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# MEDICAL CITY

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At the Regional Level in Palestine



MAY 19, 2016  
NAWAL M KHWAIRA - 11003085  
Urban Planning Department – An-Najah University



## ACKNOWLEDGEMENT

FIRST I THANK GOD FOR HIS ENDLESS BLESSINGS AND TENDER .

I THANK ALL WHO GIVE ME HANDS IN COMPLETING THIS GREAT PROJECT OF MY FAMILY, FRIENDS AND TEACHERS.

I DEDICATE THIS WORK AND THIS IDEA TO THE SOULS OF WHO PERISHED IN SEEKING FOR TREATMENT AND MEDICINE. AND SINGLE OUT THE CHILDREN OF **GAZA AND SYRIA**.

I DEDICATE THIS WORK FOR ALL WHO LIVE IN MY HEART AND FOR MY SECOND FAMILY THE STUDENTS OF URBAN PLANNING DEPARTMENT.

LAST AND NOT LEAST, I DEDICATE THIS WORK TO MYSELF WHERE MYSELF OVERCAME MYSELF IN THIS PROJECT.

## Summary

The medical city project aims to increase the medical health level in Palestine by promote doing medical researches on the educational and treatment level and it aims to gain the lost trust in the Palestinian medical facilities after a long period of suffering from the medical mistakes inside and outside **Ministry of Health facilities**. Also, it will achieves equity for people who cannot get treatment outside the MoH facilities. Moreover, to enhance doing such a projects as a tool of counter planning in Palestine.

Focused studies was done on all hospitals in Palestine to determine the needs in the specialized medical services and after that the project program was established to meet that needs.

The program contained two specialized hospitals with 400 bed capacity, one revitalization hospital with 100 bed capacity in addition to hospital university campus and small neighborhood.

This project will serve the whole nation, also it will minimize patient transfer outside Palestine, and moreover it will be a focal point for doctors to study there.

Construction such a project will accelerate innovation in medical science in Palestine and the information will be shared and transferred very smoothly between hospitals and other medical centers. It will contribute in upgrading the surrounding localities by providing services and employ its residents and it will increase the local economy and decreasing unemployment rate in health sector, finally, it will achieve governance by improving the partnership between the various sectors “ Public, Private and NGOs”.

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## I. Introduction

### I. Overview

Providing health services came from the right of health for each living thing, and from that health facilities are developing to meet people needs whether it was basic or luxury services. Moreover, it became a tool to measure countries' ranking in term of development.

Health facilities are various from small clinics to large hospitals with different type and Specialties. In the Palestinian case, health facilities are consist from clinics, public, and private hospitals and sometimes clustered such as Palestinian Medical Complex in Ramallah. However, new trend has developed in the world based on the theory tells that a cluster of healthcare facilities will accelerate innovation, so we have now medical cities that group all health related facilities whether it were a curative or educational to increase the health level in that region or country.

## II. Medical City Introduction and Justifications

My graduation project is a Medical City on the national level project seeks to be new Nucleus for planned urban development in Palestine, it will provide specialized medical services (Hospitals, clinics, researches center etc.), health related educational facilities, housing units (Employees Housing, Student dorms, etc.), park and any other needed elements in the site. The Medical City must connected to all main cities in Palestine.

Palestine health sector that is represented by the Ministry of Health(MoH) needs such a project due to deficiency in some medical specialties and bed capacity which calls to transfer patients to treat outside

the MoH facilities inside and outside Palestine, which cost the Palestinian Authority a huge amount of money and debts. Moreover, the health level in Palestine classified as low due to medical mistakes that the health sector is still suffering from, which leads people to treat outside the MoH facilities and Palestine. In addition, the clinics and hospitals in Palestine not considered as a comfortable place to be in, and that returns to many reasons such as the lack of the green in the sites.

These problems and defects had motivated me to scrutinize this subject to work on it later as graduation project on the urban design scale to serve the whole state.

❖ This project aims to the following:

- Increase the medical health level in Palestine.
- Promote doing medical researches on the educational and treatment level.
- Gain the lost trust in the Palestinian medical facilities after a long period of suffering from the medical mistakes inside and outside **Ministry of Health**.
- Achieve equity for people who cannot get treatment outside the MoH facilities.
- Enhance doing such a projects as a tool of counter planning.

## I. Site Selection

In this stage the project will be allocated based on many criteria that will be clear in the next sections.

### I. Site Selection Phase 1

In order to decide where the medical city's location to be, a study for the existing situation of hospitals must be done. There's many factors that affect the Hospitals Should be taken into consideration such as, Population Growth, Hospitals ownership, Hospitals Specialty, Bed, Hospitals ratio and Bed Occupancy. These factors are varies from each other, every factor has its own weight that will be used in the evaluation.

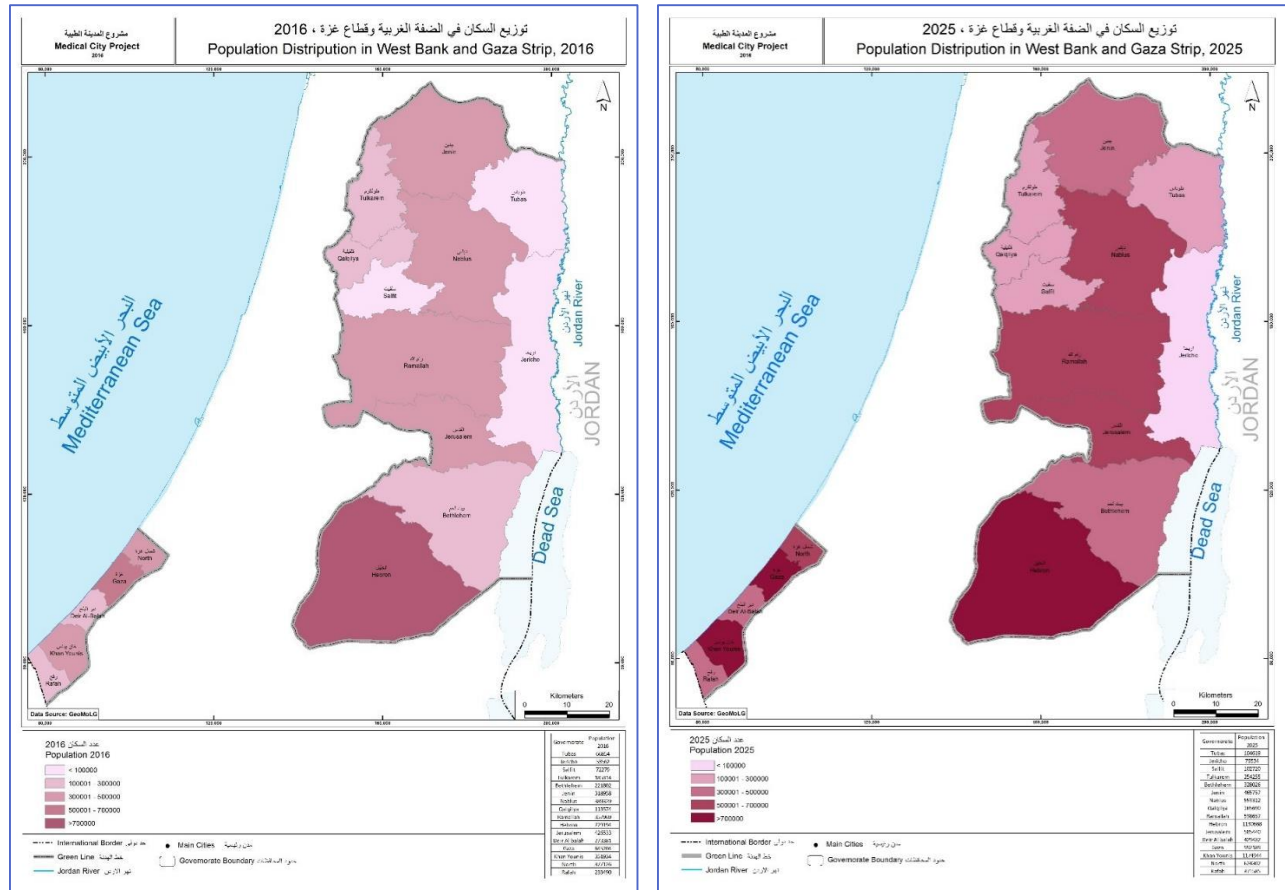
*Table 1 shows the existing situation of hospitals in the Palestinian governorates.*

Governorate	General	Ownership	Specialty
-------------	---------	-----------	-----------

	Population 2016	Population 2025	Number of all Hospitals	Number of Bed	Occupancy Rate	Governmental	Private	NGOs	Military	General	Specialized	Delivery	Rehab	Educational
	Weight													
	3	4	3	5	5	5	4	4	3	3	5	3	5	4
Bethlehem	221802	328026	7	396	76	1	2	4		3	1	3		
Hebron	729194	1130668	11	626	114	2	5	4		6	3	2		
Jerusalem	426533	585440	9	658	120		4	4		4	2	2	1	
Gaza	645204	992189	15	1349	90	6		8	1	4	10	1		
Ramallah	357969	538657	14	407	107	5	6	3		7	5	1	1	
North	377126	624302	6	339	90	2		3	1	3	2	1		
Jenin	318958	465757	3	220	84	1	1	1		1	1	1		
Rafah	233490	371585	3	164	90	2		1		1	1	1		
Nablus	389329	553312	7	524	88	2	2	3		4	2			1
Khan Younis	351934	1174944	5	697	90	2		2	1	4	1			
Deir Al balah	273381	429432	2	123	90	1		1		1	1			
Tulkarem	185314	254255	3	170	69	1		2		3				
Qalqilya	113574	165690	2	121	89	1				2				
Salfit	72279	102720	1	50	65	1				1				
Jericho	53562	79534	1	54	65	1				1				
Tubas	66854	104619	1	37	43	1				1				

## I. Population growth

Whenever we have population growth, needs will increase constantly, from next maps you can notice that Hebron and Gaza Strip have larger population and Nablus and Ramallah are coming next.



*Figure 1: Map Shows Projected Population in West Bank and Gaza Strip 2016 and 2025*

Table 2 : Shows the highest rank of governorate based on the population factor.

	Population 2016	Population 2025
Highest Rank on Scale of Five	Hebron	Khan Younis
	Gaza	Hebron
	Jerusalem	Gaza
	Nablus	North Gaza
	North Gaza	Jerusalem

## II. Hospital Ownership

There's different Parties provide health services in Palestine, such as public hospitals that are owned and ruled by the government, private hospitals owned by the private sector, non-governmental hospitals owned by the NGO's and military service hospitals owned by the military.

## Public Hospitals

These kind of hospitals are distributed along West Bank and Gaza Strip because every governorate must have at least one public hospital as the Map shows. The governorates that have lowest number of Public hospital it will have the highest rank.

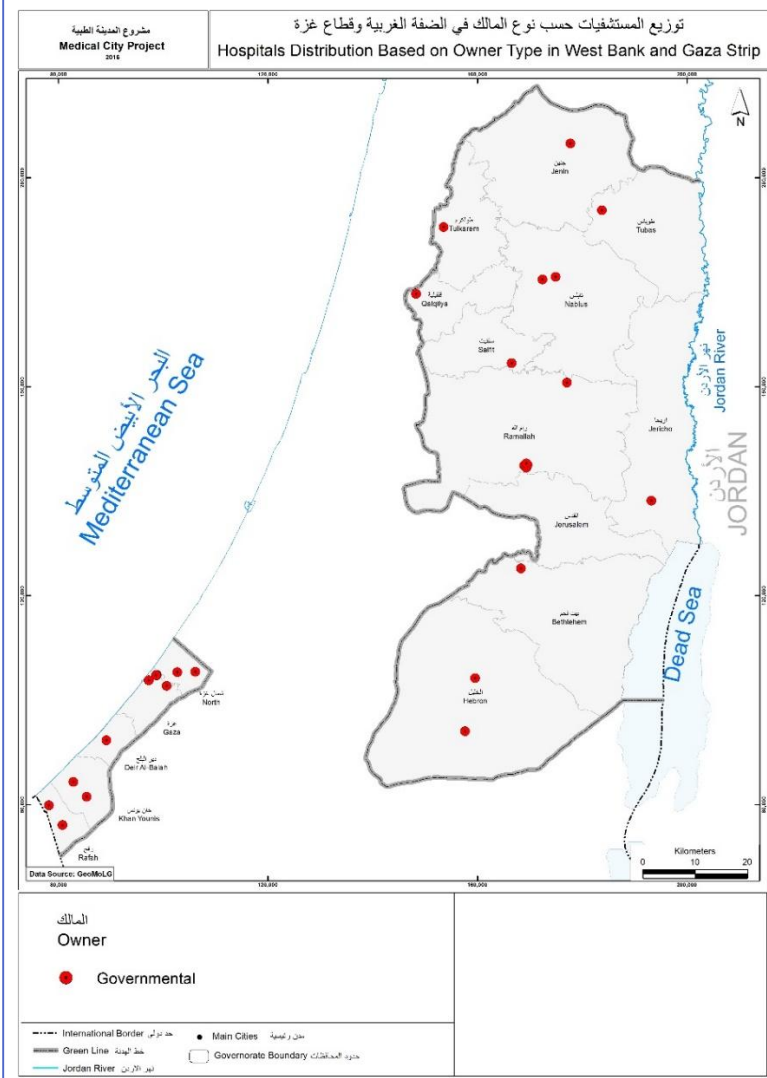


Figure 2: Map Shows hospitals owned by the government

## Military Service Hospitals

These hospitals are only exist in Gaza Strip as map shows, and it was a civil hospitals in the past. The governorates that don't have this type of hospitals will have the highest rank and vice versa, because this type of services are common in medical cities.

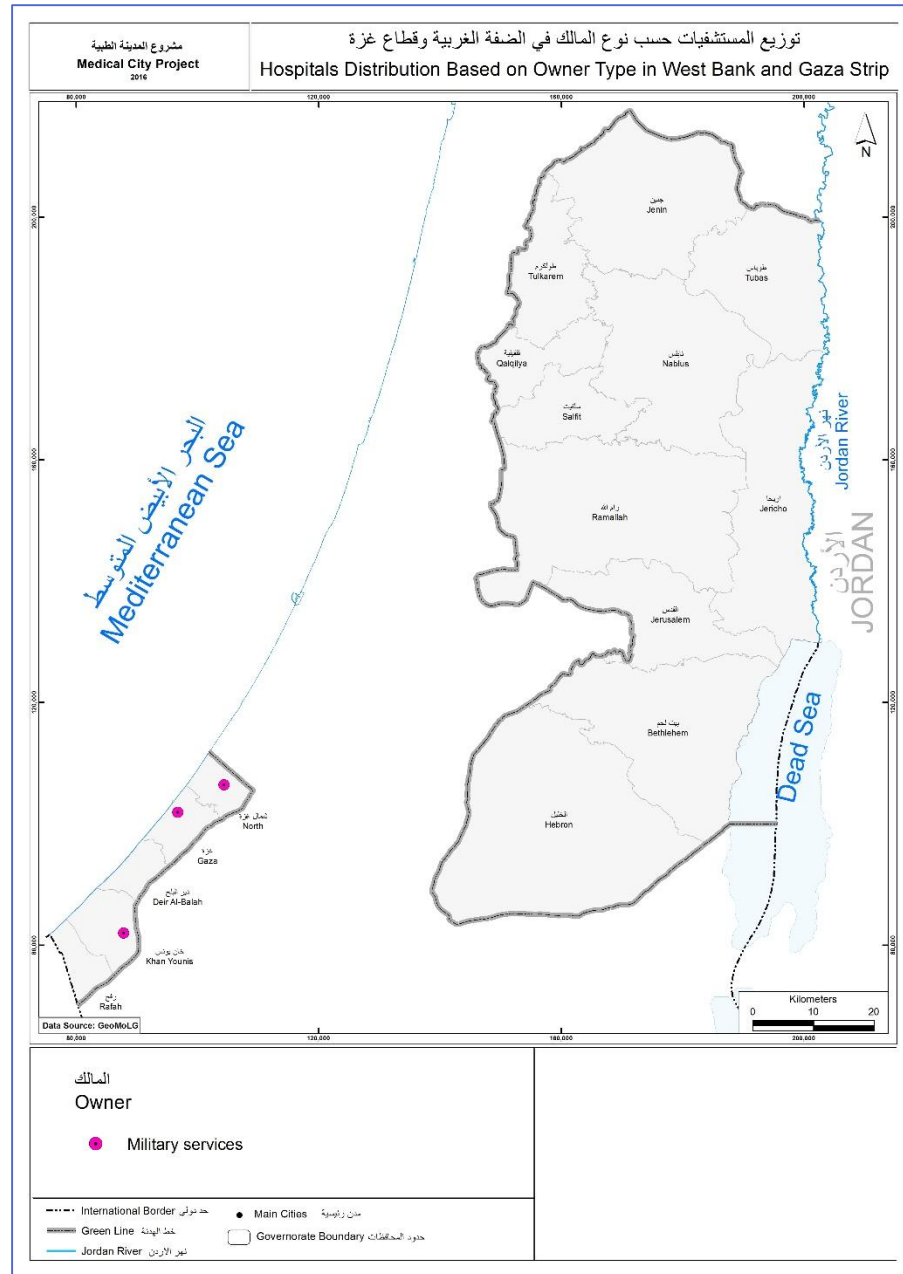


Figure 3: Map Shows hospitals owned by the military services

## Non-Governmental Hospitals

These kind of providers are common in Palestine because during occupation the NGO's represented by the donor countries have an important rules in Providing services and most of this organization have a religious theme, some are following churches and others are following Islamic groups

The governorates that don't have this type of hospitals will have the highest rank because it will be an opportunity for this kind of investments.

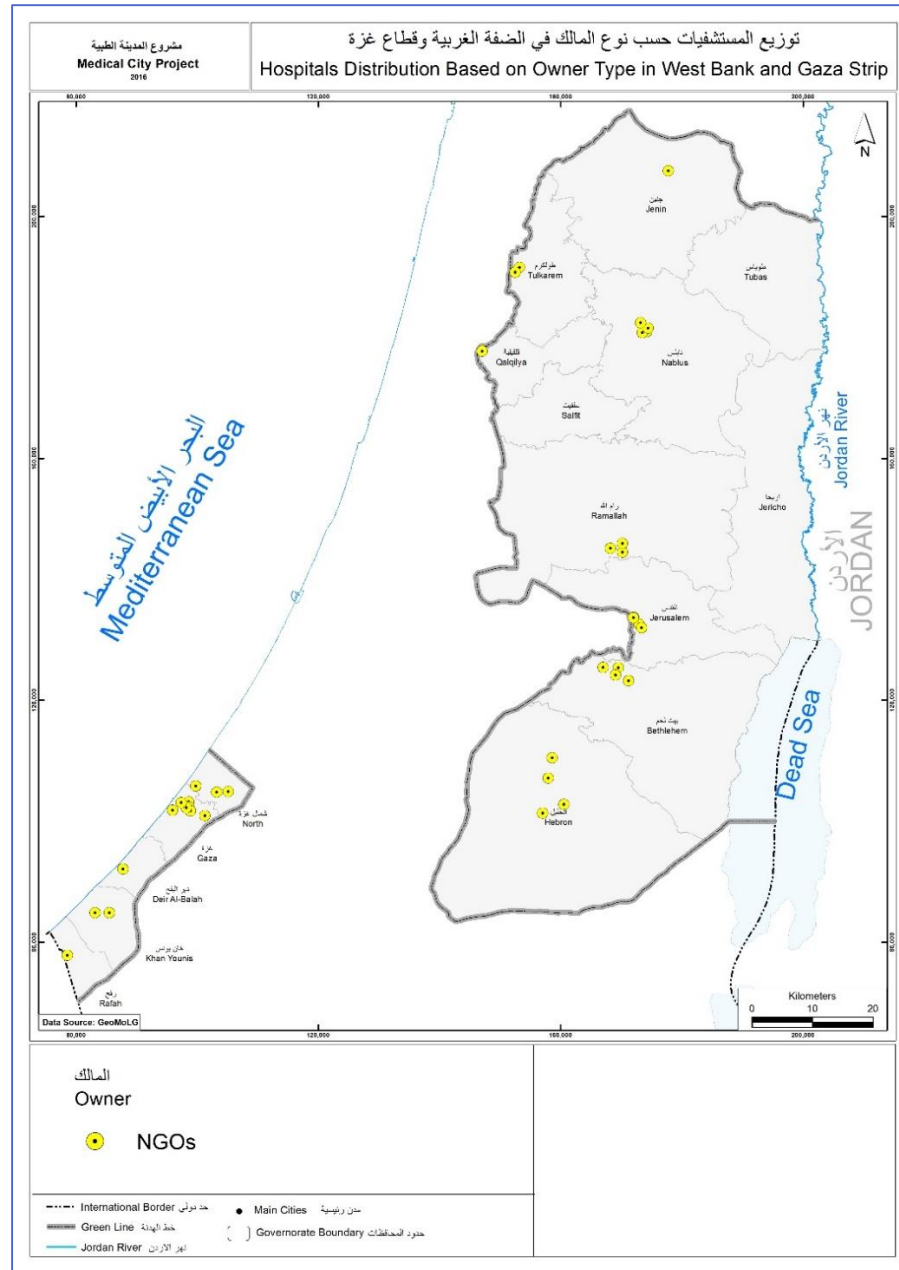


Figure 4: Map Shows hospitals owned by the NGOs

## Private Hospitals

Private sectors always care about profits plus providing special services, most of specialized hospitals are owned by the private sectors, because government couldn't provide such a high quality services in an occupied environment. It's noticeable from map that in Gaza Strip there's no investments from the private sector due to many reasons, ones due to unestablished investment environment in Gaza Strip. The governorates that have this type of investment will have the highest rank because it will be an opportunity and more economically effective.

