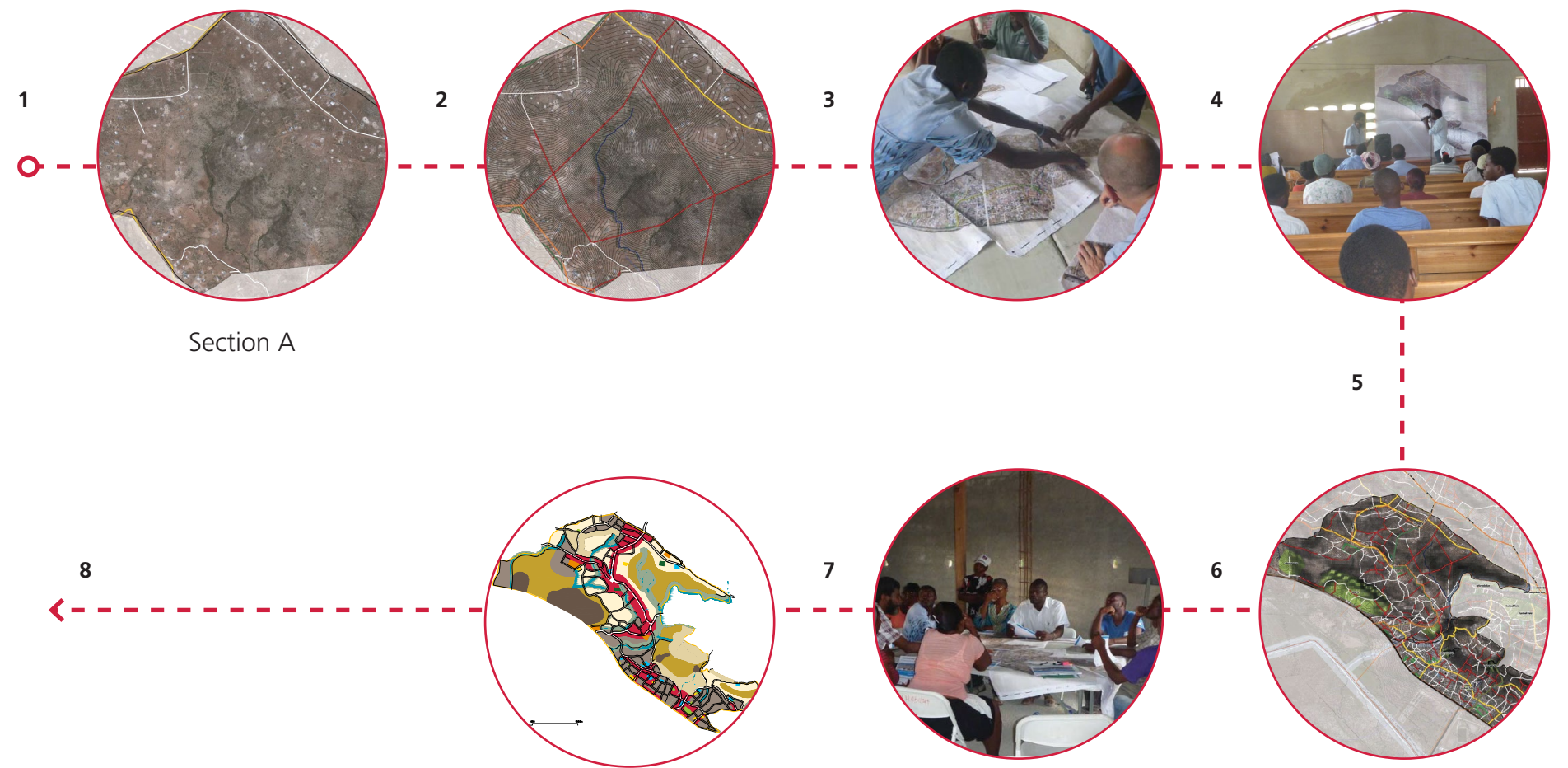


Canaan II, located on the west of the central area of Cnaan, has a population of 12,100. It is considered a low density neighbourhood with 4.383 inhab. per km<sup>2</sup> and therefore its densification is encouraged. A large part of Cnaan II borders the National Road 1 to the south but there is almost no access from it to the neighbourhood. The presence of quarries and the complex topography limit the availability of suitable lands.

The proposals in this section are based on a participatory process with the Cnaan II community that lasted an average of three months. The UN-Habitat team maps the existing situation and then the community validates and proposes ideas. The LAB of urban planning and design checks the proposed interventions and modifies if necessary. Then, a neighbourhood assembly is organized to present the vision and a land use plan is developed.



1. Mapping the existing situation
2. Mapping proposed interventions
3. Community workshops

4. New proposals draft
5. Selected interventions map
6. Neighbourhood assemblies

7. Draft of land use plan
8. Charrette and implementation

Fig.69: Cnaan II: participatory planning process

**A. STREET NETWORK**

Currently, the street network occupies 8% of the total Canaan II area. There are just secondary streets with the majority being dead-ends streets. The presence of roads in the northern and western parts is almost null thanks to the existence of quarries and steep slopes. Appropriate measures on the construction of roads in steep areas have been further elaborated in the mobility report.

