



LIVABILITY

PALESTINIAN LIVABLE NEIGHBORHOOD

By: Suha Said Tamim

Supervisor: Dr. Ali Abdlhameed & Dr. Zahraa Zawawi

Urban Planning Department, An-Najah National University, Nablus, Palestine.

Sunday, May 15, 2016

TABLE OF CONTENTS

Acknowledgement	7
Abstract.....	8
Introduction.....	9
problem definition & research questins.....	11
Methodology.....	12
Site Selection I	13
site analysis	15
Historical background.....	15
Al-Tireh Blocks	19
Evolution.....	20
Political Situation.....	28
Environmental Situation	29
Seismic Zones.....	30
Geology and Rainfall.....	31
Height of buildings.....	32
Topography	33
Infrastructre.....	34
Services.....	35
How the existing situation fits with livability	37
Site selection II.....	43
How the existing situation fits with livability	45
the buffer of the main services.....	46
☼ Schools.....	46
☼ Health care service.....	50
☼ Mosque	51
☼ Supermarket.....	52
☼ Recreational services.....	53
walkability.....	56
☼ Sidewalks	56
☼ Greenery.....	58
☼ Street Lighting	59

☼ Trash containers.....	60
☼ Other features.....	61
☼ Proposals.....	62
Public Transportation	70
Affordability.....	73
other proposals.....	74
conclusion	76

Table of Figures

Figure 1 Workflow.....	12
Figure 2 site selection.....	13
Figure 3 Surrounding Area.....	14
Figure 4 The Metropolitan.....	14
Figure 5 The boundary of Ramallah from 1963 to 1983.....	15
Figure 6 Master plan of ramallah 1985	16
Figure 7 master plan of ramallah 1999	16
Figure 8 master plan of ramallah 2012	17
Figure 9 Al-tireh neighborhood.....	18
Figure 10 Al-tireh blocks.....	19
Figure 11 Aerial photo 1997.....	20
Figure 12 Aerial photo 2000.....	21
Figure 13 Aerial photo 2002.....	21
Figure 14 Aerial photo 2004.....	22
Figure 15 Aerial photo 2006.....	22
Figure 16 Aerial photo 2008.....	23
Figure 17 Aerial photo 2010.....	23
Figure 18 Aerial photo 2012.....	24
Figure 19 Aerial photo 2015.....	24
Figure 20 master plan of al-tireh 1985.....	25
Figure 21 master plan of Al-Tireh 1999	25
Figure 22 master plan of Al-Tireh 2012.....	26
Figure 23 Built up area until 1985	26
Figure 24 built up area until 1999.....	27
Figure 25 built up area until 2015.....	27
Figure 26 Political situation	28
Figure 27 Environmental situation.....	29
Figure 28 seismic zone.....	30
Figure 29 geology.....	31
Figure 30 rainfall.....	31
Figure 31 Height of buildings	32
Figure 32 Elevations.....	33
Figure 33 topography	33
Figure 34 sewer system.....	34
Figure 35 services in al-tireh.....	36
Figure 36 the relation between al-tireh and ramallah	36
Figure 37 the scope of the mosque	38
Figure 38 the scope of the kindergarten.....	38
Figure 39 the scope of the elementary schools	39
Figure 40 the scope of the secondary schools	39

Figure 41 the scope of the UNRWA school	40
Figure 42 the scope of the supermarket	40
Figure 43 the scope of the pharmacy.....	41
Figure 44 recreational services	41
Figure 45 coffeshops and Resturant	42
Figure 46 services in al-tireh.....	42
Figure 47 land use.....	43
Figure 48 selected area.....	44
Figure 49 selected area.....	44
Figure 50 services in the neighborhood	45
Figure 51 the scope of elementary schools in the study area	47
Figure 52 the scope of kindergarten in the study area.....	47
Figure 53 the proposed school from municipality.....	48
Figure 54 the scope of secondary school in the study area.....	48
Figure 55 area need elementary school.....	49
Figure 56 proposed zone to suggest helth center	50
Figure 57 the scope of the mosque in the study area.....	51
Figure 58 proposed zone to suggest health center.....	51
Figure 59 the scope of the supermaket in the study area.....	52
Figure 60 proposed zone to suggest park.....	53
Figure 61 locations for the proposal projects	54
Figure 62 site selection for the proposed services	55
Figure 63 zoning for services.....	55
Figure 64 sidewalk condition.....	56
Figure 65 bad condition sidewalk	57
Figure 66 good sidewalk.....	57
Figure 67 greenery condition.....	58
Figure 68 non-shaded trees	58
Figure 69 non-shaded trees.....	58
Figure 70 street lighting condition	59
Figure 71 main street lighting.....	59
Figure 72 locations of trash containers	60
Figure 73 trash containers in the neighborhood	60
Figure 74 bad bavement.....	61
Figure 75 the need for stairs	61
Figure 76 internal street section.....	62
Figure 77 street pavement	63
Figure 78 internal streets in Amsterdam.....	63
Figure 79 main street section with buildings on two sides.....	64
Figure 80 main street section on supermarket area.....	64
Figure 81 main street section witout buildings on sides with wider sidewalks.....	65
Figure 82 ramps design.....	65
Figure 83 non-shaded trees.....	66

Figure 84 Populus nigra.....	66
Figure 85 Ficus netida.....	66
Figure 86 3 trash containers for each building	67
Figure 87 Women can separate waste in kitchen for plastic and paper AND OTHER waste.	67
Figure 88 locations for out doors trash containers	68
Figure 89 collecting trash containers in AMSTERDAM	68
Figure 90 small trash container in the street.....	69
Figure 91 clean worker.....	69
Figure 92 Taxi path.....	70
Figure 93 taxi path in the neighborhood.....	71
Figure 94 the taxi station and Al Manara roundabout.....	71
Figure 95 the taxi station and al manara roudabout.....	72
Figure 96 future think for transportation.....	72
Figure 97 Numbering System / mailbox.....	74
Figure 98 plastic bottles substitution machine.....	75
Figure 99 special bags for lidl supermarket.....	75

Table 1 Al-tireh Services	35
Table 2 standard Buffer for the existing services	37
Table 3 liv ability factors.....	45

ACKNOWLEDGEMENT

First of all I am very thankful to Allah who is most beneficent and merciful.

I am extremely thankful to my parents for their love and encouragement.

I'd like to express my deep thanks to my supervisors Dr.Ali Abdalhameed and Dr.Zahraa Zawawi for their valuable guidance.

I also very much thankful to Ramallah municipality for facilitating my research mission by giving me useful data.

ABSTRACT

Livability means make people live comfortably in safe place respects the environment and offer all the daily services within walkable distance, Just like San Francisco which is network of livable neighborhoods that encourage affordable housing and encourage walkability by making the services within quarter and half mile, and care about greenery for better walking and biking experience. In San Francisco the priority is walking and biking then for public transportation then for the private cars and shared-cars then to the taxi (for disabled and elders). This encourages people spend time out of doors in public space enjoying city life together and to avoid traffic jam.

In Palestine we face obstacles limit people to live in livable neighborhoods:

- Weakness of the economic in Palestine so infrastructure in all areas is not good and not enough.
- Israeli occupation and its administrative subdivisions that weaken the spatial connections.
- Limited culture and awareness of environmental matters from people.

My project aims to imagine a “**Palestinian livable neighborhood model**”. To make strong neighborhood where it will be easier to get where you need to be, and the air will be cleaner and people will be healthier and spend less money on transportation.

To reach to this point I chose part of Al-Tira neighborhood in Ramallah which has a lot of livability characteristics. Then I applied all livability criteria on the area to find the gap between the existing situation and the target. Finally I will make recommendations and suggest some elements and projects to fill that gap, and has a Palestinian Livable Neighborhood.

LIVABILITY

PALESTINIAN LIVABLE NEIGHBORHOOD

INTRODUCTION

Livability in dictionary:

“suitable for living in; habitable; comfortable”.

Anyone needs a lot of things to live in easy, comfortable and sustainable environment for future generations, but there is different standards of living from one country to another depending on the economic situation and social awareness, as residents of first world countries enjoy a high-quality infrastructure to relieve the people and if they met the economic ability with cultural and environmental awareness, they are using these ingredients in a comfortable and sustainable way. While that late economically countries often suffer from poor infrastructure and services, which make it less comfort than it is from other countries. Similarly, in Palestine.

Livable communities are places where transportation, housing, and commercial development investments have been coordinated so that people have access to adequate, affordable, and environmentally sustainable travel options

The component of livability vary from country to other, it depends on the priority of the country. For example the four fundamental aspects of great, livable San Francisco: strong

neighborhoods, walkability, and a network of attractive public spaces, and affordability.

Livable San Francisco is composed of **strong neighborhoods**. These are the building blocks of the city, each one with its own special character. A healthy neighborhood has a commercial center that provides the amenities of city life close at hand, including shops, restaurants, Laundromats, and cafes. Many neighborhood centers are lucky enough to have a park, public library, police station, or school in them as well. Every San Franciscan should be within easy walking distance of a neighborhood shopping street, with all the amenities needed for a well-rounded daily life.

San Francisco is **walkable**, maximizing the number of trips which can be made on foot and making the walking experience a joy. Everyone, at some point in the day, is a pedestrian and depends on bicycling and **Public Transportation** more than using private cars.

San Francisco is **affordable**. The only way the city can remain a welcoming place is if people can afford to live there.

This paper try to apply livability factors on a Palestinian neighborhood based on the standards used in KSA according to walkable distances to reach main daily services, but for the other factors (public transportation & affordability) it will be studied to fit the neighborhood needs.

PROBLEM DEFINITION & RESEARCH QUESTIONS

There are many obstacles limit Palestinian society to become livable because of the weakness of the economic side as Palestine is developing country dependent on imports not exports, which makes its economy weak, so infrastructure availability in all areas is not good or enough. In addition to the Israel occupation and its administrative subdivisions that weaken the spatial connections between areas under the regulatory of the Palestinian Authority. Add to this the limited culture and awareness of environmental matters from people.

All these reasons make life difficult for people day after day, so we should think about how to make Palestinian community Livable. We can learn from the successful experiences of livable developed countries and study the possibility of applying it within the Palestinian conditions. So my research will answer on these questions:

1. What is Livable City?
2. What is the Palestinian Criteria for Livability?

METHODOLOGY

My process starts by selecting appropriate neighborhood borders in the West Bank then collecting several data from many sources to start making site analysis to check how the area achieve from livability factors and what's the gap between the existing situation and the standards, then I suggest proposals to fill that gap. So that finally I can get a livable Palestinian neighborhood.

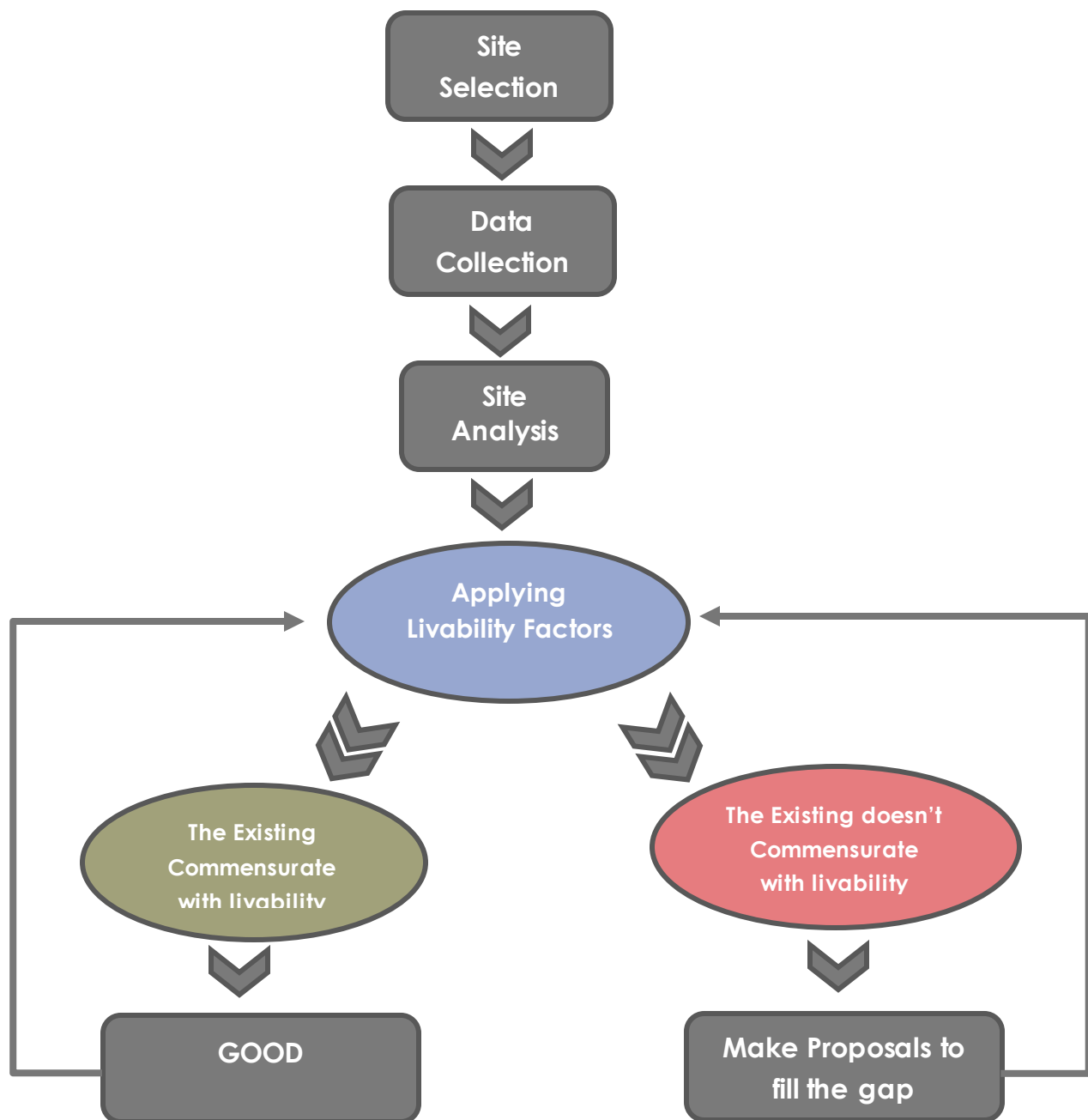


FIGURE 1 WORKFLOW

SITE SELECTION I

I choose Ramallah to apply the concepts of livability in, because of high-cultural awareness of people there compared to other cities.

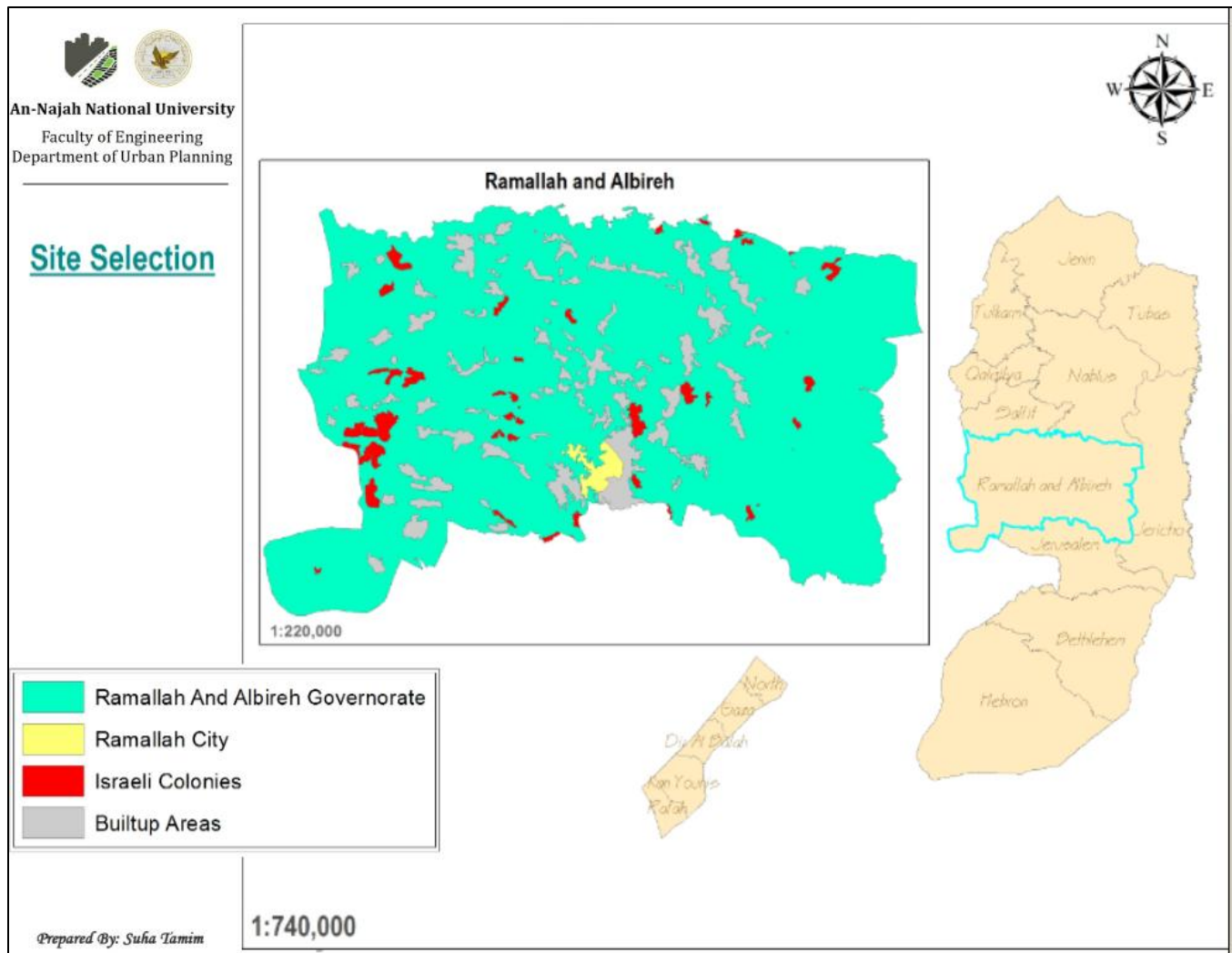


FIGURE 2 SITE SELECTION

Located on longitude 168-171 on the East, and latitude 144-197 to the North as Palestinian coordinates. Ramallah bounded by Abu Qash, Surda, and Al-zaytouna from the northern side, and Rafat from South. It bounded by Beituniya and Ein Qiniya from the West and from East there is Al-Bireh. While Ramallah, Beituniya, and Al-Bireh has its own municipality, they form together Metropolitan.

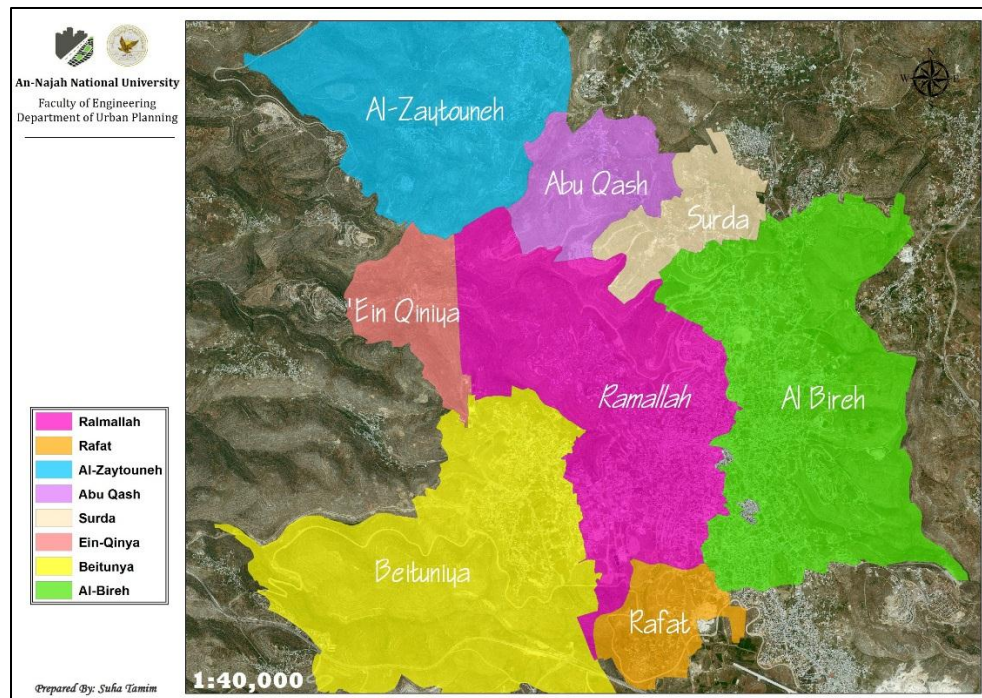


FIGURE 3 SUROUNDING AREA

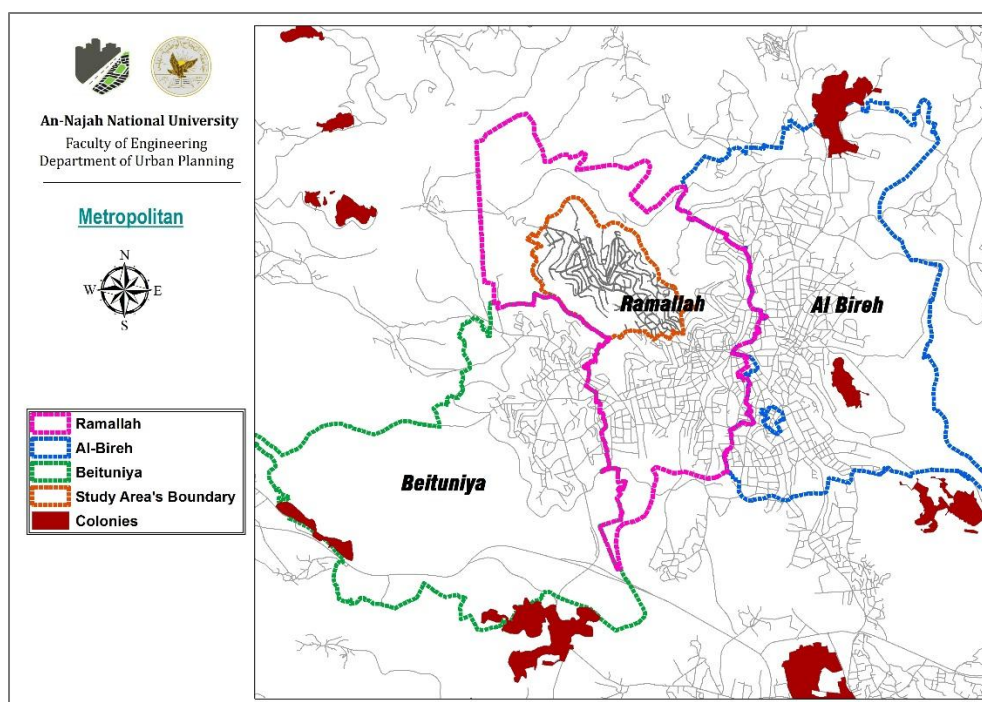


FIGURE 4 THE METROPOLITAN

SITE ANALYSIS

Historical background

Ramallah located 16 km away from Jerusalem. Its population has reached in 1922 about 3,104 people. It rose in 1931 to 4,286. It estimated in 1945 at about 5,080 people. In 1961, the number of Ramallah residents, most of them Palestinian refugees totaled 14,759 people were staying at 1731 buildings. Today the population of Ramallah is 35,140 inhabitants. Map (5) below shows the development of Ramallah municipality's boundary.

