

اهداء

لى امى الحنونة و الغالية على قلبي
الى ابي الحبيب و اخي و صديقي العزيز

الى كل عائلتي الرائعة
الى جميع اساتذتي التي تخونني الكلمات في التعبير عن الشكر و الامتنان لهم

الى اصدقائي و زملائي الاعزاء

ان معرفتي بكم اساتذتي الافاضل و زملائي الاعزاء هي الكنز الحقيقي الذي ربحتة وهو الفوز و النجاح
الحقيقي بالنسبة لي

اشكركم من كل اعماق قلبي و جزاكم الله عنا خيرا و اتمنى ان اكون عند حسن ظنكم

Affordable Housing in Area C
Urban Planning senior project

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Table of Contents

Introduction	6
Chapter 1 Site Selection	7
1.1) Introduction:.....	7
1.2) Demand and Preferences:	7
1.3) Estimated Housing Ne in the Palestinian Territories.....	8
1.4) Site selection	8
1.5)The proposed communities.....	9
1.6) The criteria of site selection:	10
1.7) The site rank:	11
1.8) The proposed sites:	13
1.9) Selecting the site:	37
1.10) Related studies:	37
Chapter 2	39
Site Analysis (the current situation for the communities).....	39
2.1) Introduction:.....	39
2.2) The regional situation and the relation with the surrounding:.....	39
2.3) Geographic characteristics:	42
2.4) Demographic and social characteristics:	55
2.5) The community facilities:	65
2.6) The infrastructure:.....	72
2.7) The economic characteristics.	79
2.8) Cultural heritage:.....	84
Chapter 3	88
Characteristics and features of the current analysis of the study area	88
3.1) The social and demographic characterstics:	88
3.2) The economic characterstics:	88
3.3) The infrastructure characterstics:	89
Chapter 4	91
General anaylsis:.....	91
4)SWOT anaylsis:	91
Chapter 5:	95

The concept and the design:.....	95
5.1) The objectives of the project:.....	95
5.2) The vision of the project:.....	95
5.3) The project program:.....	95
5.4) The concept map:.....	97
5.5) The landuse concept:	99
5.6) The zoning:	101
5.7) The Land use map:.....	103
5.8 The Master Plan:.....	105
5.8.1) The residential area:.....	108
5.8.2) The road network:.....	113
5.8.3) The open spaces and playgrounds.	119
5.8.4) The services:	126
5.8.5) The commercial area and future urban expansion area:.....	130

List of figures.

Figure 1:Preferred location for buying a new house.	8
Figure 2:Population distribution in As-Sawyeh.	14
Figure 3:population distribution in Al-lubban Ash-sharqyeh.	19
Figure 4:population distribution in Aqqraba.	24
Figure 5:population distribution in Al-Jiftlik.	30
Figure 6:The result of criteria marks for all proposed communities.	37
Figure 7:The population distribution by age group and gender (Biet-Hanina).	58
Figure 8:The population distribution by age group and gender (Al-Jib).	59
Figure 9:The population distribution by age group and gender (Bier-Nabala).....	60
Figure 10:opulation distribution by age group and gender (Al-Jedereh).	61

List of Tables:

Table 1: Site Evaluating Schedule.	12
Table 2:The rank of the site from criteria (As-sawyeh).	Error! Bookmark not defined.
Table 3:The rank of the site from criteria (Al-lubban Ash-sharqyeh)	22

Table 4:The rank of the site from criteria (Aqqraba).....	27
Table 5:The rank of the site from criteria (Al-Jiftlik).....	32
Table 6:The rank of the site from criteria (Bier-Nabala area and Biet-Hanina).....	36
Table 7:The result of criteria marks for all proposed communities.	37
Table 8:The population distribution in the study area by gender.	55
Table 9:Age groups and population number.	56
Table 10:The expected population number and age group in 2015 (Biet-Hanina).	57
Table 11:The expected population number and age group in 2015 (Al-Jib).	58
Table (12): Table 12:Age group and gender in Bier-Nabala.....	59
Table 13:Age group and gender in Al-Jedereh.	60
Table 14:expected population number in 2030 with three assumptions.	61
Table 15:The immigration status in Biet-Hanina.	62
Table 16:the immigration status in AL-jib.....	63
Table 17:The immigration status in Biet-Hanina.	63
Table 18:The immigration status in Biet-Hanina.	64
Table 19:Educational facilities in Biet-Hanina.	65
Table (20): Table 20:Educational facilities in Al-Jib.	66
Table 21:Educational facilities in Bier-Nabala.	66
Table 22:Educational facilities in Al-Jedereh.	67
Table 23:Number of mosques in study area.....	68
Table 24:health facilities in study area.	69
Table 25:The cultural, social, and recreational facilities.....	70
Table 26:The distribution of water supply in study area.	74
Table 27:The situation of solid waste collection in study area.....	77
Table 28:The agriculture lands in the study area.	79

Introduction

The house is very important part of our lives, and every person need a house to live in it, the housing word has a lot of definitions, but the dictionary define the housing word as follow:

The Housing Means: “Anything that covers, protects, or supports another thing. For example, the casing of a desktop computer is its housing component and can be made of multiple materials to protect the internal components”.

The graduation project will try to study many communities that could the affordable housing project build in it, and the selection of the community will be according to criteria.

The types of housing will be a building, and the construction rule that will be used is Regulations and building codes no.5/2011.

Chapter 1

Site Selection

1.1) Introduction:

This graduation project is about affordable housing in area C. The housing sector in the West Bank faces many challenges and obstacles, and so this project is trying to suggest a design, master plan and regulations that make housing more suitable, sustainable and safe.

The main aim for this project is to suggest a housing project with an affordable price in area C in West Bank, because the price of land in area C is the cheapest comparing with area A, B.

According to studies that were published by Portland Trust about the affordable housing, Portland defined the affordability as "Housing that is available to buy at about 3.5 to 4 times of annual earnings. Or where monthly housing costs do not exceed 30 to 35% of monthly household income. Targeting low to middle income groups."

1.2) Demand and Preferences:

In 2008, NEC(Near East Consulting) made a survey about the amount of demand and preferences for affordable house. They interviewed 1,199 respondents by phone in 2nd part October, 2008:

-The sample from across the West Bank: 47% from North, 29% from Middle, 24% from South.

-The sample from different income groups 39% below poverty line, 61% above poverty line.

(Household income = 2,200 NIS).

The result for this survey is:

- 1) 23% of respondents above the poverty line are looking for a new house. Highest demand is from those in the Middle West Bank (25%).
- 2) Majority, almost 64%, prefer a dwelling of size between 120-165m² and 23% of size over 165m².

1.3) Estimated Housing Ne in the Palestinian Territories

The Portland Trust has done a study about the affordable housing in Palestine, the study estimated housing need in Palestine, the total number of needed house are 470,000 housing unit for the next 10 years, with an average 10,000 new housing units annually.

1.4) Site selection

Introduction:

This stage is about the sites selection, the purpose is to select one or more community that fits the project.

Many organizations (Ministry of Local Government, Private Sector, NGOs) and also the Supervisors suggested several Palestinian communities that suit this proposal.

According to a study that published by Portland trust (NGO), many locations in West Bank preferred for new affordable housing project, but the top three locations are:

- Ramallah and Al-Bireh.
- Nablus.
- Hebron.

The following chart shows the preferred location for buying new house.

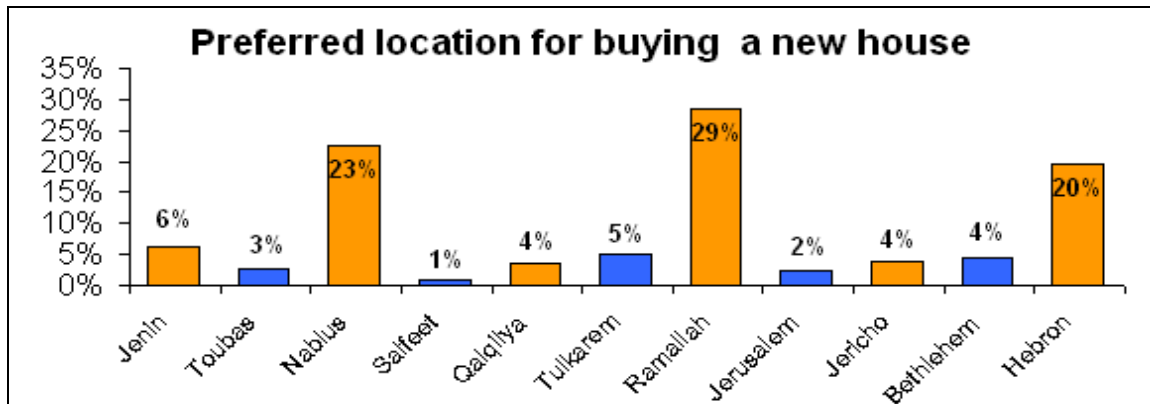


Figure 1: Preferred location for buying a new house.

The Officials in the Portland Trust, advised that the project should be in the central area in the West Bank, because the demand for the housing in the central region in West Bank is the highest.

The Ministry Of Local Government also suggested many sites in Jericho and Nablus, and the private sector advised that the location of affordable housing should be near any Palestinian community in the middle of West Bank, as much as possible, to get the infrastructure service and other services from the community, and also to reduce the cost of the infrastructure.

The supervisors suggested many locations in Nablus, and also other organization (IPCC, NGO) suggested another location at the northwest of Jerusalem city, near Ramallah City.

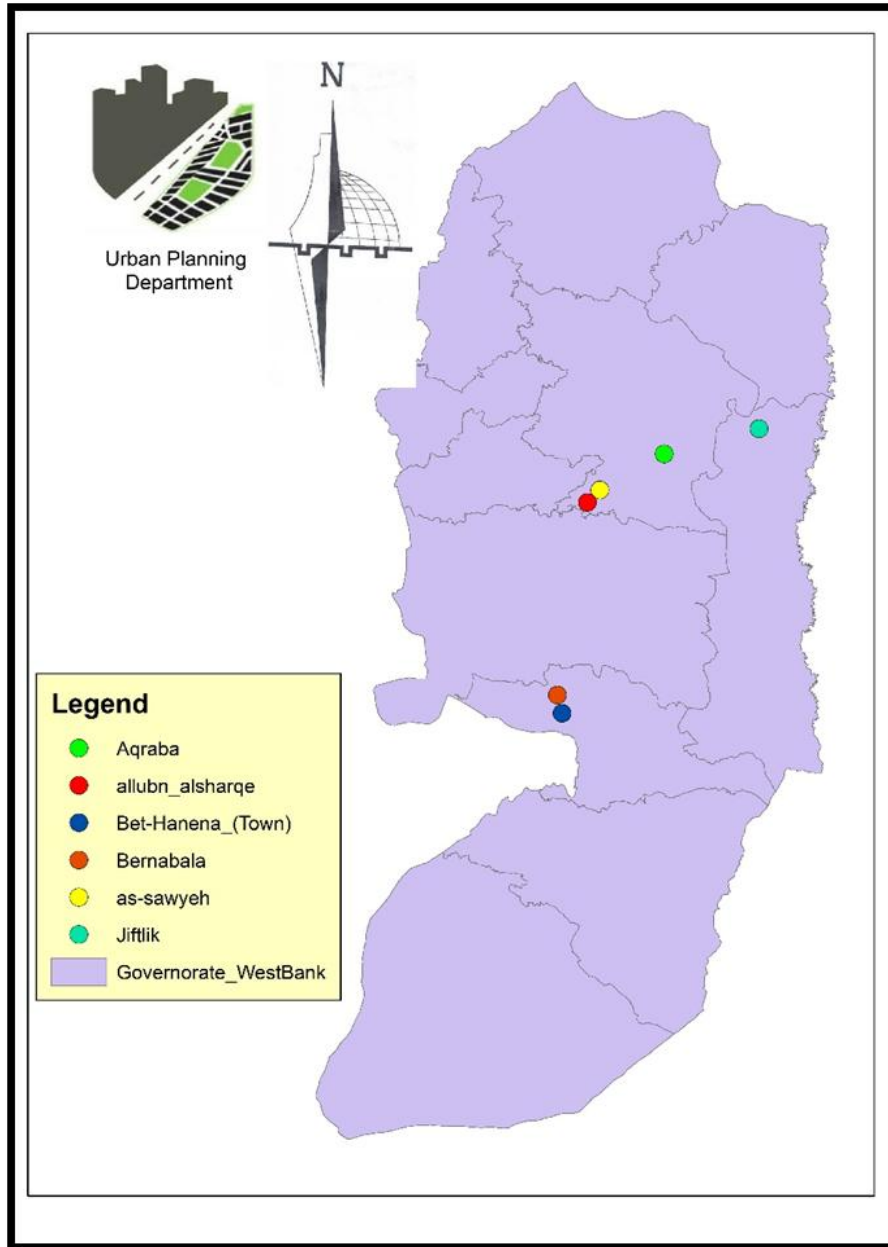
1.5)The proposed communities

The communities that have been proposed are located in Nablus, East Jerusalem, and Jericho.

-In Jerusalem the communities are: Bier-Nabala, Biet-Hanina, Al-Jib and Al-Jidereh.

-In Nablus the communities are: As-sawyeh, Al-Lubban Ash-Sharqyeh, Aqraba.

-In Jericho the community is Al-Jiftlik.



Map (1): Proposed communities.

1.6) The criteria of site selection:

The criteria are a very important part in the site selection for this project, these criteria were created and written in collaboration with Supervisors taking into consideration suggestion of NGO's.

These criteria set the most and the less suitable communities for the project, the total number of the criteria is 11, some of criteria are about the political situation, infrastructure, and others are about the economic side.

The following table shows the criteria that help in selecting the most suitable community for affordable housing project.

Each criterion has a weight from 1-10, (less-more).

1.7) The site rank:

The other component that has been used in site selection was the site rank.

The expression of “Site Rank” means in general “**how this site achieved the condition of the criterion**”.

Site rank specifically in this project has many ways such as:

- Economic (Land price).
- Locations (Urban centers, Rural communities, central region of West Bank, Regional Road).
- Planning ways (Master plans).
- Political ways (Israeli settlements, Checkpoints, Area C).
- Services (Infrastructure, Public transportation).

How to figure the rank?

According to Site Evaluating schedule, if the site ranks equal (1), it means it did not fit with the criterion, but if it ranks equal (5), it means it fits, the range from (1-5) is (less-more).

Criteria	Weight	Site Rank					
		1	2	3	4	5	
1)Location in an area C.	10	Outside from area C.	-	Partially area C	-	Inside area C.	
2)locate near main or regional roads.	7	250 m away	200 m away	150 m away	100 m away	On the Main Road	
3)Accessibility to rural communities.	10	Away from communities	-	Near Communities	-	Inside communities	
4)Accessibility to infrastructure network.	Water Network ()	9	Accessibility to one infrastructure service or no services	Accessibility to (2) infrastructure services	Accessibility to (3) infrastructure services	Accessibility to (4) infrastructure services	Accessibility to more than (4) infrastructure services
	Sewage Network ()						
	Telephone Network ()						
	Electricity ()						
	other()						
5)Accessibility to public transportation.	7	No taxi services	Few taxi services	-	Taxi services are irregular	Taxi services are regular	
6)Land Price.	8	Very high price.	High price	Moderate price	Acceptable price	Low price	
7)The location of project in the central region in West Bank.	10	Away from central region	-	Near central region	Close to central region	In the central region	
8)Proximity to urban center	9	Away from urban center	-	Close to urban	Within urban	Inside the urban.	
9)Accessibility to nearest city without any checkpoints (CP).	9	existence a lot of cp.	2 cp.	One cp.	Temporary cp.	There is no cp.	
10)Availability of master plan (MP) in Area C.	10	No MP.	-	-	-	Existence of MP.	
11) Away from Israeli settlements.	7	Within settlement (<150 m)	close to settlement (150<D<400)	Near settlement (400<D<600)	-	Away from settlement(D>600)	

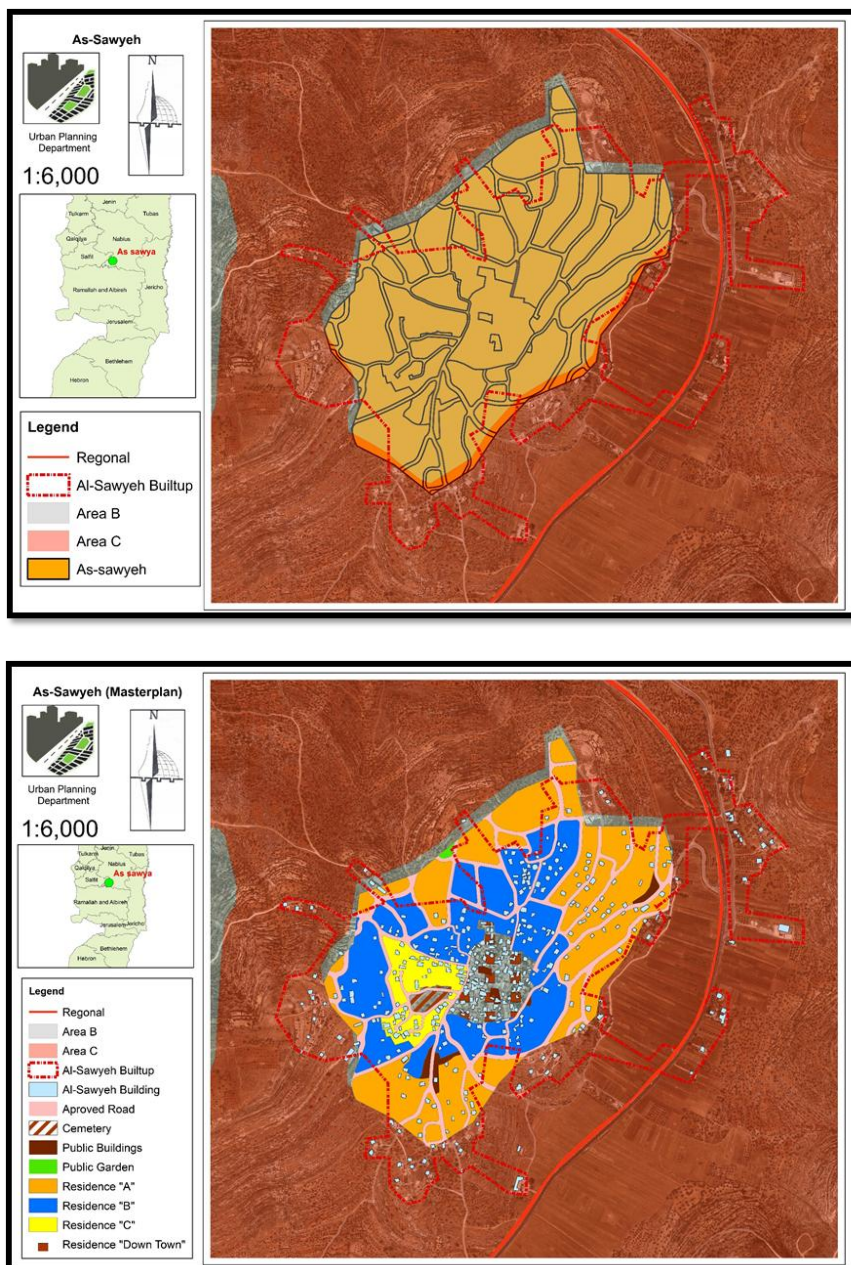
Table 1: Site Evaluating Schedule.

1.8) The proposed sites:

1.8.1) As-SawyeH

The location:

It's a Palestinian community, located in Nablus governorate, in south of Nablus city, away from Nablus around 18 km, the total area of As-SawyeH according to its master plan is 655 acres, the whole master plan is inside the area B, but its built up area is 830.8 acres (bigger than master plan), so it means many families in this village built their houses outside the master plan.



Map (2): As-SawyeH Masterplan.

The population:

The number of population in the village is 2,800 people in 2015, the following diagram shows the population distribution by gender and age group in 2015.

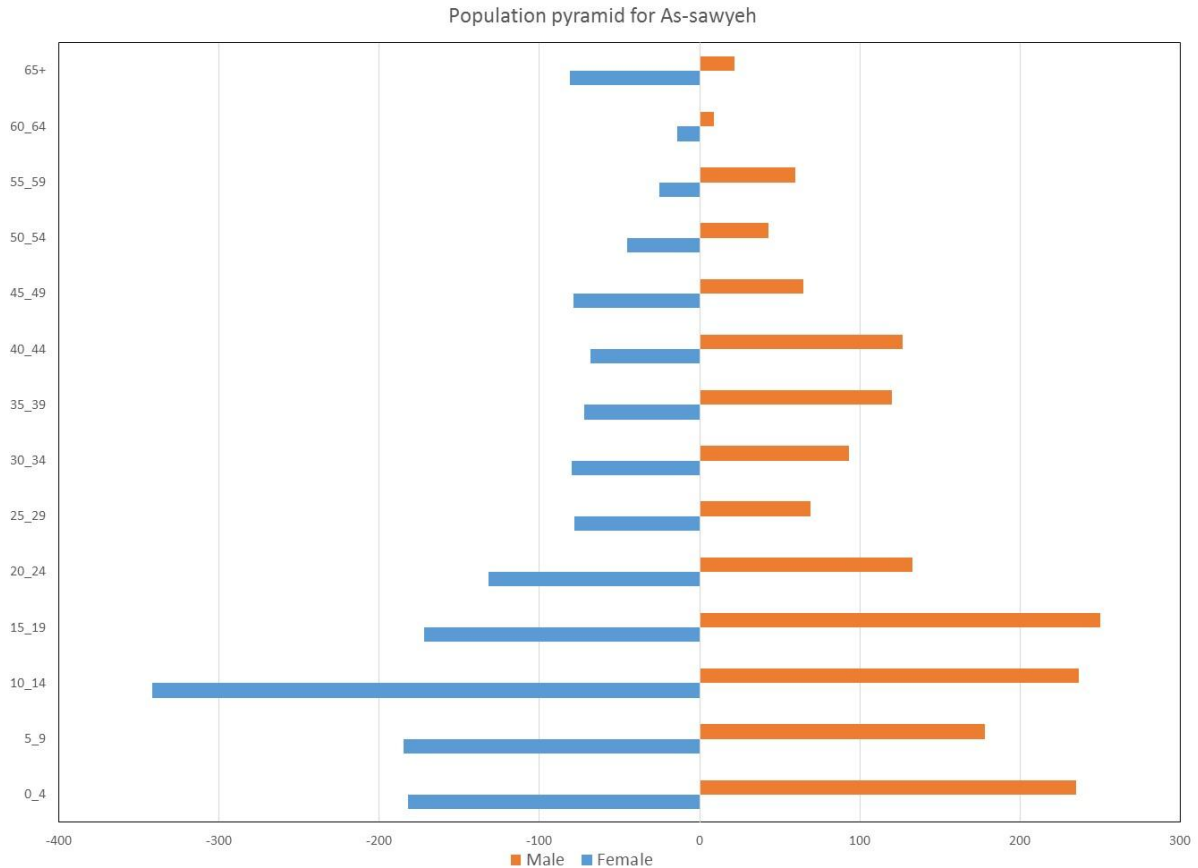


Figure 2:Population distribution in As-Sawyeh.

Opportunities and constrains:

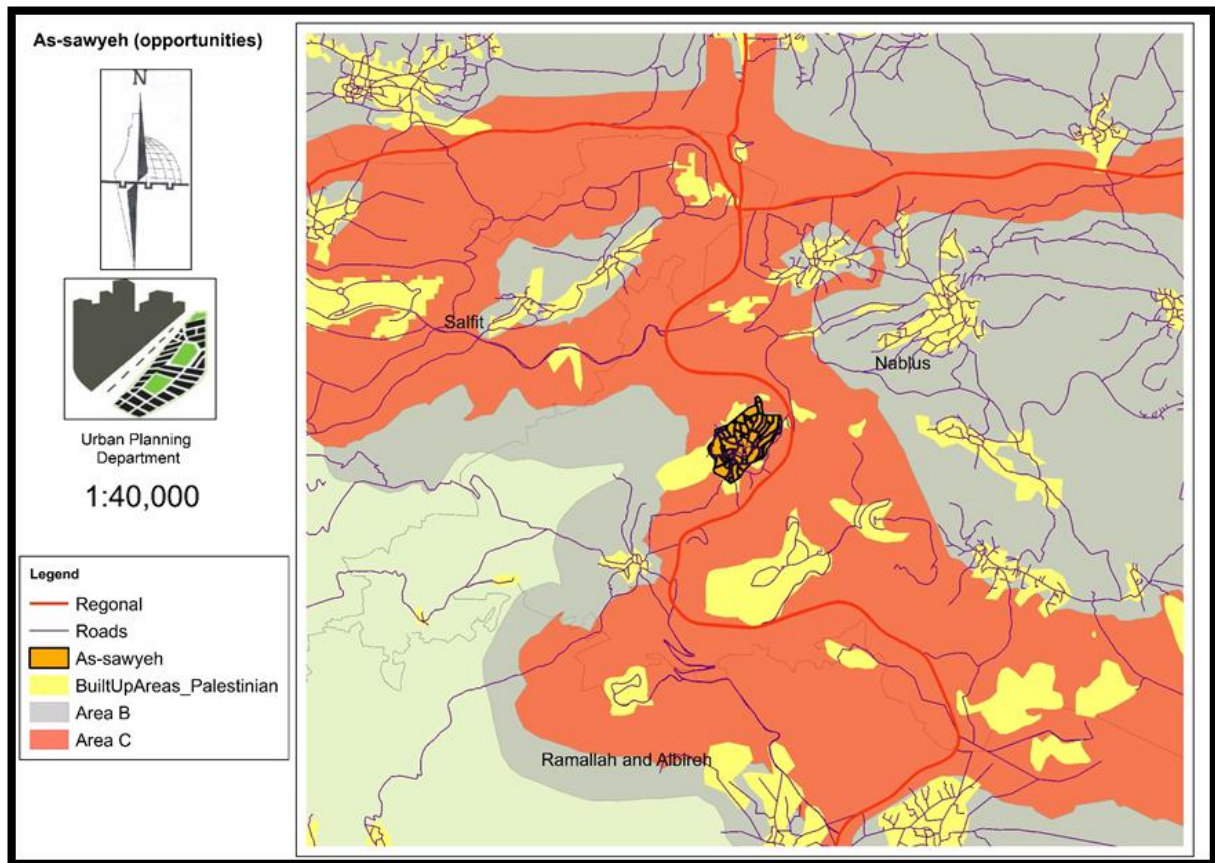
The opportunities.

There are many opportunities in the village, these opportunities add a positive value to the village, and make it candidate to be a chosen location.

The opportunities points are:

- 1)The location of this village is near a regional road (road # 60), thus the transportation services are very good.
- 2)This village located near other Palestinian communities, such as Al-Lubban Ash-Sharqyeh, which makes it less isolated from other Palestinian communities.

The following map shows the opportunities points in As-Sawyeh.



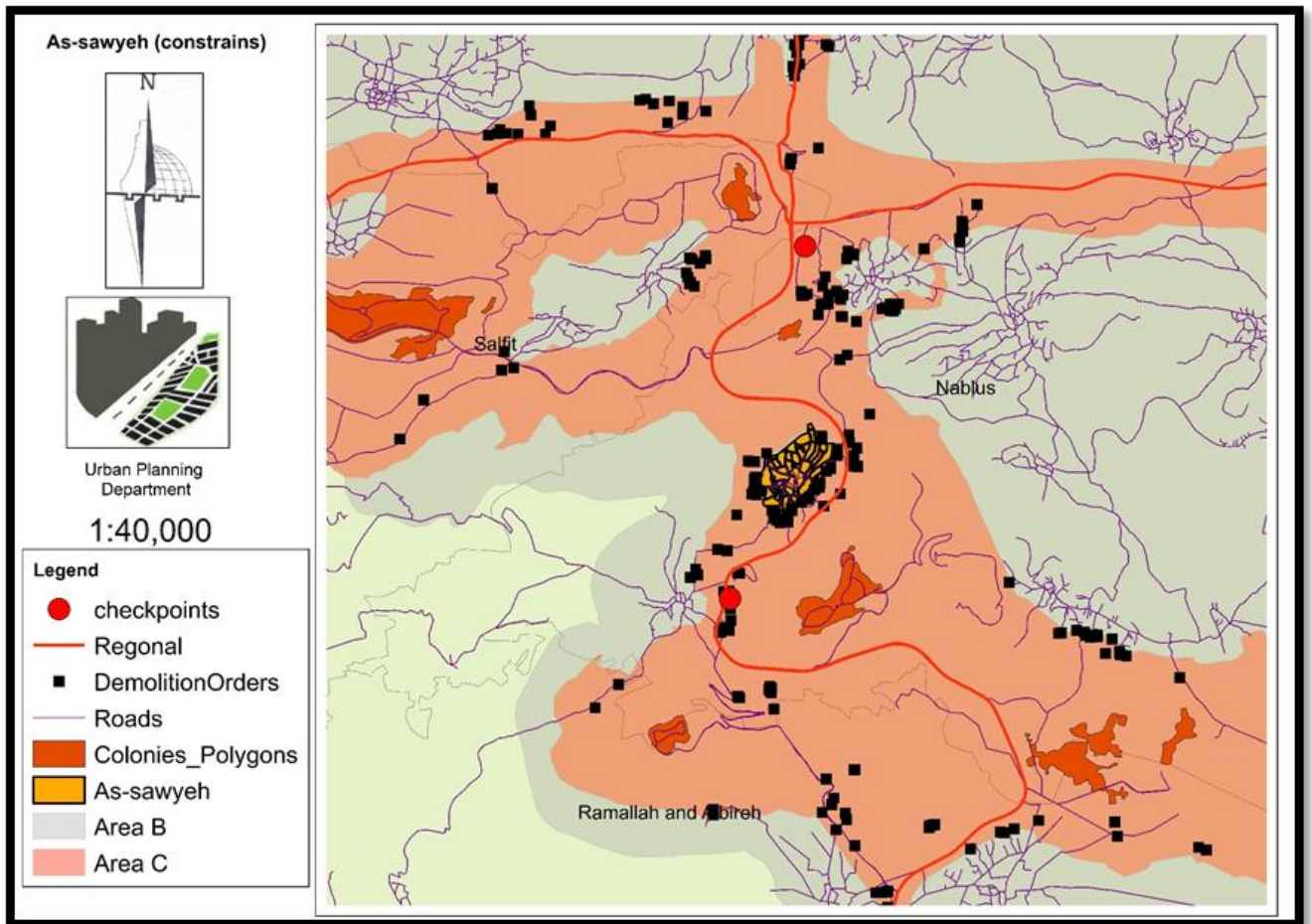
Map (3): As-Sawyeh (Opportunities).

The constrains:

The village has many constrains that could be negative and dangerous which include:

- 1)There is not any hospitals or health center in this village.
- 2)There are a lot of demolition orders for some buildings in the village, from Israeli occupation.
- 3)There are permanent checkpoints between the village and Nablus, and between the village and Ramallah.
- 4)There is no master plan for area C in this village.

The following map shows the constrains points in the village.



Map (4): As-Sawye (constrains).

Criteria	Weight of criteria	Site Rank (1-5)	Total
1)Location in an area C.	10	3	30
2)Locate near main or regional roads.	7	5	35
3)Accessibility to rural community.	10	3	30
4)Accessibility to infrastructure network.	Water Network ()	2	18
	Sewage Network (0)		
	Telephone Network (1)		
	Electricity (1)		
other (-)-solid waste collection			
5)Accessibility to public transportation.	7	4	28
6)Land Price.	8	4	32
7)The location of project in the central region in West Bank.	10	3	30
8)Proximity to urban center	9	1	9
9)Accessibility to nearest city without any checkpoints (CP).	9	1	9
10) Availability of master plan (MP) in Area C.	10	1	10
11) Away from Israeli settlements.	7	3	21
Total			252/480

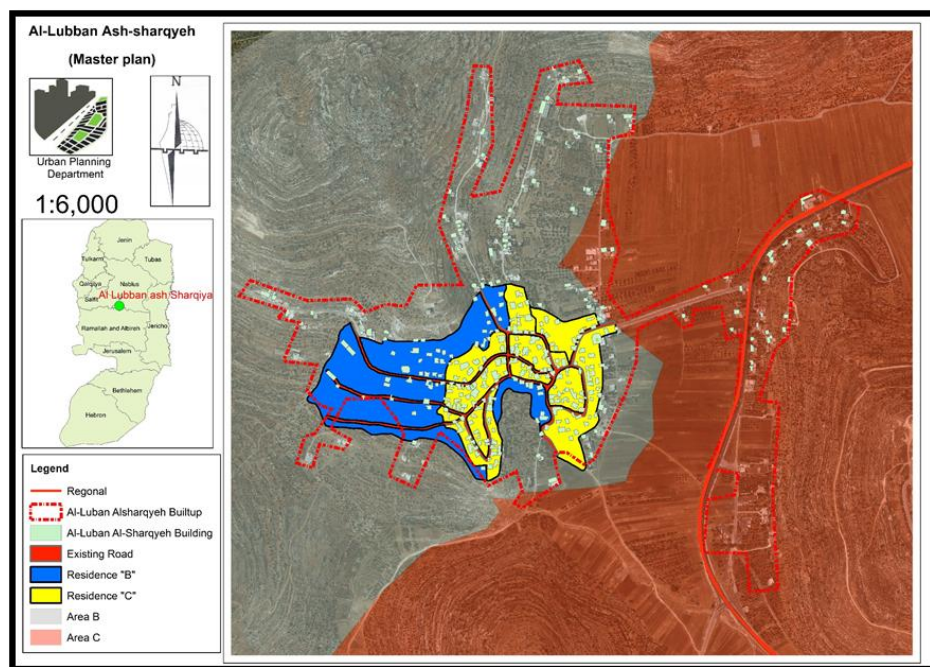
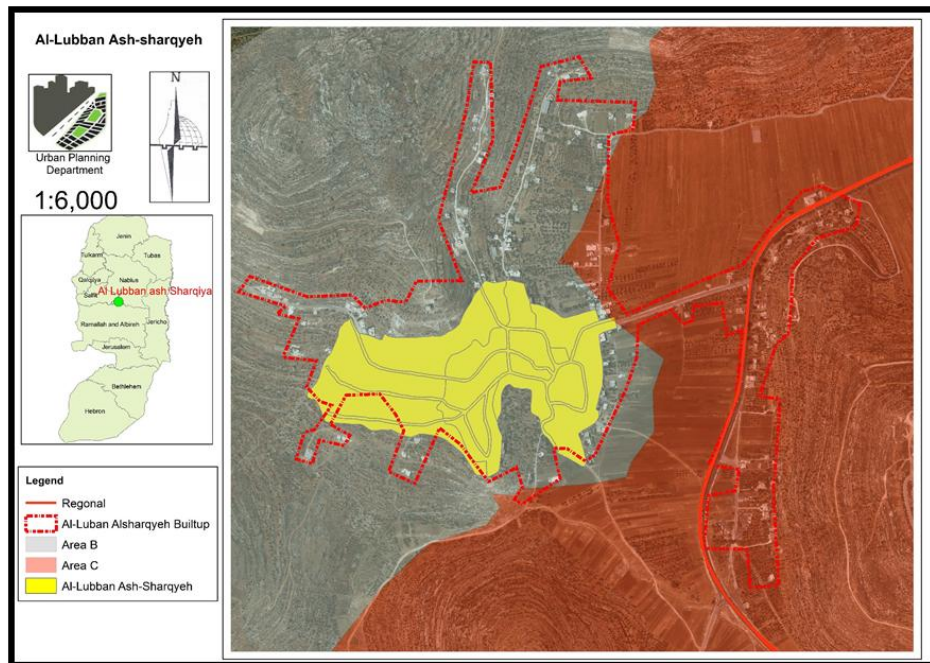
Table(2):The rank of the site from criteria (As-SawyeH)

1.8.2) Al-lubban Ash-sharqyeh

The location:

Al-lubban Ash-sharqyeh is a Palestinian community, located in Nablus governorate, away 19 km from Nablus city, it has a master plan area equal 248 acres, the whole master plan is located in area B, also it has a built up area larger than the master plan, some parts of the built up area are located in area C, outside the master plan, the shape area of built up is 791.9 acres.

The following map shows the location of the village and the master plan.



Map (5): Al-lubban Ash-sharqyeh master plan.

The population:

The number of the population in the village in 2015 equal 3,000 people, the following diagram shows the population distribution in the village by gender and age groups.

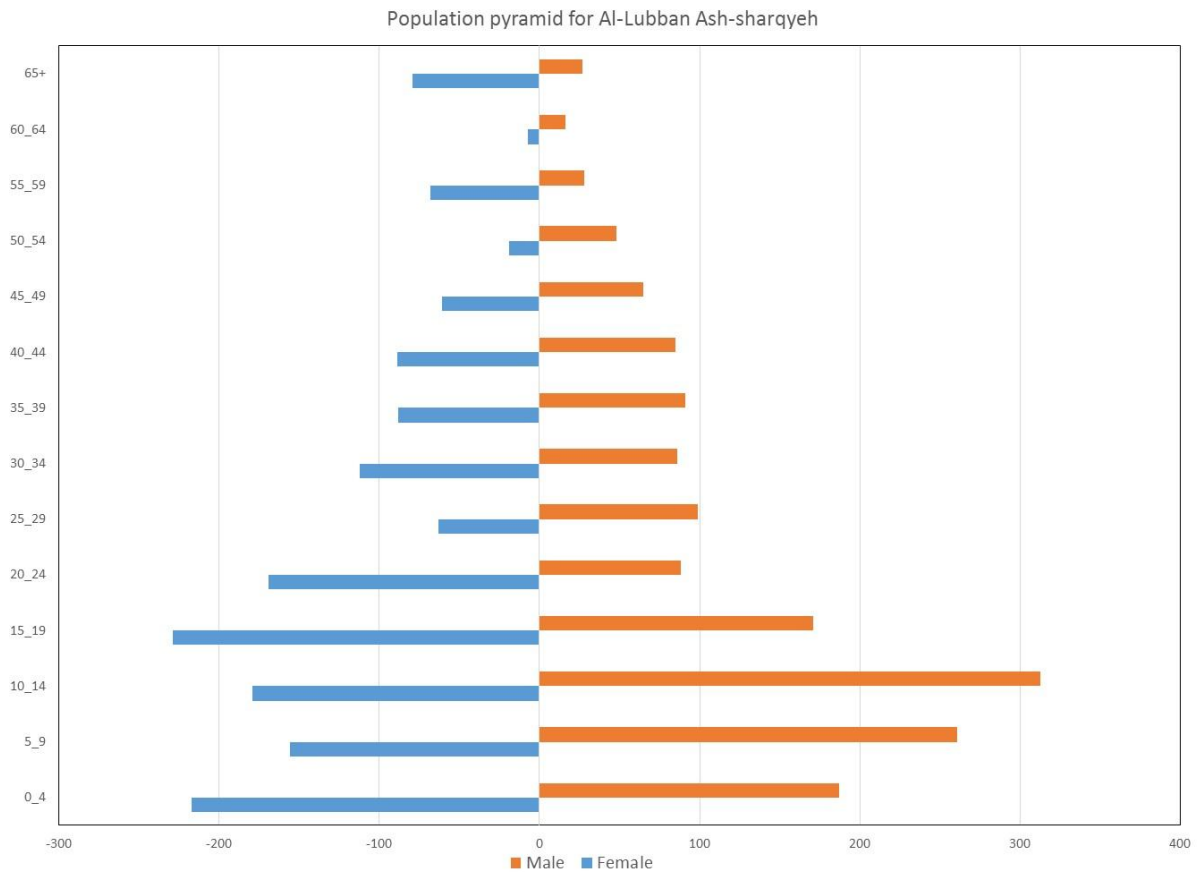


Figure 3: population distribution in Al-lubban Ash-sharqyeh.

Opportunities and constrains:

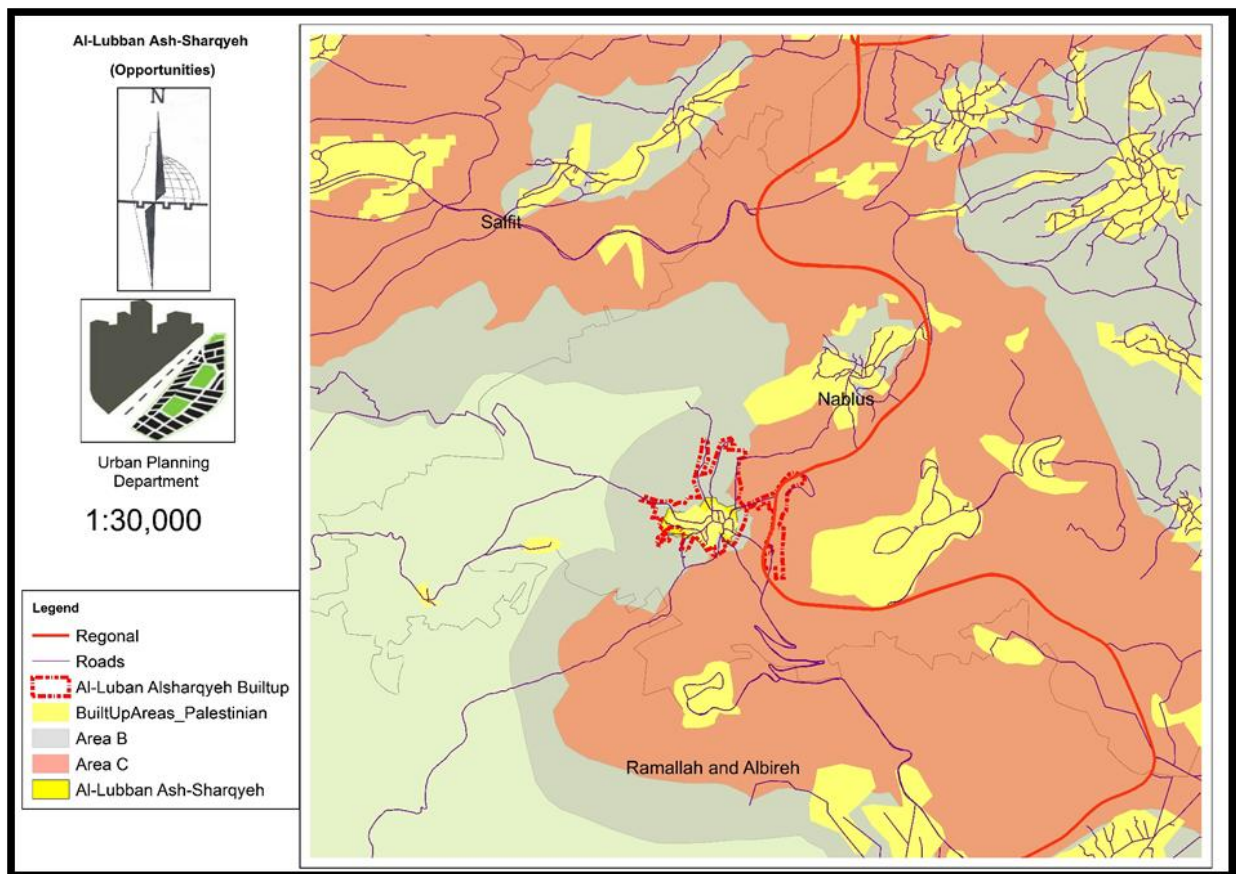
The opportunities:

There are many opportunities in the village, these opportunities add a positive value to the village, and make it a candidate to be A chosen location

The opportunities points are:

- 1)The location of the village is near a regional road (road # 60), thus the transportation services are very good.
- 2)The village is located near other Palestinian communities, such as As-sawyeh, that's mean the village is not isolated from other Palestinian communities.

The following map shows the opportunities in the village.



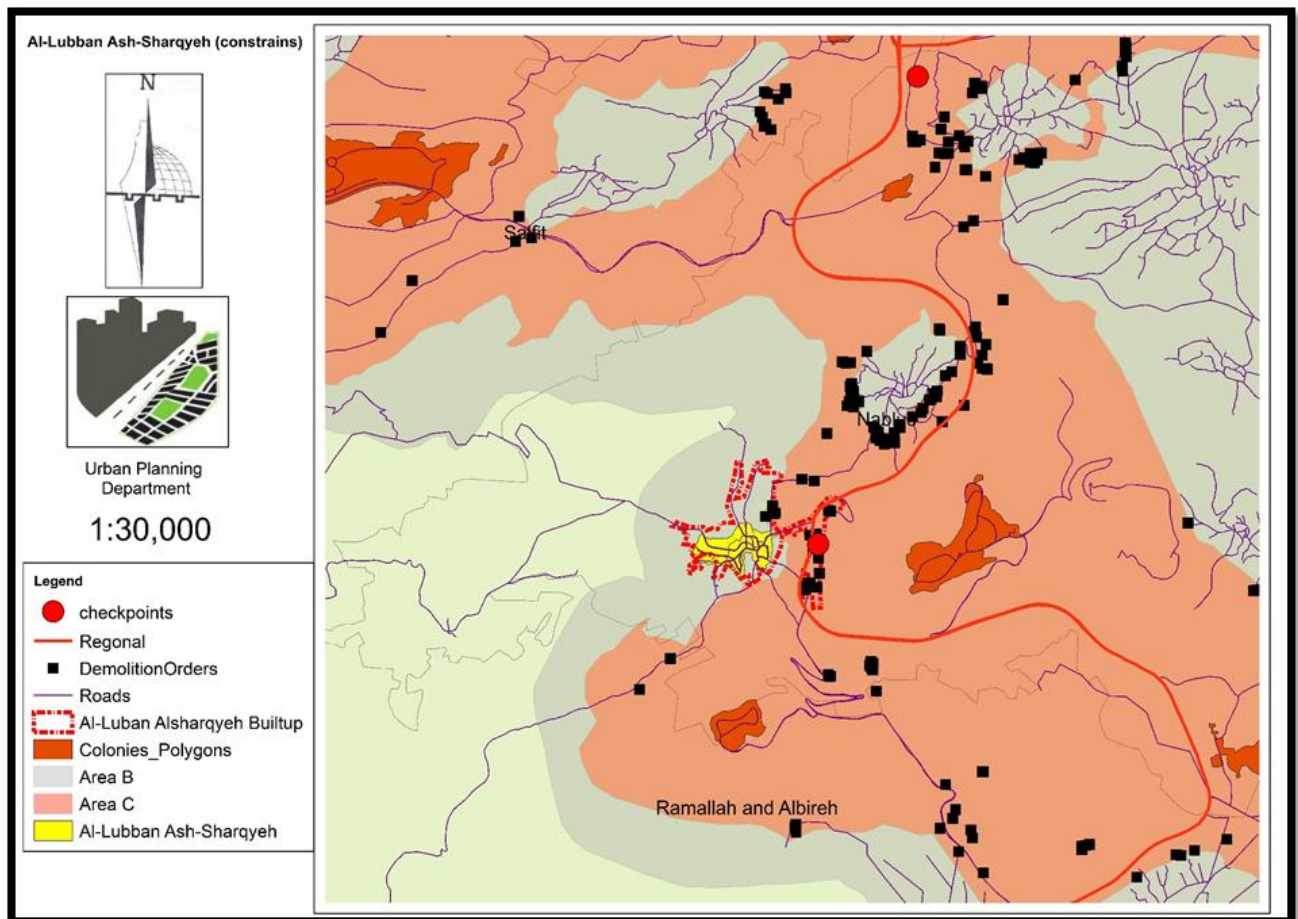
Map (6): Al-lubban Ash-sharqyeh (opportunities).