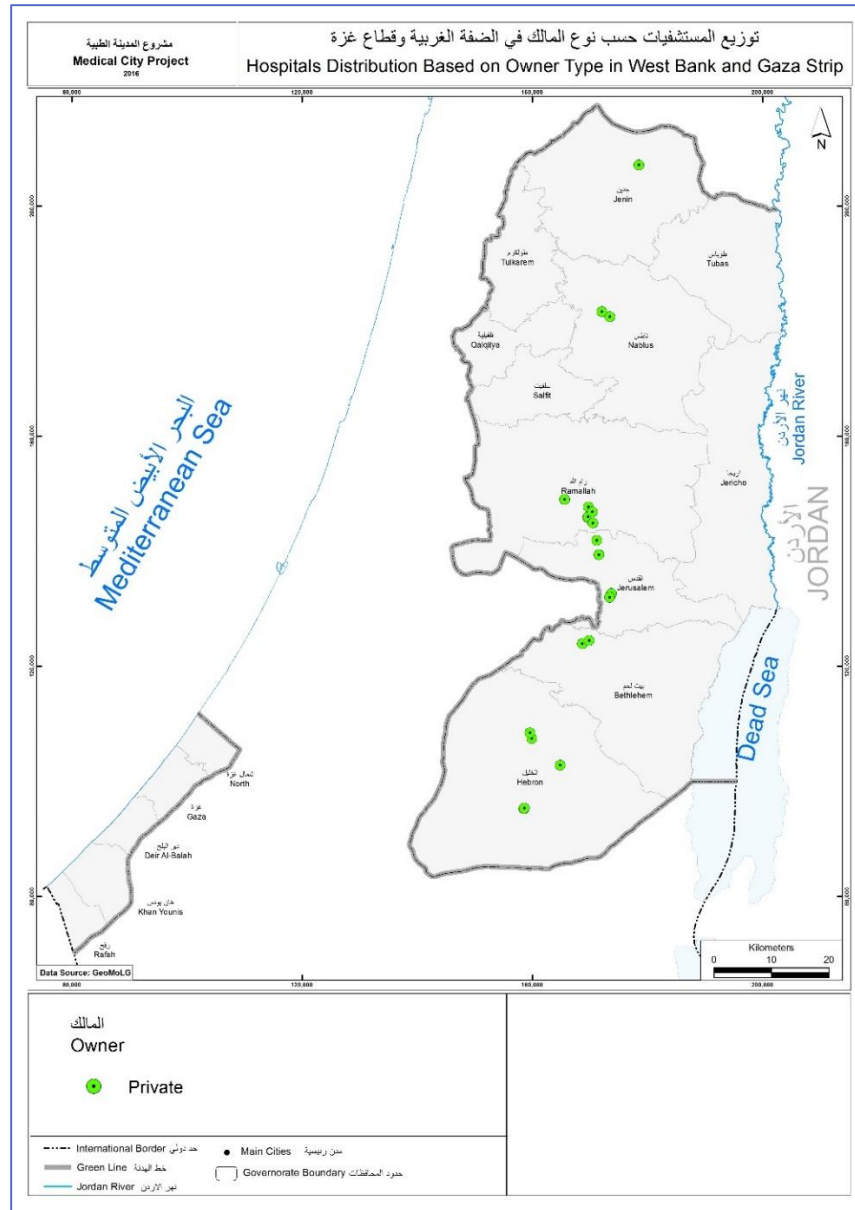


Figure 5: Map Shows hospitals owned by the Private Sector

Table 3 : Shows the highest rank of governorate based on hospital ownership

	Public	Military Services	NGO's	Private
Highest Rank on Scale of Five	Jerusalem	Khan Younis	Jenin	Ramallah
	Gaza	Hebron	Rafah	Hebron
	Jerusalem	Gaza	Deir Al Balah	Jerusalem
	Nablus	North Gaza	Khanyounis	Nablus
	North Gaza	Jerusalem	Tolkarm	Bethlehem



### III. Hospital Specialty

The more areas have specialized services, the more it will be a potential for similar development because it's more economical effective and information spread very fast which lead to innovations.

*Table 4 : Shows the highest rank of governorate based on Specialized Hospital number*

Highest Rank on Scale of Five	Specialized Hospitals
	Gaza
	Ramallah
	Hebron
	Jerusalem
	Nablus

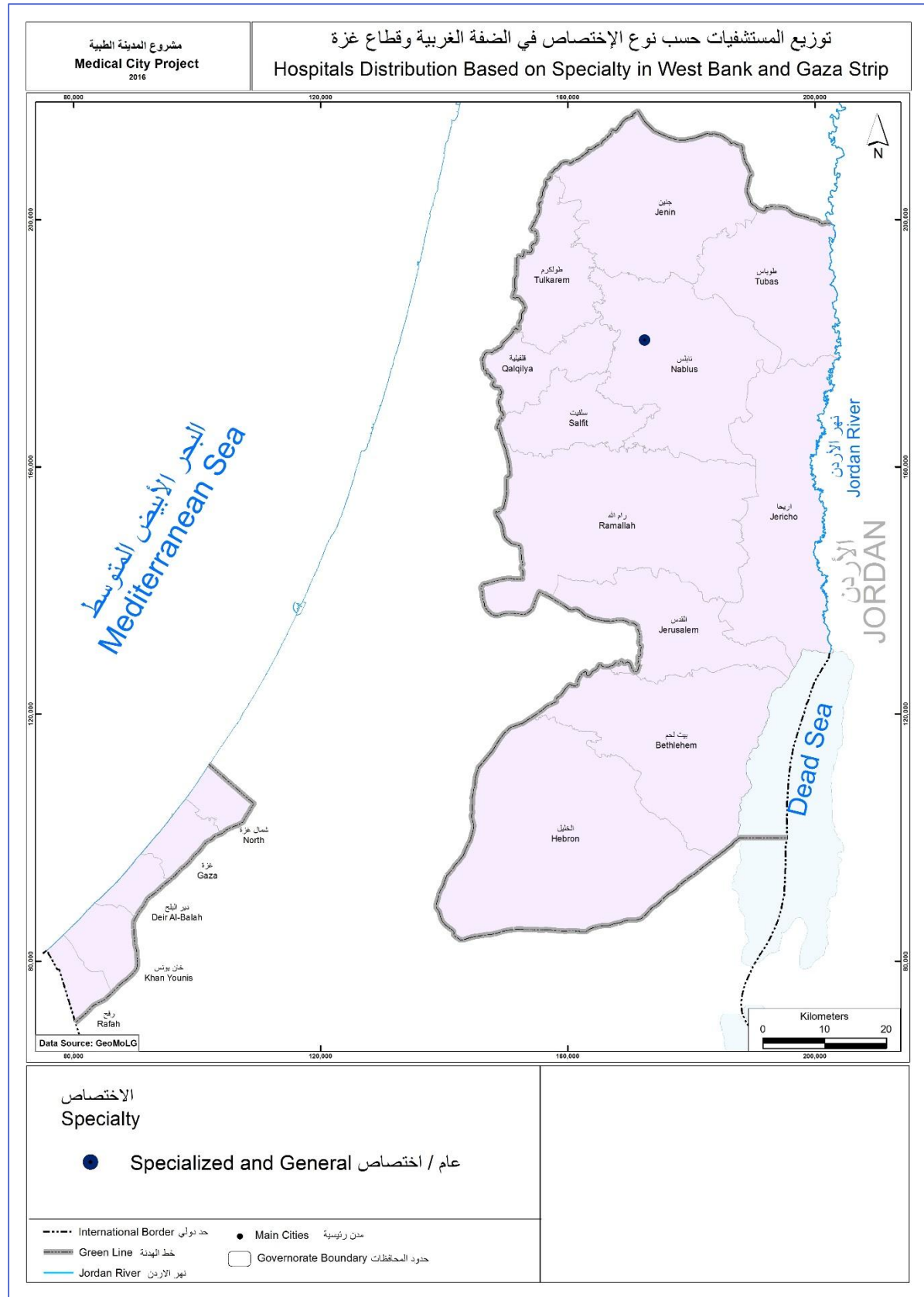


Figure 6: Map Shows Specialized/General Hospital

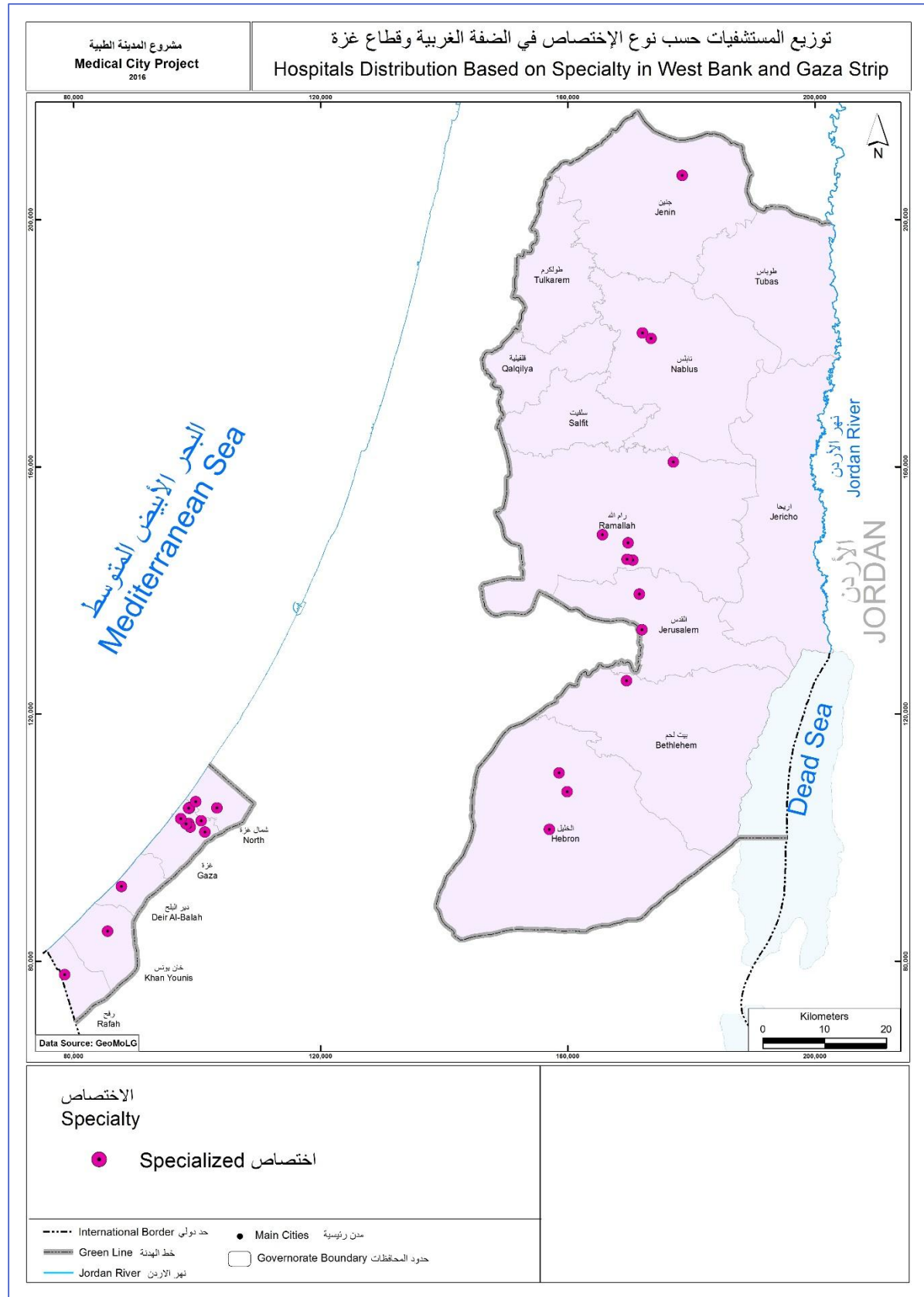


Figure 7: Map Shows Specialized Hospital

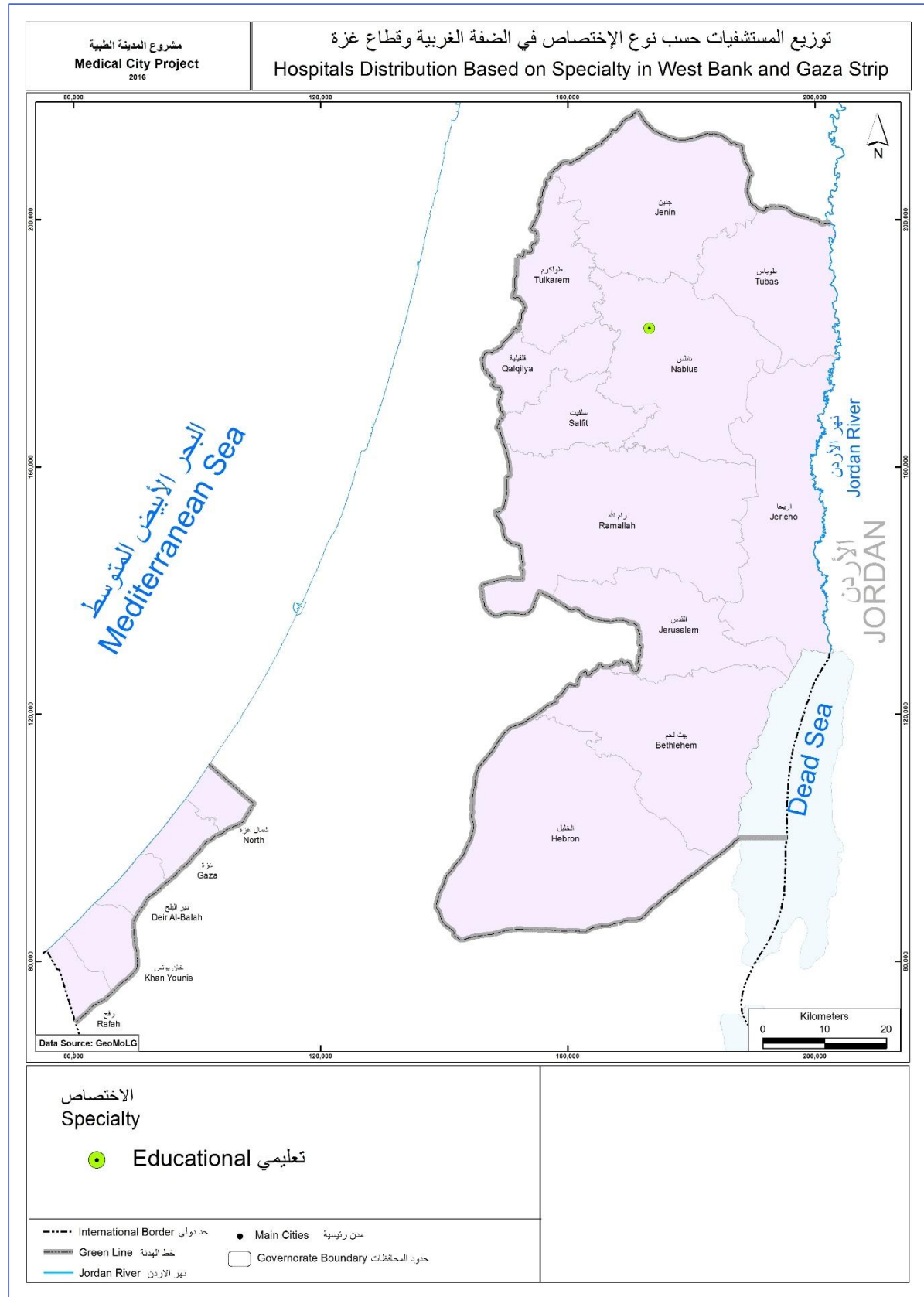


Figure 8: Map Shows Educational Hospital



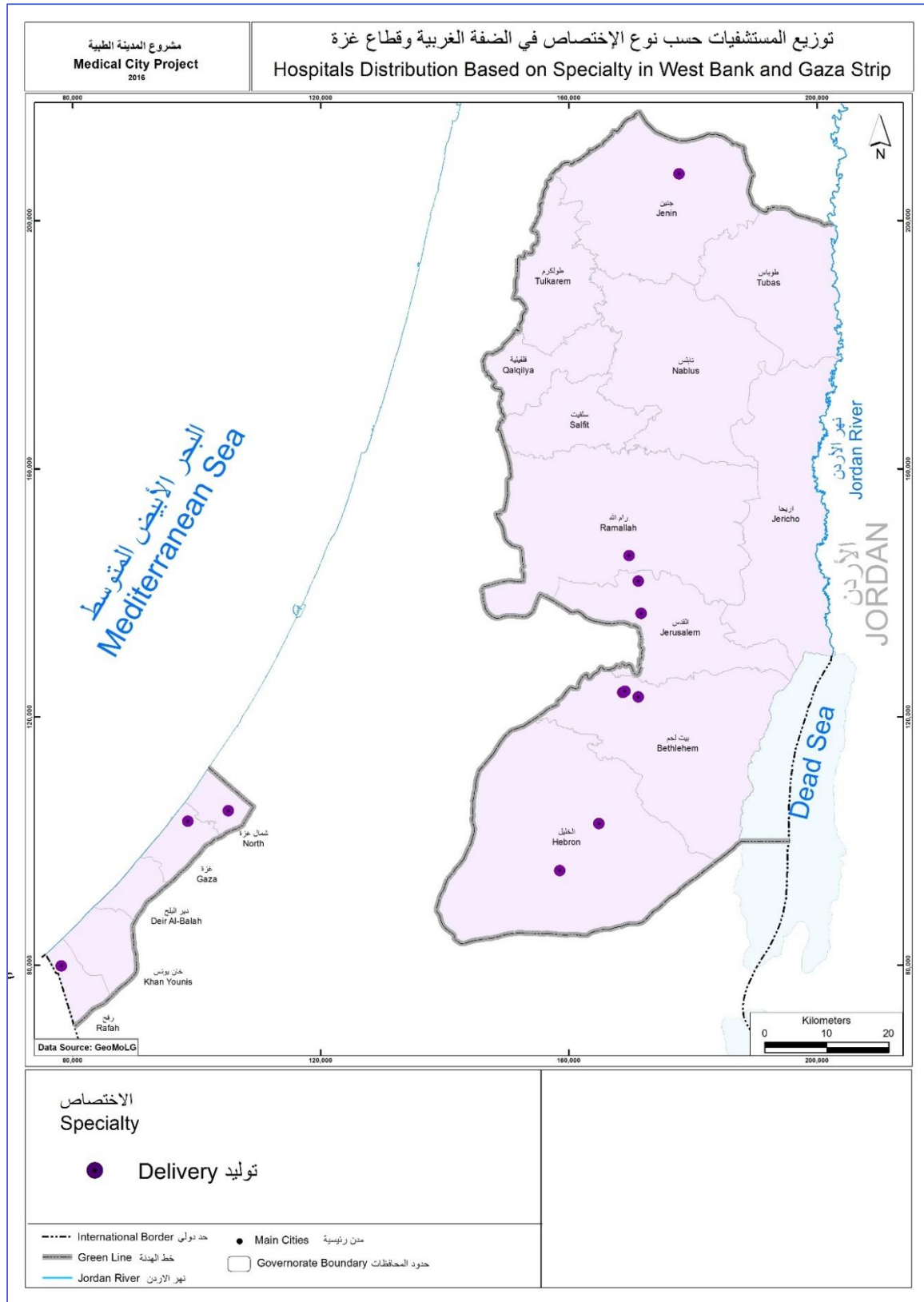


Figure 10: Map Shows Delivery Hospitals

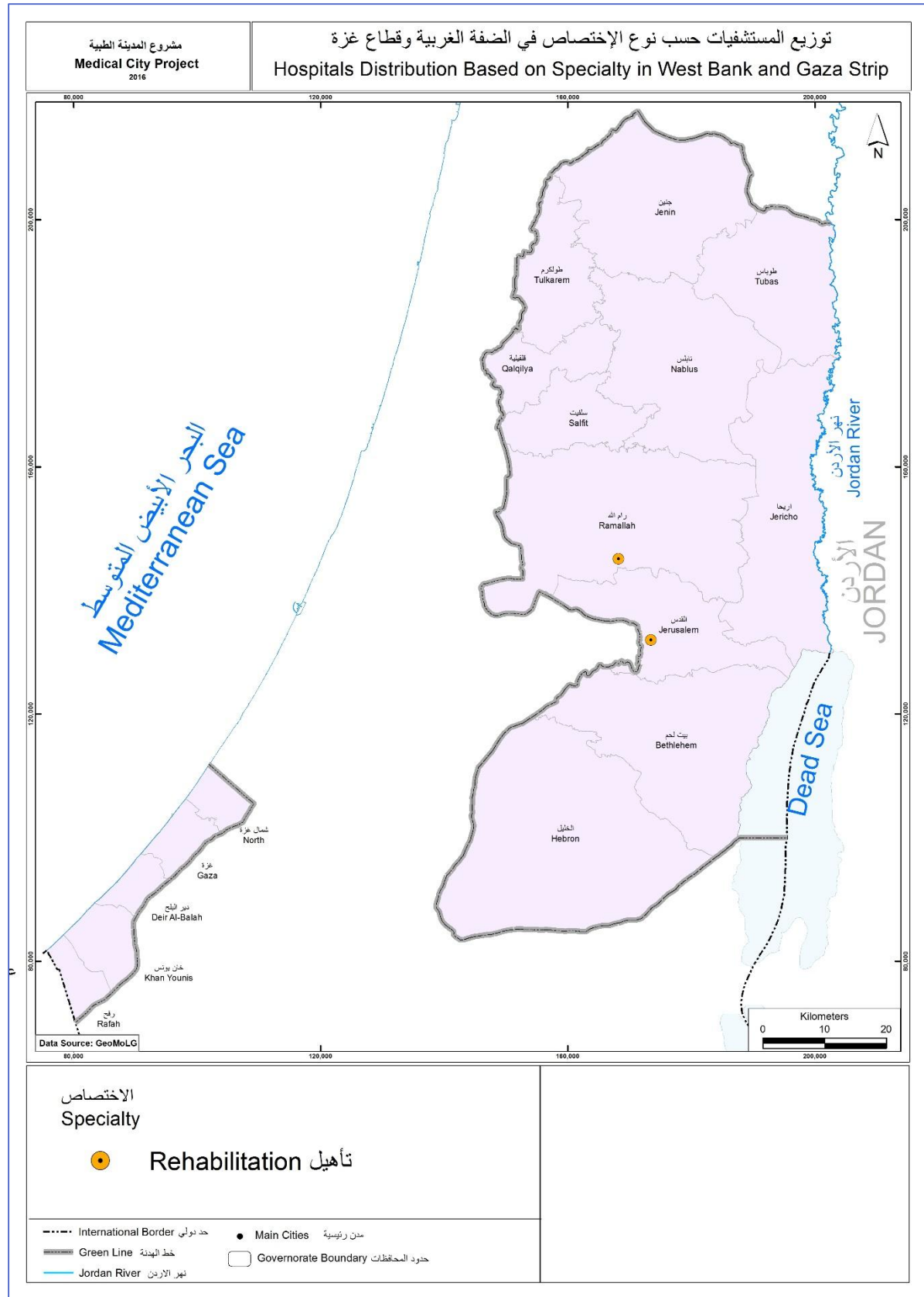


Figure 11: Map Shows Rehabilitation Hospitals



#### IV. Bed \Hospital Ratio and Bed Occupancy

From this ratio we can analyze the current situation in our hospitals, availability of adequate hospital doesn't mean that we have the perfect situation, this ratio need to be corrected by the bed ratio. Also having large number of bed in small hospital is not correct too, so we need to look at both of these ratios in the same time like the map shows.