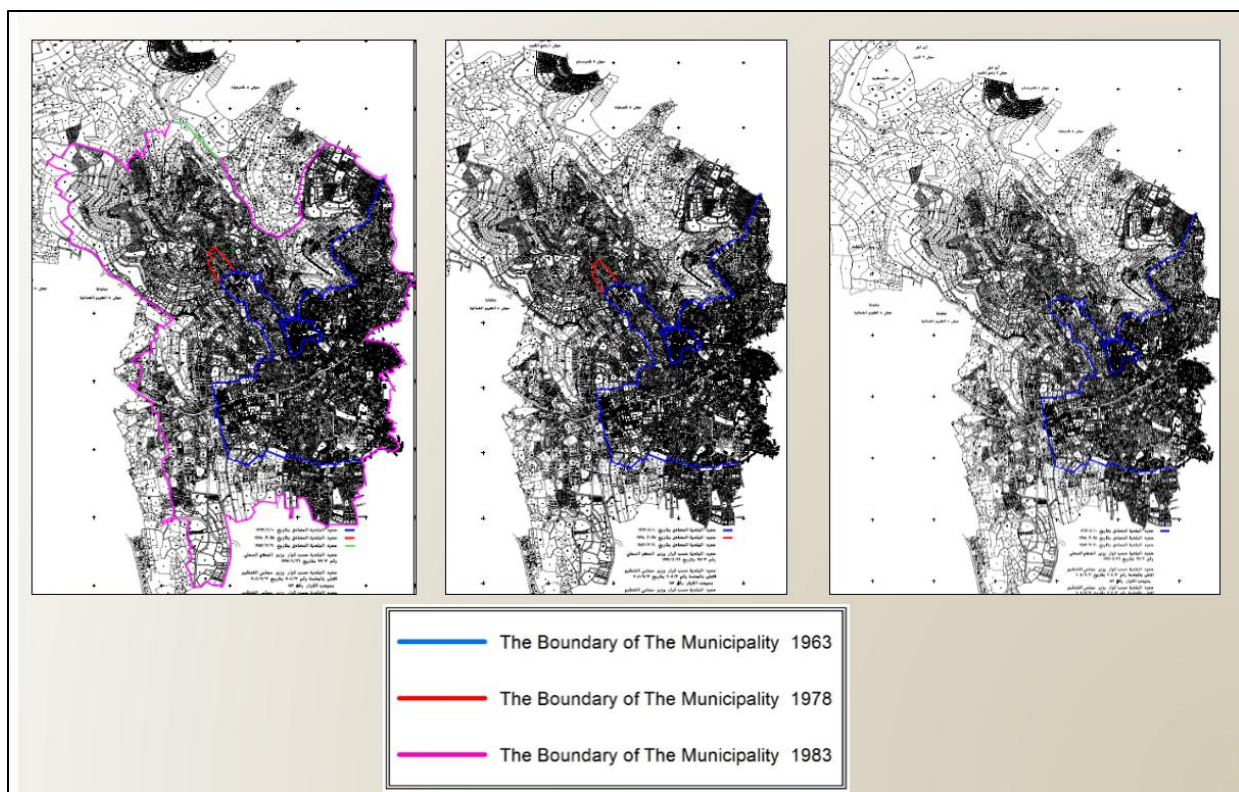


FIGURE 5 THE BOUNDARY OF RAMALLAH FROM 1963 TO 1983

The first master plan for Ramallah was Israeli made by Shlomo Khayyat and others. It designed manually in 1985 as shown in Figure (6). In 1999 the first Palestinian master plan for Ramallah was made (Figure 7) with more details in classification to suite the Rise in population. Then the municipality develop the master plan during the years to reach finally to the last master plan in 2012 (Figure 8) which used until now.

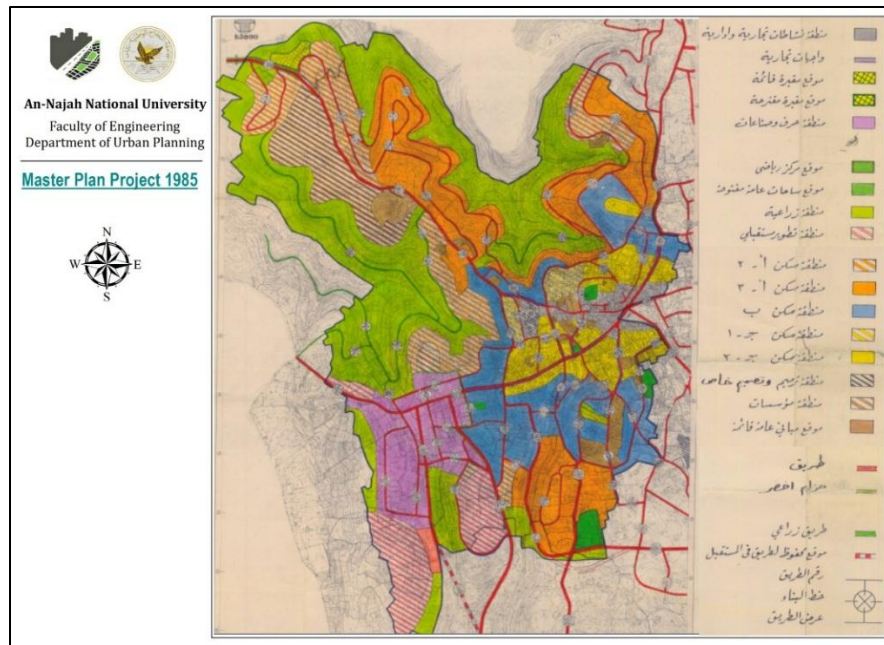


FIGURE 6 MASTER PLAN OF RAMALLAH 1985

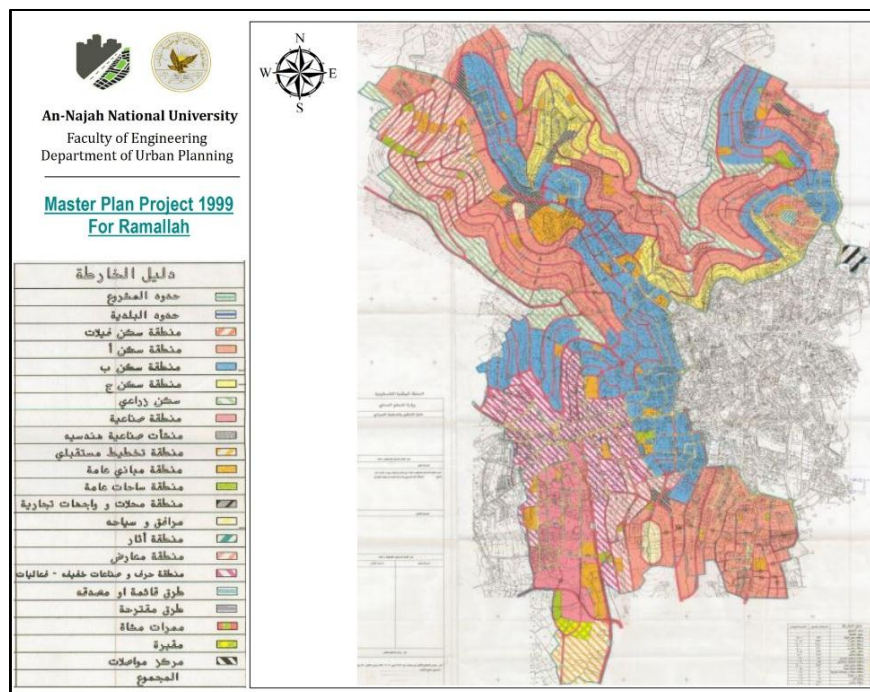


FIGURE 7 MASTER PLAN OF RAMALLAH 1999

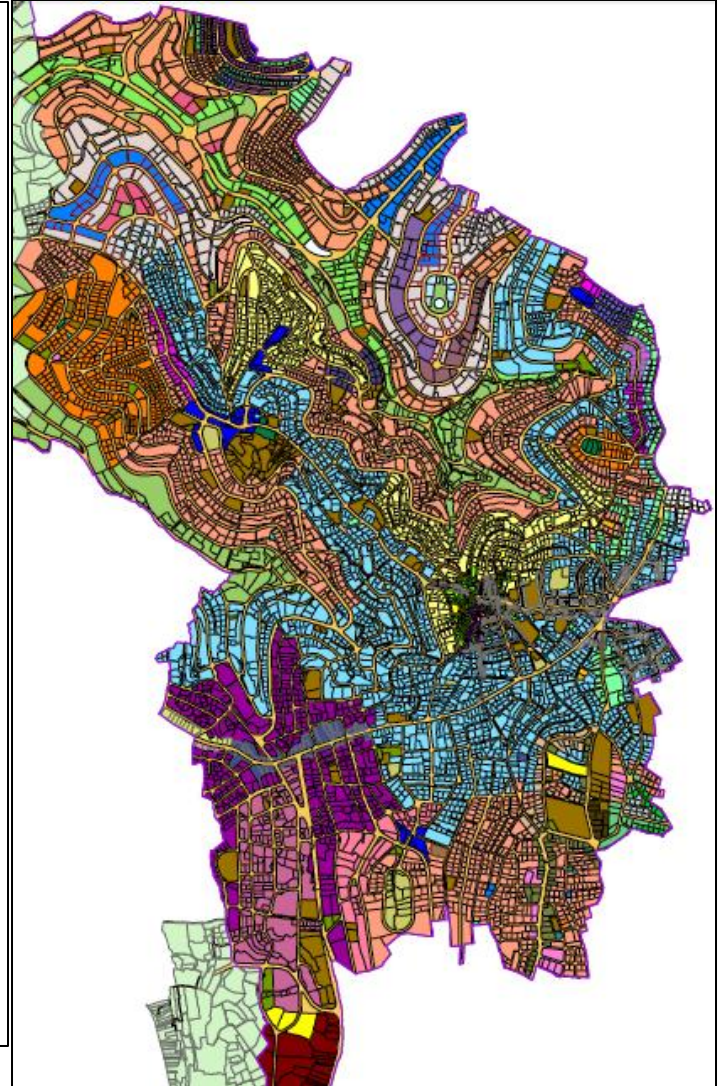


FIGURE 8 MASTER PLAN OF RAMALLAH 2012

To understand the livability concepts well I will chose a neighborhood in the city as a model because a livable city is a network of livable neighborhoods.

I choose Al-Tireh neighborhood because its high class neighborhood and it has some privacy because it has a residential character unlike other high class neighborhoods. In addition to the city expansion in that destination.

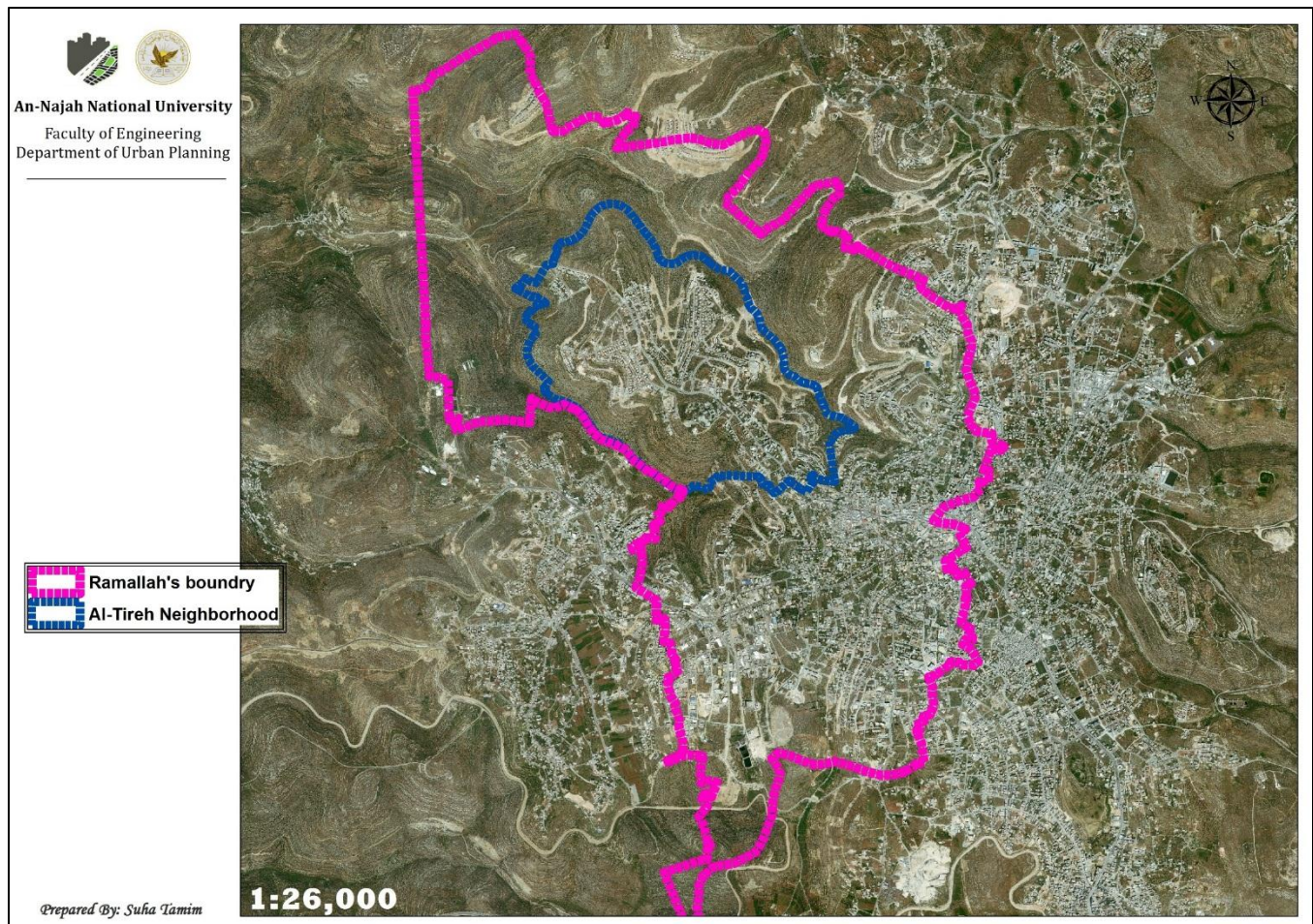


FIGURE 9 AL-TIREH NEIGHBORHOOD

Al-Tireh neighborhood locates in the northern-west part of Ramallah. It is consisting from six blocks as shown in Figure 10.



Evolution

Al-Tireh neighborhood is considered somewhat new, it became people's destination in 1990's, before that there was some housing projects, and then the municipality aimed to encourage people to build their by classify the main street as commercial classification to alleviate load on the CBD (central business district), and the existence of the Women Society Collage in the region has helped to attract residents too. Figures below show the evolution of the neighborhood by aerial photograph, maps, and masterplans.



FIGURE 11 AERIAL PHOTO 1997



FIGURE 12 AERIAL PHOTO 2000



FIGURE 13 AERIAL PHOTO 2002



FIGURE 14 AERIAL PHOTO 2004



FIGURE 15 AERIAL PHOTO 2006



FIGURE 16 AERIAL PHOTO 2008



FIGURE 17 AERIAL PHOTO 2010



FIGURE 18 AERIAL PHOTO 2012



FIGURE 19 AERIAL PHOTO 2015

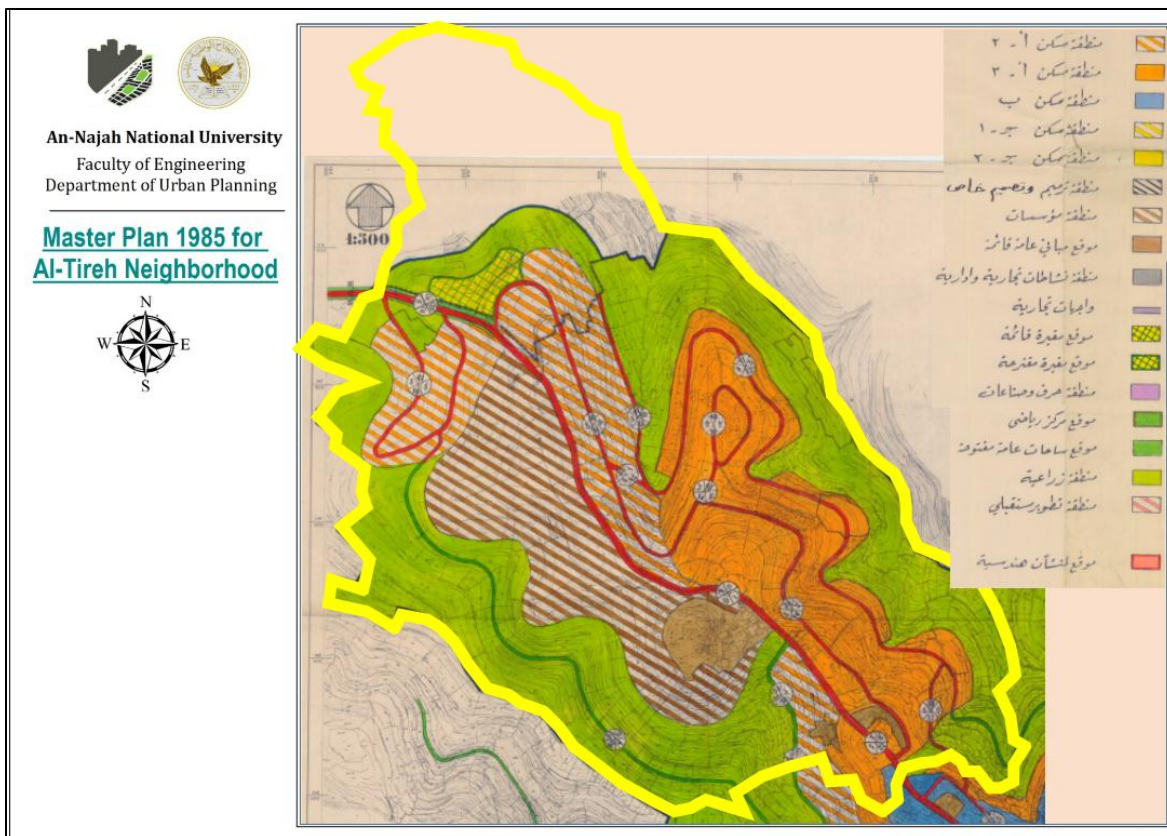


FIGURE 20 MASTER PLAN OF AL-TIREH 1985

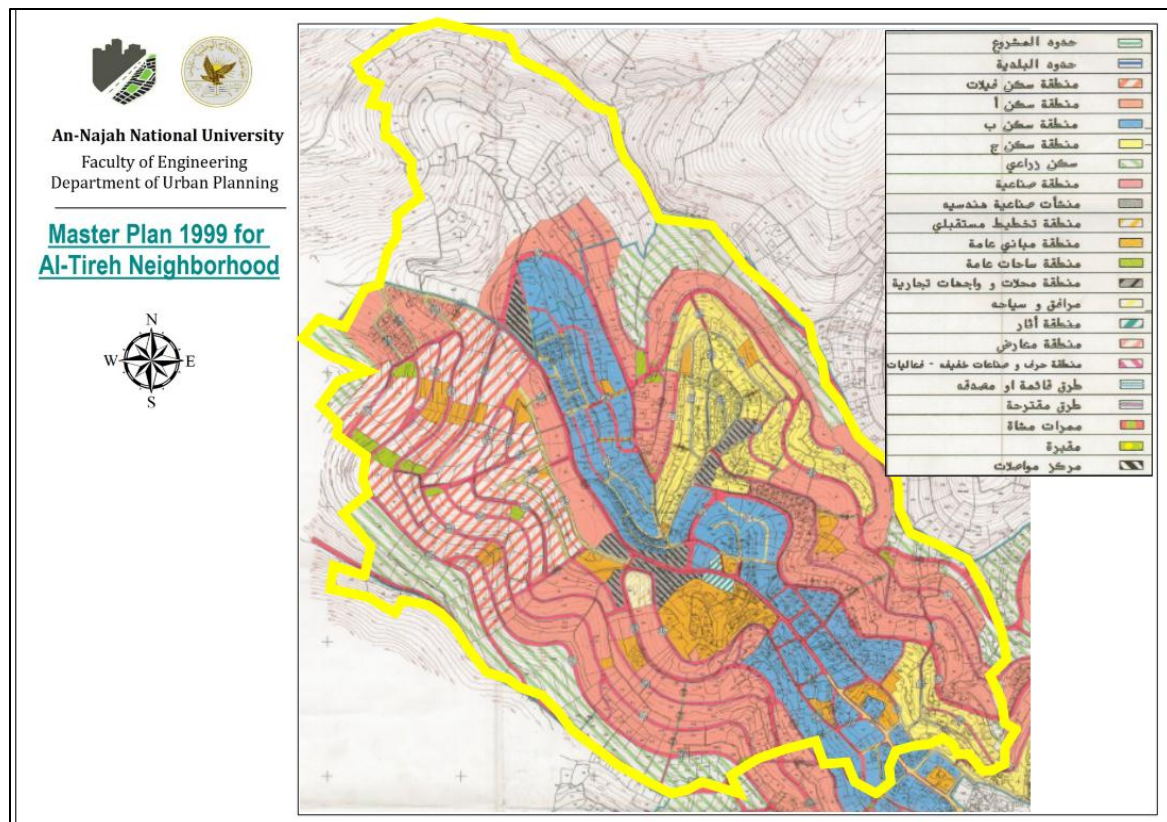
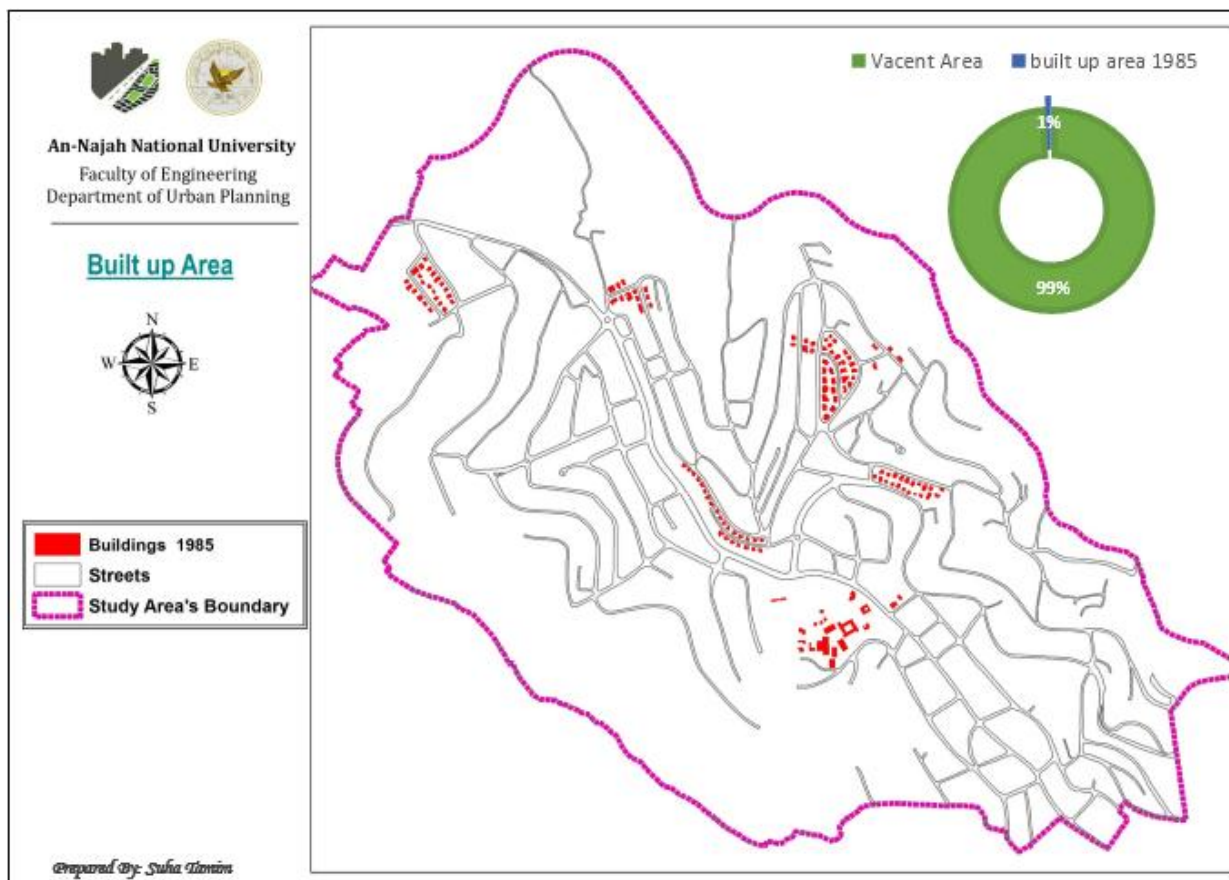
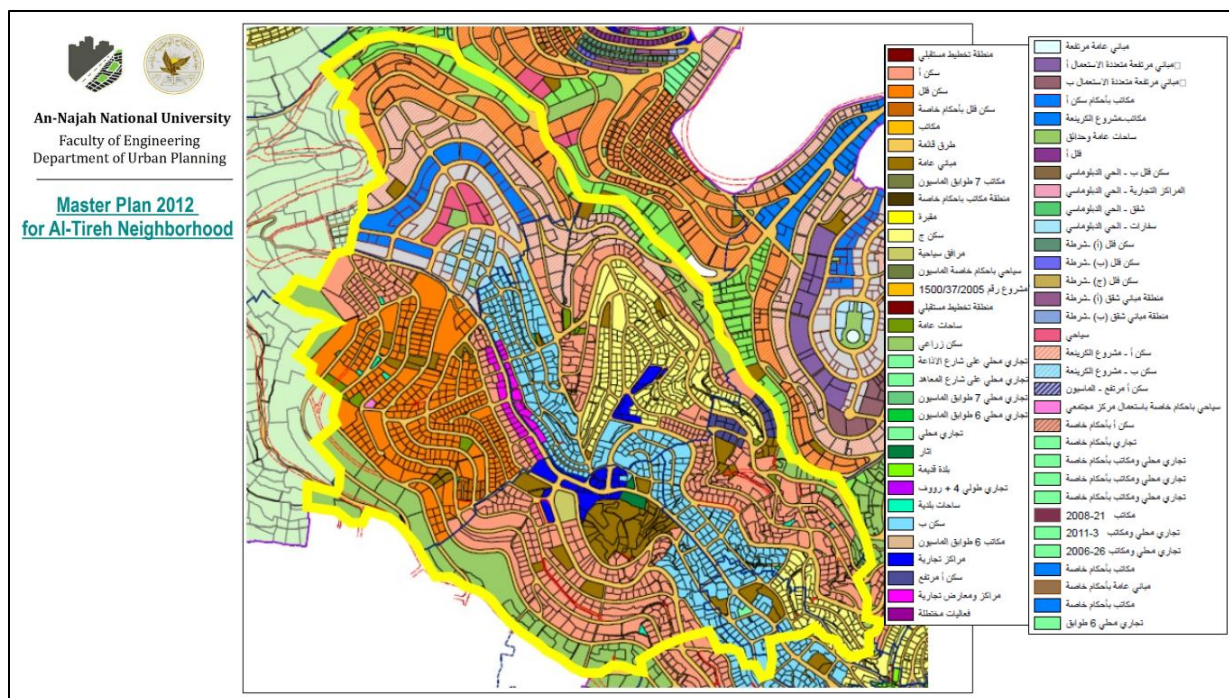


