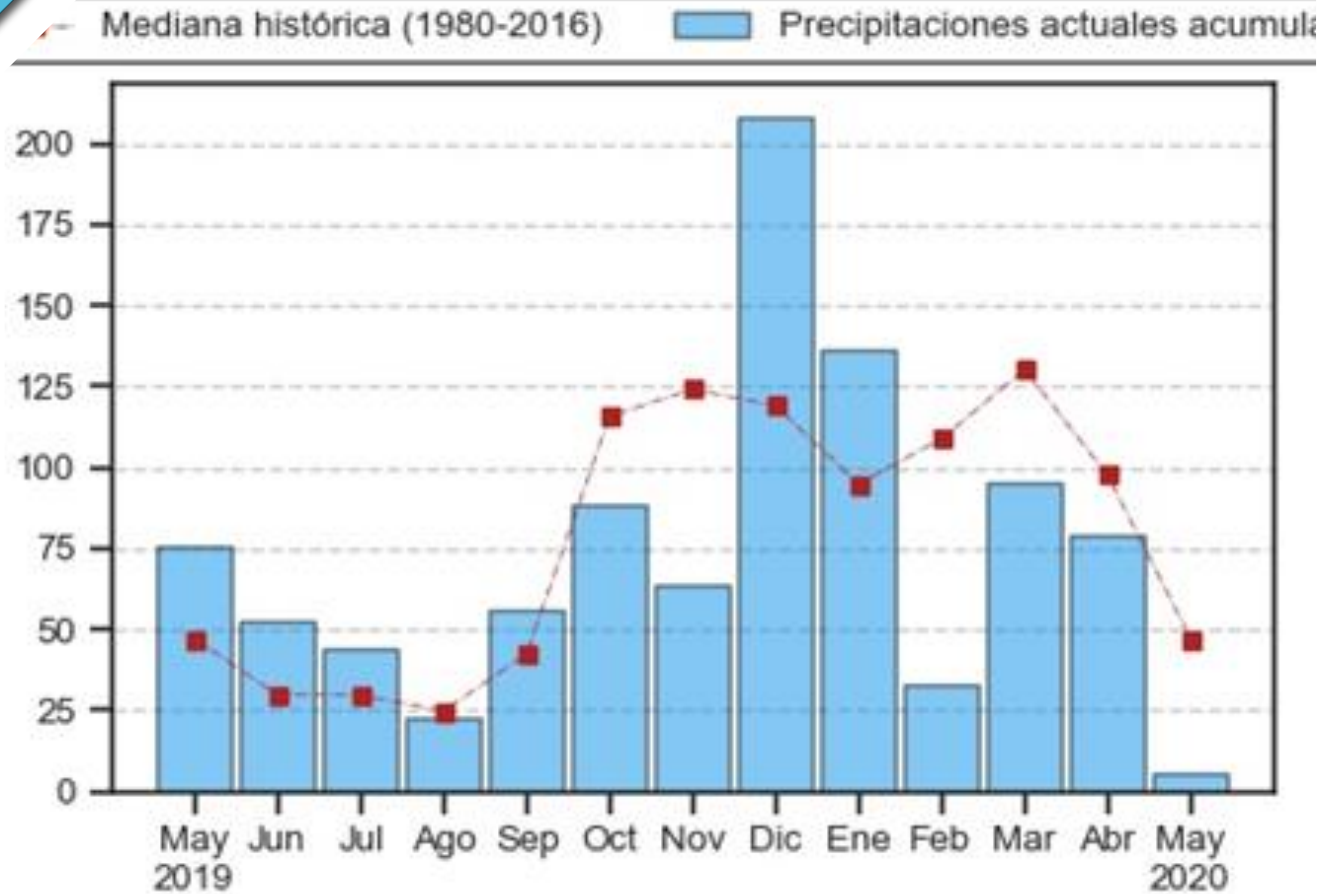
**"Ex Hipodromo" and
Almafuerte area.**

Problem Definition and Analysis:

Problem Statement



Almafuerte Floods



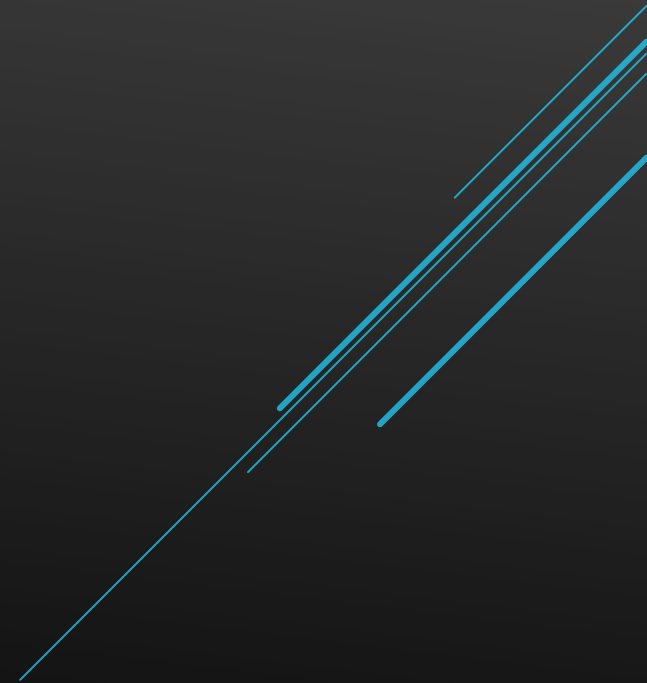
Paraná, Entre Ríos.
Datos: SMN

Actualizado: 17/

- Paraná has 1137 mm of rain per year
- It rains a lot in the summer and spring
- Floods occur on Almafuerte Avenue.

Problem Definition and Analysis:

Description of Scenes that Help Picture the
Problematic Situation



Problem Definition and Analysis:
Description of Scenes that Help Picture the Problematic Situation



<https://www.unoentrerios.com.ar/diez-familias-fueron-asistidas-la-copiosa-lluvia-parana-n942274.html>

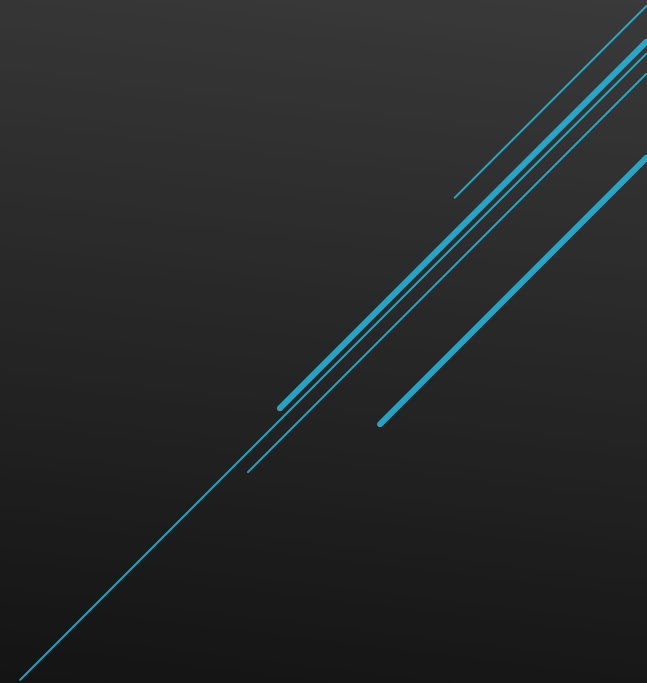
<https://www.unoentrerios.com.ar/llueve-parana-avenida-alfafuerte-colapsada-el-agua-n2652828.html>

**The problem of poor drainage system
on Almafuerte avenue**

Problem Definition and Analysis:
Identification and Analysis of Causes or
Factors that Give Rise to the Problem

Problem Definition and Analysis:

Identification and Analysis of Causes or
Factors that Give Rise to the Problem





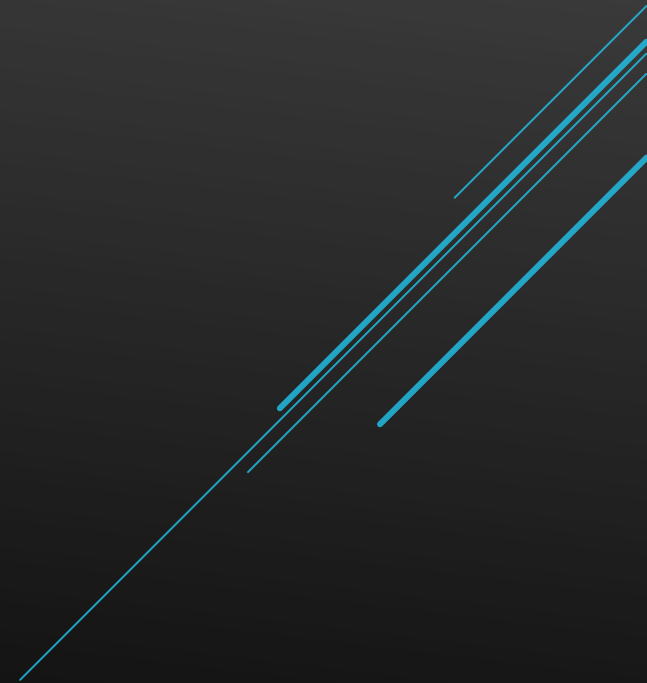
Causes

- Inclination of the avenue
- Permeability of the pavement
- Outdated and inadequate drainage system

Problem Definition and Analysis:
Identification and Description of the
Consequences

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Identification and Description of the
Consequences

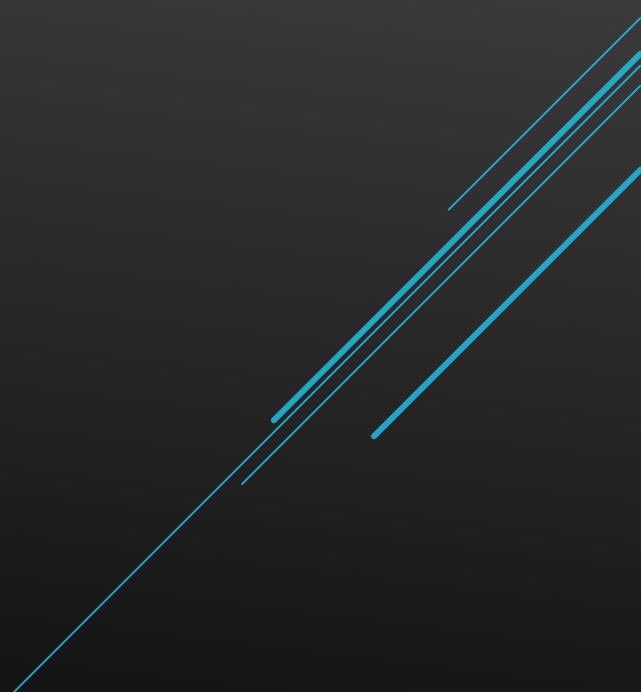




Consequences

- Property and infrastructure damage
- Disruption of people and vehicle circulation
- Pollution and sanitation issues