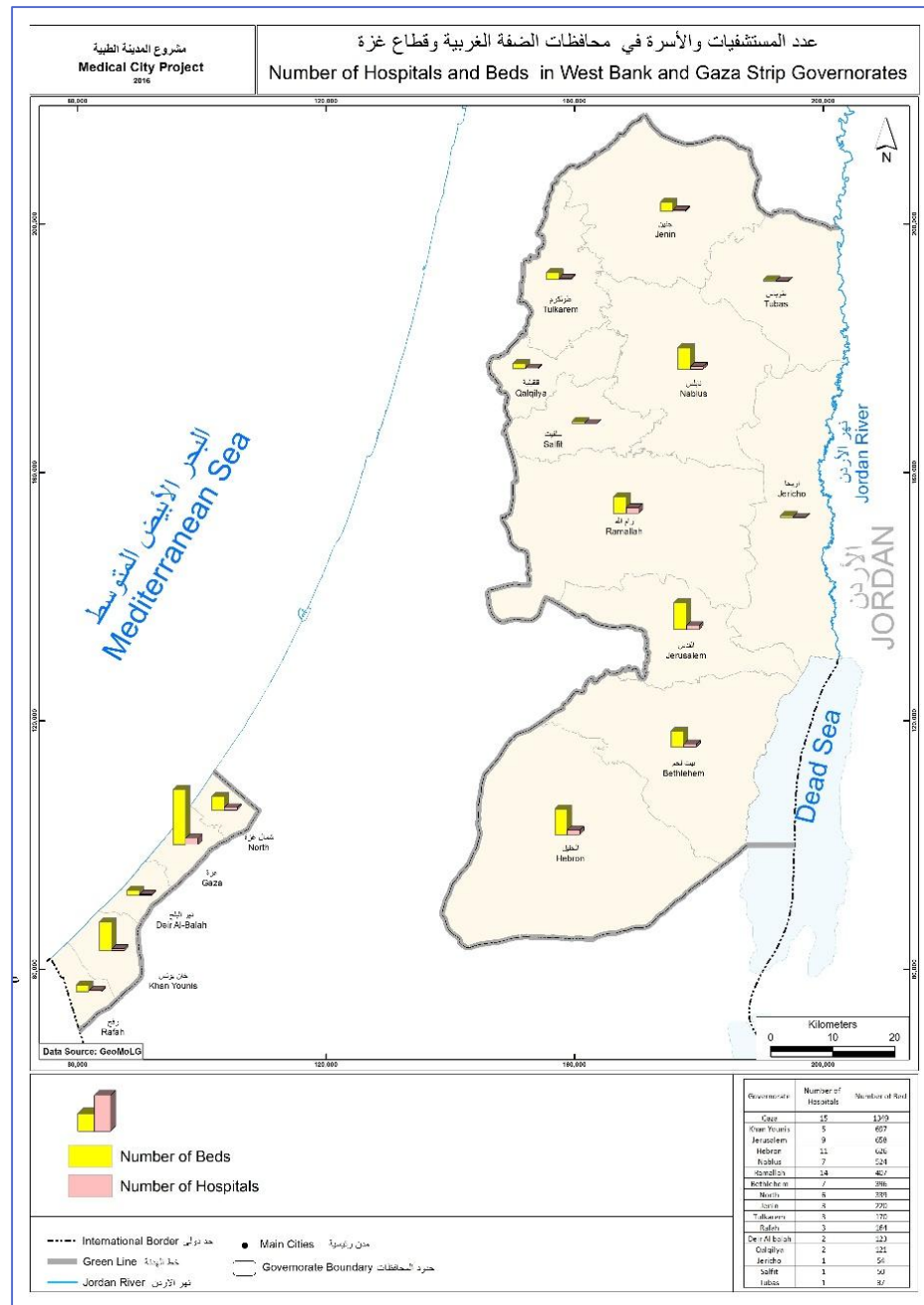


Figure 12: Map Shows Hospital and bed distribution



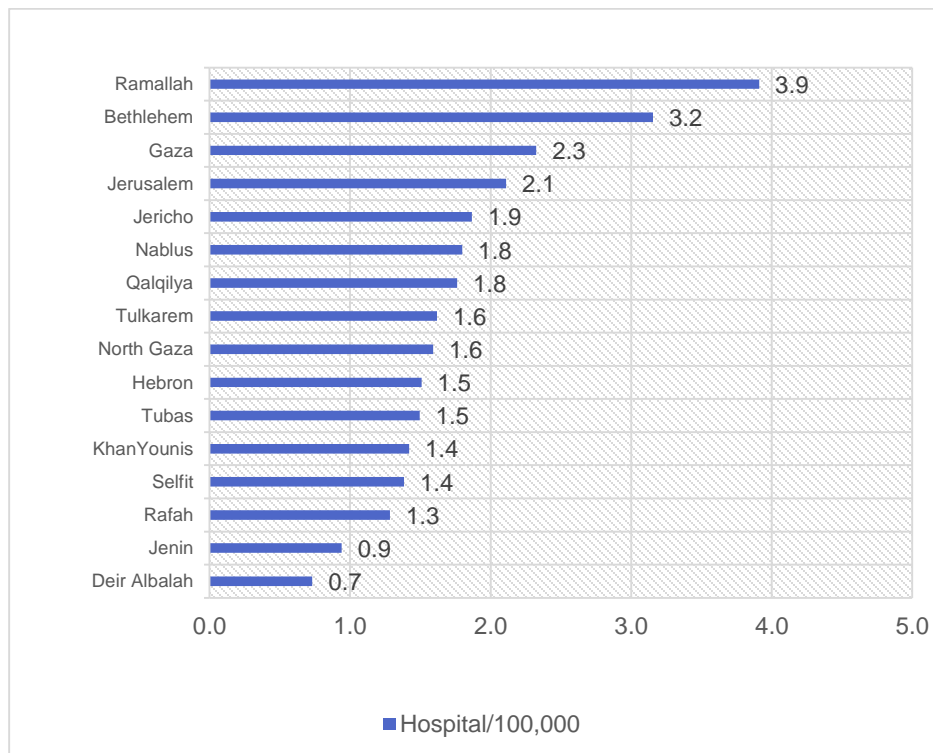
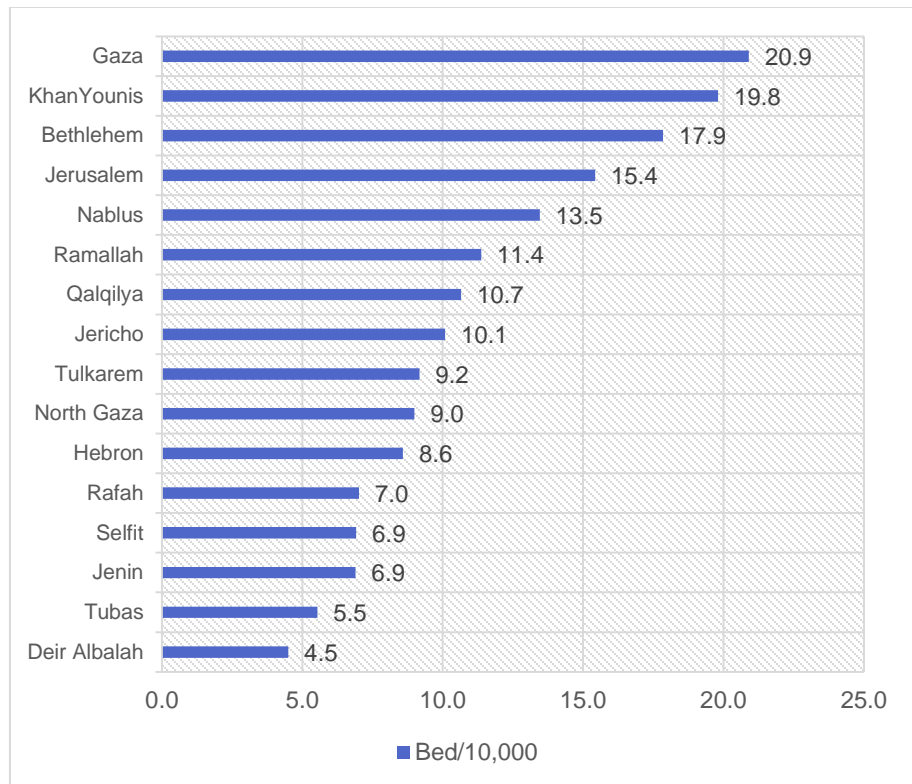


Figure 13 : bed and hospital ratio in Palestine 2016

Moreover, another factor should be taken into consideration that there's bed occupancy value that shows how full are hospitals, this value shouldn't be accede 80%, so the governorate that have the highest occupancy had the highest rank.

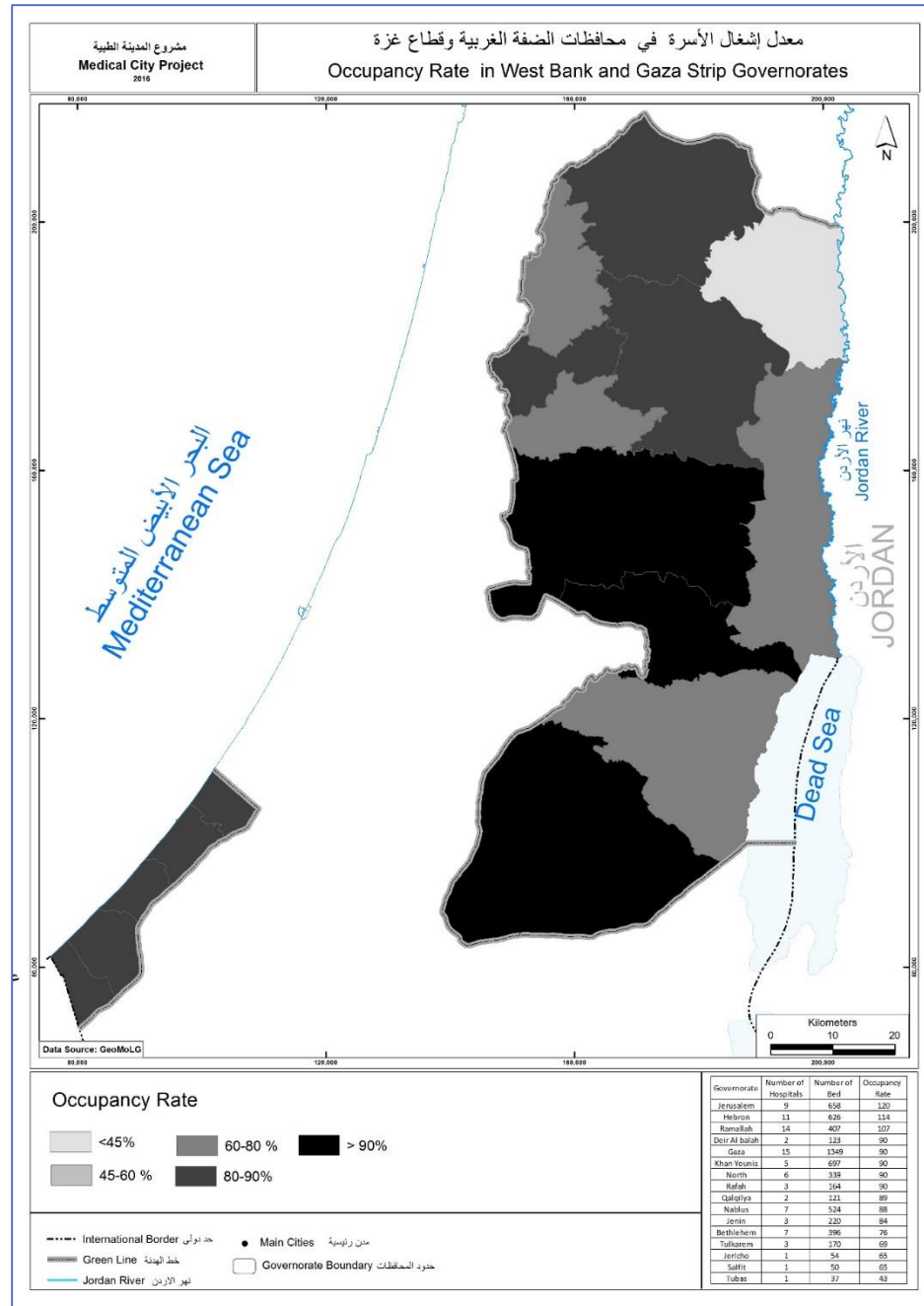


Figure 14: Map Shows Population of West Bank and Gaza Strip 2016

## I. Result

After analyzing these factors, I chose Ramallah governorate because it seems that there's good investment environment in addition to huge pressure on the medical services there. So establishing the

project there will upgrade some areas and it will enhance development in the medical service quality. The project will have three service area; the closest neighborhood and communities, Ramallah city and governorate, and the whole nation, because Ramallah is wide accessible from all governorates, and there's a lot of commuting movement toward the governorate every work day.

## V. Site selection phase 2

### I. Site selection criteria:

There was two types of criteria applied in two scales, on the macro scale and the micro scale.

#### - Macro scale:

Site mustn't be located on the protected zone according to the national spatial plan, such as high and moderate agriculture value areas, natural reserve, biodiversity, forest and the landscape areas. Also it should be within a buffer zone of 500m from the built up areas to be away from noise and within 500 m from the main and the regional roads in order to be accessible. Moreover, the slope it shouldn't exceed 25 % to be suitable for development and because it is counter planning concept it should be in area C.

#### - Micro scale:

After Applying the Macro scale and having a potential areas we apply a micro scale criteria which are to be away from noise and pollution areas such as dump sites and availability of infrastructure. Also to be away from hazard sources such as dangerous seismic zones. And the land we should be wide and have good, uninterrupted shape for development.

The next maps show this process in details.

