

# Urban & architectural rehabilitation proposal for the waste water treatment plant in Santa Clara

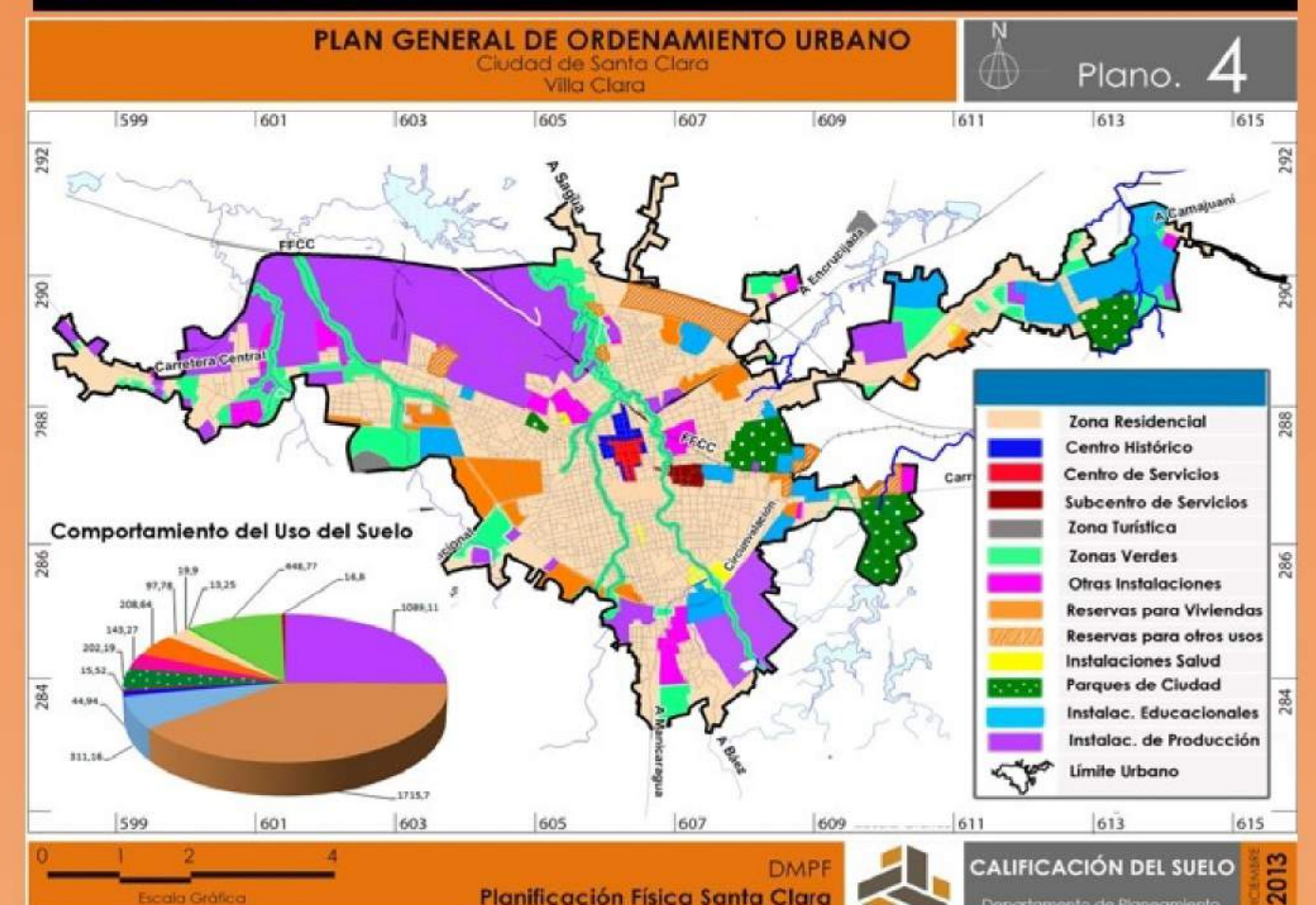
## introduction

In Santa Clara's city the same as in most of the settlements, the predominant use constitutes it the residential or habitat, conformed by the constructions destined to the housings with to the primary, secondary and superior services, articulated by the infrastructural nets, green areas, public spaces and the urban furniture.