The constrains:

The village has many constrains that could be negative and dangerous, the constrains in the village are:

- 1)There is not any hospitals or health center in the village.
- 2)There are a lot of demolition orders for some buildings in the village, from Israeli occupation.
- 3)There are permanent checkpoints between The village and Nablus, and between the village and Ramallah.
- 4)There is no master plan for area C in this village.

The following map shows the constrains in the village



Map (7): Al-lubban Ash-sharqyeh (constrains).

Criteria	Weight of criteria	Site Rank (1-5)	Total
1)Location in an area C.	10	3	30
2)Locate near main or regional roads.	7	5	35
3)Accessibility to rural community.	10	3	30
4)Accessibility to infrastructure network.	Water Network ()	2	18
	Sewage Network (0)		
	Telephone Network (1)		
	Electricity (1)		
	other ()-solid waste collection		
5)Accessibility to public transportation.	7	4	28
6)Land Price.	8	4	32
7)The location of project in the central region in West Bank.	10	3	30
8)Proximity to urban center	9	1	9
9)Accessibility to nearest city without any checkpoints (CP).	9	1	9
10) Availability of master plan (MP) in Area C.	10	1	10
11) Away from Israeli settlements.	7	3	21
Total			252/480

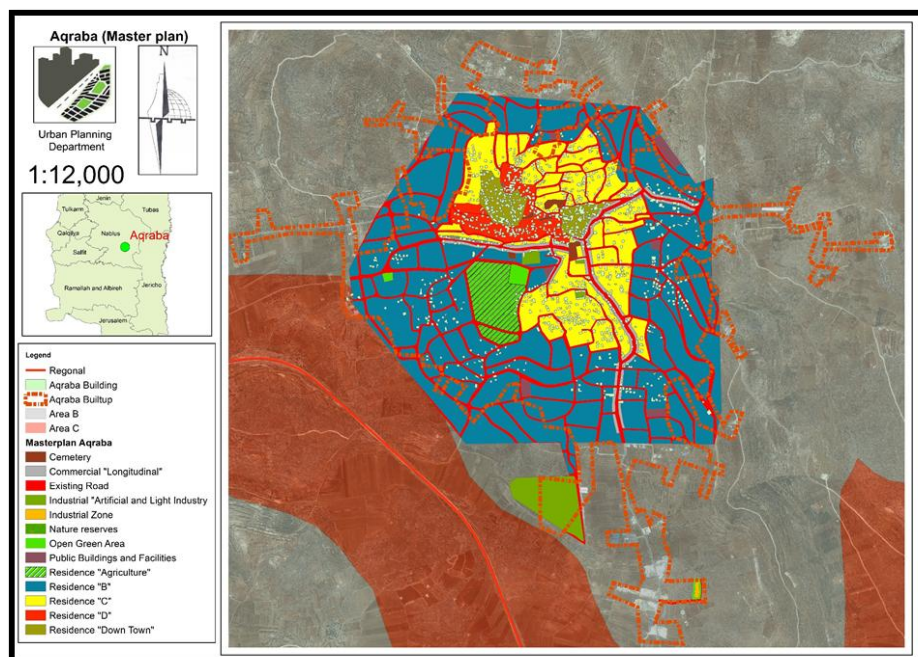
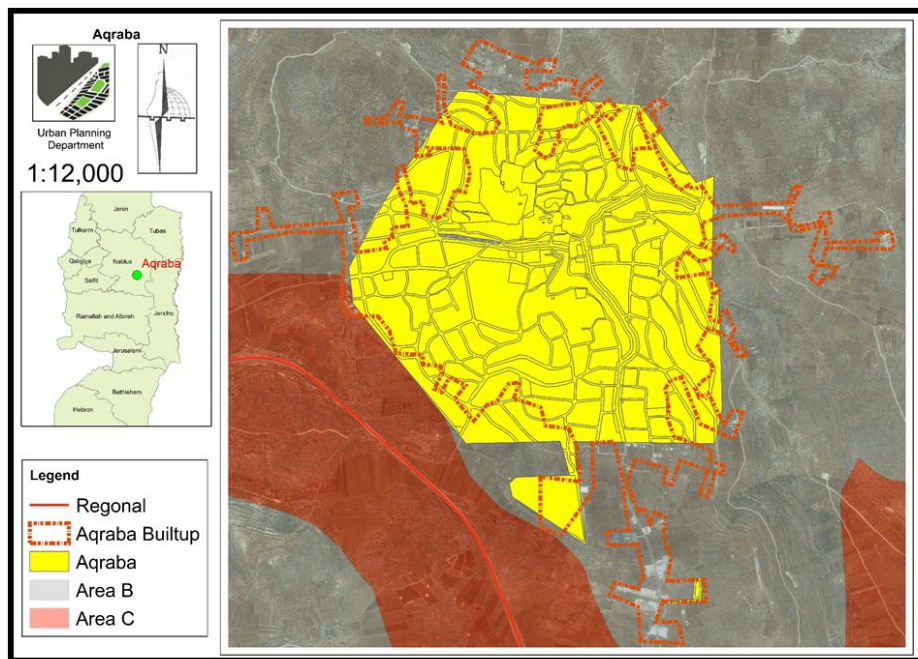
Table 2:The rank of the site from criteria (Al-lubban Ash-sharqyeh)

1.8.3) Aqqraba.

The location:

Aqqraba village is one of the Palestinian communities that is located in Nablus governorate, located in south east of Nablus city, away from center of Nablus 16 km, Aqqraba has a proposed master plan for area B, and also all built up area of Aqqraba is located in Area B, the shape area of master plan is 3,350 acres most parcels in the master plan classified as residential area type B.

The following maps shows the location of Aqqraba, and its master plan.



Map (8):Aqqraba master plan.

The population

The total number of population in Aqqraba is 11,000 people in 2015, the following diagram shows the population distribution by gender and age group.

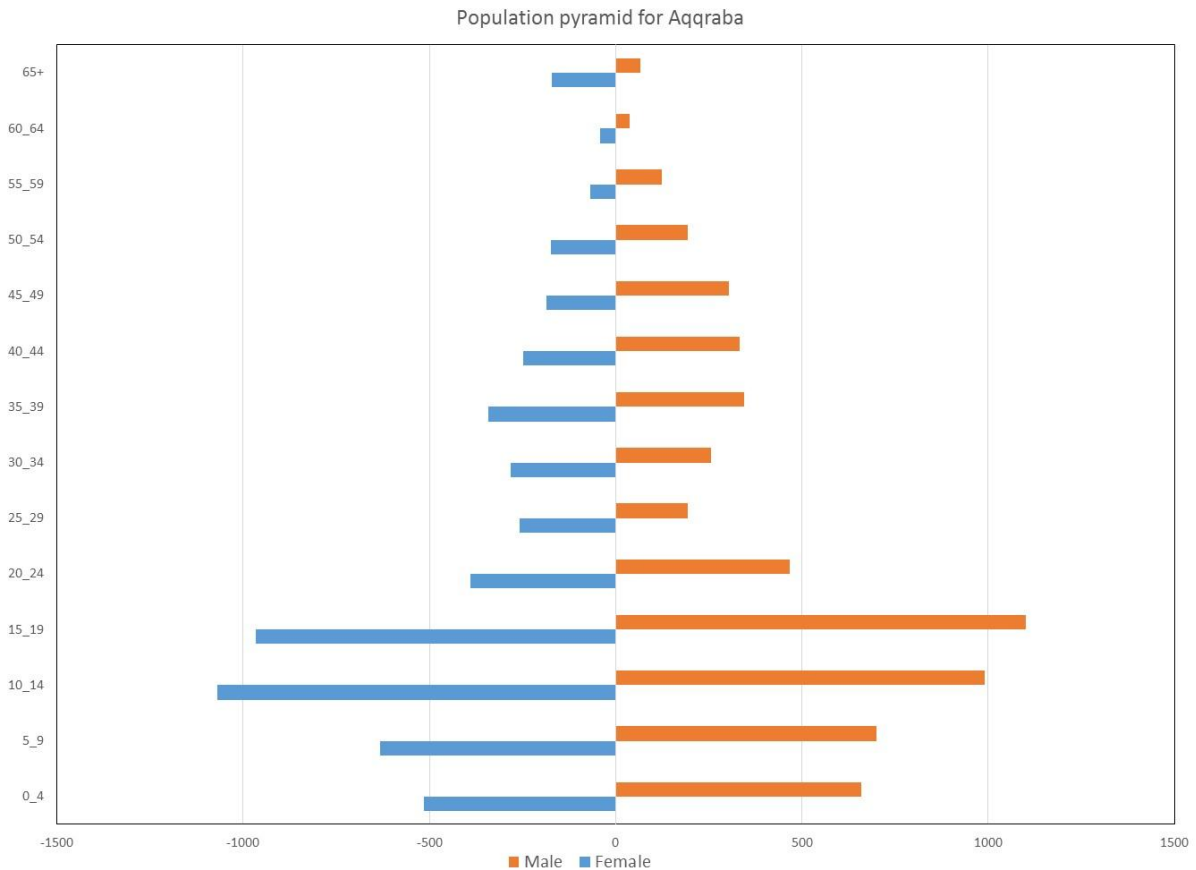


Figure 4: population distribution in Aqqraba.

Opportunities and constrains.

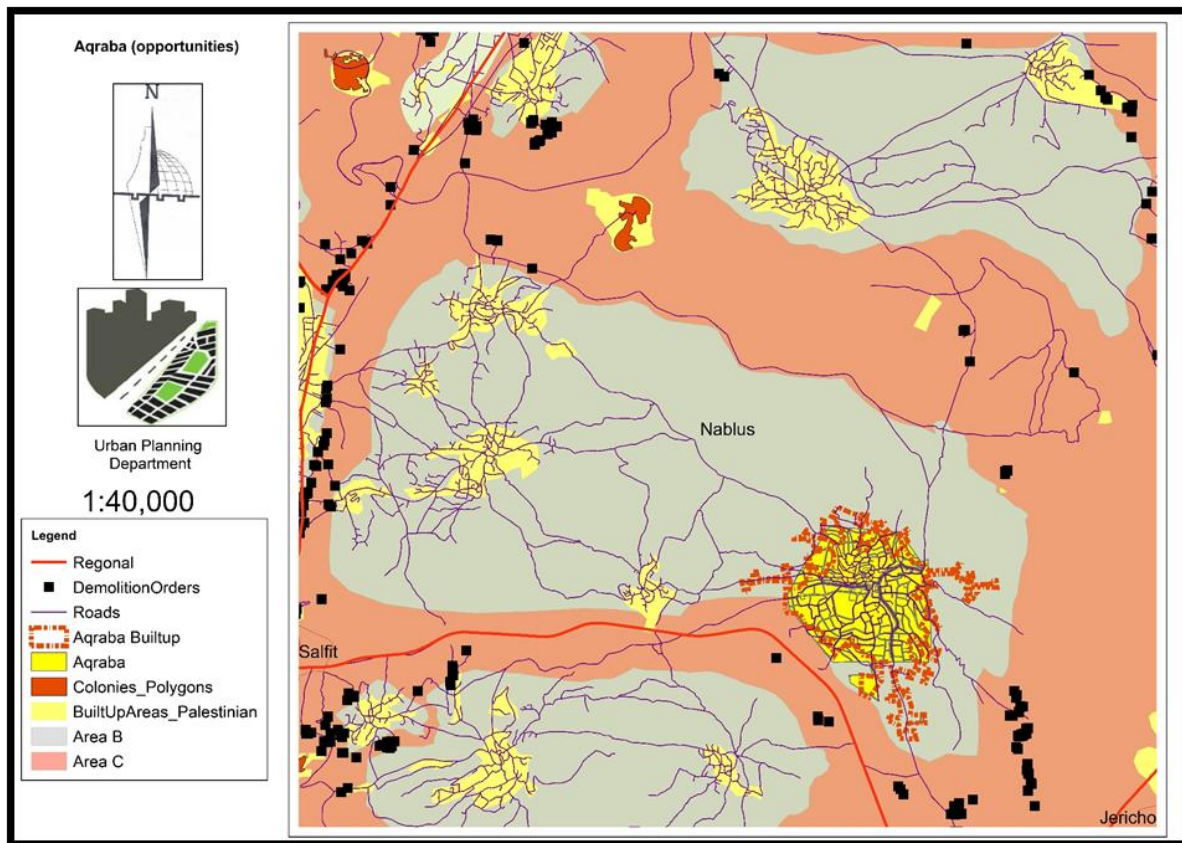
The opportunities.

There are many opportunities in the village, these opportunities add a positive value to the village, and make it candidate to be A chosen location

The opportunities points are:

- 1) There is no any Israeli settlements near the village.
- 2) The village contain no demolition orders for buildings.
- 3) Many Palestinian communities are located near the village.

The following map shows the opportunities in the village:



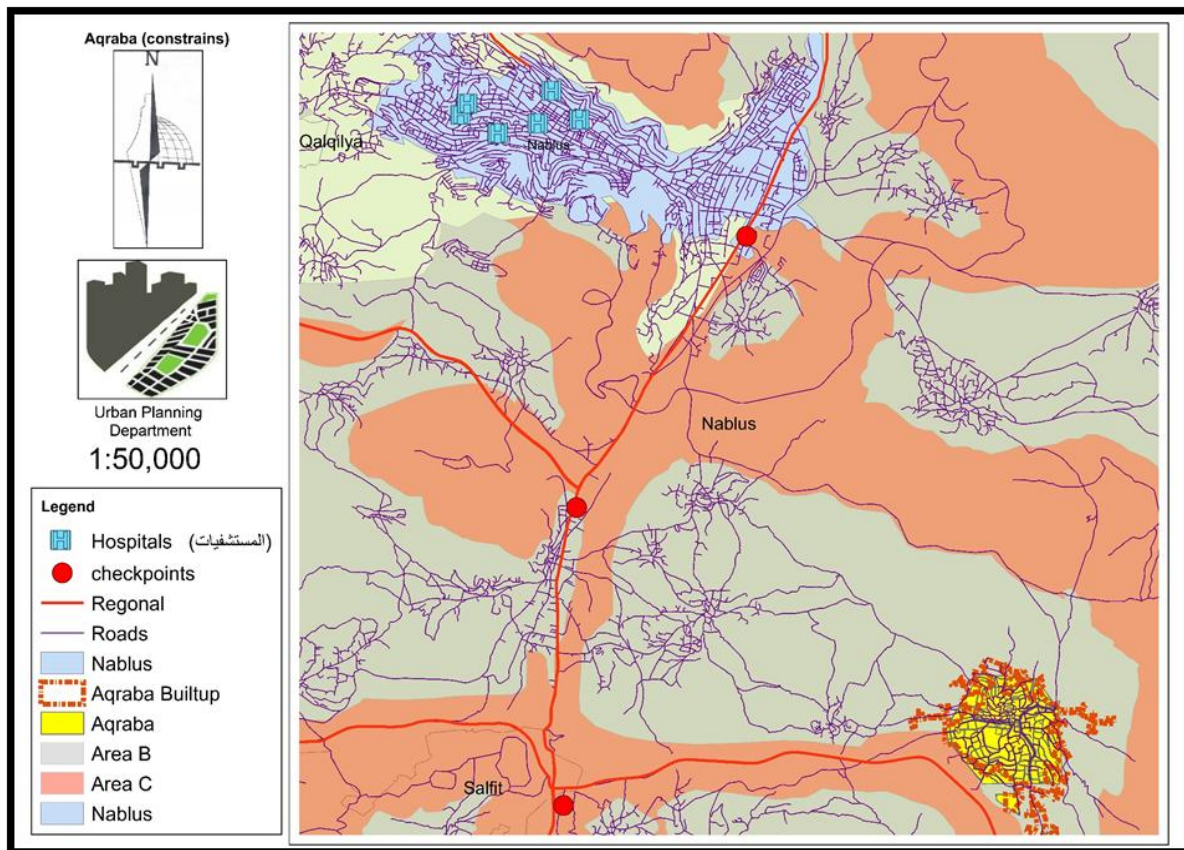
Map (9): Aqqraba opportunities.

The constrains:

The village has many constrains that could be negative and dangerous, the constrains in the village are:

- 1)There is not any hospitals or health center in the village.
- 2)There are permanent checkpoints between The village and Nablus, and between the village and Ramallah.
- 3)There is no master plan for area C in this village.
- 4)The village near the north region more than middle region in West Bank.

The following map shows the constrains in the village



Map (10): Aqraba constrains.

Criteria	Weight of criteria	Site Rank (1-5)	Total
1)Location in an area C.	10	1	10
2)Locate near main or regional roads.	7	4	28
3)Accessibility to rural community.	10	3	30
4)Accessibility to infrastructure network.	Water Network (1)	4	36
	Sewage Network (0)		
	Telephone Network (1)		
	Electricity (1)		
	other (1)-solid waste collection		
5)Accessibility to public transportation.	7	4	28
6)Land Price.	8	3	24
7)The location of project in the central region in West Bank.	10	1	10
8)Proximity to urban center	9	1	9
9)Accessibility to nearest city without any checkpoints (CP).	9	2	18
10) Availability of master plan (MP) in Area C.	10	1	10
11) Away from Israeli settlements.	7	5	35
Total			238/480

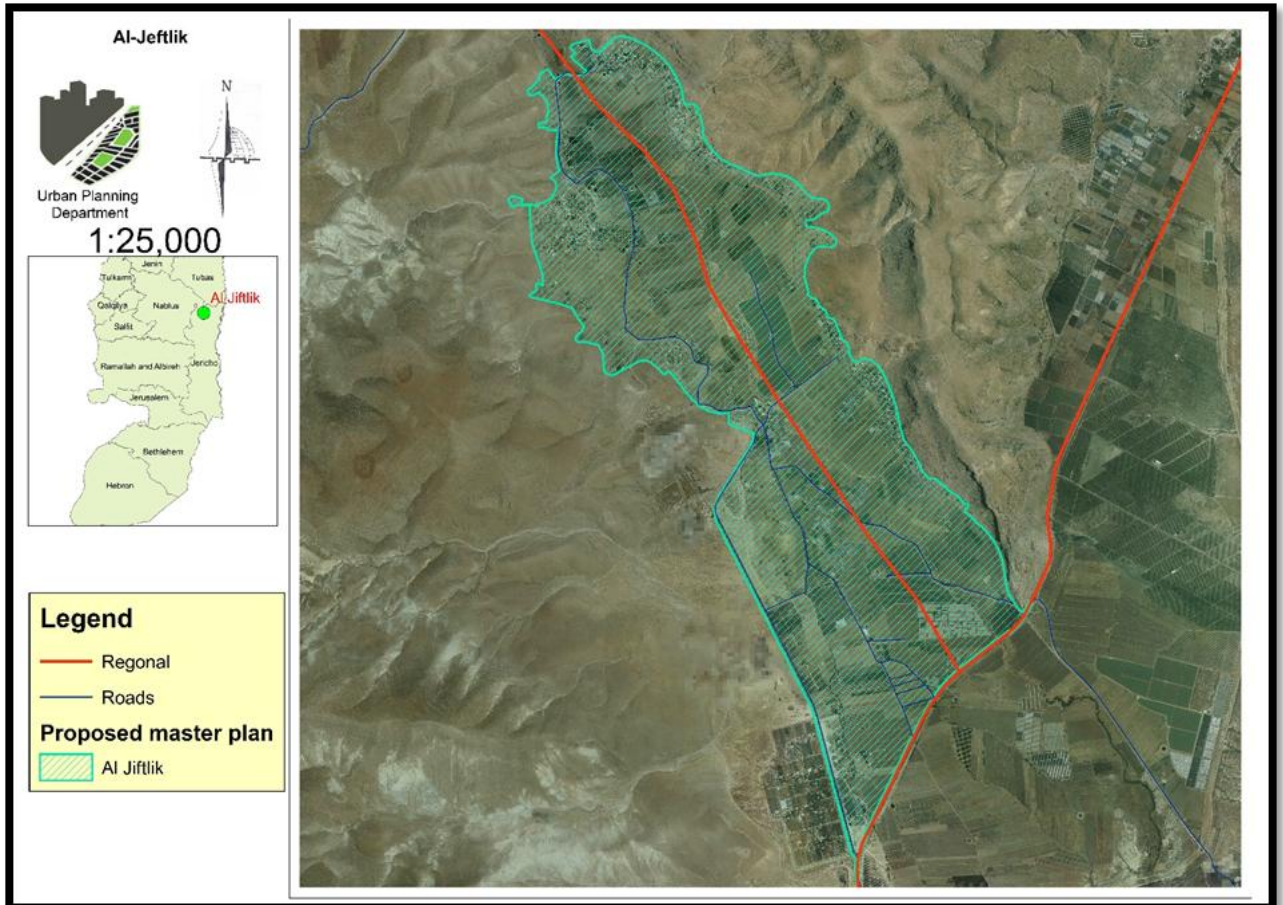
Table 3:The rank of the site from criteria (Aqqraba).

1.8.4) Al-Jiftlik

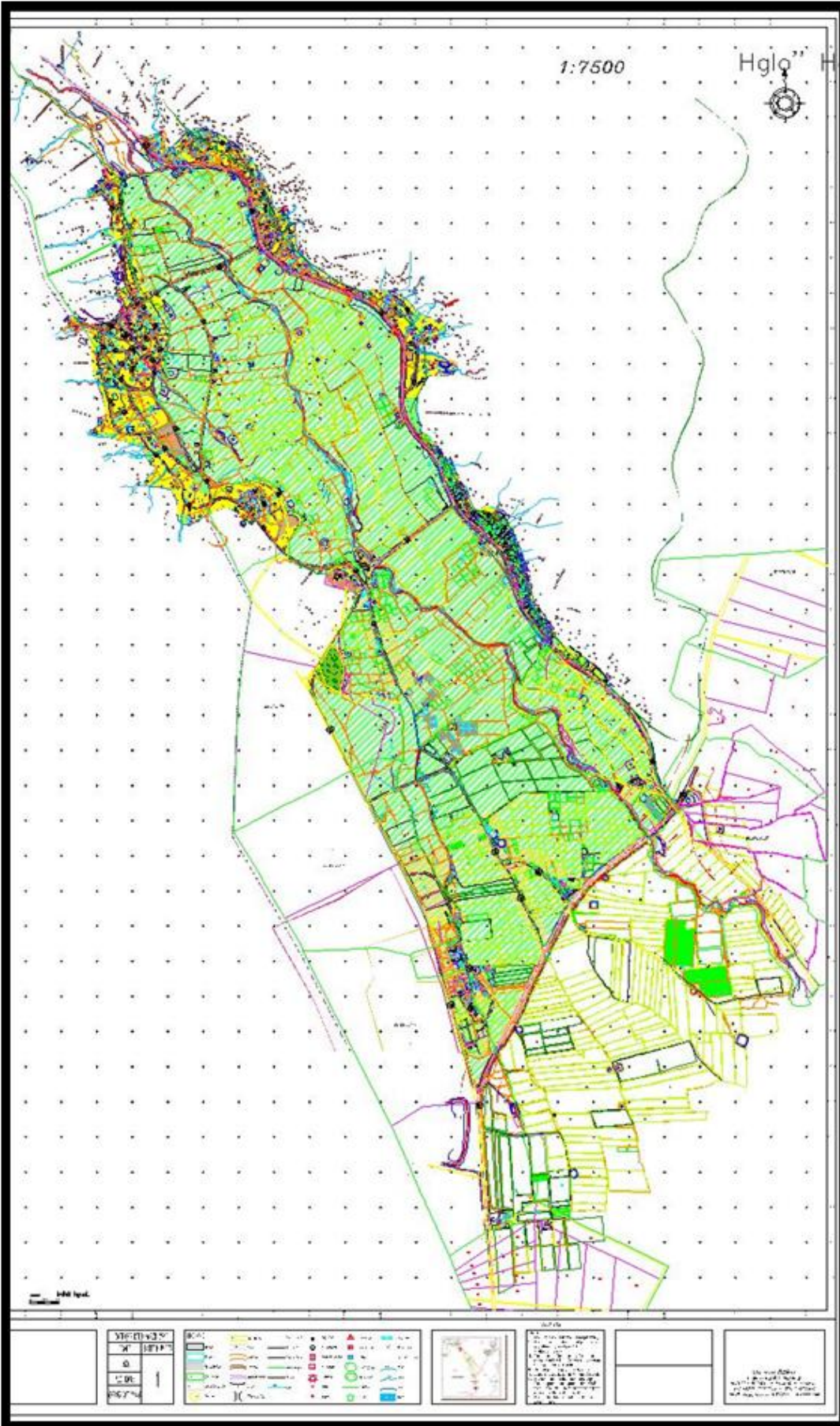
The location:

Al-Jiftlik village is one of Palestinian communities that is located in Jericho governorate, located in north Jericho city, away from center of Jericho 40 km, and from center of Nablus 30 km, Al-Jiftlik has a proposed master plan for area C, the master plan proposed by NGO, the total area for proposed master plan in area C is equal 10,500 dunms, the total number of population in the area equal 5,400 people.

The following maps shows the location of Al-Jiftlik, and its proposed master plan.



Map (11): Al-Jiftlik location.



Map (12): Al-Jiftlik proposed master plan.

The population:

The total number of population in Al-Jiftlik is 5,400 people according to PCBS in 2015, the following diagram shows the population distribution by gender and age group.

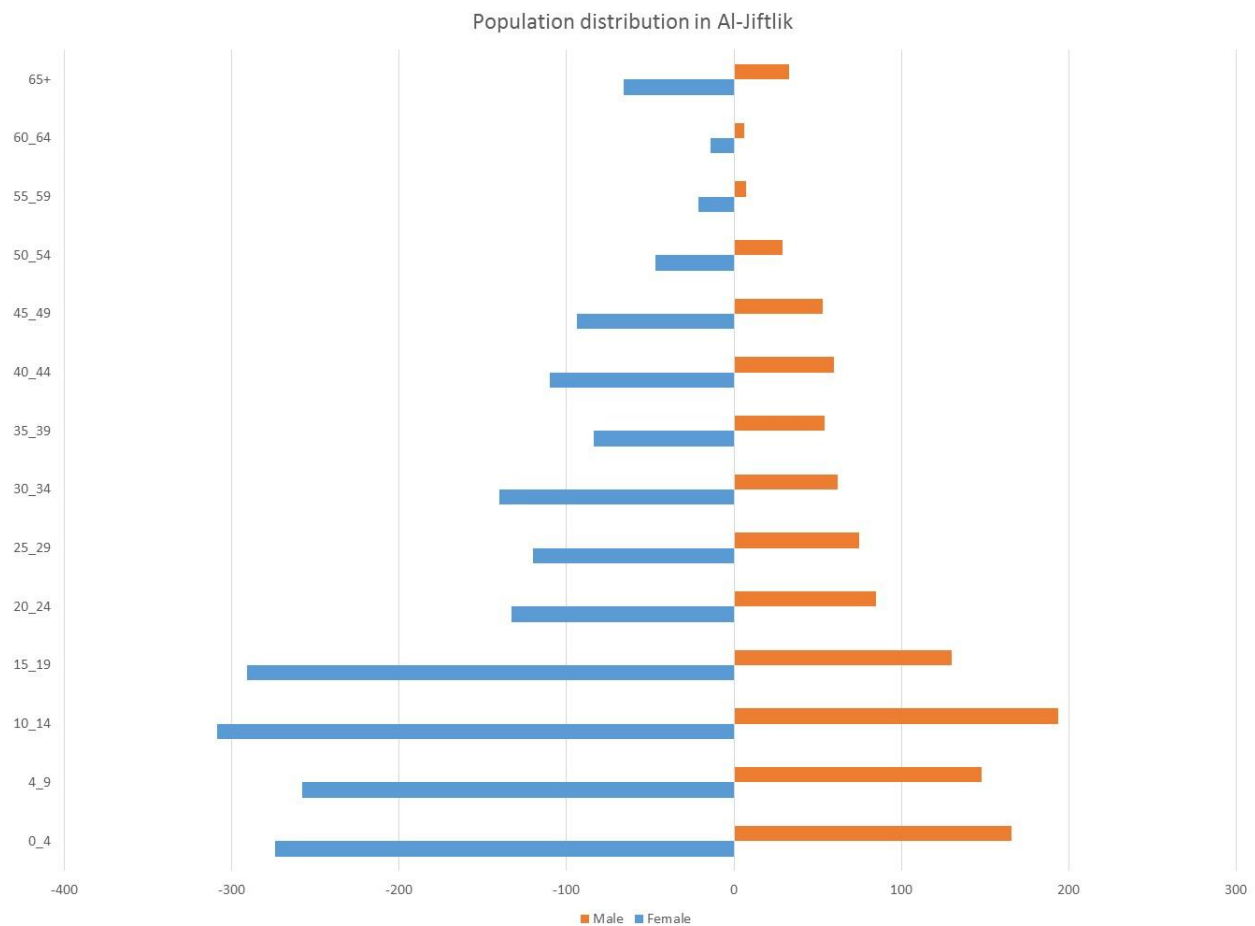


Figure 5: population distribution in Al-Jiftlik.

Opportunities and constrains.

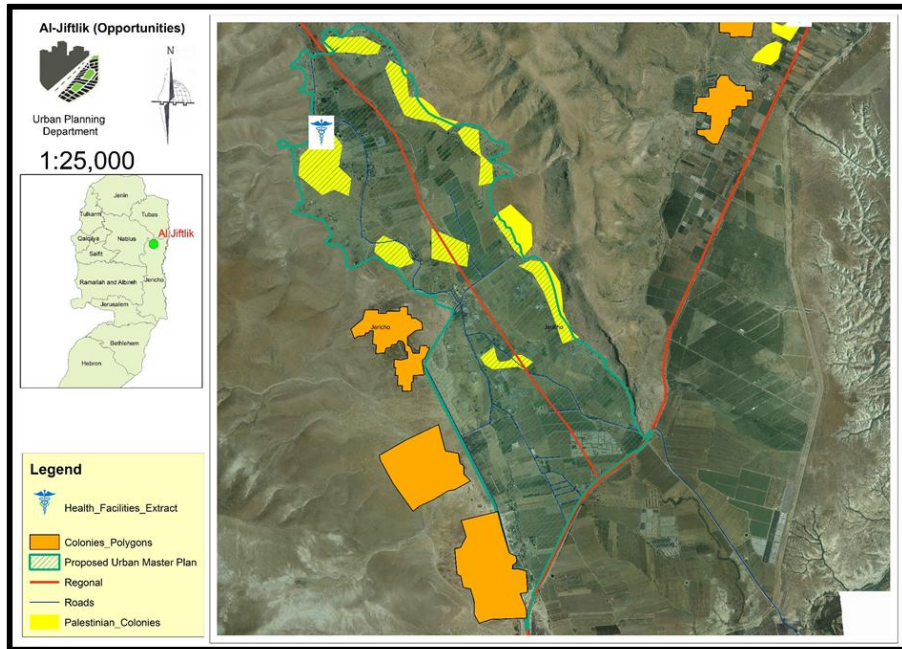
The opportunities.

There are many opportunities in the village, these opportunities add a positive value to the village, and make it candidate to be A chosen location

The opportunities points are:

- 1) There is a proposal master plan for area C.
- 2) Contains a health and medical center.
- 3) Many Palestinian communities locate near Al-Jiftlik.
- 4) No any Israeli settlements locate inside the proposal master plan.

The following map shows the opportunities in the village:



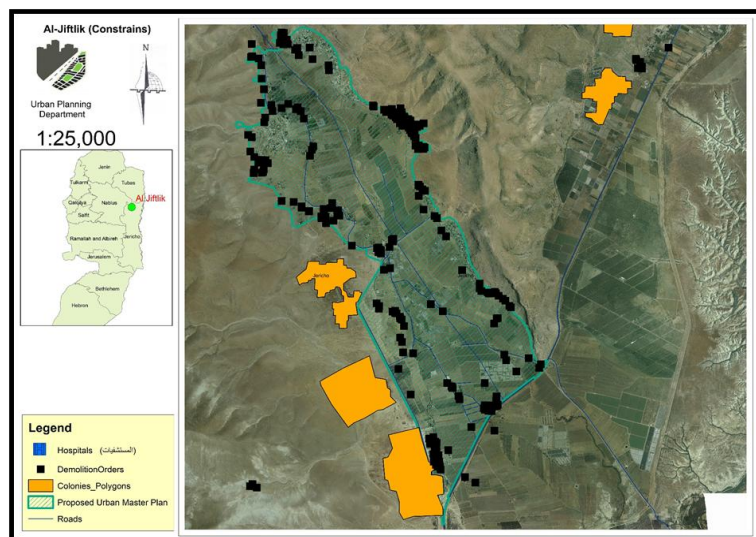
Map (13): Al-Jiftlik (opportunities).

The constrains:

The village has many constrains that could be negative and dangerous, the constrains in the village are:

- 1) Many settlements locate near Al-Jiftlik.
- 2) There is a lot of demolition orders inside Al-Jiftlik.
- 3) There is no any hospital in Al-Jiftlik or nearby.
- 4) Many checkpoints separate between Al-Jiftlik and nearby cities.

The following map shows the constrains in the village:



Map (14): Al-Jiftlik (constrains)

Criteria	Weight of criteria	Site rank (1-5)	Total
1)Location in an area C .	10	5	50
2)locate near main or regional roads.	7	5	35
3)Accessibility to rural community.	10	1	10
4)Accessibility to infrastructure network.	Water Network (0)	0	0
	Sewage Network (0)		
	Telephone Network (0)		
	Electricity (0)		
	other(0)		
5)Accessibility to public transportation.	7	2	14
6)Land Price.	8	5	40
7)The location of project in the central region in West Bank.	10	1	10
8)Proximity to urban center	9	1	9
9)Accessibility to nearest city without any checkpoints (CP).	9	1	9
10)Availability of master plan (MP) in Area C.	10	5	50
11) Away from Israeli settlements.	7	3	21
Total			248/480

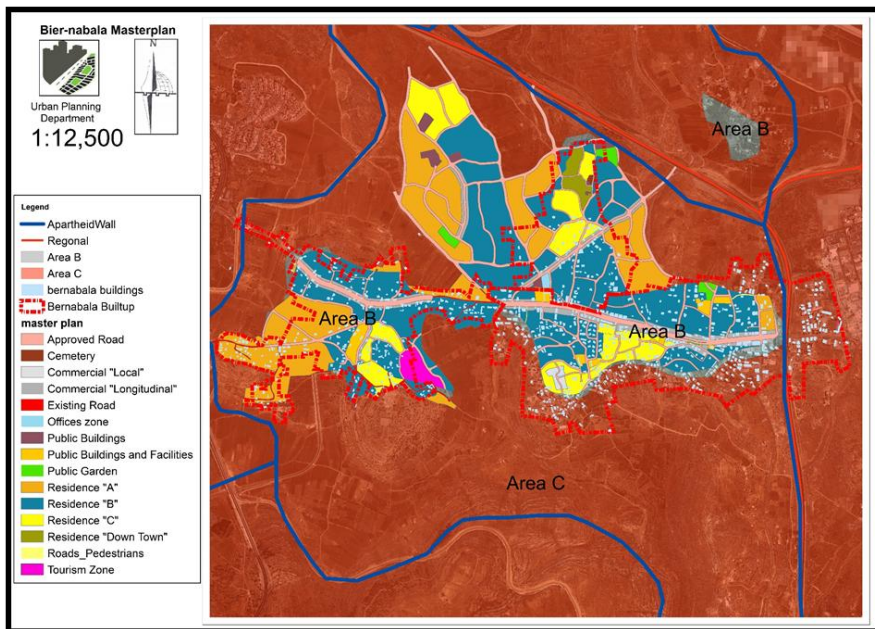
Table 4:The rank of the site from criteria (Al-Jiftlik).

1.8.5) Bier-Nabala, Al-Jib, Al-Jedereh, and Biet-Hanina(Town).

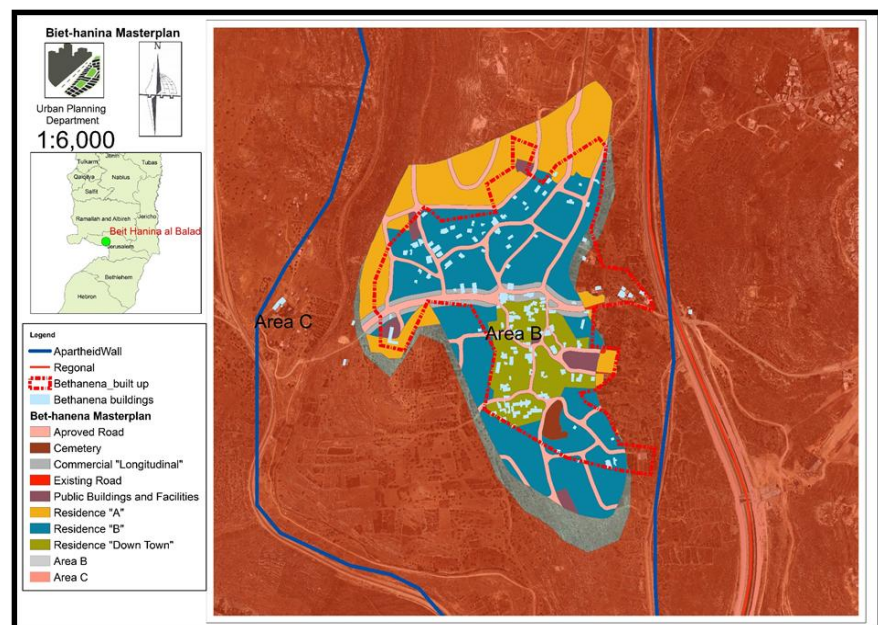
The location:

These villages located in south of Ramallah city, in Jerusalem governorate (north), away from Ramallah around 10 km, and Biet-Hanina(Town) away from Ramallah around 12 km, the number of population in Bier-Nabala, Al-Jib, Al-Jedereh in 2015 equal 8,500 people, and in Biet-Hanina the number of population in 2015 equal 1,000, all these Palestinian communities have a proposed master plan. The master plan of Bier-Nabala have a small part locates in area C.

The following maps shows the master plan for Bier-Nabala area (Bier-Nabala, Al-Jib, Al-Jedereh), and Biet-Hanina.



Map (15): Bier-Nabala area master plan.



Map (16): Biet-Hanina master plan.

The population:

This part is explained in a detailed way in Site analysis chapter.

Opportunities and constrains.

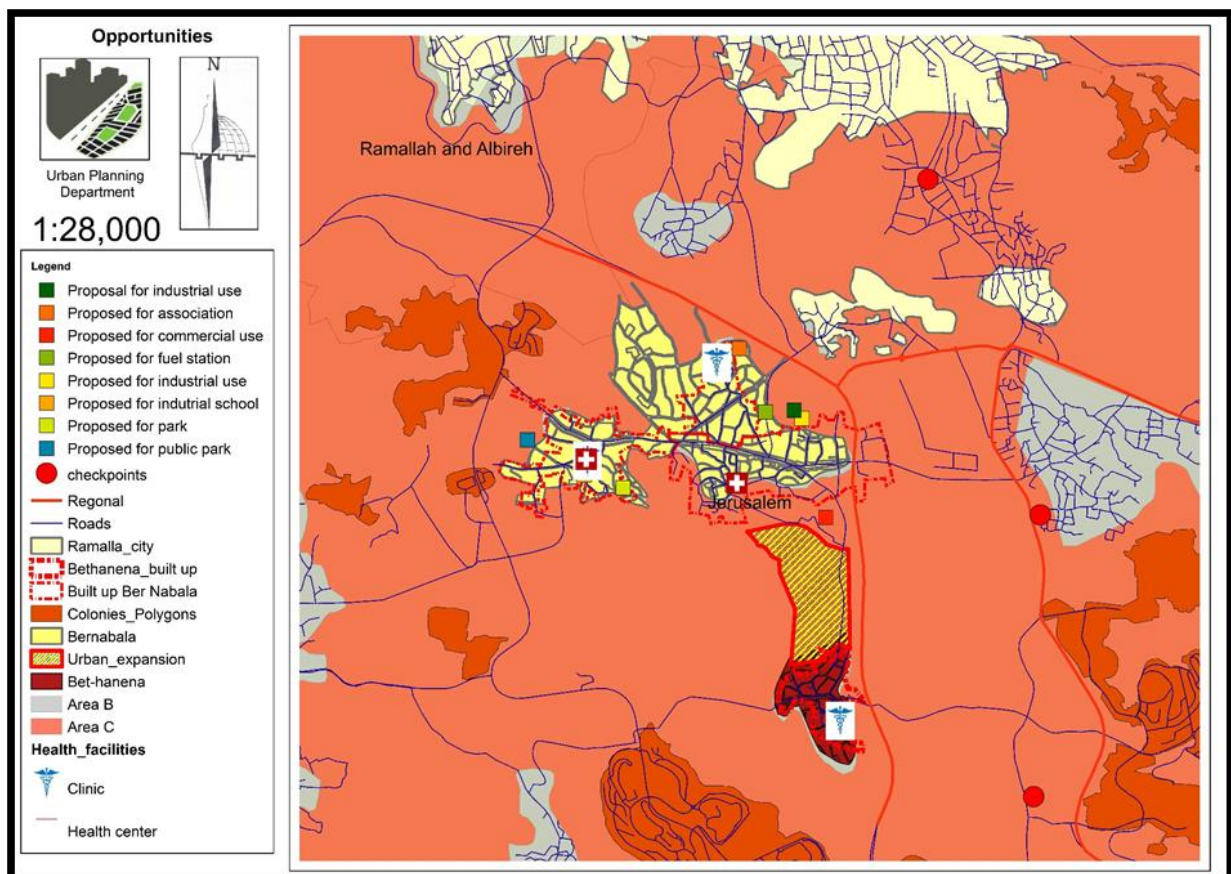
The opportunities.

There are many opportunities in the village, these opportunities add a positive value to the village, and make it candidate to be A chosen location

The opportunities points are:

- 1) There is an urban expansion area proposed by NGO (IPCC), this area proposed by the residence for a new suburb.
- 2) Many new facilities proposed in the communities.
- 3) No any checkpoints separate between Ramallah and the communities.
- 4) There are many health facilities in the communities (hospital, health center).

The following map shows the opportunities in the communities.

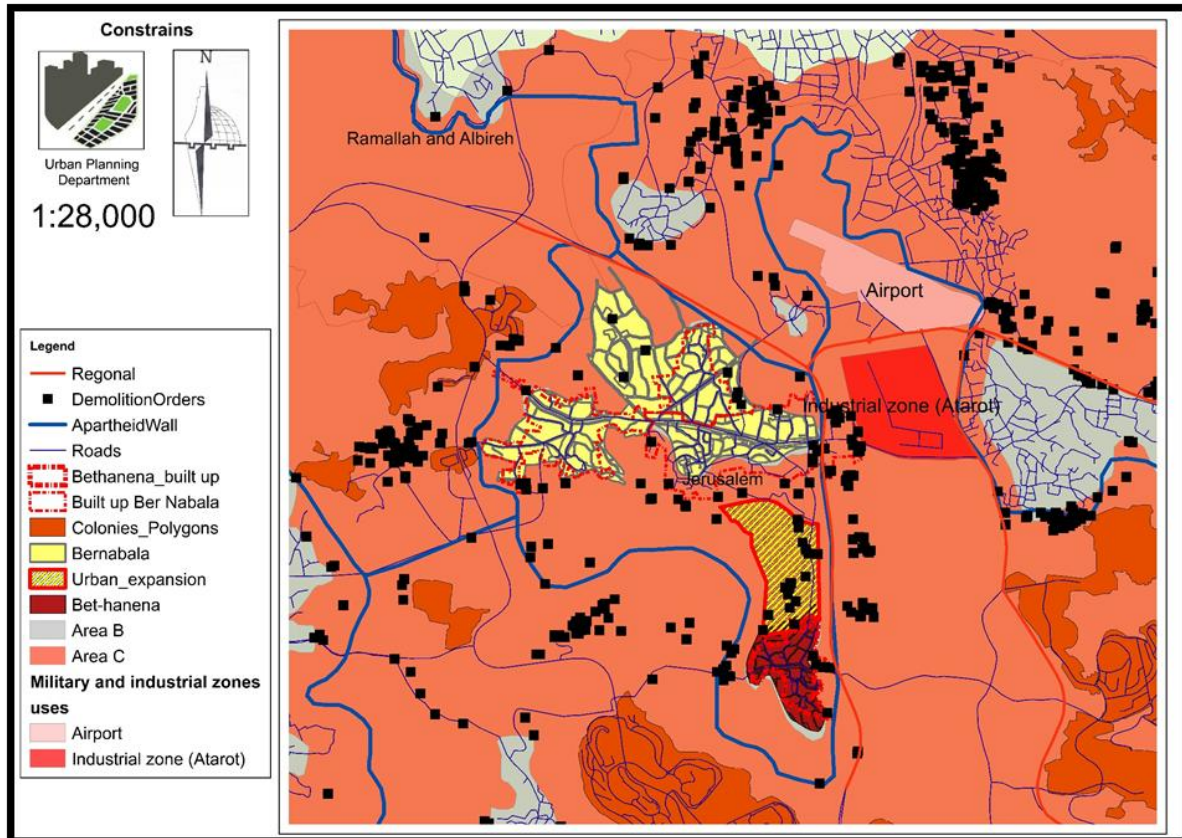


Map (17): Bier-Nabala area and Biet-Hanina (opportunities).

The constrains:

The village has many constrains that could be negative and dangerous, the constrains in the village are:

- 1) There are many demolition orders in these communities.
- 2) There is an industrial zone locates near the communities.
- 3) Many settlements locate around the communities.
- 4) An apartheid wall locate around the communities, and separate them from other Palestinian communities.



Map (18): Bier-Nabala area and Biet-Hanina (constrains).

Criteria	Weight of criteria	Site Rank (1-5)	Total	
1)Location in an area C.	10	5	50	
2)Locate near main or regional roads.	7	3	21	
3)Accessibility to rural community.	10	5	50	
4)Accessibility to infrastructure network.	Water Network (1)	9	5	45
	Sewage Network (1)			
	Telephone Network (1)			
	Electricity (1)			
	other (1)-solid waste collection			
5)Accessibility to public transportation.	7	5	35	
6)Land Price.	8	4	32	
7)The location of project in the central region in West Bank.	10	3	30	
8)Proximity to urban center	9	4	36	
9)Accessibility to nearest city without any checkpoints (CP).	9	5	45	
10) Availability of master plan (MP) in Area C.	10	5	50	
11) Away from Israeli settlements.	7	3	21	
Total			415/480	

Table 5:The rank of the site from criteria (Bier-Nabala area and Biet-Hanina).