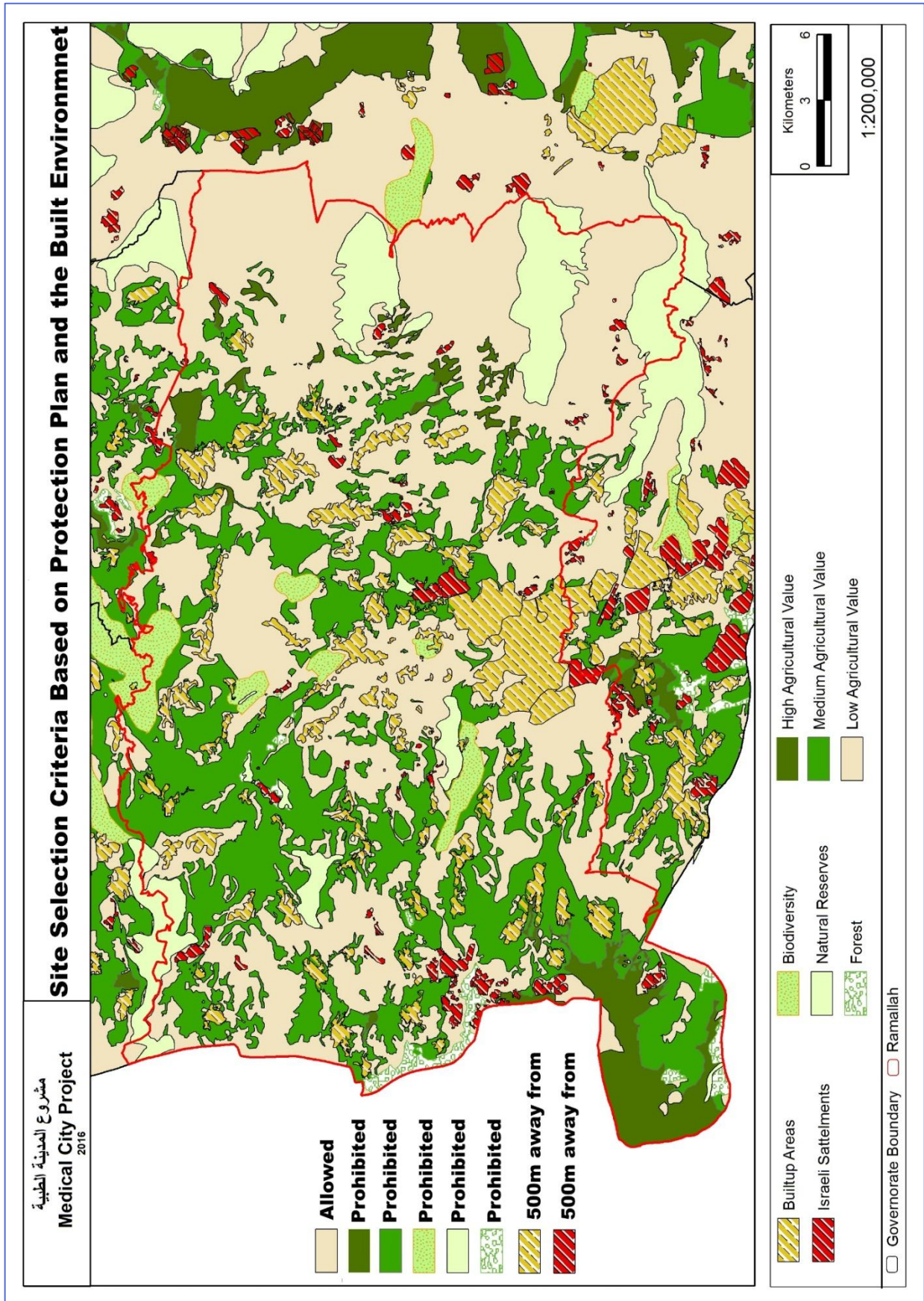


Figure 15 : site selection criteria based on protection plan and builtup areas



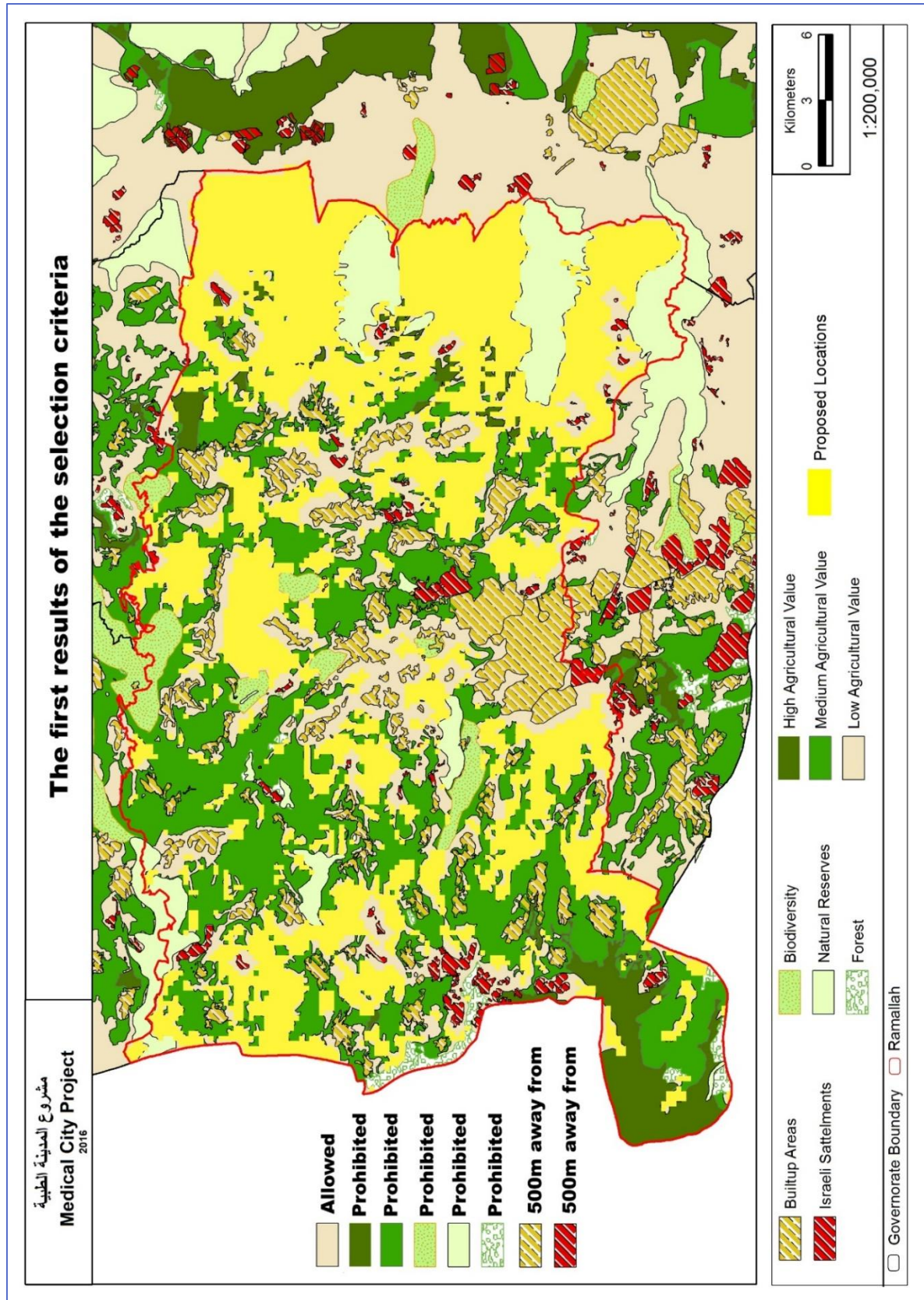


Figure 16: The first result of selection critira

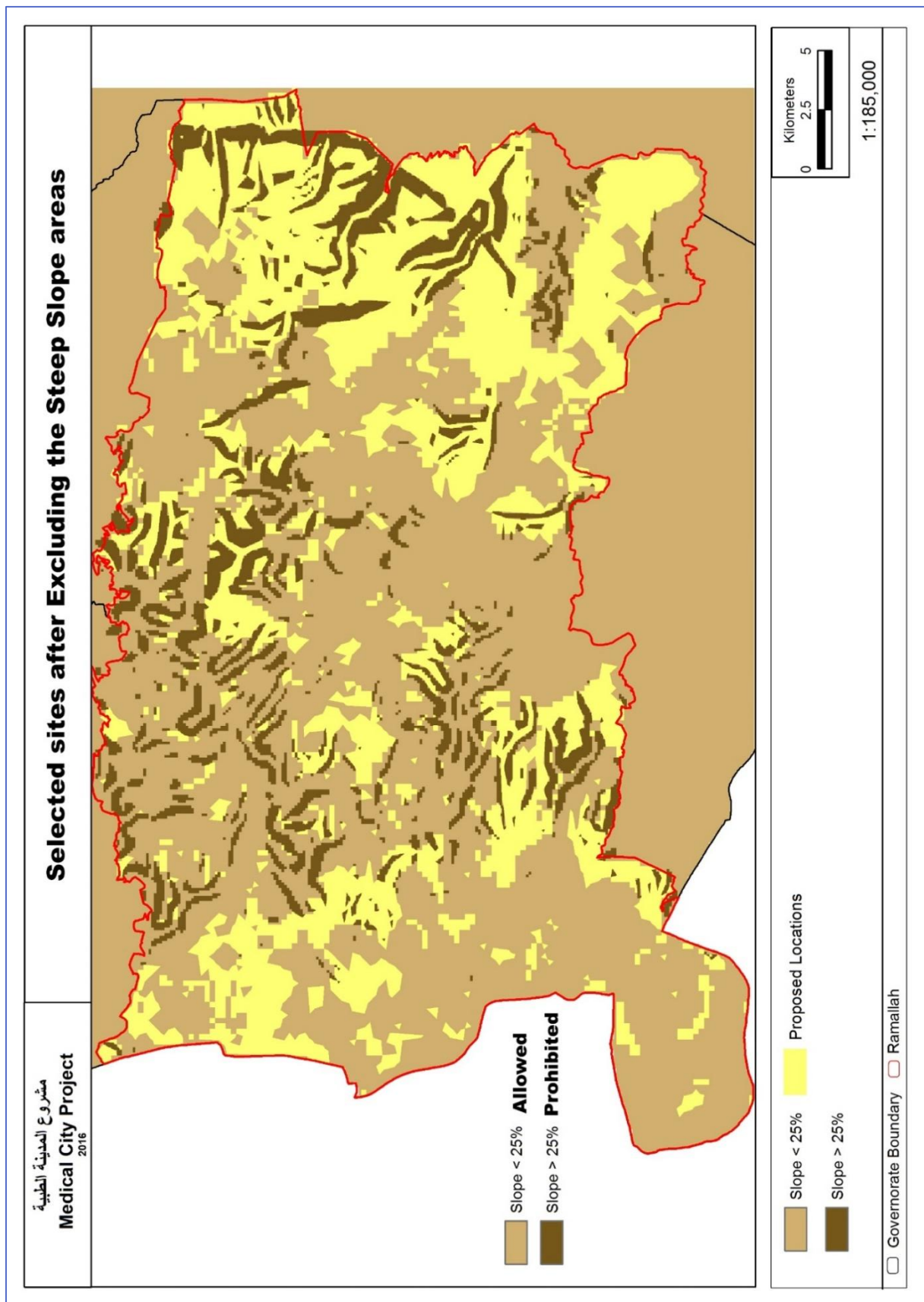


Figure 17: selected sites after excluding the steep slope areas



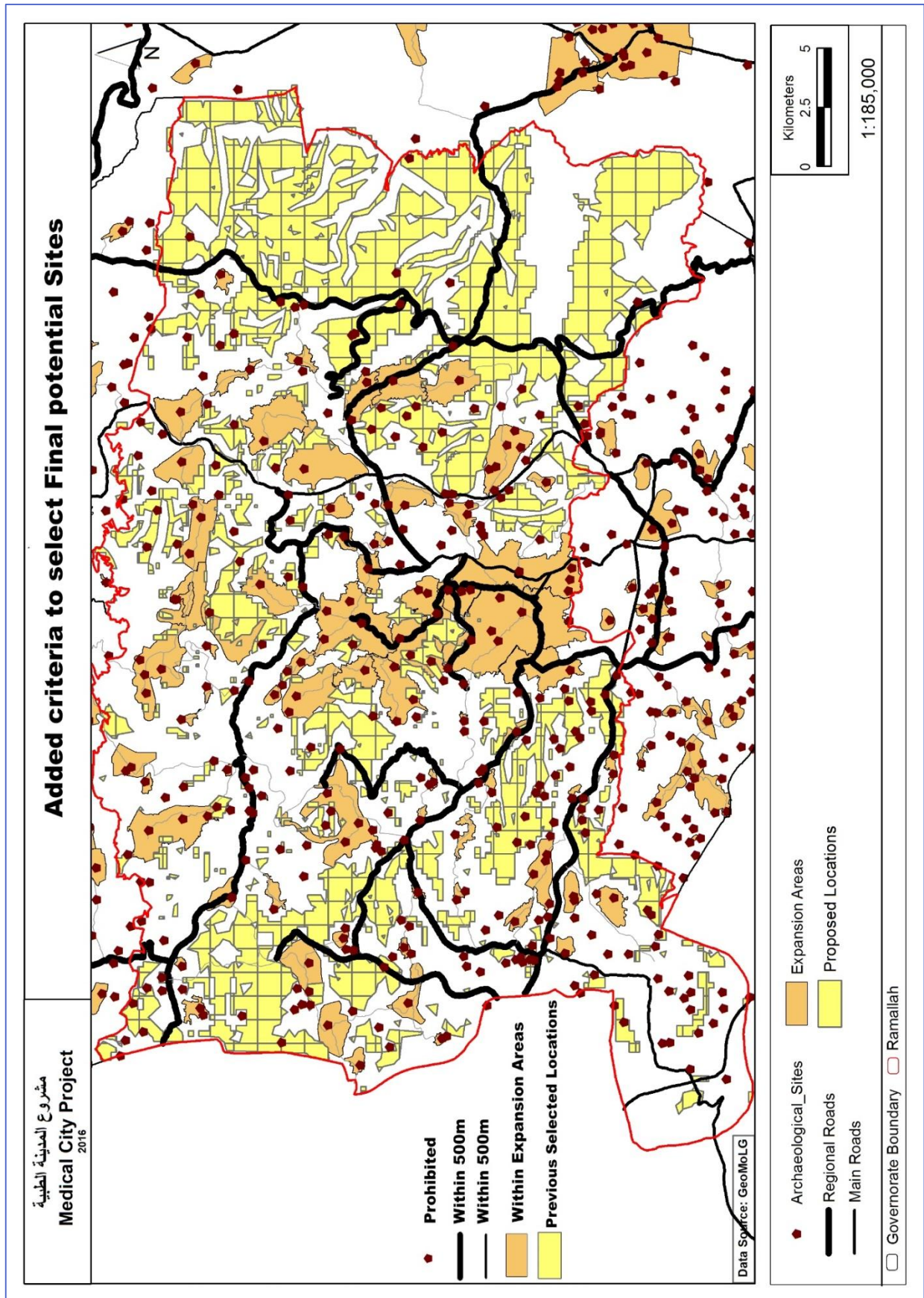


Figure 18: Added criteria to select to have final potential sites



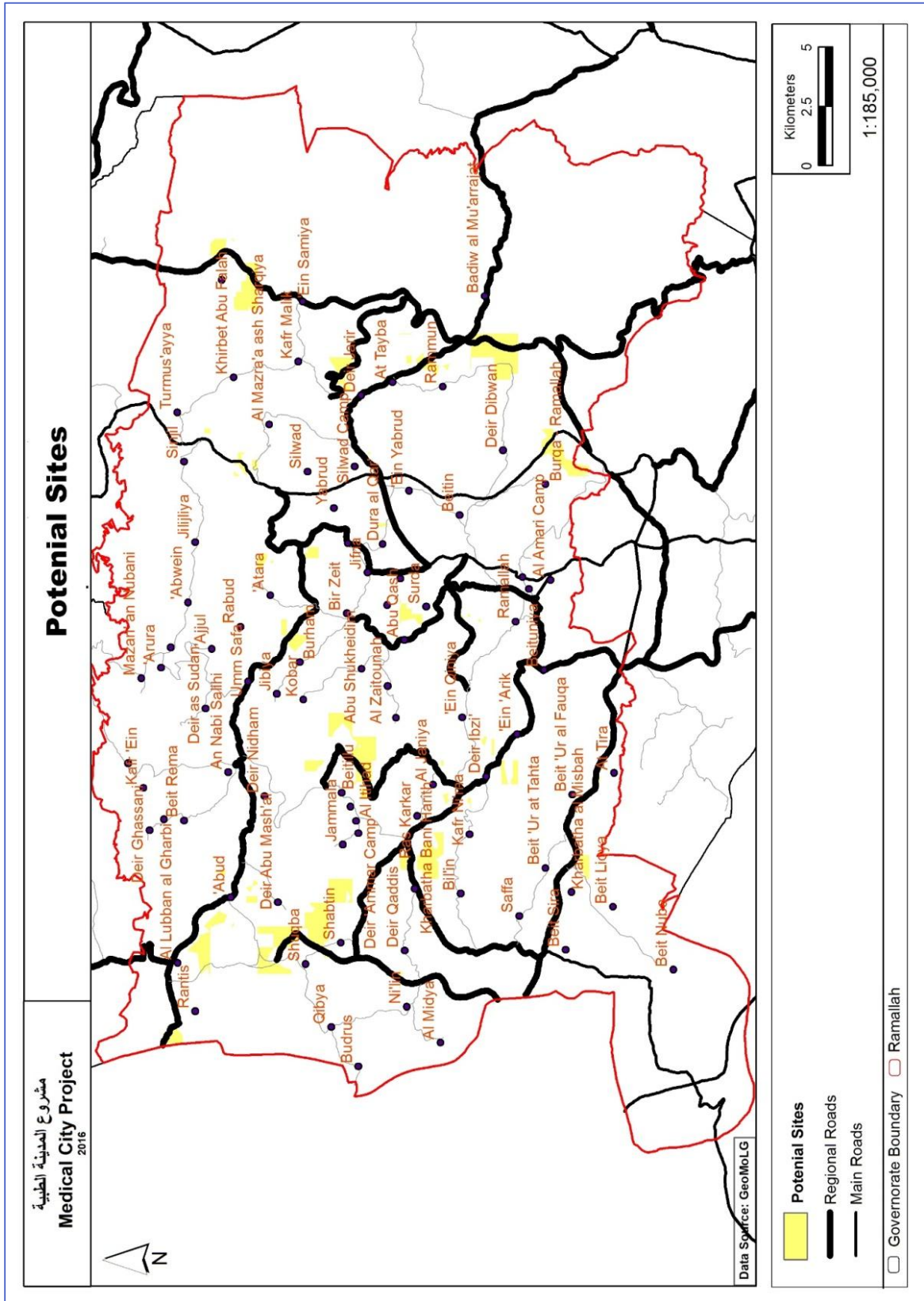


Figure 19:potenia sitesl

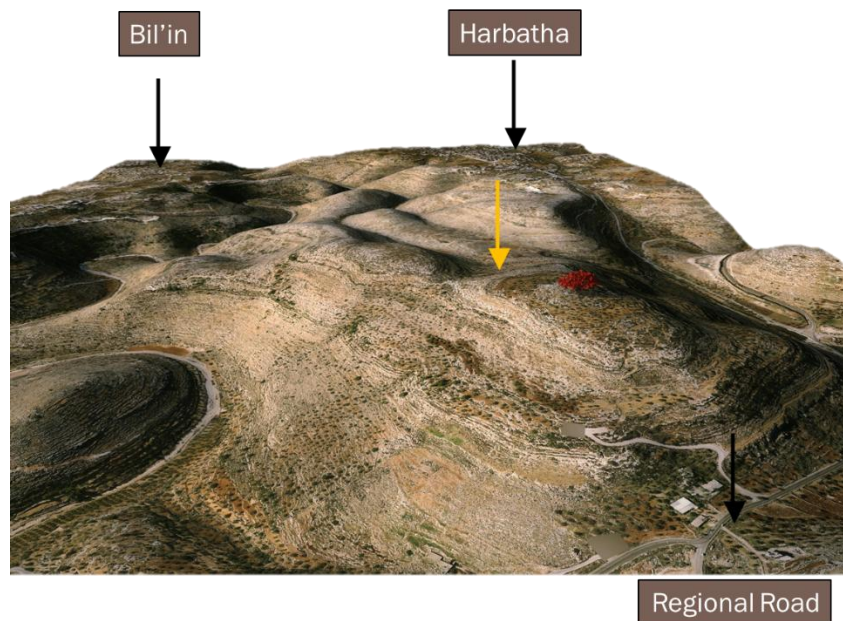
## II. Result

Four site were selected after applying macro and micro scale criteria, it was evaluated by the following criteria as table shows:

*Table 5 : Evaluation the four potential sites*

Site	hazards source	Pollution	Surrounded Communities	Infrastructure	Area(Dunhum)		Land uninterrupted	Total
					Value	Mark		
Kharbatha Bani Harith	5	3	5	3	2862.5	5	4	24
Deir Ammar	5	3	3	3	1582.5	4	5	22
AlMughair	2	3	3	3	1478.8	2	3	17
Rammoun	1	2	4	3	1578.2	3	2	15

- ✓ From this evaluation we found that site that is located near **Kharbatha Bani Harith village** is the suitable site.



*Figure 20 : Proposed Site*

### III. Site Analysis

#### I. Location

It is located in the North-West of Ramallah city which it is away from the site about 12 km. and it's land located within four administrative communities (kharbatha ,Ras karkar ,Bil'in and Kafr ni'ma).

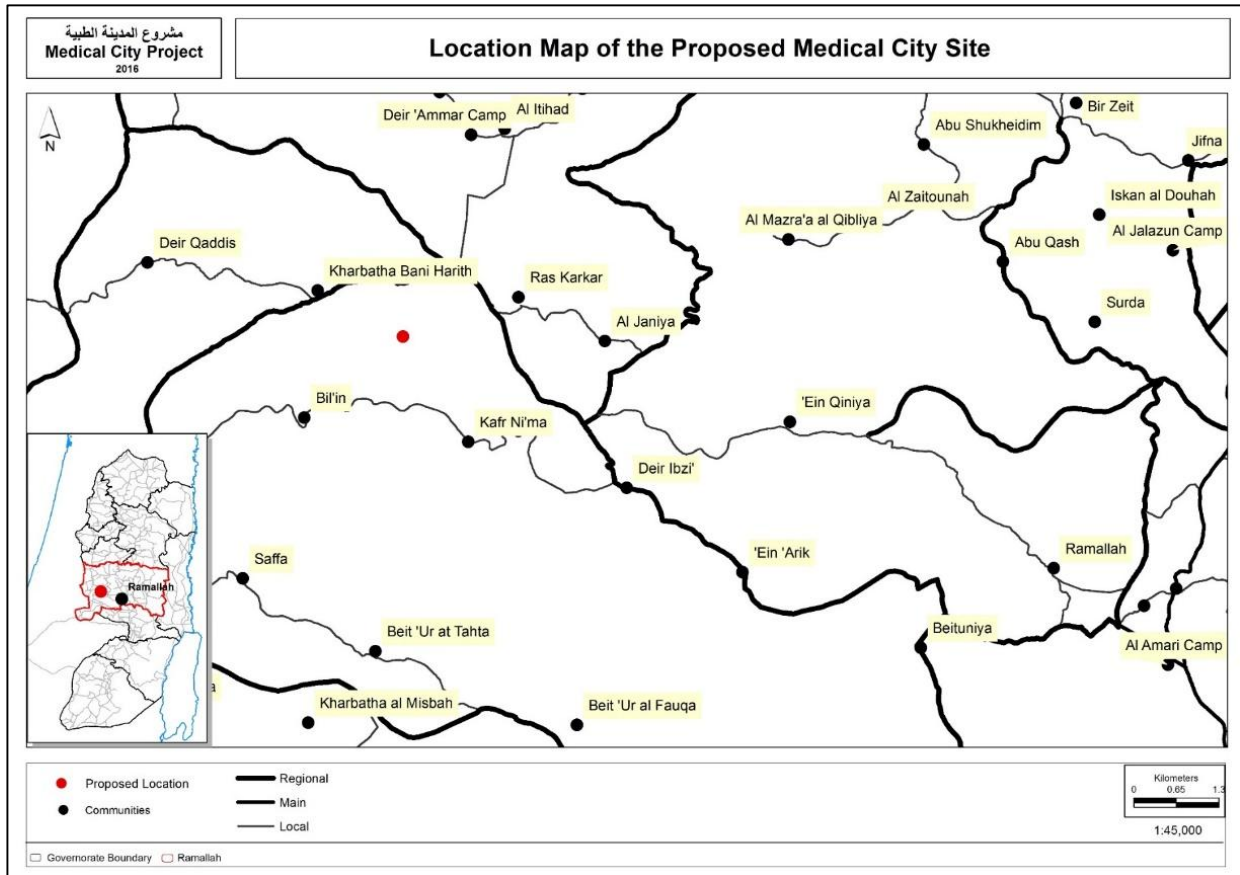


Figure 21: location of the proposed medical city site



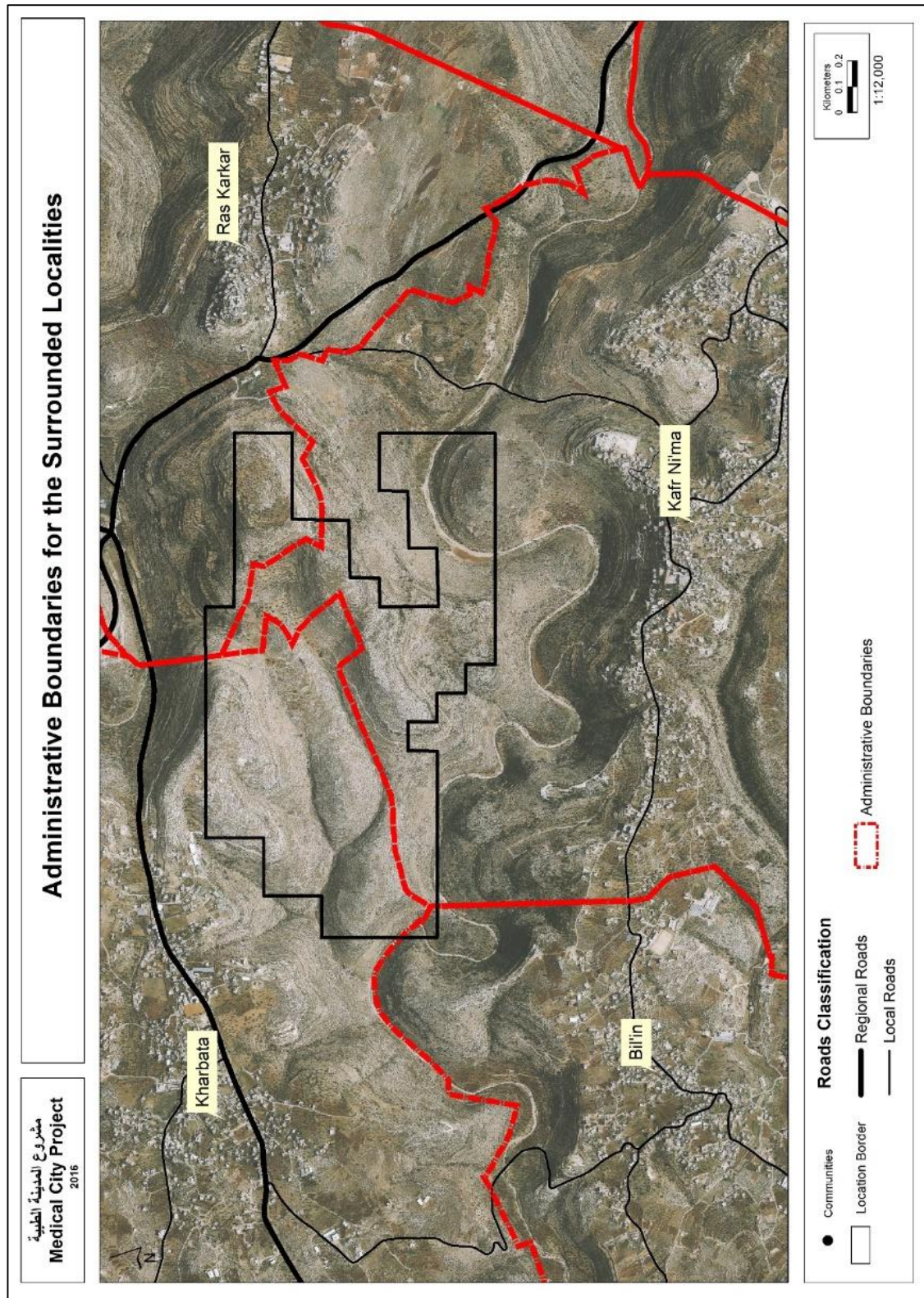


Figure 22: Administrative boundaries for the surrounded localities

## II. Accessibility

It is accessible to all governorates in West Bank and Gaza Strip by air and regional such as (463, 455 and 463) roads. Moreover, there is dirt roads passing through the site which could be used later in the plan.