In this city 31 neighborhoods and precarious focuses are located.

In the year 2014 it was concluded the **Urban Ordering Plan of the city and its Regulations**, where it was defined the physique -space structure of the city with their functions, especially the residential areas and the possible ones for the habitat.



In Cuba they are carried out the following definitions:

**Precarious neighborhood:** as the residence group that contains more than 50 housings, generally arisen in an informal way, without keeping in mind any type of urban and architectural regulations, they are characterized to possess an environmental inferior quality to the urban context. They don't present defined traced road, neither the ordering constructions; they lack total or partially of urbanizations. (Electricity technical infrastructure, water and sanitation infrastructure, required levels of social basic services, as medical clinic, primary school and provisions store).

**Precarious focuses:** as the residence group from 15 to 49 housings that they presents the same conditions of precarious neighborhood and they cause a significant impact, independently that they are located or not, in the cities' periphery areas.

As instrument of the Territorial and Urban Control exists the **DECREE No. 272 OF THE EXECUTIVE COMMITTEE OF THE MINISTERS COUNCIL**, of the year 2001.

For these works a **Confrontation Commission** exists, it is guided and organized by the Municipality Government, where main several actors taken part. At the moment the problem of the illegal constructions is very followed for the Government.

Nevertheless

Constant violations exist, mainly the illegal constructions. The demolitions are not executed, especially if they are already inhabited (constructions that are only built in three days in occasions), and in their majority they are young people that come from other places and with small children







The area, it was an old treatment plant of waste liquids of the city, this stopped to be functional from the years 60 of last century, due to the growth of the city.

it what generated volumes of the residual very higher to the treatment capacity, being no-functional this.

CONSTRUCTIONS INVENTORY WITH ARCHITECTURAL VALUE			
21	TREATMENT PLANT		
Original use: treatment plant			
Location: Avenida de Páez y Calle Duval.			
Time in that it was built: XX century		Current state: Bad.	
Architectural style: Eclectic.		Value: Architectural	
Protection grade: I		Current use: illegal neighborhood	
Number of levels: 1		Proposed use: Social, recreation.	
Observaciones:			





Starting from the years 90, the Company that administered the plant (Aqueduct and Sewer system) began to grant its locals to its workers, abandoning in a gradual way the rest areas that conformed the installation. This problem was generalized in the main cities of the country.

## Main challenge

How to give answer to a vulnerable growing illegal neighborhood with flood and illnesses risks, product of their location and infrastructure lack?



## Objectives

### General Objective

To obtain the project solution with a strategic planning for the integral, progressive and sustainable rehabilitation of the area, in correspondence with the urban plan of Santa Clara's city

### Specific objectives

- To create functions with compatible and sustainable uses.
- Preventively to treat the disaster vulnerability problems and to minimize the environmental negative impacts that have the sector.
- To put in value areas that have some potentialities.