1.9) Selecting the site:

In this section, one site for the proposal project was selected.

The following table shows the mark for each community according to criteria, the community with the highest mark will be selected:

Site	As-Saweyh	Al-Lubban Ash-Sharqyeh	Aqqraba	Jiftlik	Bier-Nabala area & Beit-Hanina (town)
Mark	٢٥٢	٢٥٢	٢٣٨	٢٤٨	٤١٥

Table 6: The result of criteria marks for all proposed communities.

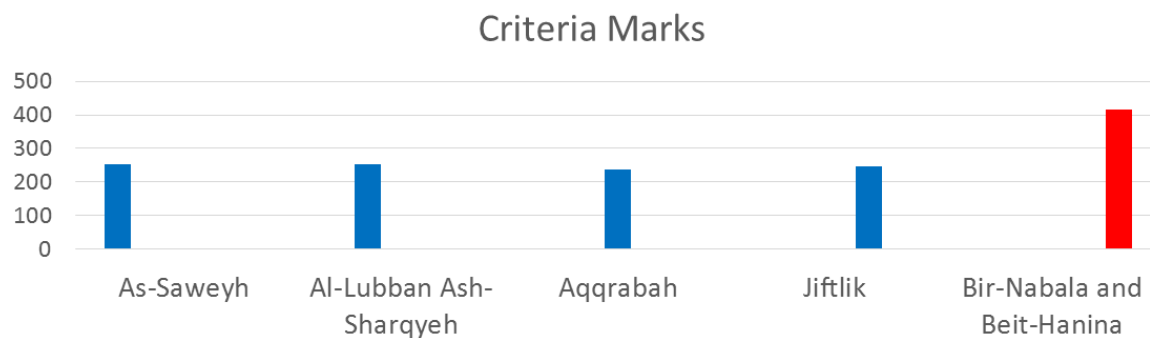


Figure 6: The result of criteria marks for all proposed communities.

This table shows that the highest mark was for Bier-Nabala area and Biet-Hanina. So, the proposal project will be in these communities.

1.10) Related studies:

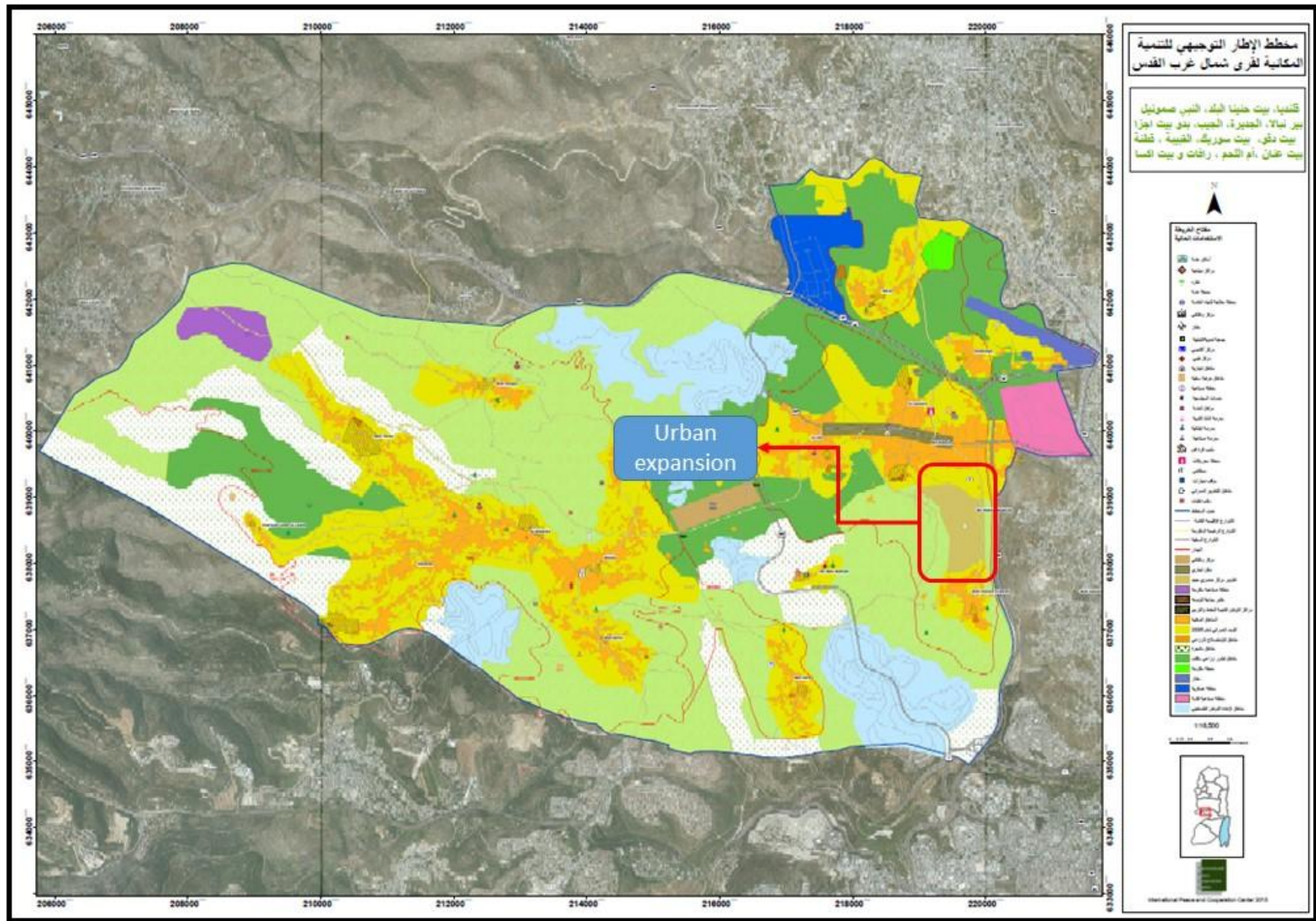
In 2011, IPCC (NGO) issued a report about the villages in the northwest of Jerusalem, this report contains the regional plan for these villages.

The study places covered by the report are: (Qalandia, Beit-Hanina(Town), Bir-Nabala, Al-Jedereh, Al-Jib, Bedo, Beit-Ijza, An-Nabi Samoel, Biet-Doqo, Al-Qubibah, Qatanah, Beit-Anaan, Rafat, Beit-Iksa, Emm-Allaham.

The report contains (Scheme framework guideline for the development of spatial villages northwest of Jerusalem plan) .

This plan suggests an urban expansion area for a new suburb locates north of Biet-Hanina, and south of Bier-Nabala area, the total area for this new urban expansion is around 700 acres.

The following map shows the proposal plan:



Map (19): Scheme framework guideline for the development of spatial villages northwest of Jerusalem plan proposed by IPCC, 2010

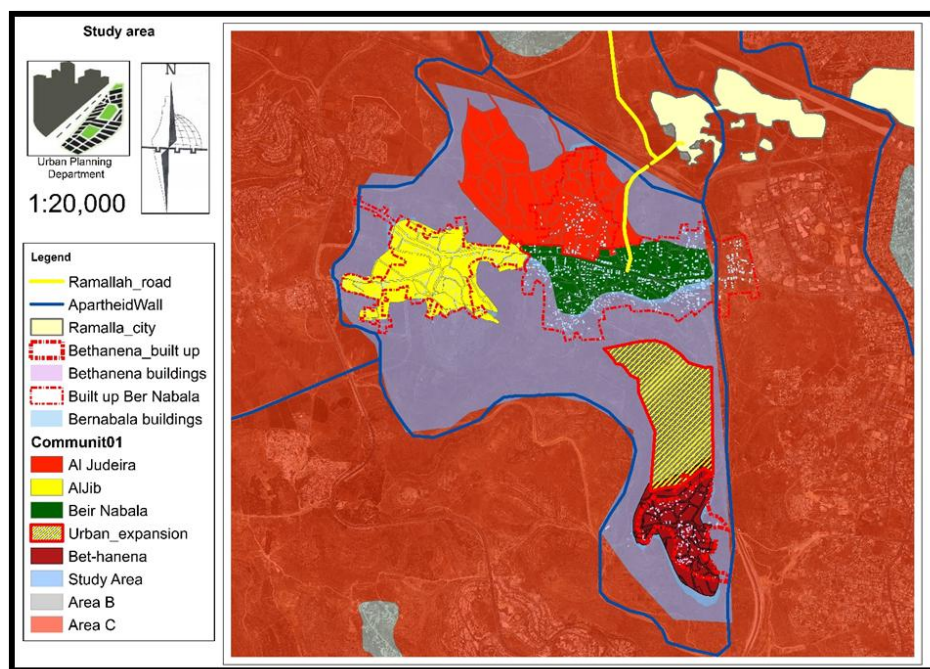
Chapter 2

Site Analysis (the current situation for the communities).

2.1) Introduction:

This chapter is about site analysis for the selected communities, as mentioned in the previous chapter (Site Selection), the result was 4 communities located in Jerusalem governorate Bier-Nabala area (Bier-Nabala, Al-Jib, Al-Jedereh), Biet-Hanina area.

The study area contains the selected communities, and the urban expansion area, where the proposal project is located.



Map (20): study area.

Ref: IPCC,2010. MOLG.

This chapter describe many sides including physical, population, and political sides.

2.2) The regional situation and the relation with the surrounding:

2.2.1) The regional situation:

The study area is located in West Bank, and the political classification for its land is Area B, and Area C, but the urban expansion area is classified as Area C.

Although the study area is located near Jerusalem city, its functional relations with the city is limited due to apartheid wall that separates the study area from Jerusalem. Also the citizens in the study area are prohibited from entering to Jerusalem city due to their West Bank ID.

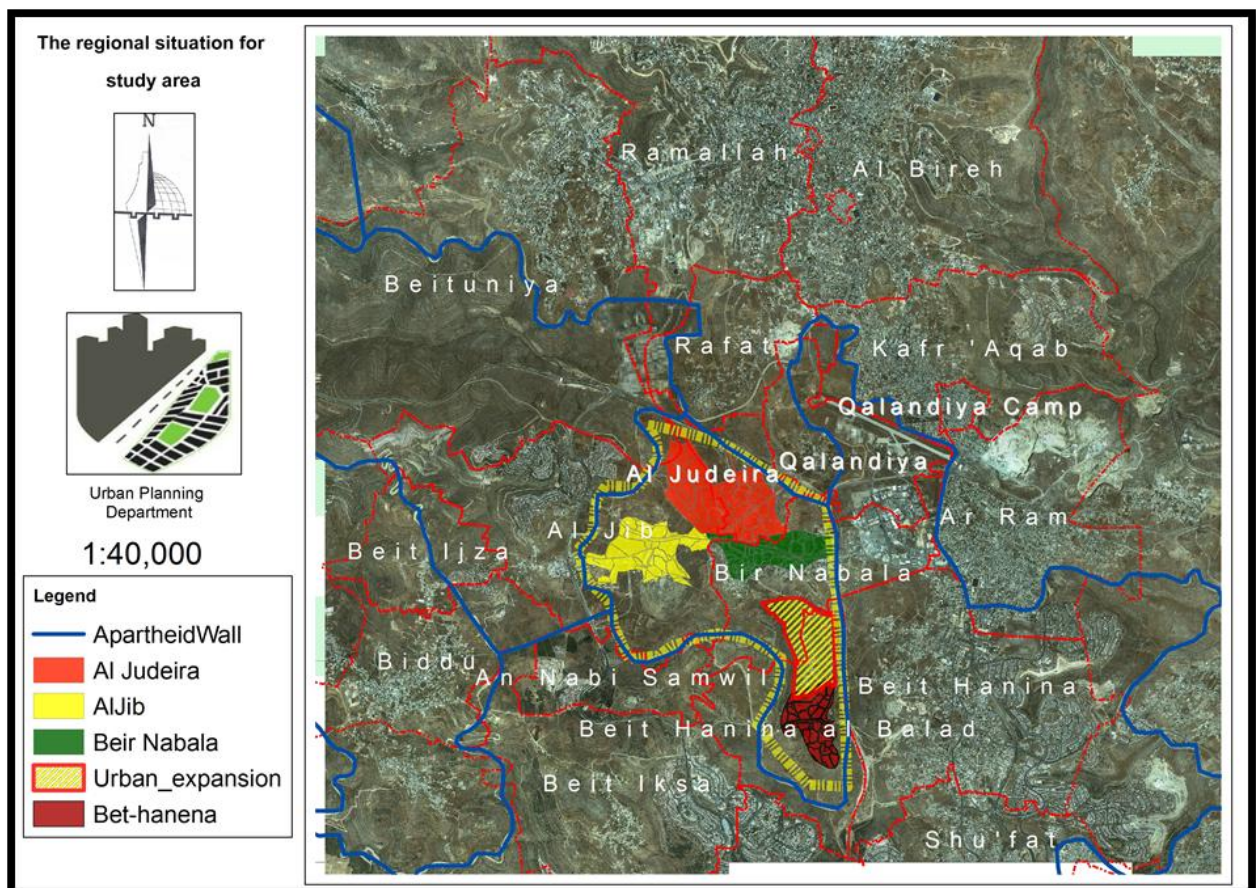
However, there is a strong functional relation with Ramallah city which is located 12 kilometers away.

The Bier-Nabala village is considered as a center for the surrounding near villages. It contains many services, such as health facilities, educational facilities, in addition to a high population density.

2.2.2) Administrative situation:

Like all Palestinian villages before the Palestinian authority was established, the village's headman governed the village. As, the Israeli occupation refused to make village councils in Palestine communities. Nowadays, the study area (Bier-Nabala, Al-jib, Al-Jedereh) have their village councils.

The following map shows the regional situation for study area.



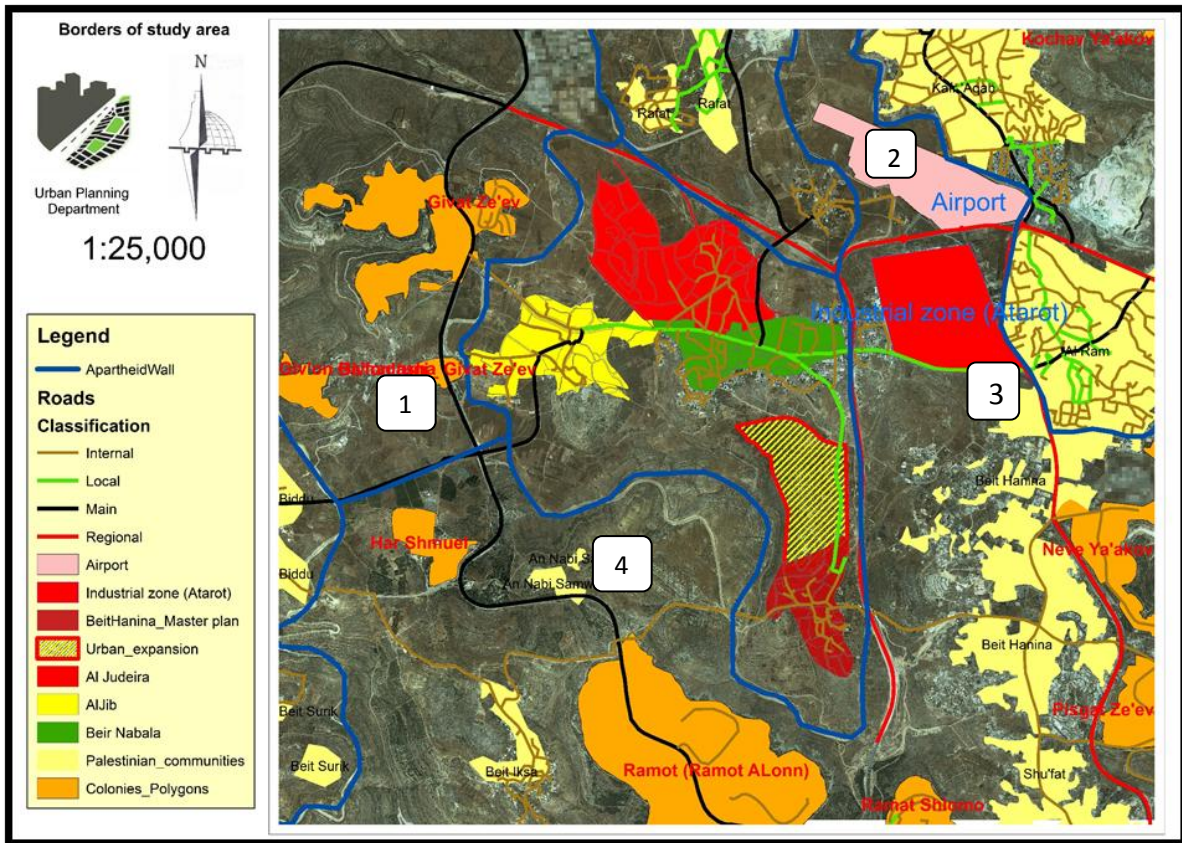
Map (21): The regional situation in the study area.

Ref: IPCC,2010. MOLG.

2.2.3) The borders of study area:

The study area has many facilities near it, some places affect negatively such as Israeli industrial zone (Atartout), the apartheid wall and some Israeli settlements, on the other hand there are other places affect positively of the study area, such as Palestinian communities around it.

The following map shows the borders of the study area, and its surroundings.

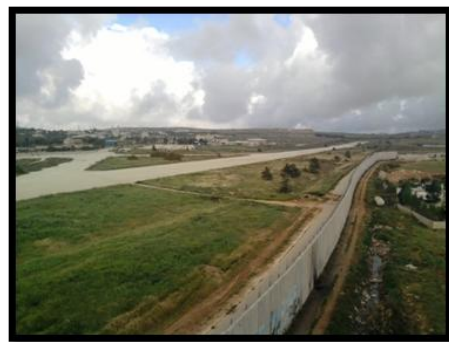


Map (22): the borders of study area and surrounding.

Ref: IPCC,2010. MOLG.



Picture (1)



Picture (2)



Picture (3)



Picture (4)

2.3) Geographic characteristics:

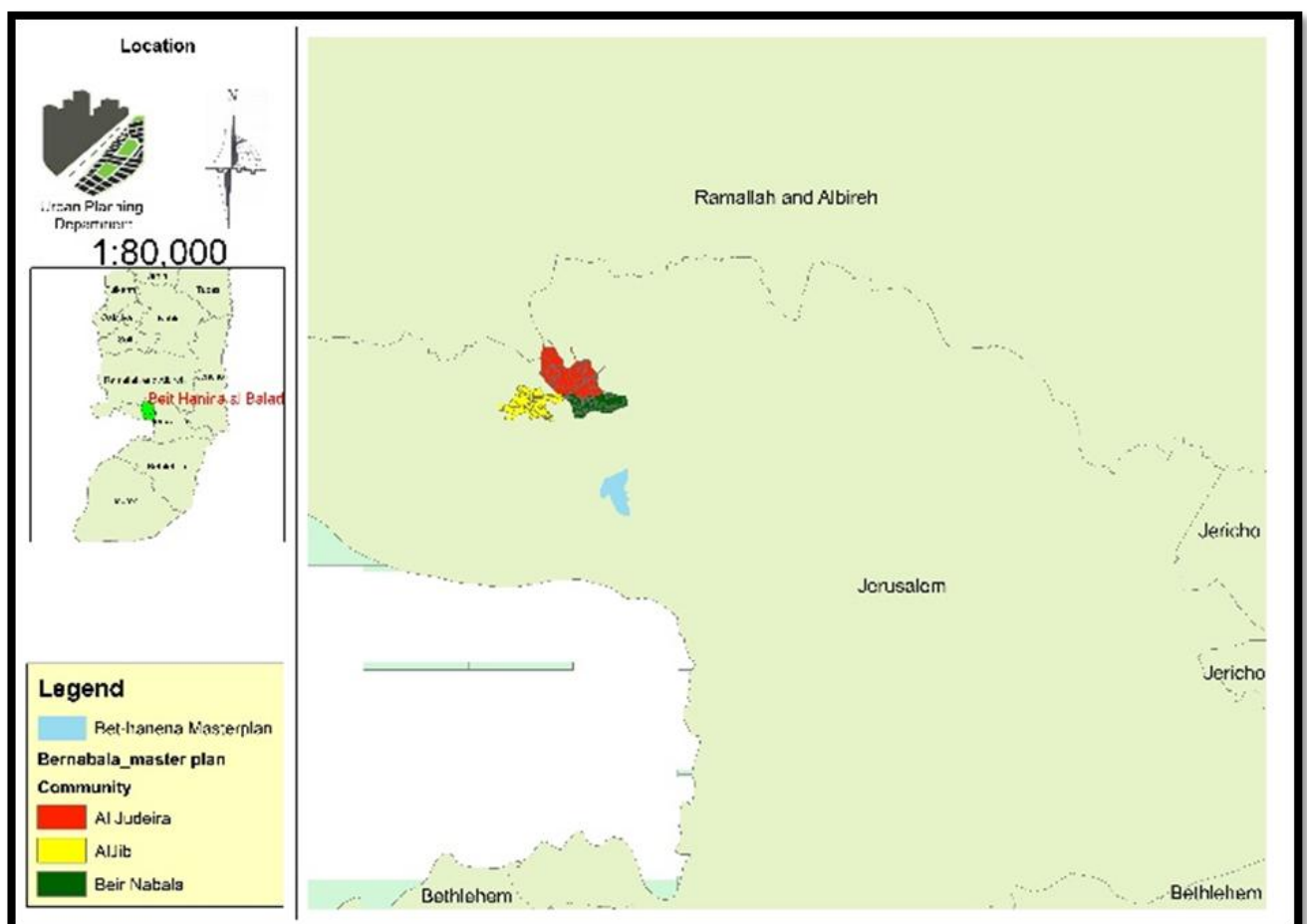
2.3.1) The location and the area:

The study area (Bier-Nabala, Al-Jib, Aljedreh, Biet-Hanina), is located in Jerusalem governorate, north of Jerusalem city, although the communities are located in Jerusalem but there is no accessibility to Jerusalem city, due to apartheid wall, so of the region is governed by the Palestinian authority, as the study area lies 12 kilometers away from the city of Ramallah.

The total shape area for (Bier-Nabala, Al-Jib, Al-Jedereh) is equal 2789.1 acres, and shape area for Biet-Hanina is equal 581.1 acres, and for proposed urban expansion area is equal 760 acres.

Ref: MOLG. PCBS, مخطط الاطار التوجيهي لقرى شمال غرب القدس, IPCC.

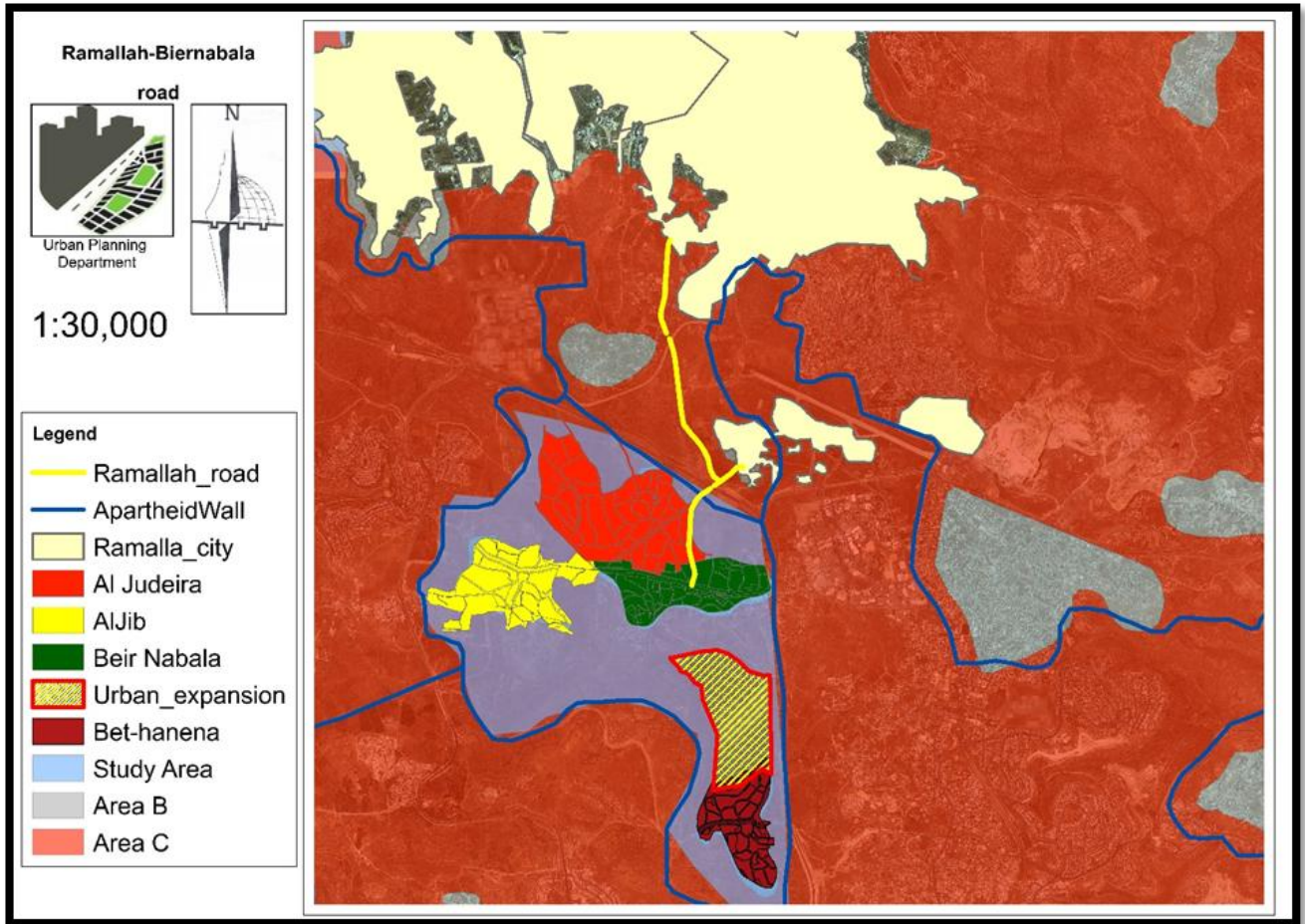
The following map shows the location of selected communities and proposed urban expansion area.



Map (23): the location.

Ref: MOLG.

The following map shows the connection to the nearest city



Map (24): Ramallah-BierNabala Road.

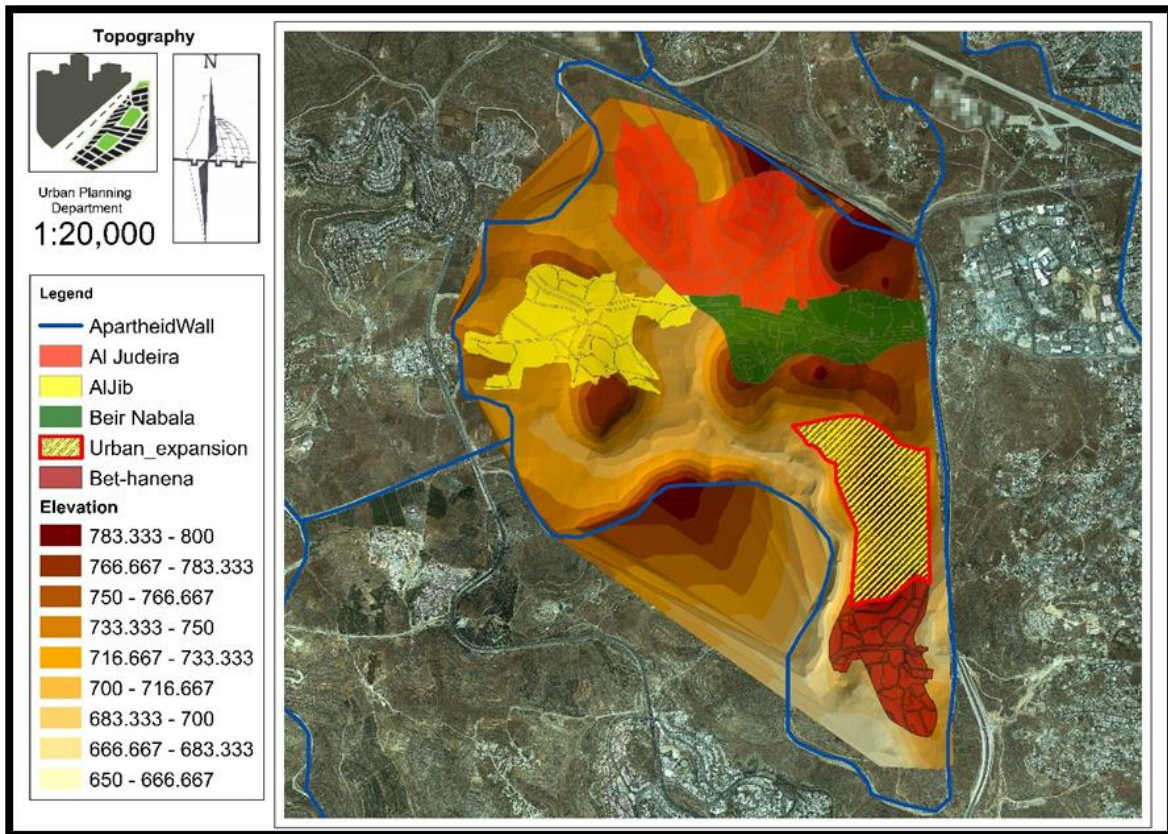
Ref: IPCC,2010. MOLG.

2.3.2) The topography and slopes:

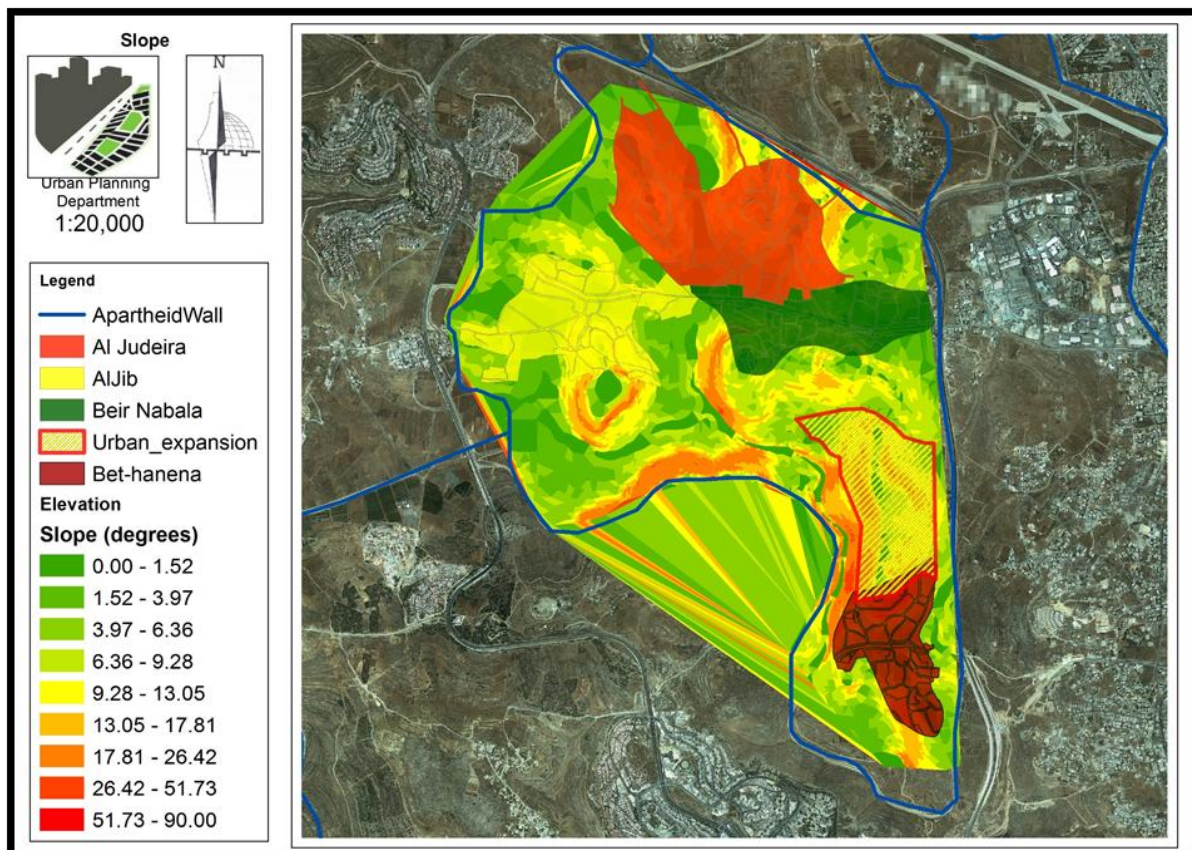
The study area has a different elevation, the minimum elevation equal 650m, and the maximum elevation equal 780m, the study area has different slope degree, the range of slope in the study area between 0.00" up to 50".

In general, the study area has a mountains terrain, like the most natural of terrains in West Bank, the building process need cut and fill on the land.

The following maps show the topography and slope in the study area.

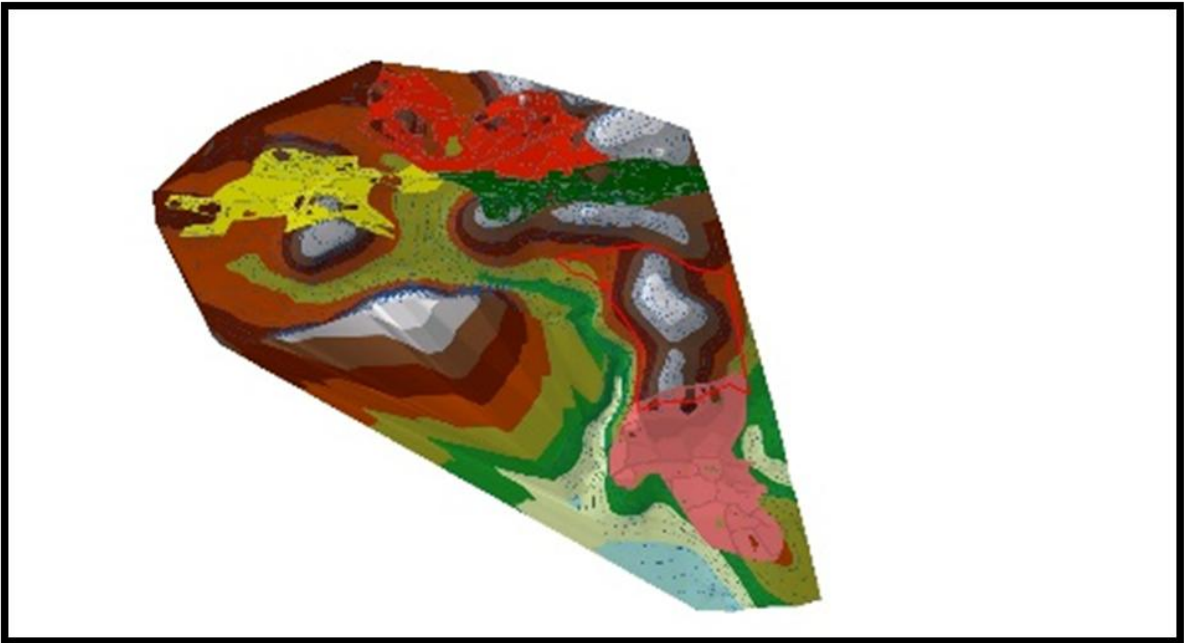


Map (25): The topography.

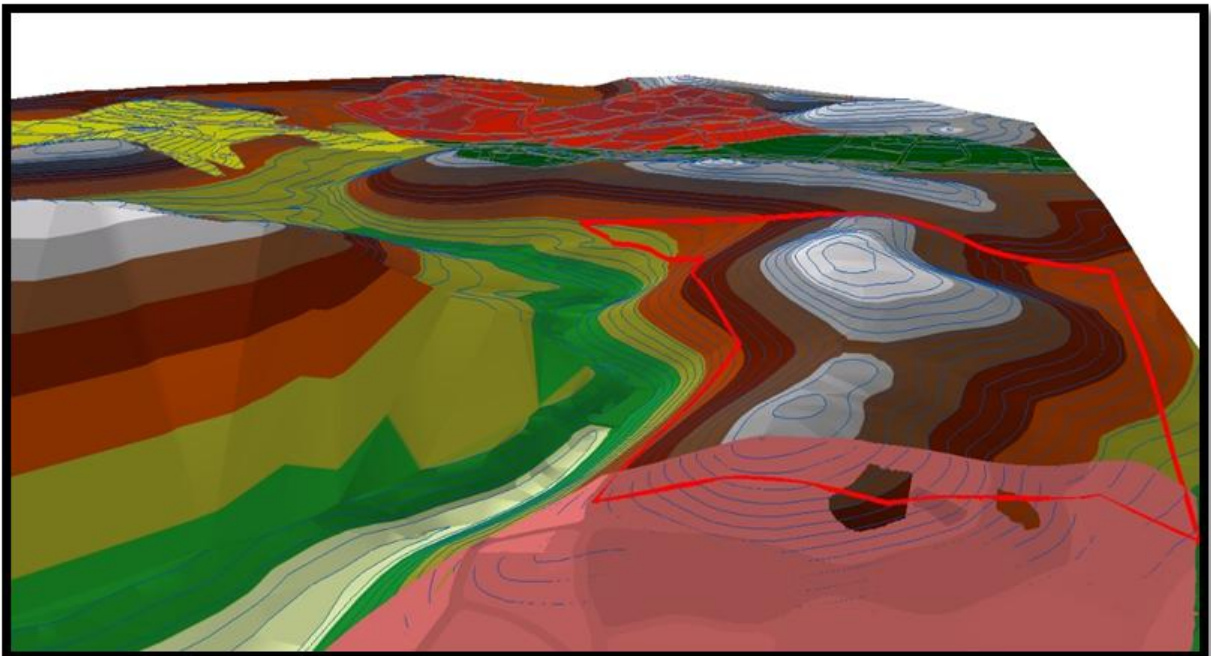


Map (26): The slope.

3D Shoots:

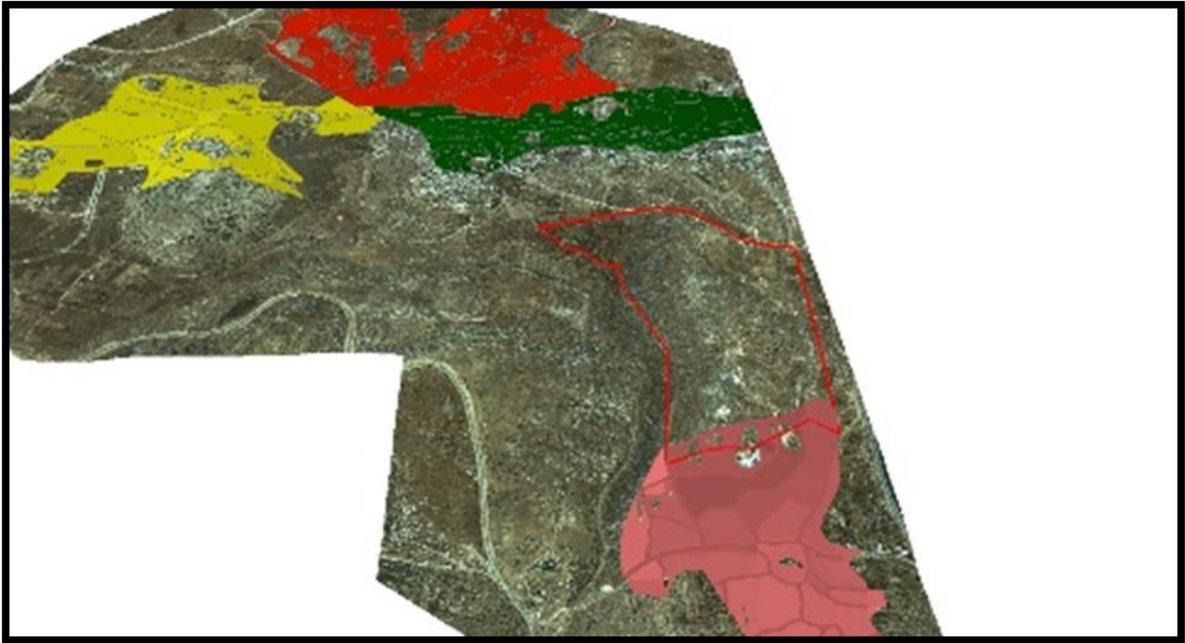


Map (27): 3D shoot #1.



Map (28): 3D shoot #2.

3D Shoots cont.



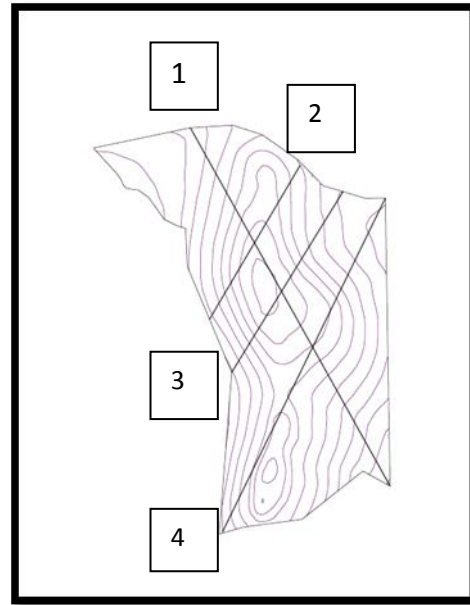
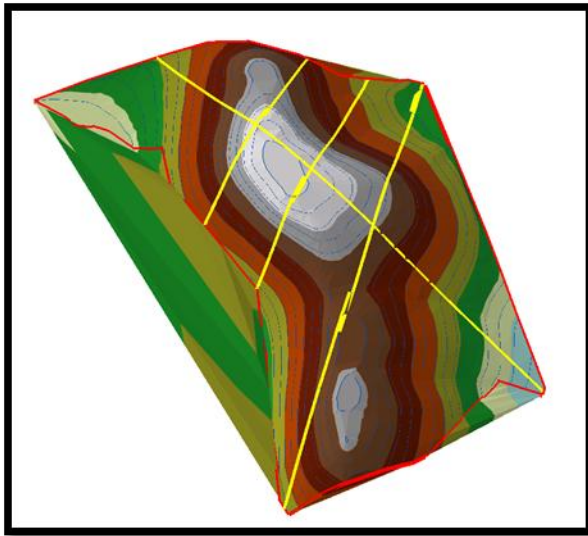
Map(29): 3D shoot #3..



Map (30): 3D shoot #4.

Reference for all topography, slopes, and 3D shoot mapping: IPCC, 2010.MOLG.

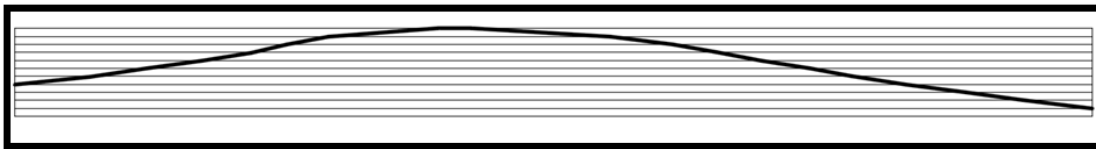
The following maps show the section of the land that proposed for the project (Urban expansion).



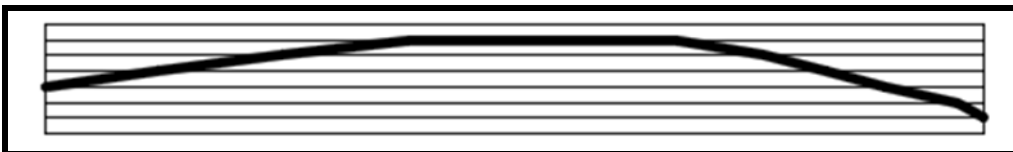
Map (31):

The Sections:

Section #1:



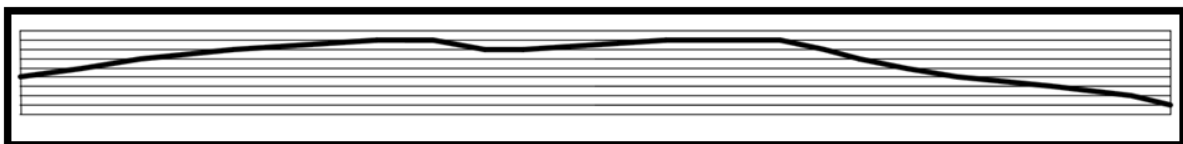
Section #2



Section #3:



Section #4:



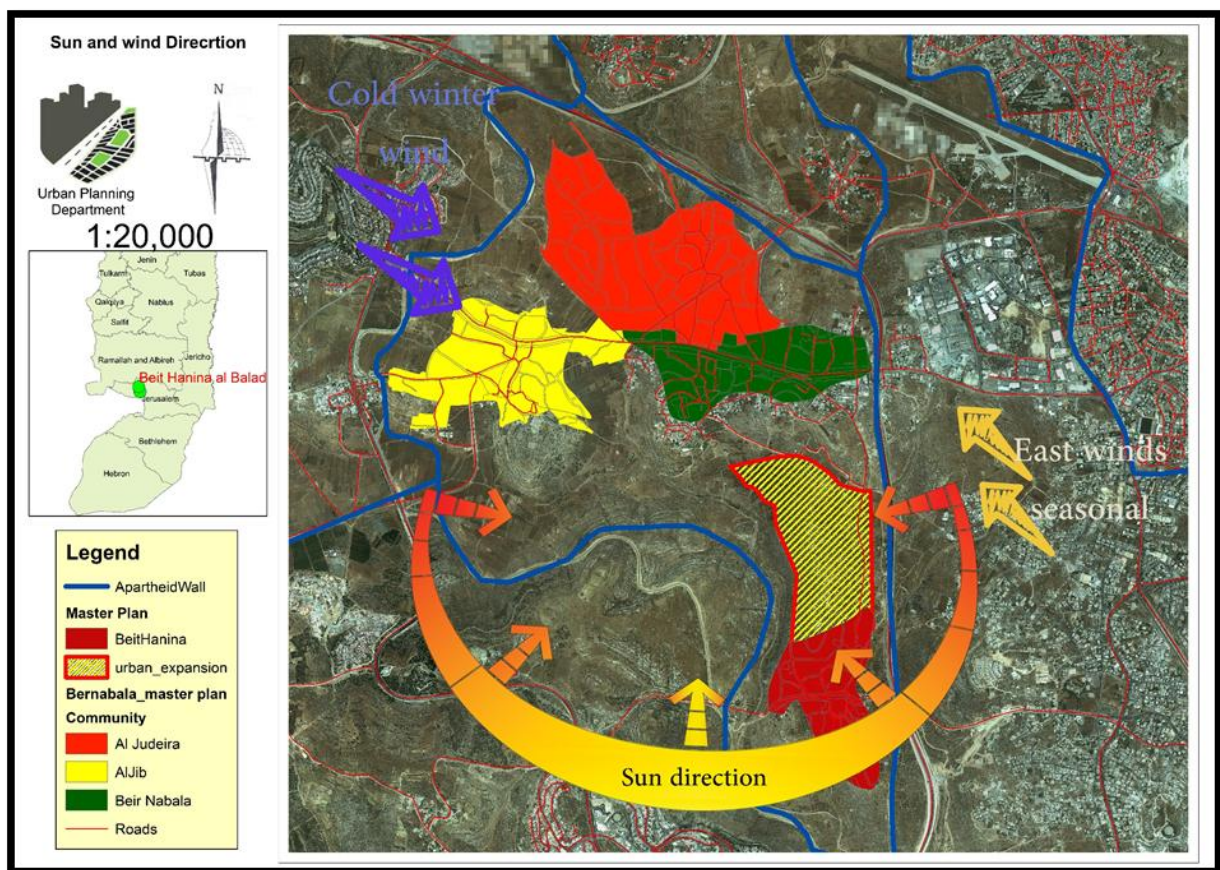
2.3.3) The climate:

The study area has a middle eastern temperature, the average rainfall in the area is between 700 mm up to 800 mm, and the average temperature in winter is between 10° up to 12°, but in the summer the average temperature between 24° up to 26°. In general, the climate in the study area is similar to the climate in Jerusalem district.

