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Cooperación Suiza en Bolivia

*Reducción del riesgo de desastres*



  
Guaqui

**Project: Construction of a water treatment plant and sewer system for the Guaqui town, Bolivia**



## General project data

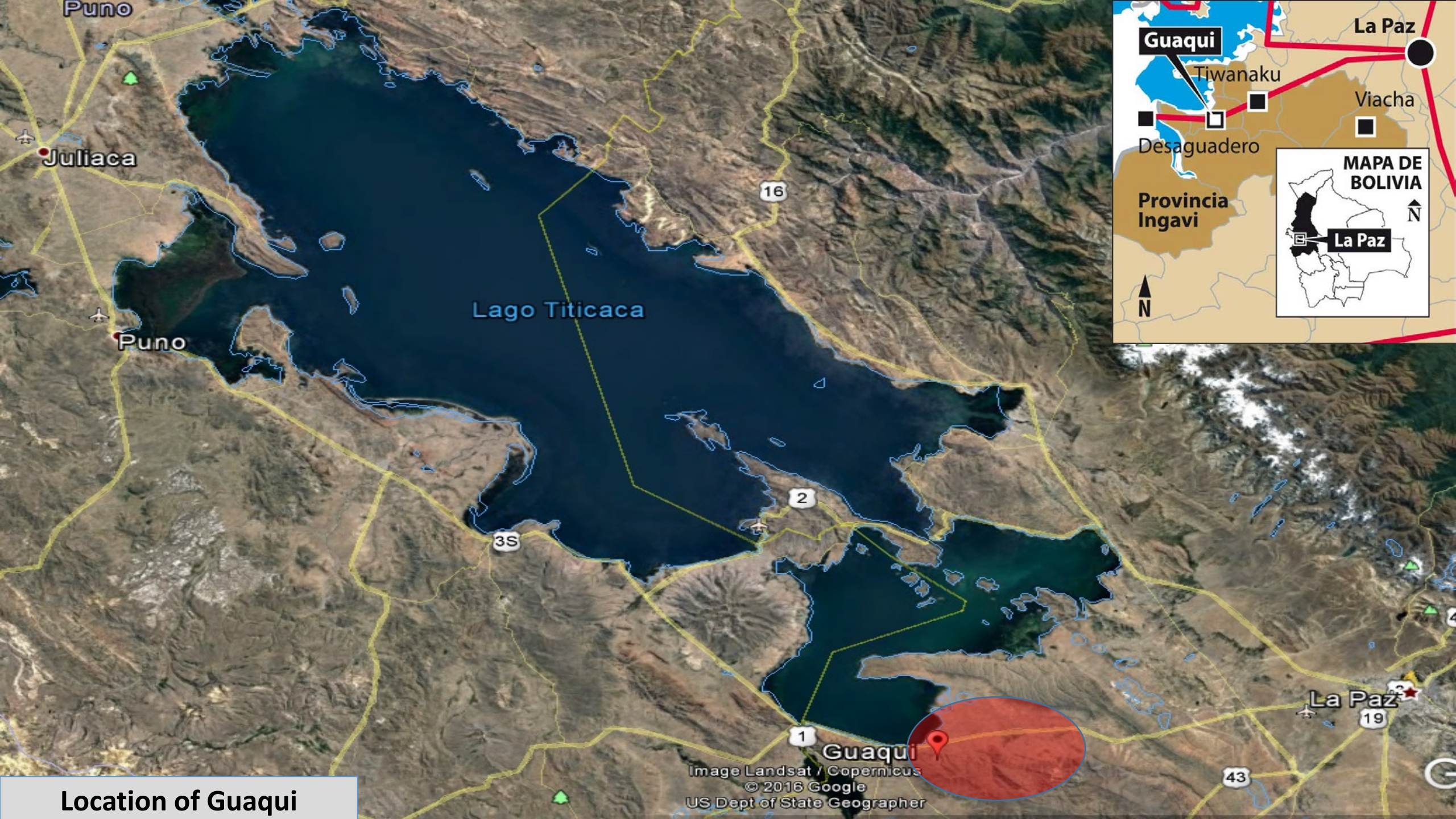
Location:	Town of Guaqui Municipality of Guaqui Department of La Paz
Management:	Autonomous Municipal Government of Guaqui
Executor:	EMAGUA (Executing Agency for Environment and Water)
Cost of investment:	USD. 1.000.000
Cost of infrastructure:	USD. 901.344
Cost of supervision:	USD. 47.050
Environmental mitigation:	USD. 8.100
Technical assistance:	USD. 48.500
Period of execution:	Sept 2016 – July 2017
Sector:	Water and Sanitation
Beneficiaries:	3822 inhabitants
Area served:	224 Ha