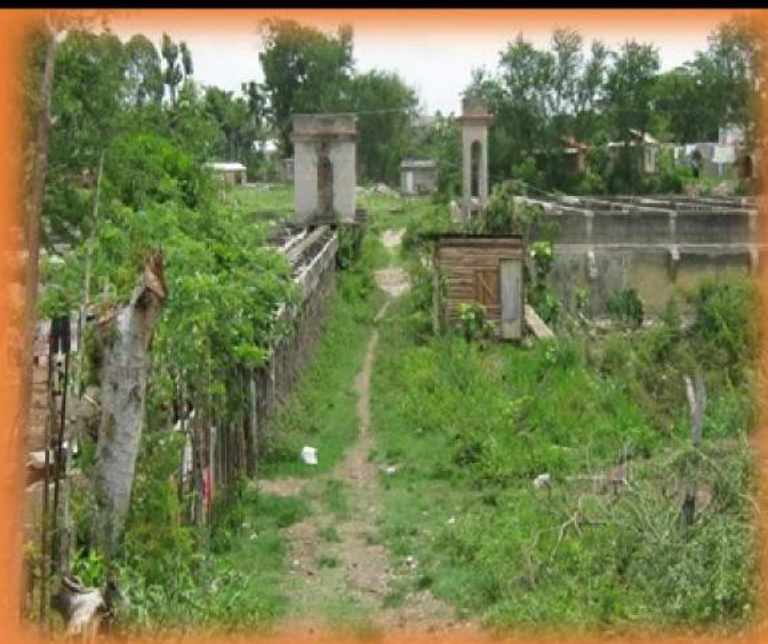




# Main problems



- Existence of an area associated to the river, under the flooding level.
- Destruction of constructions for the illegal appropriation
- Deficient urban image
- Constructions with vulnerable materials
- Possibilities of illnesses and epidemics for the consumption sources of drinkable water and the infrastructure lack.
- Growth and consolidation of the area.
- Existence of small garbage disposal in the rivers margins.
- Most of their residents have cultural low level and with social problems.



TOTAL OF PEOPLE: 132

HOUSING TOTAL-54

Years	No	%	CONSERVATION STATE	GOOD	REGU LAR	BAD	Infraestruc ture	Aqueduct	Wells	Sewer System	Small septic tank	Drainage to the river	No T N
0-9	30	22.7											
10-19	11	8.3											
20-29	18	13.6											
30-39	22	16.6	HOUSINGS INUMBER	10	32	12	Housing	8	14	10	17	12	13
			%	18.5	59.2	22.2	%	14.8	25.9	18.5	31.4	22.2	24

## Weaknesses:

- Vulnerable area to flooding risks
- Severe contamination of the river and its brooks.
- Phreatic- mantle existence with high levels of contamination
- Waters sewers pond in the areas of the obsolete plant.
- Lack of technical infrastructure for the residential use
- Lacks of political associated to illegal neighborhoods. Although a methodology exists for the study of these neighborhoods, clarity doesn't still exist for its relocation or adaptation to the area, not existing a financing for it.
- Weakness in the territory control, the government doesn't apply eviction political, only housings are demolished in construction stage, not inhabited housings.



## Risks

- Bélico river
- Natural drainage
- Stagnation area of residual waters
- Housings with flood risk
  - hig h
  - middl e
  - low
- Housings with collapse risk
  - parcial
  - total
- ⚡ electric illegal nets