FIGURE 21 MASTER PLAN OF AL-TIREH 1999



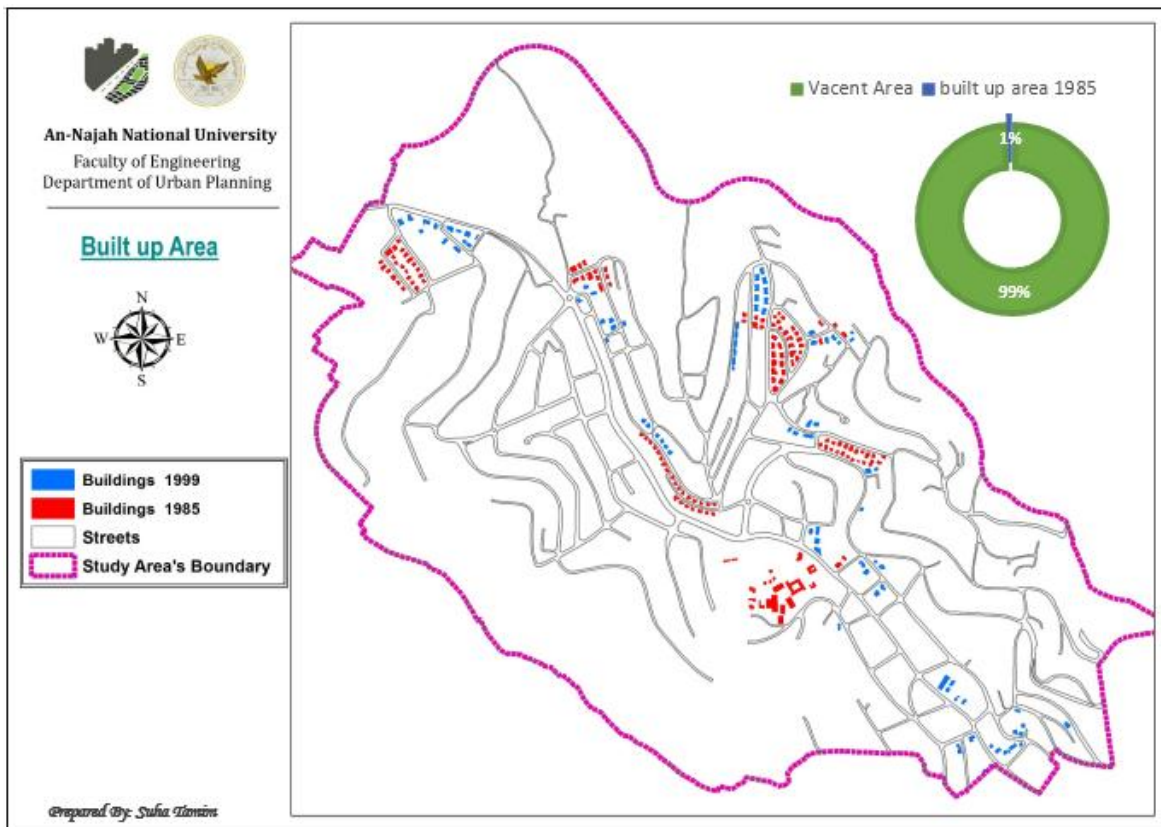


FIGURE 24 BUILT UP AREA UNTIL 1999

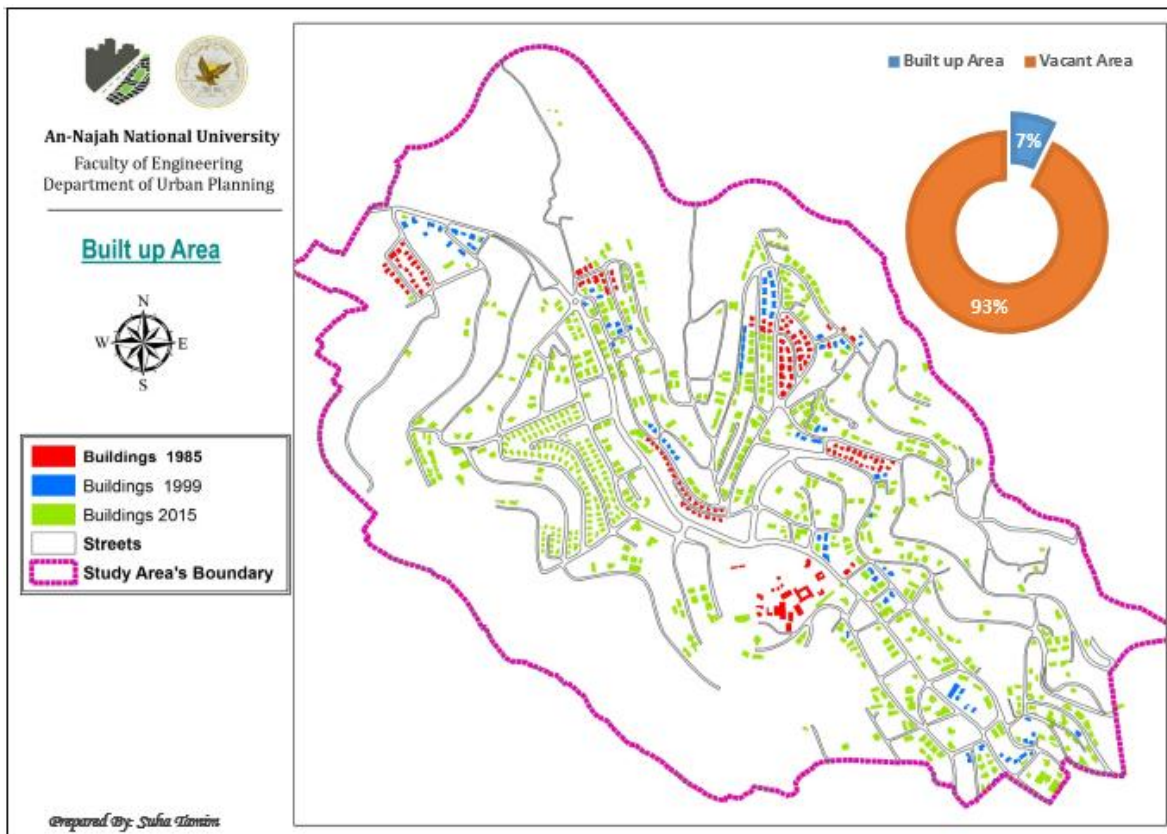


FIGURE 25 BUILT UP AREA UNTIL 2015

Political Situation

The political division according to Oslo agreement is clearly shown in map (26), the built up area in Ramallah is classified area "A", but surrounded by area "C" from all sides except for the northern region classified "B", with a large demolition orders and Israeli colonies in area "C" with the apartheid wall in the south. Which means that the expansion spaces is limited. And for Al-Tireh the predictable expansion area is to the north, because of the adjacent area "C" in the West.

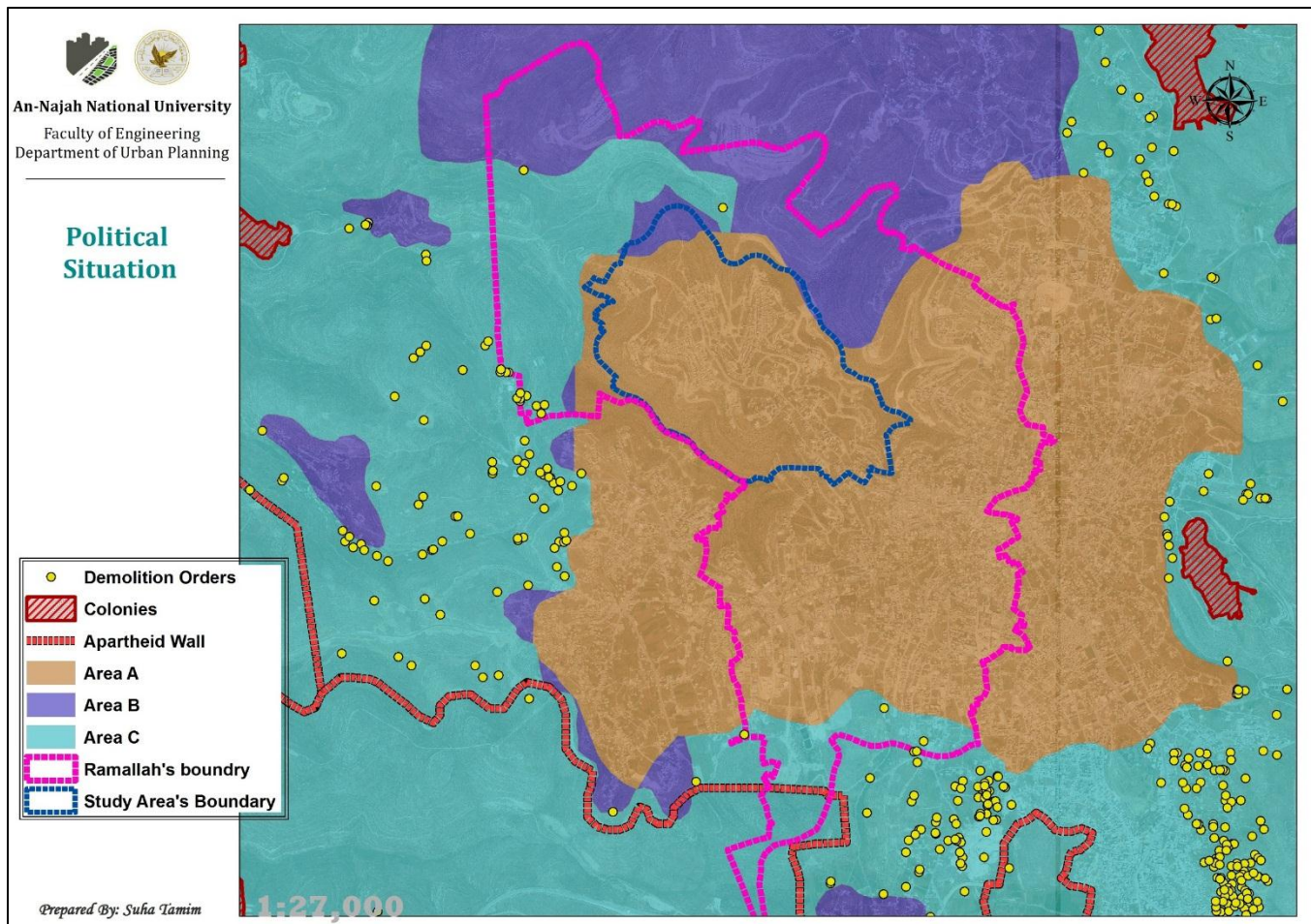


FIGURE 26 POLITICAL SITUATION

Environmental Situation

Ramallah is non-agricultural land, it's classified as low-value agricultural area, but a few parts in the northern region on the borders of Al-Tira is medium agricultural value, there is a forest, biodiversity and natural reserve area and number of springs as illustrated in map (27) below.

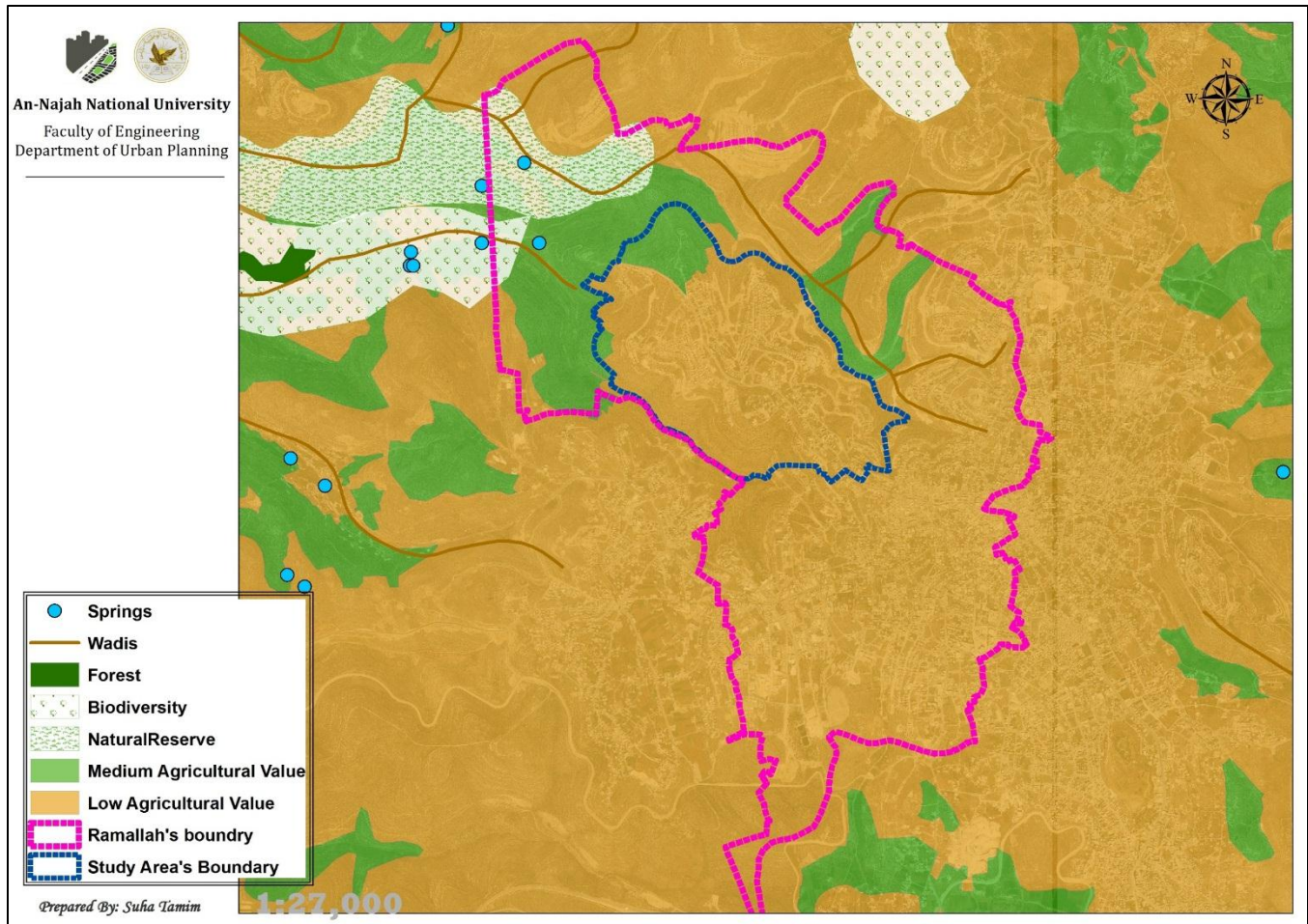


FIGURE 27 ENVIRONMENTAL SITUATION

Seismic Zones

Ramallah is located in zone 2A, this zone according to seismography is safer than others because it's far from Asian Rift Valley.

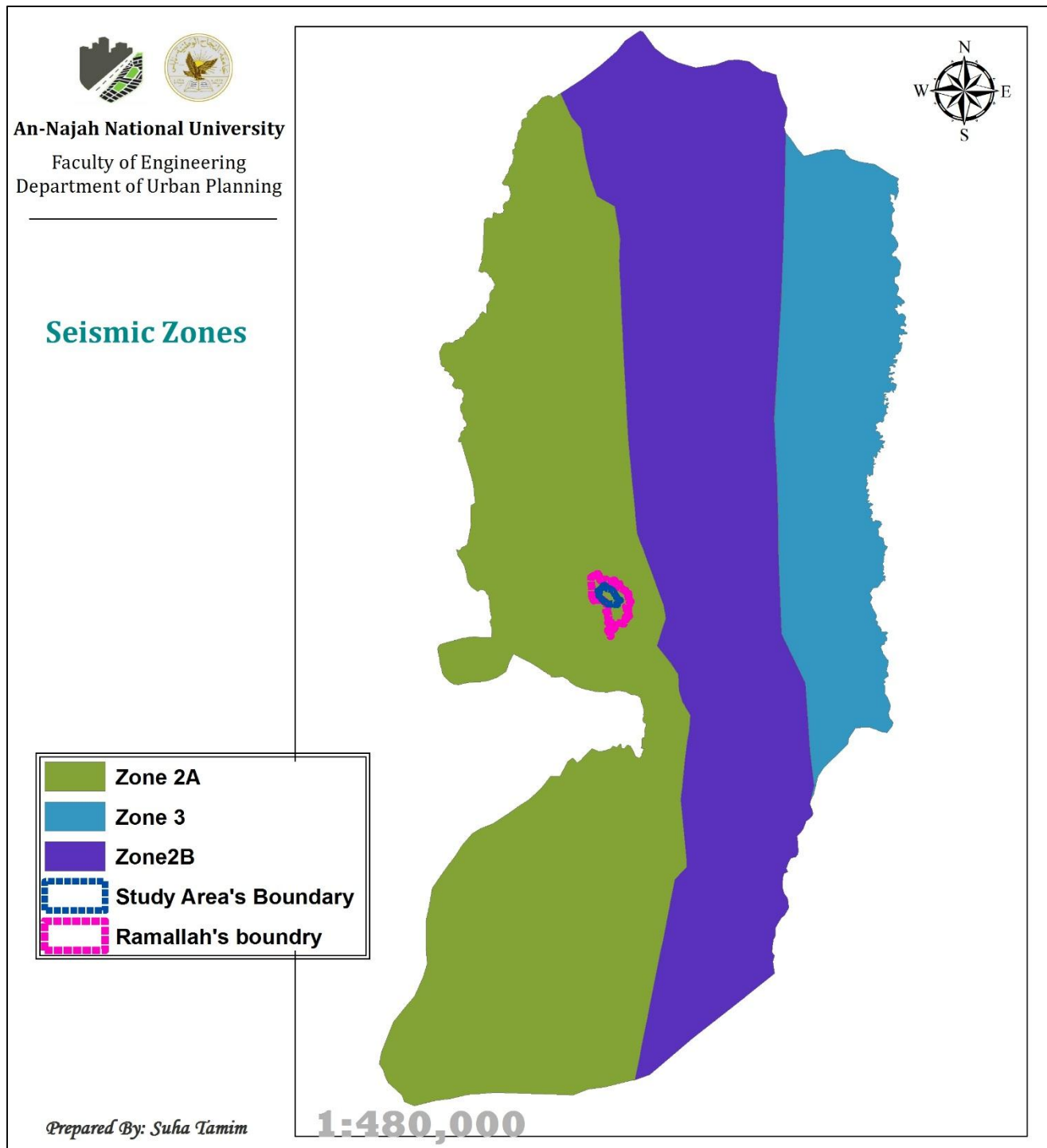


FIGURE 28 SEISMIC ZONE

Geology and Rainfall

According to the geology and rainfall levels in millimeters/year for Al-Tireh and Ramallah in general and surrounding regions are shown in figures (29 & 30).