2.3.4) Sun and wind direction:

There are two types of wind effect on the study area, the first type is cold winter wind, which is came in winter, from northwest, and the other type is east winds seasonal, which is came from southeast.

The following map shows the sun direction from east to west, and the two types of wind directions.



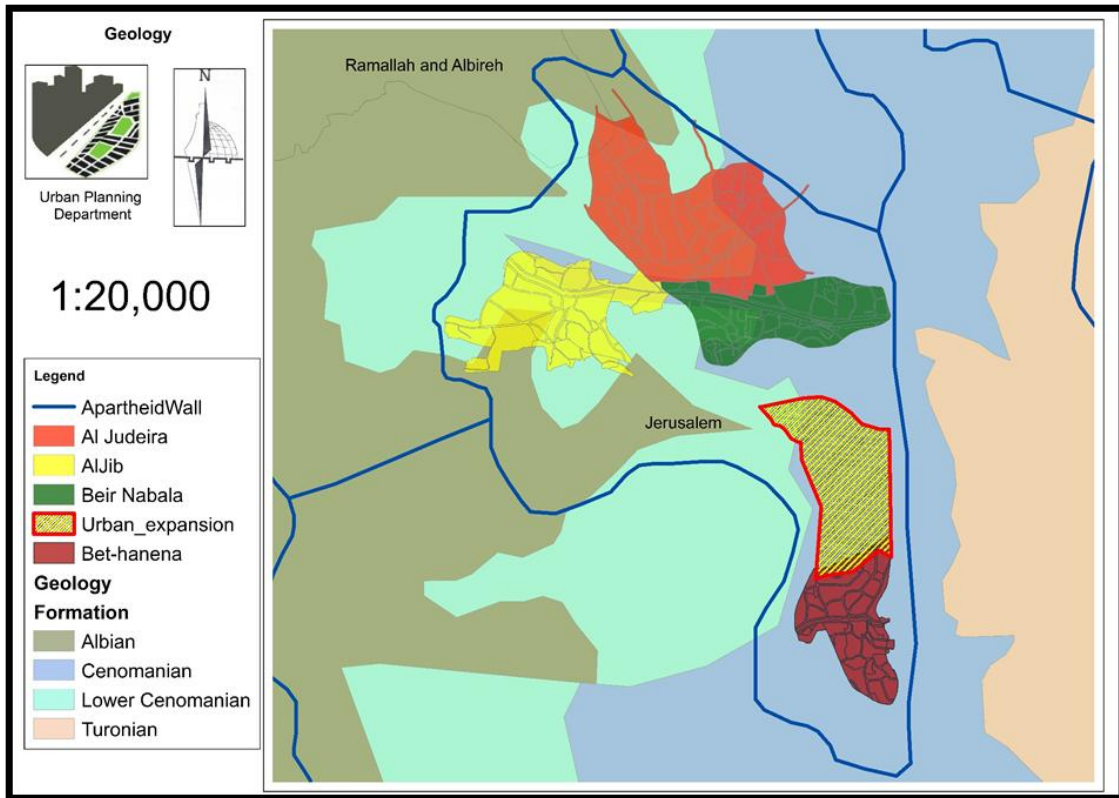
Map (32): Sun and wind direction.

Ref: IPCC,2010. MOLG.

2.3.5) The geology:

The study area is located on three different types of geology layer, the geology layers are: Cenomanian, low Cenomanian, and Albian. The urban expansion area locates on the Cenomanian layer.

The following map shows the geology layers in the study area.



Map (33): Geology.

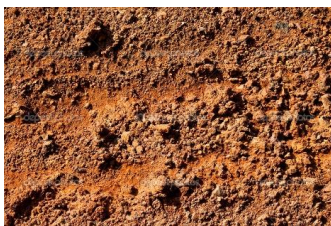
2.3.6) The soil:

The study area contains many types of soil, but most area contain one type of soil, the soil is Terra Rossas soil, the Terra Rossas is a clay soil produced from erosion from limestone, the iron element existence in the soil is responsible for the red color italics to orange, which is oxidized as a result of the process of erosion.

This type of soil contain protrusions, it allows the drainage of water inside the soil, and makes it fertile.

The other type of soil that exists in the study area is Grumusols, it contains Humus element, this soil is also produced from erosion of limestone, it has a thin layer upper of limestone, so it can drain the water ,but less than Terra Roassas soil.

The following pictures show the soils in the study area.



Terra Rossas

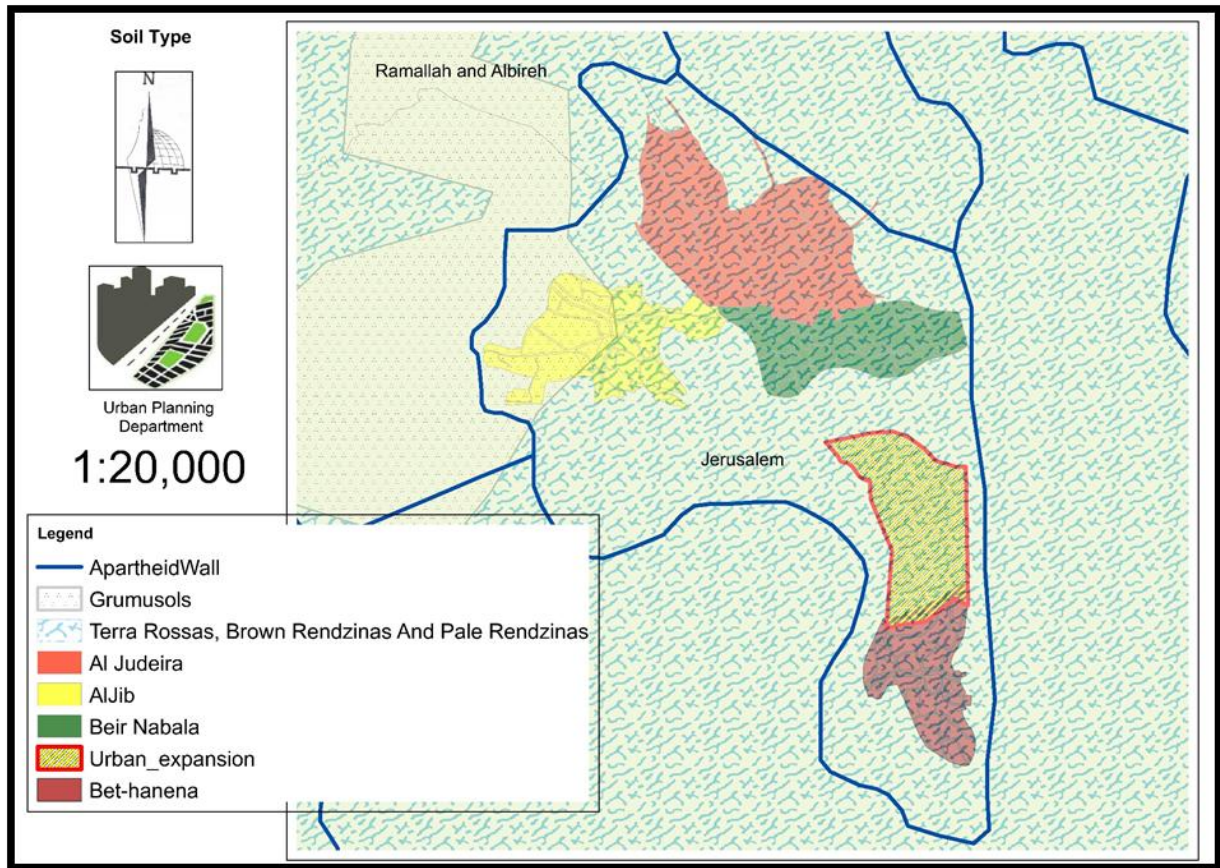


Brown Rendzians



Pale Rendzians

The following map shows the soil types in area study.



Map (34): The soil types.

2.3.7) The current land use:

There are multiple proposed master plans for these communities, the master plan contains the land use, and the types of uses in the study area, there are 2 master plans, one for Bier-Nabala, AL jib, Al-Jedereh (Bier-Nabala Area), and the other for Biet-Hanina.

The total master plan area for Bier-Nabala, Al-Jib, and Al-jedreh is equal 2,879.1 acres, and the total master plan area for Biet-Hanina is equal 581.1 acres.

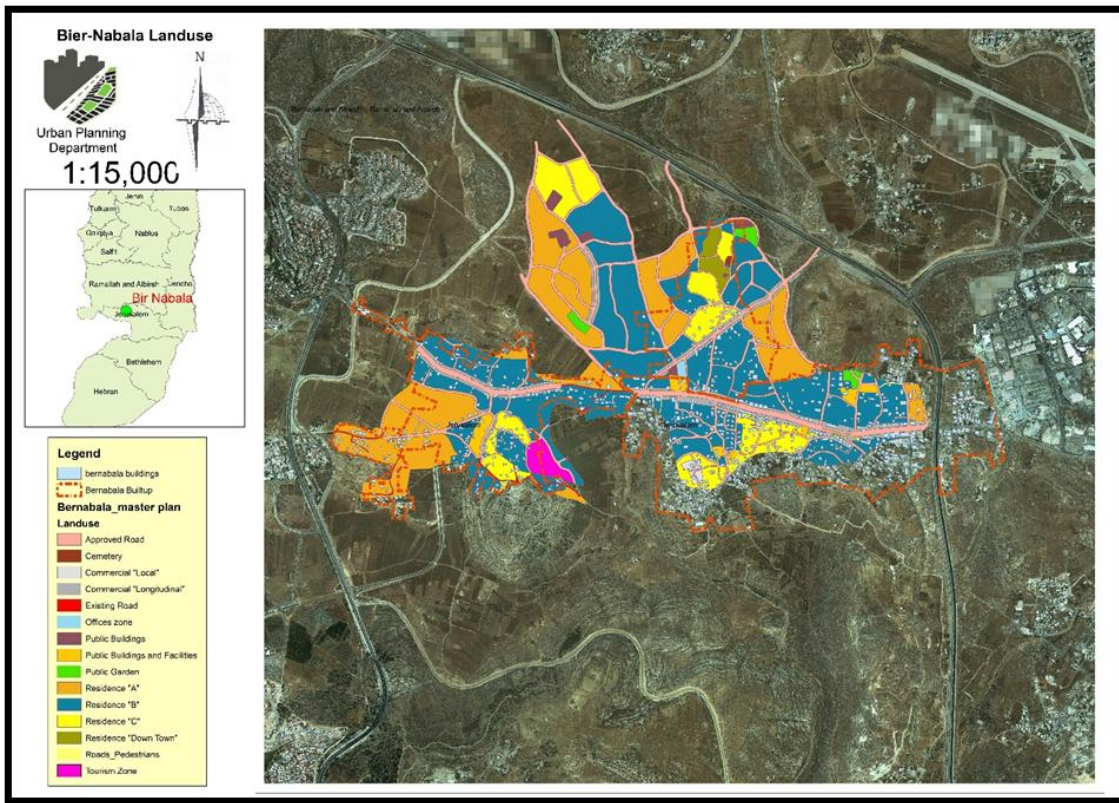
The first master plan for Bier-Nabala Area contains many types of land uses, it contains: Residence (A,B,C,Down town),Cemetery, Commercial, Public buildings and facilities, Existing roads, Approved roads, Offices zone, Public garden, and Tourism zone.

The second master plan for Biet-Hanina contains: Residence (A,B,Down town), Cemetery, Commercial, Public buildings and facilities, Existing roads, and Approved roads.

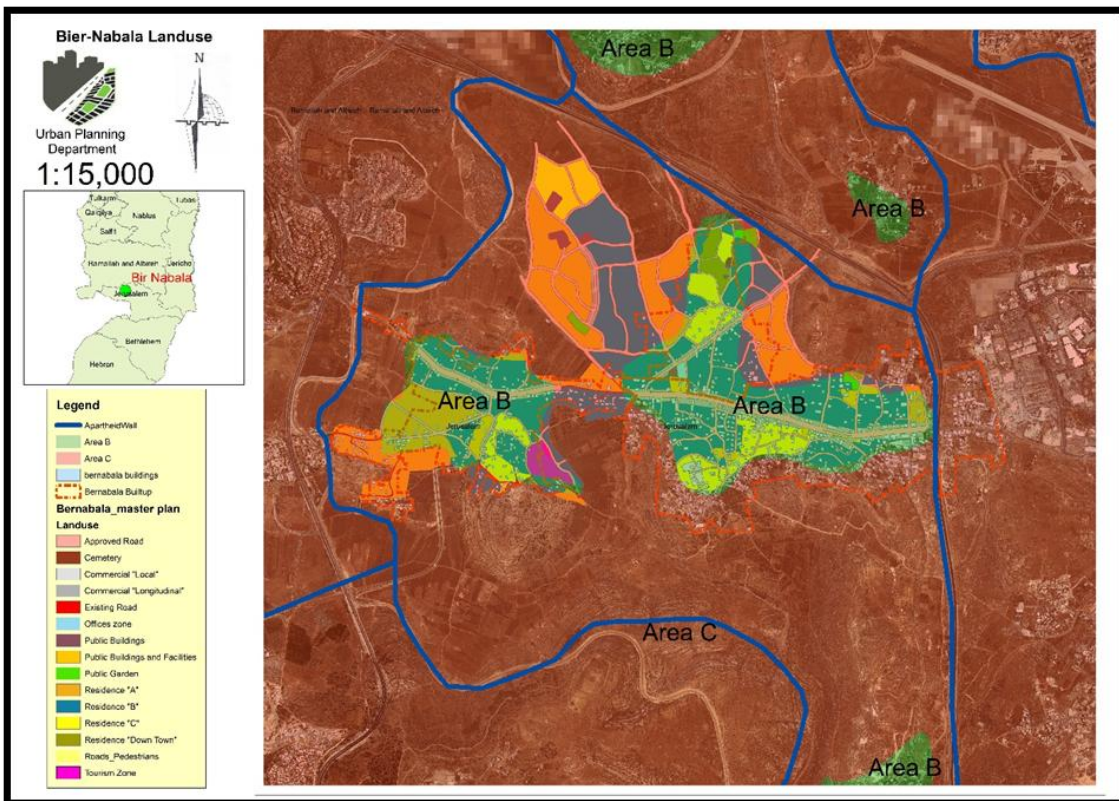
The following tables and map shows the master plans for Bier-Nabala Area, and for Biet-hanina, and the following tables shows the details about the master plan such as landuse, area... etc.

The master plan for Biet-Hanina located in Area B, but the master plan of Bier-Nabala Area has some parts located in Area C, and other parts in Area B.

Bier-Nabala Area:



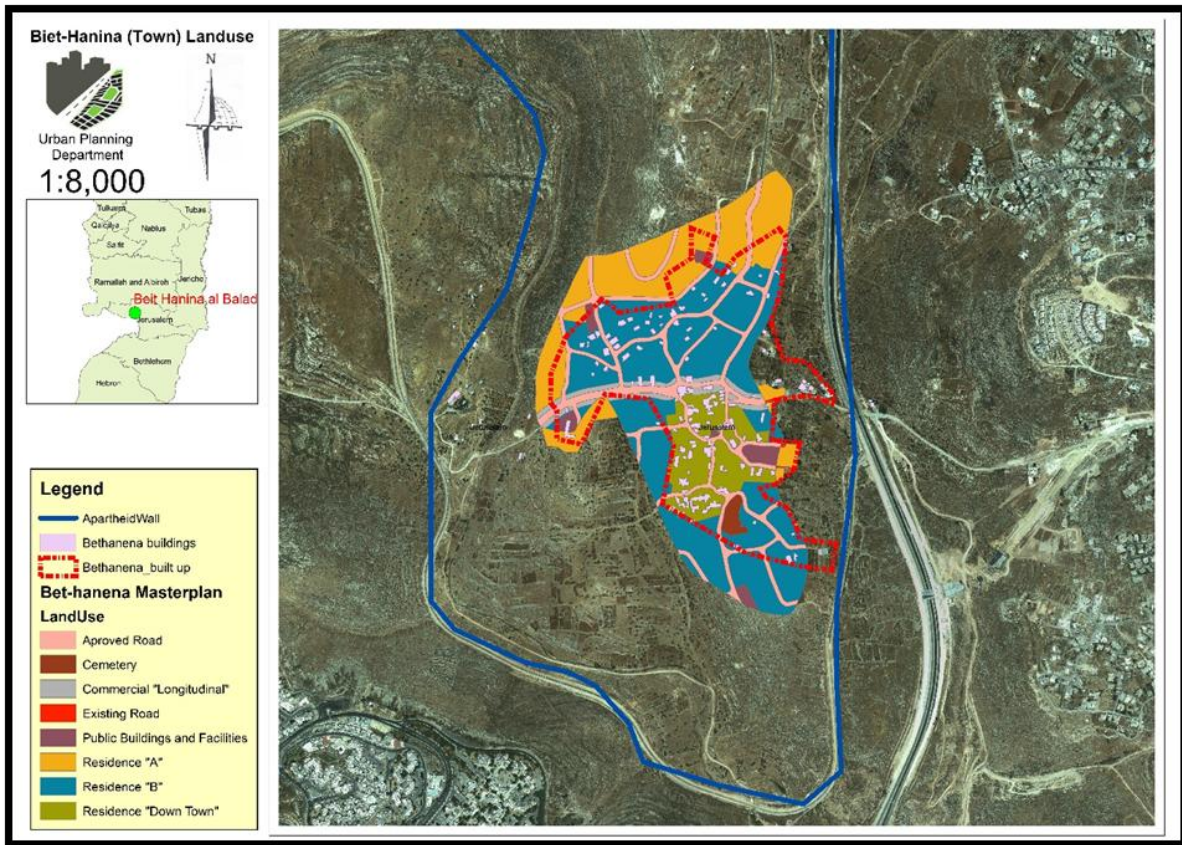
Map (35): Master plan of Bier-Nabala Area without political classification for land.



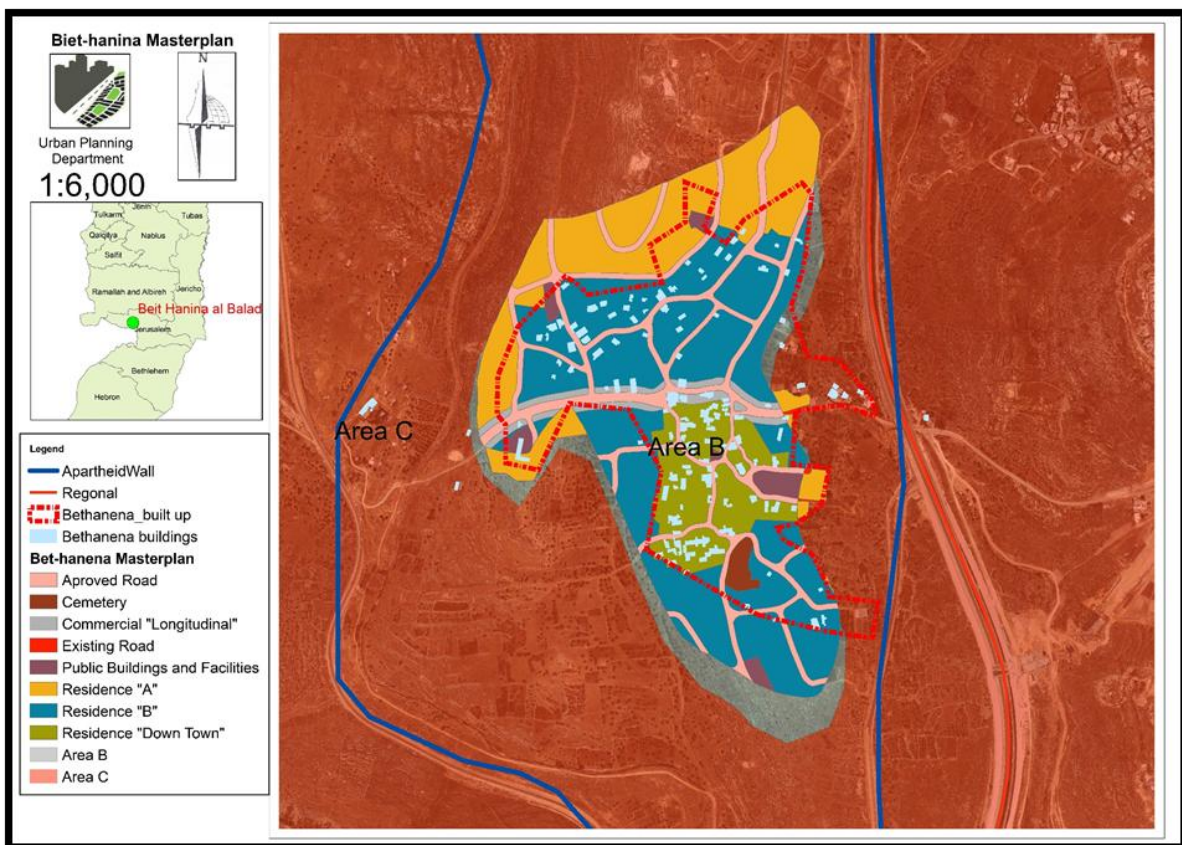
Map (36): Master plan of Bier-Nabala area with political classification for land

The community	Land use	Area	Maximum floor area percentage	Accumulative floor area percentage
Bier-Nabala, Al-Jib, Al-Jidireh	Residence "A"	663958 Sq.m.	36%	180%
	Residence "B"	1169363 Sq.m.	42%	210%
	Residence "C"	286550 Sq.m.	48%	240%
	Residence "Down Town"	30347 Sq.m.	According to the decision of the licensing	According to the decision of the licensing
	Cemetery	2051 Sq.m.	-	-
	Commercial	138386 Sq.m.	70%	420%
	Public Buildings and facilities	71138 Sq.m.	36%	216%
Existing road	19928 Sq.m.	-	-	
Approved road	437314 Sq.m.	-	-	
Offices zone	4034 Sq.m.	According to the decision of the licensing.	According to the decision of the licensing.	
Public garden	24157 Sq.m.	-	-	
Tourism zone	31874 Sq.m.	-	-	
Total	2879.1 Acre			

Biet-Hanina:



Map (37): Master plan of Biet-Hanina without political classification for land.



Map (38): Master plan of Biet-Hanina with political classification for land.

The community	Land use	Area	Maximum floor area percentage	Accumulative floor area percentage
Biet-Hanina	Residence "A"	131820 Sq.m.	36%	180%
	Residence "B"	258649 Sq.m.	42%	210%
	Residence "Down Town"	66165 Sq.m.	According to the decision of the licensing	According to the decision of the licensing
	Cemetery	5347 Sq.m.	-	-
	Commercial	18596 Sq.m.	70%	420%
	Public Buildings and facilities	14147 Sq.m.	36%	216%
	Existing road	770 Sq.m.	-	-
Approved road	85638 Sq.m.	-	-	
Total		581.132 Acre		

2.4) Demographic and social characteristics:

The demographic and social characteristics in the study area are:

Note: the population expected equation is: $p_2 = p_1 \cdot (1+r)^n$

2.4.1) Gender composition of the population:

The gender composition of the populations in study area is variable, for example in Biet-Hanina the percentage of males is more than females in all periods time (1997,2007,2015).

On the other hand, in Bier-Nabala the percentage of Females is more than the percentage of males in 2 periods time (2007, 2015), but in 1997 the percentage of males is more than females.

In general, according to PCBS and the expectation table, the communities have a different percentage in male and female population, in Biet-Hanina and Al-jib the percentage of male is more than female, but in Bier-Nabala and Al-Jedereh the percentage of female is more than male.

Table 7: The population distribution in the study area by gender.

community	Population distribution by gender	1997		2007		2015 (expected)	
		Population number	%	Population number	%	Population number	%
Biet-Hanina	Male	526	51.3%	496	51.3%	397	50.8%
	Female	499	48.7%	470	48.7%	383	49.2%
	Total	1025	100%	966	100%	780	100%
Al-Jib	Male	1730	50.3%	1927	50.6%	1690	50.3%
	Female	1706	49.7%	1878	49.4%	1668	49.6%
	Total	3436	100%	3805	100%	3358	100%
Bier-Nabala	Male	2271	50.4%	2166	49.8%	1404	48.9%
	Female	2228	49.6%	2177	50.2%	1462	51.1%
	Total	4499	100%	4343	100%	2866	100%
Al-Jedereh	Male	784	49.9%	1026	50%	1083	49.8%
	Female	786	50.1%	1026	50%	1091	50.2%
	Total	1570	100%	2052	100%	2174	00%

2.4.2) The population age group structure:

According to the statistics from PCBS, the larger age group in the study area is the group, (10-39), more than half of communities in study area their age in this range.

The following table shows the age group and the population number in each community in study area:

Community	Age group	Population number	percentage
Biet-Hanina	(0-9)	360	35.5%
	(10-39)	469	46.3%
	(40-64)	143	14.2%
	(65 +)	41	4%
	Total	1013	100%
Al-Jib	(0-9)	909	27%
	(10-39)	1798	53.5%
	(40-64)	569	16.9%
	(65 +)	87	2.6%
	Total	3363	100%
Bier-Nabala	(0-9)	839	28.2%
	(10-39)	1457	49.1%
	(40-64)	532	17.9%
	(65 +)	138	4.8%
	Total	2966	100%
Al-Jedereh	(0-9)	624	28.7%
	(10-39)	1134	52%
	(40-64)	377	17.4%
	(65 +)	43	1.9%
	Total	2178	100%

Table 8:Age groups and population number.

Ref: PCBS.

2.4.2.1) Distribution of the population in the study area by gender and detailed age groups:

This section is about the distribution of population by gender in each community in study area, the data in the following done by the researcher, by using a population data for 1997 and 2007 from PCBS, and using the following equation to find the population in 2015:

1-Biet-Hanina:

Age group	Male	Female	Total
	Number	Number	Number
0-4	59	126	185
4-9	54	121	175
10-14	62	78	140
15-19	48	41	89
20-24	34	32	66
25-29	31	32	63
30-34	38	40	78
35-39	13	19	32
40-44	20	23	43
45-49	12	6	18
50-54	15	20	35
55-59	5	21	26
60-64	2	19	21
65+	11	31	41
Total	404	609	1013

Table 9: The expected population number and age group in 2015 (Biet-Hanina).

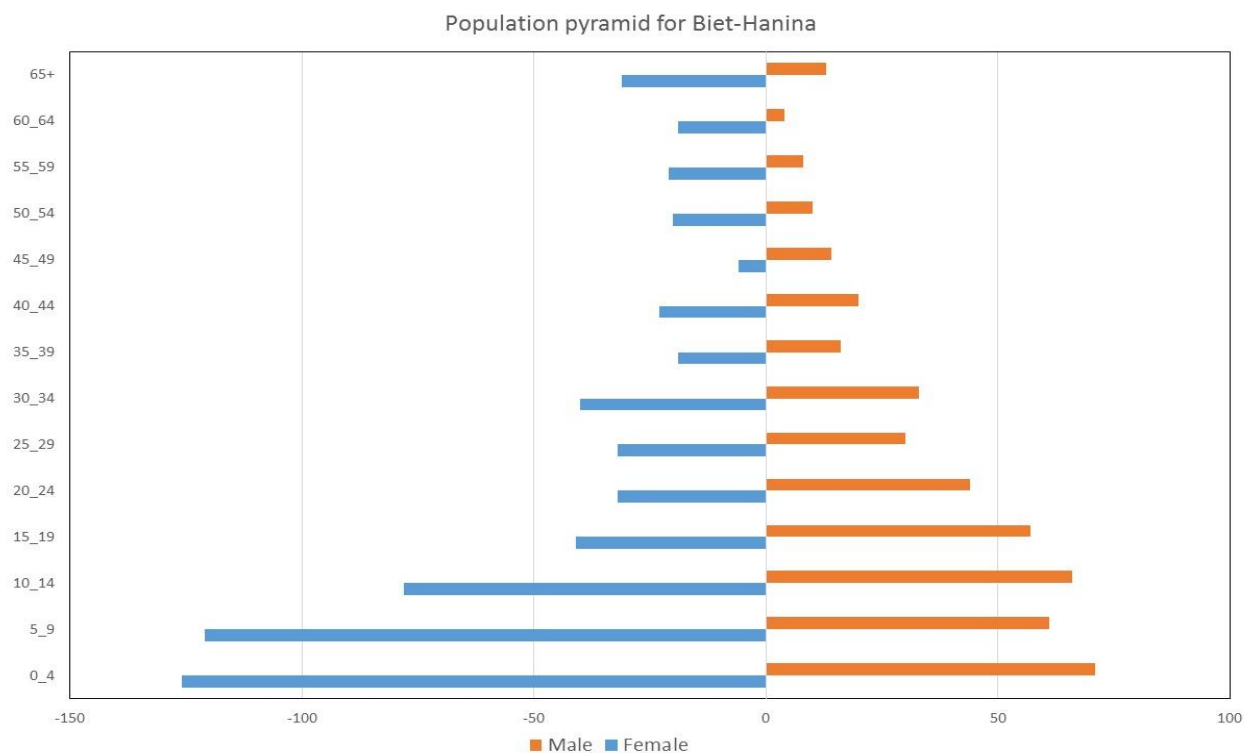


Figure 7: The population distribution by age group and gender (Biet-Hanina).

2-Al-Jib:

Age group	Male	Female	Total
	Number	Number	Number
0-4	175	188	363
4-9	268	278	546
10-14	212	237	449
15-19	179	154	333
20-24	144	114	258
25-29	124	135	259
30-34	150	111	261
35-39	117	121	238
40-44	131	101	232
45-49	60	77	137
50-54	30	34	64
55-59	42	37	79
60-64	21	36	57
65+	41	46	87
Total	1694	1669	3363

Table 10: The expected population number and age group in 2015 (Al-Jib).

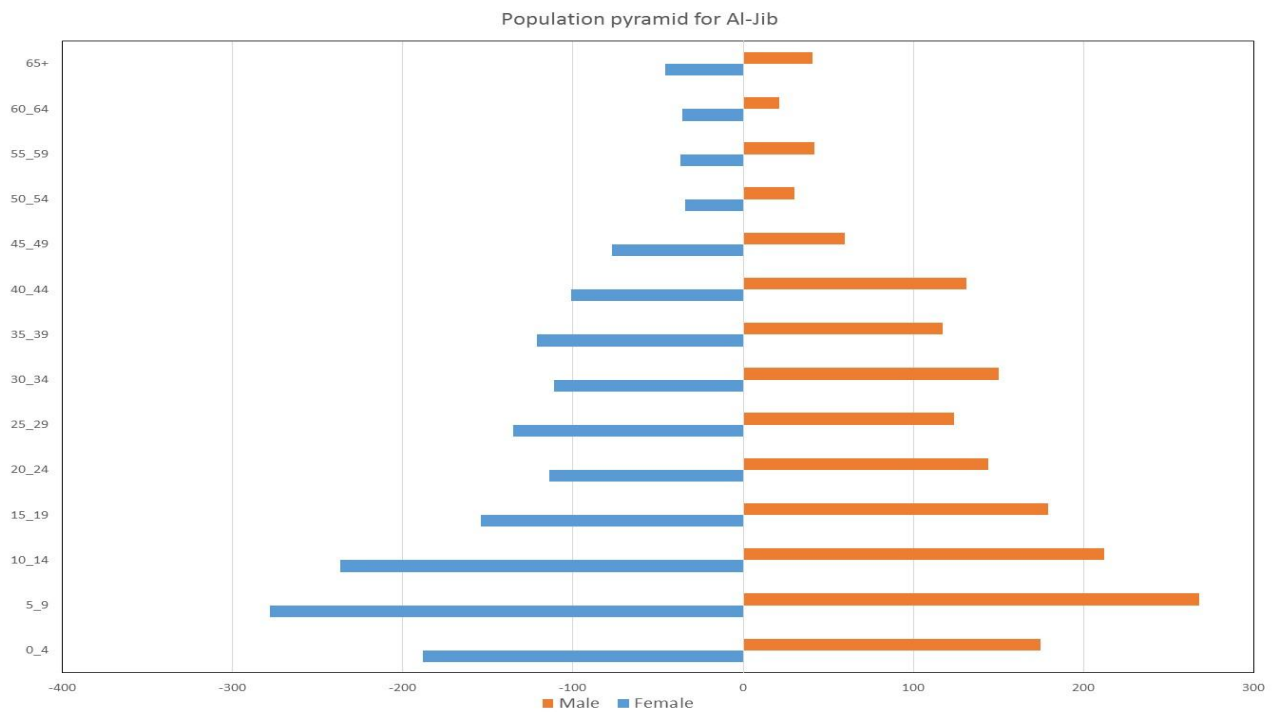


Figure 8: The population distribution by age group and gender (Al-Jib).

3-Bier-Nabala:

Age group	Male	Female	Total
	Number	Number	Number
0-4	202	280	482
4-9	195	162	357
10-14	242	204	446
15-19	130	194	324
20-24	89	82	171
25-29	81	106	187
30-34	62	65	127
35-39	78	124	202
40-44	115	103	218
45-49	69	78	147
50-54	41	24	65
55-59	37	28	65
60-64	12	25	37
65+	52	86	138
Total	1405	1561	2966

Table (12): Table 11: Age group and gender in Bier-Nabala.

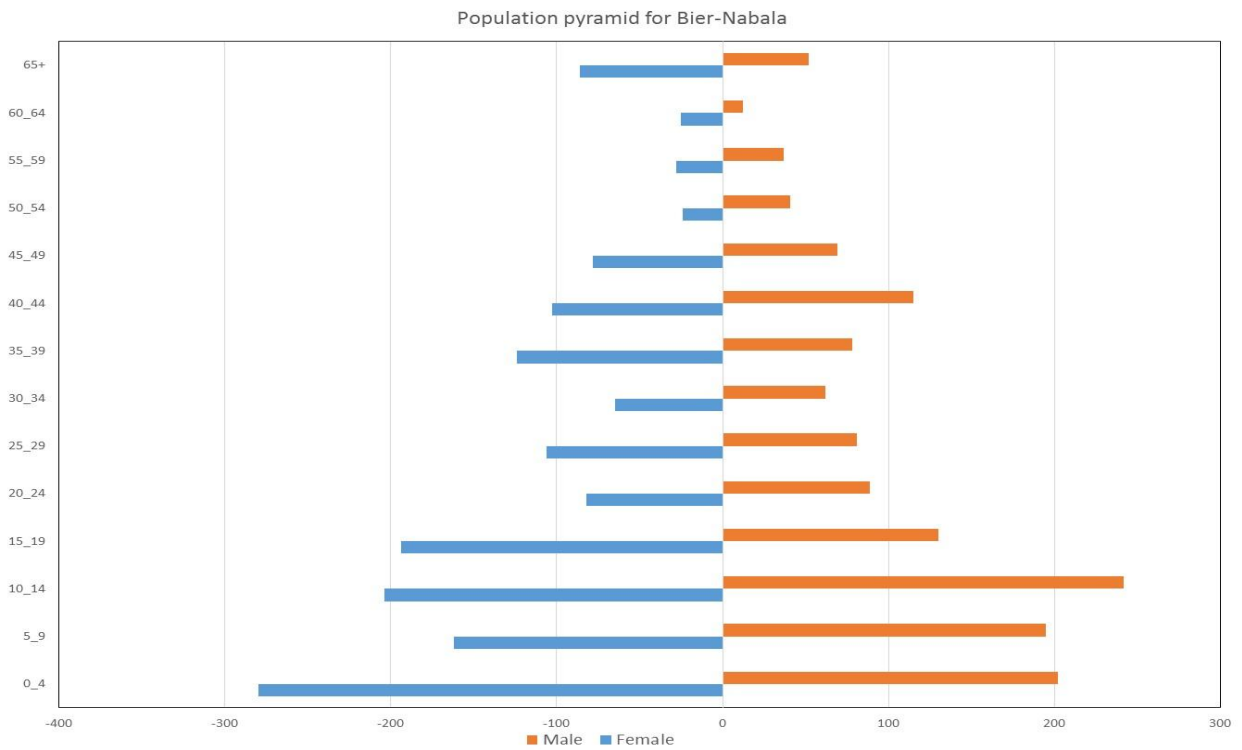


Figure 9: The population distribution by age group and gender (Bier-Nabala).

4-Al-Jedereh:

Age group	Male	Female	Total
	Number	Number	Number
0-4	137	160	297
4-9	195	132	327
10-14	177	135	312
15-19	88	108	196
20-24	51	76	127
25-29	114	129	243
30-34	94	81	175
35-39	45	36	81
40-44	38	70	108
45-49	52	70	122
50-54	28	19	47
55-59	14	15	29
60-64	28	43	71
65+	23	20	43
Total	1084	1094	2178

Table 12: Age group and gender in Al-Jedereh.

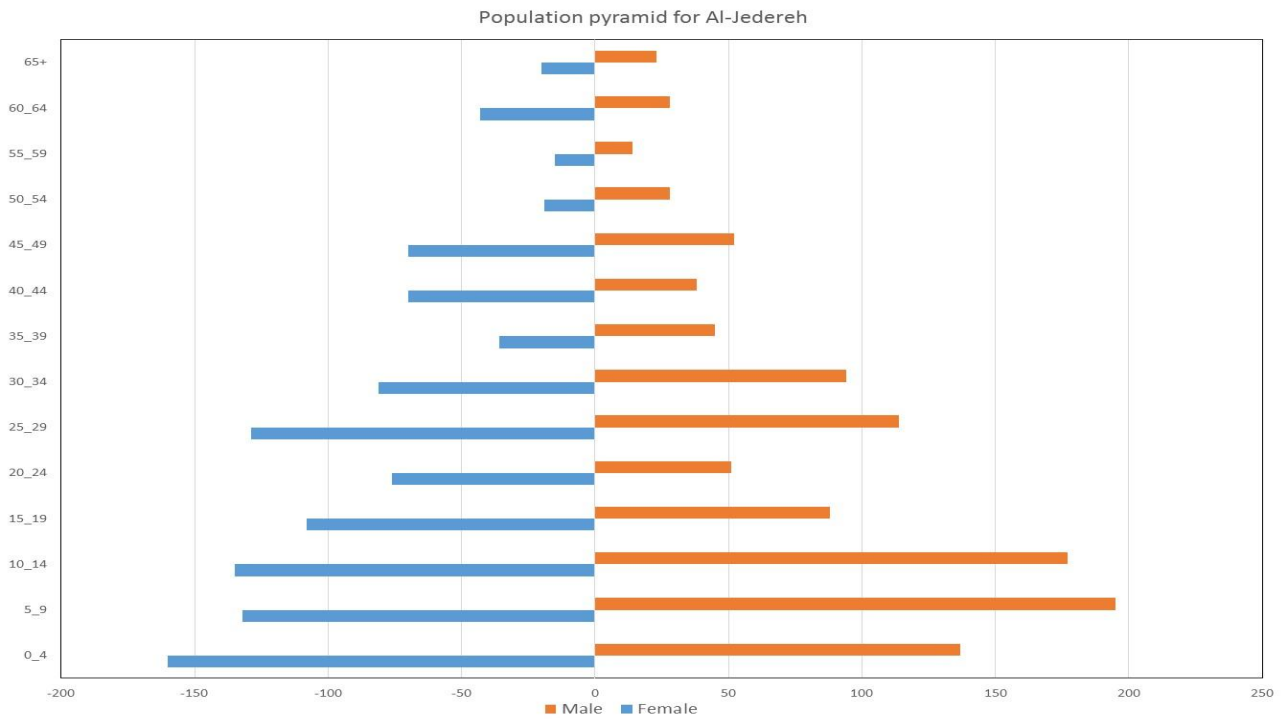


Figure 10: population distribution by age group and gender (Al-Jedereh).

2.4.3) An expectation in increasing in population number:

According to the population number in the study area, for 1997 and 2007, the IPCC studied these numbers that they collected them from PCBS, and they expected the number of population in 2030, also the assumed 3 different assumptions for population number in 2030.

The assumptions are:

- 1-Normal increasing in population number.
- 2-Normal increasing in population number with positive immigration to the study area.
- 3-Decrasing in population number due to immigration from communities.

The following table shows the expected population number in 2030 with three assumptions.

The community	Population number in 1997	Population number in 2007	1 st assumption (pop. # in 2030)	2 nd assumption (pop. # in 2030)	3 rd assumption (pop. # in 2030)
Biet-Hanina	1025	966	1375	1554	1841
Al-Jib	3436	3805	5415	6121	7250
Bier-Nabala	4499	4343	6180	6987	8275
Al-Jedereh	1570	2052	2920	3301	3910

Table 13: expected population number in 2030 with three assumptions.

Reference: IPCC, 2010.

The study of IPCC recommended to work on the assumption of increasing in population number.

2.4.4) The immigration from and to the study area:

Since there are no official statistics for the number of birth and death in the study area, it is not easy to specify the population growth, so the normal population growth of West Bank can be used to compare it with normal growth for each community and find the percentage of immigration for each community, but this process is not accurate, because of the immigration that has been happened between 1997 and 2007 due to build apartheid wall especially from Bier-Nabala and Biet-Hanina(Town),to preserve the Jerusalem ID card.

2.4.5) The immigration status:

Biet-Hanina(Town):

The following table shows the number of refugees and non-refuges in Biet-Hanina, most people in the area are non-refuges, and 26.6% are refugees.

There are some citizens not registered as refugees or non-refuges, they considered as unknown status.

Immigrants status	Male		Female		Total	
	Population number	Percentage	Population number	Percentage	Population number	Percentage
Registered refugees	141	28.4%	116	24.7%	257	26.6%
Non-Registered refugees	26	5.3%	27	5.8%	53	5.5%
Non-refuges	278	56%	274	58.3%	552	57.2%
unknown	51	10.3%	53	11.2%	104	10.7%
Total	496	100%	470	100%	966	100%

Table 14: The immigration status in Biet-Hanina.

Reference: PCBS.

Al-Jib:

The following table shows the number of refugees and non-refugees in Al-Jib, most people in the area are non-refugees, and 8.7% are refugees.

There are some citizens not registered as refugees or non-refugees, they considered as unknown status, their percentage is 12.38%

Immigrants status	Male		Female		Total	
	Population number	Percentage	Population number	Percentage	Population number	Percentage
Registered refugees	157	8.1%	176	9.4%	333	8.7%
Non-Registered refugees	12	0.62%	16	0.85%	28	0.76%
Non-refuges	1,503	78.08%	1,469	78.20%	2,972	78.16%
Unknown	255	13.2%	217	11.55%	472	12.38%
Total	1,927	100%	1,878	100%	3,805	100%

Table 15:the immigration status in AL-jib.

Reference: PCBS.

Bier-Nabala:

The following table shows the number of refugees and non-refugees in Biet-Hanina, most people in the area are non-refugees, and 26.6% are refugees.

There are some citizens not registered as refugees or non-refugees, they considered as unknown status.

Immigrants status	Male		Female		Total	
	Population number	Percentage	Population number	Percentage	Population number	Percentage
Registered refugees	457	21.2%	469	21.6%	926	21.4%
Non-Registered refugees	46	2.1%	46	2.1%	92	2.1%
Non-refuges	1,200	55.4%	1,209	55.7%	2,409	55.6%
Unknown	461	21.3%	448	20.6%	909	20.9%
Total	2,164	100%	2,172	100%	4,336	100%

Table 16:The immigration status in Biet-Hanina.

Reference: PCBS.

Al-Jedereh:

The following table shows the number of refugees and non-refuges in Biet-Hanina, most people in the area are non-refuges, and 26.6% are refugees.

There are some citizens not registered as refugees or non-refuges, they considered as unknown status.

Immigrants status	Male		Female		Total	
	Population number	Percentage	Population number	Percentage	Population number	Percentage
Registered refugees	27	2.6%	50	4.8%	77	
Non-Registered refugees	-	0%	2	0.2%	1	
Non-refuges	876	85.4%	857	83.7%	1,733	
Unknown	123	12%	115	11.3%	238	
Total	1,026	100%	1,024	100%	2,049	

Table 17: The immigration status in Biet-Hanina.

Reference: PCB

2.4.6) The population density:

There are a differences in the 4 communities (Bier-Nabala, Al-Jib, Biet-Hanina, Al-Jedereh), for Bier-Nabala, Al-Jib and Aljedreh the number of population in 2007 is equal 4,343 people and the total area of 10,200 people, and the total area for these communities is equal 2,879.1 acres, the population density is equal 3.54 persons/ acre, this density is low.

The number of population in Biet-Hanina is equal 966, and the total area of Biet-Hanina is equal 581.1 acres, with population density equal 1.66 person/acre, which is low density comparing with Bier-Nabala area (Bier-Nabala, Al-Jib, A-Jedereh).

2.5) The community facilities:

2.5.1) The education and the regional places:

The study area contains the primary schools and the primary schools, the total number of schools in the area are equal 22 primary and secondary schools, and kindergarten, the following table shows the number of primary and secondary schools and which school for boys, girls or co-education.

2.5.1.1) The education in Biet-Hanina:

Biet-Hanina contains 3 educational facilities, it contains kindergarten, and secondary school, but Biet-Hanina needs a secondary school for boys, because there is no any secondary school for boys (government school), and also needs a primary school for boys and girls.

The total number of educational facilities in Biet-Hanina are equal 3.

The following table shows the educational facilities in Biet-Hanina.

Gender/school type	Kindergarten	Primary	Secondary	Mixed
Boys	0	0	0	0
Girls	0	0	1	0
Co-education	1	1	0	0
Total	1	1	1	0

Table 18: Educational facilities in Biet-Hanina.

Reference: IPCC, 2010.

2.5.1.2) The education in Al-Jib:

Al-Jib contains 9 educational facilities, it contains kindergarten, primary schools, and secondary schools, there is no any problem in the education facilities in Al-Jib.

The following table shows the educational facilities in Al-Jib.

Gender/school type	Kindergarten	Primary	Secondary	Mixed
Boys	0	1	1	0
Girls	0	2	1	1
Co-education	2	1	0	0
Total	2	4	2	1

Table (20): Table 19: Educational facilities in Al-Jib.

Reference: IPCC, 2010.