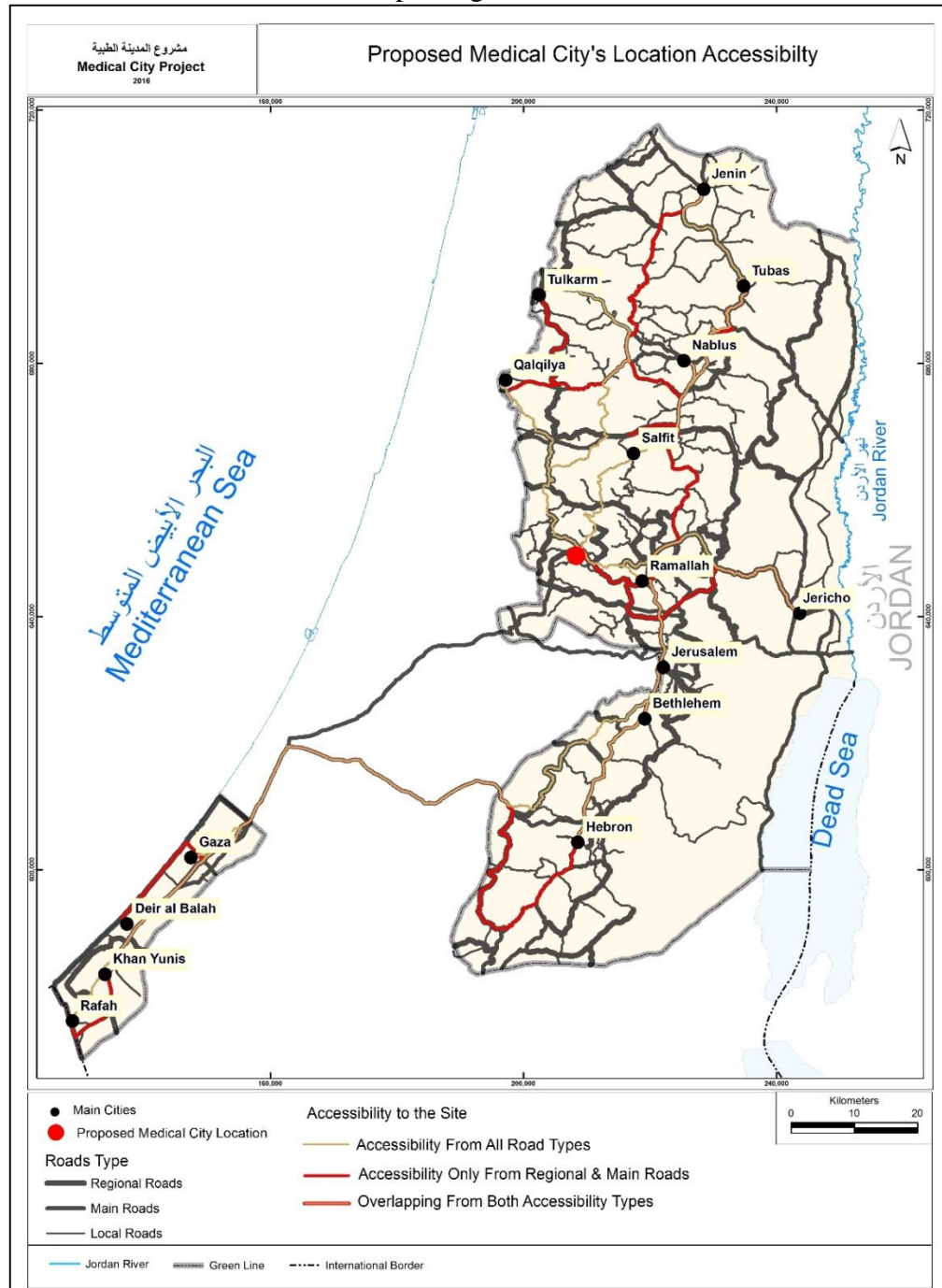


Figure 23: proposed medical city's location accessibility



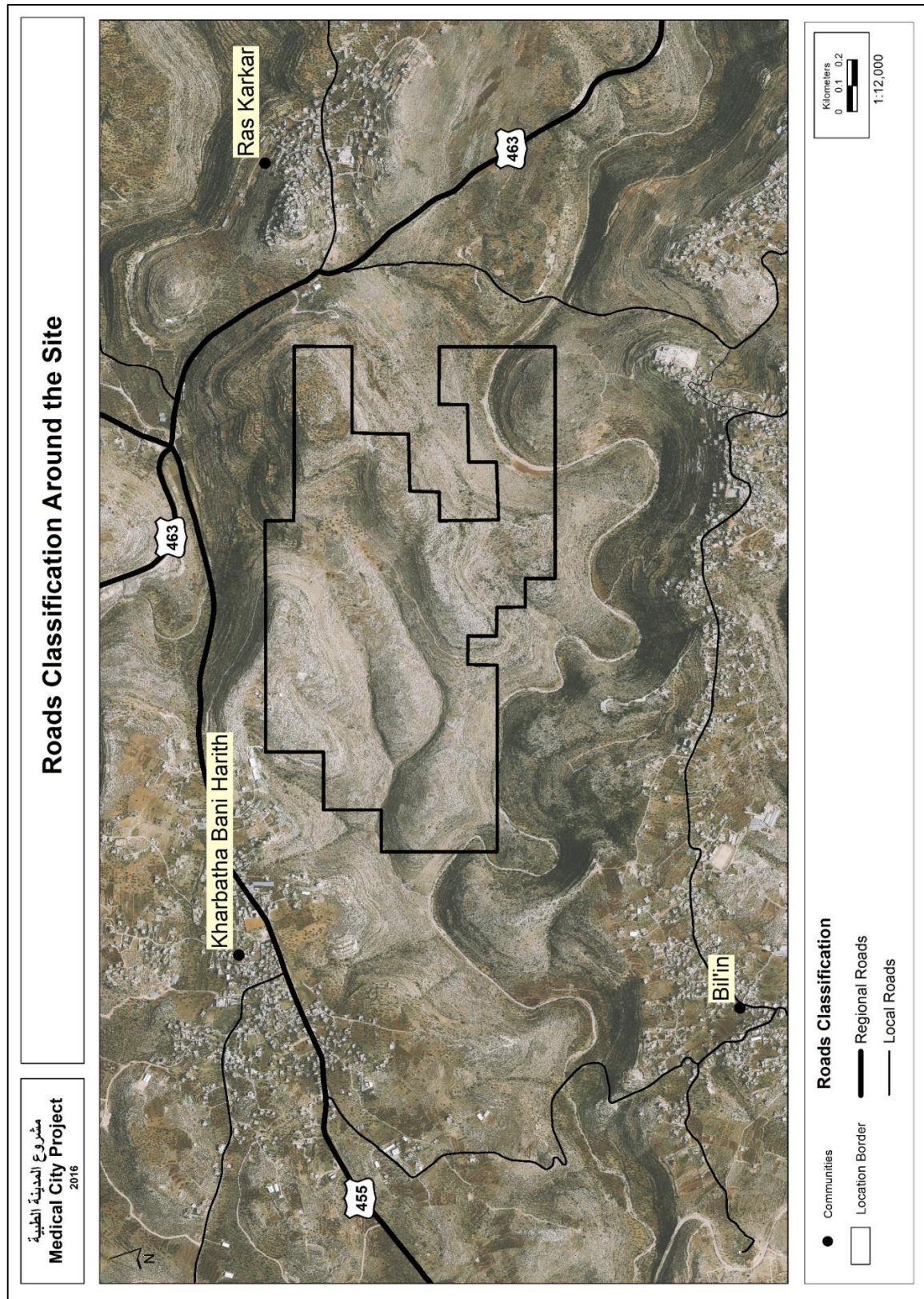


Figure 24: Roads Classification around the site



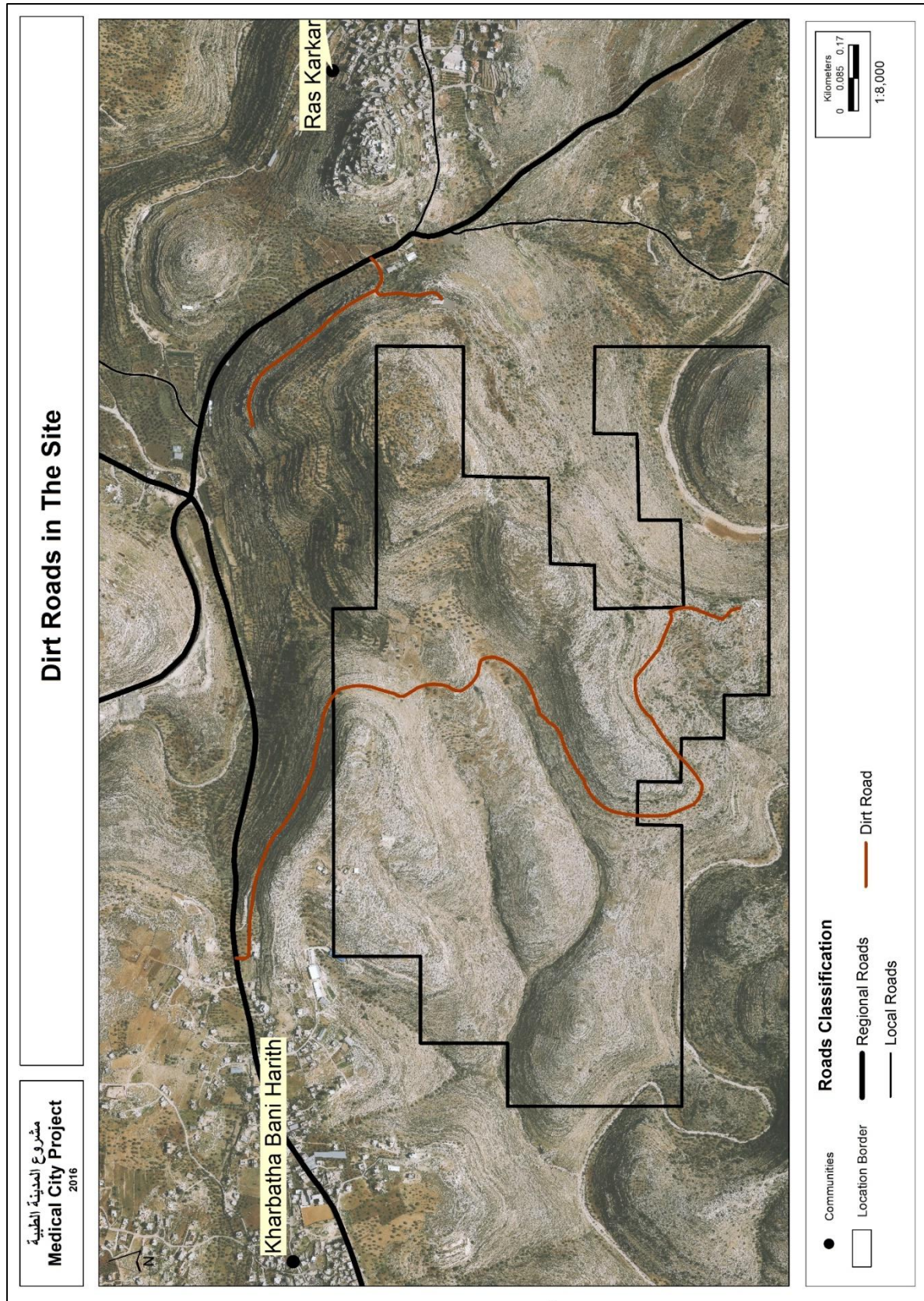


Figure 25: Dir roads in the site



### III. Geopolitical situation

The entire site is located in area C and there is an expansion development area from kharbatha toward the site.

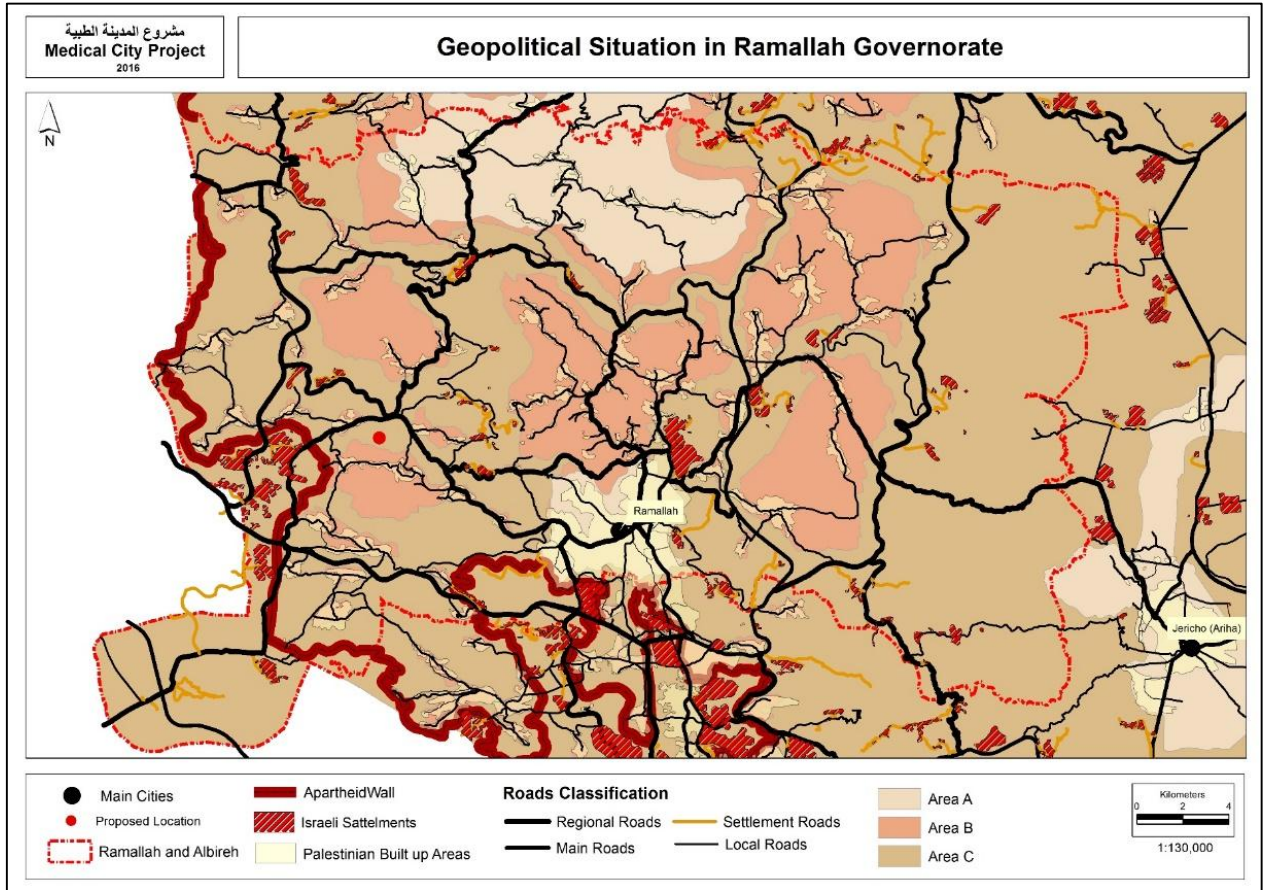


Figure 26: Geopolitical situation in Ramallah governorate

### IV. Elevations

The elevations are varies in the site, the maximum height is 500 and the lowest height is 250 m and this diversity led to diversity in the nature in the site where there natural scenes and beautiful views, in addition to valleys pass throw the site. Also this diversity makes the climate moderate there.



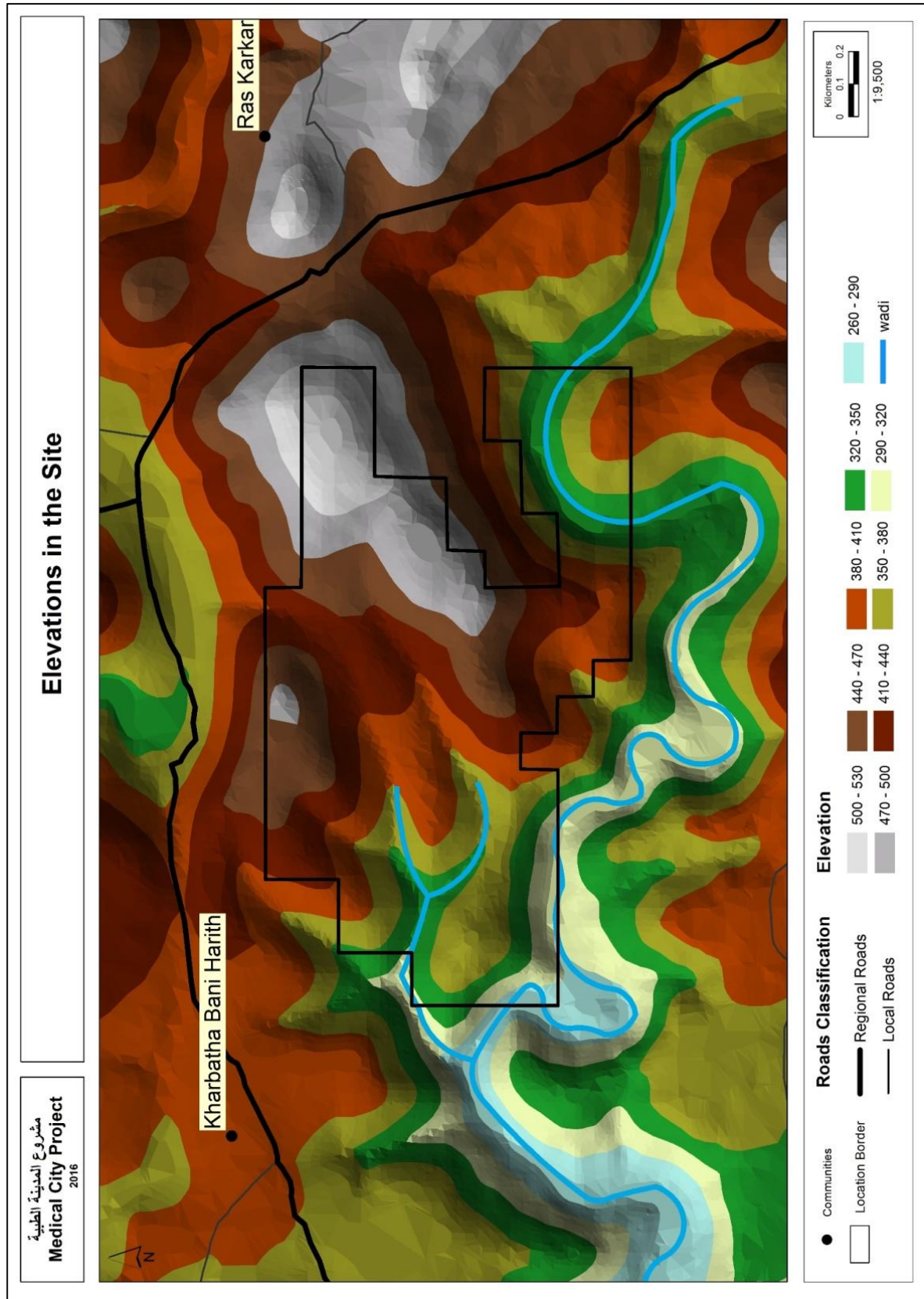


Figure 27: Elevations in the site

## V. Slope and Sections

The slope in the area do not exceed 25% which is suitable for development and the diversity in slope challenging which leads to creativity.

The following sections for more understanding to the nature of the site.

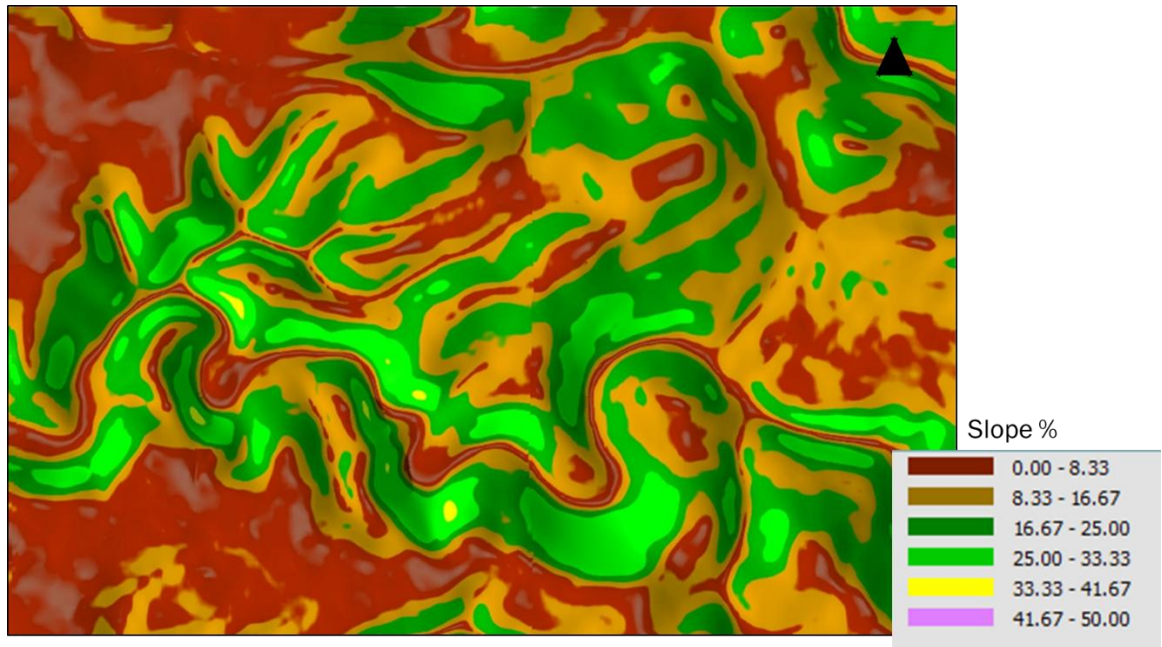


Figure 28: Slope Shape

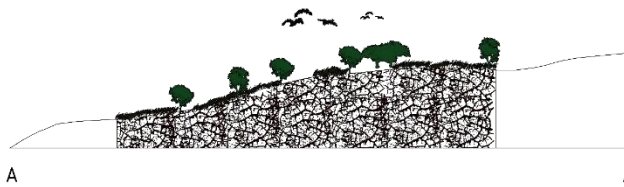
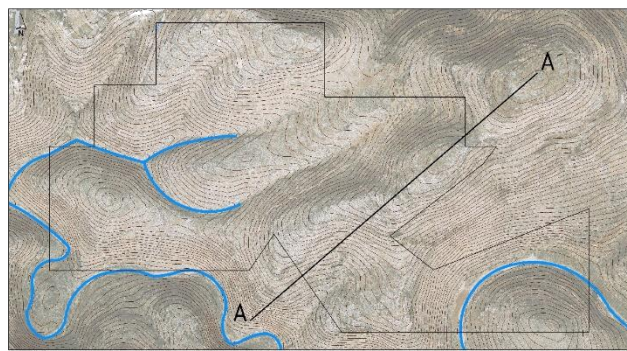


Figure 29: section 1

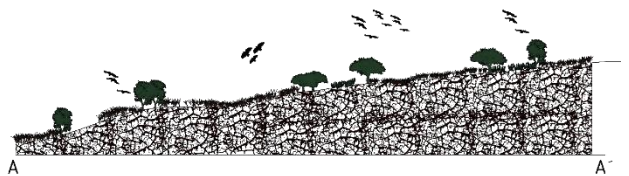
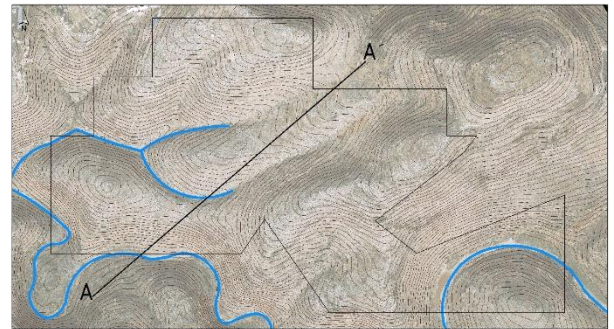
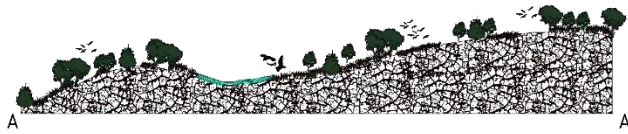
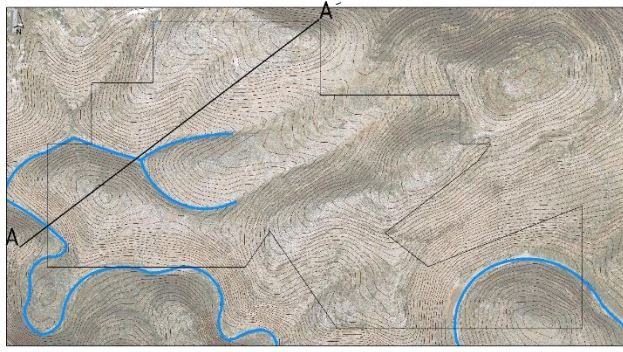
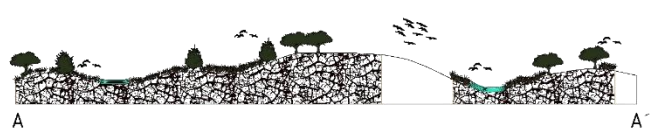
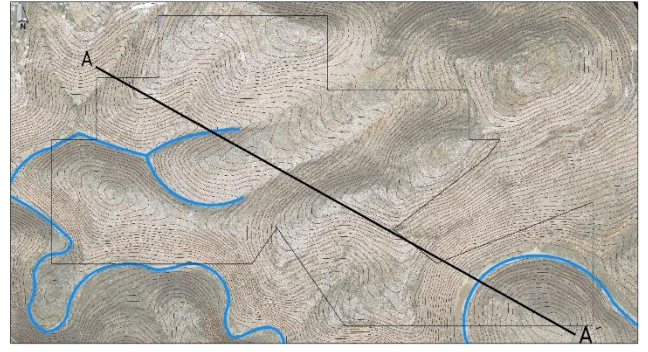


Figure 30: section 2

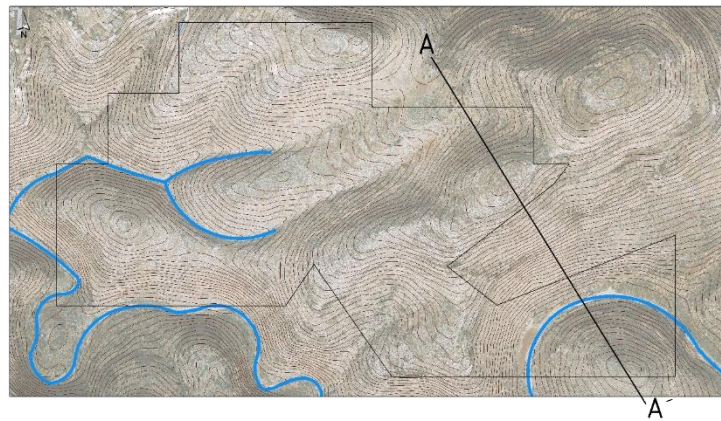




*Figure 31: section 3*



*Figure 32: section 6*



*Figure 33: section 7*

## VI. Land use

The current landuse is low agriculture value, actually there's no landuse plan for this area or to the surroundings which may lead to unplanned expansions in the area.

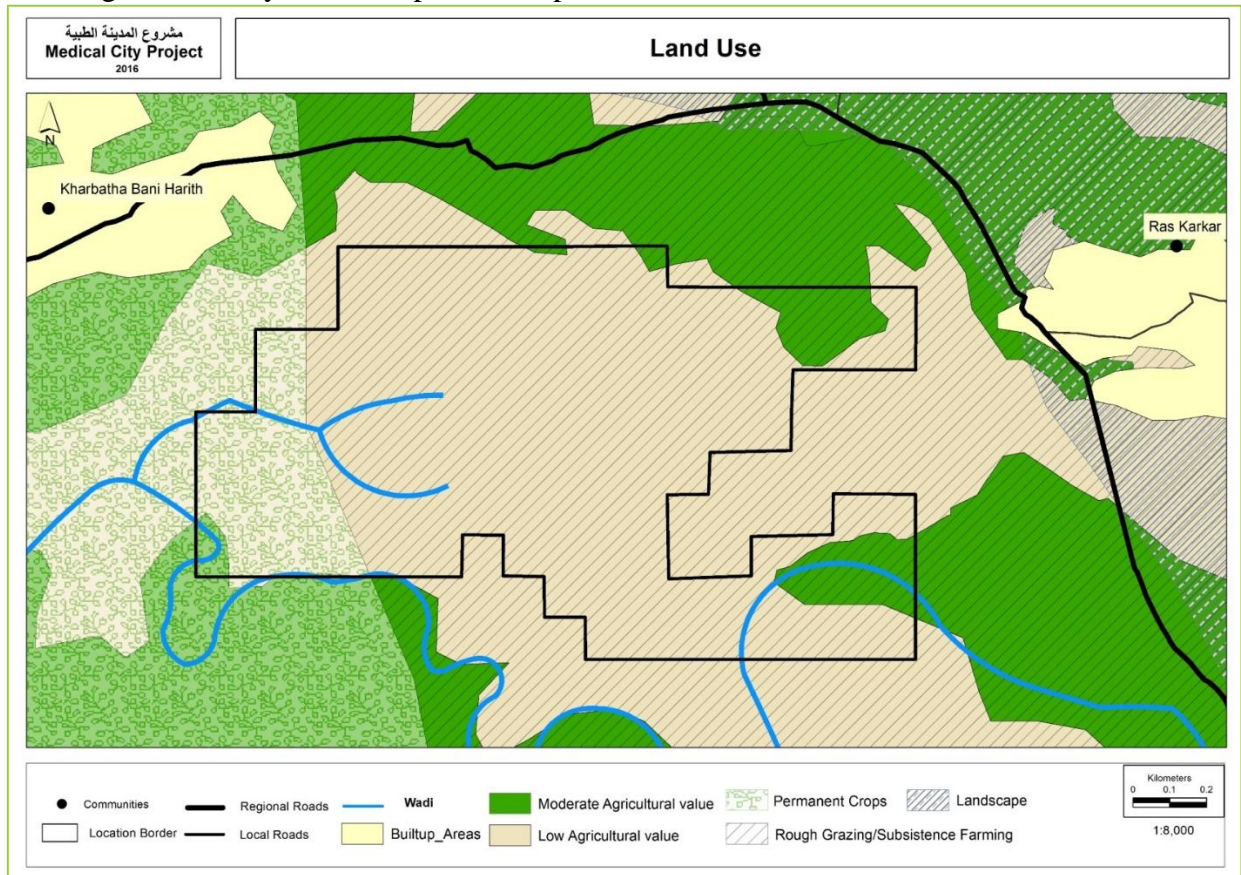


Figure 34: current land use

## VII. Sun, wind, shadow and climate

The climate is characterized as moderate because it belongs to the Mediterranean climate. Which it is hot, dry in the summer, moderate, cold in winter. The average annual temperature is 18 o C, and the average annual humidity is about 61%. And the shadows always move from east to west toward the north which should be taken into consideration in design phase.