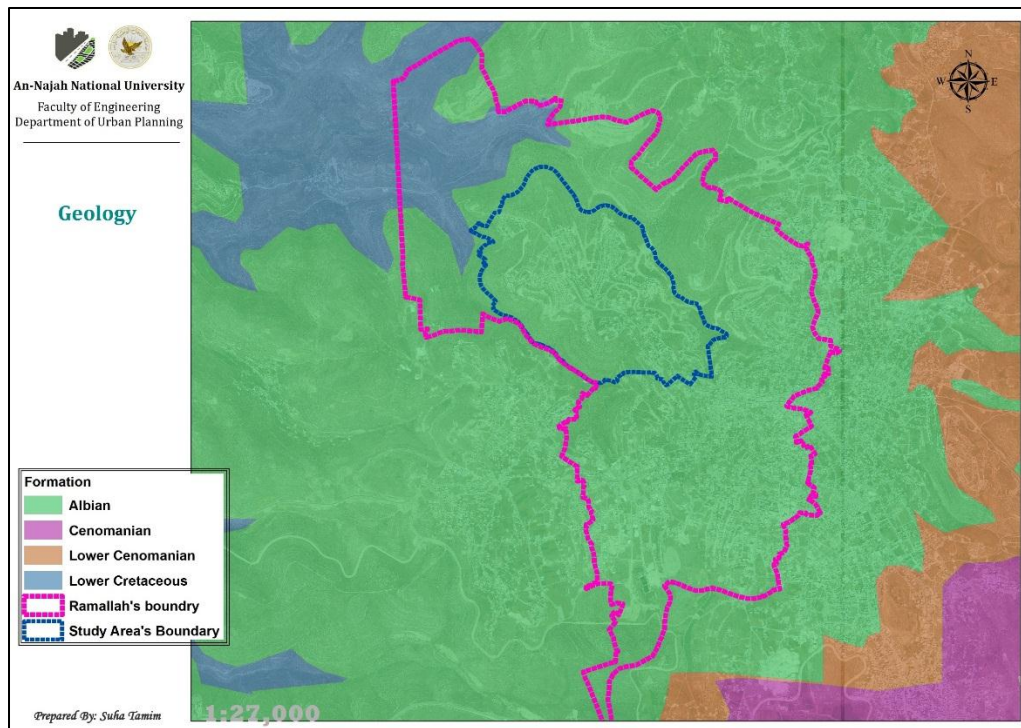


FIGURE 29 GEOLOGY

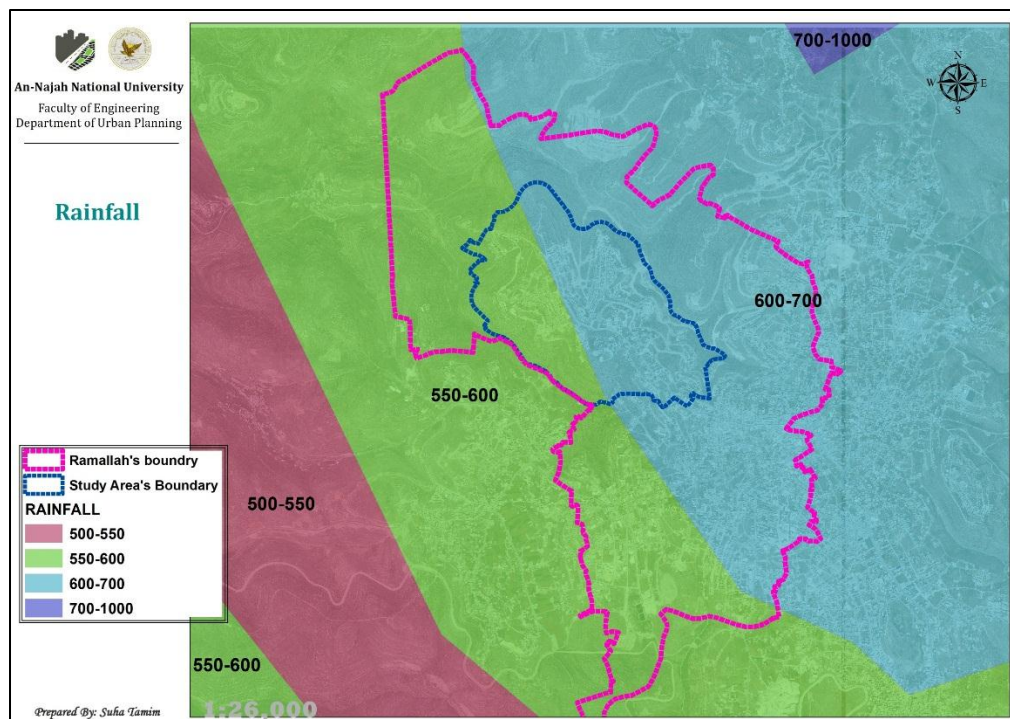


FIGURE 30 RAINFALL

Height of buildings

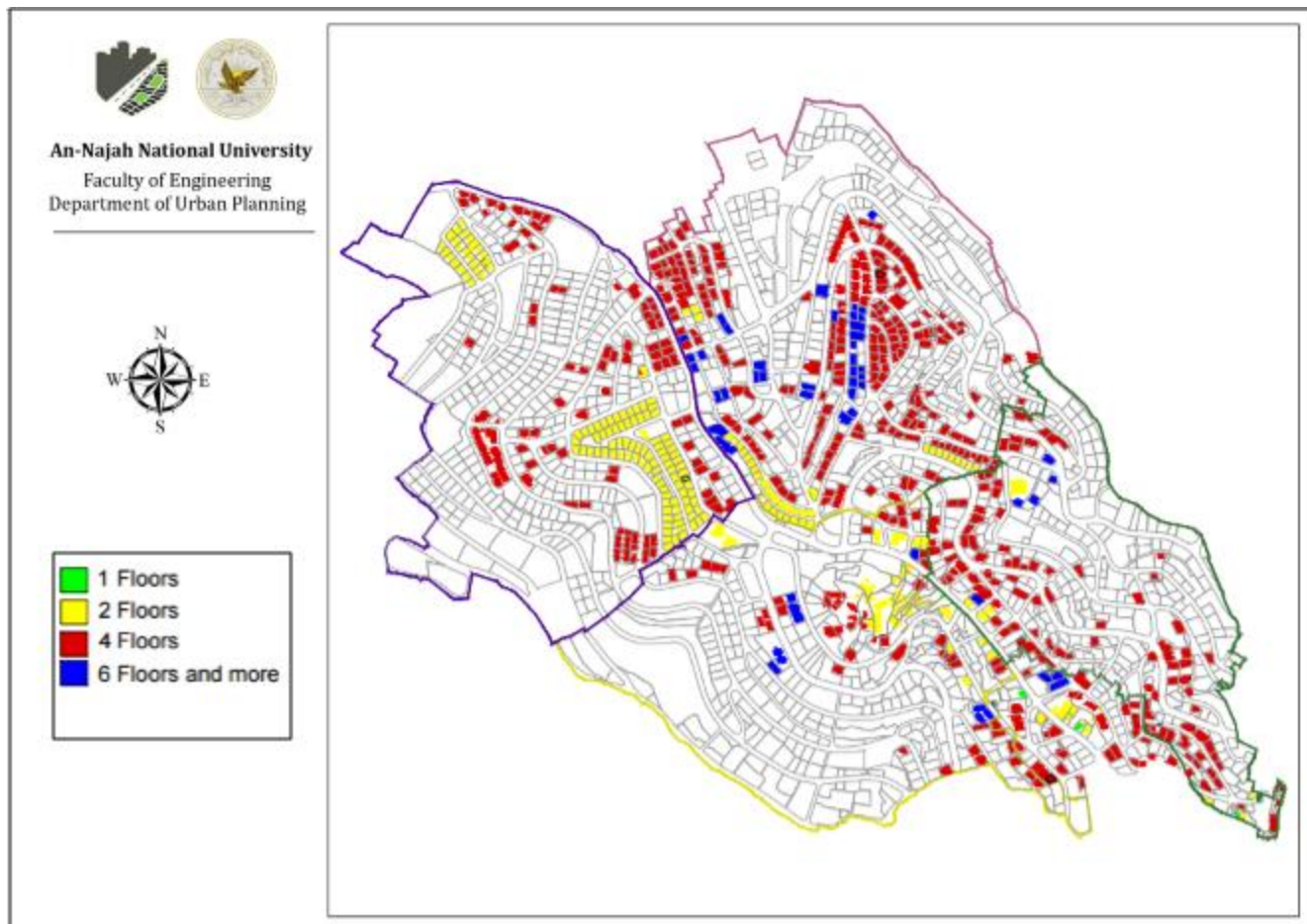


FIGURE 31 HEIGHT OF BUILDINGS

Topography

Al-Tireh rising 810 m from the sea level and is characterized by mountainous terrain and steep slopes.

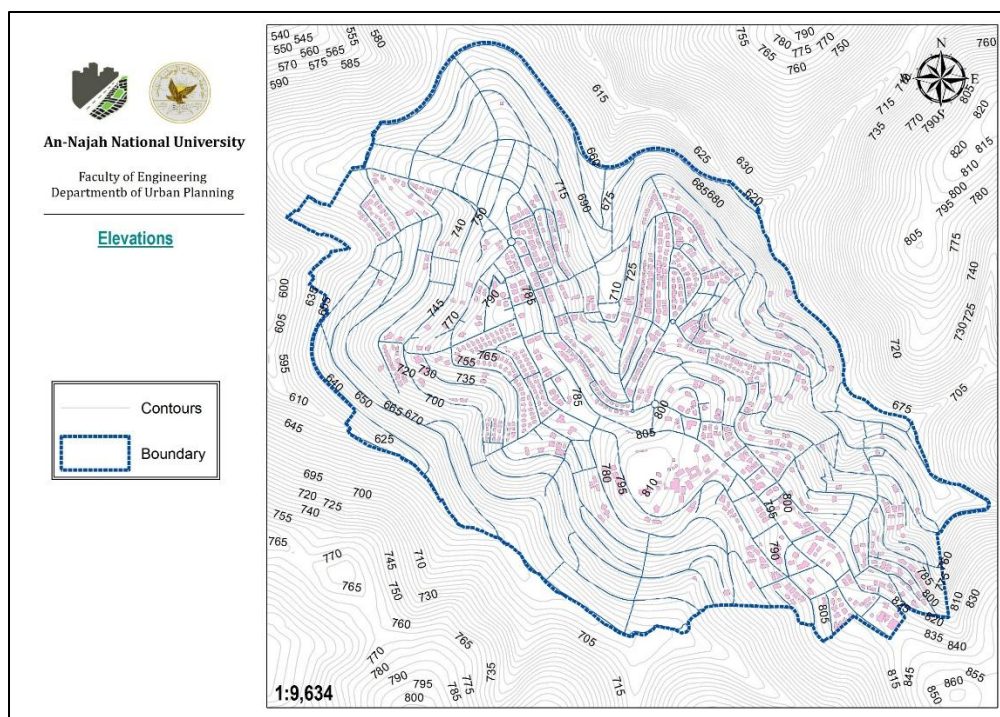


FIGURE 32 ELEVATIONS

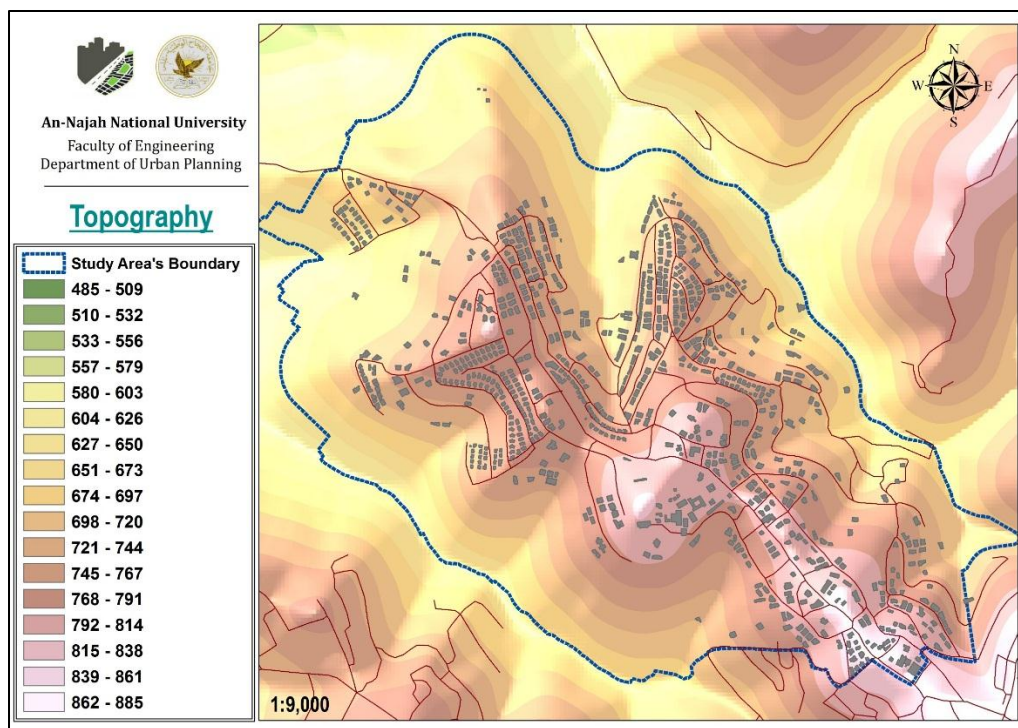


FIGURE 33 TOPOGRAPHY

Infrastructre

For infrastructure in the region we can say Al-Tireh is complete now, the water, electricity, and telecommunication networks are complete since long time with good condition and enough unlike sewer system which has been extended recently and connect with two treatment plant because of the topography.

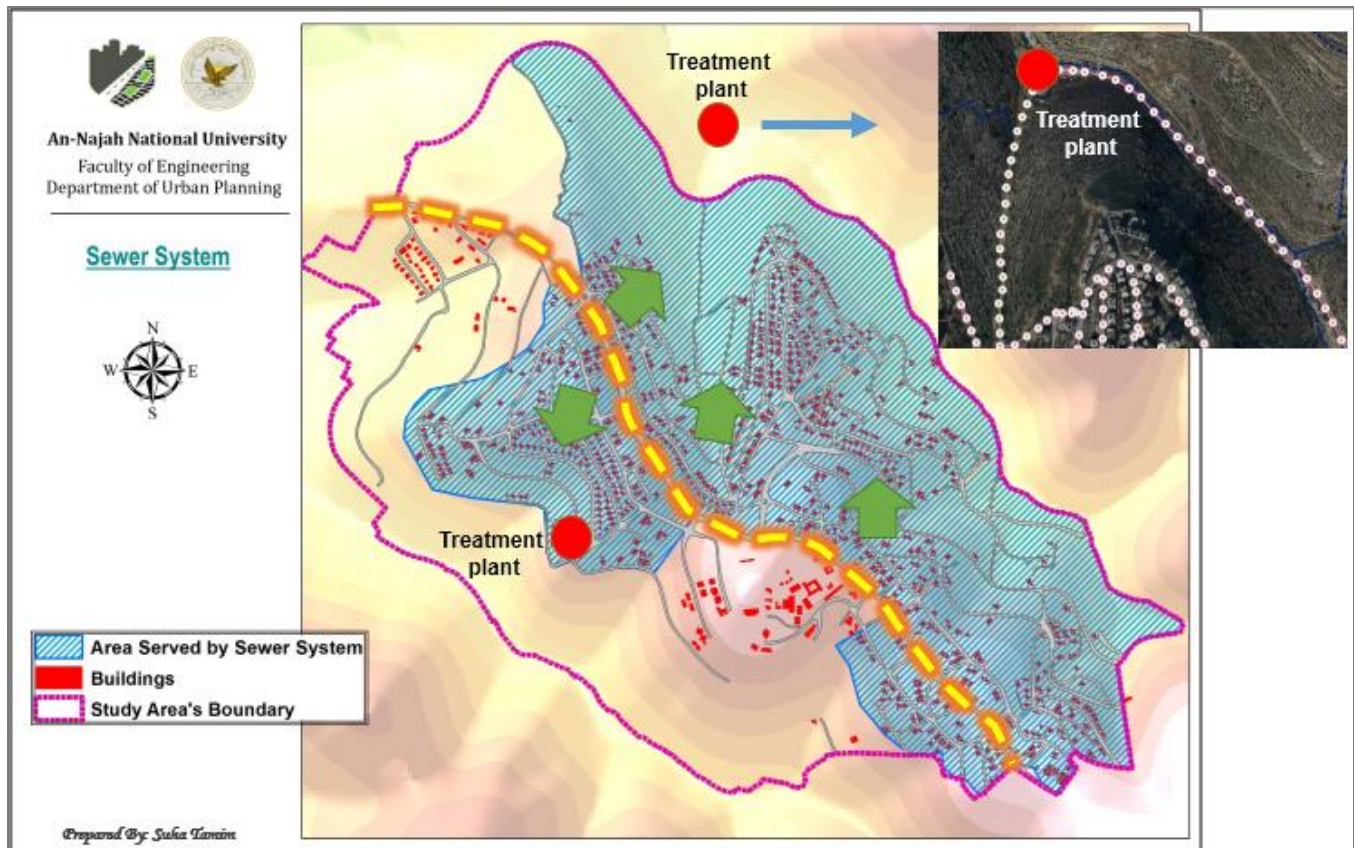


FIGURE 34 SEWER SYSTEM

Services

Al-Tireh away from the city center 2.6Km and contains many diverse services distributed in the region to serve the resident, but it still depends on the city center and the city as a whole for health services and banking and administrative services.

Do the services in Al-Tira serve people in livable way? To answer this question I will study the buffer of each service and how much it will serve.

TABLE 1 AL-TIREH SERVICES

Service	Number
Mosque	1
Taxi Office	4
Supermarket	8
Garden	3
Hotel	2
Schools	5
Kindergarten	6
Bank Services	4
Pharmacy	1
Health Care Service	0
Restaurant and Coffeshop	17

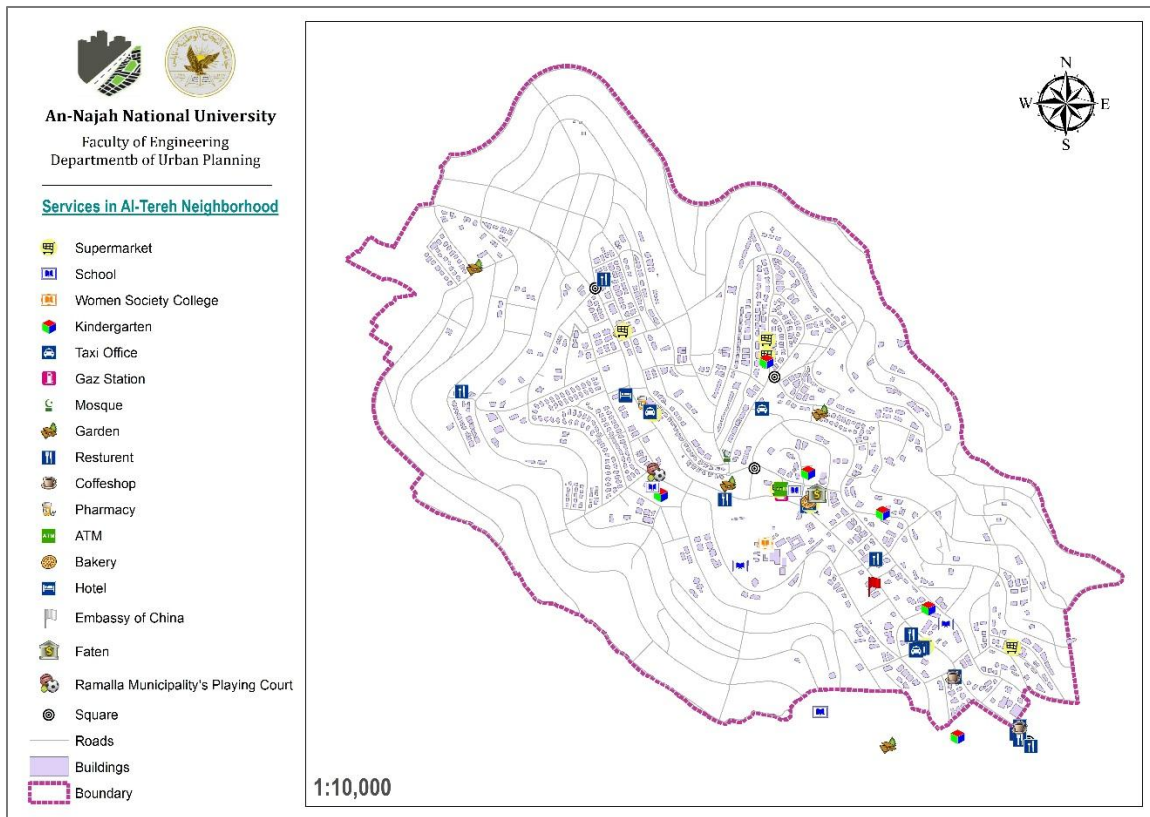


FIGURE 35 SERVICES IN AL-TIREH

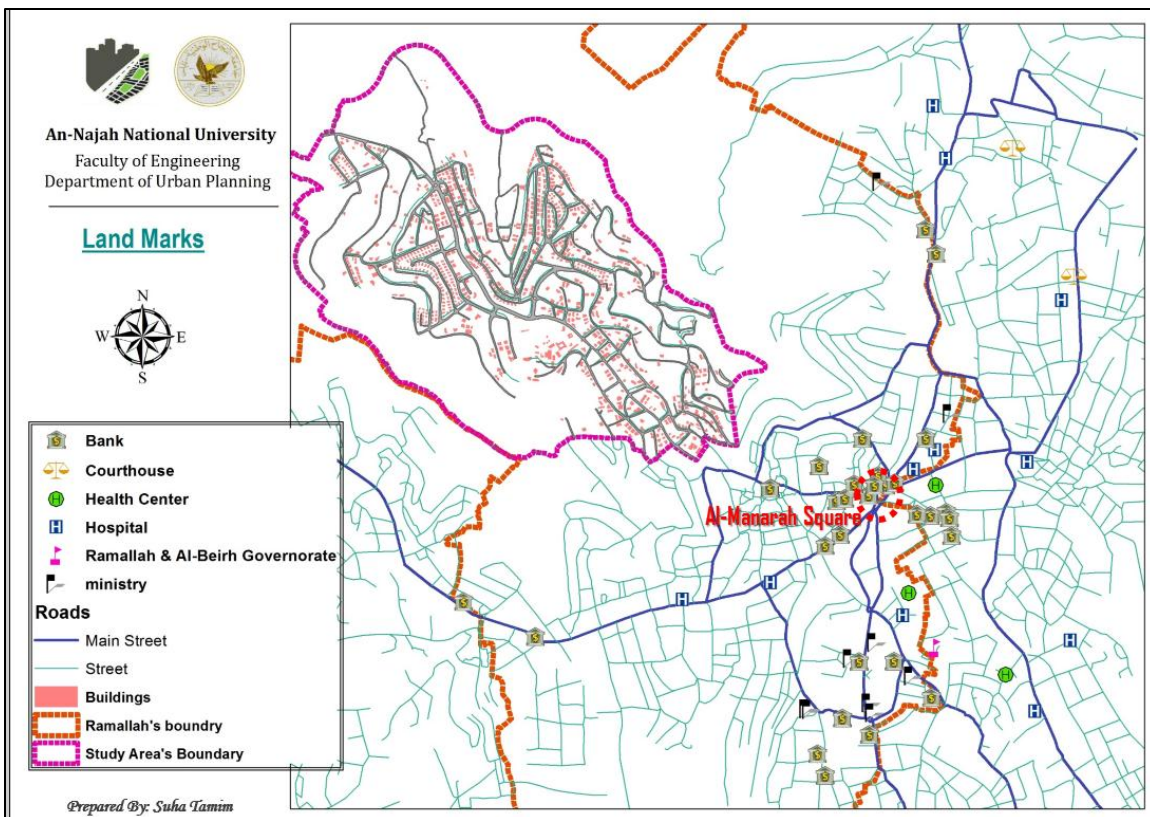


FIGURE 36 THE RELATION BETWEEN AL-TIREH AND RAMALLAH

How the existing situation fits with livability

According to the livability objectives:

- ☀ Neighborhoods will be stronger. Every neighborhood will have attractive, comfortable local shopping streets.
- ☀ It will be easier to get where you need to be and spend less money on transportation.