2.5.1.3) The education in Bier-Nabala:

Bier-Nabala contains 8 educational facilities, it contains kindergarten, primary schools, and secondary schools, but Bier-Nabala has a lack in educational facilities, it needs a secondary school for boys, because there is no any secondary school for boys (government school).

The following table shows the educational facilities in Bier-Nabala.

Gender/school type	Kindergarten	Primary	Secondary	Mixed
Boys	0	1	0	0
Girls	0	1	1	0
Co-education	2	2	1	0
Total	2	4	2	0

Table 20: Educational facilities in Bier-Nabala.

Reference: IPCC, 2010.

2.5.1.4) The Education in Al-Jedereh:

Al-Jedereh contains 2 educational facilities, it contains kindergarten, primary school for girls, but there are no any secondary schools for boys or for girls, there is a lack in secondary schools, and also there is a lack in primary schools for boys.

Al-Jedereh contains the least number of education facilities comparing with other communities in study area.

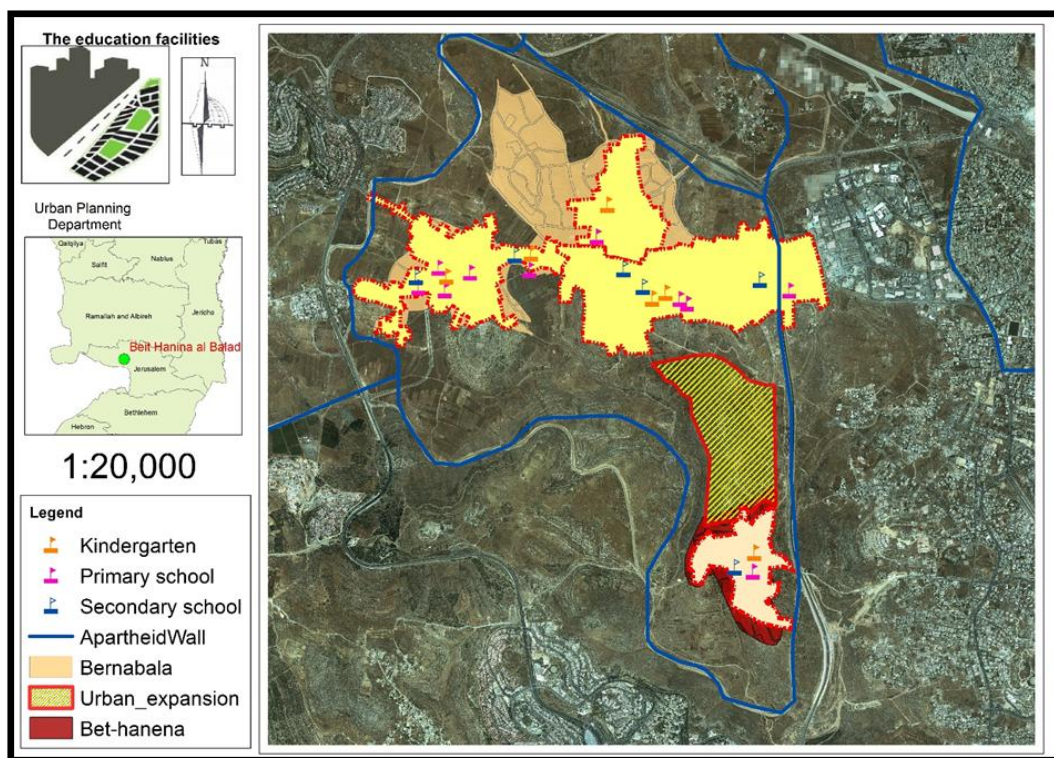
The following table shows the educational facilities in Bier-Nabala.

Gender/school type	Kindergarten	Primary	Secondary	Mixed
Boys	0	0	0	0
Girls	0	1	0	0
Co-education	1	0	0	0
Total	1	1	0	0

Table 21: Educational facilities in Al-Jedreh.

Reference: IPCC, 2010.

The following map shows the schools and kindergartens in the study area:



Map (39): The education facilities in study area.

Reference: IPCC, 2010.

2.5.1.5) The Regional facilities:

All the religious places in the study area are mosques, there is no any church in the study area, the total number of mosques in study area equal 6 mosques.

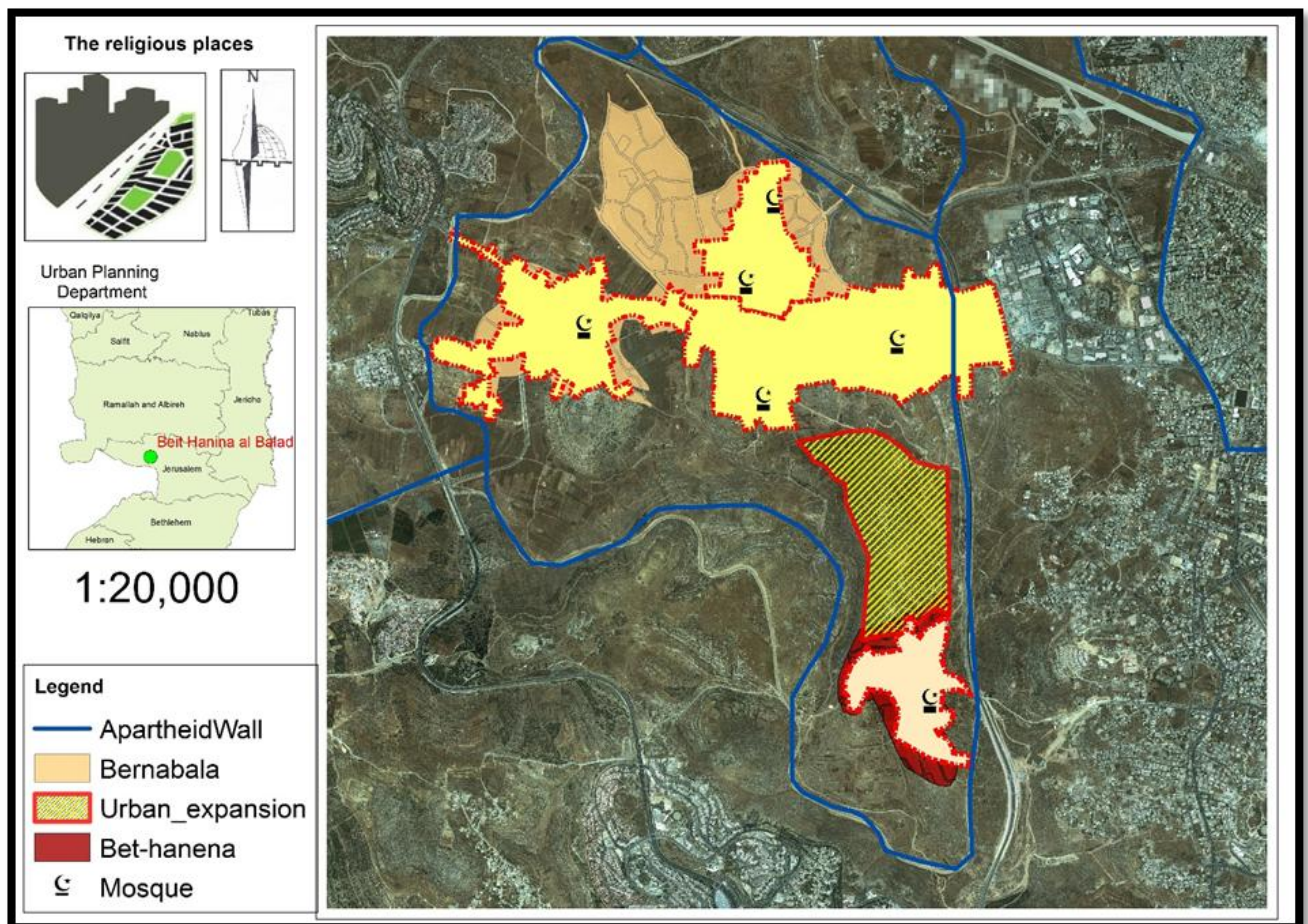
The following table shows the distribution of mosques in study area:

Community	Number of mosques
Biet-Hanina	1
Al-Jib	1
Bier-Nabala	2
Al-Jedereh	2

Table 22: Number of mosques in study area.

Reference: IPCC, 2010.

The following map shows the distribution of mosques in study area:



Map (40): The mosques distribution in study area.

Reference: IPCC, 2010. MOLG.

2.5.2) Health facilities:

In the study area there are some health facilities, such as hospital, clinic, and health center. In Bier-Nabala there is a hospital (Al-Quds hospital), it contains many departments, but there are some departments not effective, such as: department of Obstetrics and department of surgeries, but there are other departments are effective such as: X-ray department, there are a pharmacy and lab.

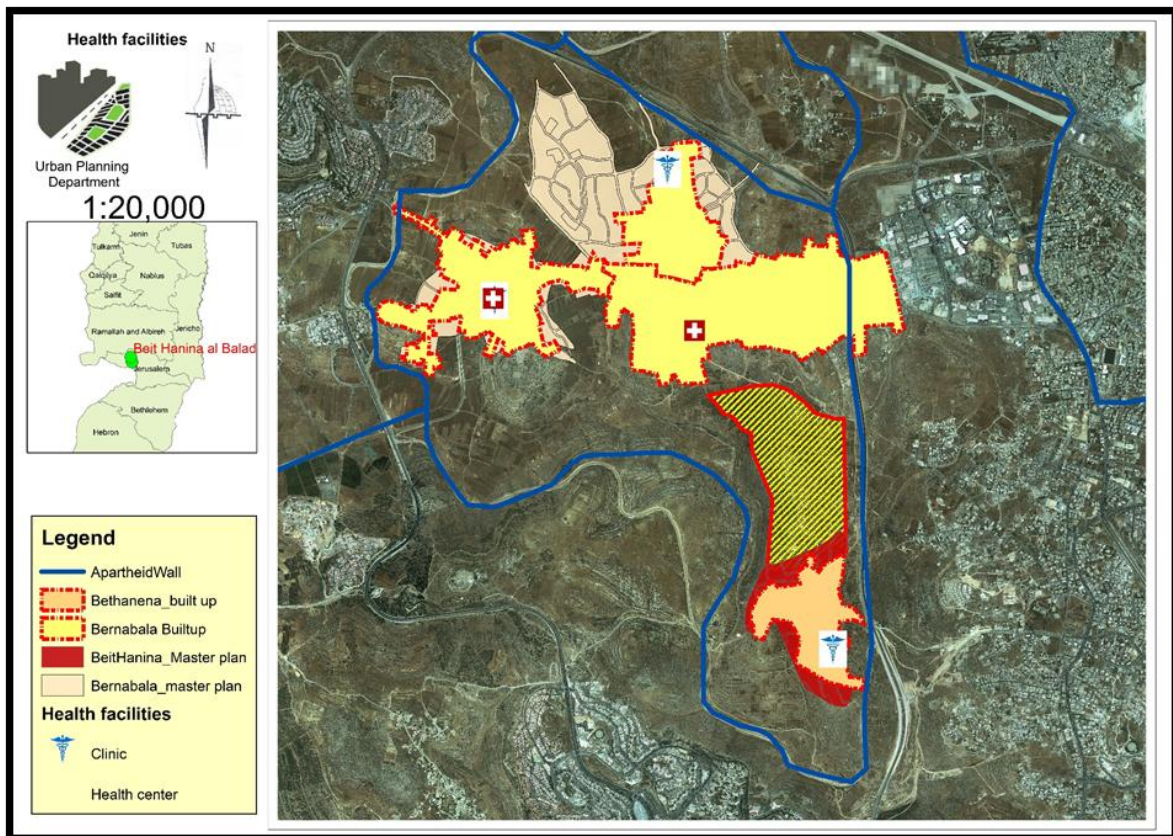
In other communities in study area there are other clinic, dentist clinic and emergency clinic.

The following table shows the health facilities in study area:

Community	Type
<i>Biet-Hanina</i>	1 Clinic
<i>Al-Jib</i>	1 Clinic, 1 Health center
<i>Bier-Nabala</i>	1 Hospital with clinic
<i>Al-Jedereh</i>	1 Clinic

Table 23:health facilities in study area.

Reference: IPCC,2010.



Map (41): The health facilities in study area.

Reference: IPCC,2010. MOLG.

2.5.3) The cultural, social, and recreational facilities:

The study area contains many cultural, social, and recreational facilities, Bier-Nabala contains many facilities and there is diversity in these facilities, such as: halls, public garden, and feminist center, also Biet-Hanina and Al-Jib contains many facilities on the other hand, Al-Jedereh contains the least number of these facilities.

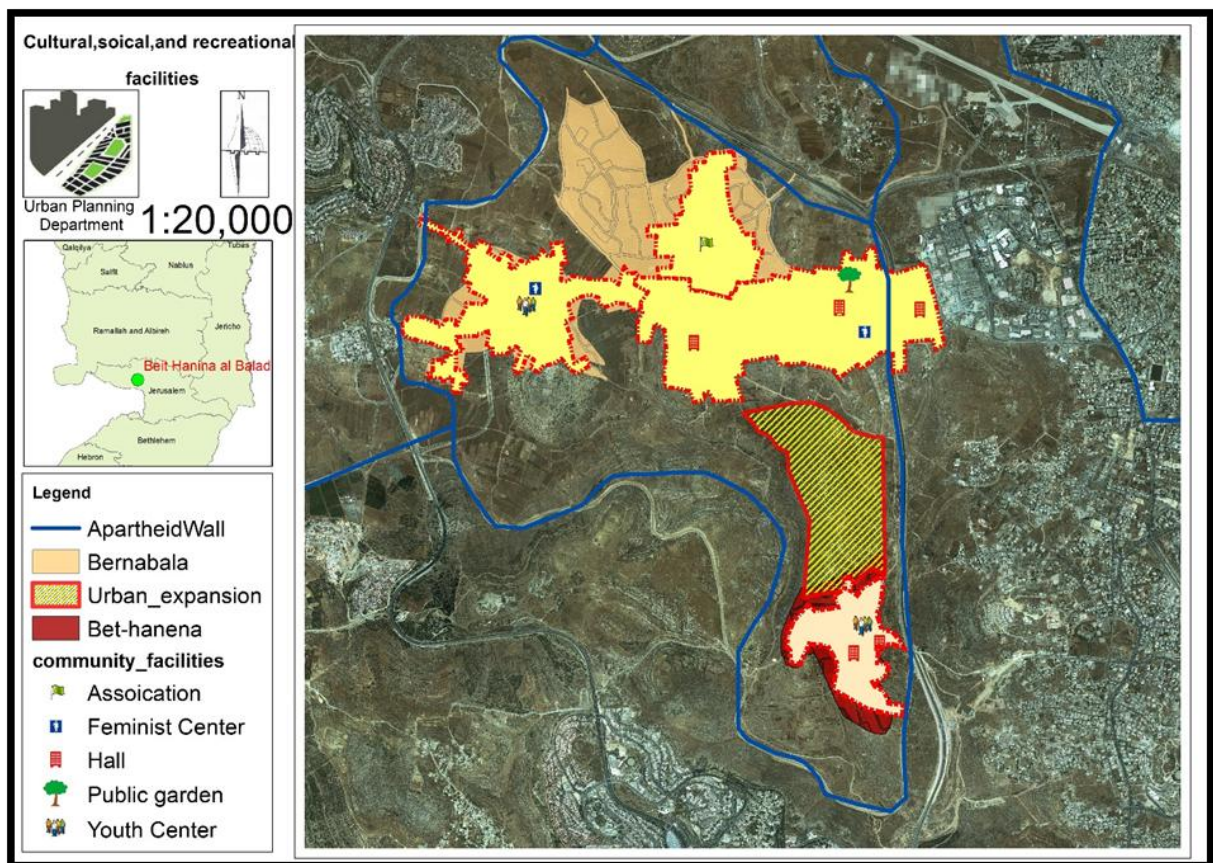
The following table shows the cultural, social, and recreational facilities in study area:

community	Type of facility
Biet-Hanina	2 Wedding halls, Youth center
Al-Jib	2 Youth centers, Feminist center.
Bier-Nabala	Feminist center, 3 wedding hall, public garden.
Al-Jedereh	Association.

Table 24: The cultural, social, and recreational facilities.

Ref:

The following map shows the cultural, social, and recreational facilities:



Map (42): The cultural, social, and recreational facilities in study area.

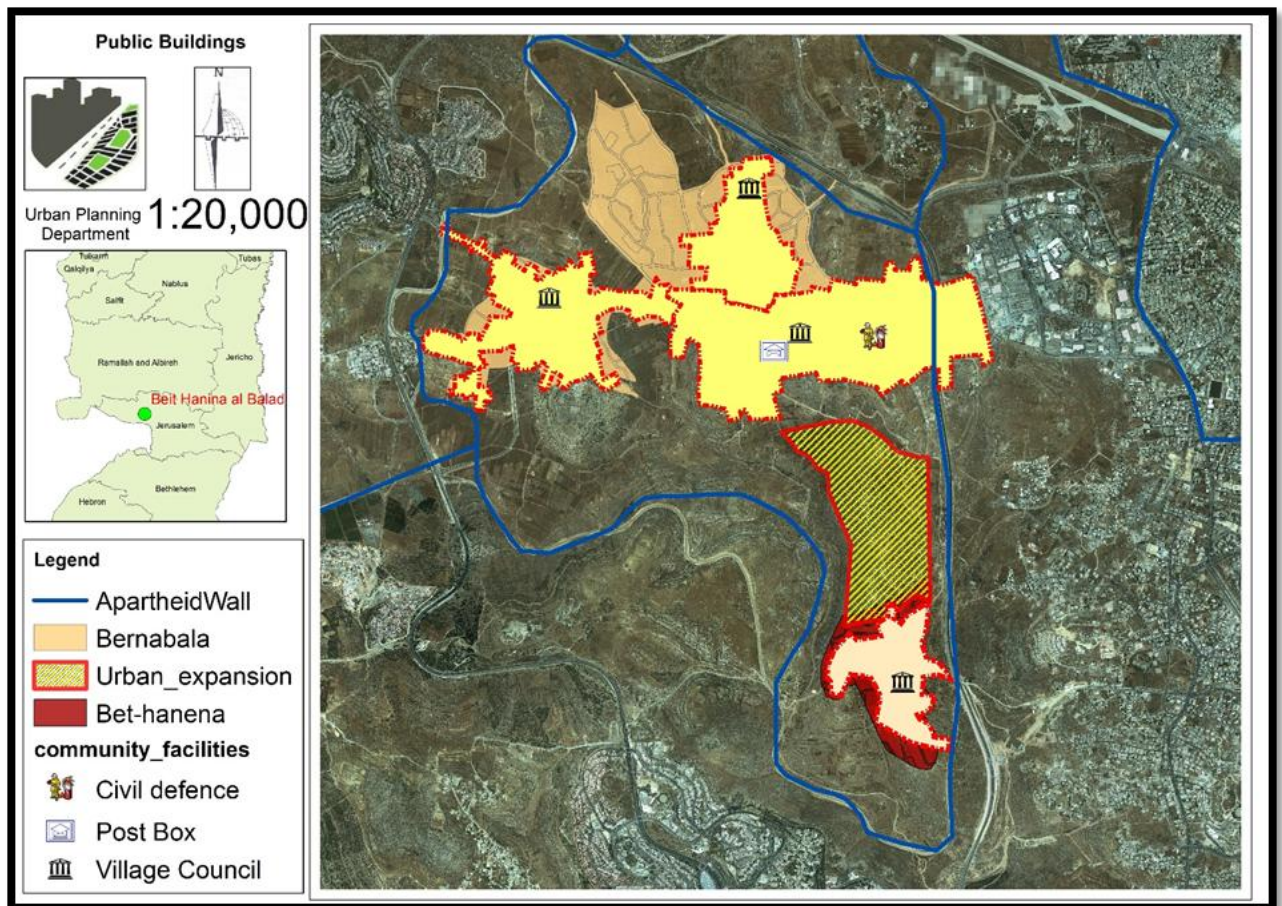
Ref: IPCC,2010. MOLG.

2.5.4) Public Buildings:

The study area has many public buildings that has a specific function, each building can serve the residence, the village council, civil defense and other buildings is government buildings, Local government and other ministries are responsible for managing the communities by using these buildings.

In each community in study area there is a village council, but just Bier-Nabala has a civil defense and post office.

The following map shows the public building in study area:



Map (43): Public Buildings in study area.

Ref:IPCC,2010.MOLG.

2.6) The infrastructure:

This chapter is about the infrastructure in the study area, it contains many infrastructure services such as: Road network, Water supply, Sewage network, and other services.

There are some differences in the quality of infrastructure services in the study area, some communities have a lack in sewage network services, and other communities has an old Water supply network needs a renewable.

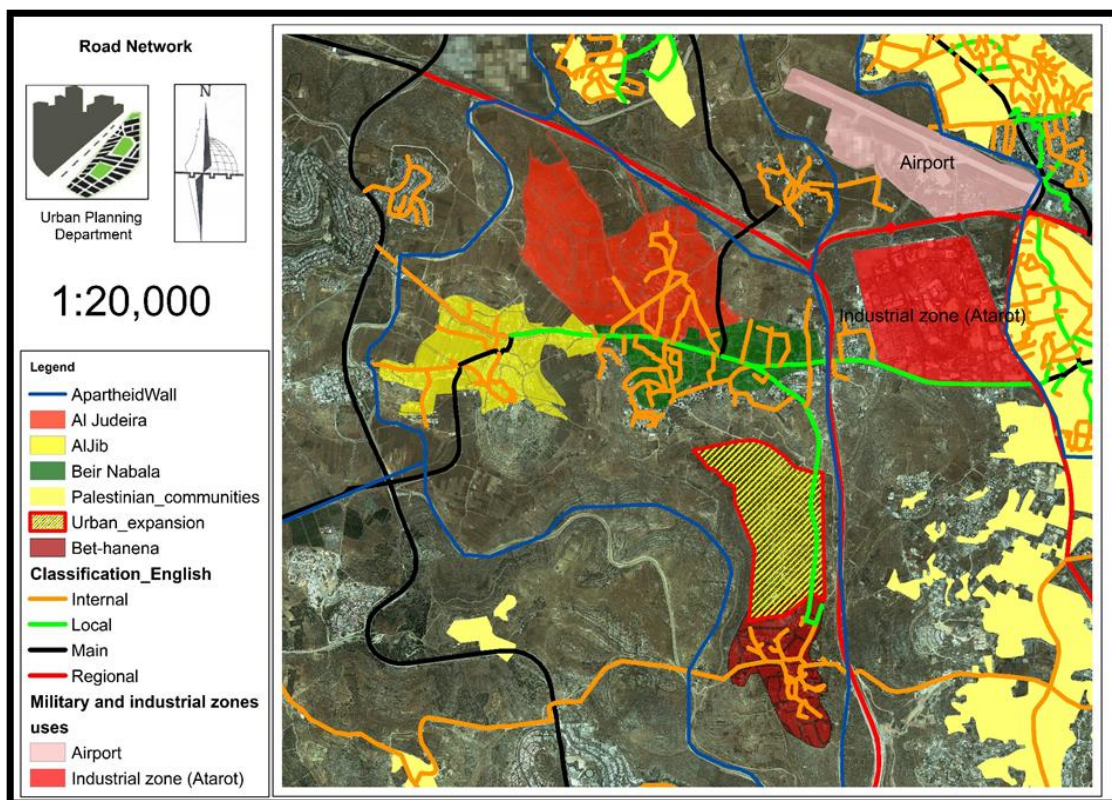
The infrastructure services are:

2.6.1) Road Network:

The study area has many types of road, it has a local, internal, and main road network, from the north there is a main road that connect the study area with Ramallah city, from east there is no any connection due to apartheid wall, from south there is no any connection to the surrounding, but from the west there is a connection between Al-Jib and Bido (a Palestinian community locate in the west of study area), but the road connection is under the main street and apartheid wall (subway).

These is also a road connection between Al-Jib and Givat- Ze'ev settlement but there is an Israeli checkpoint, just who holding a Jerusalem ID can pass it.

The following map shows the road connection in study area:



Map

(44): The road network in study area.

Ref: IPCC, 2010. MOLG

The main road between Ramallah and study area has a good situation in general, although this road has a barbed wire created by Israeli occupation to save their settlers and locate under subway, but the internal road and local road in the study area in bad condition, and need maintenance.

The best road network in the study area are (road 443, 436, 404, and 45) but all these roads are prevented to use it by Palestinians.

The following pictures show the road condition in the study area (from the Best to the worst).



2.6.2) Water Supply:

In study area there is a water supply network for all built up area, but the condition of this network is bad, and need a maintenance, according to Jerusalem Water Undertaking (JWU) in Bier-Nabala and Al-Jedereh there is a project to maintain the water network, financier by KFW, and the total cost of this project around 880,153 €, but Biet-Hanina and Al-Jib has a bad condition network.

Springs and wells is another source of water supply in study area expect Al-Jedereh, there is 9 springs and wells distributed in the communities in study area, all these sources can be used by human.

The study area has an extreme vulnerable area for pollution, also some parts has a moderate and non-sensitive to vulnerable area for pollution.

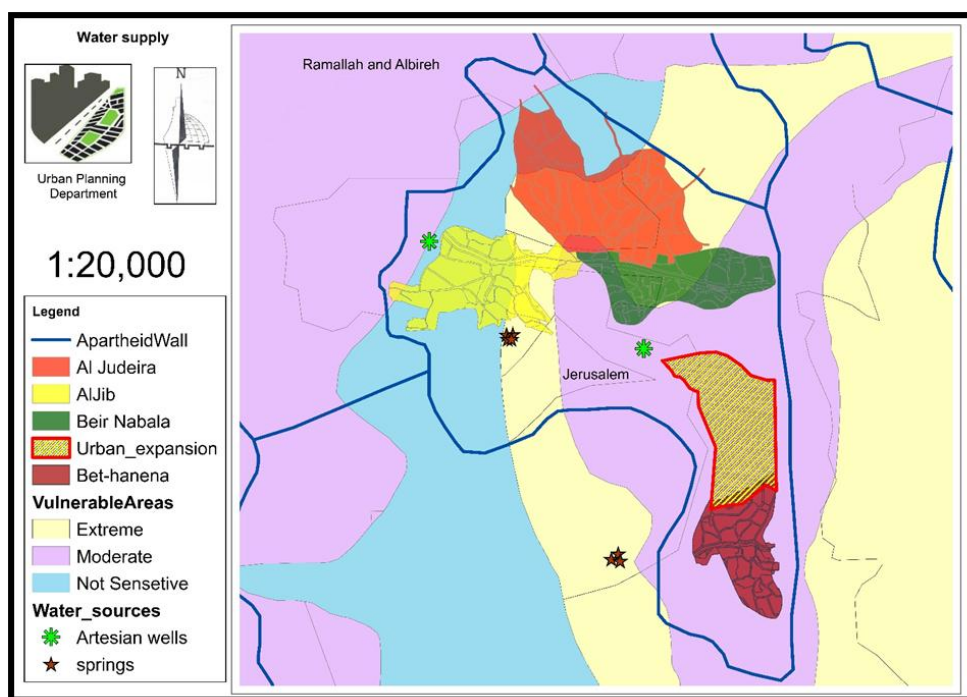
The following table shows the number of wells and springs:

The Community	Wells	Springs
<i>Biet-Hanina</i>	0	3
<i>Al-Jib</i>	1	4
<i>Bier-Nabala</i>	1	0
<i>Al-Jedereh</i>	0	0

Table 25: The distribution of water supply in study area.

Ref: IPCC,2010.

The following map shows the location of the water supply in the study area.

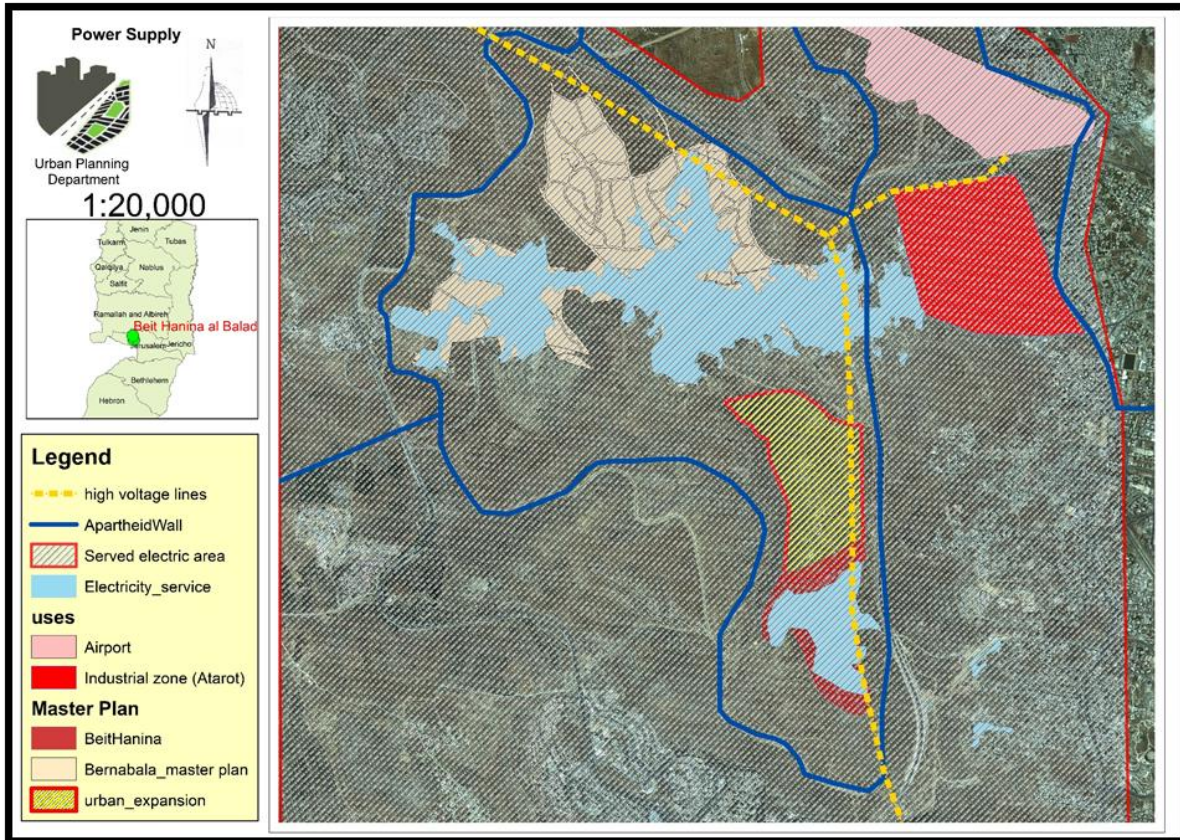


Map(45): The water supply in study area. Ref: IPCC,2010. MOLG.

2.6.3) Power supply:

All the study area provided with electricity network, also most areas has lighting streets expect the expansion area, it needs a lighting street network, the study area also contains a high voltage line that comes from near industrial zone (Atarout), which provide the study area with electricity.

The following map shows the power supply to the study area.



Map (46): Power supply in study area.

Ref: IPCC,2010. MOLG.

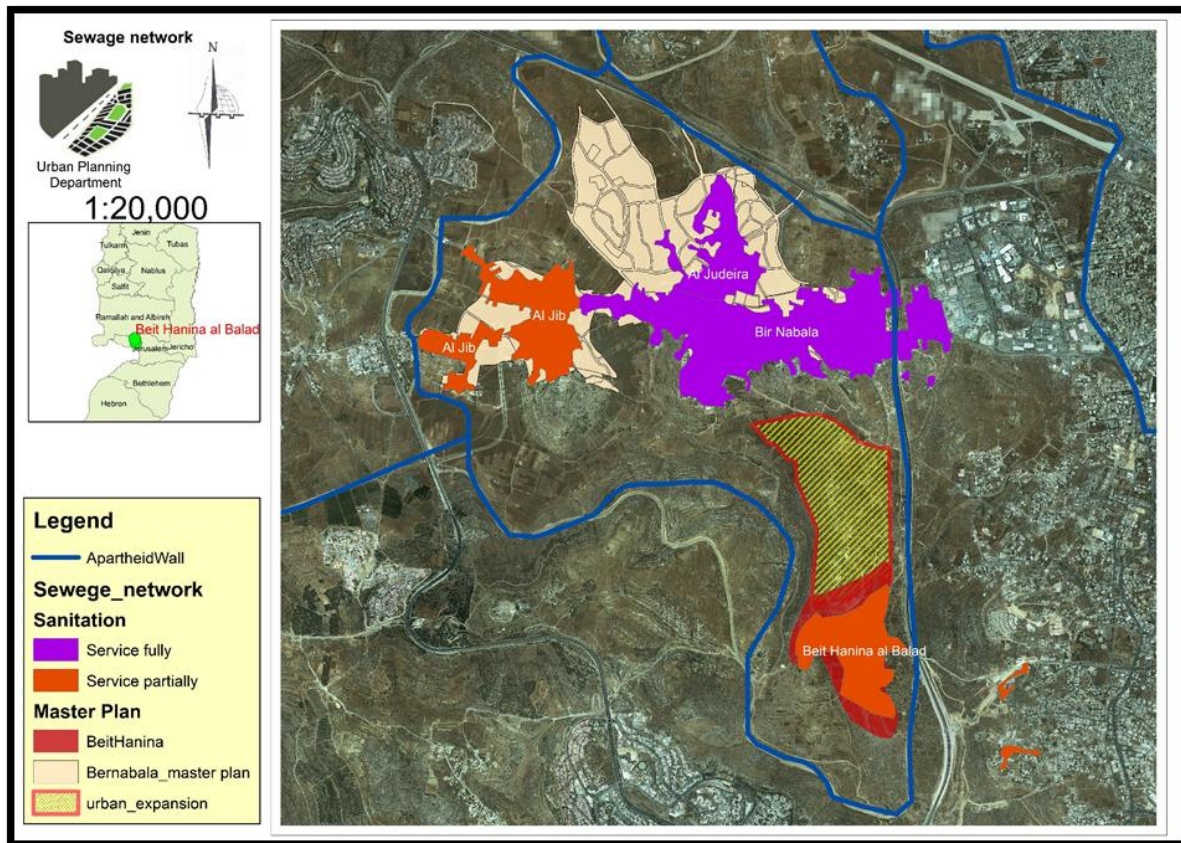
2.٦.٤) The Sewage Network:

In study area there are a sewage networks, but there is a variation in this services between the communities, each community has a separate sewage network, Bier-Nabala and Al-Jedereh only have a full coverage of sewage network for all buildings (100% service), unfortunately Biet-Hanina has a poor sewage network, and the citizens in this village faces a problem in discharging waste water, only 35% of Biet-Hanina area covered by sewage network.

In Al-Jib the problem is less than Biet-Hanina, most of buildings covered by sewage network, up to 80% of Al-Jib covered.

In study area there is no any drilling absorbency for discharging waste water, but in the urban expansion area there is no any sewage network, due it's not built and contain no buildings.

The following map shows the sewage network in study area and the level of service:



Map (47): The sewage network in study area.

Ref: IPCC, 2010. MOLG.



Pictures for the condition of sewage network of study area.

2.6.5) Solid waste collection service:

The study area does not contain a dumping sites, the nearest dumping site locate in Ramallah city, Bier-Nabala, AL-Jib, Biet-Hanina, and Al-Jedereh used this dumping site.

The village councils the communities are responsible to collect the solid waste from the communities and send it to dumping site in Ramallah, some communities like Biet-Hanina has a lack in this service and need more truck dumps waste, and other communities need to increase the collection times in weeks.

In general, the solid waste collection service is not enough and need to increase the number of trucks and collection times in the study area.

The following table shows the situation of solid waste collection in study area:

The community	Quantity of containers	Waste collection time/week	Waste collection fees	Responsibility for waste collection	Availably of private dumping site	Dumping site location
Biet-Hanina	Not enough	1	15 NIS	Village council	No	Ramallah
Al-Jib	Not enough	3	15	Village council	No	Ramallah
Bier-Nabala	Not enough	6	20	Village council	No	Ramallah
Al-Jedereh	Not enough	2	15	Village council	No	Ramallah

Table 26: The situation of solid waste collection in study area.

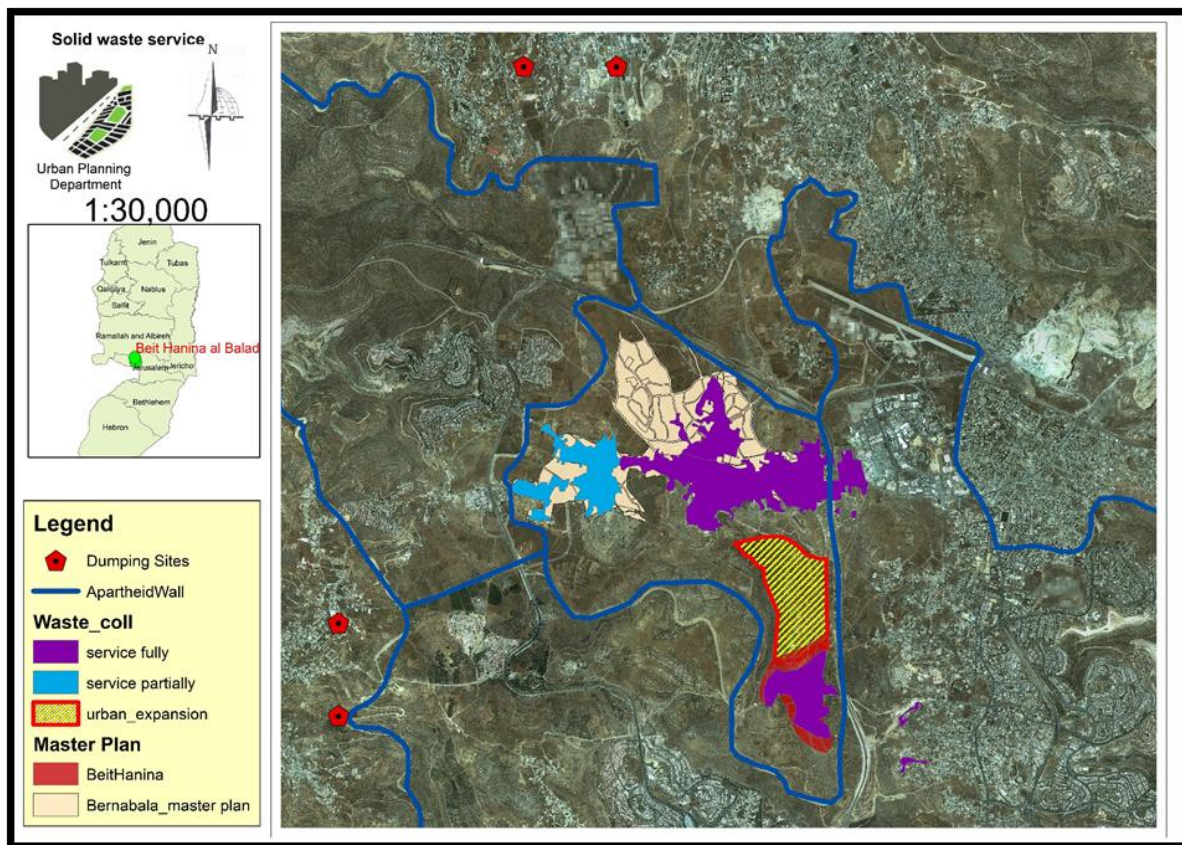
Ref: IPCC,2010



The pictures show the containers of solid waste and situation of containers.

Ref: IPCC,2010.

The following map shows the solid waste services in the study area:



Map (48): The solid waste collection service in the study area.

Ref: IPCC,2010. MOLG.

2.6.6) The environmental situation:

The study area has a good environmental situation in general due to availability of sewage network, solid waste collection services, and other health facilities, all these factors can make the study area livable and save the citizens from diseases.

Although, there are some problems in previous services mentioned in some area, these problem should solve it to avoid the diseases, in Biet-Hanina the sewage network needs a maintenance and need to cover more buildings with this service.

In other communities such as Al-Jib and Al-Jedereh they need to increase the times of collection waste per week.

All these factors could affect negatively or positively on the environmental situation.

2.7) The economic characteristics.

The components of local economics are:

2.Y.1) The agriculture:

The agriculture is an important activity in the study area, cultivation of olives, grapes and almonds, is the most agriculture activity diffused in study area, but many agriculture sources have been gone due to confiscation land by Israeli occupation to build the apartheid wall.

The following table shows the agriculture lands in the study area.

The community	The total area	Agriculture area	Percentage
Biet-Hanina	492 acres	4,871 acres	10.1%
Al-Jib	2,431 acres	8,728 acres	27.8%
Bier-Nabala	276 acres	4,126 acres	6.7%
Al-Jedereh	253 acres	2,031 acres	12.5%

Table 27: The agriculture lands in the study area.

Ref: IPCC, 2010.

The current situation of the agriculture in study area:

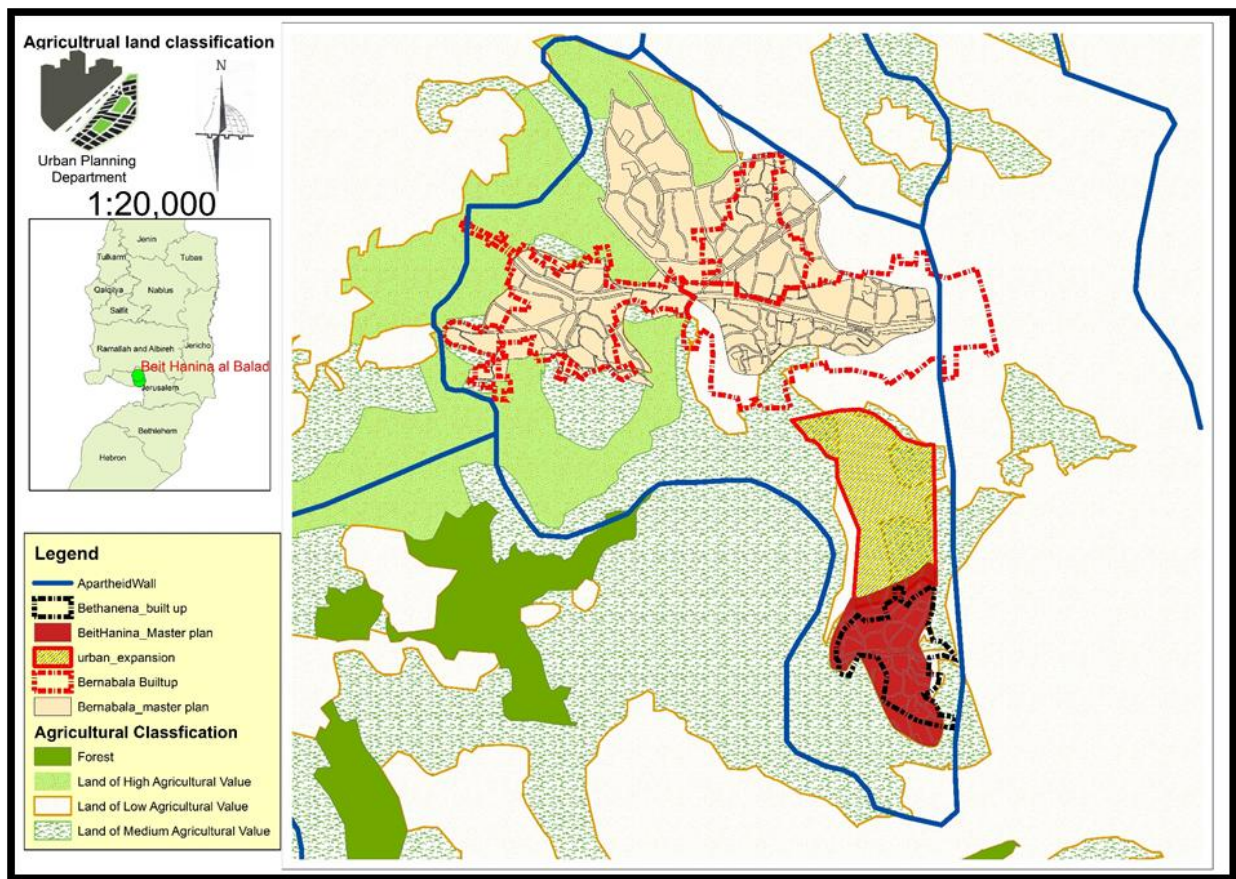
1) The apartheid wall is the main reason for deterioration of the agricultural situation, and confiscation land for the apartheid wall, this cause many negative effect on the farmers, and determined the level of income they have.

2) Improving the agricultural and farmers' situation, and support them with an efficient program will improve their economic situation.

3) The obstacles that the occupation imposes it such as: prevent the marketing of the agricultural products outside, and also fill the Palestinians markets with Israeli products, all these factors cause the losses for the farmers and the Palestinian economy.

The following map shows the classification of agricultural land in the study area and surrounding:

The following pictures shows the agricultural land in study area:



Map (49): The classification of agricultural land in study area.

Ref: IPCC,2010. MOLG.

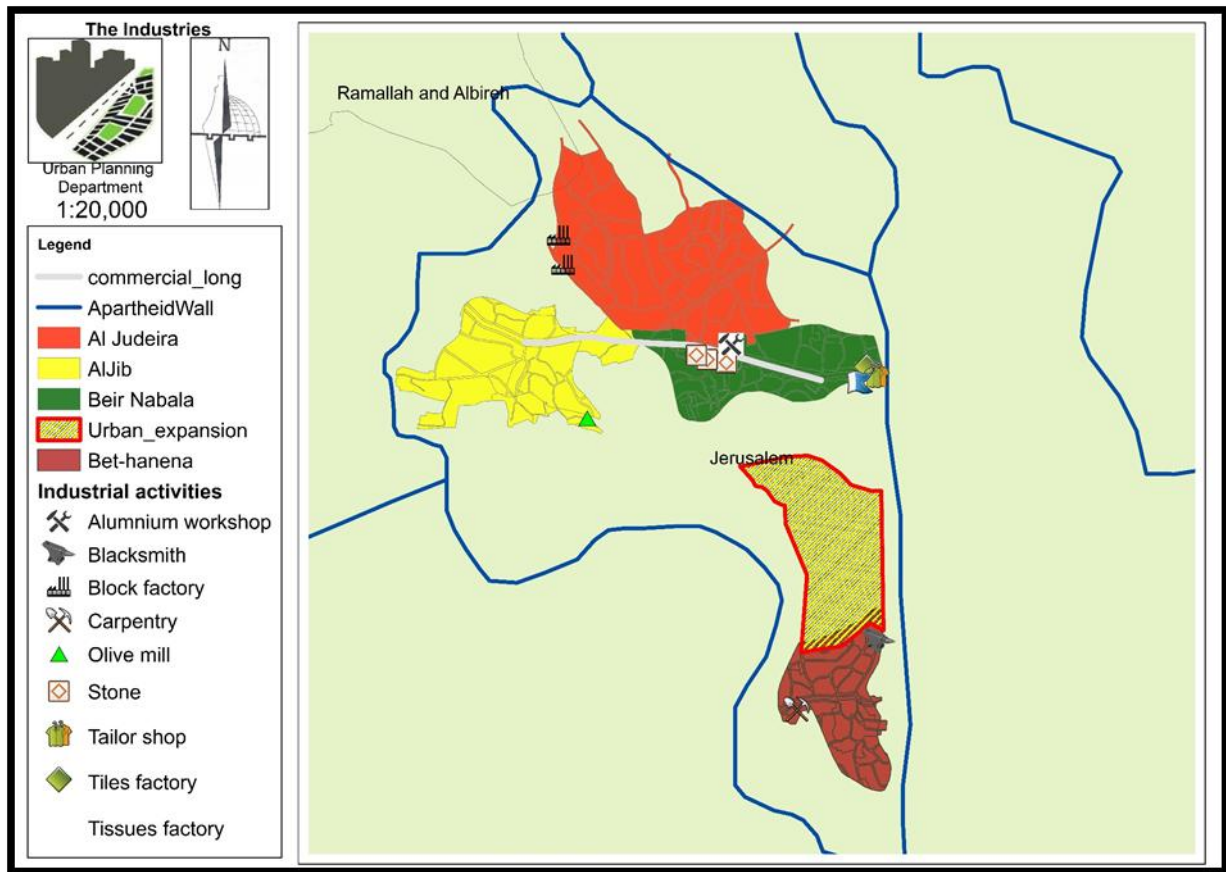
2.7.2) The industries:

The study area does not consider as an industrial area, but there are some industries in it, the industry activities are:

- 1) Stone factories
- 2) Carpentries.
- 3) Concrete factories.
- 4) Olive mill.
- 4) Tailor shops.
- 5) Aluminum workshop
- 6) Blacksmith.
- 5) Block factory.
- 7) Tissues factory.