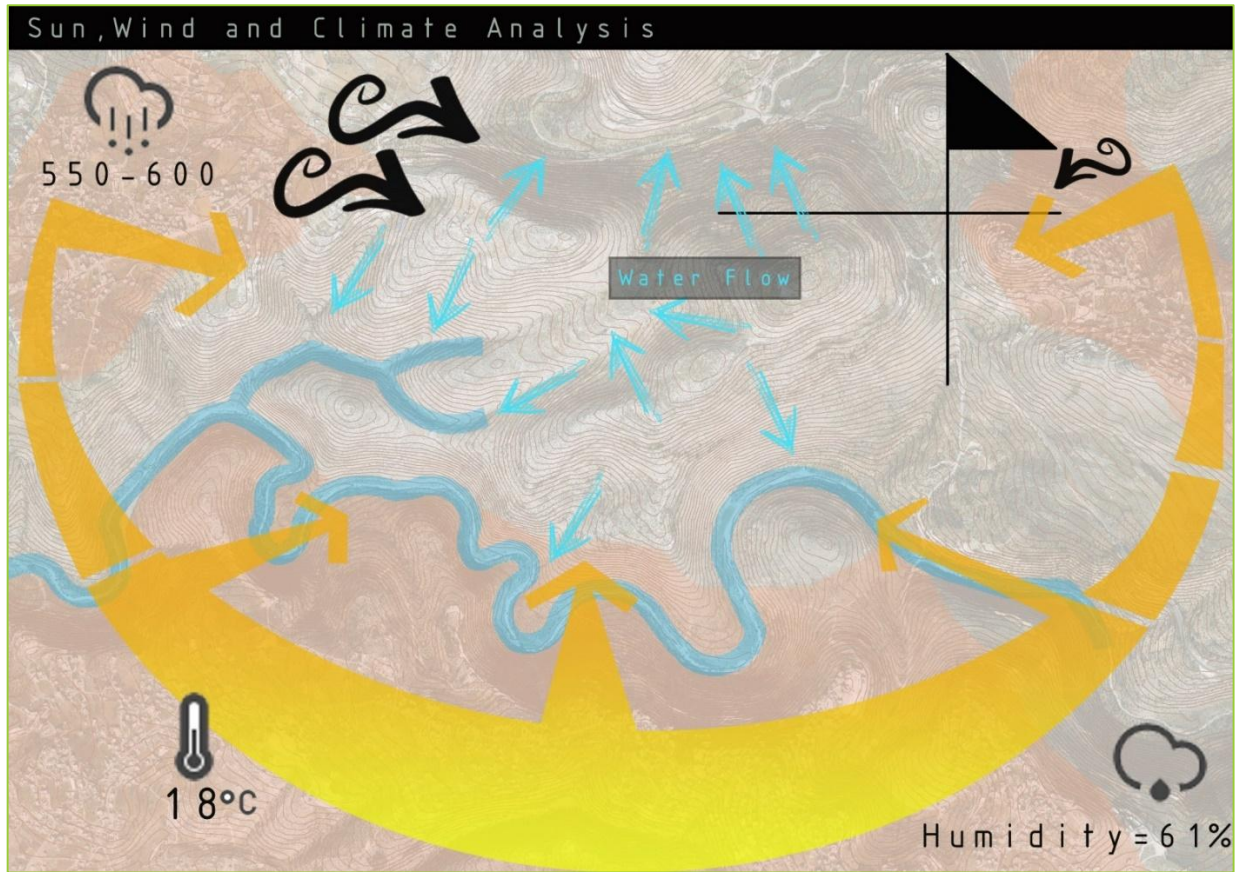


Figure 35: Sun, wind and climate analysis



Figure 36: shadow pattern charactrize by tree

## VIII. Soil classification

The soil type in the site is Terra rossa soil and a little of colluvial soil around the valley. The soil is used in earthquakes calculations to know the preferable floors number as shown in the soil profile below.

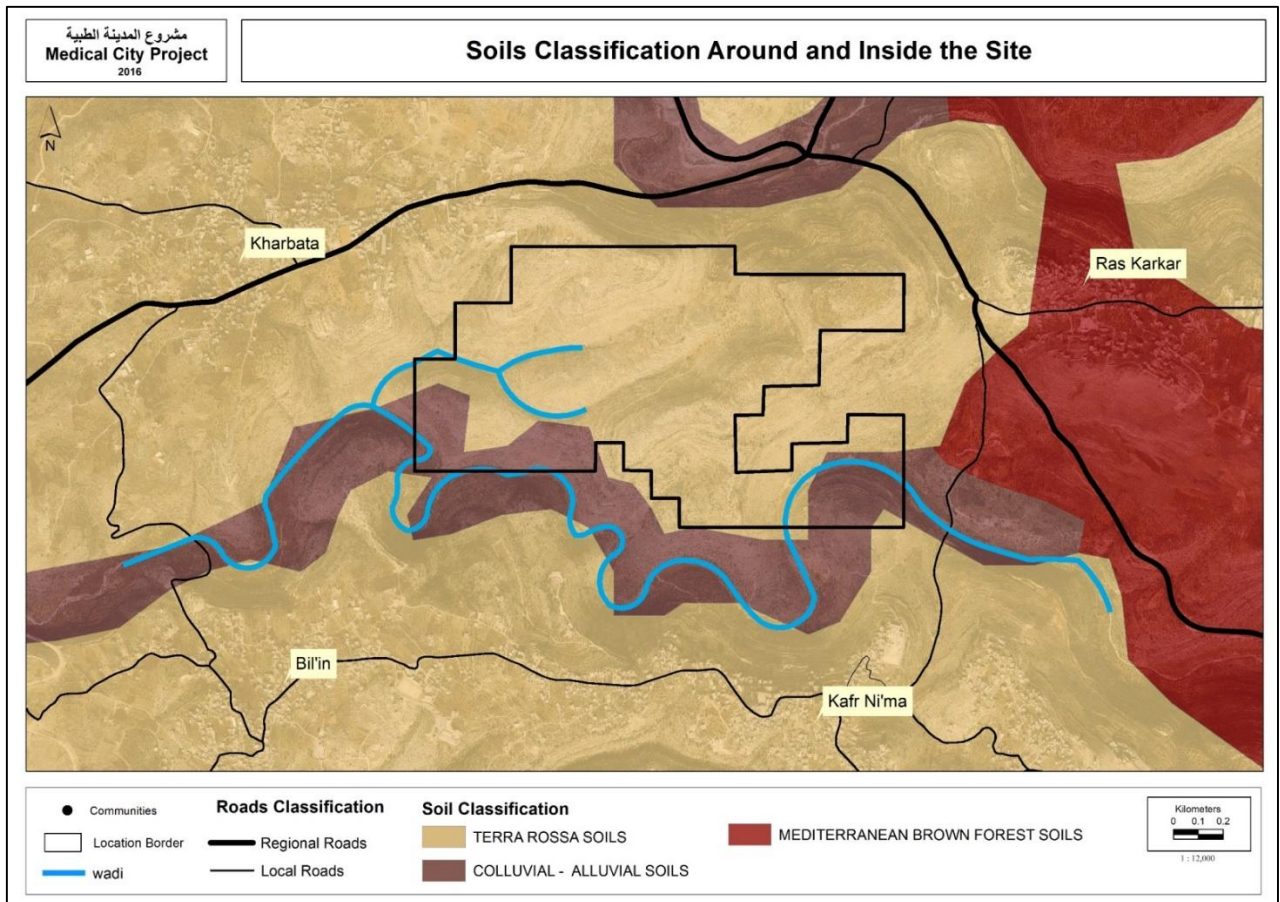


Figure 37: soil classification around and inside the site

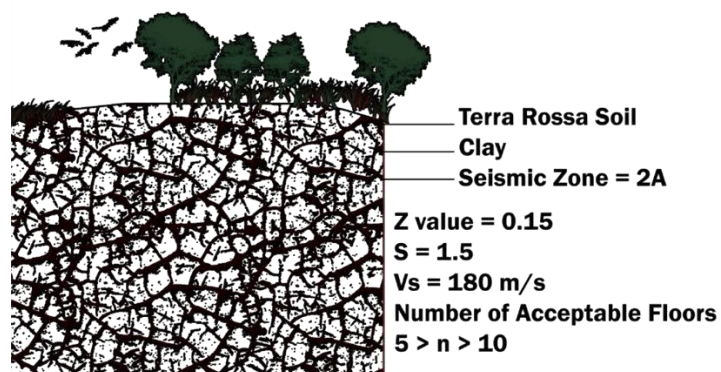


Figure 38: soil profile



## IX. Views

The site location is obvious from the surrounding and have a beautiful views and it meet the counter planning concept due to it views toward the green line land.

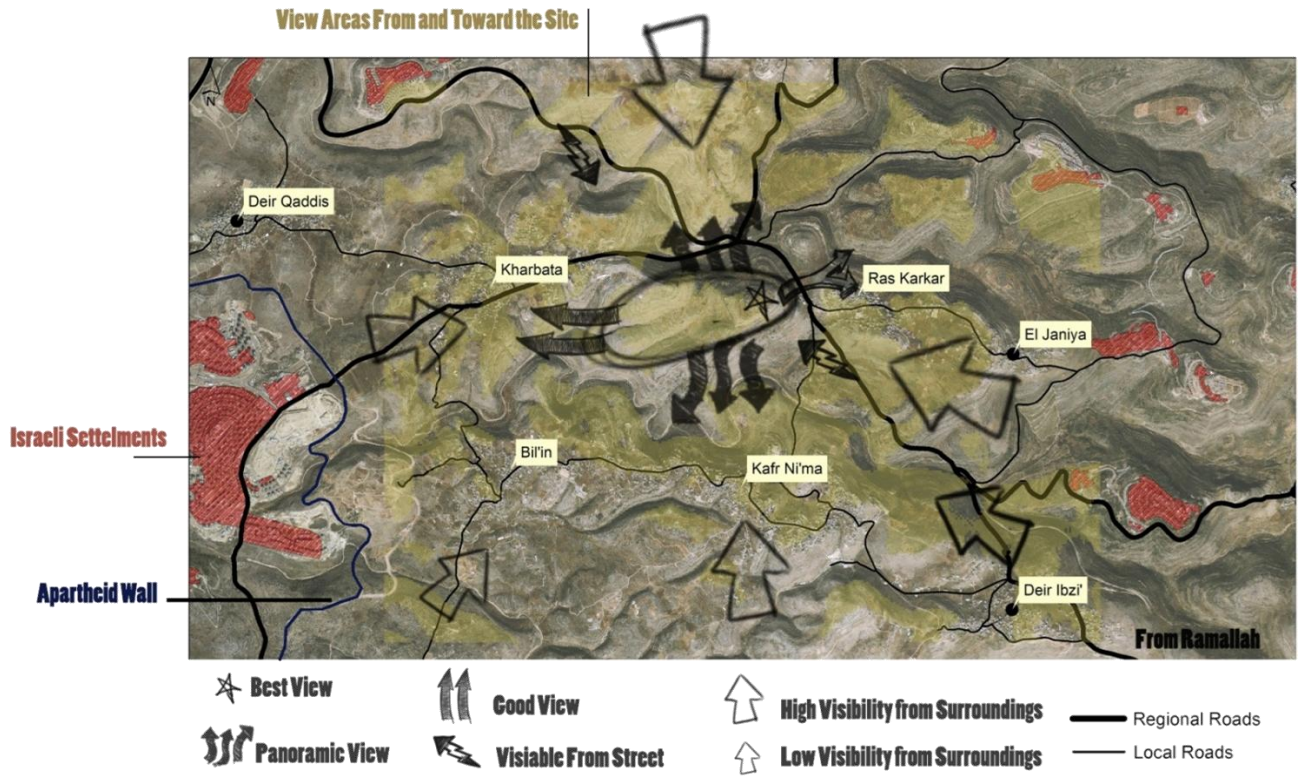


Figure 39: Views



Figure 40:panoramic view from the site toward the south-west

## **X. SWOT Analysis**

### **I. Strength**

- Healthy Site because it's on a top of Hill
- Has a Panoramic Views
- Accessible from All Governorates
- Located on Safe Seismic Zone (Zone 2A).
- Availability of dirt road inside the Site.
- Mediterranean Climate
- Availability of infrastructure (electricity network, water network, roads network)

### **II. Opportunities**

- Surroundings with communities which could be useful in term of providing services
- Area C (Counter Planning)
- Availability of Wadi which encourage to have recreational area
- Upgrading the surrounding communities after construction the project.
- Housing Projects in Kafr Na'meh



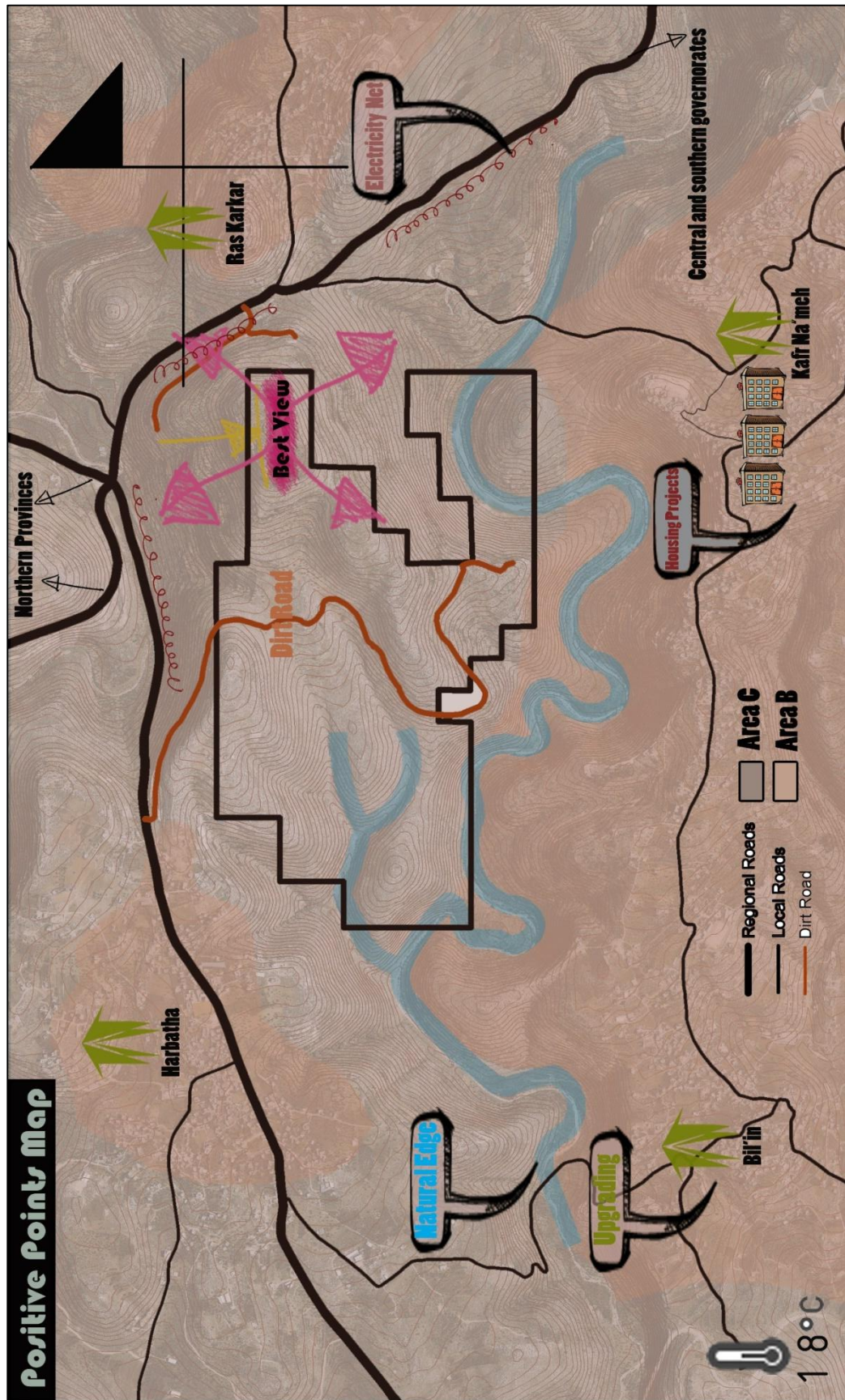


Figure 41: positive point map

### **III. Weakness**

- There's no Master Plan for the site
- Undesirable Slope
- Undesirable hill shade in some areas
- Weak Soil
- There's no Sewage Network
- There's no Water treatment plant
- There's no Master Plan for the Surrounding Communities
- Price ( 8000 – 14000 JD/ Dunum)

### **IV. Threats**

- Unplanned Expansion
- The Site owned from three parties “communities” which lead sometimes to problem in management
- Flooding the Wadi in case of heavy raining
- Noise from the Regional Road
- According to Oslo Agreement B, C areas have no law enforcement from the Palestinian authority
- Discharge waste water in the valley



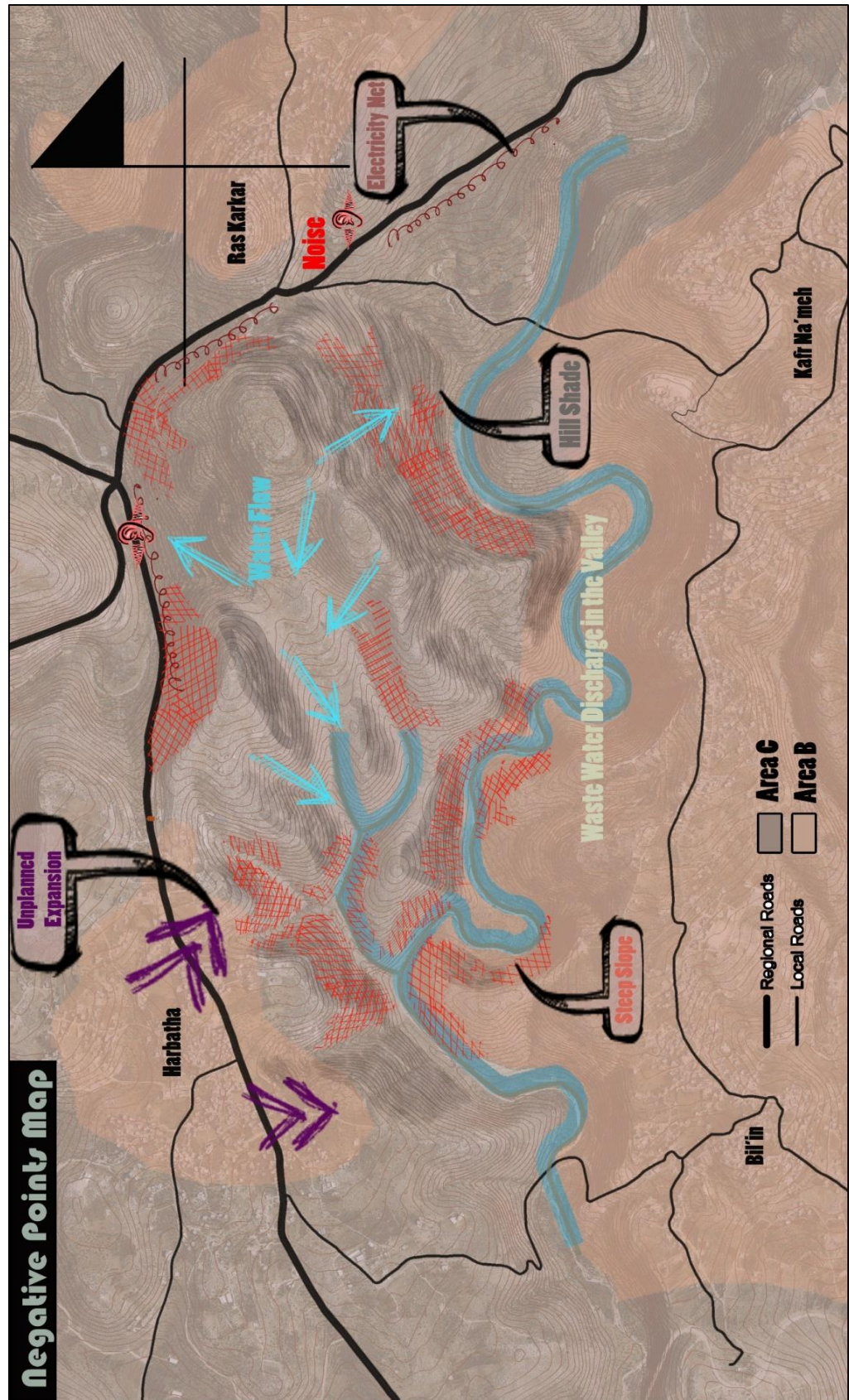


Figure 42: negative points map

## V. Concept development:

### I. VISION, Objectives and Program

#### ✓ Vision

- Healthy Compatible Medical City that provides the best specialized medical service in the region, accessible for people on the regional level (WB and GS).

#### ✓ Objectives

- To be compatible with the surroundings.
- Function adequate.
- To be accessible from the main cities.
- Healthy and Comfortable.
- Visually Attractive.
- Good design oriented.
- To be a tool for counter planning.

#### ✓ Program

- Two specialized hospital within 400 bed capacity, by 2025 this capacity will cover 40% of specialized medical needs in Palestine. These hospital will treat diseases that are related to cancer, pediocardo, burn, and Intensive care in addition to external clinics that may be run by private investments and provide derma and plastic surgery treatments. This cooperation in investments will run the city in efficient way and make it more productive.
- Revitalization hospital within 100 bed capacity, there's no such a hospital in Palestine that treat the body and human psychology in one place, so it will increase healing speed.
- Hospital University Campus, to be also an educational core for medical science, and to an opportunity to student who wants to be specialized in Palestine.
- Stuff Neighborhood, these will be employees that are not residents in Ramallah and don't want to live in the near villages.