The Way Forward: Problem Approach

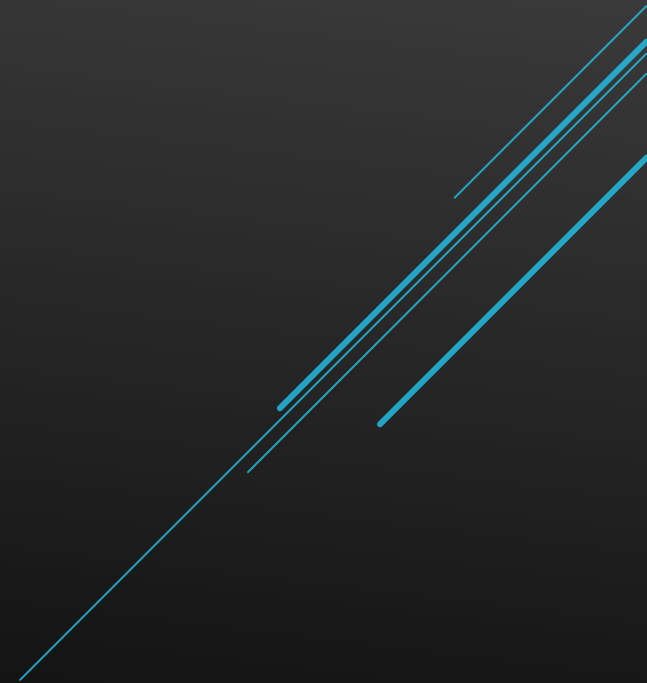




<https://www.klausinggroup.com/blog/what-is-a-rain-garden-exactly-3-types-of-rain-gardens-2-myths-6-benefits>

- Restoration and Adaptation of the Drainage System to a New Rain Garden
- Utilization and Storage of Rainwater in a Simple Green Space: The Rain Garden
- The Suggested Location for Construction: The "Ex Hipodromo"

The Way Forward: Strengths of the Proposal



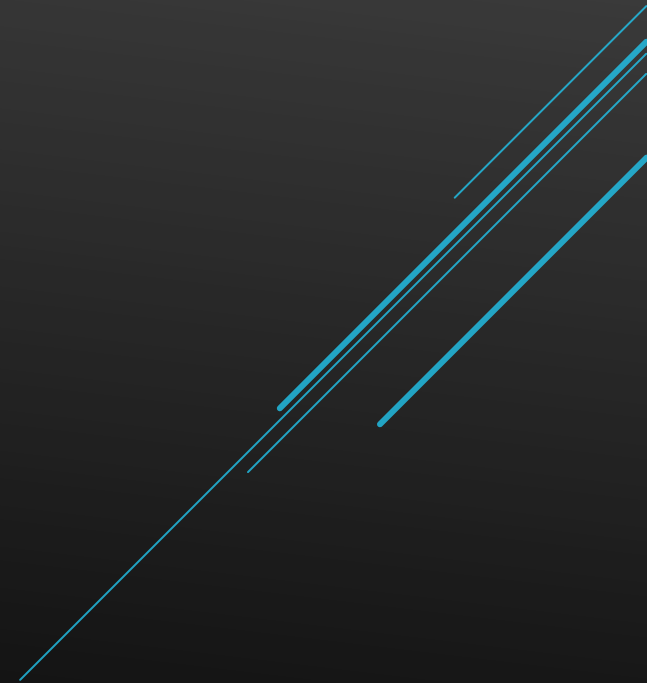
Strengths:

- Water Management
- Wildlife Habitat
- Aesthetic Enhancement.
- Cost Reduction



The Way Forward:

Weaknesses of the Proposal



Weaknesses:

- Space and Layout
- Maintenance
- Initial Cost
- Proper Drainage Needs



Conclusion:

A new drainage system in Paraná is an important improvement because there are a lot of problems in relation with the water accumulation.

A decorative graphic consisting of several parallel, diagonal cyan lines of varying lengths, located in the bottom right corner of the slide.

References

1. Google. "Google Maps location of Paraná, Entre Ríos". Accessed: August 7, 2023. [Online]. Available: <https://goo.gl/maps/fcjHYsNdY4sDkB4Z7>
2. Google. "Google Maps location of Av. Almafuerde, Paraná, Entre Ríos". Accessed: August 7, 2023. [Online]. Available: <https://goo.gl/maps/fDZxXvHBXedmipQN6>
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5. Google. "Google Maps location of Paraná, Entre Ríos". Accessed: October 12, 2023. [Online]. Available: <https://maps.app.goo.gl/5LvBhtyZ8hrrjgWz5>
6. "What Is A Rain Garden, Exactly?", www.klausingroup.com, <https://www.klausingroup.com/blog/what-is-a-rain-garden-exactly-3-types-of-rain-gardens-2-myths-6-benefits> (accessed October 12, 2023)

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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 Yugar Tófalo, Senior Lecturer, at gyugar@frp.utn.edu.ar.

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