**Objective:** to improve the current living conditions of the people of the Guaqui town by implementing an appropriate sewage system that benefiting all the population currently lives in the place, with a projection of 20 years



**Component:** Sewage collection network  
Emissary  
Pumping sump  
Pumping line  
Treatment plant  
Infiltration ditches





Location of Guaqui

Image Landsat / Copernicus  
© 2016 Google  
US Dept of State Geographer





Port of Guaqui

Guaqui town

Guaqui Guaqui

RN 1

© 2016 Google  
Image © 2016 CNES / Astrium

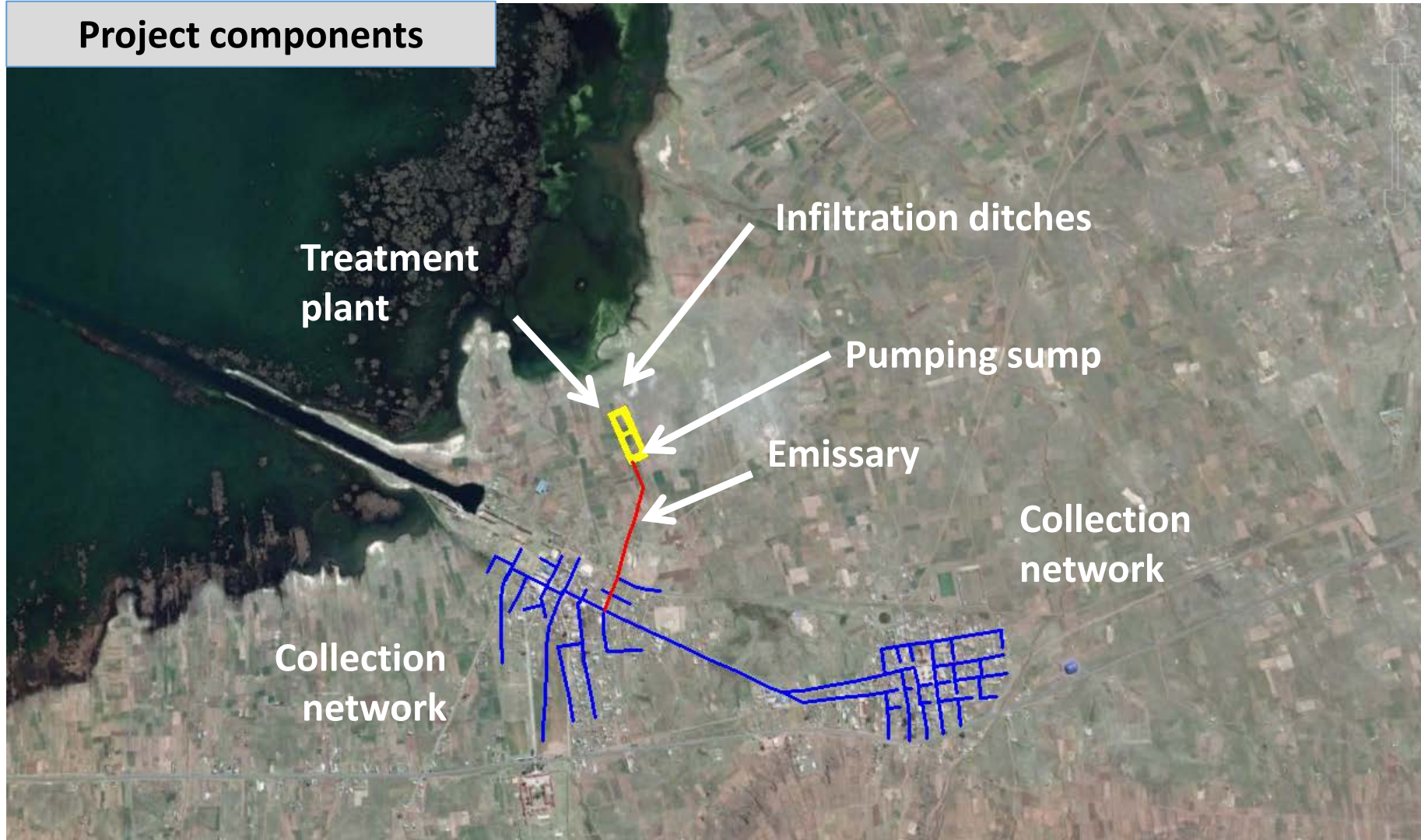
Google

### Coverage and range of Guaqui Project





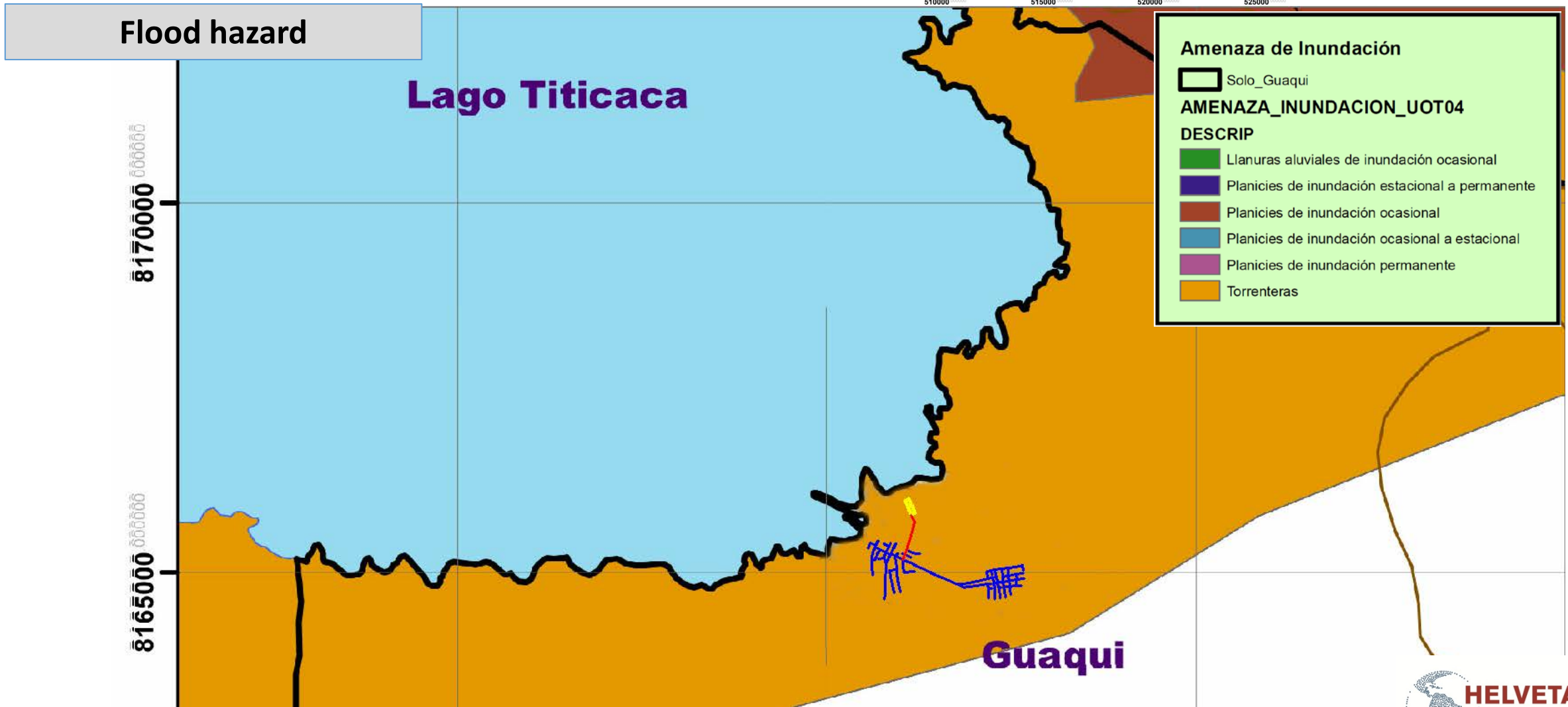
## Project components



**Current situation:** The final design study was elaborated by the company Pirámide Ingeniería y Construcciones SRL and is in the contracting stage for its execution