#### ✓ Standards and calculations

- The expected number of employees in hospitals is 1000 person who are doctors, nurses, pharmacists, dietitian, and specialists in laboratory analysis, IT employees, social service employees, physiotherapist and other employees. I assumed that only 150 employee will live in the project neighborhood, rest of them may live in the surrounding communities or to be commuter and use transportation every day. The neighborhood was planned for 700 residents and their needs, the other needs such as school, will be from the surroundings.

*Table 6 : Number of employees*

Type of Employee	number
doctors	125
nurses	250
pharmacists	5

<b>dietitian</b>	5
<b>specialists in laboratory analysis</b>	5.333333
<b>IT employees</b>	6.666667
<b>social service employees</b>	6.666667
<b>physiotherapist</b>	30.33333
<b>other employees</b>	500
<b>Total</b>	Approximately (1000)

- Hospitals standards was as following, the total buildup area shouldn't exceed 4000 m2 and 25% from the total site area, there should be 4.2% services, 10 m2 open space for each bed, 160 m2 for each bed and one parking space for each bed for patients and 1 parking space for four employees.
- Hospital University Campus the assumption was that the campus is for 1500 student with 100 teachers and by that the standards by 2 student was, 30 m2 for dorm, 30 m2 for collage, 1.01 for library, 1.01 services, 0.7 for administration, 1 m2 for research center and 1 parking space for 10 student.

## II. Concept

The existing features in the site drew the project outline, such as, the dirt roads that we have in the site was very helpful in choosing the project entrance, it's so effective to use an already opened road instead of proposing new one, also the unplanned expansion that we have in the site from Kharbatha side, led to choose the neighborhood location near the residential area to be connected with the surroundings and take the benefits of services that are provided from the village as you can notice from the figure down shows.

The highest points in the project led to choose the hospitals location beside the existing regional roads in term of privacy, since the revitalization hospital need to be quite isolated to respect the patient privacy.



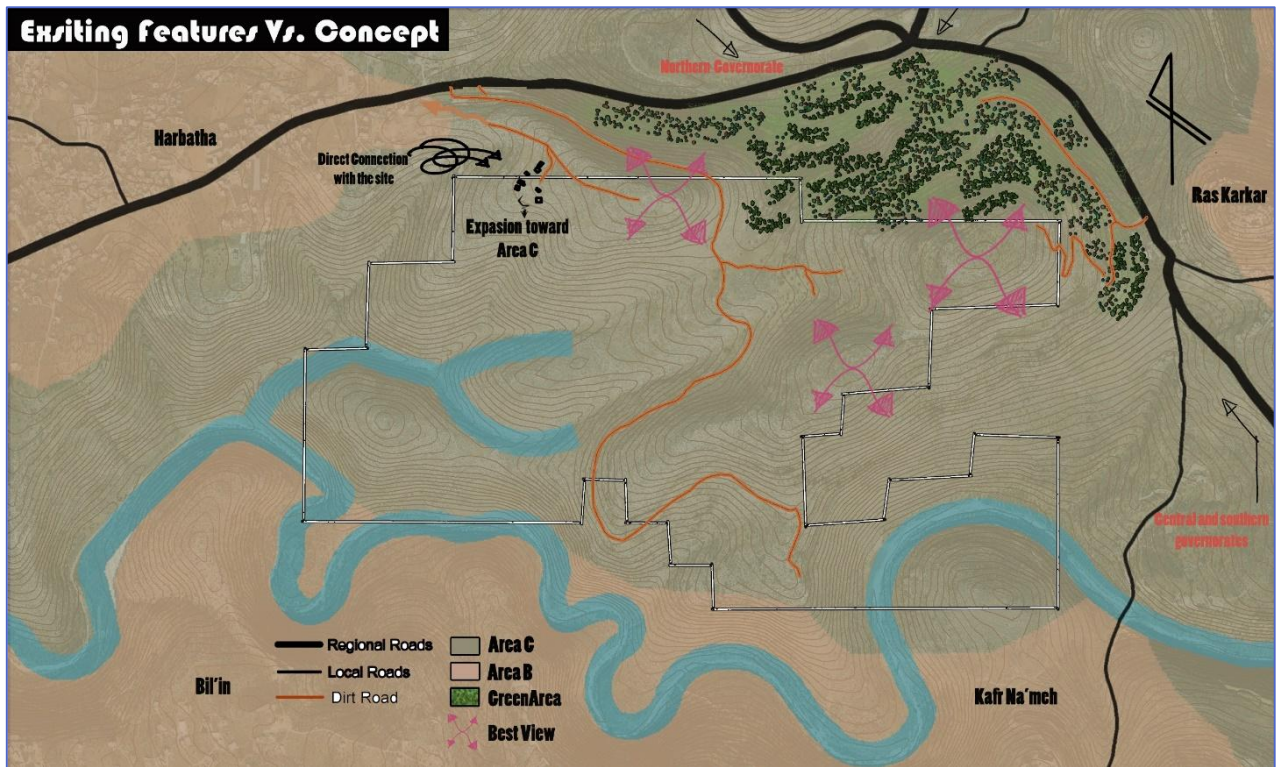


Figure 43 : shows the existing features that drew the concept dimensions

Also the hospitals should be close from the main roads so that why I chose to allocate the specialized hospital there. And in the middle the campus is allocated to be easy to access the hospital areas like figure 44 shows.

After that the streets concept should be done by connecting the functions with the entrances and with each other, also it should be an outer ring around the site for the future expansion and as a scape road (see figure 45).



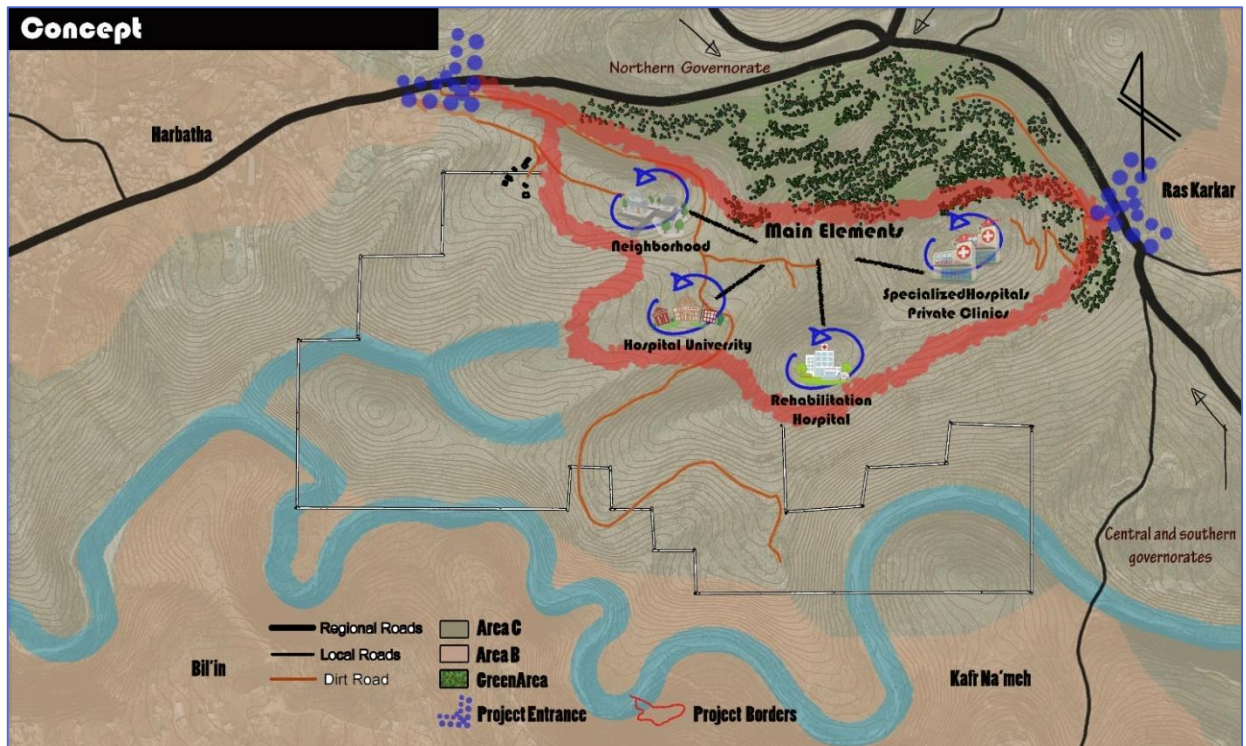


Figure 44: Concept development

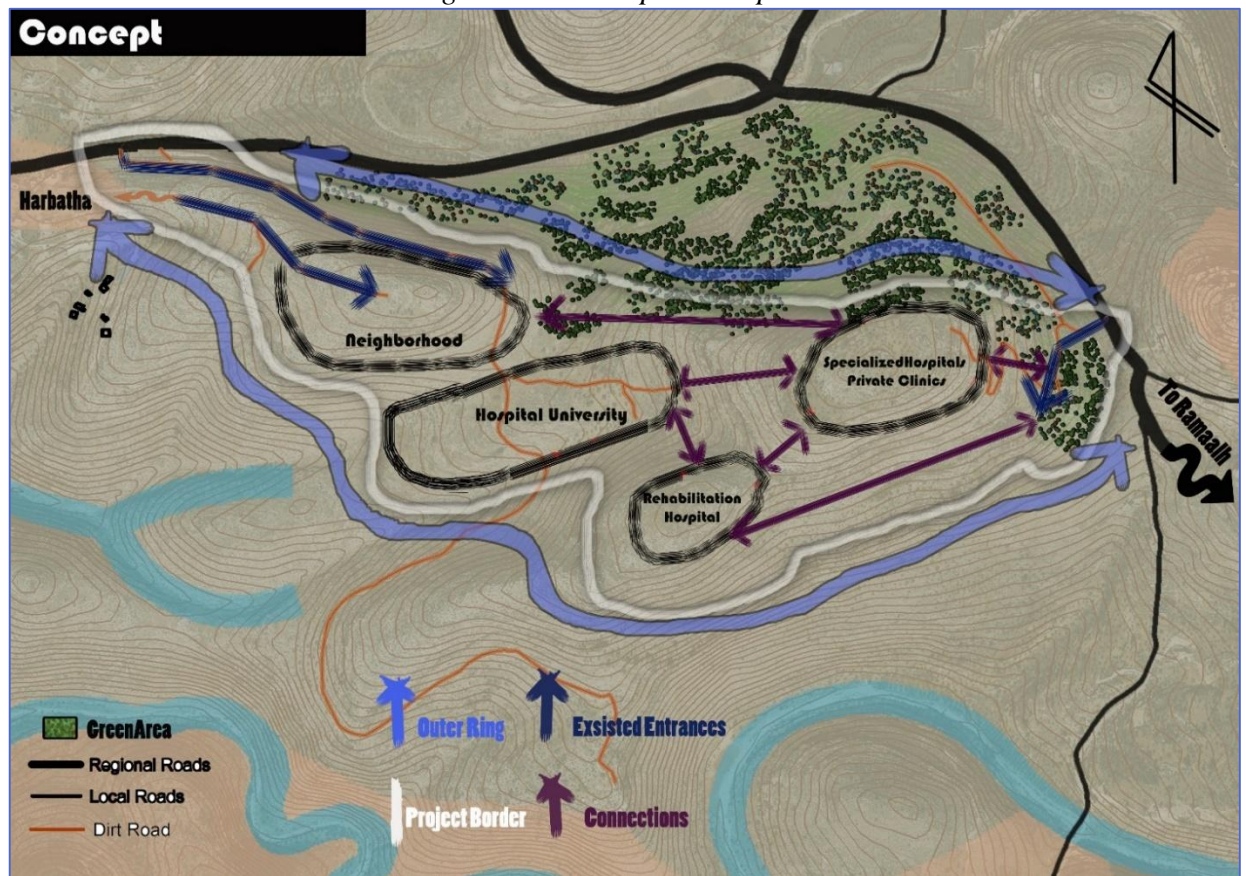


Figure 45: Streets Concept

After a long time of trials in drawing the streets layout and check it in term of slope and circulation, conceptual landuse map constructed to shape the project outline plan.



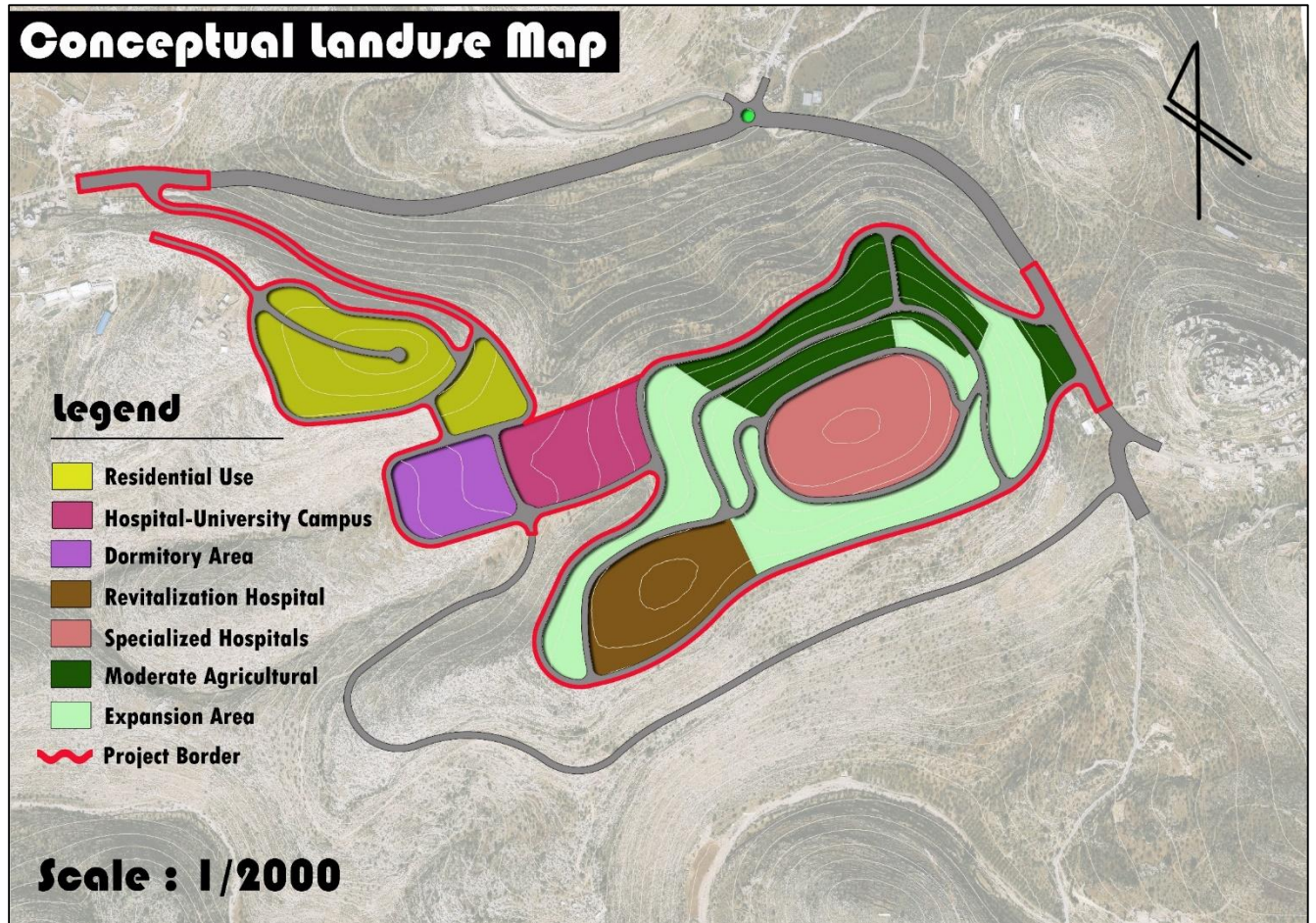


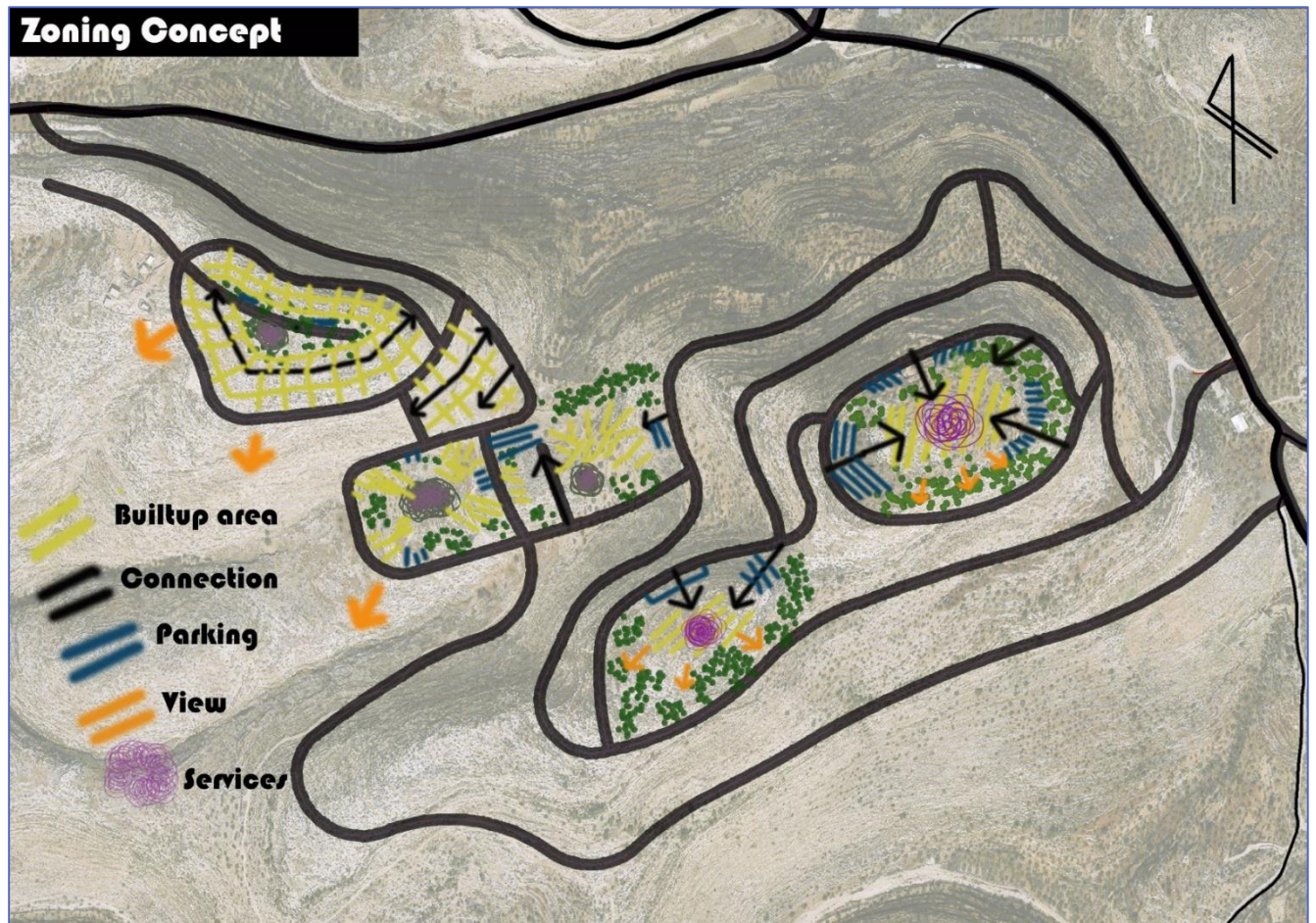
Figure 46 : conceptual landuse map

Table 7: Landuse Areas and Percent

Landuse	Area (m2)	Percent
Residential use	72755.82	11.85
Hospital University Campus	40737.10	6.63
Dormitory Area	30560.87	4.97
Revitalization Hospital	51965.33	8.46
Specialized Hospitals	68165.71	11.10
Moderate Agricultural	72012.57	11.72
Expansion Area	136728.28	22.27
Roads	140999.61	22.96
<b>Total</b>	<b>613925.29</b>	<b>100</b>

After that a zoning concept was developed to distribute the functions in each zone, the concept was to have links from streets to the buildup area base on the functions, a centralized service area and to have nice views.





*Figure 47 : Zoning Concept*

Then, these sketches turn into conceptual master plan that shows the details of this drawings like the parking areas, landscape areas... etc. ( see figure 48).



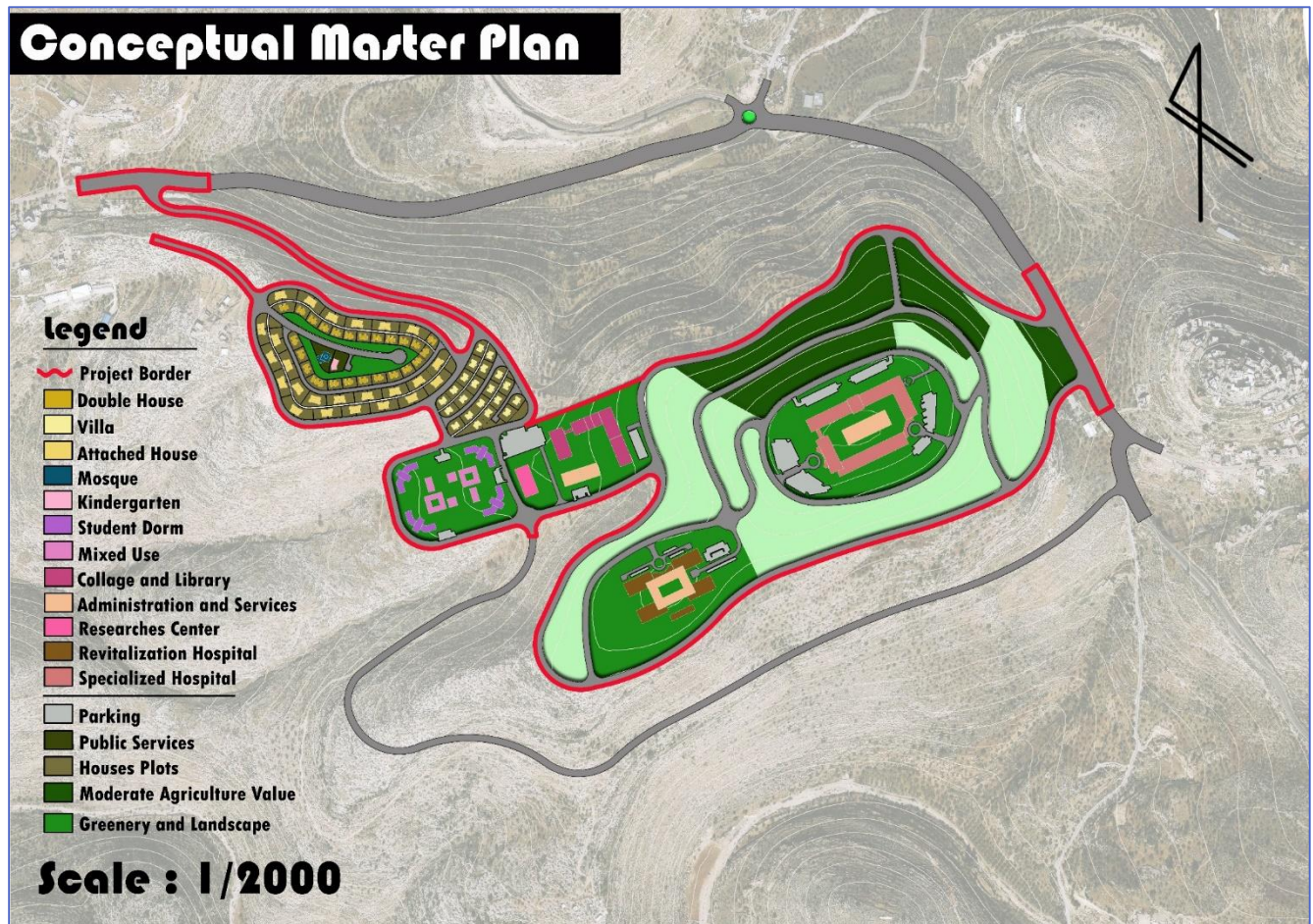


Figure 48: Conceptual Master Plan

Then in figure 49, the master plan of the medical city, that contains building types, roads, alleys and corridors, general landscape and parking area.