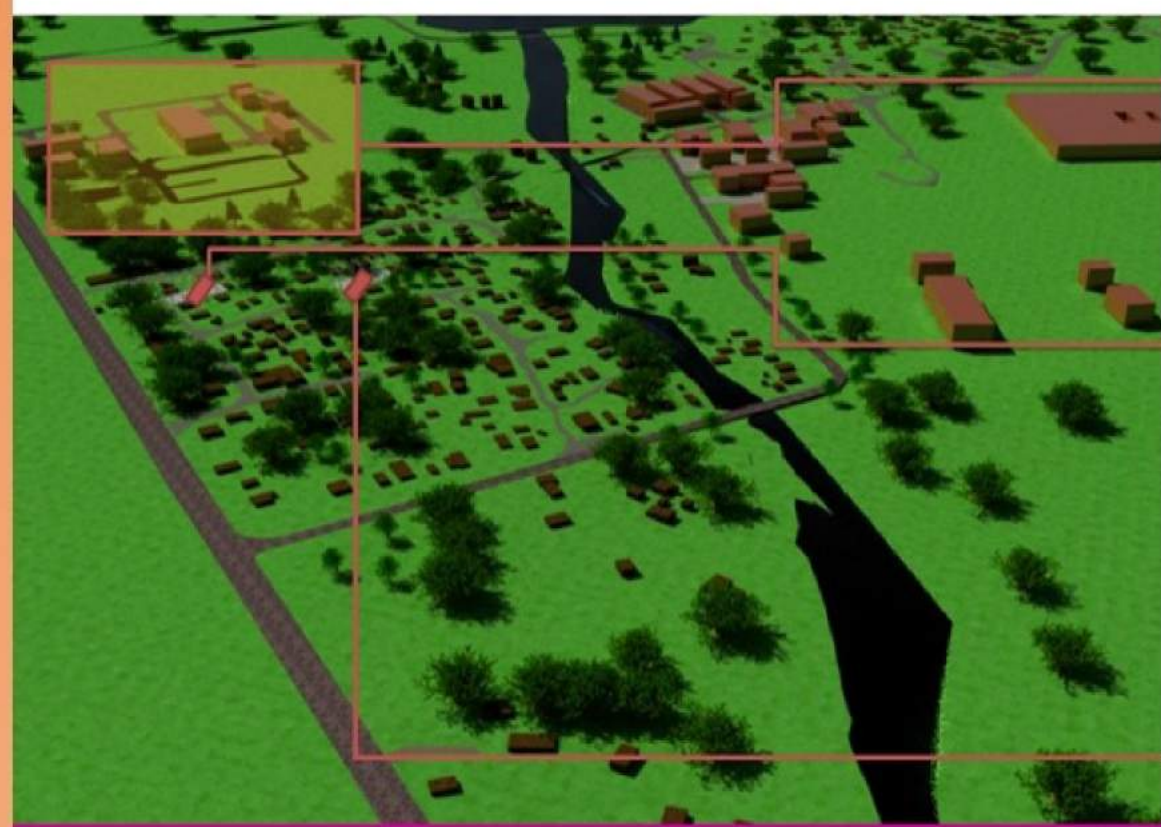
# Methods and Tools

To analyze this challenge several strategies they were developed. **The Municipal Office of Physical Planning, began from the 2013 to give priority to the studies related with the illegal neighborhoods, to define the action with them.**

Due to the existent **relation between the Santa Clara Municipal Office of Physical Planning and the Central University Marta Abreu**, studies were carried out of two illegal neighborhoods in the city, studies of academic formation and with the Urban Department of Physical Planning premises.



HITOS



- Causes that facilitated the spontaneous growth.
- Evolution of the area
- Diagnosis of the area and its around zones
- Studying all problems and the existent potentialities.
- Surveys.
- Main neighborhood actors were consulted
- Relationship among the institutions

## GENERAL DATA

Sex \_\_\_\_\_ Age \_\_\_\_\_ Occupation \_\_\_\_\_ **Survey**

### 1. ROOT LEVEL

How long does you take living in the neighborhood? \_\_\_\_\_

### 2. OWNERSHIP SENSE

Do you like the neighborhood? \_\_\_\_\_

Would you move to another neighborhood? \_\_\_\_\_ To which \_\_\_\_\_

### 3. CONFLICTS PRIORITY

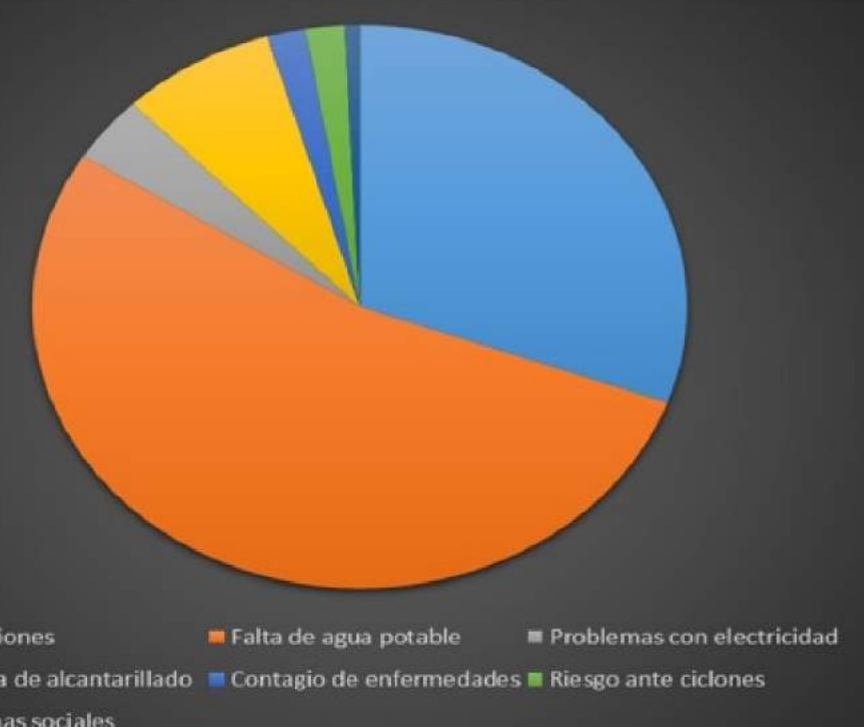
Mark from the 1 to the 7 as he/she thinks that it is more serious:

- \_\_\_ Floods
- \_\_\_ Lacks of drinkable water
- \_\_\_ Problems with the electricity
- \_\_\_ Sewer system lack
- \_\_\_ Infection of illnesses
- \_\_\_ Risk for hurricanes
- \_\_\_ Social problems

### 4. PARTICIPATION FORMS IN THE REHABILITATION

You would participate in the neighborhood arrangement? \_\_\_\_\_

How?



illegal blocks manufactures



church house





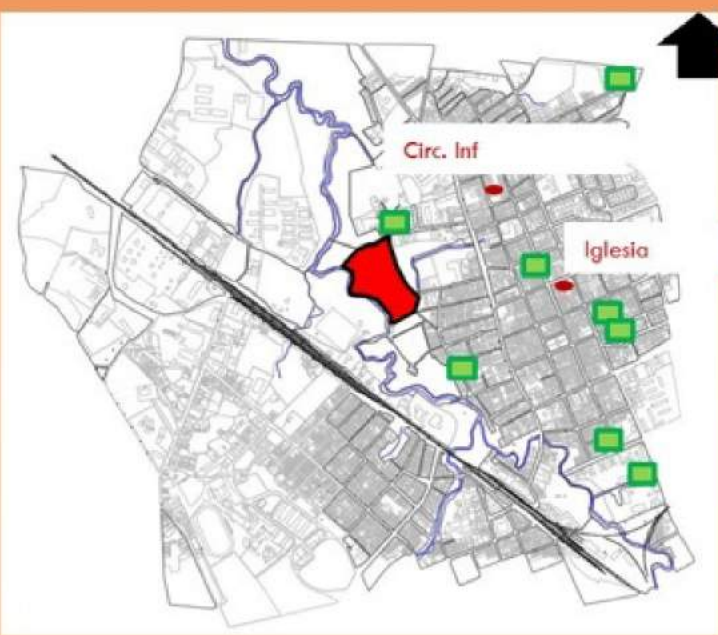
### Country main strengths

- The country nowadays find in an opening in ascent in its international relationships.
- Tourists growing increase
- Great quantity of collaboration projects with several countries, organizations or government and not government institutions, with financings included.

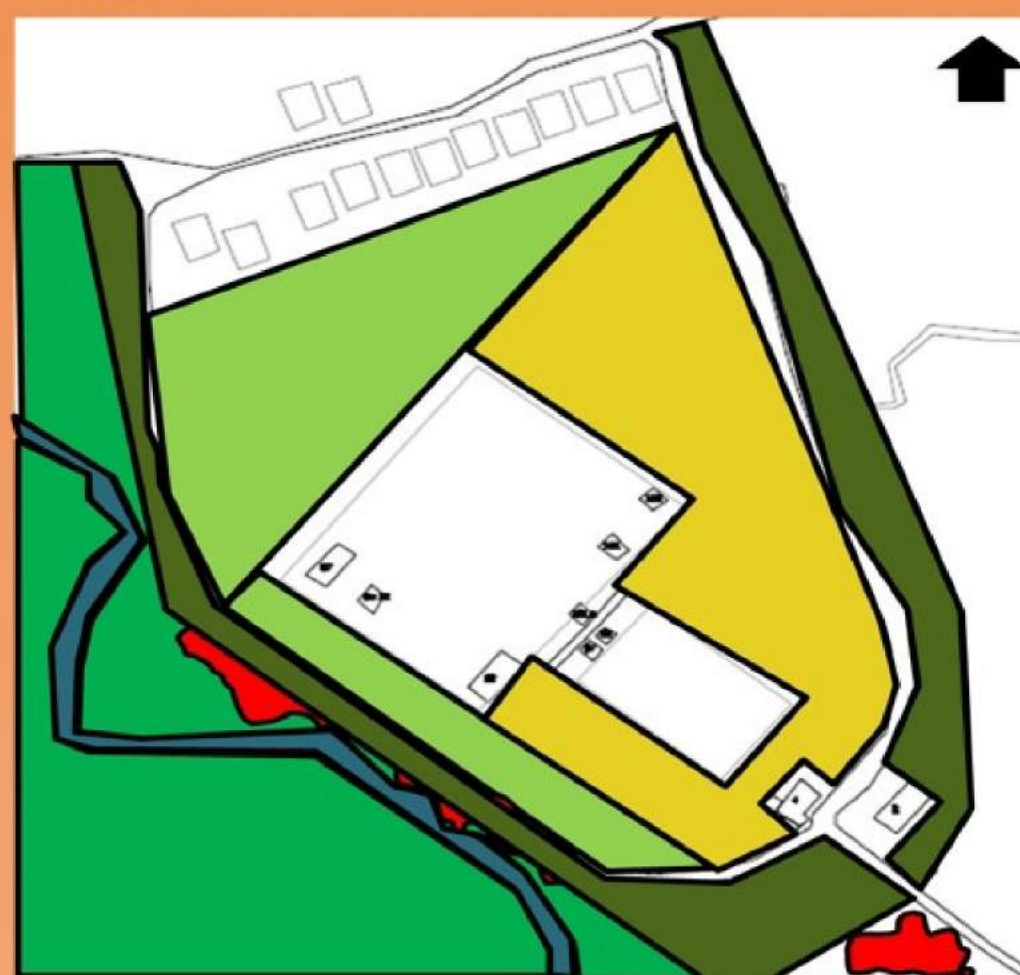
- Existence of areas with landscape values.
- The existence of architectural historical values associates to the city industrial evolution.
- Existence of plants with natural values.
- Area located inside the city.
- Existent connectivity by means of roads accesses.
- Vestiges of the old treatment plant still exist.
- Studies carried out by the University for an appropriate use and relocation of the housings.