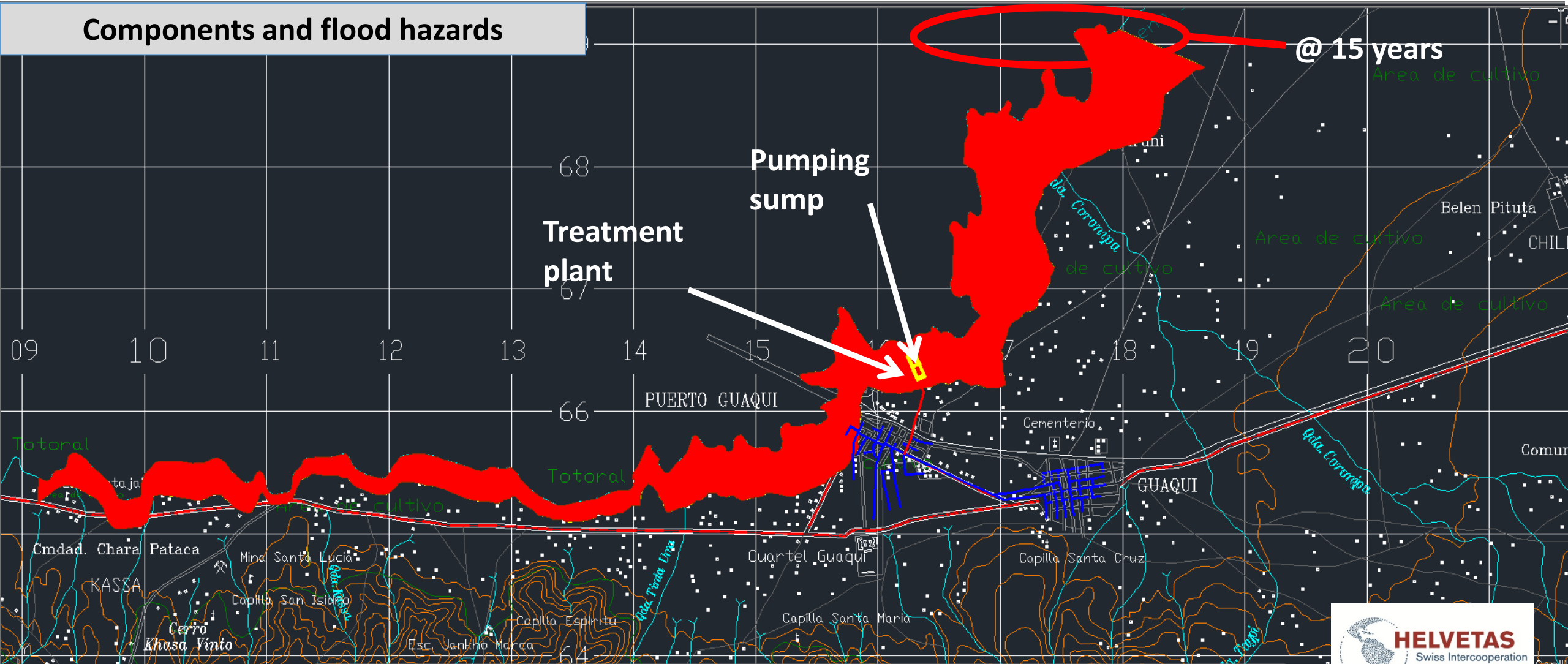
**Components:**

- Collection network
- Emissary
- Pumping sump
- Treatment plant
- Infiltration ditches