**Existing situation**

Streets percentage

UN-Habitat: 30%

**8%**

Streets km/sq.km

UN-Habitat: 18 km/sq.km

**13.6 km/sq.km**



Fig.70: Canaan II: existing street network

**Proposed street network**

Streets percentage

**15.5% -Option A**

Arterial road: 24m

Main roads: 18m

Secondary streets: 12m

**- Option B**

Arterial road: 18m

Main roads: 12m

Secondary streets: 9m

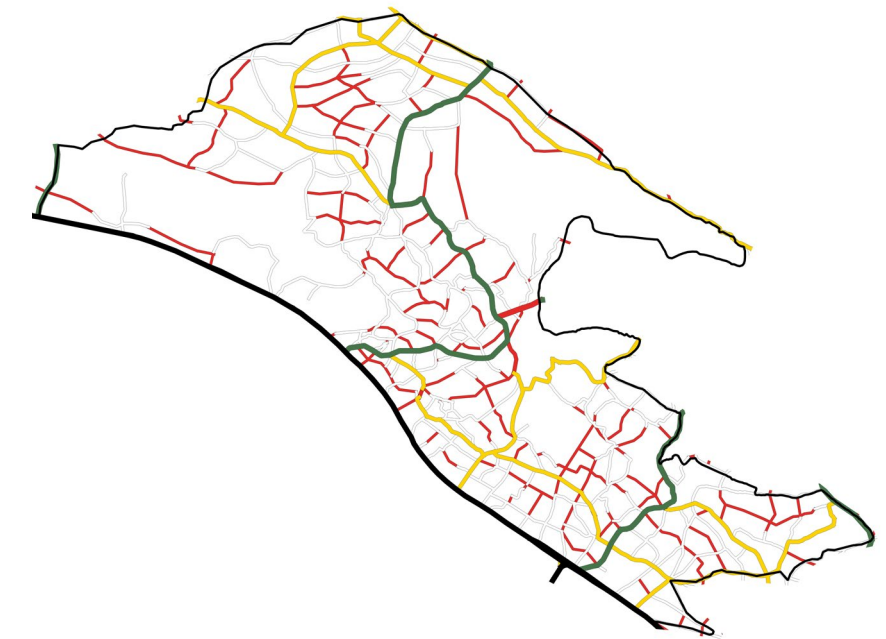
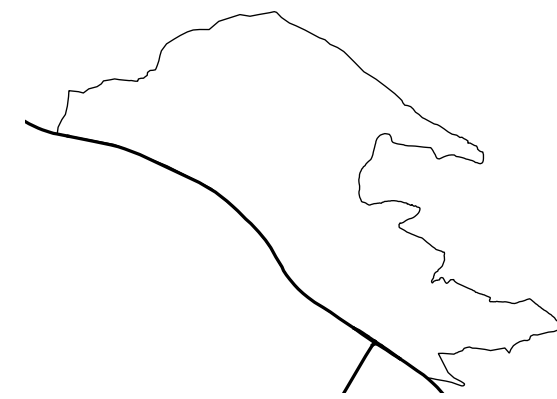
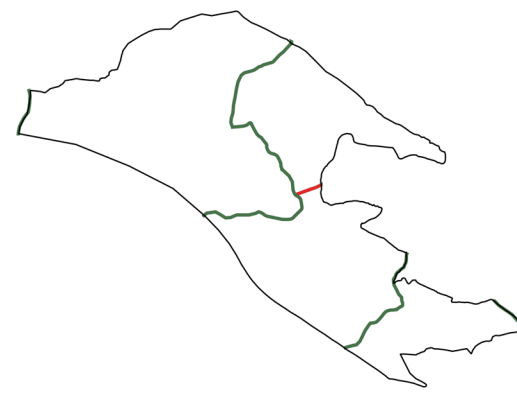


Fig.71: Canaan II: Proposed street network

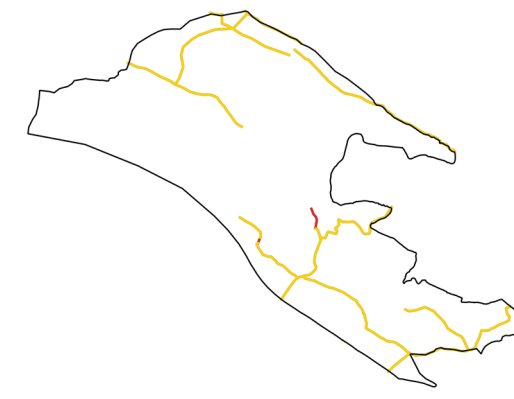
**Layers of the proposed street network**