In figure 50, shows the specialized hospitals area that have 4 entrances (Patients, Employees, Emergency and VIP). The concept was here not to have circulation inform of buildings that are oriented toward the best views, and that also was the concept of revitalization hospital.

You can also notice from table 8 that the landscape and green areas about 59% from the total areas, which is very good comparable to our rigid hospitals.



### III. Master Plan



Figure 49: Master Plan

- ✓ Consideration about the master plan
  - The outer ring road is 14 m width, and the inner ring and each project zone is 12 m width.
  - The streets that is below 12 m width are tiled.
  - The number floor of specialized hospital is five floor.
  - The number floor of the collage is five floor.
  - The number floor of Research center and administration is two floor.
  - The number floor of mixed use buildings is three floor.
  - The number floor of dorms is four floor.
  - The number floor of all neighborhood buildings is two floor.

IV. Master Plan Detail

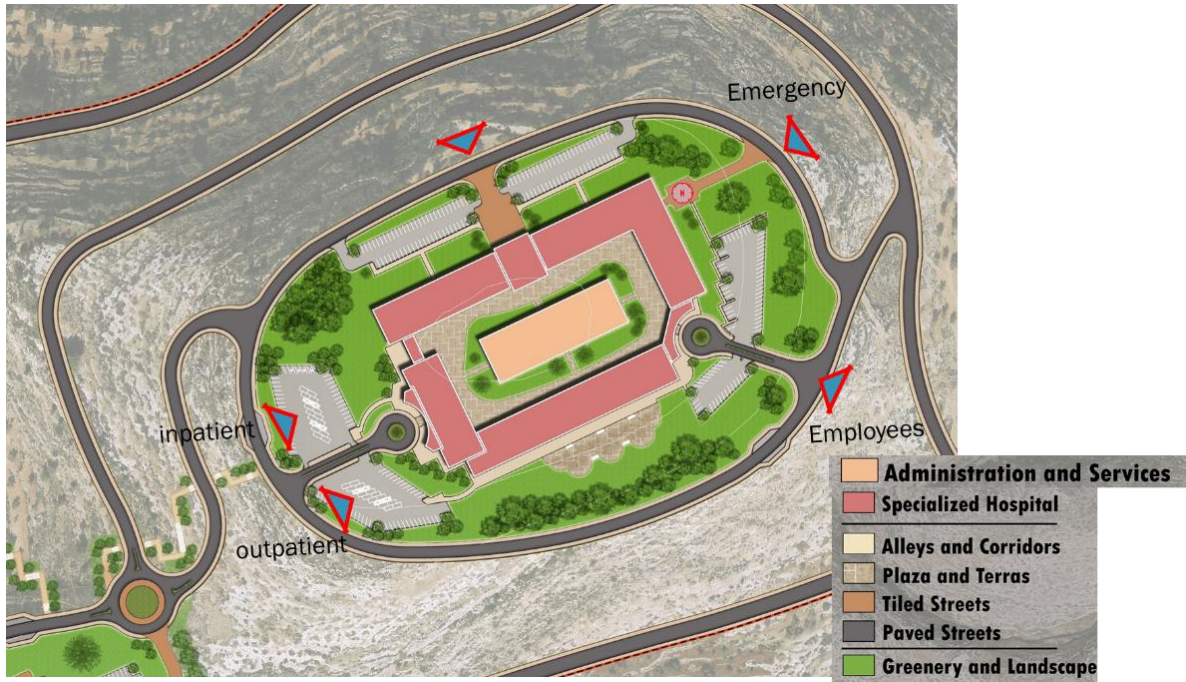


Figure 50 : Specialized Hospitals

Table 8: specialized hospital areas

Specialized Hospitals	Area	percentage
hospital	11787.36	17.29
Administration and Services	2693.61	3.951
Corridors	4048.268	5.93
Parking	10038.68	14.72
Greenery and Landscape	39597.79	58.09



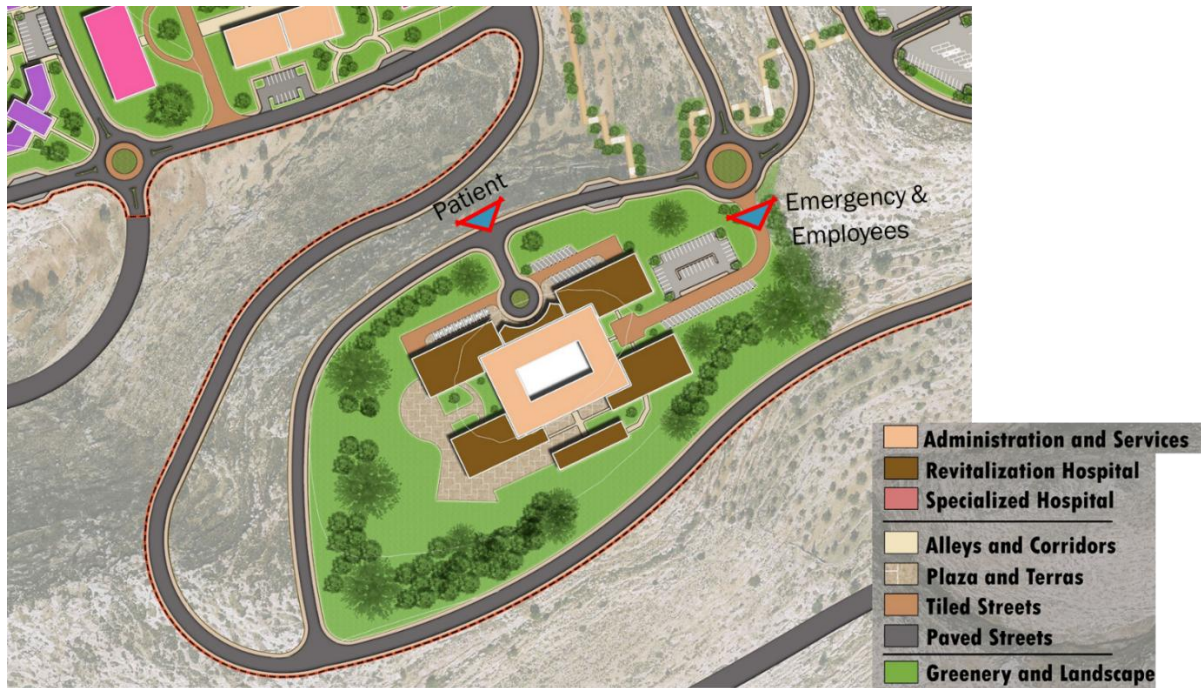


Figure 51 : Revitalization Hospital

In this hospital there's only two entrances because this type of hospital don't expect too much visitors because of high sensitivity of privacy.

Table 9: Revitalization hospital areas

Revitalization	Area	percentage
Hospital	5593.25	10.76343
Administration and Services	3254.8	6.263407
Alleys and Corridors	3280.63	6.313113
Parking	2115.059	4.070135
Greenery & Landscape	37721.59	72.58992



Table 10 : Hospital University Campus areas

Hospital University Campus	Area	percentage
College and Library	5710.36	14.01759
Administration and Services	1725.004	4.234477
Research Center	1500	3.682146
Alleys and Corridors	1022.814	2.510766
Parking	5037.042	12.36475
Greenery & Landscape	25741.89	63.19027

Table 11 Student Dormitory Areas

Hospital University Campus	Area	percentage
Dorms	3799.51	12.4326
Mixed use	3145.67	10.29313
parking	1507.447	4.932605
Greenery & Landscape	22108.24	72.34167





Figure 52 : Neighborhood

Neighborhood	Area	percentage
Kindergarten	212.16	0.29
Mixed Use	356.51	0.49
Villa	3150	4.32
Attached House	6463.86	8.88
Double House	4017.51	5.52
Corridor	5998.8	8.24
Parking	600	0.82

## V. Project Outcomes

This huge project need heavy infrastructures such as a water treatment plant, the surrounding areas don't have wastewater network so such a proposal will be good for the surrounding areas to provide this service to them. It's located far from the residential area and the medical city in the lowest area of the Valley to be easy for water to flow there, and it should be 1km buffer zone around it.



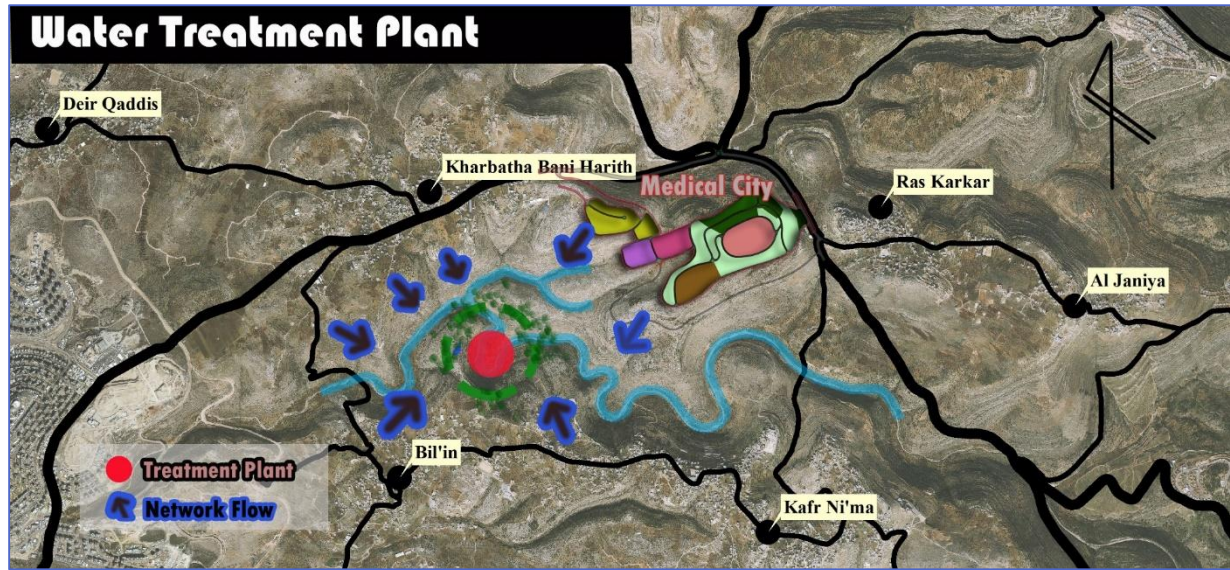


Figure 53: Water Treatment Plant Proposal

The project will have three service area; the closest neighborhoods and communities, Ramallah city and its governorate, and the whole Palestine as figure 55 shows.

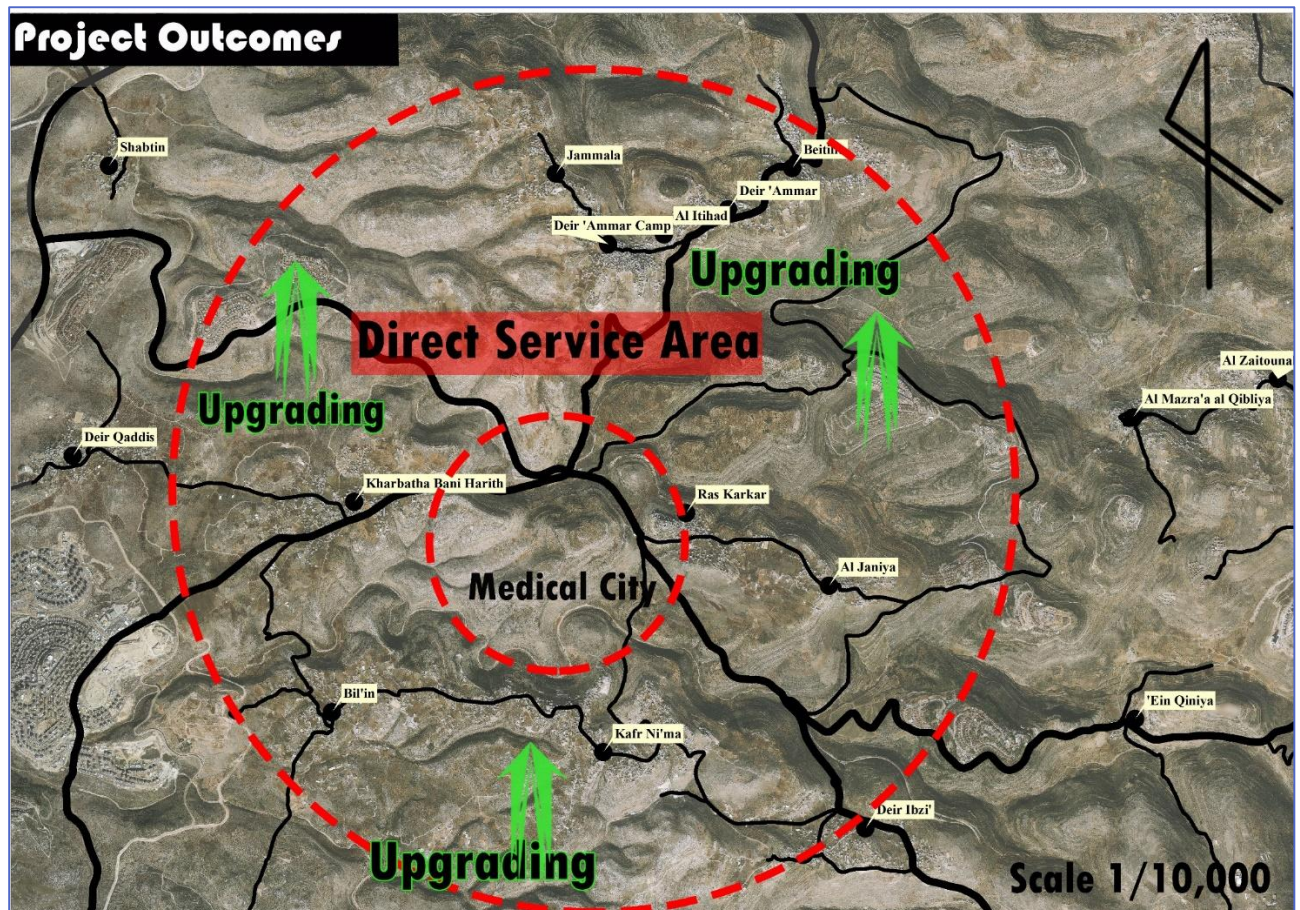


Figure 54 : Service Area of the medical city

- ✓ The Economic dimension of the project
  - Upgrading the surrounding localities by providing services and employ its residents



- Increase investment in health sector
- Accelerate innovation which lead to more researches and development
- Increase the local economy
- Decrease unemployment rate in health sector
- Achieve governance by improving the partnership between the various sectors “ Public, Private and NGOs”

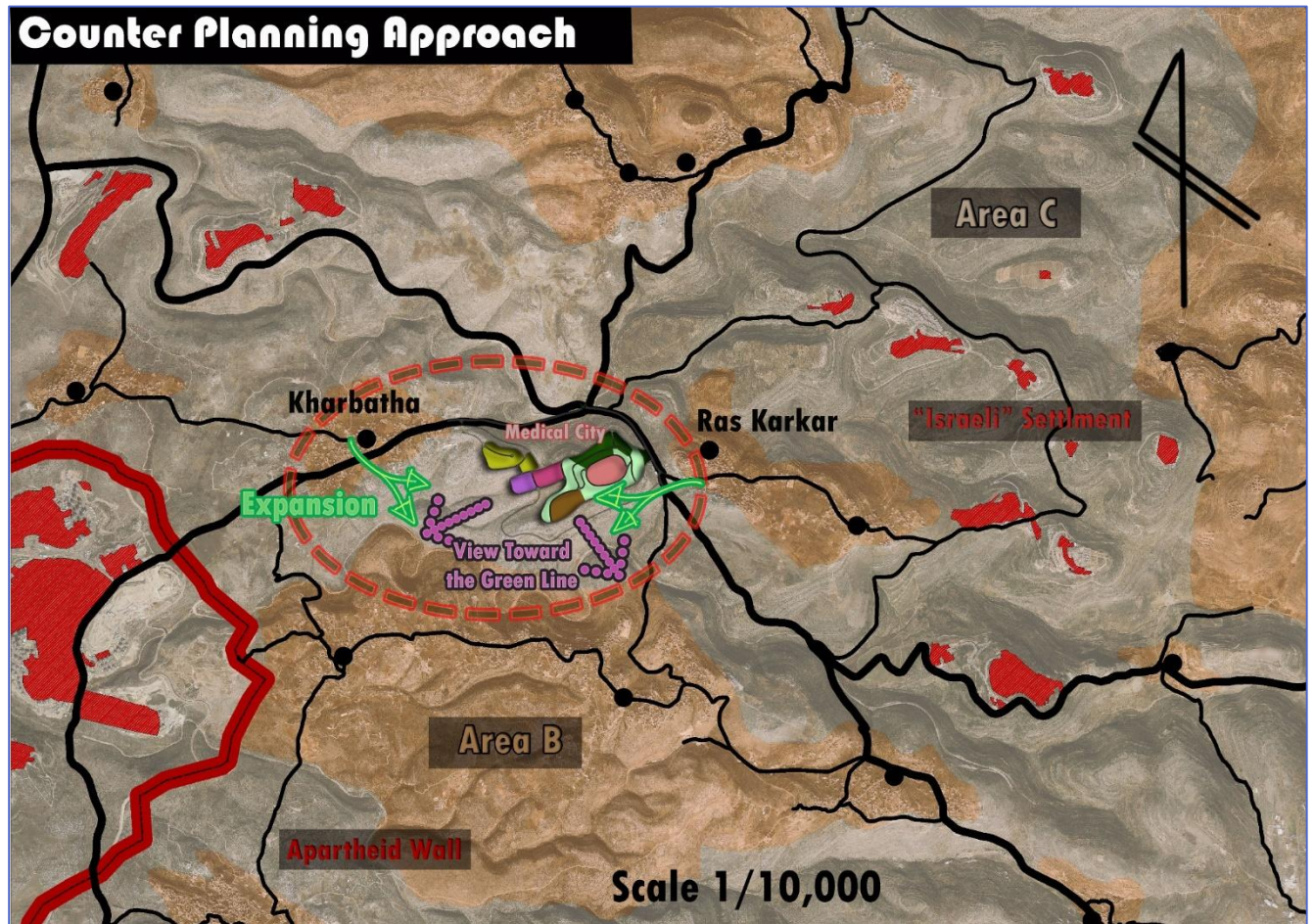


Figure 55 : Counter Planning

Achieve counter planning approach by creating belt around area C, because we already have expansion in Area C from Kharbatha and if we enhance Ras Karkar to expand in Area C, this belt will be created to save these area from stealing. It's also recommended to have one master and comprehensive plan for this area and the surrounding communities to stop the unplanned expansion and have that attractive service core.

Also, the medical city views are toward the green line areas which is visually counter planning.

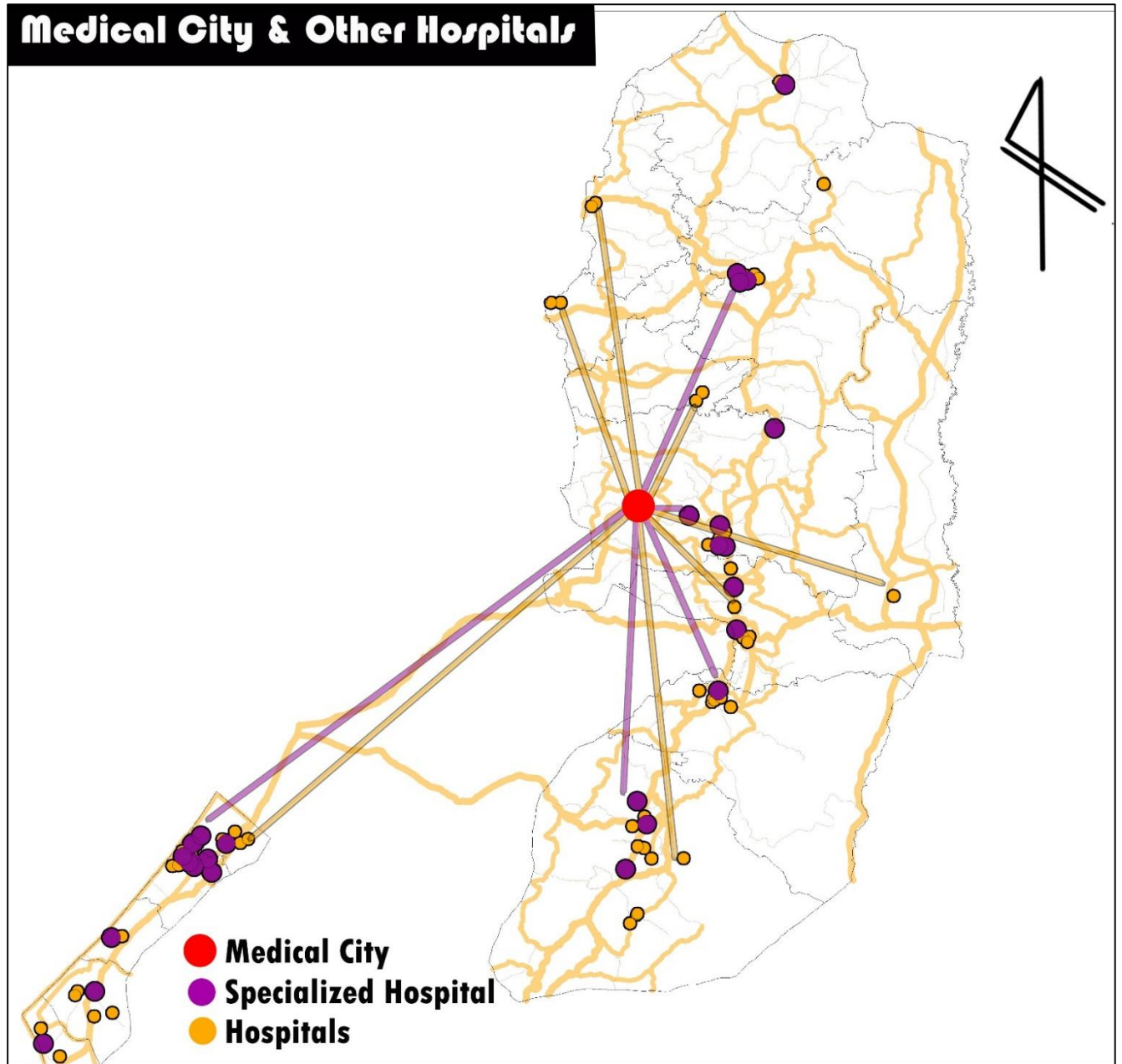


Figure 56: Project Effect on the health sector

Last and not least, construction such a project will accelerate innovation in medical science in Palestine and the information will be shared and transferred very smoothly between hospitals and other medical centers, and it will reduce the patient transfer outside Palestine and it will raise the service quality when others want to keep up with the new modern medical city. Also it will be a focal point for doctors and students to visit and live in the medical city to take the advantage of the Palestinian patient cases, or may be to feel the Palestinian real pain and transfer this image to the whole world.