### General Objectives:

1. To improve the community life quality
2. To achieve an environmental better comfort
3. To rescue the historical, architectural and archaeological values of the Plant, with the improvement and appropriate use of the place



LEVEL 0



- Sistema Ambiental**
1. Sanitation of Bélico river and their margins.
  2. To eliminate small garbage
  3. To propose areas and appropriate vegetation for the place.



### Specific Objectives

- To relocate the family affected toward available near areas to the sector, keeping in mind as a priority.
- To provide housings with acceptable life conditions.
- To clean up the polluted areas.
- To achieve with the design of new facilities the decrease of the level contamination.
- To achieve with the landscape design the thermal and atmospheric improvement of the sector, as well as their embellishment.
- To perfect the connection between the sector with the bordering neighborhoods.
- To improve the conservation of the building.
- To maintain some samples of the Plant and to seal off the committed place, avoiding new immigrations.



To be sustainable the proposal, to suggest the local government's financing. The government has a percent in money for proposals or actions in the Municipality. It is also possible an external financing that guarantees the execution of the project. The structure of the city has a company that has as its social object to guarantee the maintenance of the green areas, parks, etc (Communal)



- Illegal neighborhood are commonly related to poverty or necessities.
- Migration to urban areas is deteriorating living and environmental conditions.
- Lack of infrastructure because they're illegal.
- Governments often wait until the problem is out of control to make an intervention.
- The laws have to be carry out, they cannot be flexible.



## Reflection

- It is necessary an effective politics against the emergence and growth of the illegal neighborhoods, as well as the implementation of methodologies for the ordering of those that can be reordered in the area.
- A strategic politics doesn't exist in the country to eradicate the precarious or illegal neighborhoods that don't proceed in the place.
- The government dedicated financial resources in the execution of new residential neighborhoods to relocated this zones (apartment blocks), what it caused an economic great expense.



- That strategy also stimulates the execution of illegal housings, because for this way the citizens they come an alternative from getting appropriate housings, citizens that press the local governments to solve the situation that they live taking account the precariousness of its housings
- It doesn't exist for the institutions, companies or state organisms a politics that identifies a land value. Neither a deep and effective penalization exists by the abandoned facilities.
- The companies don't guarantee the custody of their abandoned facilities, which are occupied by their own workers with the approval of their directive in many cases



- Most of their inhabitants are identified with the area, at the same time they get employments or they study near to their residence, for what its transfer in many cases is not wanted by its inhabitants