National road



Arterial road



Main roads



Secondary streets

Fig.72: Canaan II: Layers of the proposed street network

B. PUBLIC SPACES

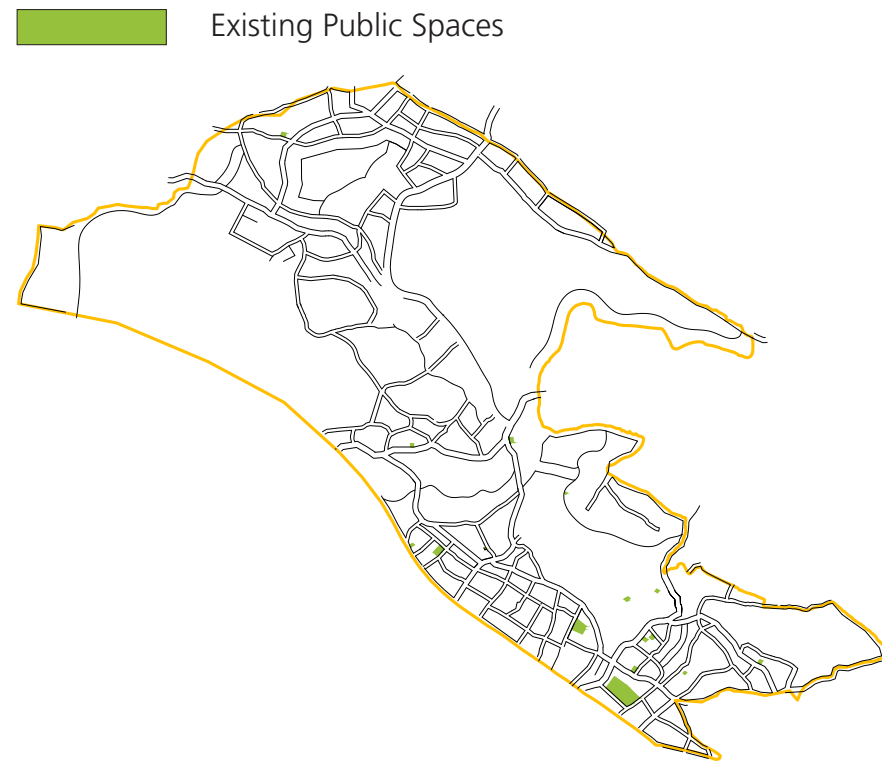


Fig.73: Canaan II: Existing Public spaces



Fig.74: Canaan II: Public spaces proposed by the community

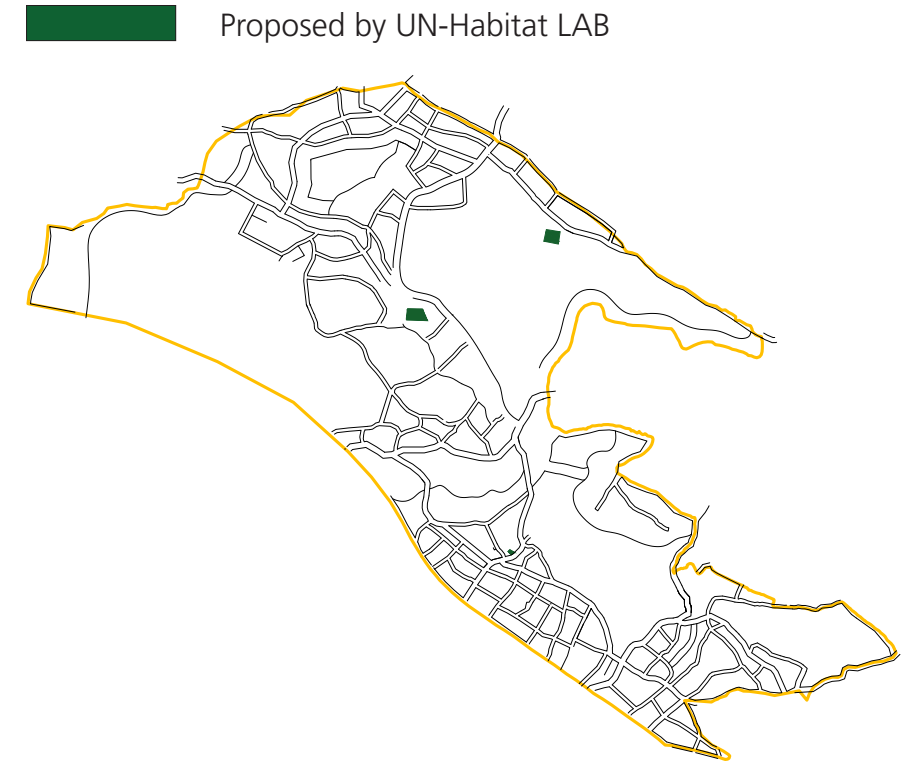


Fig.75: Canaan II: Public spaces proposed by UN-Habitat LAB

#	PUBLIC SPACE CANAAN II	STATUS	NAME (IF ANY)	m2	Ha	%
NEIGHBOURHOOD AREA				2760000	276	100%
1	Public space	Existing	Terrain de football	660	0,07	
2	Public space	Existing	Terrain de football	1.300	0,13	
3	Public space	Existing	Parc	5.900	0,59	
24	Other public spaces (13)	Existing		2.051	2	
				<b>9.911</b>	<b>0,99</b>	<b>0,36%</b>
4	Public space	Proposed by the community		8.984	0,8984	
5	Public space	Proposed by the community		2.490	0,249	
22	Public space	Proposed by the community		3.384	0,3384	
23	Public space	Proposed by the community		2.320	0,232	
				<b>17.178</b>	<b>1,72</b>	<b>0,62%</b>
7	Public space	Proposed by the lab		2.527	0,2527	
6	Public space	Proposed by the lab		2.203	0,2203	
25	Public space	Proposed by the lab		200	0,02	
				<b>4.930</b>	<b>0,49</b>	<b>0,18%</b>
<b>Total:</b>				<b>32.019</b>	<b>3,20</b>	<b>1,16%</b>

Table 6. Canaan II: Percentage of public spaces

Canaan II has 24 small public spaces, two of them are football fields and the other is a market. The total area of the existing spaces is of 1 hectare consisting 0.37% of the total neighbourhood area. These spaces are located in south where the concentration of houses is abundant. To keep up with the recommendation of UN-Habitat, it is essential to consider vacant lots for the development of new public spaces.

The results of the workshops highlighted the importance and the need of having new public spaces. Considered as a priority, the community proposed to locate four spaces in the north. Adding the community's proposals to the existing situation, the percentage of public spaces is still insufficient. For this reason, the LAB suggested the establishment of two other spaces in the north-eastern part. After the proposals of both parties, the number increased by 3Ha.

It is essential to guarantee from both sides of the ravine a distance of 30-50 metres as a buffer zone. These areas were also designed with the potential to become public spaces and not just as protective spaces. If these proposals are implemented, the designated public space in Canaan II would reach 10.8%.

#	PUBLIC SPACE IN CANAAN II	STATUS	NAME	m2	Ha	%
	Neighbourhood area			2760000	276	100%
	<b>Public spaces</b>			<b>32.019</b>	<b>3,2</b>	<b>1,16%</b>
16	Buffer zones around the ravine	Proposed by the LAB		149.651	14,9	
17	Buffer zones around the ravine	Proposed by the LAB		23.423	2,3	
18	Buffer zones around the ravine	Proposed by the LAB		10.399	1	
19	Buffer zones around the ravine	Proposed by the LAB		8.830	0,88	
20	Buffer zones around the ravine	Proposed by the LAB		30.298	3,0	
21	Buffer zones around the ravine	Proposed by the LAB		43.662	4,3	
	<b>Total:</b>			<b>266.263</b>	<b>26,63</b>	<b>9,65%</b>
	<b>Public spaces and open areas total:</b>			<b>298.282</b>	<b>29,82</b>	<b>10,81%</b>

Table 7. Canaan II: Total percentage of public spaces

The World Health Organization (WHO) recommends 9m<sup>2</sup>/inhabitant

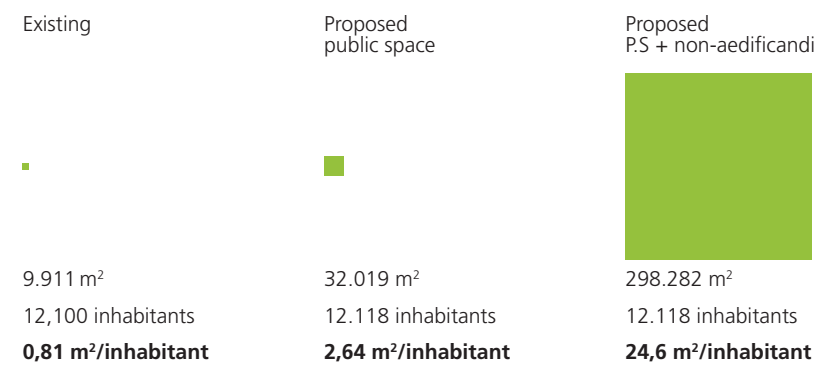


Table 8. Canaan II: Public space area per inhabitant diagram

Proposed public spaces with 400 metres buffer

- Existing public spaces
- Proposed by the community
- Proposed by UN-Habitat LAB