All these industries just run a few numbers of workers, the most number of workers' work

The following map shows the industries in the study area.



Map (50): The industries in the study area.

Ref: IPCC,2010. MOLG.

2.7.3) The commerce:

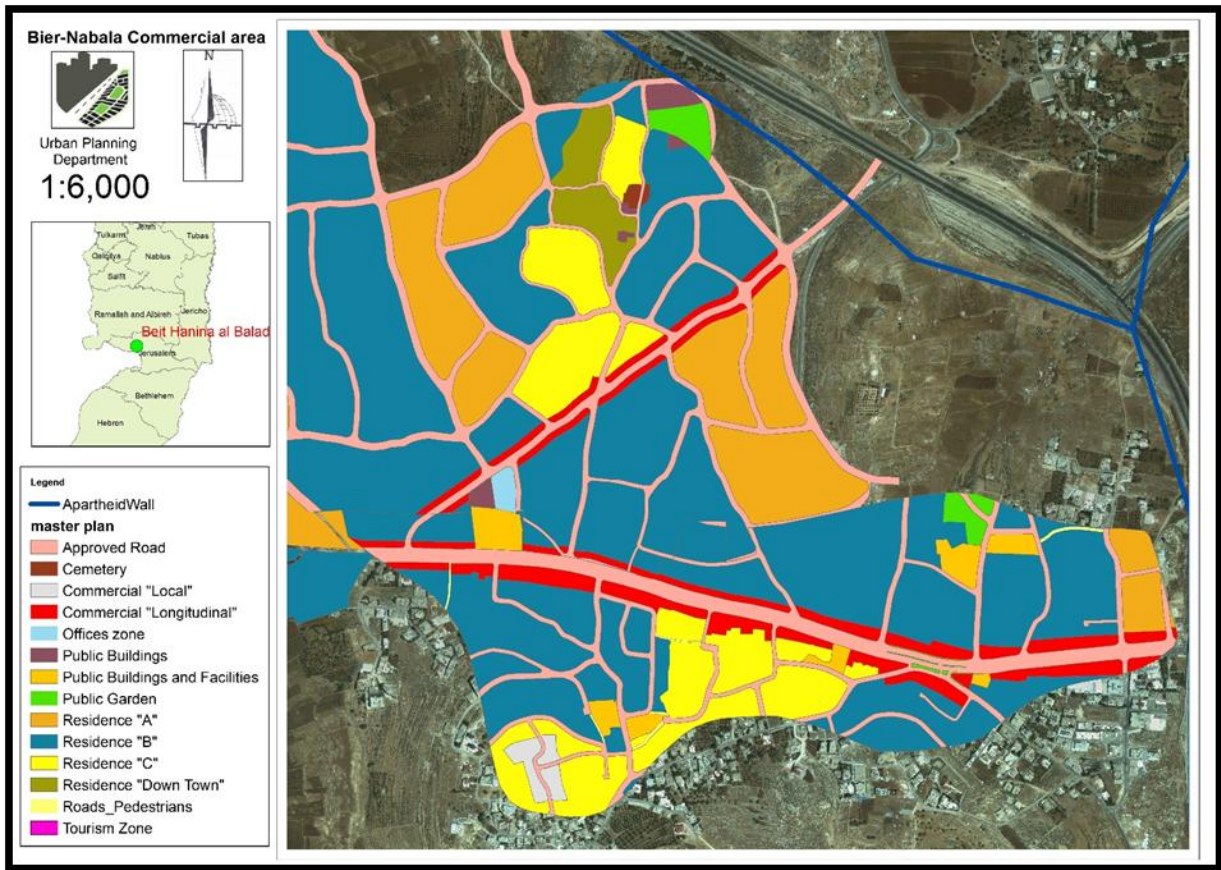
There is no any main commercial center in study area, the citizens rely on Ramallah to market their agricultural products, the study area contain just a small mini markets in each community, also the most residents buy their need of products from Ramallah.

The weakness of commercial activity in study area happened because of difficult to find a middle region for markets, and also the long distances between the communities that locate near the study area.

In the study area Bier-Nabala considered as a small commercial center for the study area, and this center also considered as a secondary center after Ramallah markets.

The following map shows the commercial area in Bier-Nabala.

The red line is the commercial area in Bier-Nabala.



Map (51): The Commercial area in Bier-Nabala.

Ref: MOLG.

The following pictures show some stores in study area.



Ref: IPCC,2010.

2.7.4) The tourism:

There is a lack in the registered tourism sites in study area, it contains many tourism sites such as historical sites and the old town in each community in study area, but all these sites need a strategic plan to develop it and make a regeneration.

There is a need to develop the tourism and encourage the tourists to visit these sites, this will increase the economic resources for the study area and the other surrounded communities.

The only tourism place in study area locates in Bier-Nabala, it's a public garden with swimming pool, but this place dose not attract the tourists.

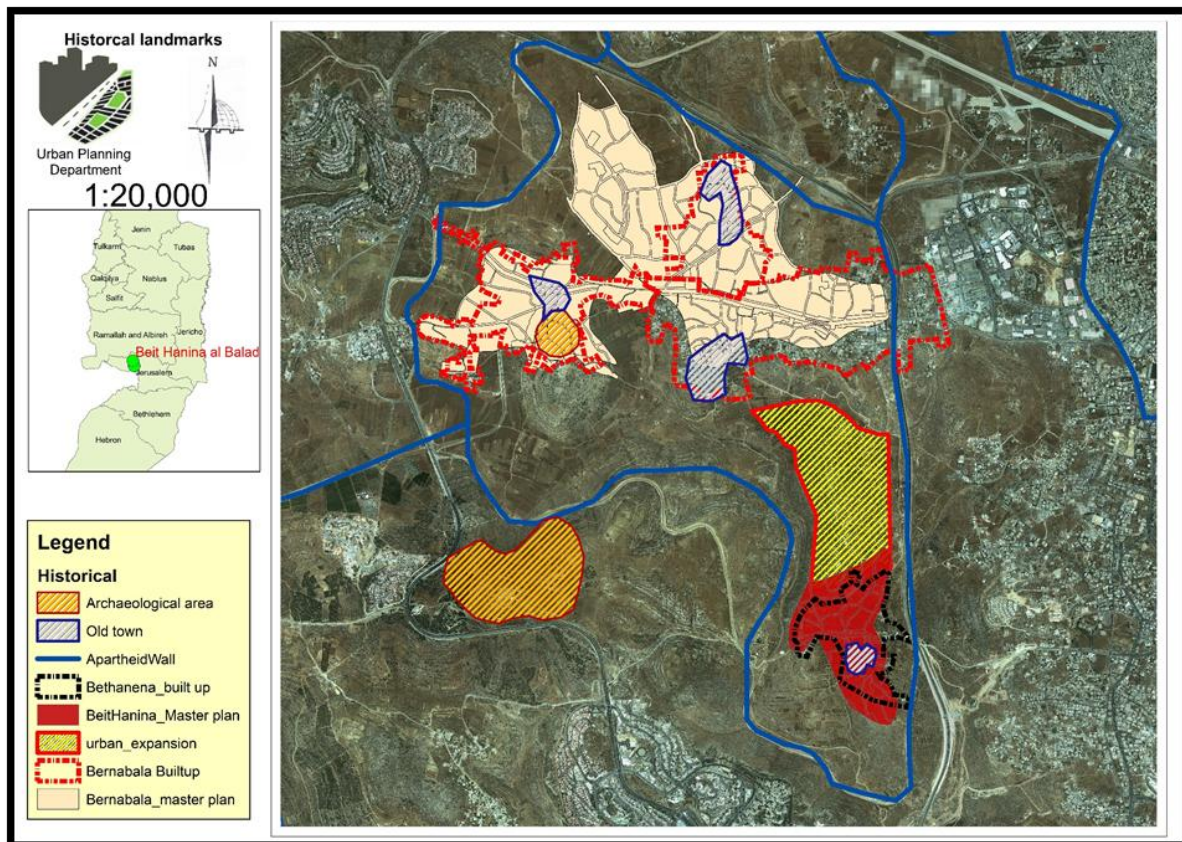
The following picture shows the public garden in Bier-Nabala:



2.8) Cultural heritage:

The study area and the near Palestinian communities such as: Biet-Ijza, are a part of Palestinian cultural heritage, study area contains an archeological area, and old towns,

The following map shows the distribution of archeological area and the old towns in each community.



Map (52): The cultural heritage and historical landmarks in study area.

Ref: IPCC,2010. MOLG

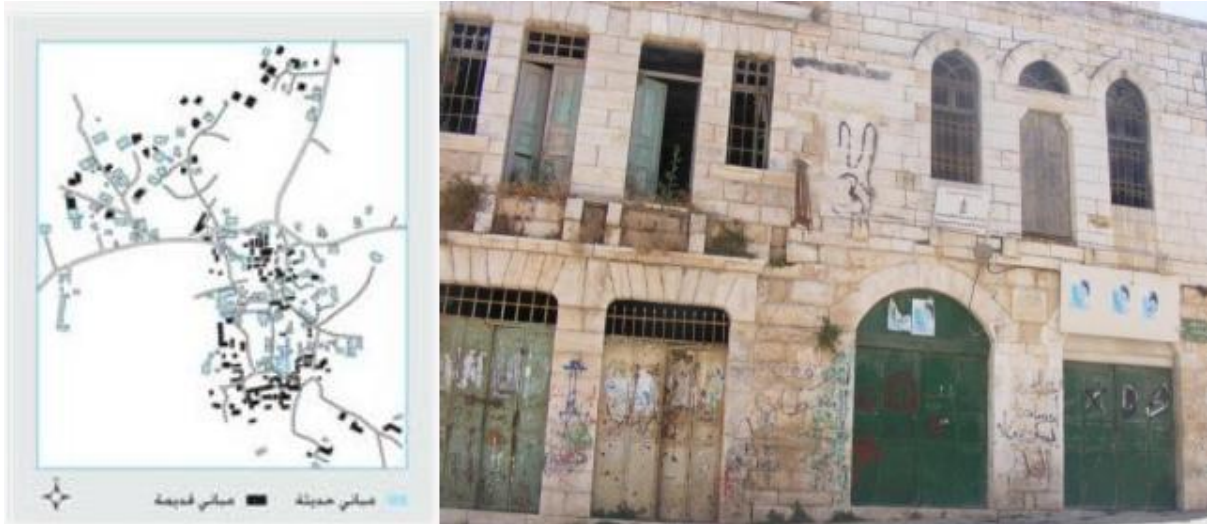
The old towns in the study area are:

2.8.1) Biet-Hanina old town.

Biet-Hanina old town has the smallest area comparing with the communities in study area, according to RIWAQ* surveying in 2001, there is 195 building in Biet-Hanina, most of these buildings locates in the old town, the buildings are connected to each other and have some backyards, but there are some separated buildings around the old town, 57% of these building are unusable, 23% with good situation, and 7% have a bad situation.

Most buildings in old town are Abandoned buildings, and just 24% are usable by the residence.

The following pictures and map show the old town and the old buildings



Map(53): the buildings in old town.

Ref: RIWAQ, IPCC,2010.



2.8.2)Al-Jib:

This community has 83 old buildings in its old town, most these buildings were built in 17th century or earlier, 57% of these buildings in bad situation, and the other buildings are not used for long time.

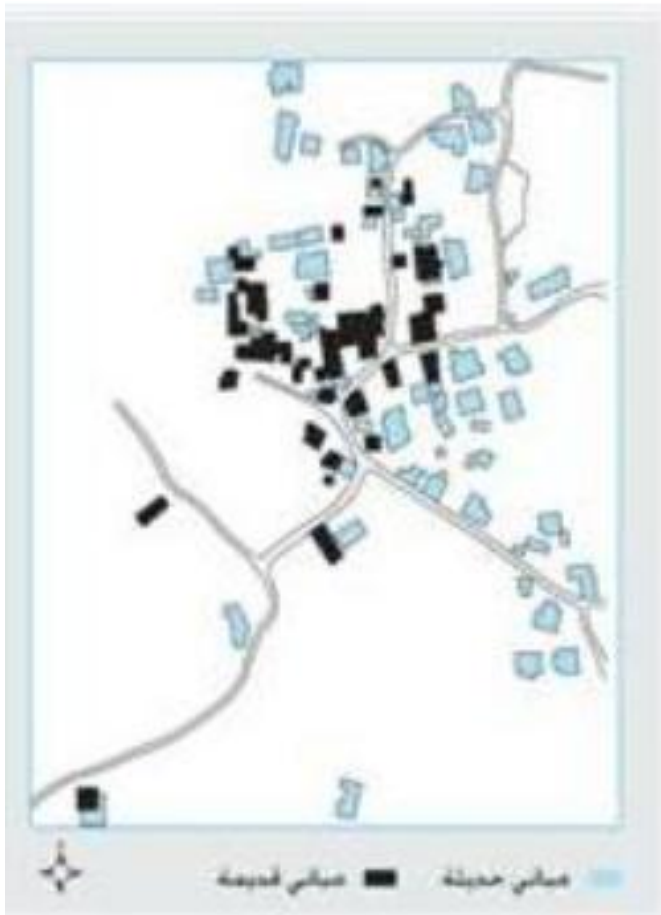
The buildings in old town is connected to each other.

2.8.3)Bier-Nabala:

The number of old buildings in Bier-Nabala are 49 buildings, most of these buildings are not used, there are many types of buildings in Bier-Nabala, there is a connected buildings and other buildings are separated and have their own backyards.

Some buildings have 2 floors and other have 1 floor, the old town of Bier-Nabala characterized by the presence of hexagonal arcs in the old buildings.

The following pictures and map show the old town and the old buildings:



Map(54): The old town in Bier Nabala
Ref: RIWAQ.



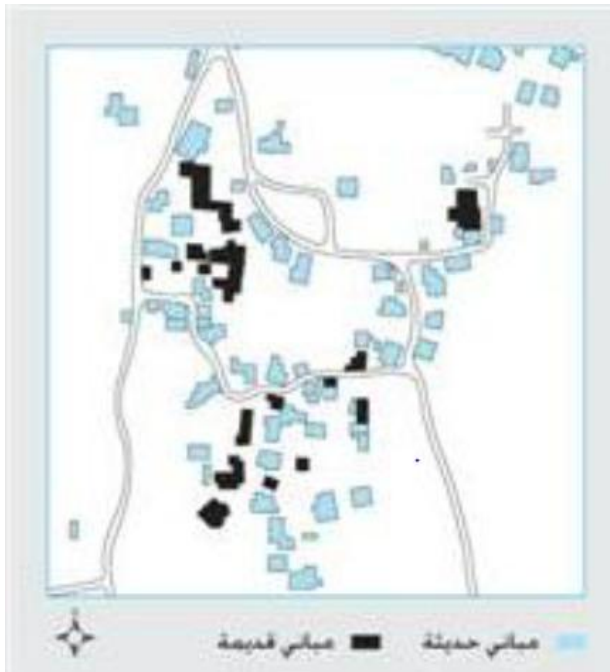
Pic: Old buildings in Bier-Nabala.
Ref: RIWAQ.

2.8.4)Al-Jedereh:

The total number of old buildings in old town is 25 buildings, the situation of these buildings between good and bad, 52% of these buildings in good situaion,and 32% in bad situation.

Al-Jedereh contain the least number of old buildings comparing it with other communities,so its important to make a regeneration and rehabilaition for the old town in Al-Jedereh.

The following pictures and map show the old town and the old buildings:



Map(55): The old town of Bier-Nabala.



Pic:Old buildings in Bier-Nabala.

Ref: RIWAQ.

Chapter 3

Characteristics and features of the current analysis of the study area

3.1) The social and demoghraphic characterstics:

There some positive effects and negative effects about the social and demoghraphic characterstics:

Positive effects:

- 1)The study area has a family system, and the village heaman should be from the same community of his village council.
- 2)There is a regional master plan study done by IPCC, and its taking in consideration the demoghraphic situatuaion for the study area and the near by communities, and also taking in consideration a three sernarious for the number of population in 2030.
- 3)There is a cooperation between all residances in the study area and the other near by communities.
- 4)The study area contains many facilities that distributed in the area, and all residence can use any of these facilities without any interruption or problem.

Negative effects:

- 1)Some communities in study area don't have the important facilities, such as youth center, feminst center and other facilities, this will affect in the developing of the study area.
- 2) The population number in the communities in study area and the near by communities decreasing year by year due to apathied wall.
- 3)Most young workers, work outside their communities, especially in Ramallah and Al-Bireh city, despite the existance of the same craft in their communities.

3.2) The economic characterstics:

Positive:

- 1)The location of the study area near to Ramallah city.
- 2) The existance of many industries in the study area.
- 3) Despite the study area locates near urban region, but its consider as a rural area and contains agriculutral area.
- 4)The study area contains a longtidual commercial area in Bier-Nabala.

Negative:

- 1)The weakness of working young people in the agricultural sector.
- 2) The lack of water sources for agriculture, which prevents irrigated agriculture.
- 3)The young people working in the Ramallah city instead of working in their communities.
- 4) Lack of uniform commercial area for the communities in study area and nearby.
- 5)The availability of Israeli industrial area near the study area affect on the commercial and industrial activities in the area.

Needs and priorities:

- 1)make a commercial area that connect between the all communities in study area.

3.3) The infrastructure characteristics:

3.3.1) The Road network analysis:

Positive:

- 1)The location of the study area near road #60, and the availability of road between Ramallah and study area, made the transportation easy.
- 2)Availability road that connect between the Jerusalem city and Al-Jib, but there is a checkpoint.
- 3)The possibility of new road in the area, because there is an empty land.
- 4)The existence of public transportation between the communities in the study area and the near by communities and also Ramallah city.

Negative:

- 1)there is only one entrance and exit from and to the study area, this entrance controlled by Israeli occupation.
- 2)The condition of the road network in study area in general, is bad.
- 3) there are many main road can't be used by the Palestinian such as road #443.
- 4) the existence of many dangerous junctions.
- 5) there is only one local road that connect between Biet-Hanina in the south and Bier-Nabala in the north, and it needs maintenance.

Needs and priorities:

1) A new road network in urban expansion area and connect it with other roads.

2) The water supply and sewage networks:

Positive:

1) Availability of water supply and sewage networks in the study area.

2) Bier-Nabala and Al-Jedereh has a full services 100% for water supply.

3) Many springs and artesian wells existence in the study area.

Negative:

1) Most of space in the study area classified as a moderate and extreme vulnerable area for the pollution.

2) All wells and springs locate outside of the master plan boundary and built up area.

3) Biet-Hanina has a lack in sewage network and need a maintenance.

4) There is no any infrastructure network in new urban expansion area.

Needs and priorities:

1) Create a new infrastructure network in new urban expansion area, and trying to connect it with Bier-Nabala due to their good networks.

2) Maintain the sewage networks in Biet-Hanina.

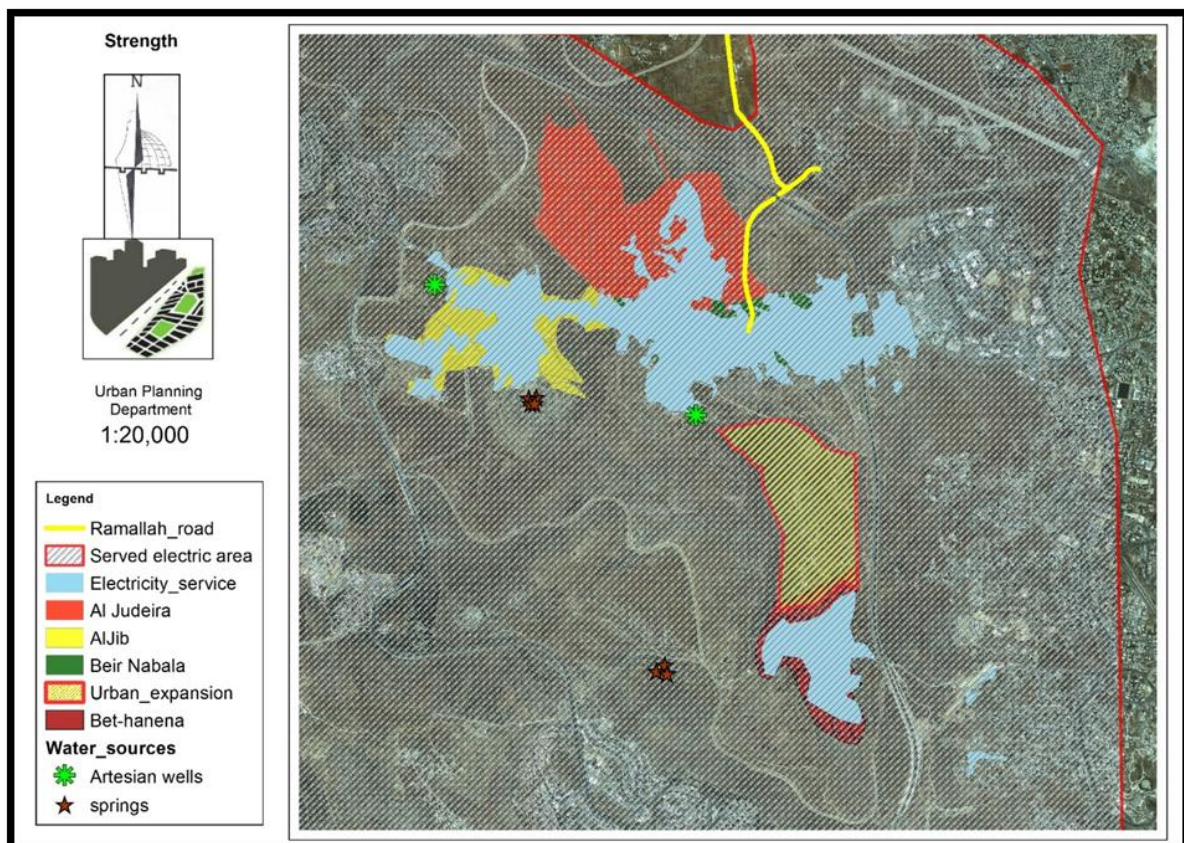
Chapter 4

General analysis:

SWOT analysis:

The Strengths:

- 1- Availability of proposed urban expansion area.
- 2- Accessibility to infrastructure network.
- 3- Easy access to Ramallah.
- 4-The development plan recommends to construct a new suburb in urban expansion area
- 5-The availability of water sources in study area.
- 6-Availibility of full electricity serviced.

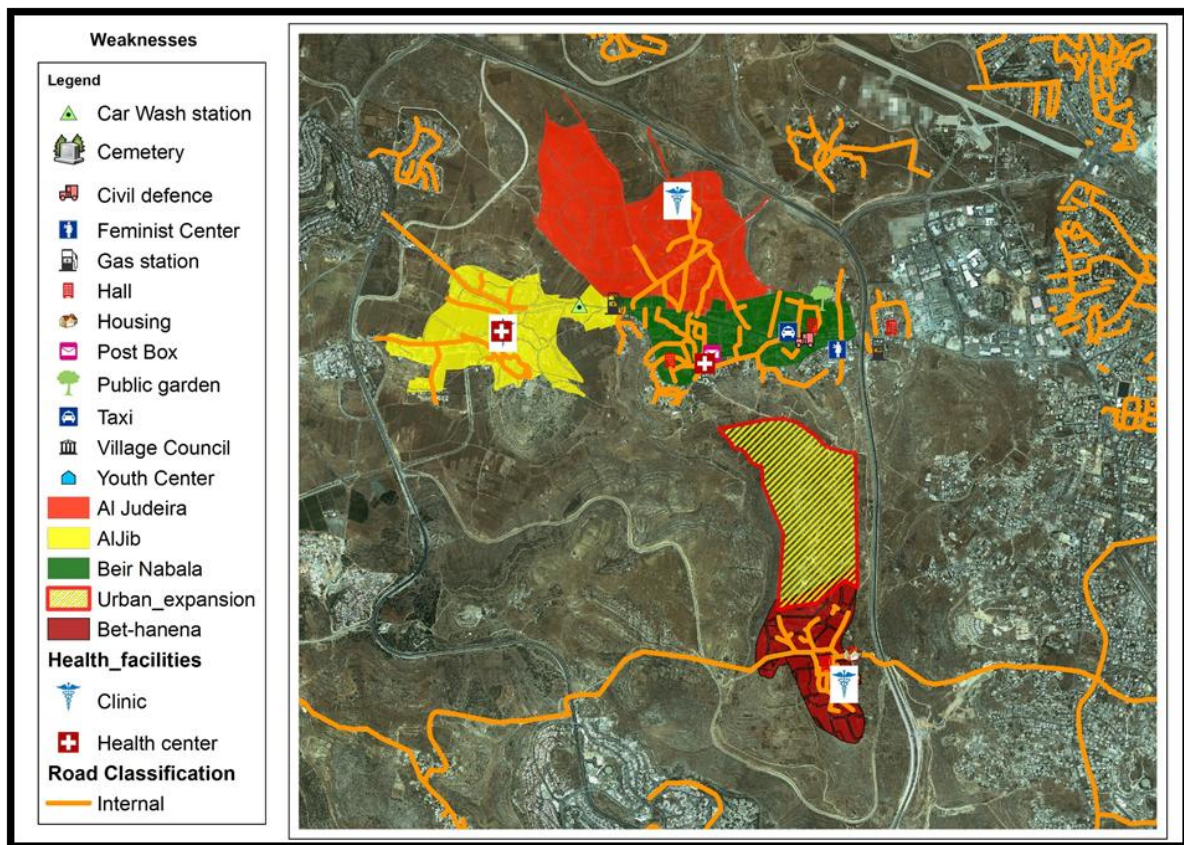


Map(56): The strenghtes.

Ref:IPCC,2010.MOLG.

The weaknesses:

- 1-Lack of some health facilities.
- 2-Poor internal roads.
- 3-Lack of education services.
- 4-A part of limited area for urban expansion classified as land for medium agricultural value.
- 5-Lack in some community facilities.
- 6-Poor service in Sewage Network in Biet-Hanina.
- 7-The solid waste collection service is poor in Biet-Hanina.
- 8-The sewage network is partily serviced in Biet-Hanina and Al-Jib.



Map(57): The weaknesses.

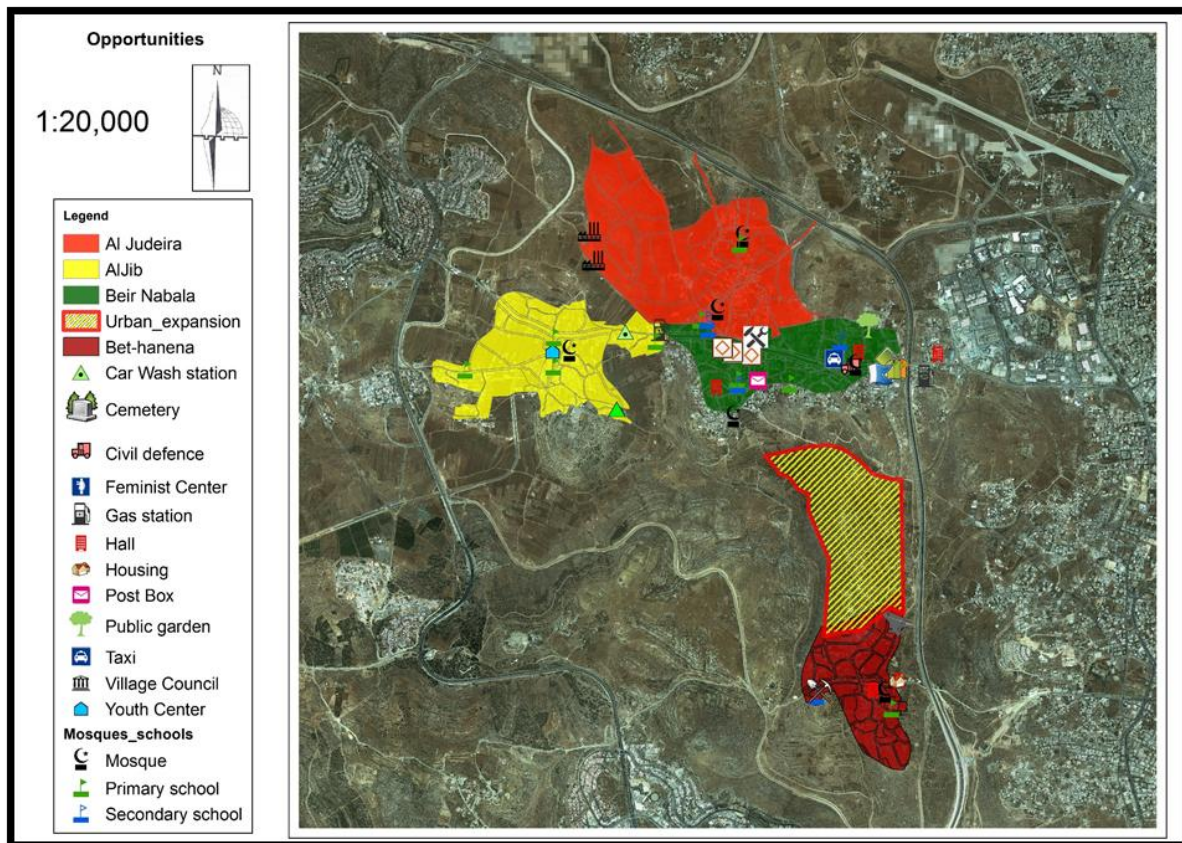
Ref:IPCC,2010.MOLG.

The opportunities:

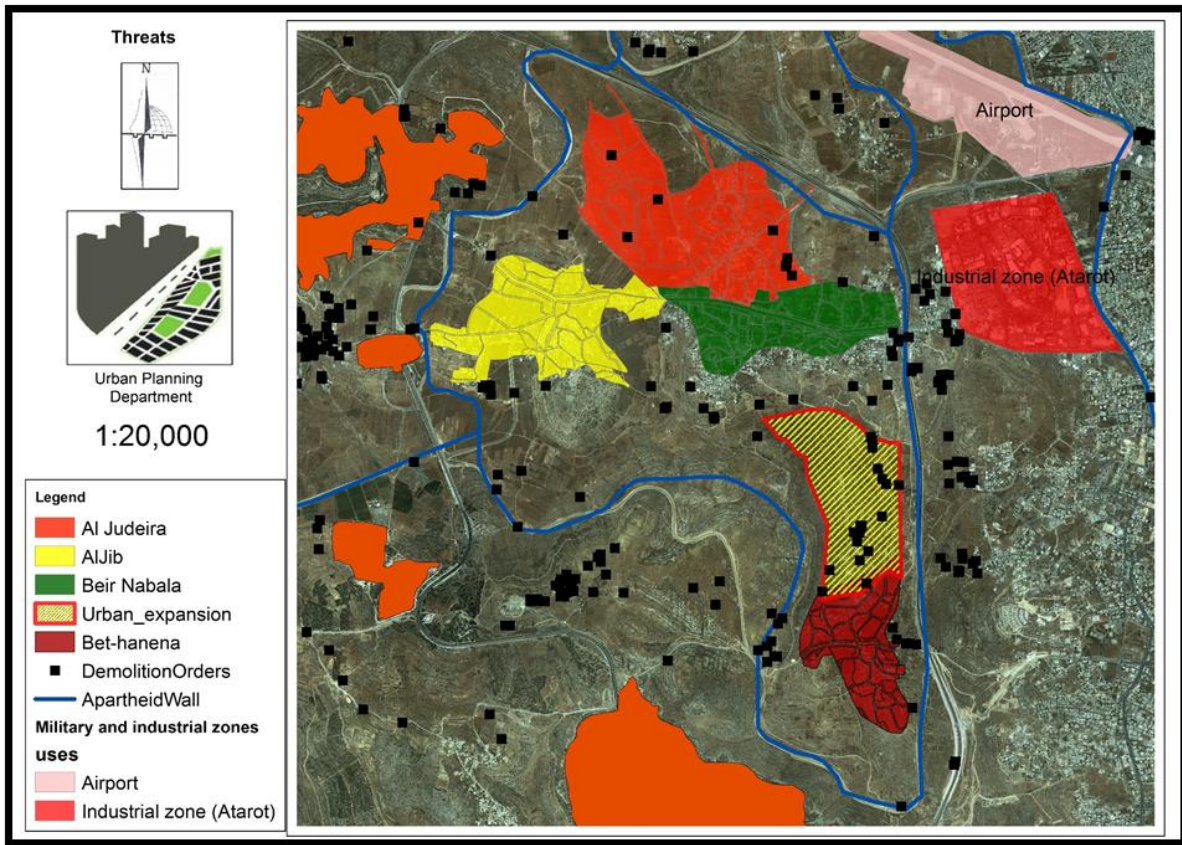
- 1-Availability of some community facilities.
- 2-There are a job opportunities in the area because of the proximity to industrial zones.
- 3-Availability of many industrial activities in the communities.
- 4-An expected to increasing in population number in 2030.

The Threats:

- 1-Existance of apartheid wall around the study area.
- 2-Many settlements locate around the study area.
- 3-The Atarot industrial zone locates near expansion area.
- 4-Many demolition orders issued against Palestinians.



Map(58): The opportunities.(*Ref:IPCC,2010.MOLG.*)



Map(59): The Threats. (Ref:IPCC,2010.MOLG.)

Chapter 5:

The concept and the design:

5.1) The objectives of the project:

- 1) Design an affordable housing master plan that is suitable for everyone.
- 2) Provide houses with an affordable standards and costs.
- 3) Provide the housing project with required services, that would cover the needs of the residents and the nearby communities.
- 4) Efficient use of the proposal land project.
- 5) Encourage and support the Palestinians to build in Area C, and prove their right in this land.
- 6) Build a new suburb in the expansion area to meet the residence needs until 2030.

5.2) The vision of the project:

The vision for the project is:

Toward Counter planning, support the Palestinian people in their lands, Confirmation on Palestinian rights in their lands, affordable houses with affordable price for middle income class, Sustainable, Suitable, safe suburb.

5.3) The project program:

The total of number people that expected to live in the new suburb around 6,000 people.

Ref: IPCC,2010.

-Each family contains 5 persons, so the number of families will be 1,200 families, they need 1,200 dwellings.

-The neighborhood density (required according to study) = 4units/acre.

-The total area required for the project = $1200/4 = 300$ acres.

-The proposed area for the project equal 345.252 acres.

-Each building contains 8 dwellings (4 floors *2 dwellings)

-The number of Buildings need= $1,200 \text{ dwellings} / 8 \text{ dwellings} = 150$ residential building.

-There will be 3 types of spaces dwellings: **130 m², 140 m², 150 m².**

-The total area of houses = $1,200 \text{ families} * (140 \text{ m}^2 \text{ average}) = 168 \text{ acres.}$

The services facilities:

1) 2 kindergartens.

Each kindergarten has:

- The service range is (200 m - 300m).
- The number of children assimilated (90-180).
- Each child needs a space (5 m²- 10m²).
- The kindergarten area = (100 children * 10 m²) = 1,000 m².

The total kindergarten area needed is **3 acres**.

2) Mosque.

The mosque has:

- The service range is (500 m – 800 m)
- Each prayer needs a space (1.6 m²).
- The total area needed is **2 acres**.

3) 2 Primary schools.

Each school has:

- Accommodate the students to the extent of 500 students.
- Each student need a space area= 15 m².

The total area needed for primary schools = 2(500 students* 15 m²) = **15 acres**.

4) 2 secondary schools one for boys and one for girls.

Each secondary school has:

- Each school can serve neighborhood with number of population (10,000-20,000).
- The service range (up to 2,500 m).
- Accommodate the students to the extent of 900 students.

The total area needed for primary school = **10 acres**.

5) Health center.

This project needs a health center, includes: laboratory, stores, pharmacy, emergency, health facilities, ambulances, waiting room, mother child hood center, inspection rooms, administration room, nursing room, parking.

- Each person need space area = (0.12 m²-0.15m²)
- The shape area for health center = (0.15m²/person * 6000) ~1 acre

7) Civil defense.

8) Commercial area (separated from the proposed project) =33.3 acres

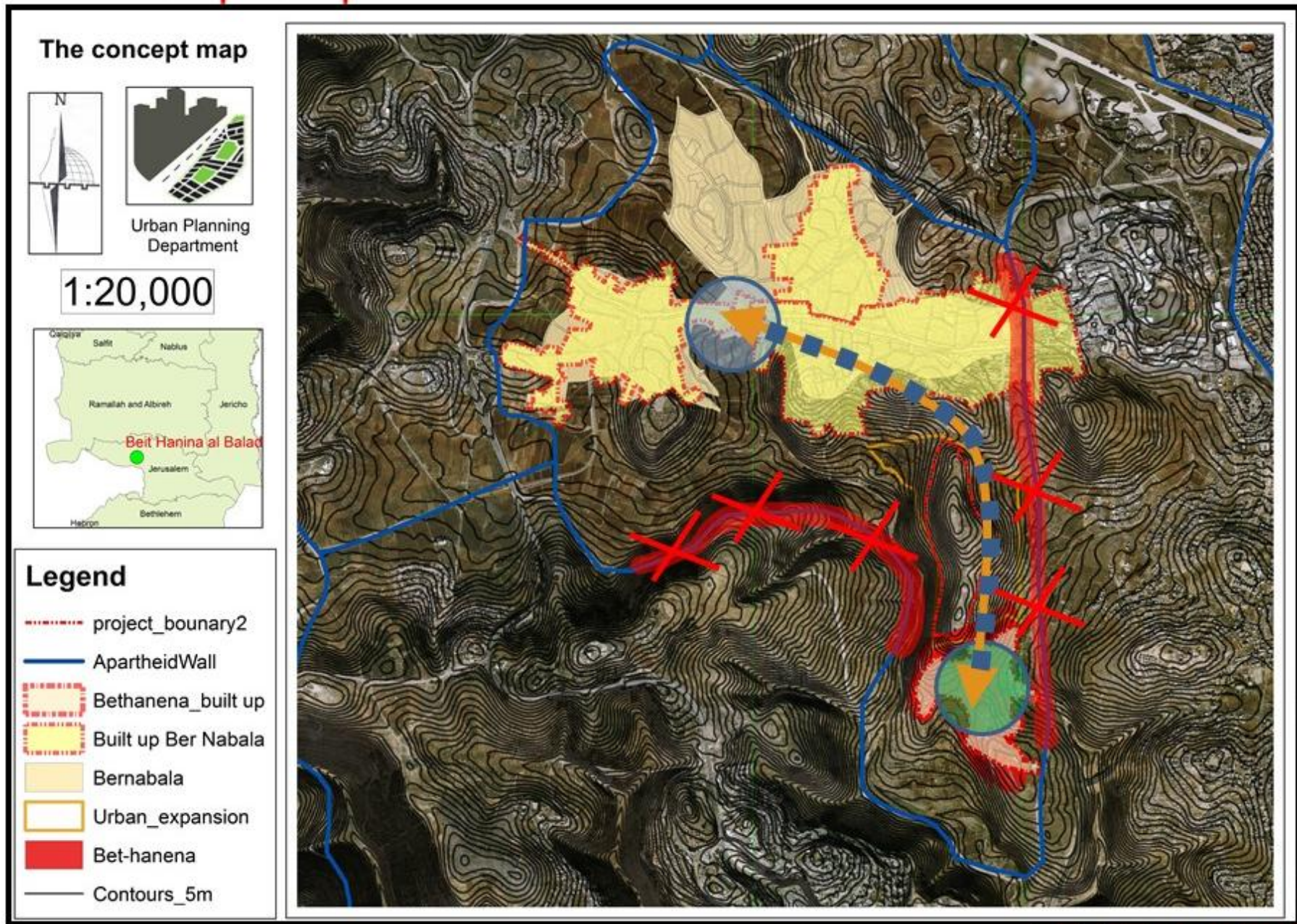
9) Public gardens.

5.4) The concept map:

The main concept of the project is to connect Biet-Hanina (Town) with Bier-Nabala, Al-Jib, and Al-Jedereh, and also strengthening the link between the existing road between these communities.

The longitudinal design was chosen as a result of the existence of the apartheid separation wall

The site of project was chosen on the recommendation by Scheme framework guideline for the development of spatial villages northwest of Jerusalem plan proposed by IPCC in2010.



Map (60): The concept map.

5.5) The landuse concept:

the main idea for landuse concept is to distribute the neighborhood to 3 main zones the green open spaces and the services and housing

As for the services zone, The services and green open spaces should serve the project and the nearby communities, so these services are distributed in the middle and in the edges of the project.

The main 2 parks will be in the top of hill, these two parks will serve the project and the other nearby communities, especially the park in the south.

It is expected to serve the Biet-Hanina (town) which lacks green spaces.

The other zones suggested for housing and their services (road, footpaths).

The following map shows the land use zoning of the project:

The landuse concept



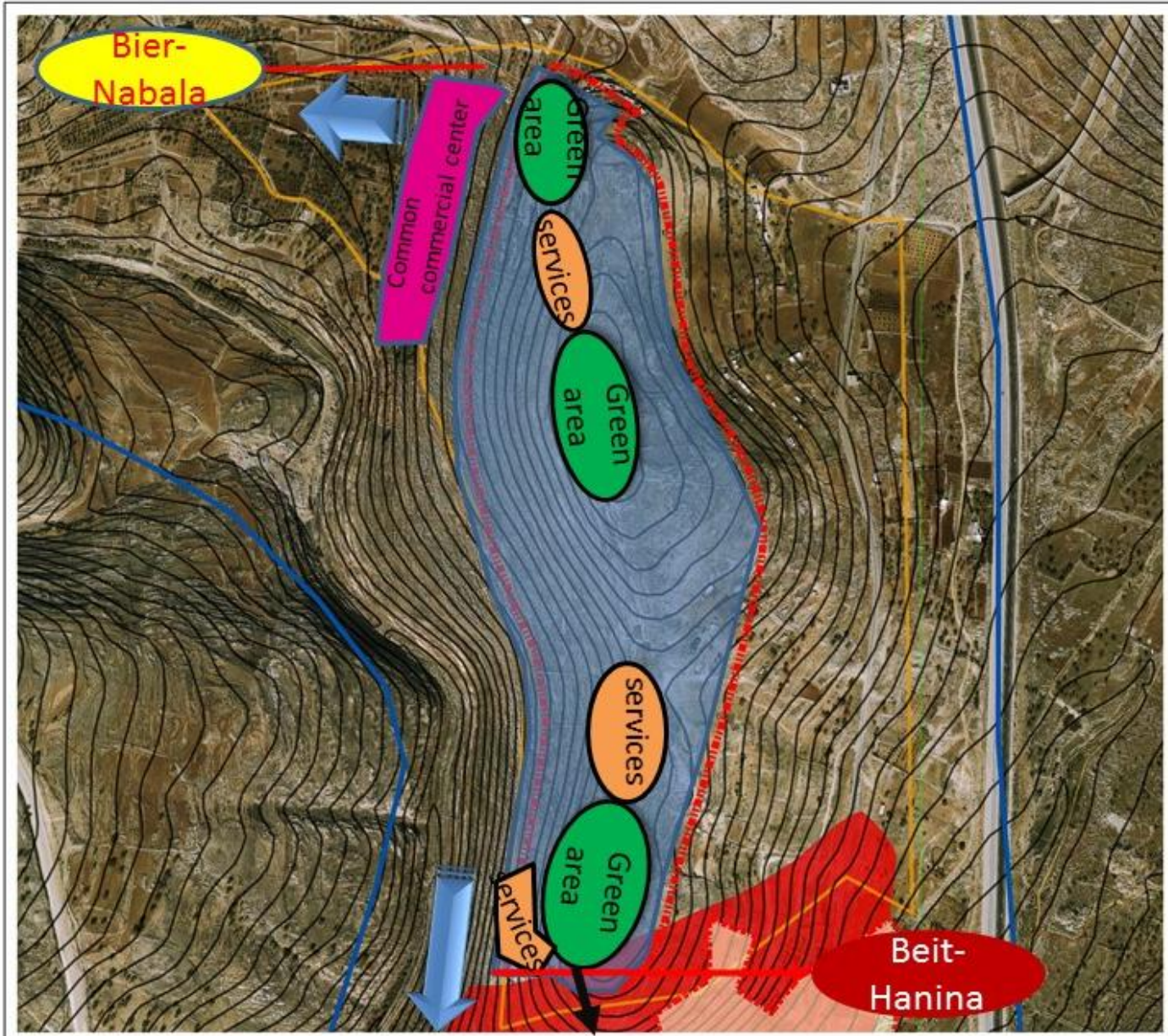
Urban Planning
Department

1:5,000



Legend

- project_boundary2
- ApartheidWall
- Bethanena_built up
- Urban_expansion
- Bet-hanena
- Contours_5m



Map (61): The landuse concept.

