

Construction of a vehicle bridge over *Las Piedras* stream

Florencio Varela - Quilmes - Buenos Aires Province



Las Piedras stream is part of Sarandí-Santo Domingo watershed, in which 550,000 people live at risk of flooding¹. This area lacks suitable sanitation services, its industrial, sewage and rain drainage systems have no pretreatment and garbage dumps at its margins create specific sites of pollution and the spreading of vectors.

At 52 B street (*Florencio Varela*), the stream marks a frontier between the neighborhoods of "*El Molino*" (*Florencio Varela*) and "*Eucaliptus*" (*Quilmes*). Currently, there is a vehicle bridge that runs through the stream, built twenty-five years ago by neighbors themselves when flooding levels of the riverbed were lower. However, nowadays the stream grows significantly when it rains heavily, with water reaching up to one meter above the bridge, isolating both communities. Moreover, the bridge holds back the wastes that the stream drags upstream, as a result of little or no waste management in several populations along the watershed, and even coming from industrial, sewage and rain drainage systems with no proper treatment, further worsening the situation².

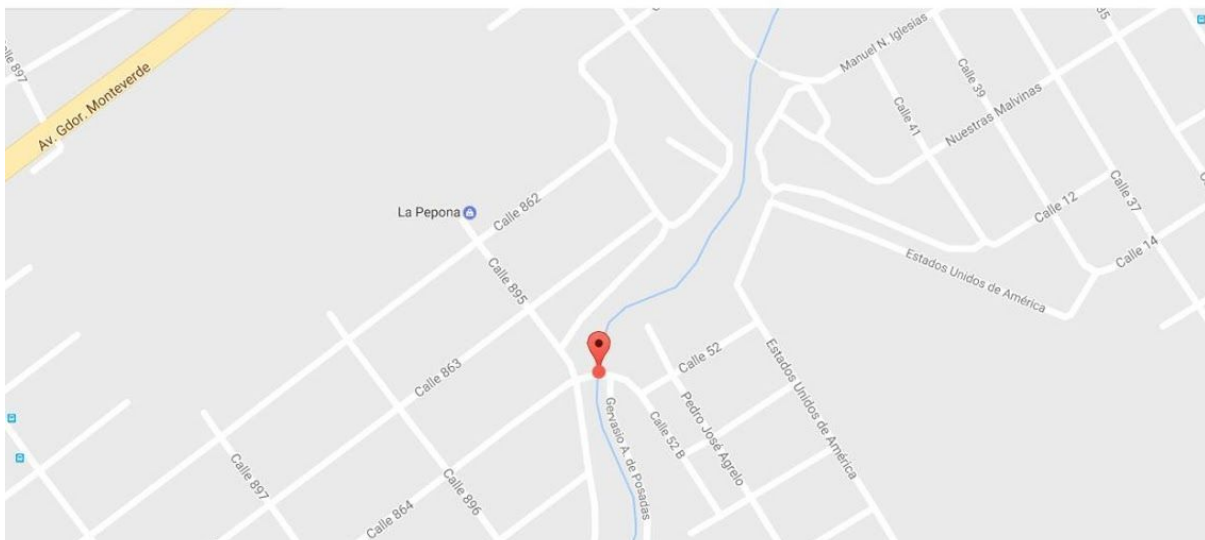
¹ Ortiz, N., Re, M., Kazimierski, L.D. y García, P.E. "Caracterización de población afectada por diferentes tipos de inundaciones en una cuenca urbana". XXVI Congreso Nacional del Agua, Argentina, September 2017.

² Elordi, M. L., Colman Lerner J.E. and Porta A. "Evaluación del impacto antropológico sobre la calidad del agua del arroyo Las Piedras, Quilmes, Buenos Aires, Argentina" *Acta Bioquím Clín Latinoam* 2016; 50 (4): 669-77.



Location

The current bridge connects *Quilmes* district, in 864 and 895 streets, with *Florencio Varela*, in *Valentín Gómez* and *Gervasio A. de Posadas* streets.



On one margin of the stream, there is *El Molino* neighborhood, in *Florencio Varela* department. It takes up 55 hectares where 2,745 inhabitants live, according to data published by the local council³. It is a community in a situation of vulnerability: 350 families have access to the power grid and water system through an irregular

³ <http://www.varela.gov.ar/seccionesdeintereses/imagenes/desarrollourbano/datos/publicados2010-1.pdf>

connection, public lighting was installed by neighbors, and there is no gas piping, sewage system and waste collection.⁴

The neighbors of *El Molino* have a long history of commitment to addressing shared social problems. They are the very builders of their own infrastructure, such as streets, drains, electricity and water lines. Over the past couple of years, the neighborhood commission has been conducting different actions to expose the urgent need to adapt their existing bridge and prevent fatal accidents. This is a project that requires joint action among different actors. This well-organized community invited EWB-Ar to participate in their project to build a new bridge.

On the other side of the stream you will find '*Los Eucaliptus*' settlement in San Francisco Solano, Quilmes district. This neighborhood has existed since 1950. There are 6,737 people living in 1,620 homes: 70% of these are in substandard housing conditions, 94.4% do not have access to sewers and 69.7% do not have access to the gas network (Data from the social census conducted by the *Quilmes* local government in 2010)⁵.

Current issues

Las Piedras stream increases its flow considerably on heavy rainy days. The water gets inside the houses and rises approximately one meter above the height of the bridge. The situation isolates families and forces people to cross the stream walking (or through an insecure footbridge) or to move from one place to another searching for safer roads to go to work or school. In the last few years, four people, including two children, died as a result of this situation.

⁴ Techo settlement map

⁵ <http://www.quilmessocial.org/ftp/pdf/censosocial/censosocial.pdf>



The stream is highly polluted. Waste from the surrounding villages ends up in the watercourse as a result of an inefficient management of the materials, of the dragging by rain and wind, and of the lack of an appropriate landfill site. Microbiological and physical-chemical contamination is present. The neighbors organize clean-up tasks to unblock the stream at the height of the bridge in order to prevent water from overflowing and flooding nearby houses.



The neighborhood commission of *El Molino* claims the urgent need to build a new bridge or adapt the existing one to prevent fatal accidents. This is a project that requires joint action among different actors

Project

The project consists of raising the level of the existing bridge, building above this a new vehicular bridge, to ensure the safe access of neighbors in times of flooding, thus avoiding fatal accidents.

Strategies

- Meetings of participatory design in which will be defined by consensus the technical and functional aspects of the work. The activities will be coordinated by an interdisciplinary team with experience in similar community development projects.
- Training in construction work for the neighbors.
- Neighborhood meetings throughout the project, bringing together all families through a WhatsApp group administered by the coordination of the project and the neighborhood commission.
- To summon different institutions and local references in order to articulate long-term partnerships that will allow improvements and future projects.



Actors Involved

'El Molino' neighborhood commission, Municipality of *Quilmes*, Municipality of *Florencio Varela*, Undersecretary for hydraulic infrastructure in the province of *Buenos Aires*, National Ministry of Health and Social Development, National Institute of Water, Staco Argentina SA, Krah Latin America, UTN Regional college of La Plata and volunteers from EWB-Ar.