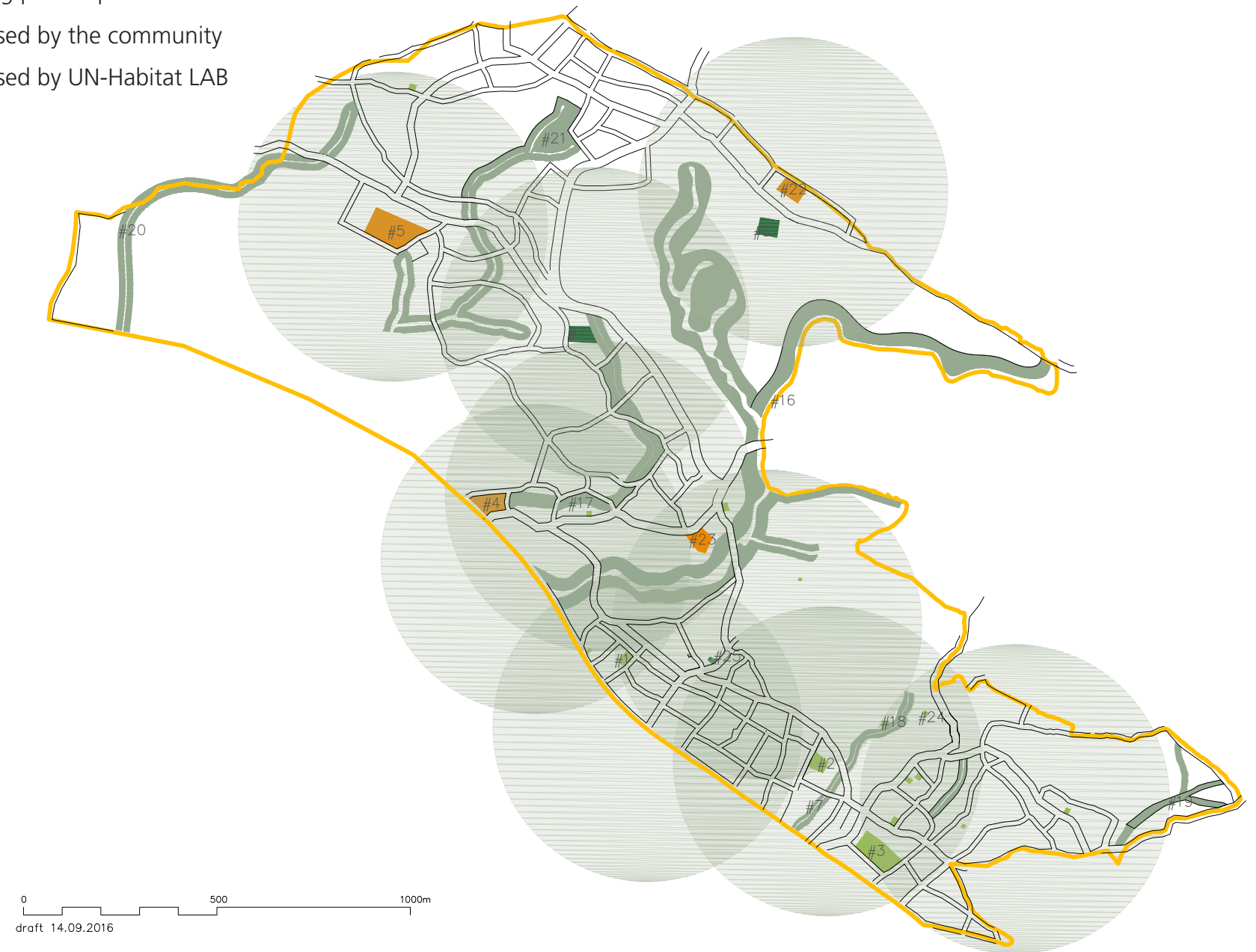


Fig.76: Canaan II: Overall public spaces' land use and buffer area (400m)

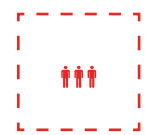
C. RESIDENTIAL AREA



**2.76 km<sup>2</sup>**  
Neighbourhood area



**12,098**  
Inhabitants  
*(source ARC household survey 2016)*



**4,383**  
people/km<sup>2</sup>

 Existing residential areas



Fig.77: Canaan II: Existing settlements

Canaan II is considered as a very low density neighbourhood. With a population of 12,098 inhabitants and an area of 2.76 km<sup>2</sup>, the density is of 4,383 inhabitants per km<sup>2</sup>.

**Canaan II**  
Population growth

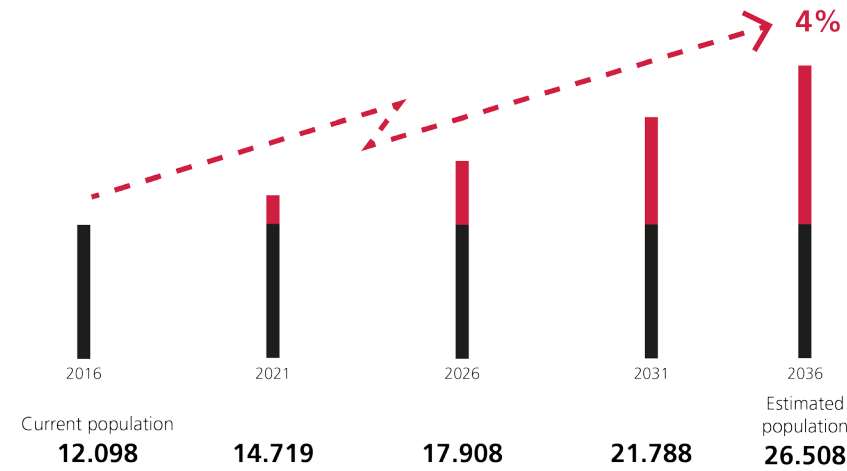


Fig.78: Canaan II: Projected population increase

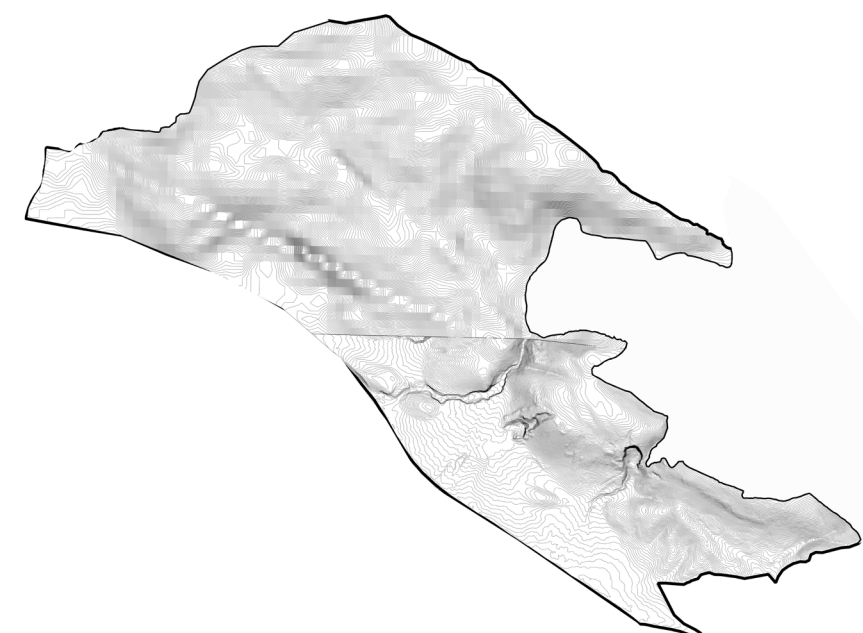


Fig.79: Canaan II: Contours

The concentration of dwellings is mostly in the south where the topography is moderate. In the north, the houses are scattered and have access to secondary streets.