To test the existing services how much are they sufficient and suitable for the residents within walkable distance, I apply criteria in the manual used in KSA "Planning Standards for services".

TABLE 2 STANDARD BUFFER FOR THE EXISTING SERVICES

Existing Service	Standard
Mosque	15 minutes OR 500m
Kindergarten	200m
Elementary school	500m-600m
Secondary school	1000m
Supermarket	15 minutes OR 500m
Pharmacy	15 minutes – 20 minutes

Maps below show the approximate spatial range for the scope of each service (for pedestrian not with cars).

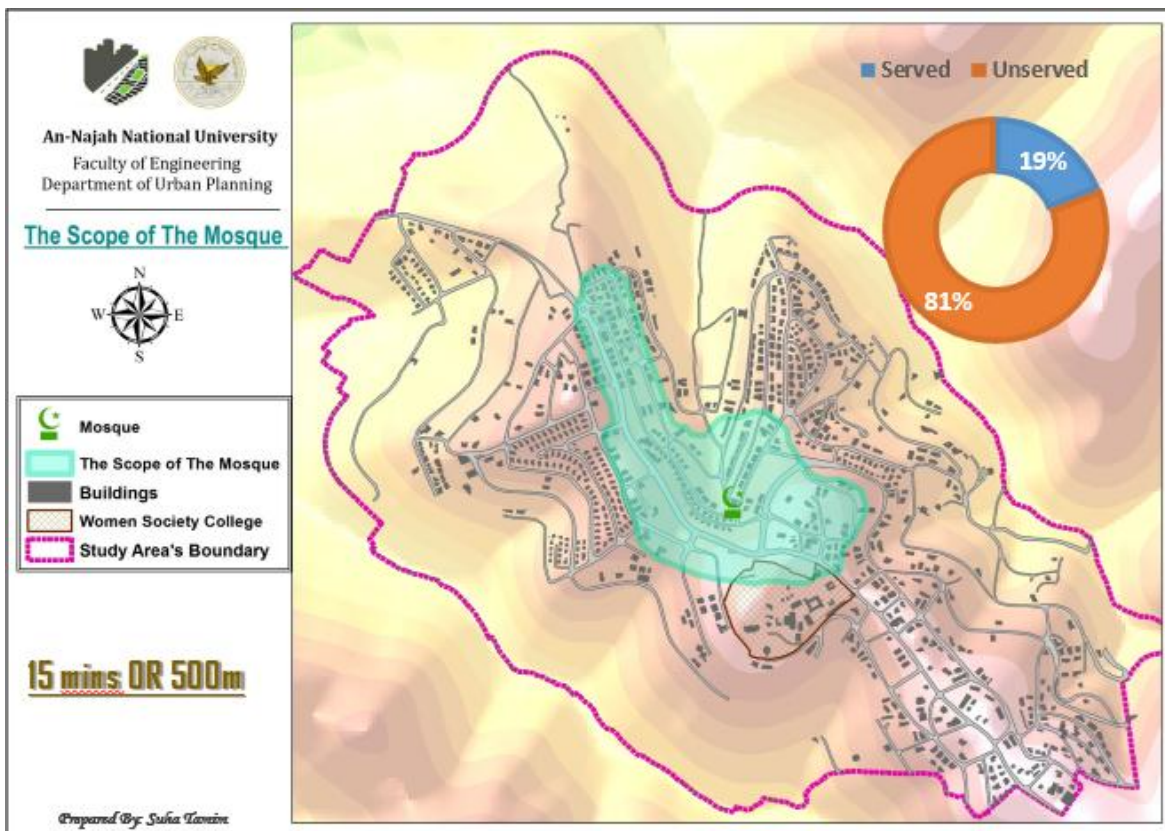


FIGURE 37 THE SCOPE OF THE MOSQUE

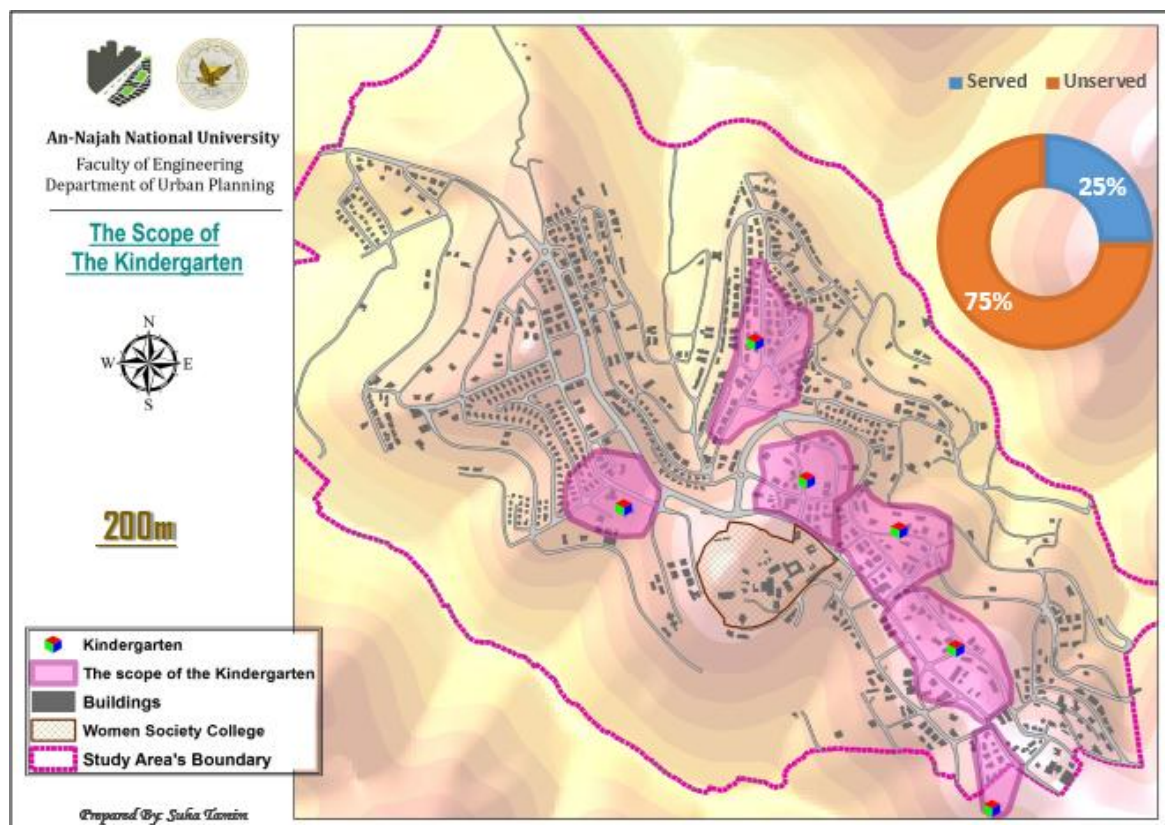


FIGURE 38 THE SCOPE OF THE KINDERGARTEN

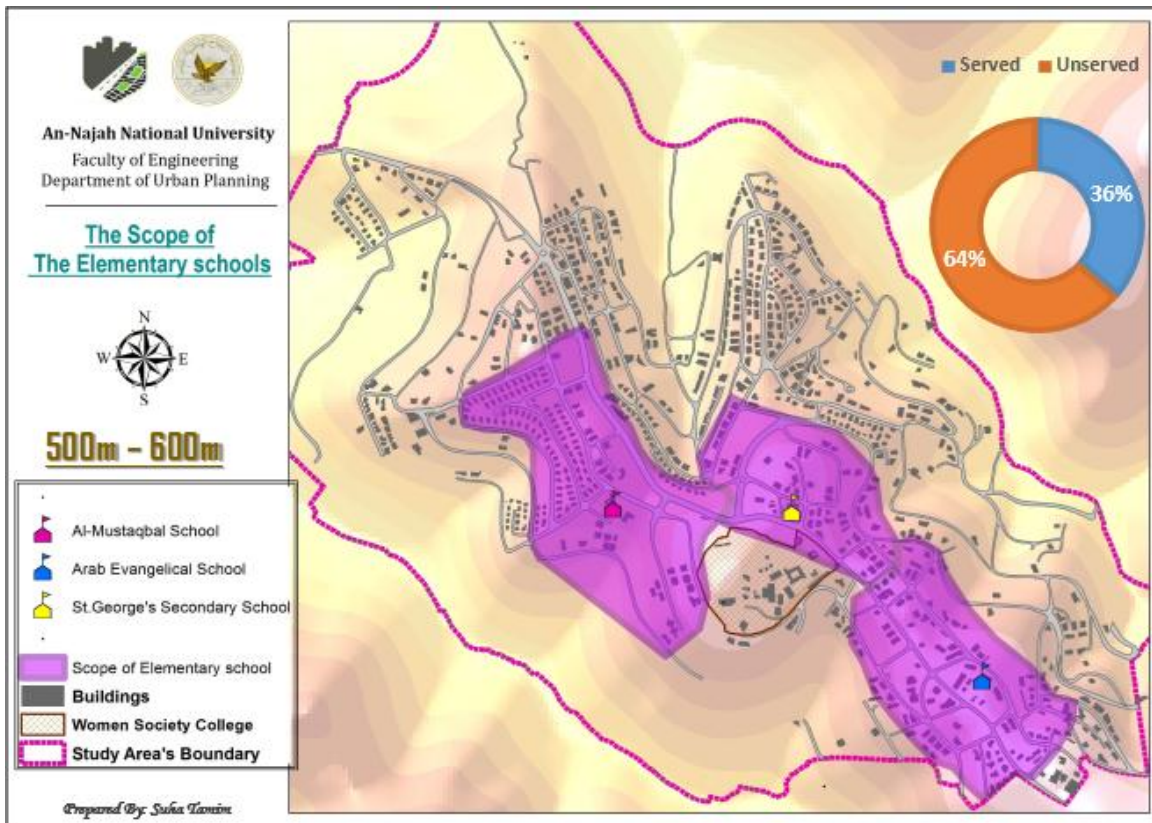


FIGURE 39 THE SCOPE OF THE ELEMENTARY SCHOOLS

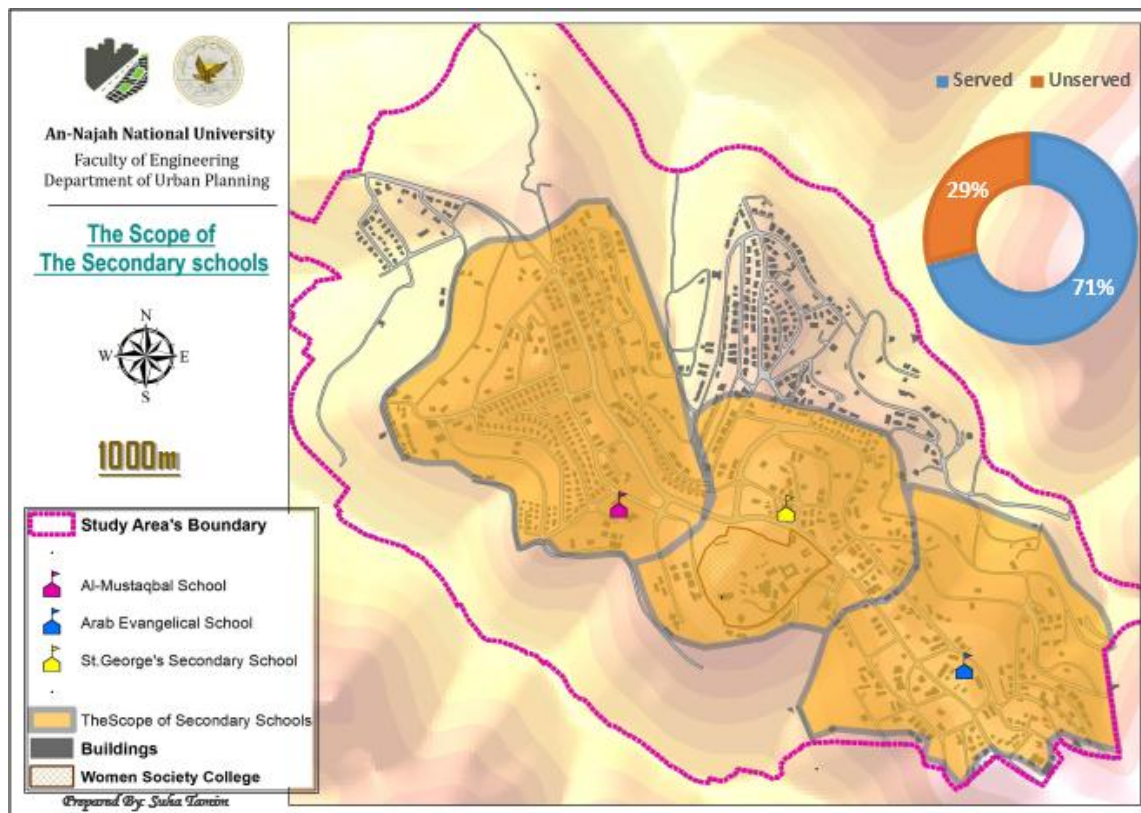


FIGURE 40 THE SCOPE OF THE SECONDARY SCHOOLS

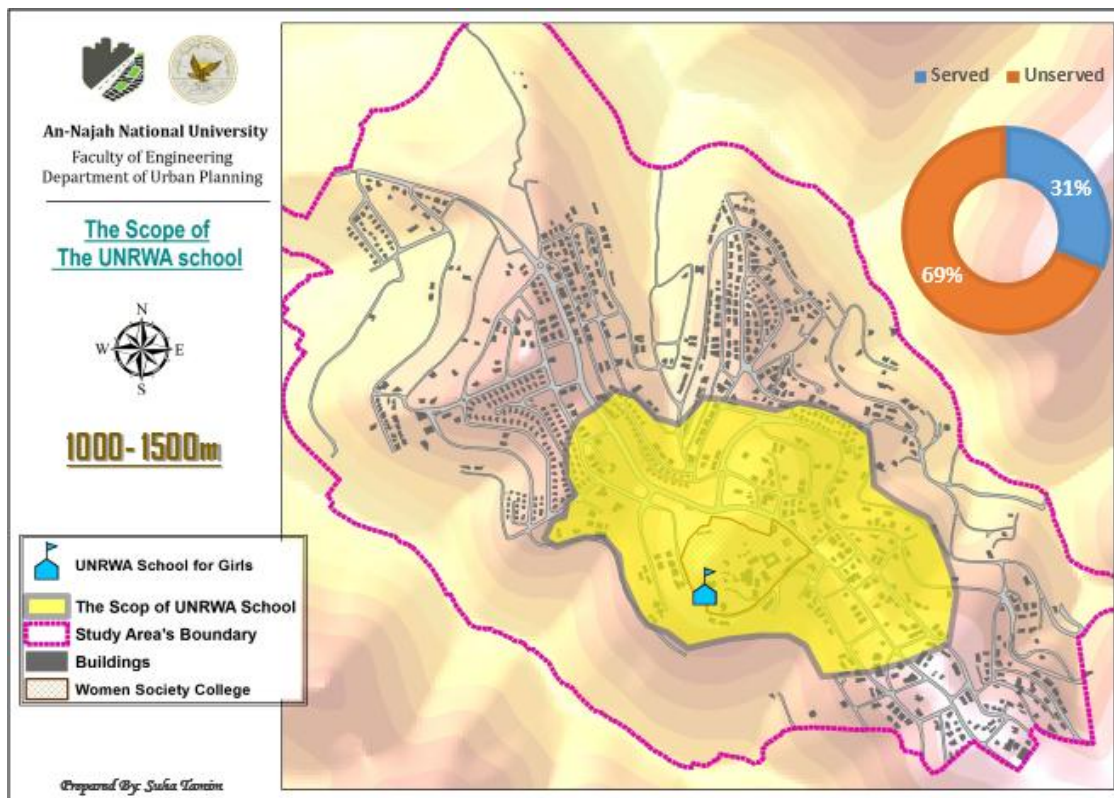


FIGURE 41 THE SCOPE OF THE UNRWA SCHOOL

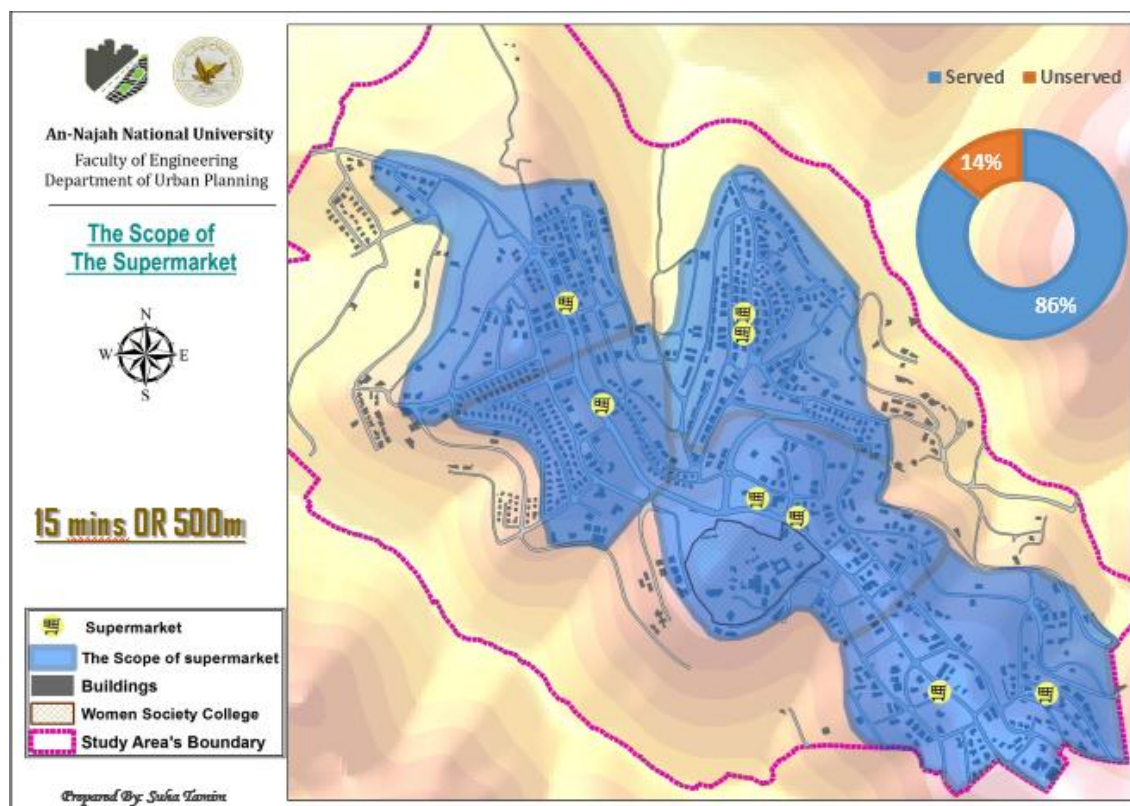


FIGURE 42 THE SCOPE OF THE SUPERMARKET

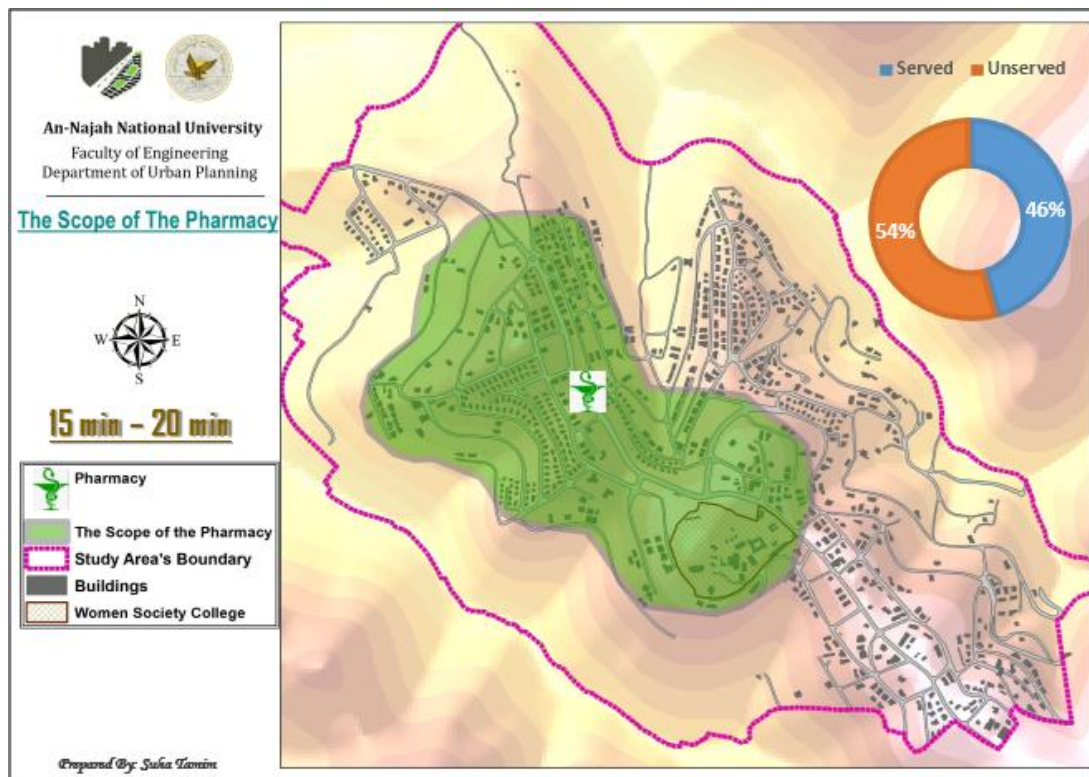


FIGURE 43 THE SCOPE OF THE PHARMACY

There are 4 recreational services but one of them is closed and one is stairs not open space and the others are considered semi private for the housings.