5.6) The zoning:

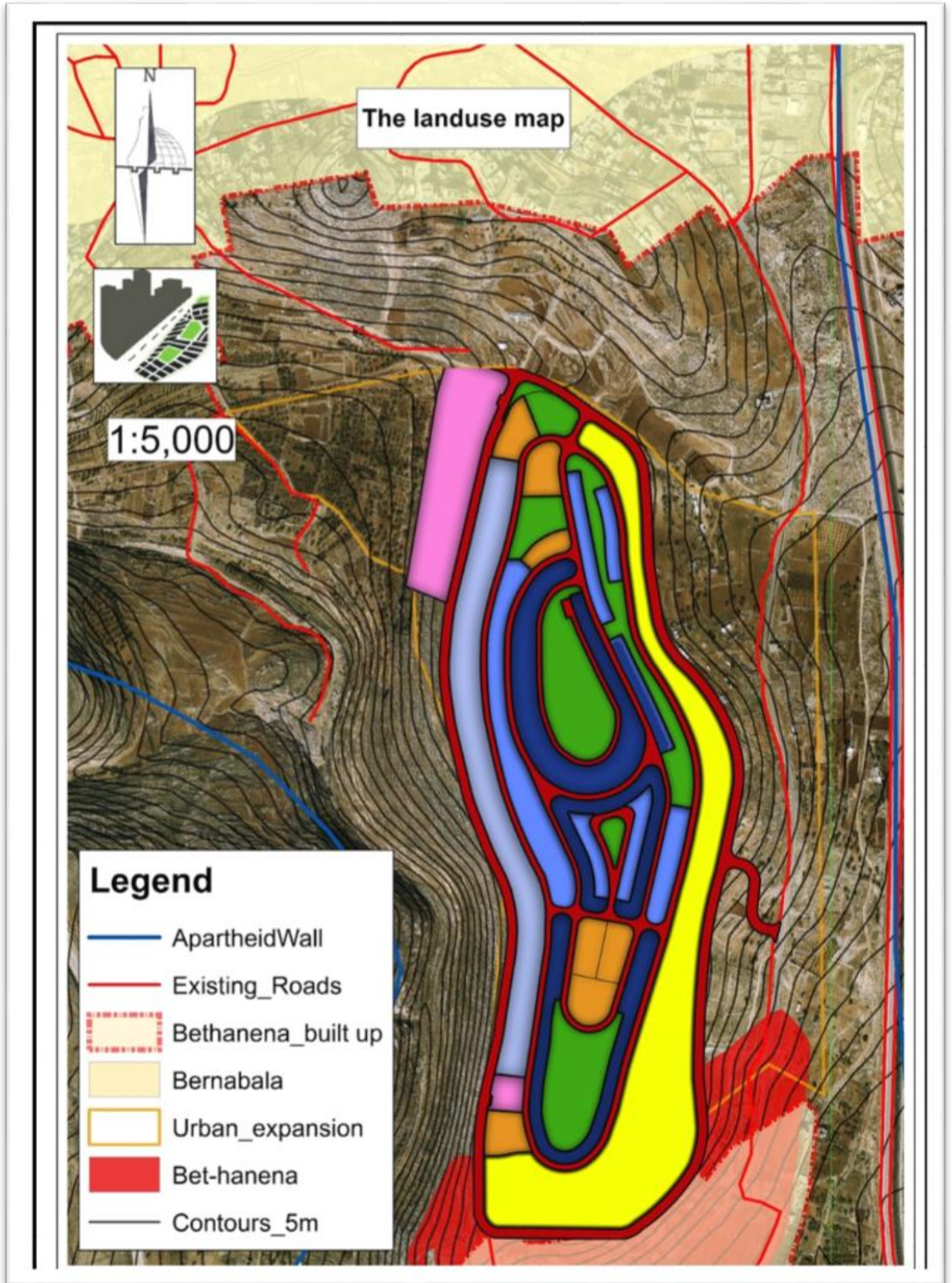
This stage is about the distribution of the housing, services and open spaces in the project. However, this stage has more details than the previous one.

The road network was suggested in this stage, the following map shows the zoning map, and it shows 3 types of housing and the way they are connected to the services and the green open spaces.

The project contains a future urban expansion area _as a part of the project, this area considered as special area for individual building, so the Palestinian citizens can build their own housing without being obliged to follow the housing type of the project.

The project also contains a commercial area, which is located on the main access road. This road connects the project to the near communities, so this commercial area will help to organize and arrange the commercial activities, and provide a necessary service for the neighborhood and the other communities.

The following map shows the zoning map, and shows how the 3 types of housing, services, and green open spaces were distributed in the project site.



Map (62): The zoning map.

5.7) The Land use map:

In this stage the land was distributed to parcels. Each parcel contains one building. There are 3 different types of parcels according to their areas. The first type, includes apartment with an area of 150 m². This type is given 14.2% of the whole project area (45.2 acres). The second type consists of 10.3% (33.17 acres), the last type consists of 9.6 % (30.35 acres) the total percentage is equal 34.1%.

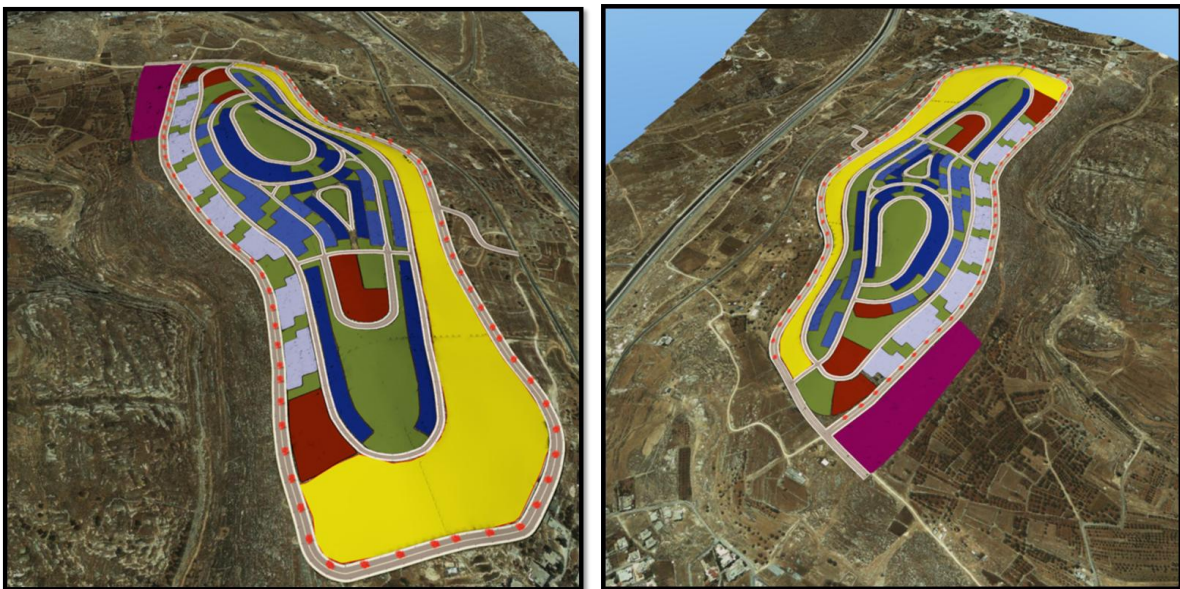
The road network is divided to 4 different widths, which will be explained later. The roads area consists of 26.3% of the project area (84.26 acres)

In addition, services were distributed in a suitable way with a percentage of 12.7% of the project (40.47 acres). The open spaces were also distributed in a convenient way including parks and playgrounds, including 26.9% of the project way (86.28 acres).

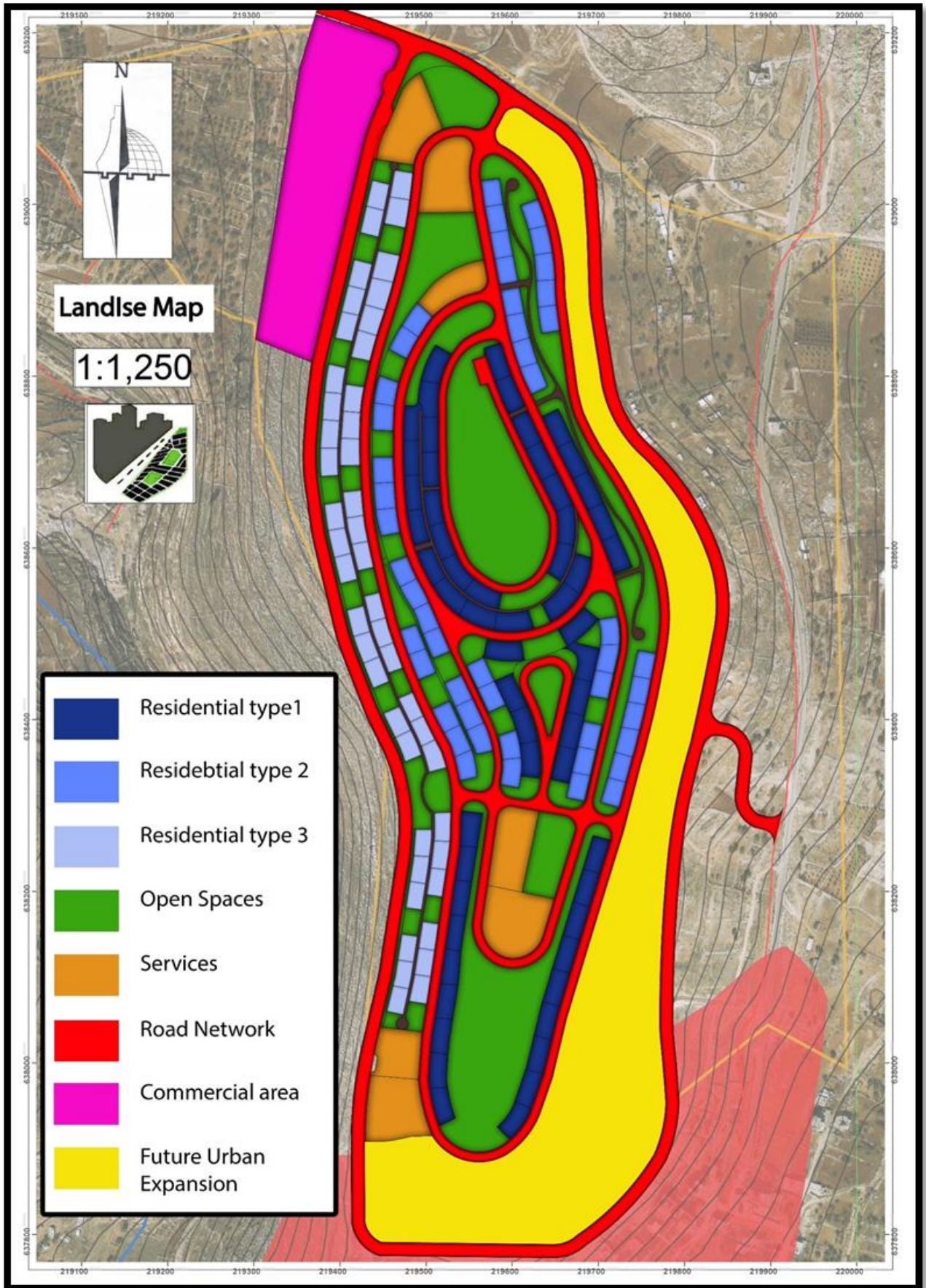
The commercial area (33.3 acres) is located outside if the project area boundaries.

The future urban expansion area is located near the project boundaries, with an area of 93.2 acres. This area is allocated for individual private buildings.

Collectively, the total area of land use is equal to 446.5 acres.



Pic: 3D Landuse.



Map (63): The land use map.

5.8 The Master Plan:

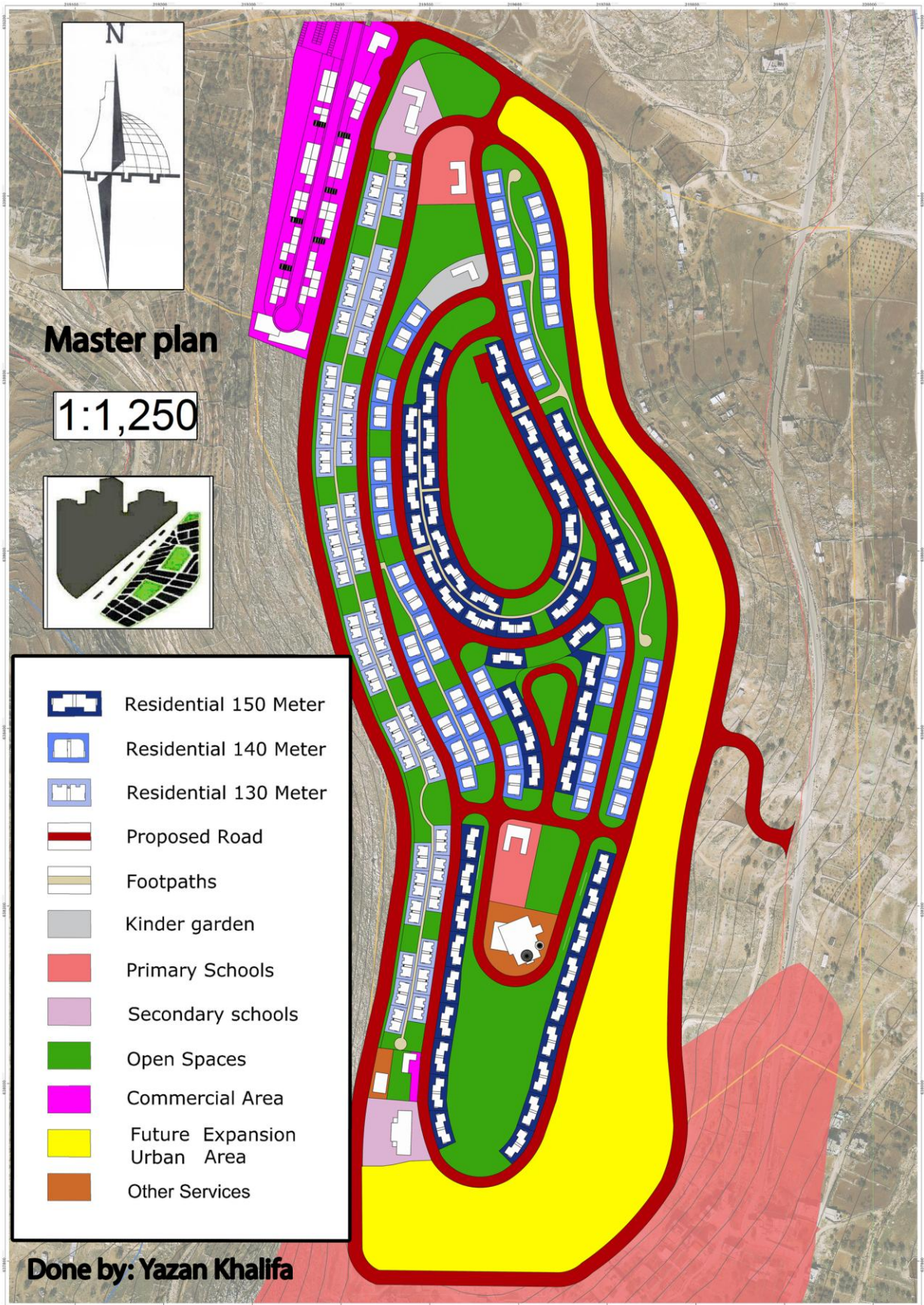
In this stage of the project, the residential buildings were designed and located on their parcels. This distribution was based on the law of regulations and building codes no.5/2011.

According to this law, the highest allowed percentage for construction is 48% of the parcel area, and the setbacks from both back and front is 4 meters, and for both sides 3 meters. The maximum allowed floor percentage is 240%.

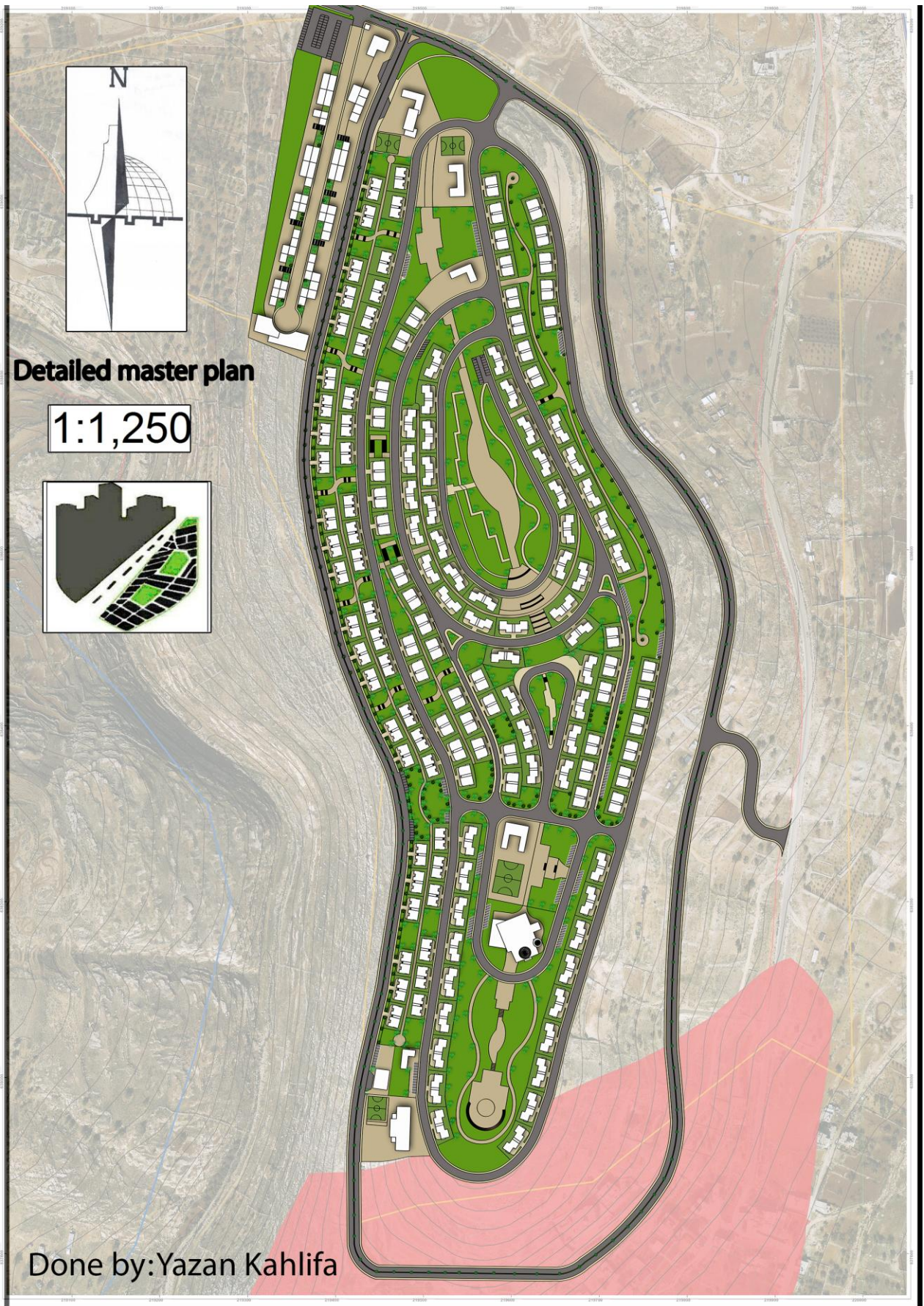
As for services, the two secondary schools were located on the edges of the project, in order to serve both the residents of the project and the nearby communities. The two primary schools were located in the middle and the northern areas of the project. in order to serve Bier-Nabala Al-jedereh and Al-Jib communities.

Also a small commercial center is also included in the project to provide the main needs of the residents.

Additional services in the project include, a kindergarten, a health center and a mosque.



Map (64): Masterplan map.



Map (65): Detailed master plan.

5.8.1) The residential area:

The master plan contains many facilities, includes residential area, which constitute the most area in the project (around 47% from the whole area).

The residential area was classified to 3 types of buildings, these types was classified according to the area of the apartment in each building, the apartment areas area 130m², 140m², and 150m².

Each building contains 5 floors, the first floor for cars parking and the other four floors for apartments, each floor has 2 apartments.

The shape the design of each building should be like the traditional design.

According to the law of regulations and building codes no.5/2011, the setbacks for each building should be like the following table:

The setback	Front	Back	Side
Unit in Meter	4	4	3

Table (29): The setbacks.

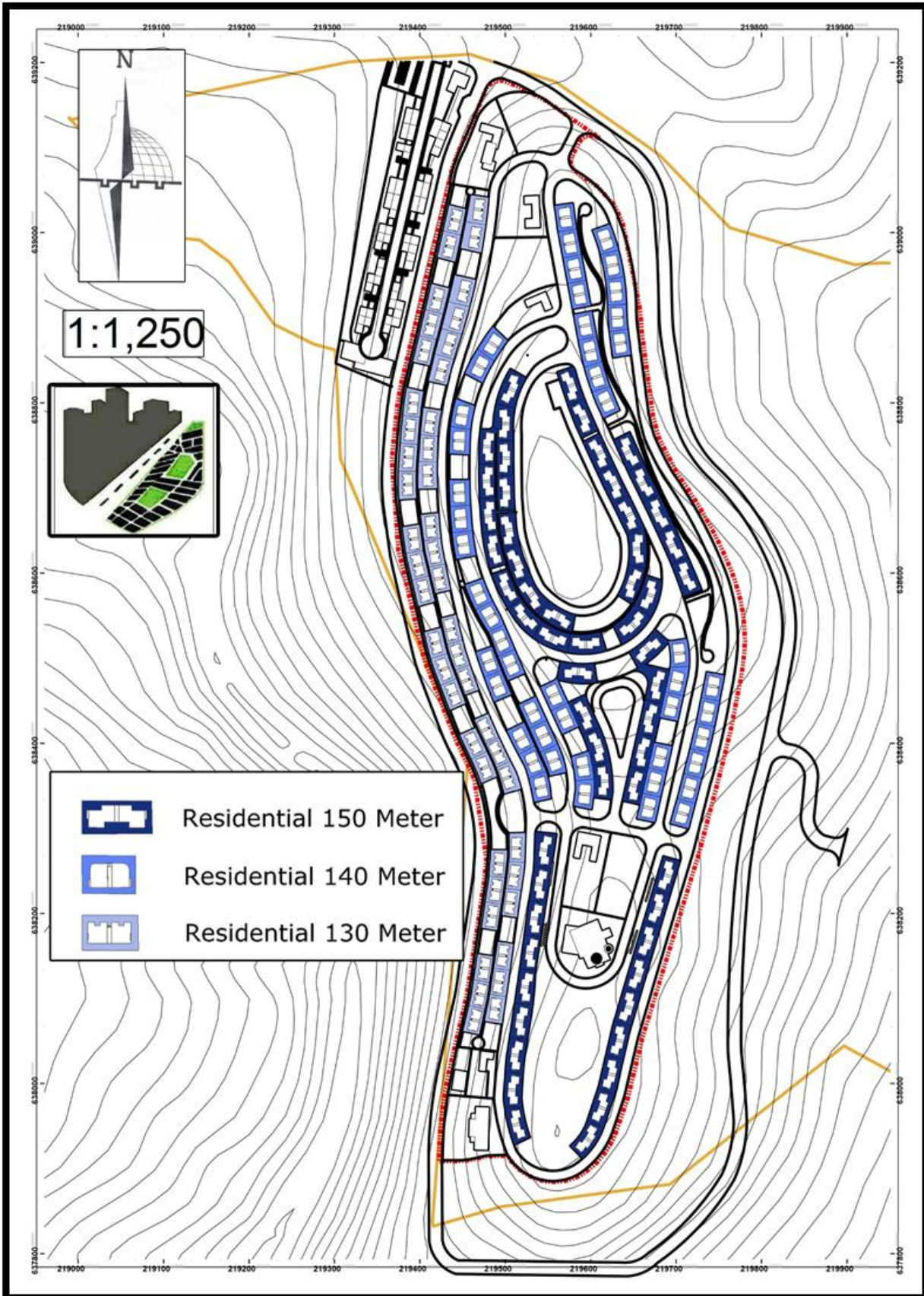
These setbacks are very important, because the setback spaces give the privacy, and safe and good ventilation.

The housing type 1 has an apartment area 150 m², and each floor has an area equal 340m², which has a parcel area around 790 m² (in average), and the total number of this type of building is 57 buildings, the percentage of construction for this type is equal 43%, and the maximum percentage allowed according to the law of regulations and building codes no.5/2011 was 48%.

The housing type 2 has an apartment with an area equal 140 m², each floor has an area equal 320 m², each building has a parcel area equal 700 m² (in average), the total number of parcels and buildings for this type is equal 47 buildings, the percentage of construction for this type of housing is equal 45.7%, and the maximum percentage allowed according to rule of regulations was 48%.

The housing type 3 has an apartment with an area 130 m², each floor has an area equal 280 m², each building has a parcel area equal 645 m² (in average), and the total number of building is 47 buildings, the percentage of construction for this type is equal 43.4%, and the maximum percentage allowed according to the law of regulations and building codes no.5/2011 was 48%.

The following map shows the residential building in the project and their types.



Map (66): The residential building types map

Housing typology

1) Housing 150 m²:



2) Housing 140 m²:



3)Housing 130 m²:



3D Shoots for housing in project:





Pic: the project edited by Infracore 360.

5.8.2) The road network:

the whole suggested area for the project contains no any road network, because this area is not used by the Palestinian citizens, since it locates in area C, expect of existing some dirty road in the East.

The total area of all road network that suggested in the project is equal, 74.46 acres and the percentage of road network from whole project is equal 26.3%, this percent is considered high compared with other affordable housing, for these reasons:

1-This area contains no any road network of any type of infrastructure, so it needs a fully infrastructure services.

2-Since this area locates in area C, the Israeli occupation response to issuing the licenses for the buildings and master plans, and most times refused some roads and streets in any master plans, so if they refused some roads, anther roads will help in connections.

3-This area is expected to inhabited by around 6000 persons, and they need a large road network to connect them with other communities.

Also there are many car parking plots, distributed in whole project area, especially near the services and open spaces that available in the project.

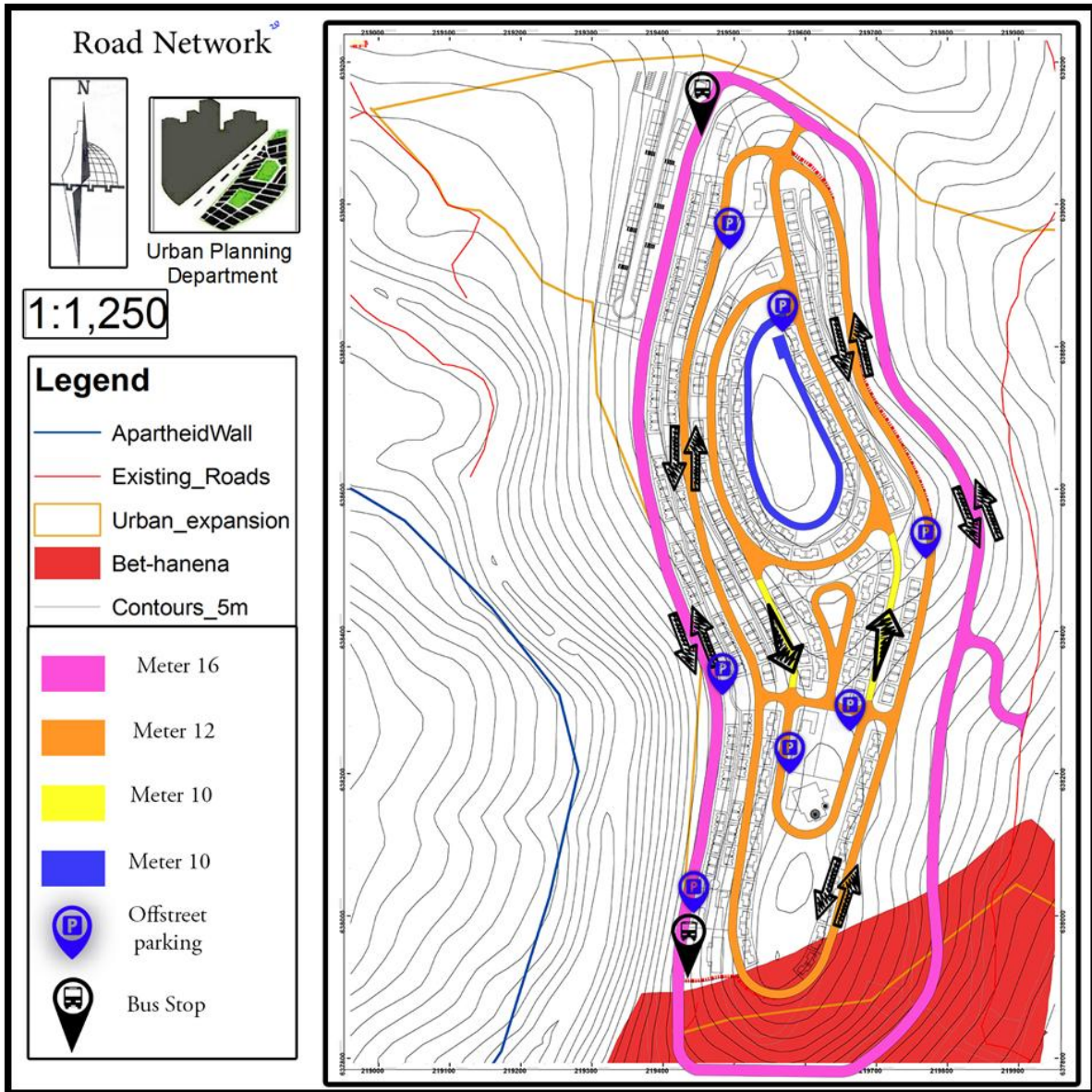
The total number of the parking plots is equal 7 plots, the larger plot locates in the main park, also the project has 2 bus stop stations, locates on the main road the connect Biet-Hanina with the project and commercial area and Bier-Nabala, these stations locate near the secondary schools also.

For the road design, there are 3 different types of road according to their widths, all roads are 2 ways expect 2 roads, one lane for each way, and one lane for parking in the right way only.

The width of the roads is:

- 1) 16 meters.
- 2) 12 meters.
- 3) 10 meters.

The following map shows the road network with their width, and the parking plots, and bus stop stations.



Map (67): The road network.

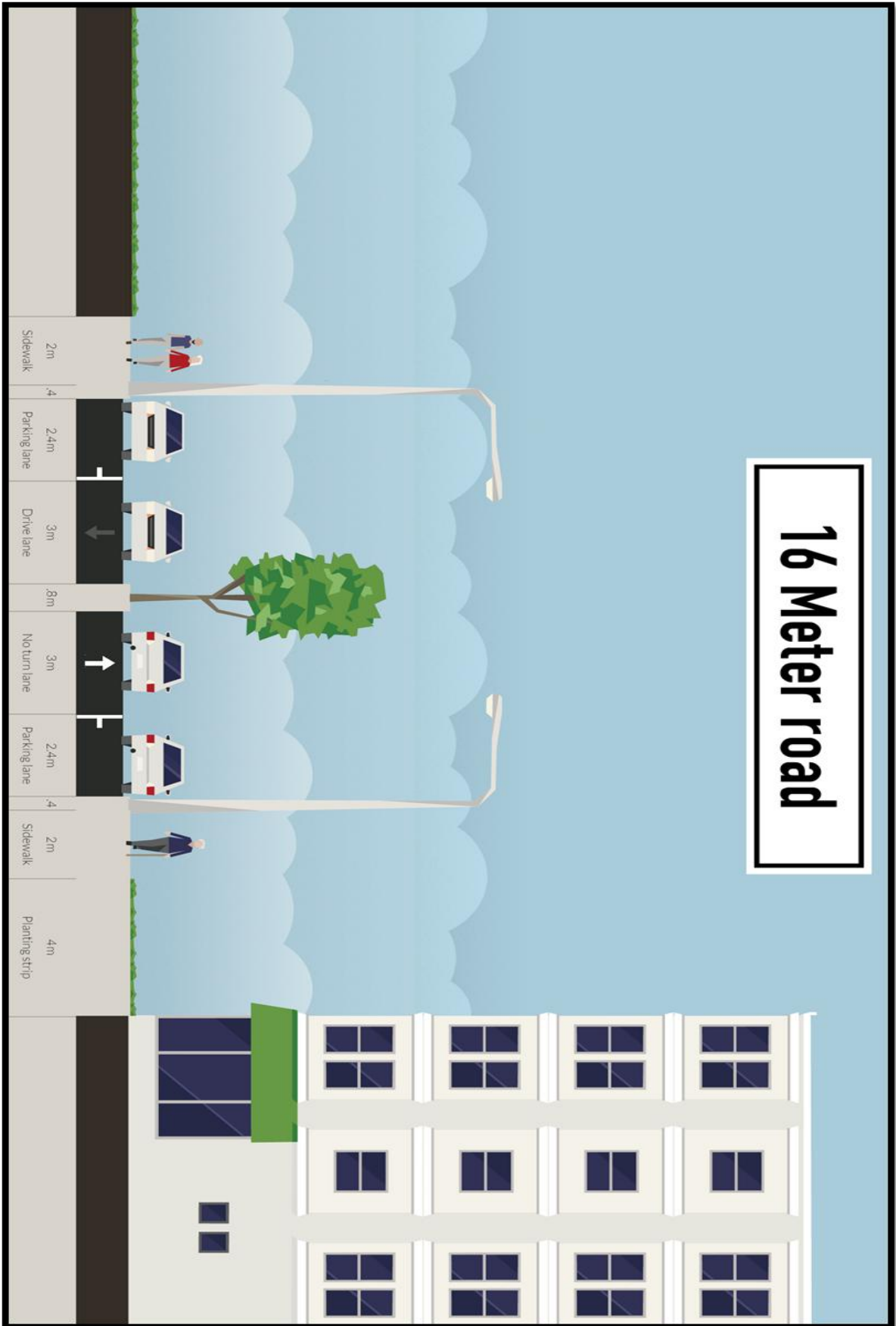
The sections of some roads in the project in the next page:

1-16 Meter road.

2-12 Meter road.

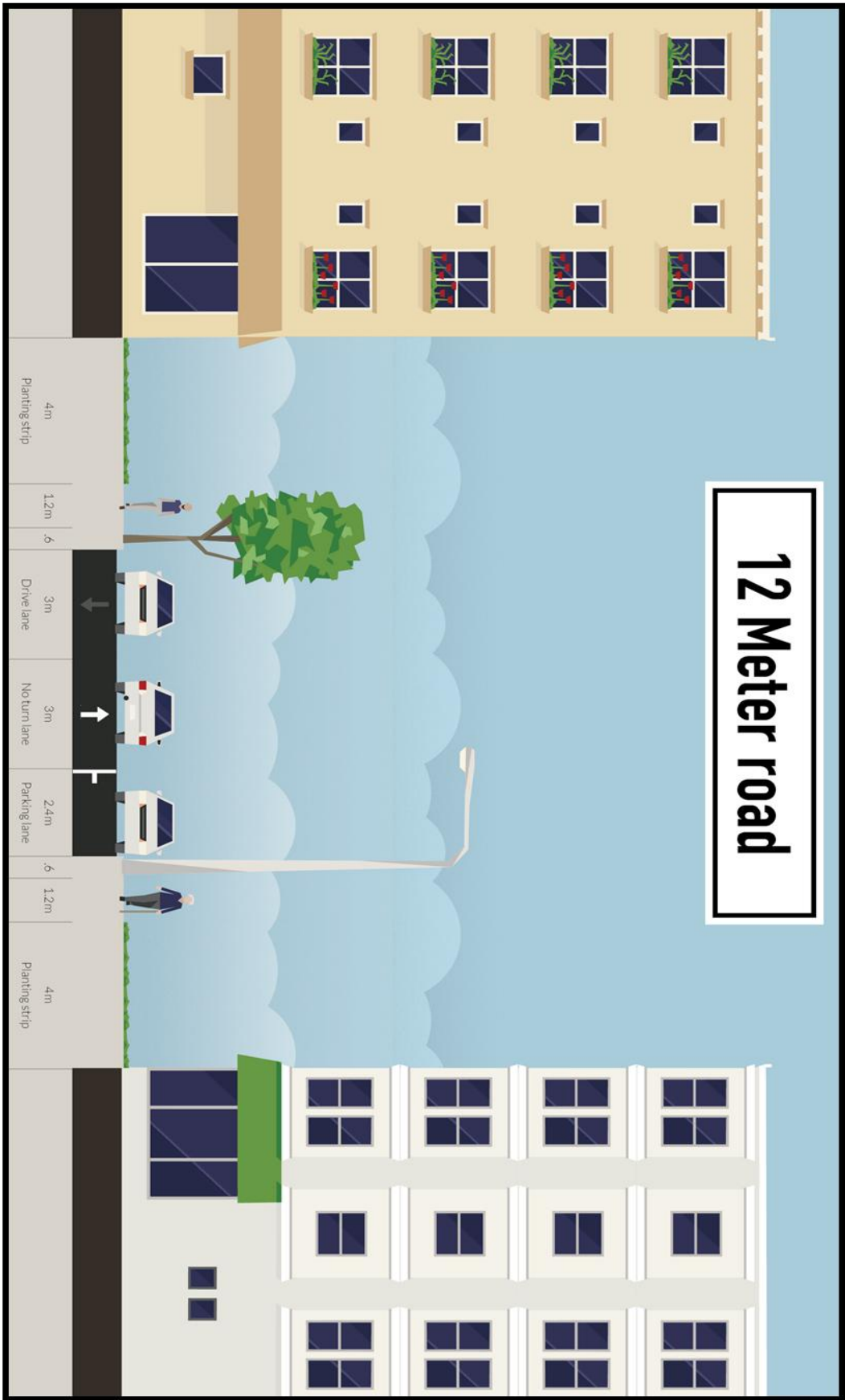
3-10 Meter road.

4-10 Meter Road (one way).

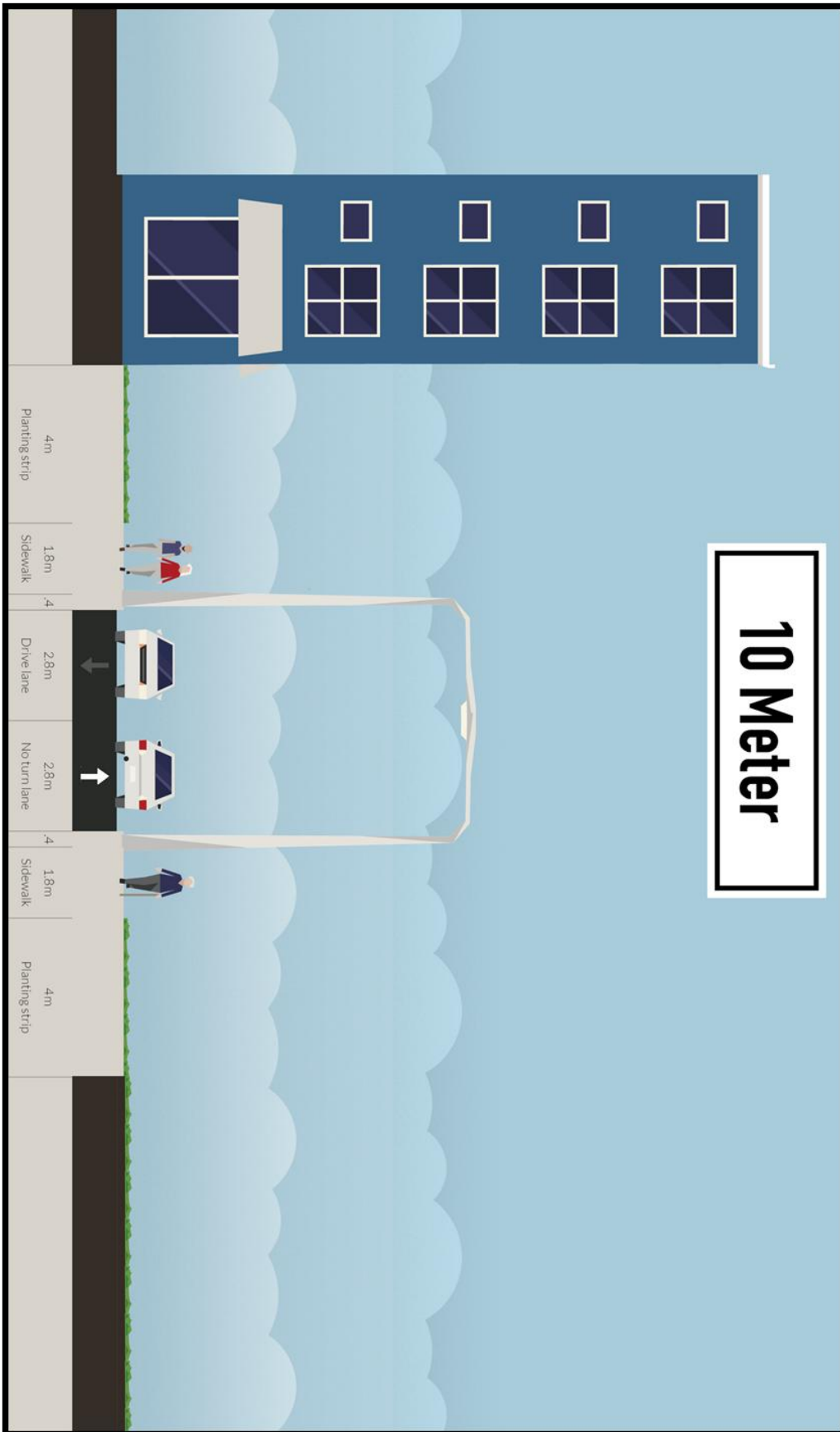


16 Meter road

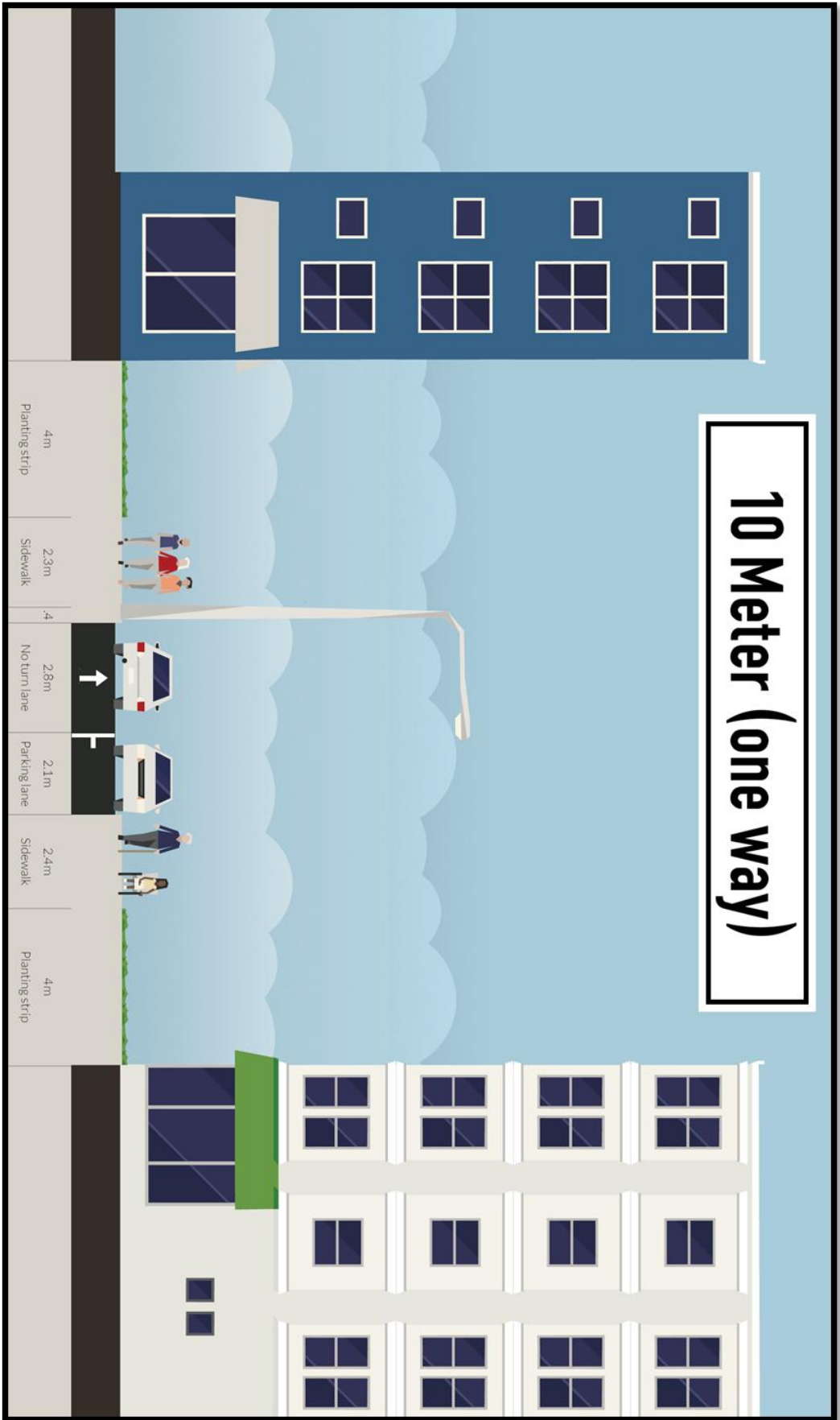
Section for road 16 Meter.



Section for road 12 Meter.



Section for road 10 Meter.



Section for road 10 Meter.

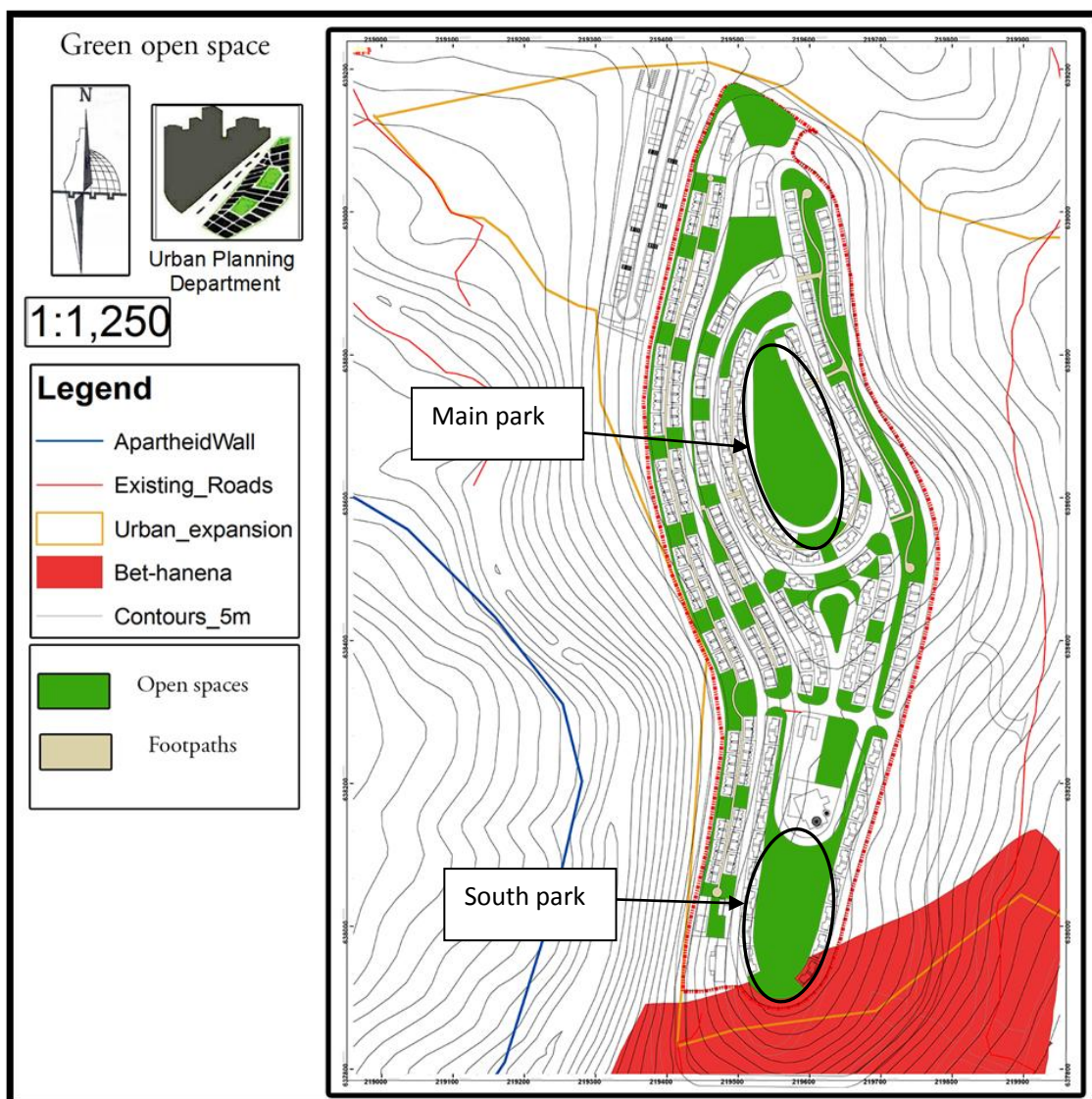
5.8.3) The open spaces and playgrounds.