Proposed densities

 Low density

In the new proposal for density distribution, most of the low-density settlements will be located in the centre of the neighbourhood. Considering that the density is 8,000 inhab. Per km<sup>2</sup>, Canaan II will be able to accommodate 3,900 inhabitants. Houses in this classification are often connected to secondary streets. It is possible to have small shops provided to ensure a good access to pedestrian paths.

 Medium density

Medium density dwellings in the new plan are located along the arterial road. The topography in these areas is not so steep and densification strategies in existing low density areas is thus feasible. The design proposes to have 12,000 inhabitants per km<sup>2</sup> in medium density areas. Respecting the proposed plan, Canaan II will be able to accommodate 2,280 inhabitants.

 High density

For the high density areas, UN-Habitat recommends to have 15,000 people/km<sup>2</sup>. This means that a study should be conducted on plot resizing and land readjustments before densifying the neighbourhood. The areas that would be densified are located where the topography is almost flat. In means to accommodate the congestion and the increasing number of habitants in these areas, the high density settlements should have direct access to the arterial and the main roads.

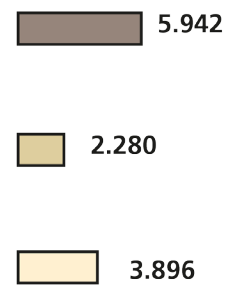
It usually advised to locate high density habitats near commercial activities in order to have a more compact city.

The new plan for Canaan II is able to accommodate up to 5,950 people in the new high density areas.

**Canaan II  
Density and population**



**12.118**



	HIGH DENSITY	POPULATION 15,000 / KM <sup>2</sup> (0,4 KM <sup>2</sup> / 14,35%)
	MEDIUM DENSITY	POPULATION 12,000 / KM <sup>2</sup> (0,19 KM <sup>2</sup> / 6,89%)
	LOW DENSITY	POPULATION 8,000 / KM <sup>2</sup> (0,49 KM <sup>2</sup> / 17,65%)

Fig.80: Canaan II: Diagram of population in the new proposed residential areas.

In 20 years from now, and if the growth of the area remains the same, it is expected that the current population of 12,098 will increase up to 26,508 inhabitants. The densification of Canaan II, as proposed in the new plan, will be able to host 12,118 people, which is yet not sufficient. In order to cope with the rapid growth, it is advisable to further densify the areas that are of low densities and consider planned city extension as well.

The existence of economic activities in the residential areas is highly recommended provided that they have direct access to the roads. The size of the commercial activity is strictly linked to the type of roads they face and the densities; the higher the density the more commerce are big and vice versa. The compactness of the cities is triggered by the different land usages in the urban fabric.