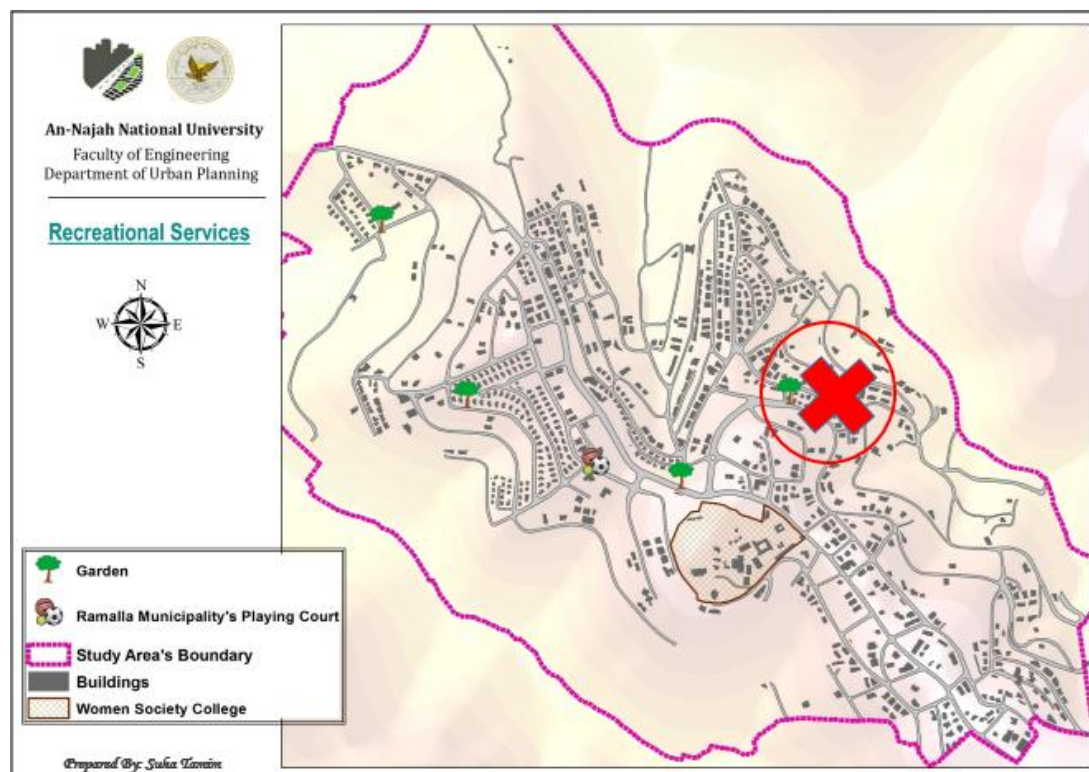


FIGURE 44 RECREATIONAL SERVICES

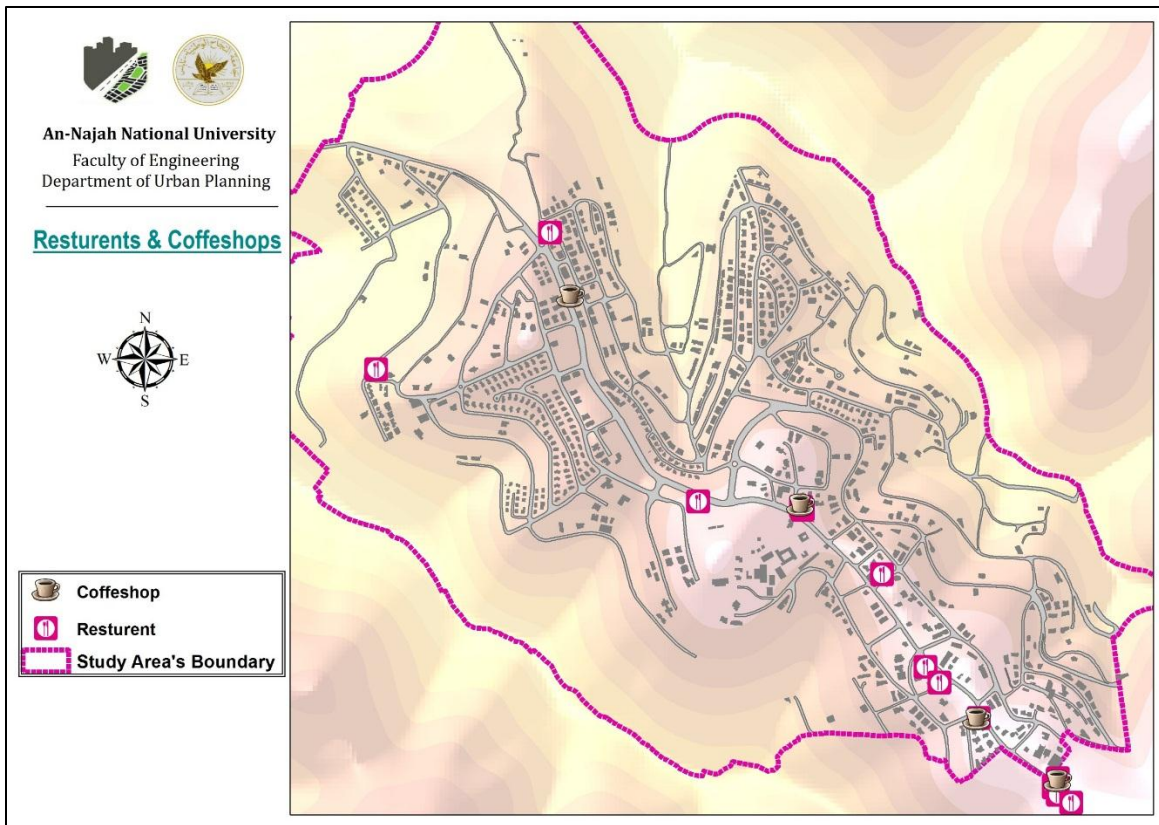


FIGURE 45 COFFESHOPS AND RESTURANT

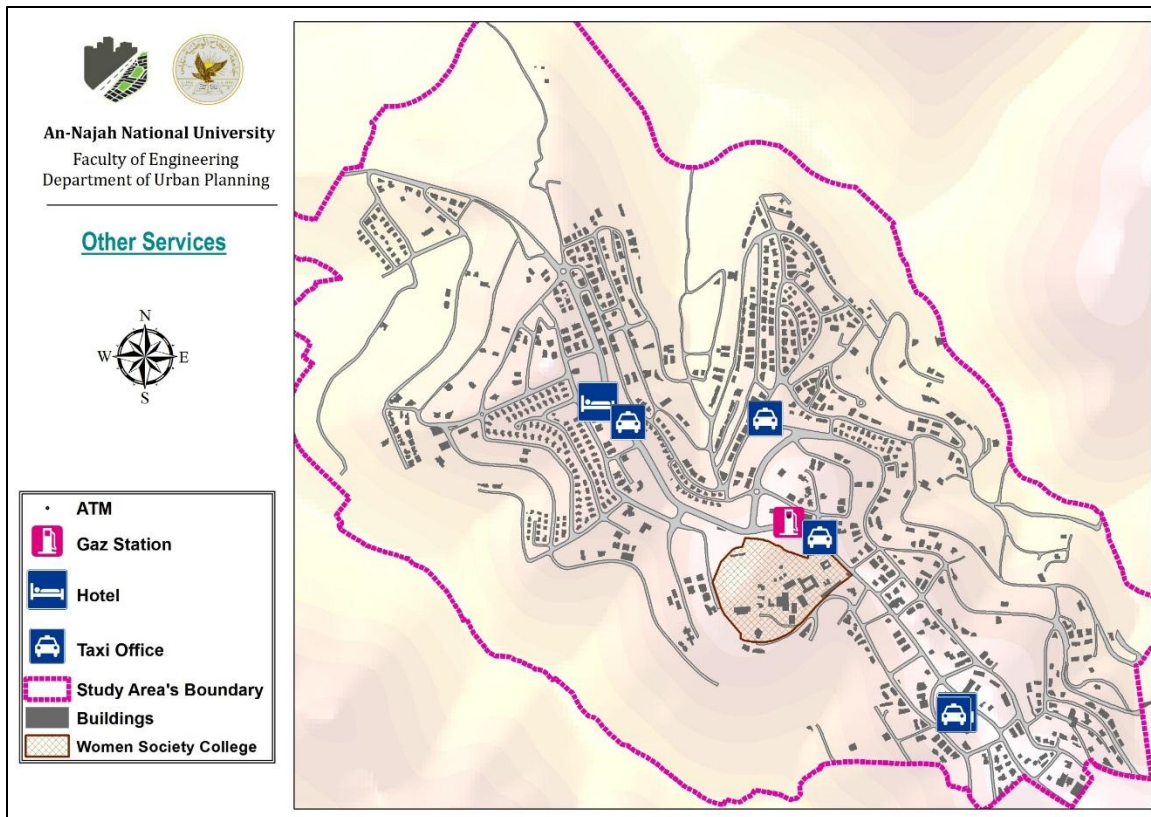


FIGURE 46 SERVICES IN AL-TIREH

SITE SELECTION II

Clearly, in the previous maps of the existing services do not cover the needs of all residents within walkable distance, so we can't apply the criteria of livability in this situation because the area is 3.8 Km² too much to consider all this area as walkable neighborhood. So I want to select a new border to the study area.

I selected area with appropriate area (.6 km²) and diverse land use (single houses and housings, Main Street with mix use), closer to livability character.

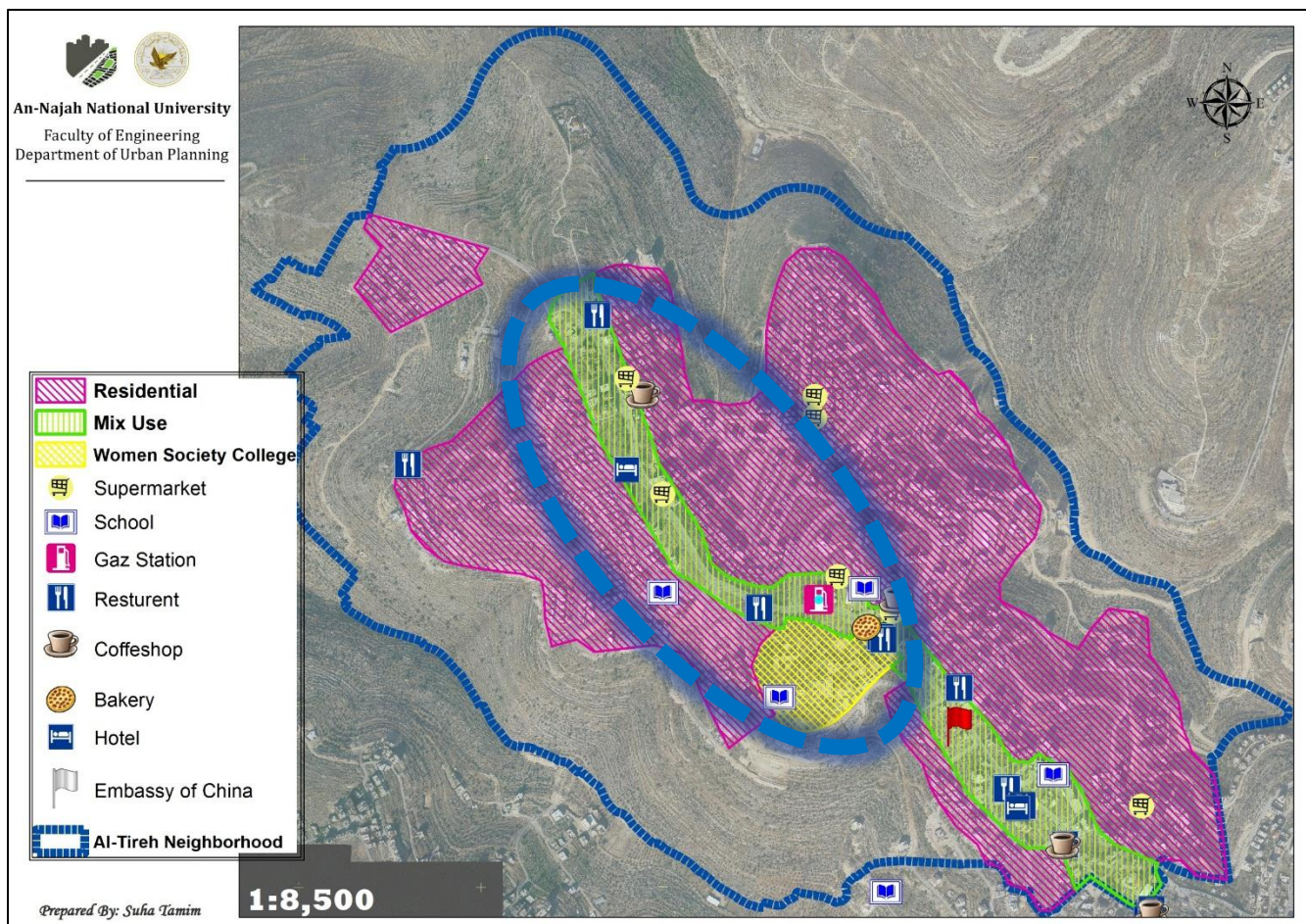


FIGURE 47 LAND USE

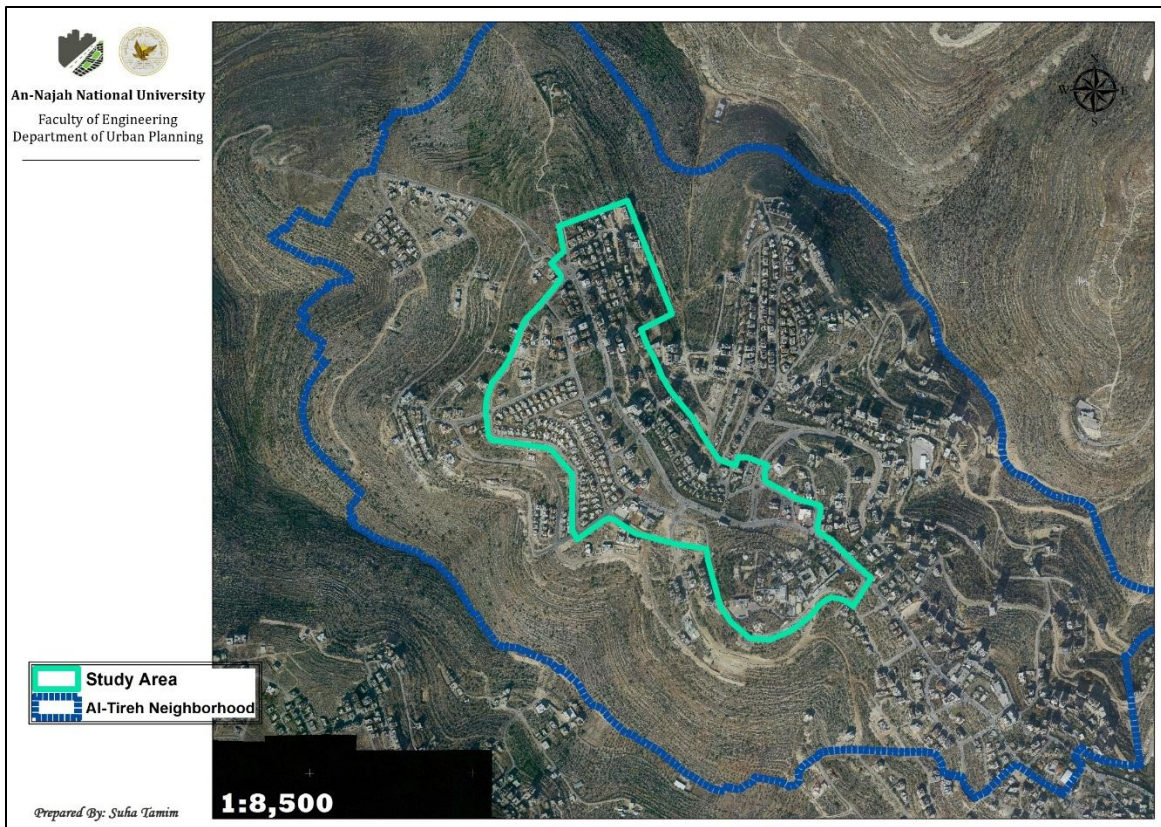


FIGURE 48 SELECTED AREA

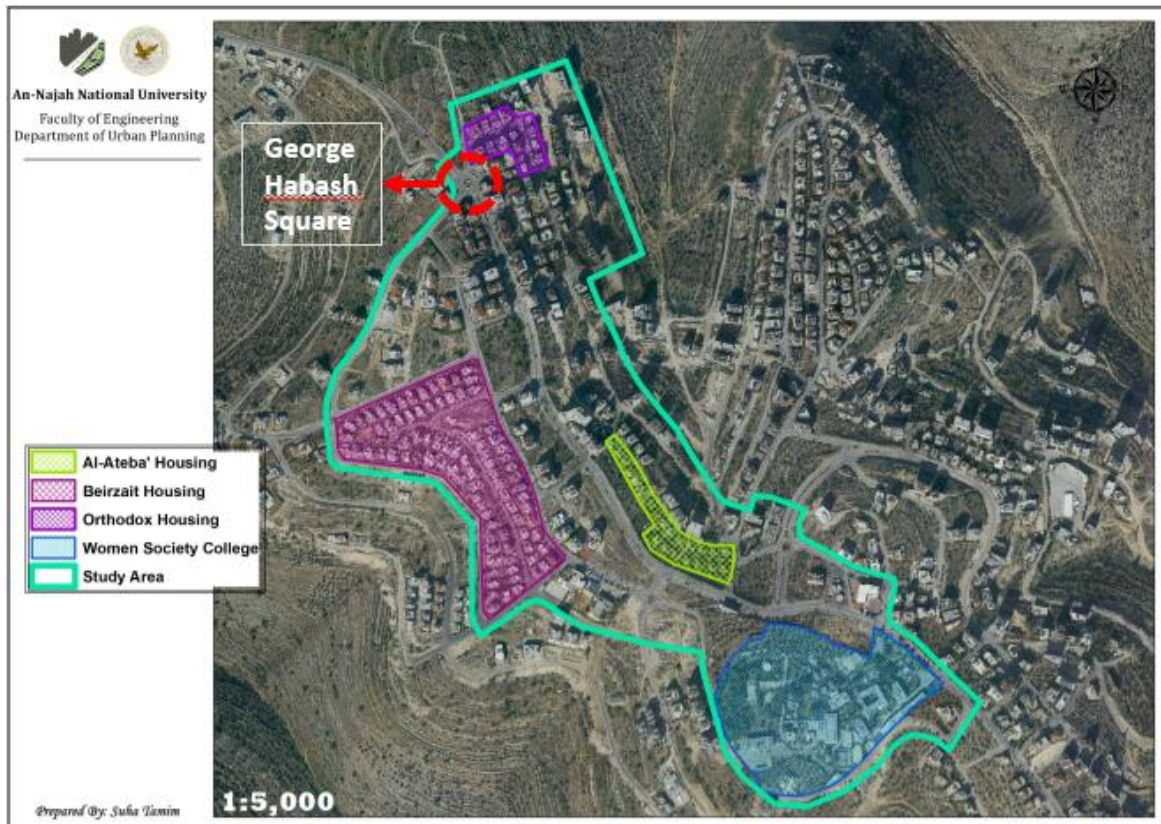


FIGURE 49 SELECTED AREA

HOW THE EXISTING SITUATION FITS WITH LIVABILITY

I can consider this area a neighborhood with appropriate area and closer to livability than other areas in Al-Tireh and now I'll apply the four factors of the livability.

TABLE 3 LIVABILITY FACTORS

criteria			standard
The buffer of the main services	schools	Kindergarten	200 m
		Elementary	500m/15 min
		Secondary	1000 m
	Health care		15 min – 20 min
	Mosque		15 min / 500 m
	Supermarket		15 min / 500 m
	Park		20 min
Affordable housing			Affordable housing
Walkability	Sidewalk		90%
	Lighting		100%
	Quietness		90%
	Hygiene		100%
	Greenery		85%
	Seats		50%
	Sorting rubbish		100%
Shared Transportation			strong

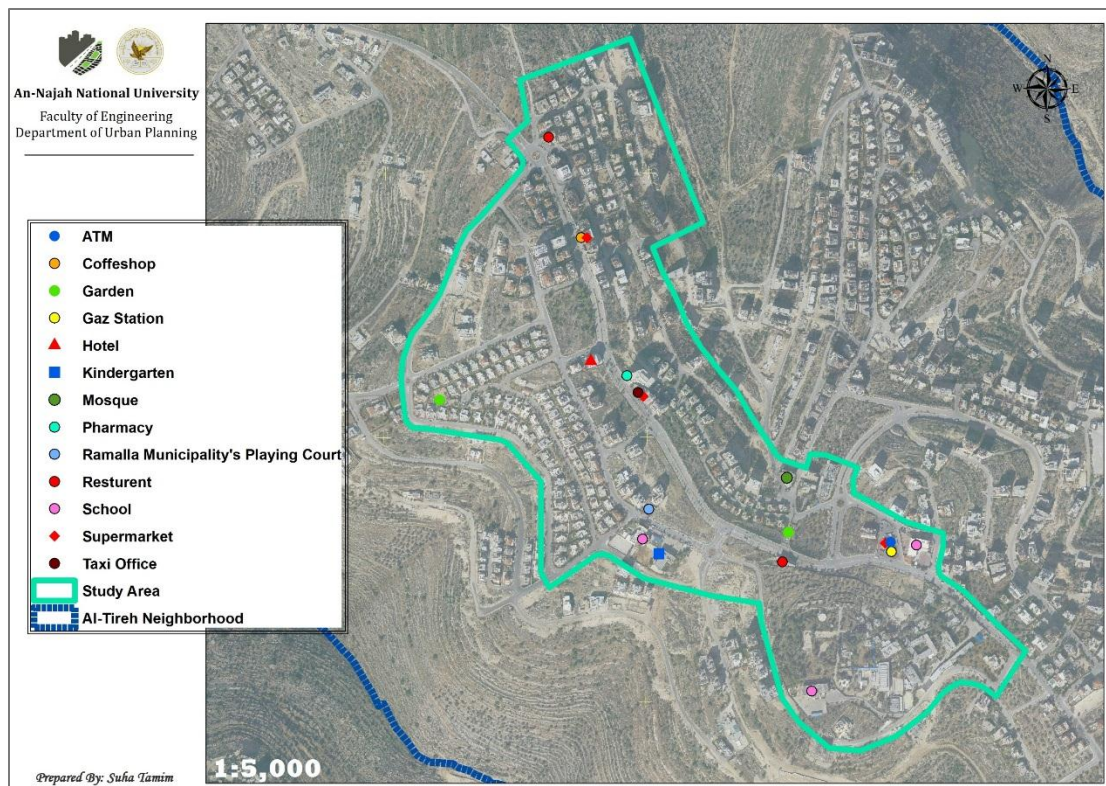


FIGURE 50 SERVICES IN THE NEIGHBORHOOD

THE BUFFER OF THE MAIN SERVICES

Schools

For kindergarten: to cover all the area with kindergarten service within walking distance of 200 meters is something unreasonable because children at that age rely on parents fully to reach or by bus.

As for the elementary schools, the distance traveled by the students on the north side to reach the schools is far and according to the standards of livability I have to suggest an elementary school in the zone shown on map (55), but this proposal is illogical because urban development will be on the southern side because of area "C", This means The school will not serve the required number of people.

No need to find a secondary school in the region, the existing schools and the proposed from municipality are enough. High school student can reach his school if there are walkable environment encourage students to depend on walking or biking to reach their schools.