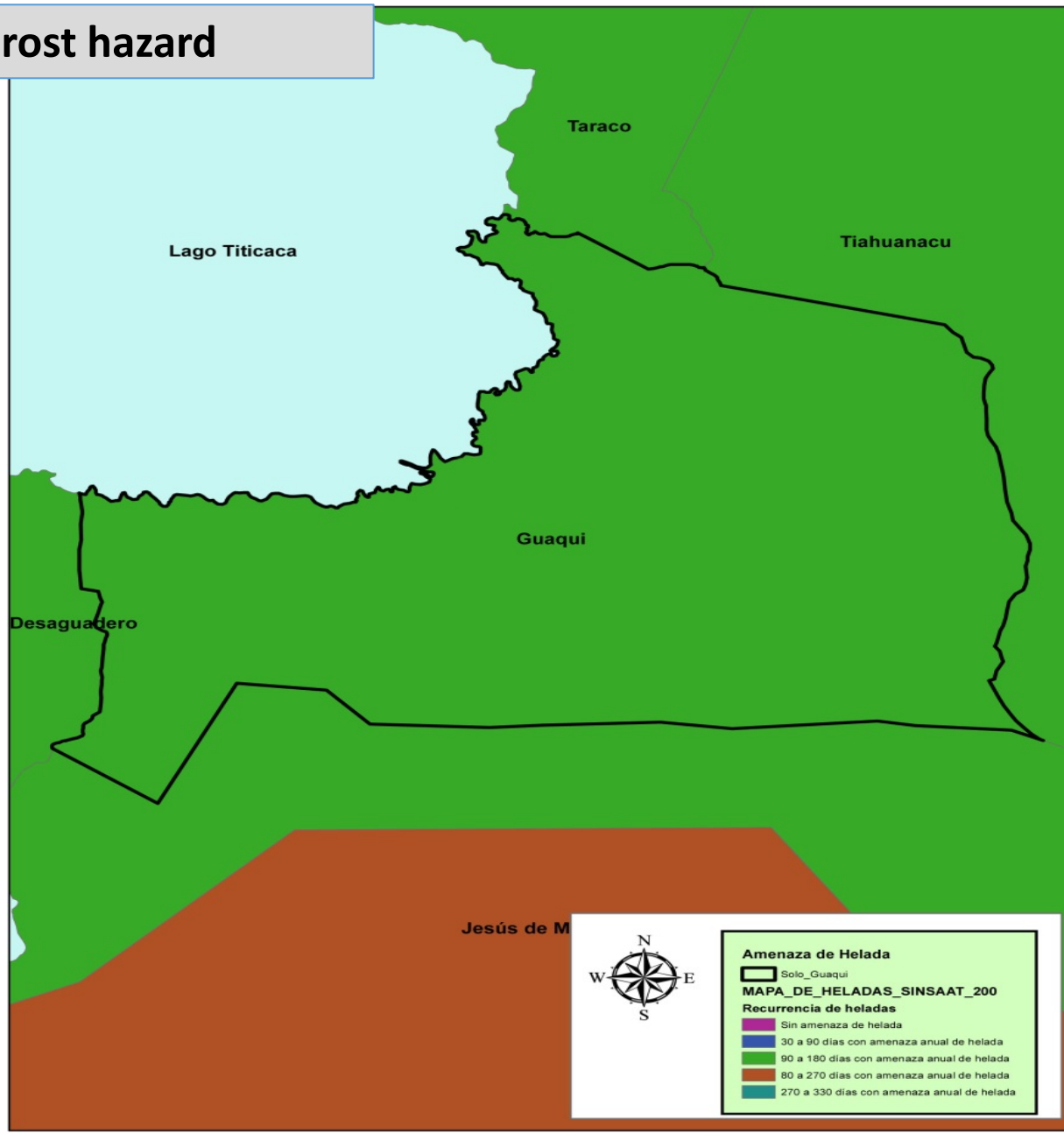


## Components and flood hazards





## Frost hazard



**Amenaza de Helada**

- Solo\_Guaqui

**MAPA\_DE\_HELADAS\_SINSAAT\_200**

**Recurrencia de heladas**

- Sin amenaza de helada
- 30 a 90 días con amenaza anual de helada
- 90 a 180 días con amenaza anual de helada
- 180 a 270 días con amenaza anual de helada
- 270 a 330 días con amenaza anual de helada



## Pictures of Guaqui



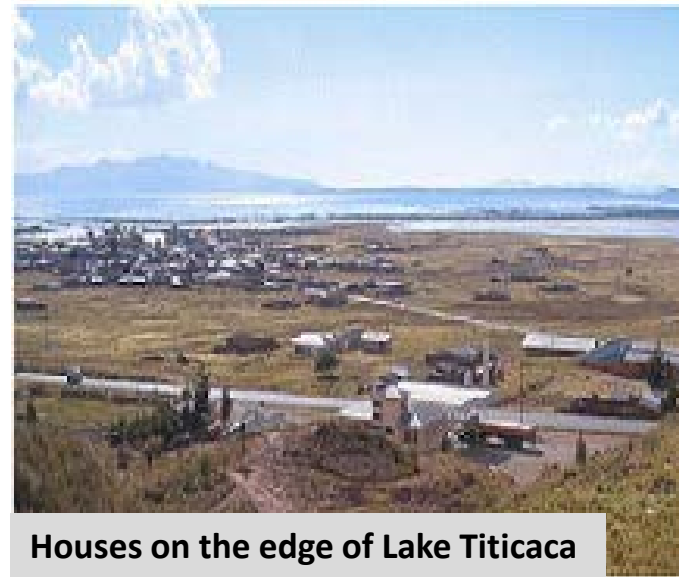
Town of rural area, Square and Church



Without sanitary system



Drinking water manhole



Houses on the edge of Lake Titicaca



Tourism and sports in Lake Titicaca



## Project components, plant location, risks, soil types and flood zones



Flooded pumping sumps



Oxidation lagoons



Flood zone and type of soil



500 families and 22 houses in 11 coastal municipalities like Guaqui in the west of the city of La Paz were affected by flooding on the level (1 m) of Lake Titicaca, as a consequence of the rains in the last two months.



Settle location of the project, near Lake Titicaca



Flood zone and type of soil



## Project components, plant (oxidation lagoons) and pumping sump



Oxidation lagoons



Flooded oxidation lagoons



Machines of a pumping sump