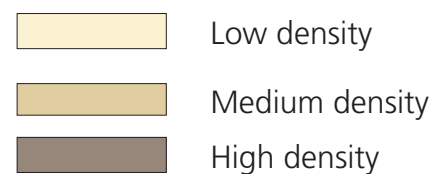


Fig.81: Canaan II: Residential areas and proposed densities

D. COMMERCIAL AREAS

● Existing commercial

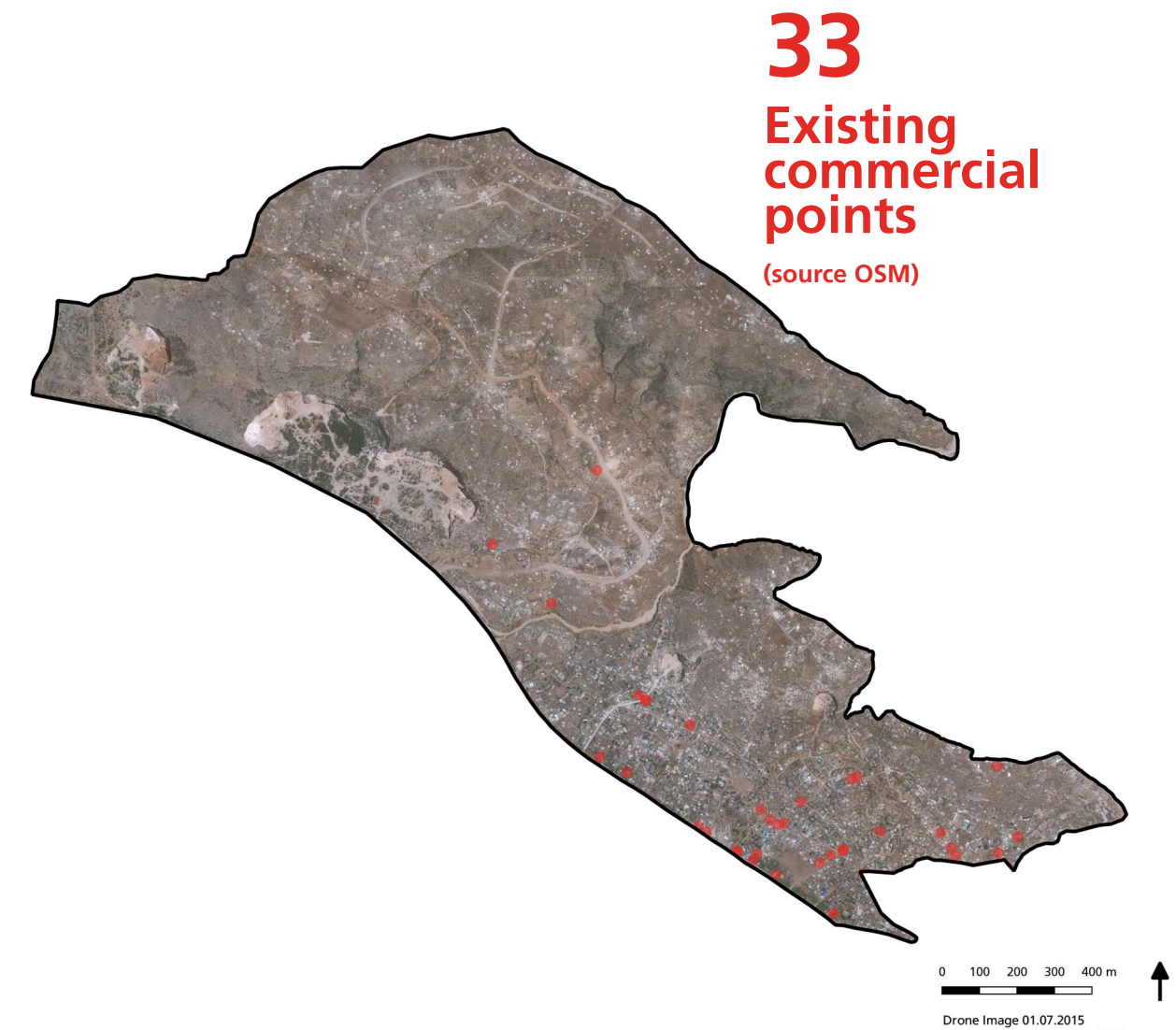


Fig.82: Canaan II: Existing commercial points (Source: OSM)

According to the OpenStreetMap data, there are 33 commercial points in the neighbourhood. The concentration of these existing shops is found in the south where the density of habitats is high. The information on the types of commerce is absent. To reinforce the local economy, new commercial services should be considered and strategically located in the neighbourhood with a good road access.

■ Proposed commercial areas (mixed-use)

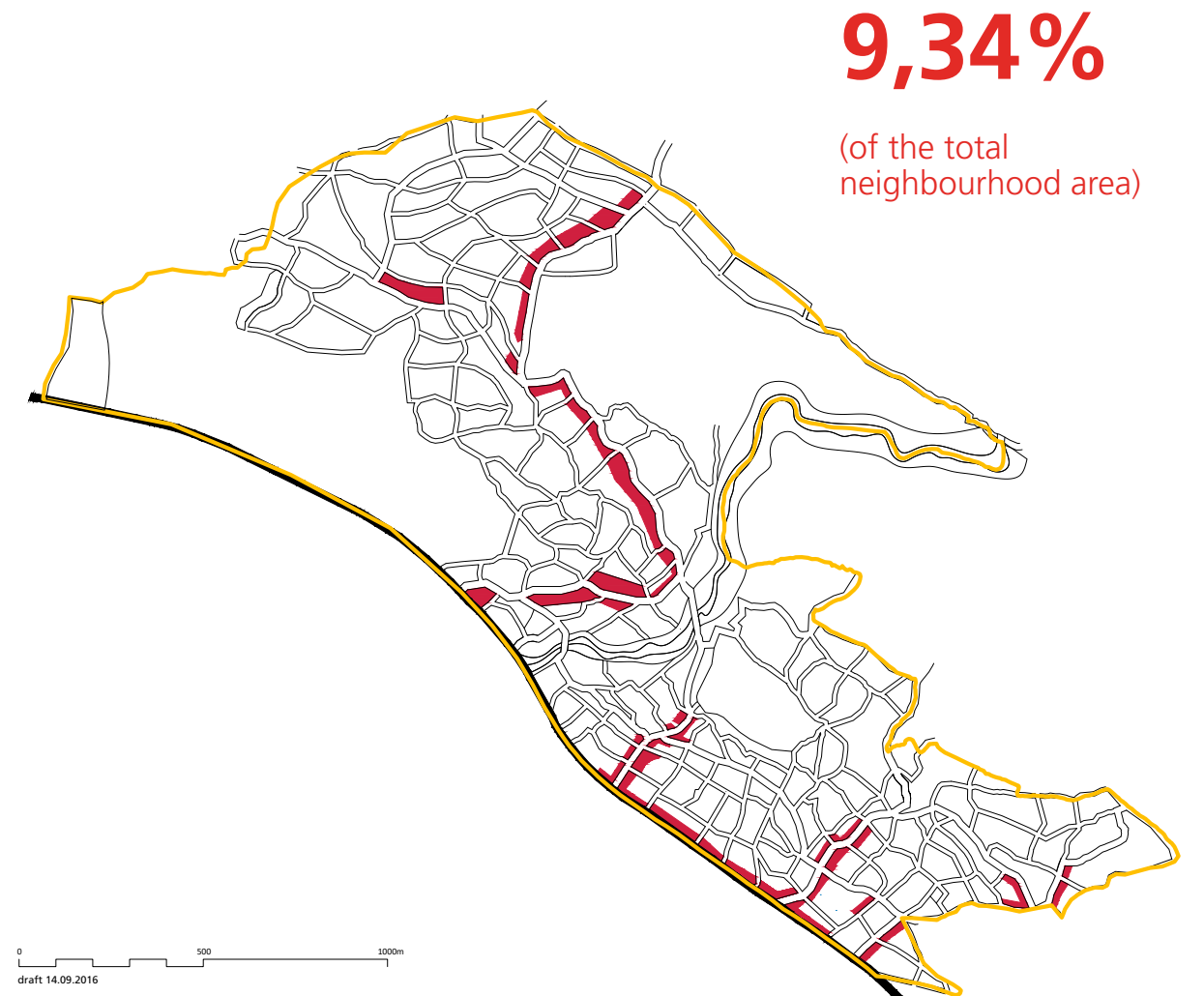


Fig.83: Canaan II: Proposed commercial areas

In the new proposal, the commercial activities will be facing the National Road 1. Also, others will be facing the new arterial road and will occupy the ground level. These activities have the potential to generate a new, highly diverse sector within the local economy, with new job opportunities. They act as catalysts for initiating a structural transformation. The proposed commercial areas in the new land use plan will occupy 9.34%.