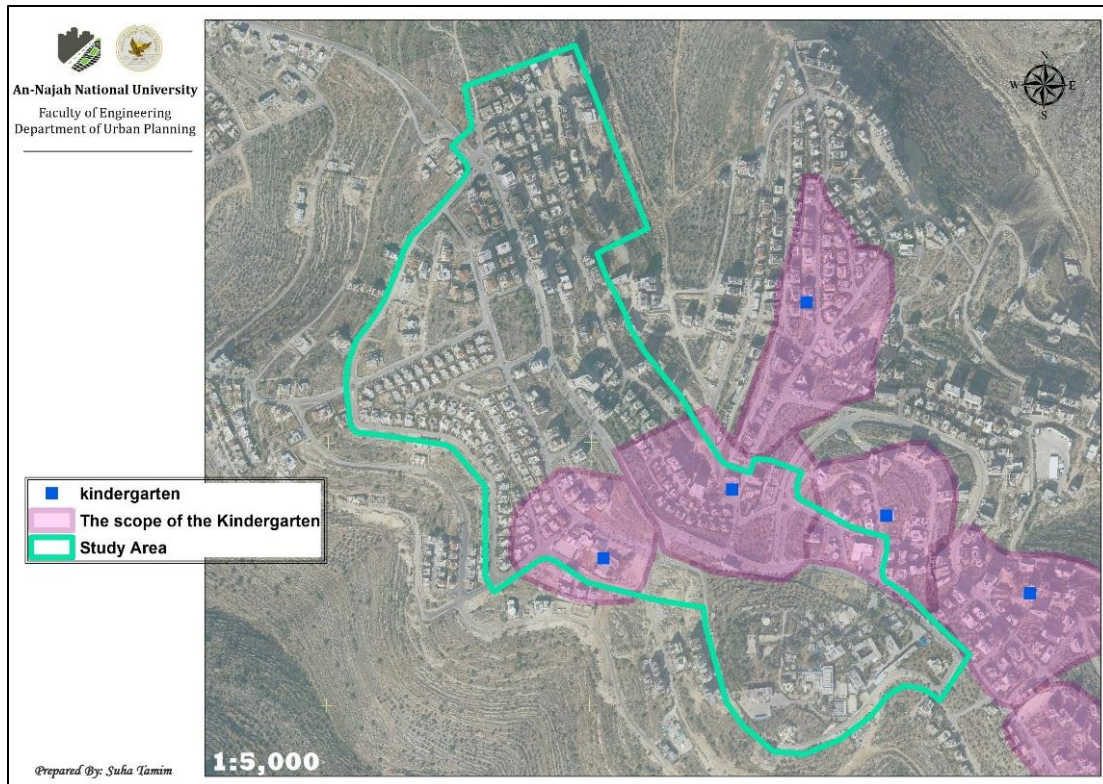


FIGURE 52 THE SCOPE OF KINDERGARTEN IN THE STUDY AREA

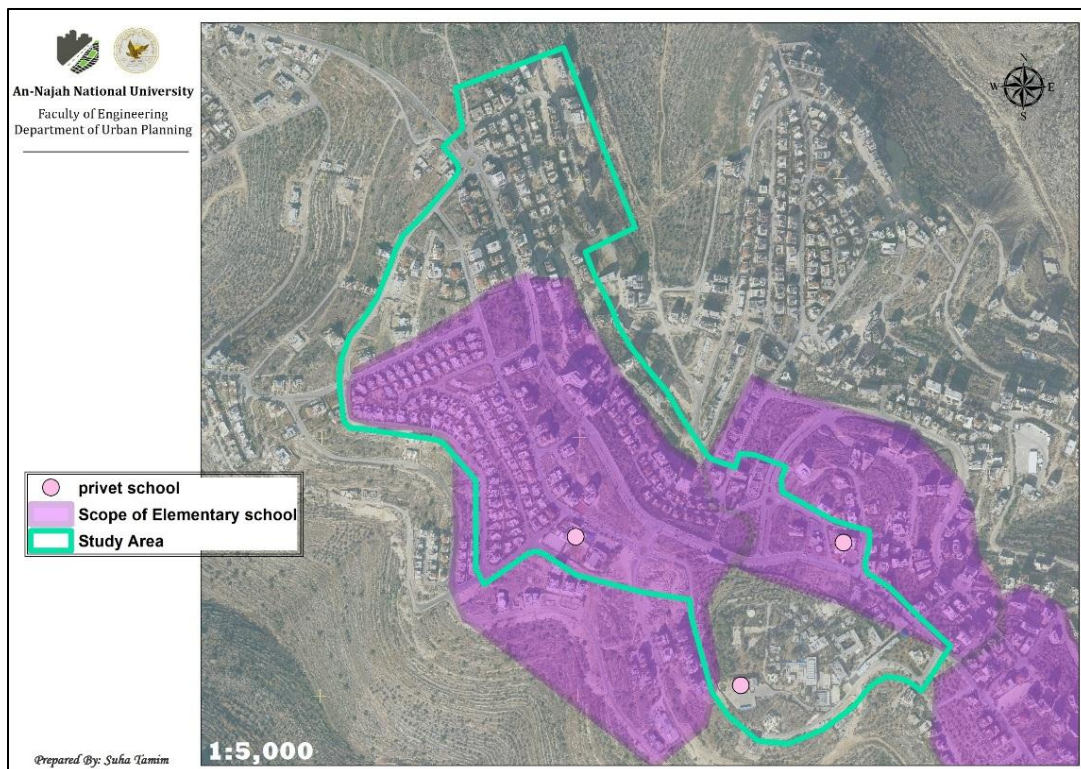


FIGURE 51 THE SCOPE OF ELEMENTARY SCHOOLS IN THE STUDY AREA

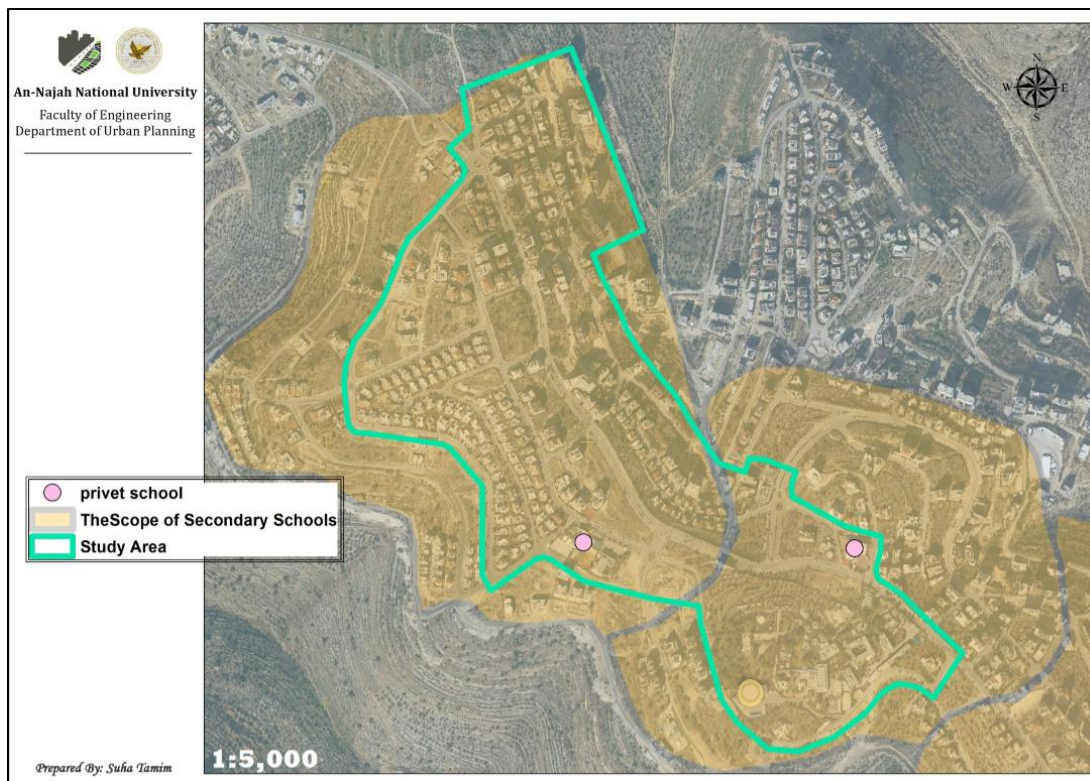


FIGURE 54 THE SCOPE OF SECONDARY SCHOOL IN THE STUDY AREA

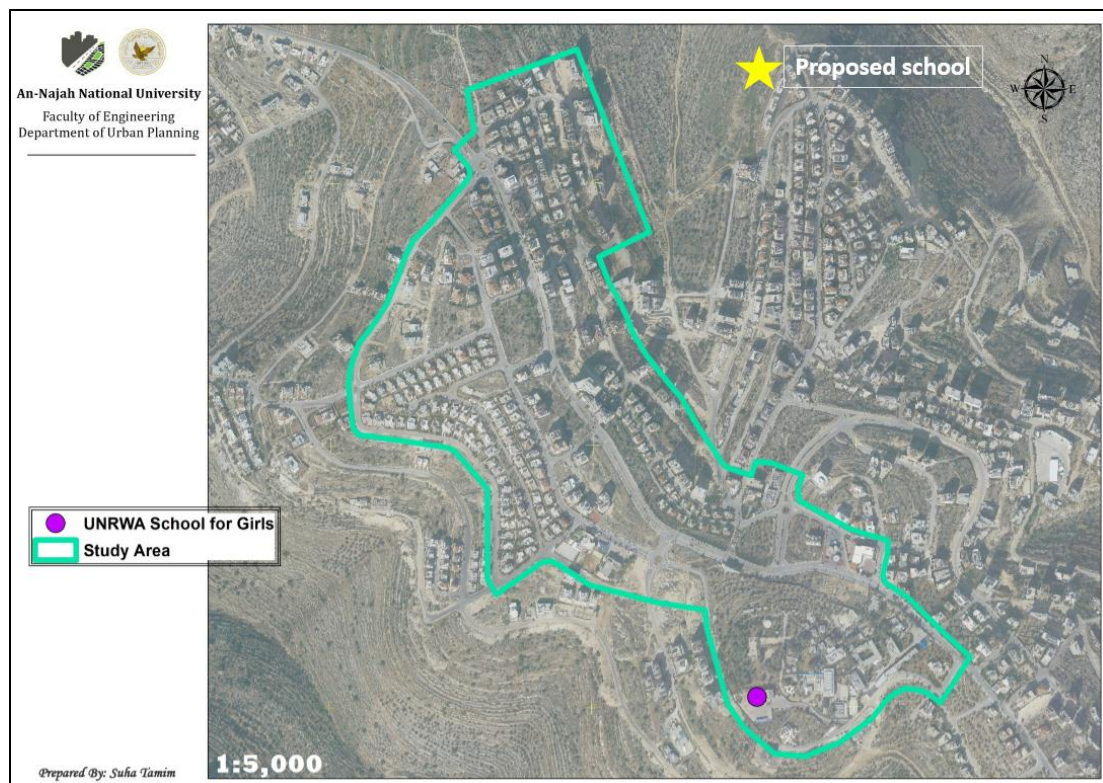


FIGURE 53 THE PROPOSED SCHOOL FROM MUNICIPALITY

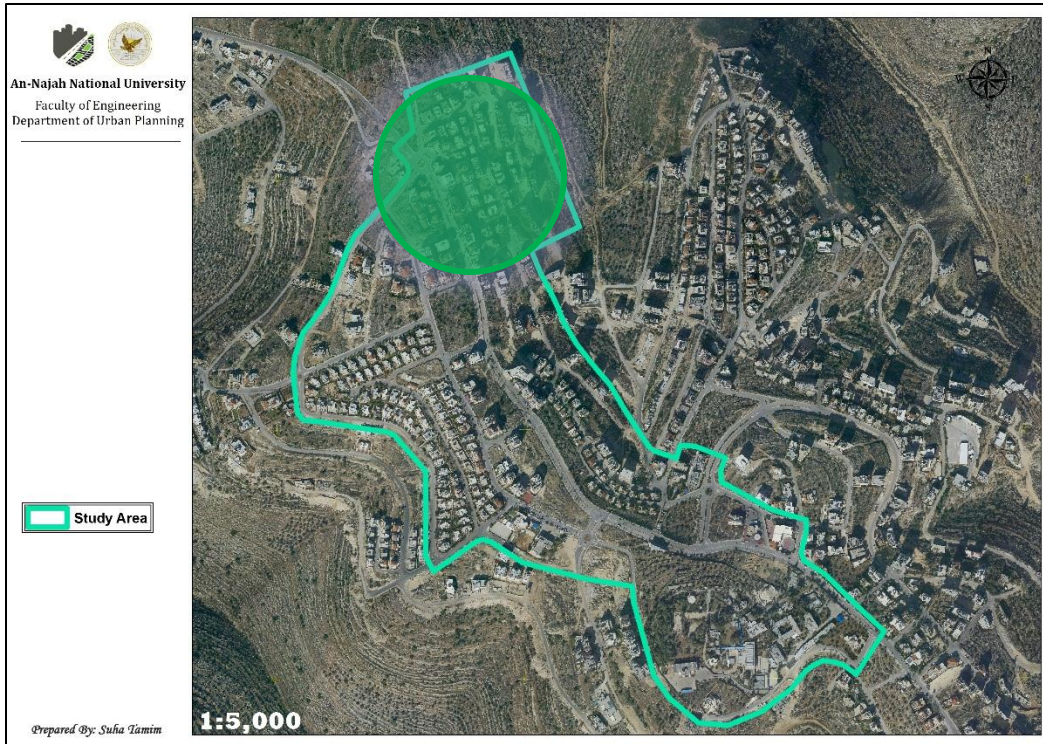


FIGURE 55 AREA NEED ELEMENTARY SCHOOL

Health care service

There is no health center in the study area or in neighboring areas in Al-Tireh for emergency ,they rely on the clinics and hospitals in the city of Ramallah and Al-Bireh, so there is need to find a health center for emergency services (for heart disease and internal medicine, children and maternity) and intermediate zone easy to reach.

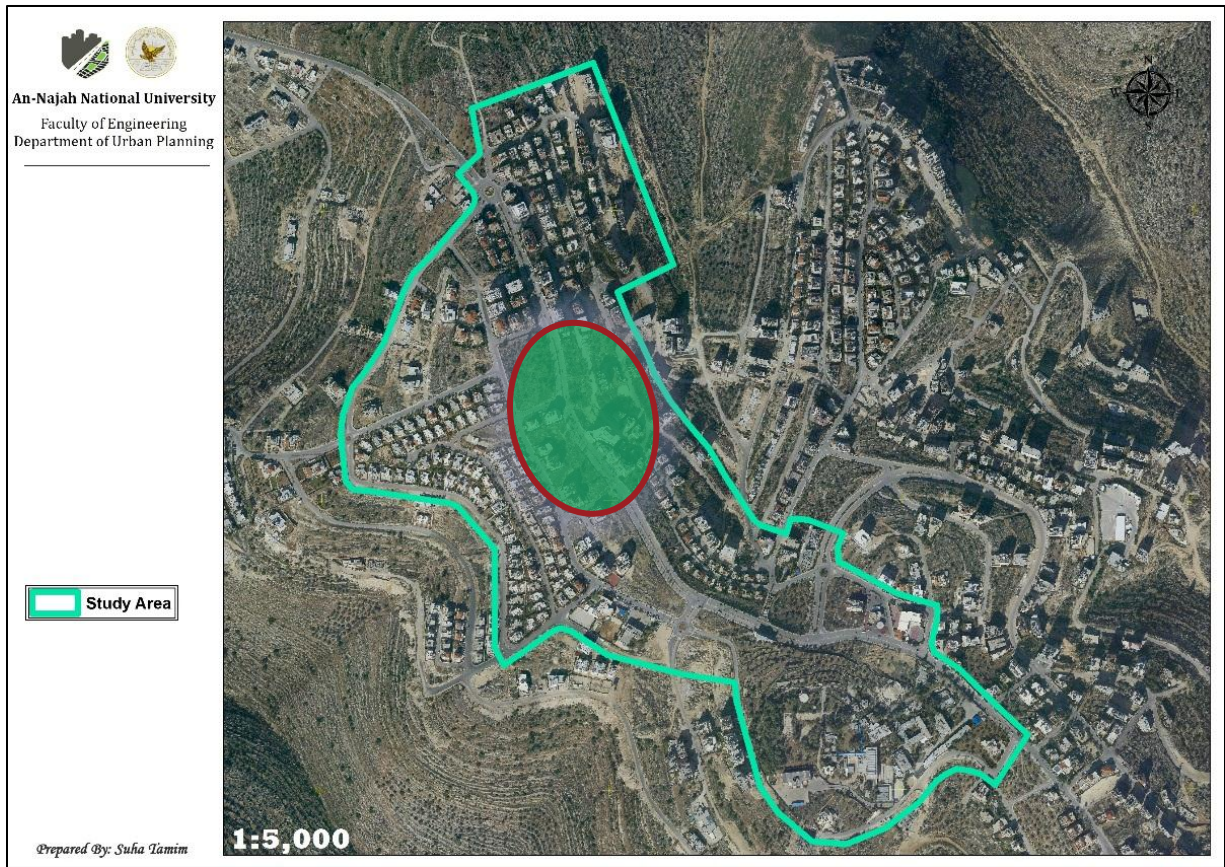


FIGURE 56 PROPOSED ZONE TO SUGGEST HELTH CENTER

Mosque

Al-Tireh mosque consists three floors and that sufficient in terms of capacity, but it is far from Birzeit Housing and residents of the northern part of the study. Moreover, the population of Al-Tira is on the rise so I suggest a mosque in the area shown on the map to serve the study area fully and neighboring areas within suitable walking distance of a 500 meters or 15 minutes walking.

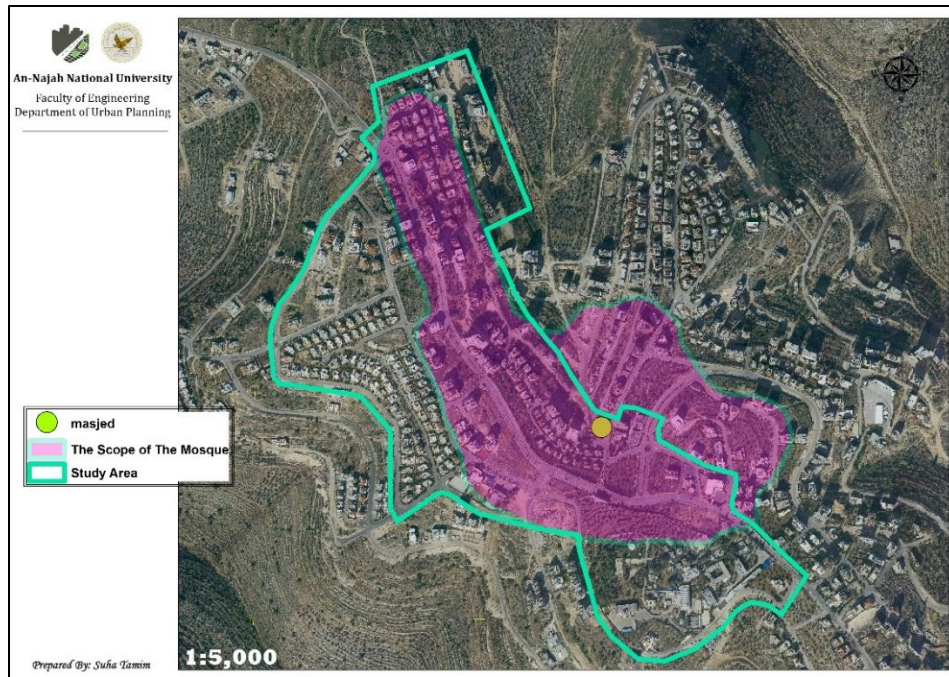


FIGURE 57 THE SCOPE OF THE MOSQUE IN THE STUDY AREA

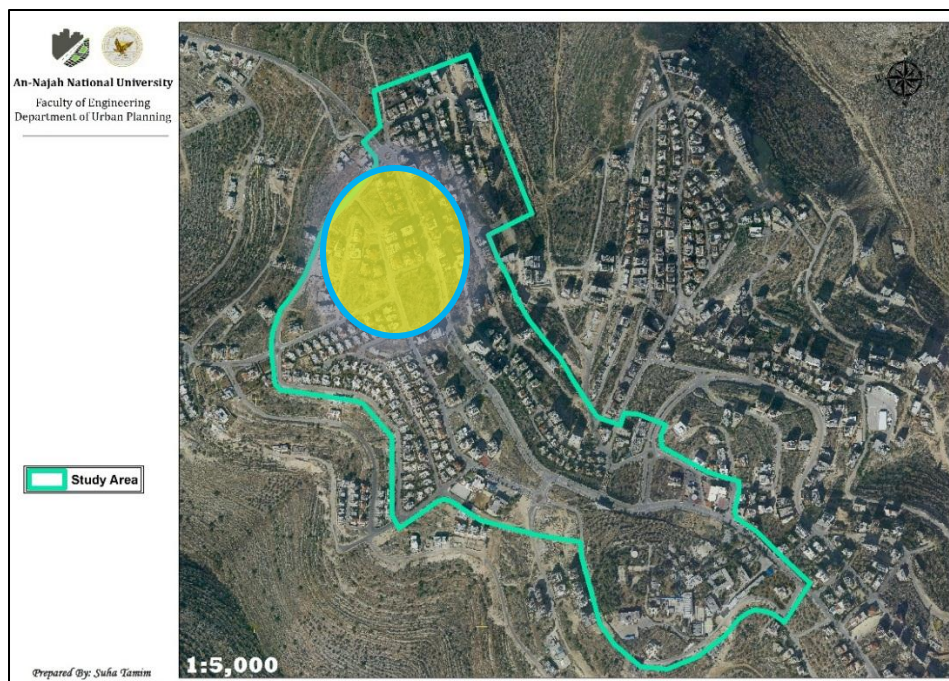


FIGURE 58 PROPOSED ZONE TO SUGGEST HEALTH CENTER

Supermarket

There are four supermarkets in the study area and others in neighboring areas, which is sufficient and meet the needs of people on foot.

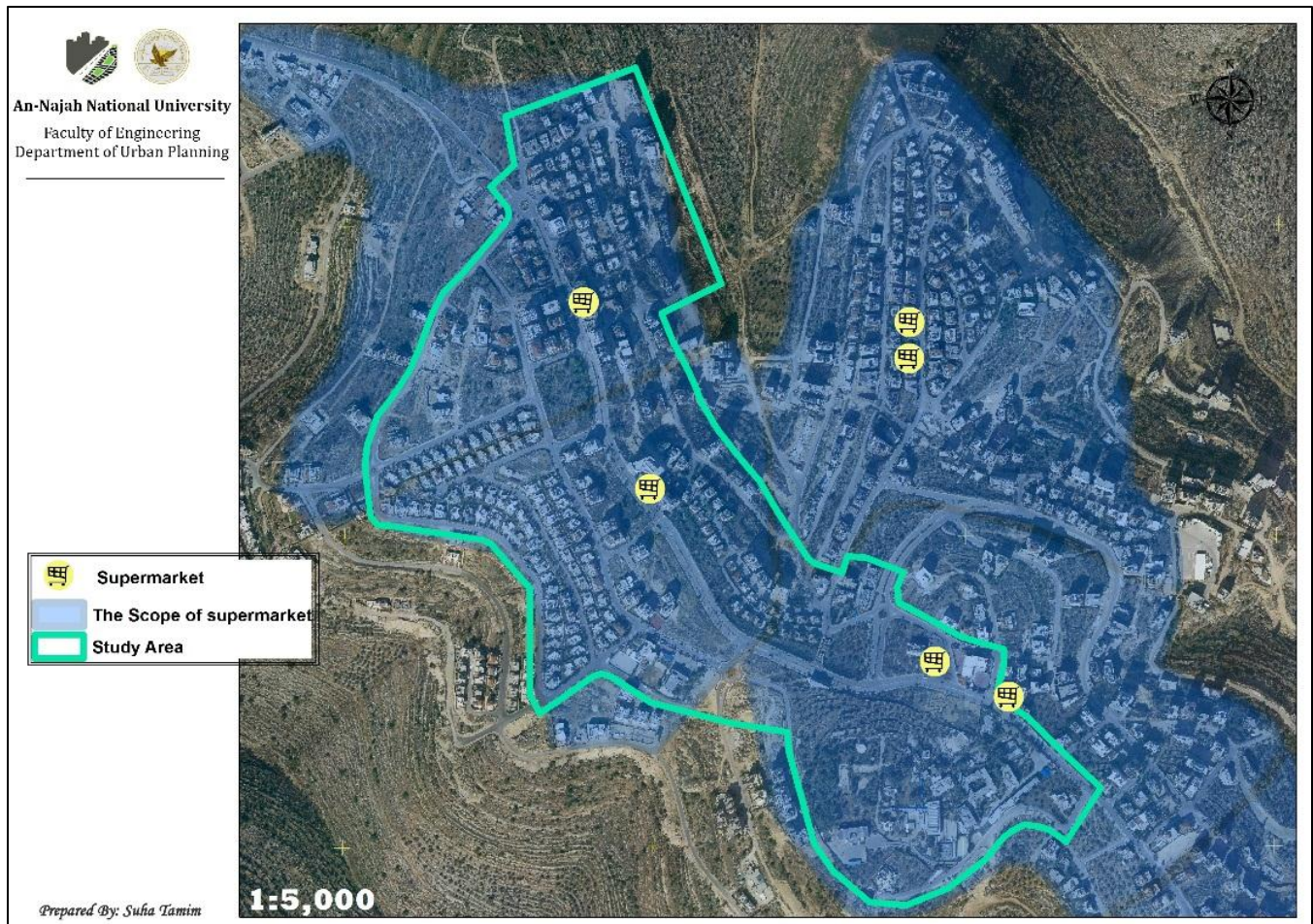


FIGURE 59 THE SCOPE OF THE SUPERMAKET IN THE STUDY AREA

Recreational services

This neighborhood needs garden with seats and corridors and children playground for all people in all times and also visited by people outside Al-Tireh.