The project contains an open space, classified to main park, south park, playgrounds between parcels of buildings, the total area for whole open spaces and playgrounds are 86.28 acres, which has a percentage around 26.9%, this percentage is considered high compared with other affordable housing projects for many reasons:

1-The communities (Biet-Hanina, Bier-Nabala, Al-Jib, Al-Jedereh) has considered as a rural communities, so it should preserves its rural character, by increasing the green areas.

2-The area surrounded by an Israeli settlement, and Israeli Industrial zone (Attarot), these two zones especially Attarot emits a lot of smoke and pollution, that could harm the Palestinian citizens in the near community, so the green area will decrease this rate of pollution, and will make the neighborhood project more livable and acceptable.

3-An green area regarded as an attraction to buy a home and living in the project when it is built in the future.



Map (68): green open spaces map.

There are 2 parks in the project, the parks are:

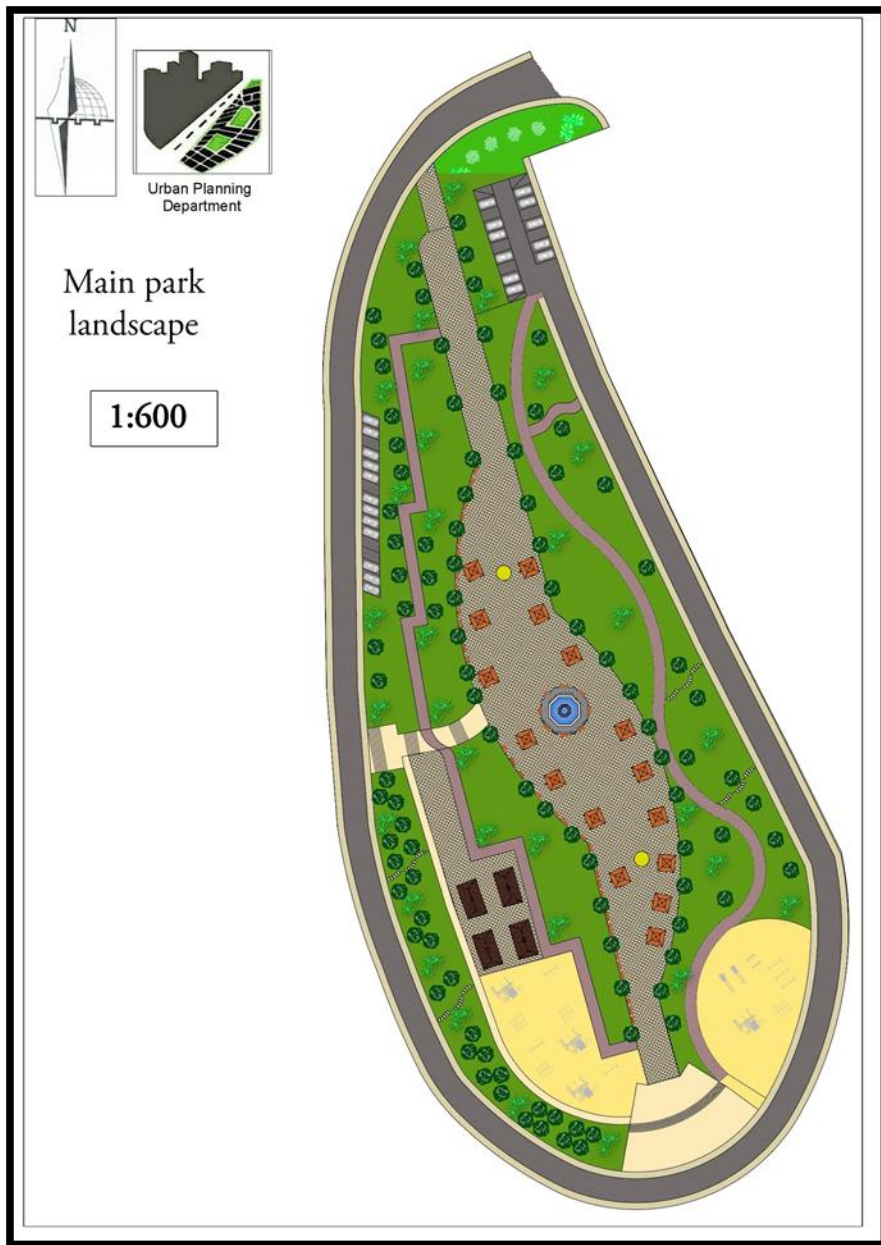
1-The main park:

The main park locates in the north of project, with an area=20.7 acres, on a hill, with an elevation around 791.5 meter, it's the highest point project, this park is expected that will serve the most residence in the project.

The following plans show the suggested design for the main park using AutoCAD and PhotoShop:



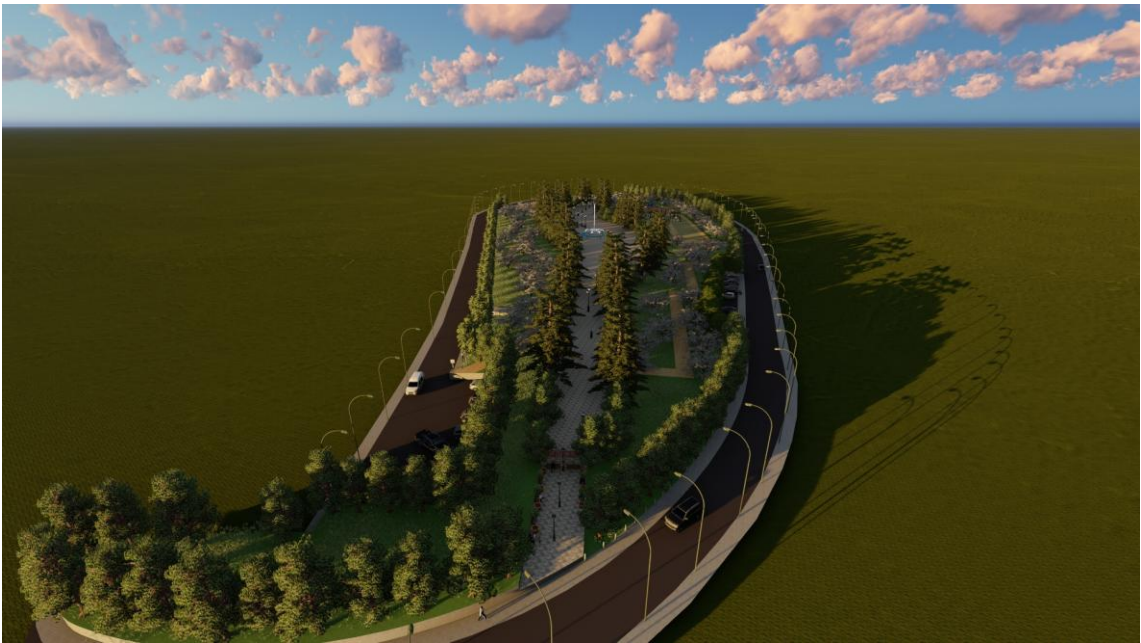
Map (69): The landscape design of main park(AutoCAD).



Map (70): The landscape design of main park(PhotoShop).

3D shoots for the main park:





2-The south park:

The south park locates in the south of the project, near Biet-Hanina (town), the total area of this park is equal 21.5 acres, the main aim of this park is to serve the residence of Biet-Hanina, since it locates on the edge of the project, but also the residences of the project can use it.

The park contains many elements:

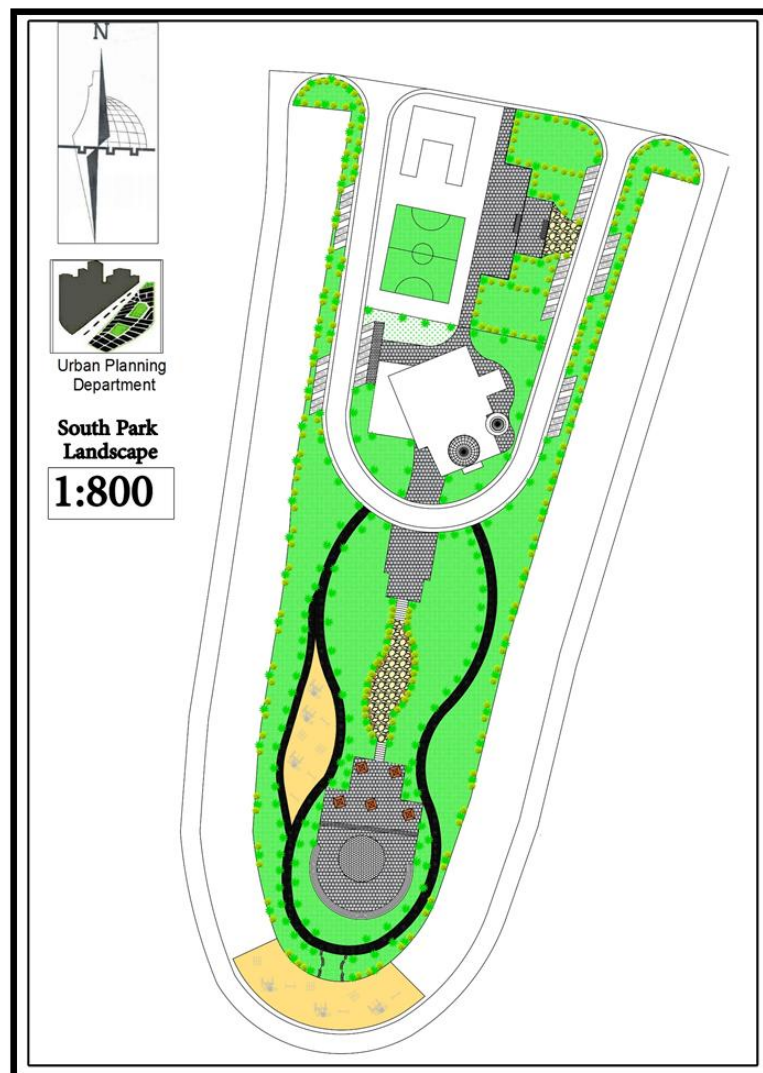
1-A small amphitheater for social events and activities.

2-A space for family's court.

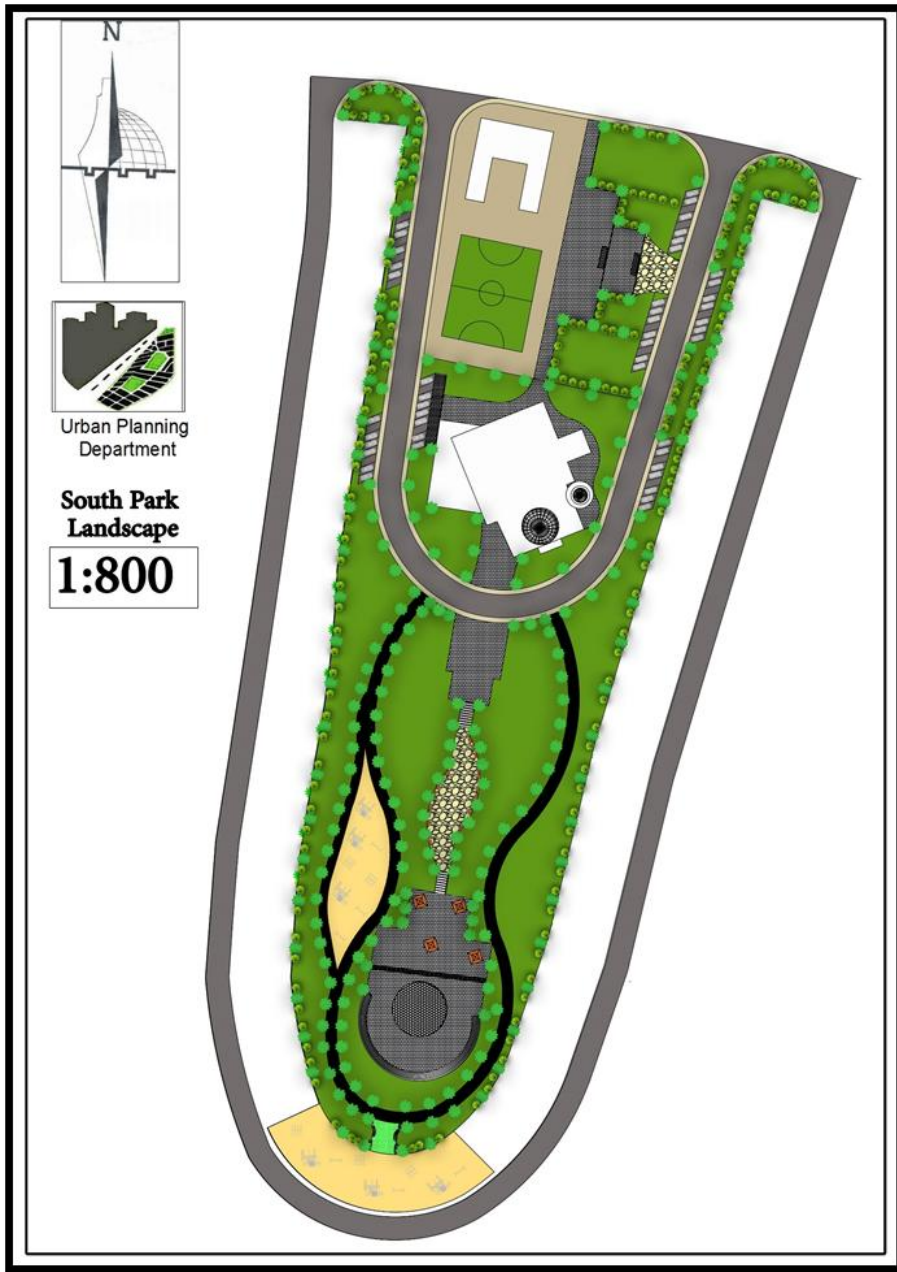
3-A playground for kids.

the park also locates near main services such as: schools, mosque, and health center, so it can serve the students of the school that locates nearby.

The following maps show the suggested design landscape using AutoCAD, and Photoshop:



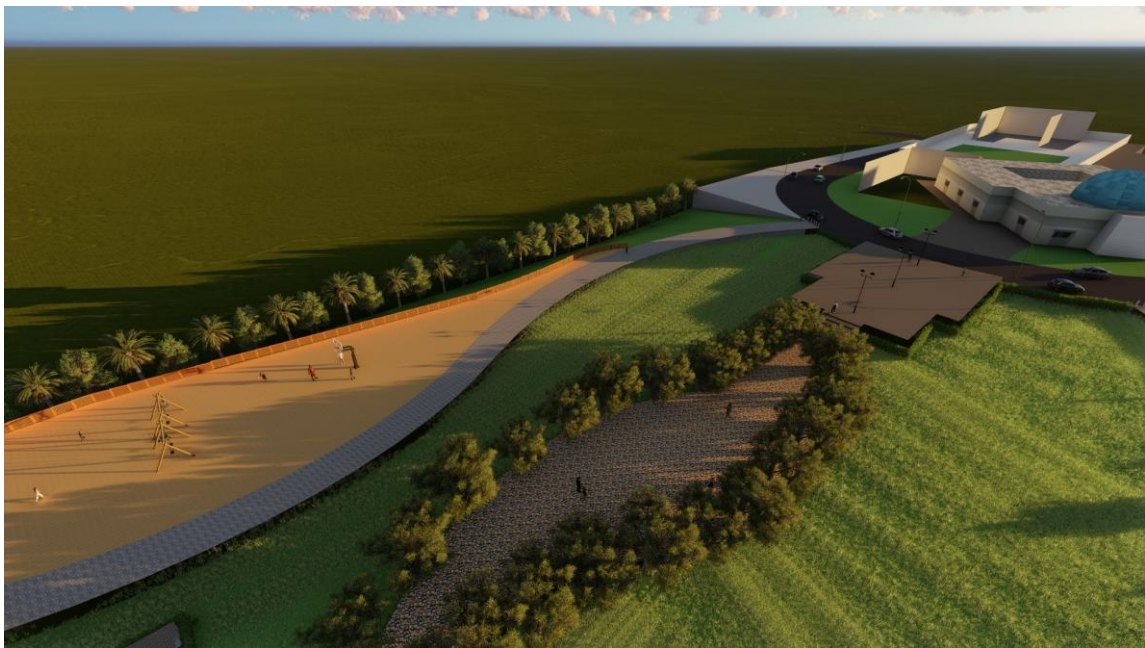
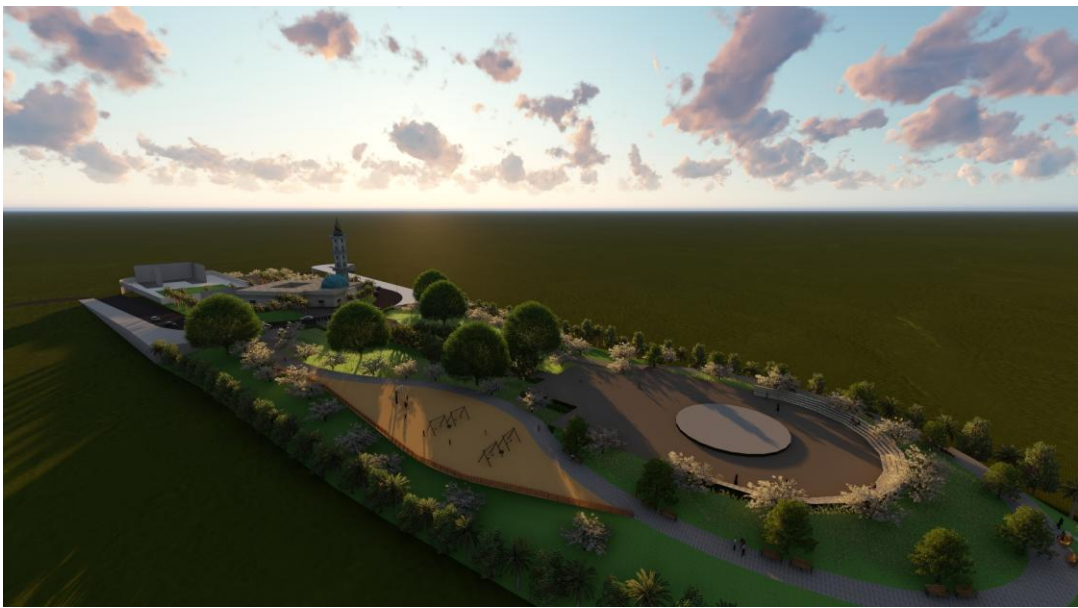
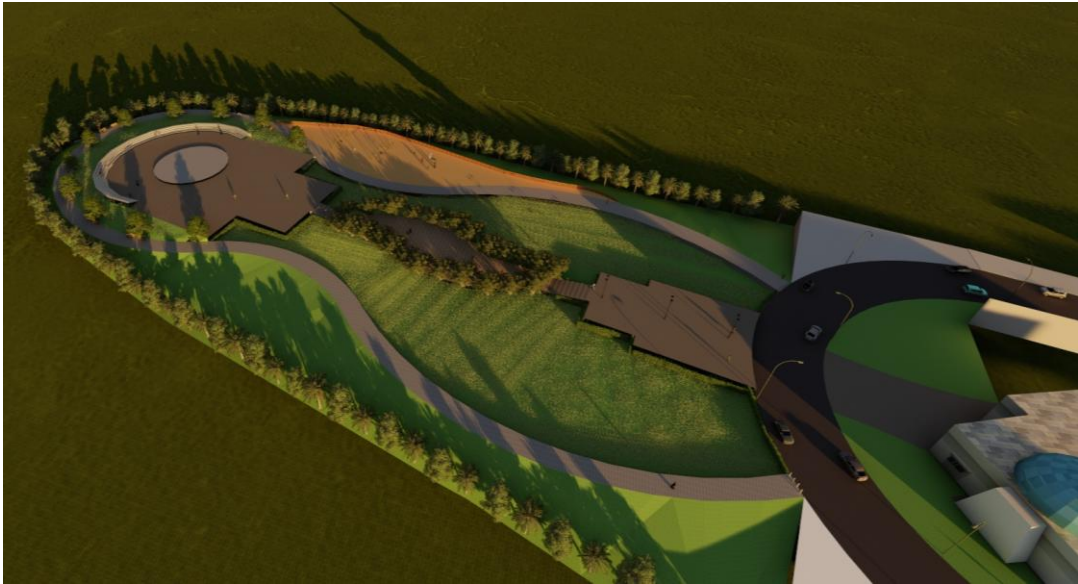
Map (71): The landscape design of south park(AutoCAD).



Map (Y2): The landscape design of south park(Photoshop).

3D shoots for the south park:





5.8.4) The services:

The project needs many services, some of these services is for the residences in the project, and other services could meet the needs of other communities (especially Biet-Hanina and Bier-Nabala), the suggested services are:

1-The kindergarten:

The neighborhood needs this type of service, since that this service should be available in any housing project, the service range for each kinder garden is equal (200-300) meter, so 2 kinder garden is needed, one of them in primary school in the south, and the other in separate building in the north.

Each kinder garden expected that could serve between 80-120 child.

2-The mosque:

Each neighborhood need a religion services, here in the project one mosque is needed, which can serve every residence in the project, the average range that the mosque could serve between (500m-800m), the parcel area suggested is equal 2 acres.

The mosque total area that needed is equal 2 acres, and each prayer need 1.2m².

3-The primary schools:

The project contains 2 primary schools, one for boys, and the other for girls, one of two schools has also a kindergarten in it, the suggested area for both 15 acres.

Each school could serve up to 500 students, so the total number of student that is expected to served is 1,000 students.

The two schools distributed in way that could serve all residences in the project, and also the citizens in Biet-Hanina (Town).

4-The secondary schools:

Two secondary schools were suggested in the project, one for boys and the other for girls, according to the standards, the number of residence that range between (10,000-20,000) need just one school, but 2 schools suggested to serve the near communities with this service, because these communities have a lack in this service, especially Biet-Hanina, and Bier-Nabala.

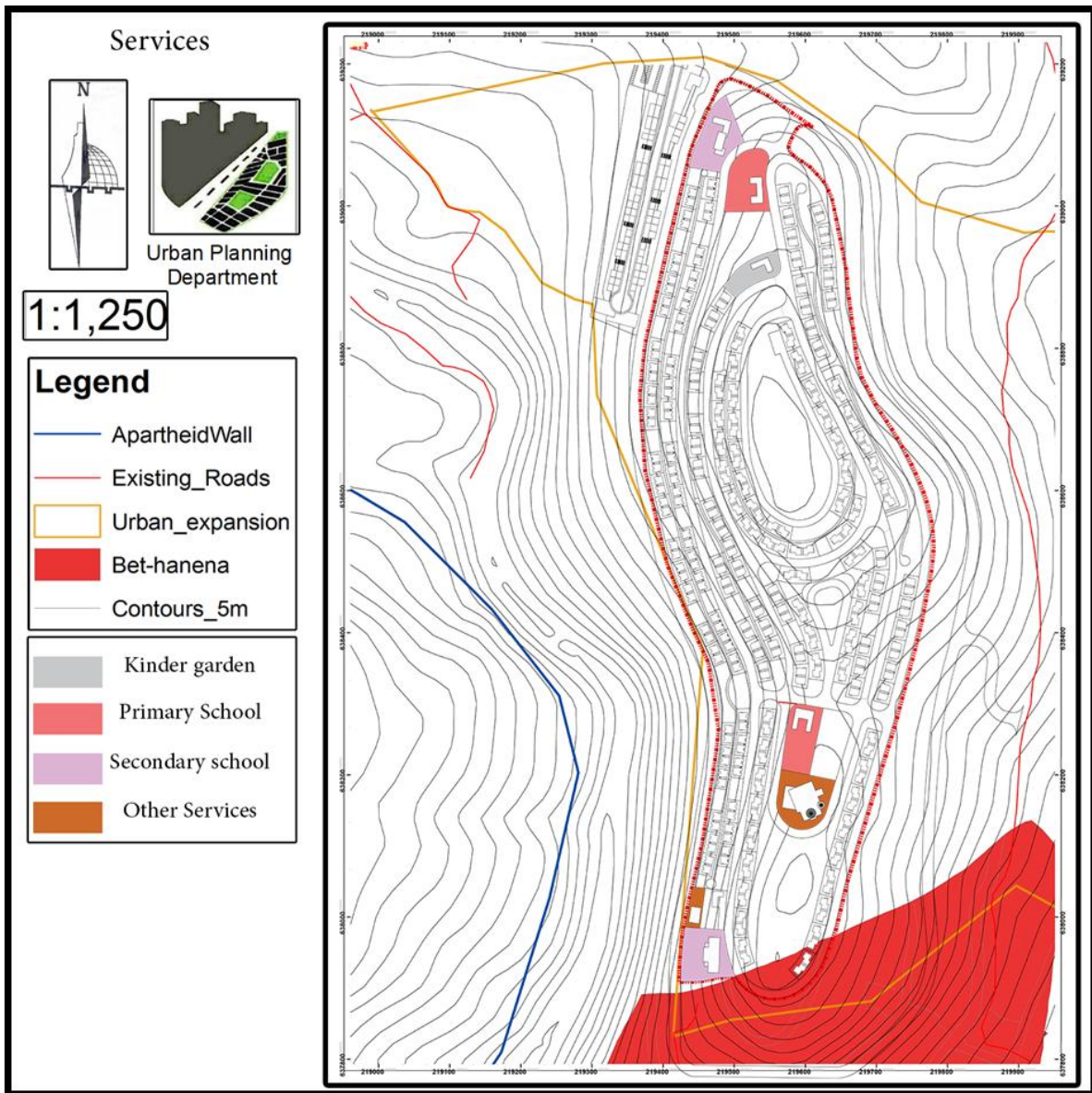
Each school could serve in range (2,000m-2,500m).

The parcels area that suggested is equal 10 acres.

5-Health center and civil defense:

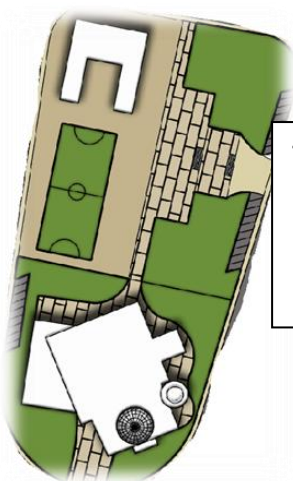
The project contains a health center with an emergency center, this center has an area parcel area equal 900m², and 400 m² for civil defense.

The following map shows the services that are available in the project:



Map (73): The services map.

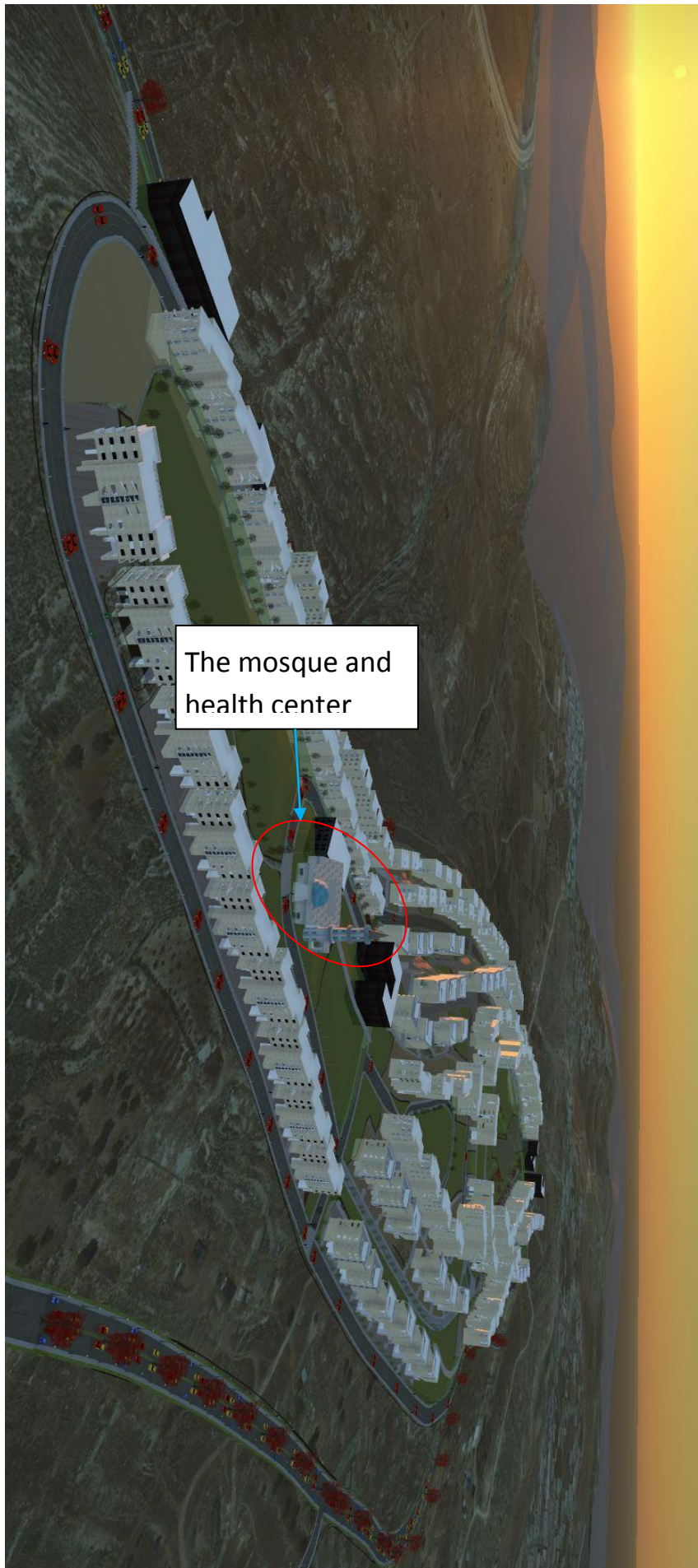
The following pictures show the services in the project.

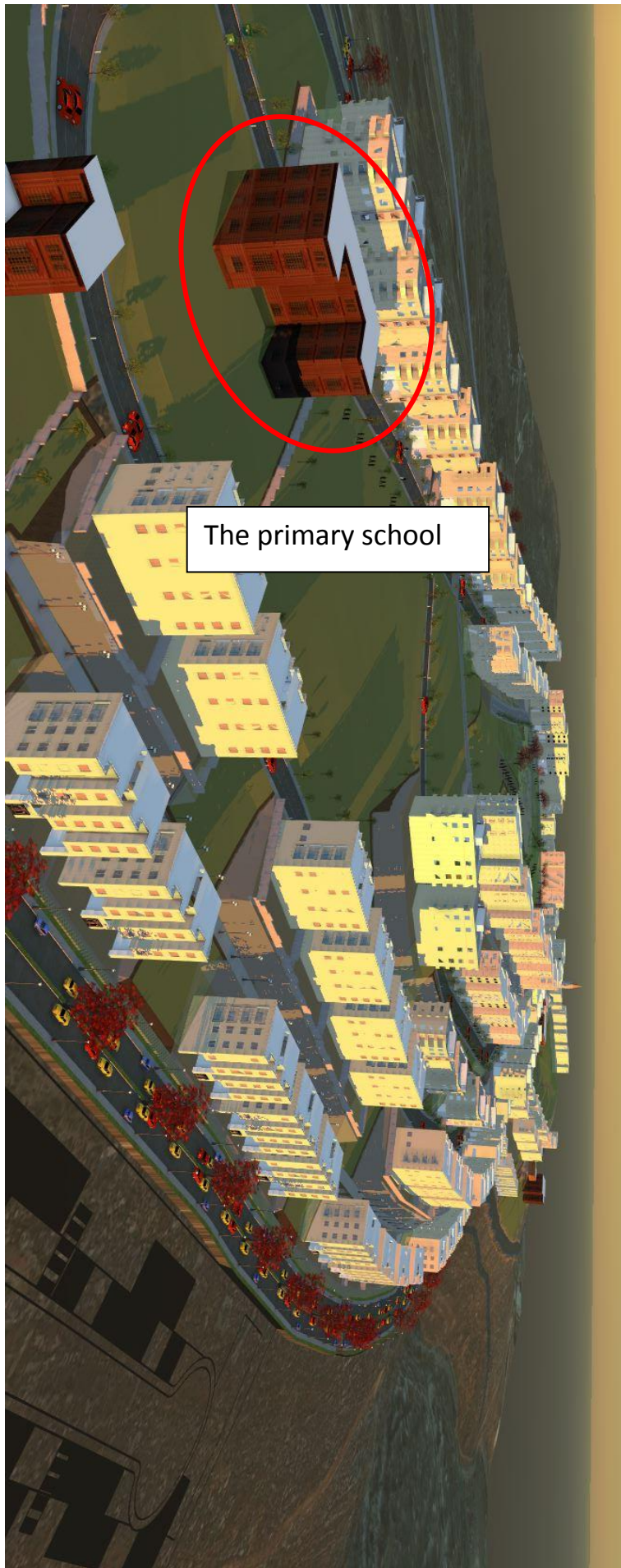


The mosque and primary school



The secondary school.
The primary school.
The kindergarten





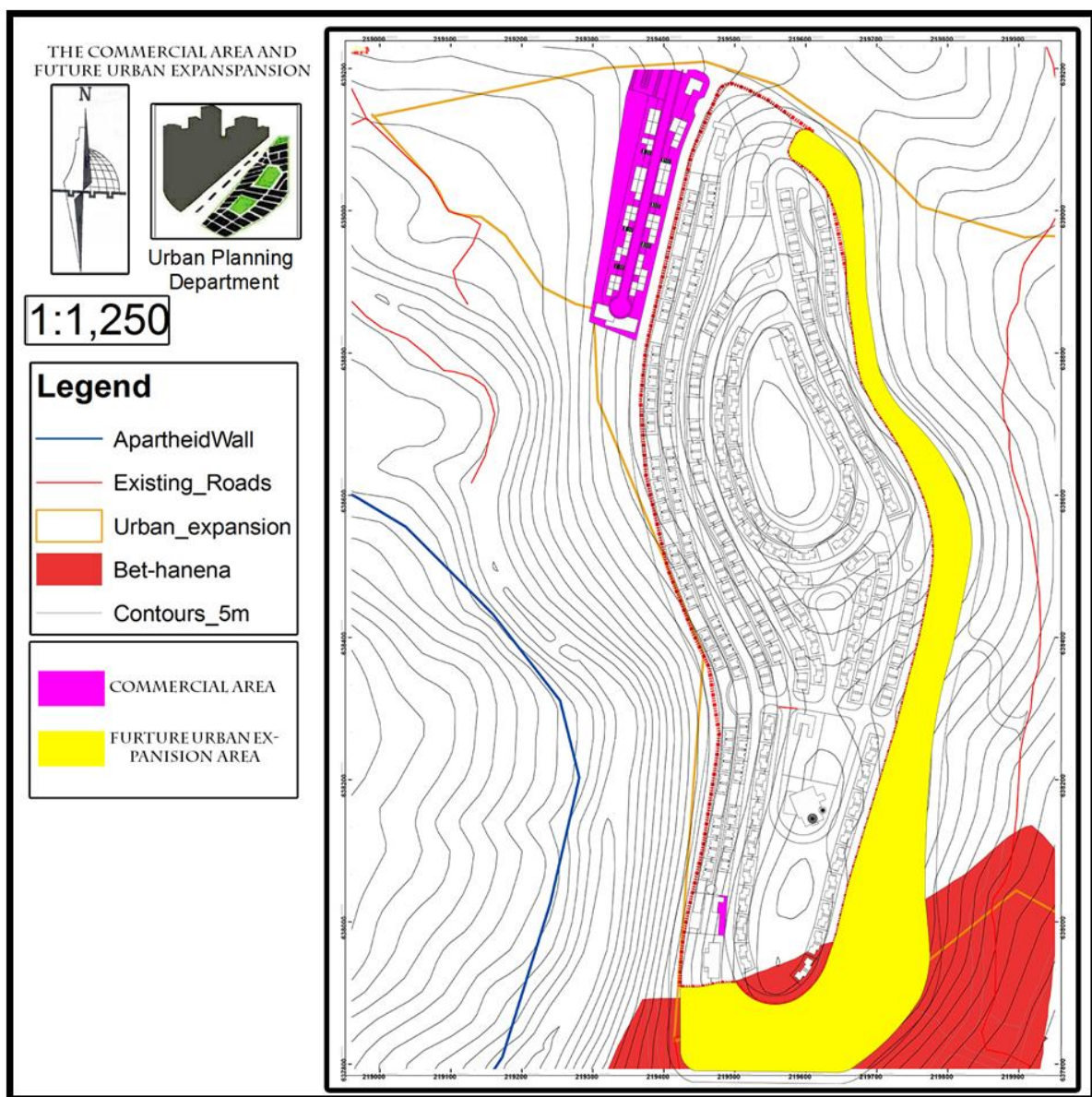
5.8.5) The commercial area and future urban expansion area:

After study and read the site analysis, it is noted that there is an attarot industrial area, which produce and sell many goods, also there is sporadic commercial areas in the nearby community, these areas need to rearranged, so one of solution is to create a central commercial area, that could be locate nearby the suggested project.

The new suggested project has an area around 33.3 acres, on the main access that connect Biet-Hanina with Bier-Nabala and the project, this area contains a retail shops, and restaurants, and any activities expected a heavy or light industries.

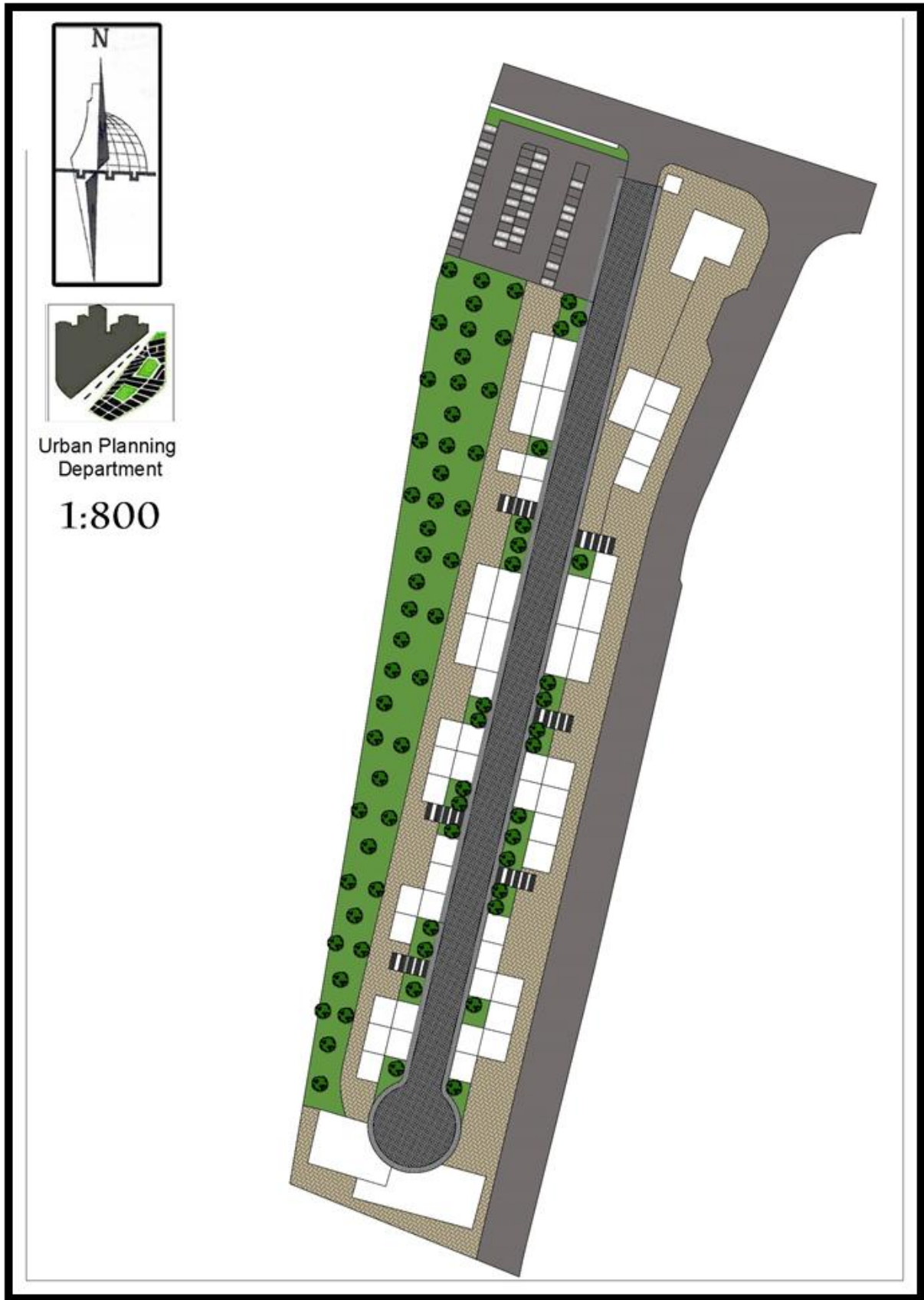
Also a future urban expansion area suggested nearby the project, this area is allocated for individual buildings as mentioned in landuse section.

The following map shows the commercial area and future urban expansion area:



Map (73): the commercial area and future urban expansion area.

The following map is for the commercial area:



Map (74): The commercial area.

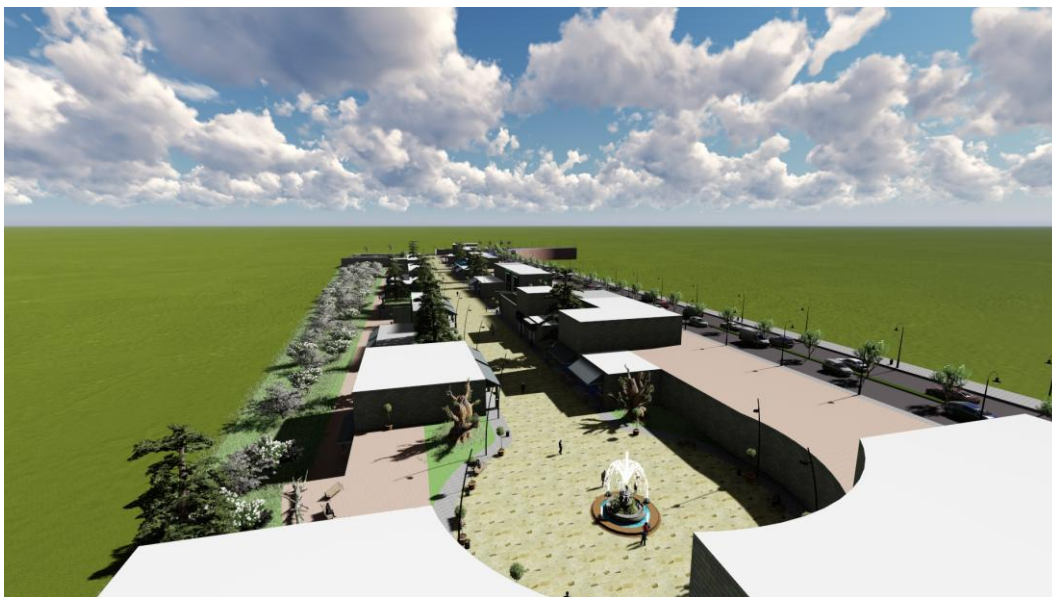
3D Shoots for the commercial center:

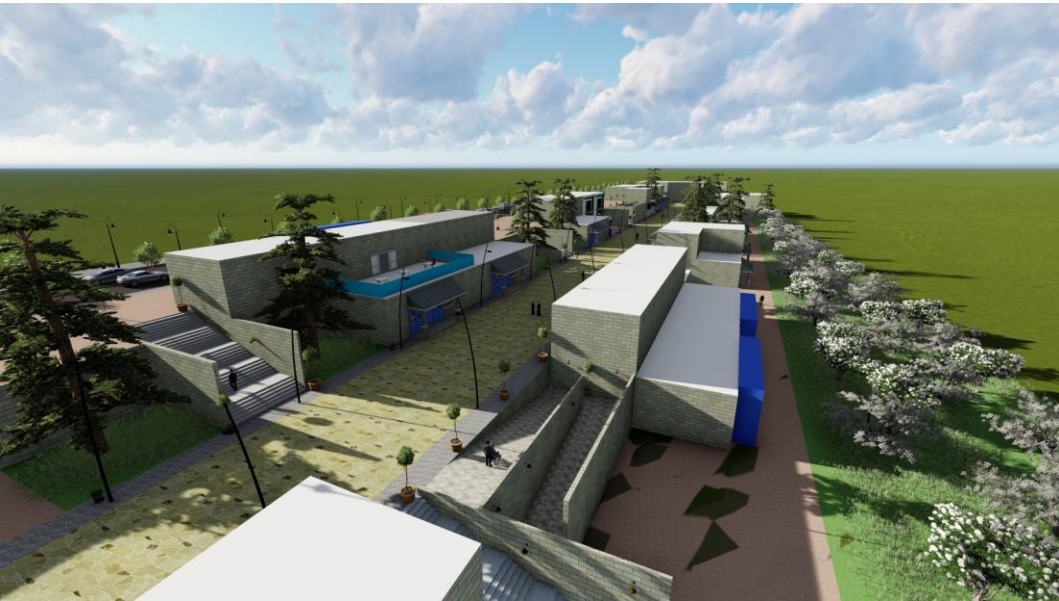
By sketch up





By lumion





3D Shoots for the project:





References:

- International Peace and Corporation Center, Scheme framework guideline for the development of spatial villages northwest of Jerusalem plan proposed.
- Portland Trust, Palestinian affordable housing program.
- Geo.Molg.gov.ps. (for maps and layers).