E. PUBLIC FACILITIES

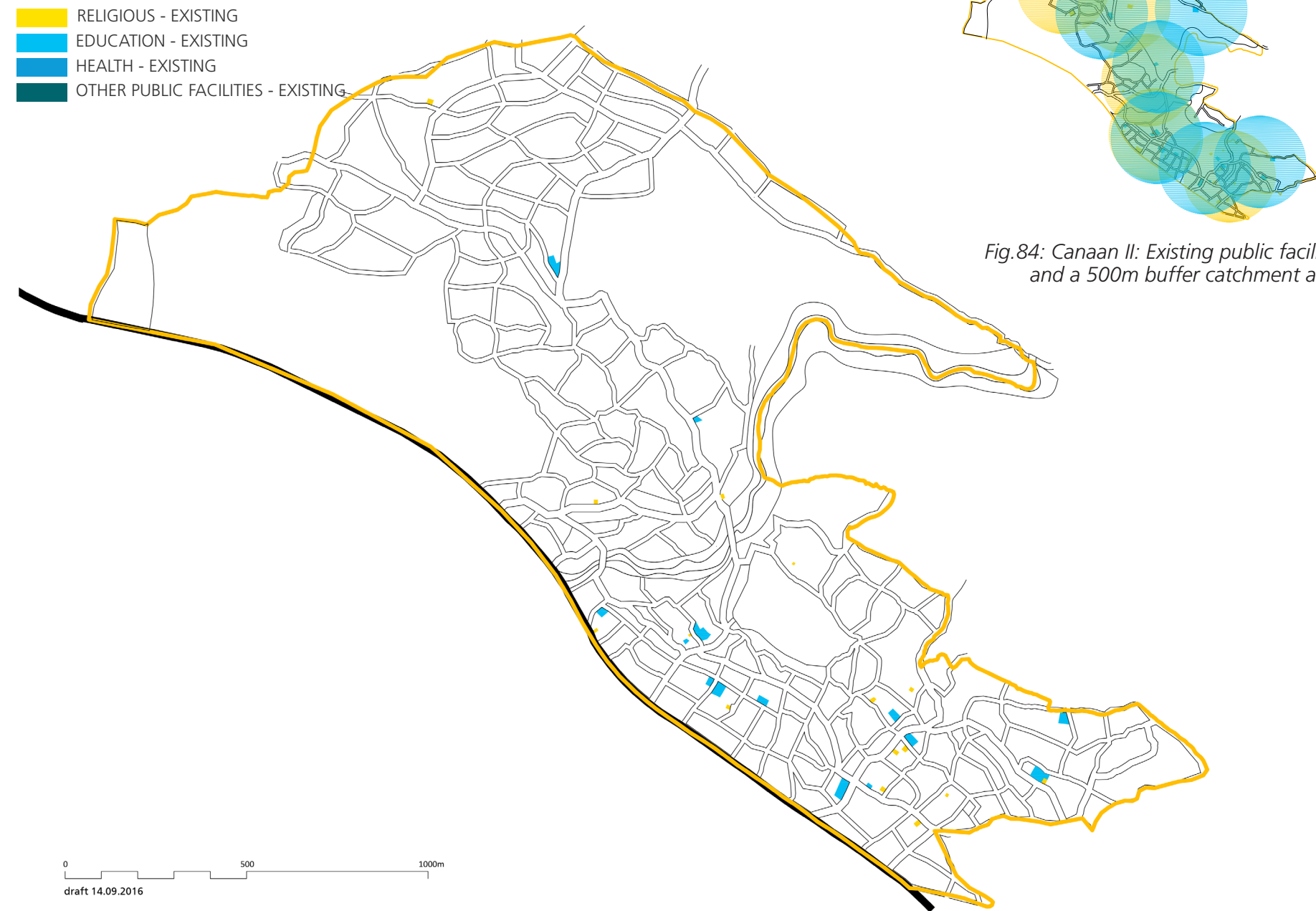


Fig.84: Cnaan II: Existing public facilities and a 500m buffer catchment area.

Education plays a major role in reducing poverty and inequalities. For that, it is always advisable to reserve vacant land for the extension of existing facilities and/or for the provision of new educational facilities. The existing schools are located in the southern part of the neighbourhood. The data has been validated with the community but there is still a lack of information on the types of schools (primary, secondary, etc.). Therefore, it was a challenge to predict the required number of educational services for the Cnaan II population.

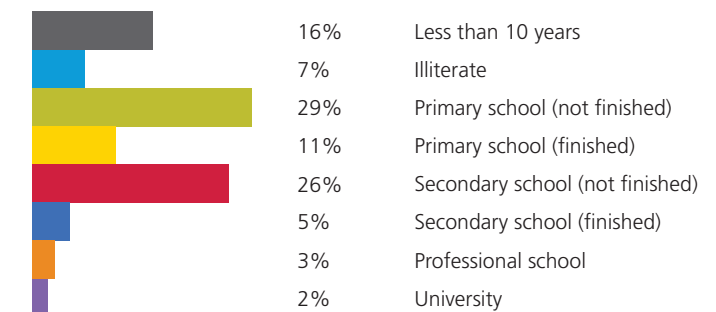


Table 9. Cnaan II: Participation level (Croix Rouge Americaine, Juillet 2016)

The neighbourhood has places of worship but no information is available about health services, community centres, security stations and others. For planning purposes, and in order to have a sustainable city, it is essential to consider the services mentioned in the new design of the neighbourhood. Generally, they require good accessibility to the different types of road with good mobility. Normally, it is recommended to locate these services within 500 metres of the houses so they can be easily reached.

Fig.85: Cnaan II: Existing public facilities



F. NATURAL RESOURCES AND ENVIRONMENT

Given the topography, the presence of quarries and ravines in certain areas will be considered as no-built for environmental protection reasons. There is a high potential for flooding in the centre of the neighbourhood and this is due to the presence of the ravine. A buffer zone of 50 metres on both sides is therefore designated as a mitigation measure to prevent any risk. This buffer zone has been designed with the potential to become a public space. Abandoned quarries must also be converted into recreation projects to benefit from these lost spaces.

No-built areas will occupy about 34% of the total neighbourhood area.

#	No-built areas	m <sup>2</sup>	ha	%
	Neighbourhood area	2.765.000	276	100%
8	Quarry	31.243	3,1	
9	Quarry	140.296	14	
10	Quarry	13.031	1,3	
11	Quarry	6.677	0,67	
12	Environmental risk area	223.269	22,3	
13	Environmental risk area	128.555	12,8	
14	Environmental risk area	31.268	3,1	
15	Environmental risk area	107.271	10,7	
16	Environmental risk area	149.651	14,9	
17	Environmental risk area	23.423	2,3	
18	Environmental risk area	10.399	1	
19	Environmental risk area	8.830	0,88	
20	Environmental risk area	30.298	3	
21	Environmental risk area	43.662	4,3	
	<b>total:</b>	<b>947.873</b>	<b>95</b>	<b>34,28%</b>

Table 10. Canaan II: Total percentage of no-built areas

Legend







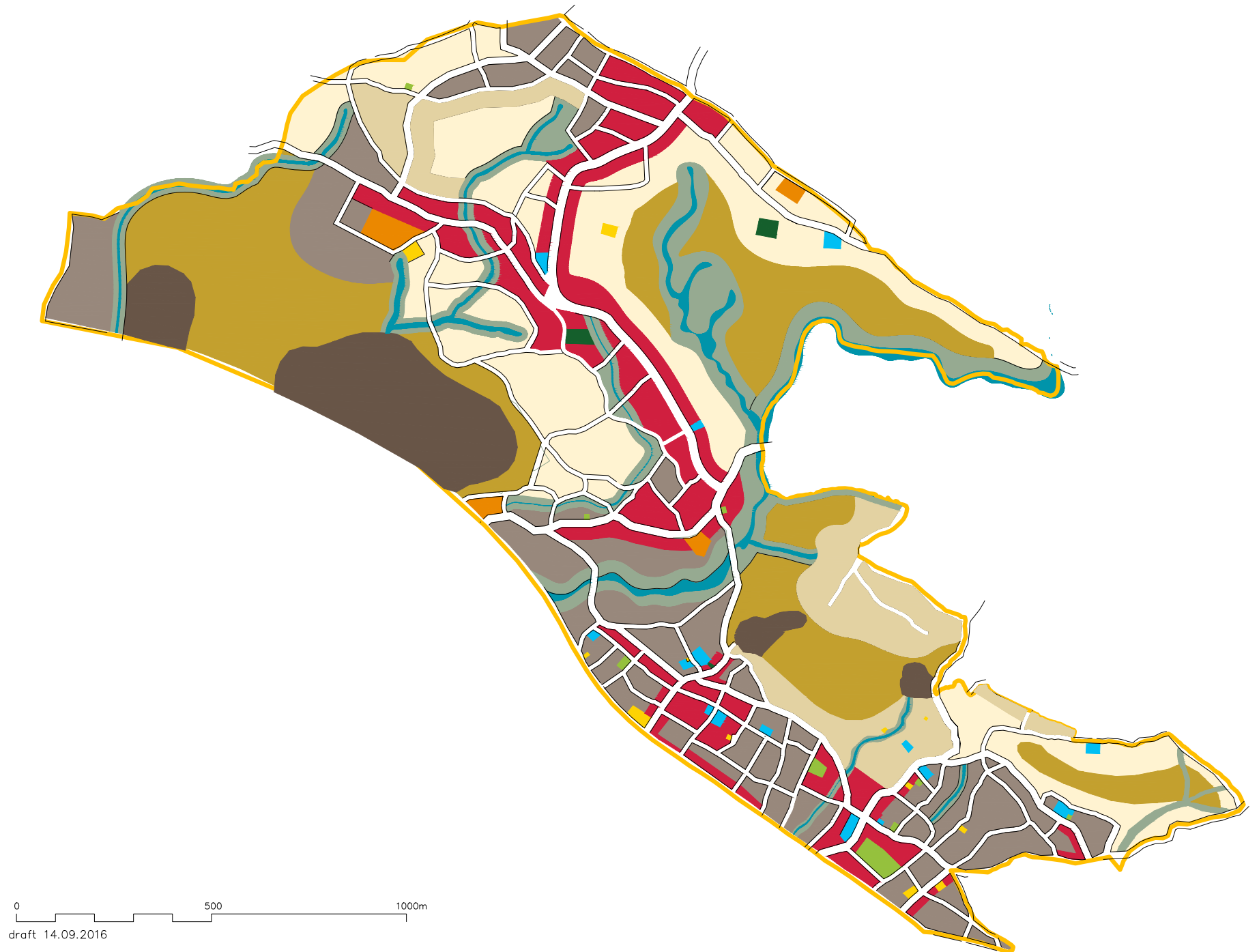
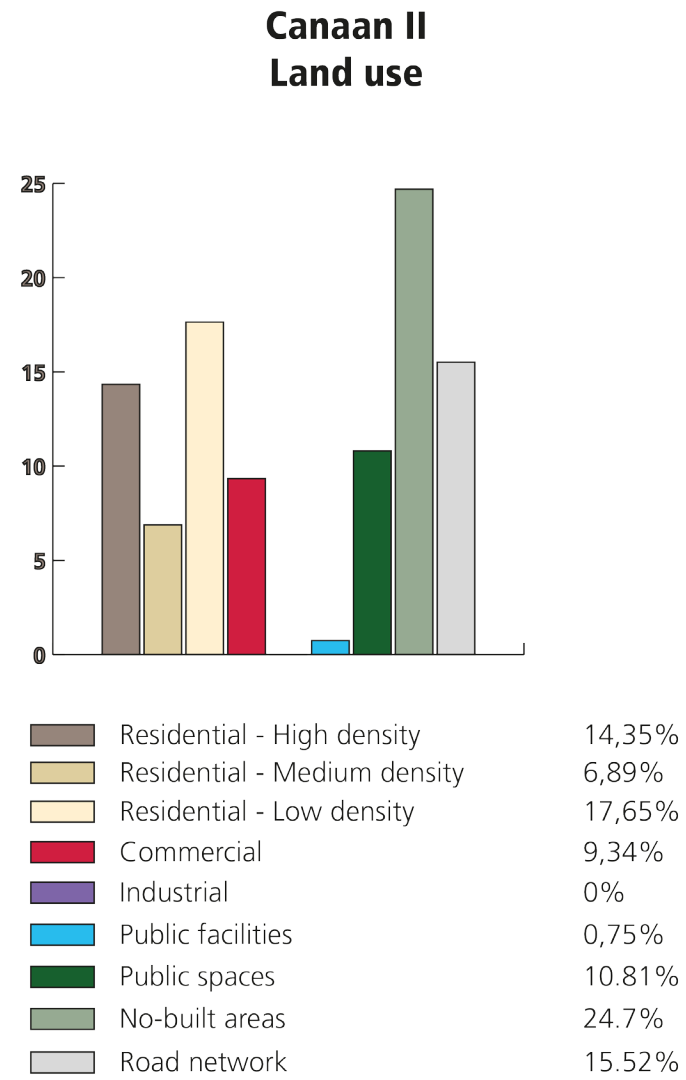
-  Proposed buffer zone along the rivers and ravines
-  Proposed area for livestock grazing
-  Proposed area for reforestation
-  High environmental risk areas
-  Existing rivers and ravines
-  Quarries



Fig.86: Canaan II: No-built areas

G. CANAAN II LAND USE



The assemblies, facilitated by the UN-Habitat team in Haiti, identified the main needs of the residents of Canaan II. The proposed land-use plan is the result of the ongoing participatory process with the community. It responds as much as possible to their needs and proposes new ideas that can induce prosperity and sustainability.

The plan was reviewed as a whole, taking into account the neighbourhoods nearby and how they connect. It is mandatory to situate each of the individual neighbourhood plans in the whole Canaan area to achieve a coherent and rich structure.

Fig.87: Canaan II: Proposed land use plan