We can't consider Al-Tireh stairs as recreational for all residents, it doesn't child or elderly. And the garden in Beir zait housing is considered semi privet for the housing, not for all residents.

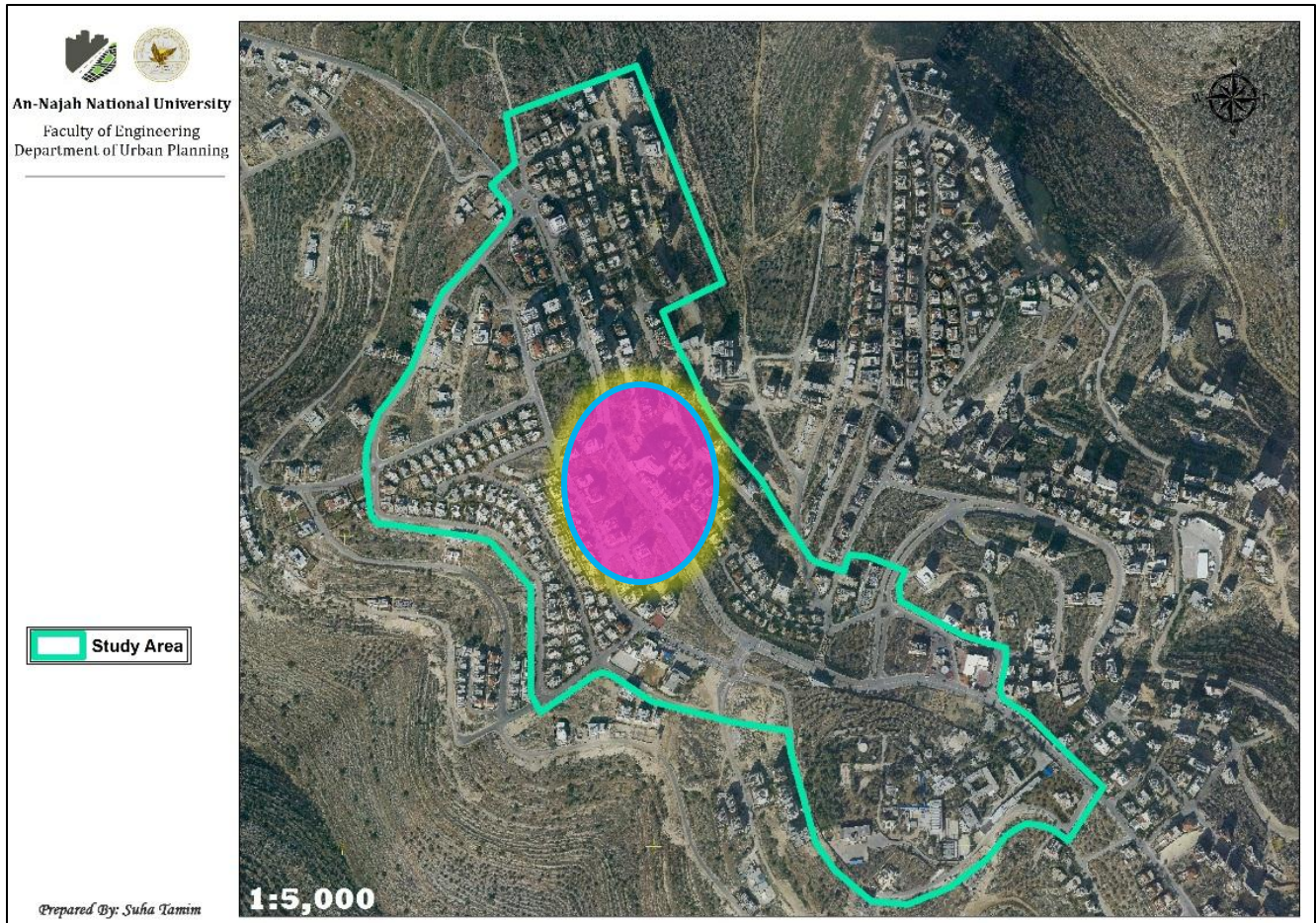


FIGURE 60 PROPOSED ZONE TO SUGGEST PARK

After studying the existing services and the adequacy for the residents within walking distance, the result that the region need a mosque, a park and a health center in the area of easy access.

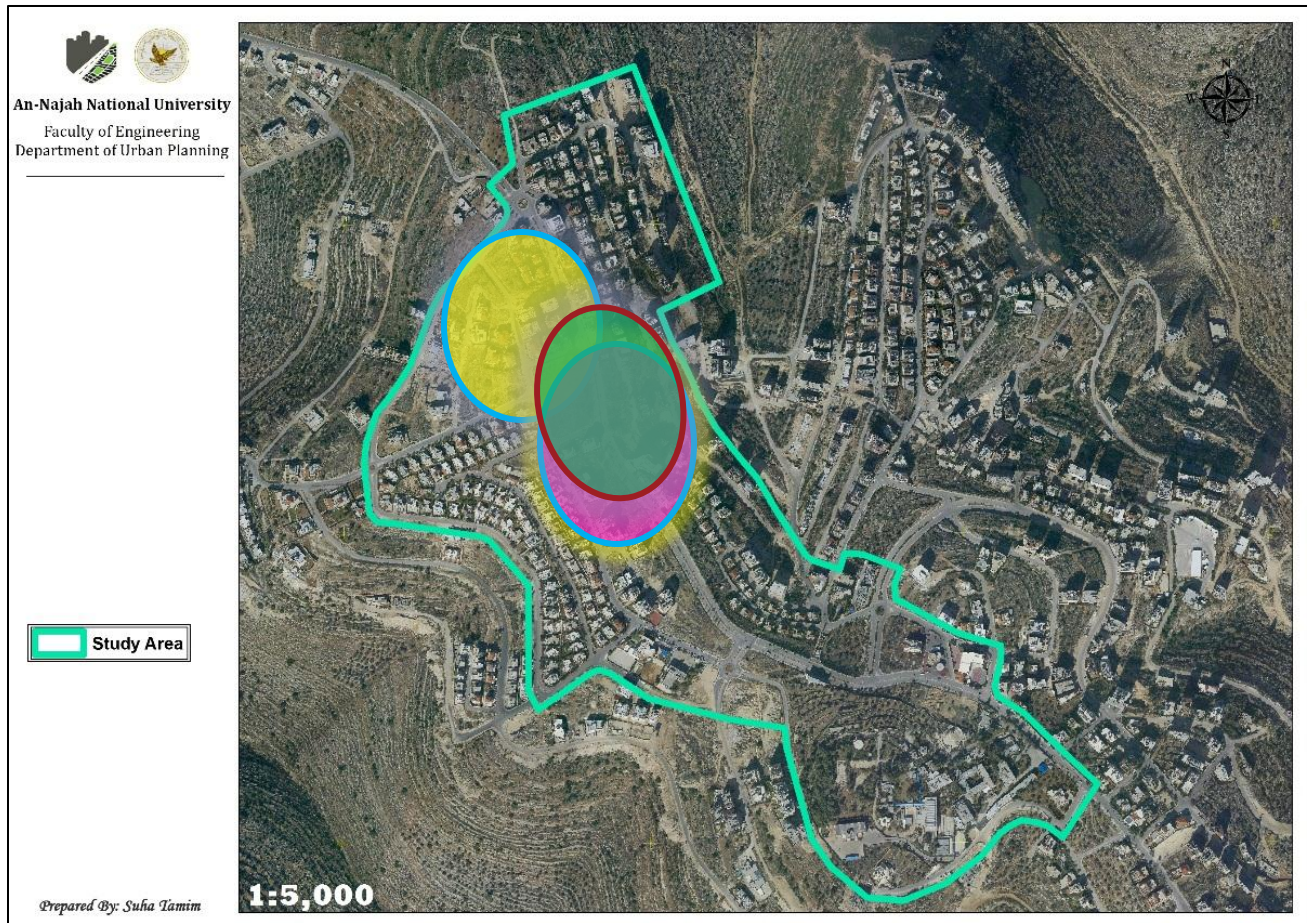


FIGURE 61 LOCATIONS FOR THE PROPOSAL PROJECTS

The proposal zones overlap in the center of the neighborhood. Map (62) show site selection for area suitable to build multi story building and design a park, its area (9.5 dunums).



FIGURE 62 SITE SELECTION FOR THE PROPOSED SERVICES



FIGURE 63 ZONING FOR SERVICES

WALKABILITY

Walking is associated with street furniture and their suitability to encourage walking, pedestrian need wide and comfort sidewalks, greenery, trash containers, appropriate lighting at night, seats, and stairs in steep slopes, for better walking experience and spend time out of door enjoying their social life together.

☀ **Sidewalks**

In general the sidewalks in Al-Tireh are good specially on the main street , but there is some internal streets with no sidewalk or with poor condition, it may be narrow or the trees on it makes obstacles, as result pedestrian walk on the street.

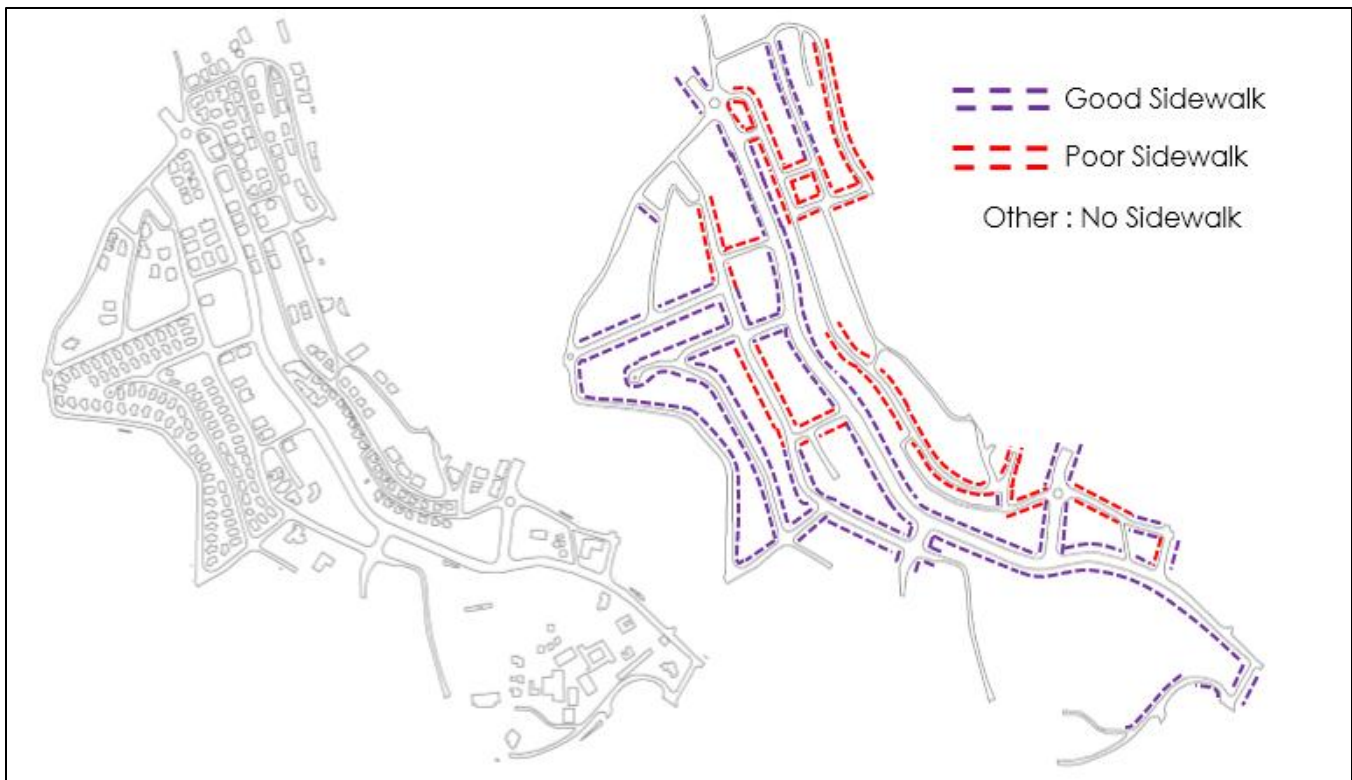


FIGURE 64 SIDEWALK CONDITION



FIGURE 65 BAD CONDITION SIDEWALK



FIGURE 66 GOOD SIDEWALK

Greenery

For greenery it's good in general, except some new streets without greenery or streets with non-shaded trees.



FIGURE 67 GREENERY CONDITION



FIGURE 68 NON-SHADED TREES



FIGURE 69 NON-SHADED TREES

☀ **Street Lighting**

Lighting in the neighborhood is perfect. The main street lighting is strong and that is good, while the internal streets have moderate lighting power and that is good too, since people need privacy in the internal streets, they don't need high lighting.

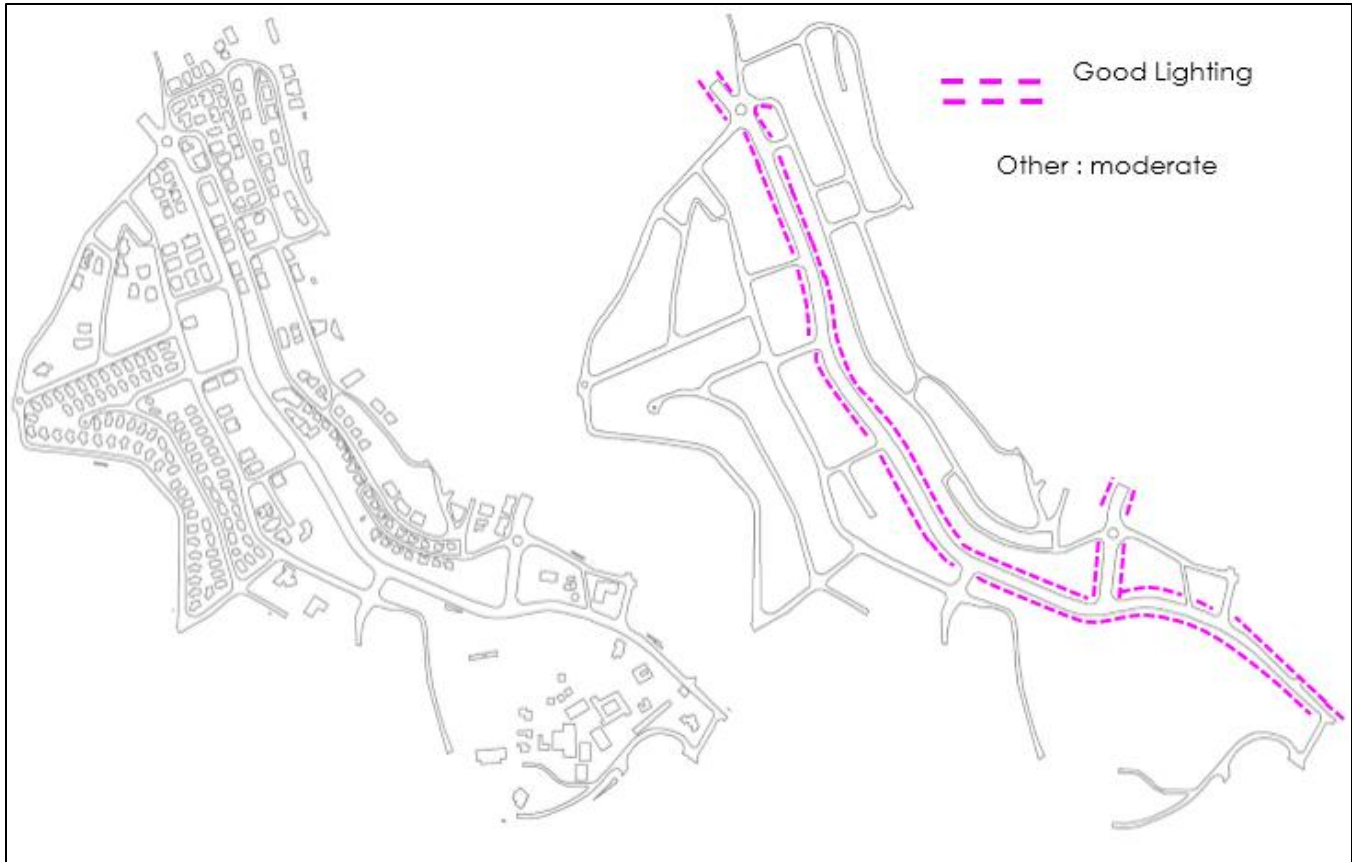


FIGURE 70 STREET LIGHTING CONDITION



FIGURE 71 MAIN STREET LIGHTING

☀ **Trash containers**

A lot of trash containers are separated in the neighborhood, but areas around these locations aren't clean, it may be because the containers are small or because the municipality delay in collection. By the way I will suggest new system for trash in the neighborhood fit with livability criteria to keep the neighborhood clean and encourage people to walk in clean environment.



FIGURE 72 LOCATIONS OF TRASH CONTAINERS



FIGURE 73 TRASH CONTAINERS IN THE NEIGHBORHOOD

☀ ***Other features***

- The main street pavement is in good situation, but some internal streets have bad pavement.
- No seats on the neighborhood.
- The need for more stairs.



FIGURE 74 BAD PAVEMENT



FIGURE 75 THE NEED FOR STAIRS

Proposals

To improve walkability I will first redesign the internal streets whatever the width of the street, I design street with minimum width in the neighborhood (10m) and this design applicable for wider internal streets by make the street for cars (with maximum speed of 30km/h) and pedestrian at the same time because the traffic there is very low, making a bike lane with shaded trees and seats, and substitute the existing pavement with other as shown in figure (77) Streets pavement characteristic:

1. Friction resistance.
2. Bear high loads up to 70 tons.
3. Easy to maintenance.
4. Durable.
5. Notifies drivers to slow down because it's residential area.



FIGURE 76 INTERNAL STREET SECTION



FIGURE 77 STREET PAVEMENT



FIGURE 78 INTERNAL STREETS IN AMSTERDAM

For the main street, it has very good condition with 22m wide I just redefine the sidewalks and the other street furniture to be clearer.

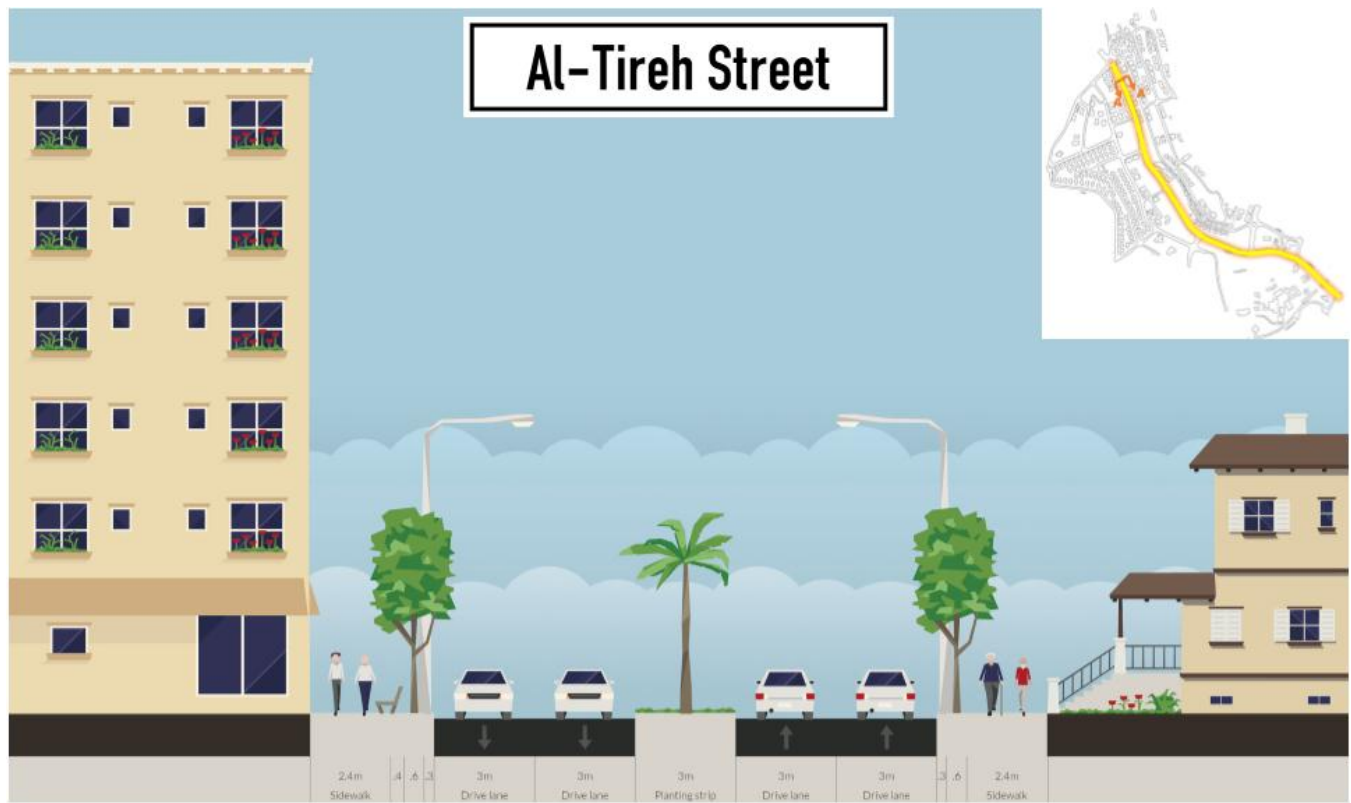


FIGURE 79 MAIN STREET SECTION WITH BUILDINGS ON TWO SIDES

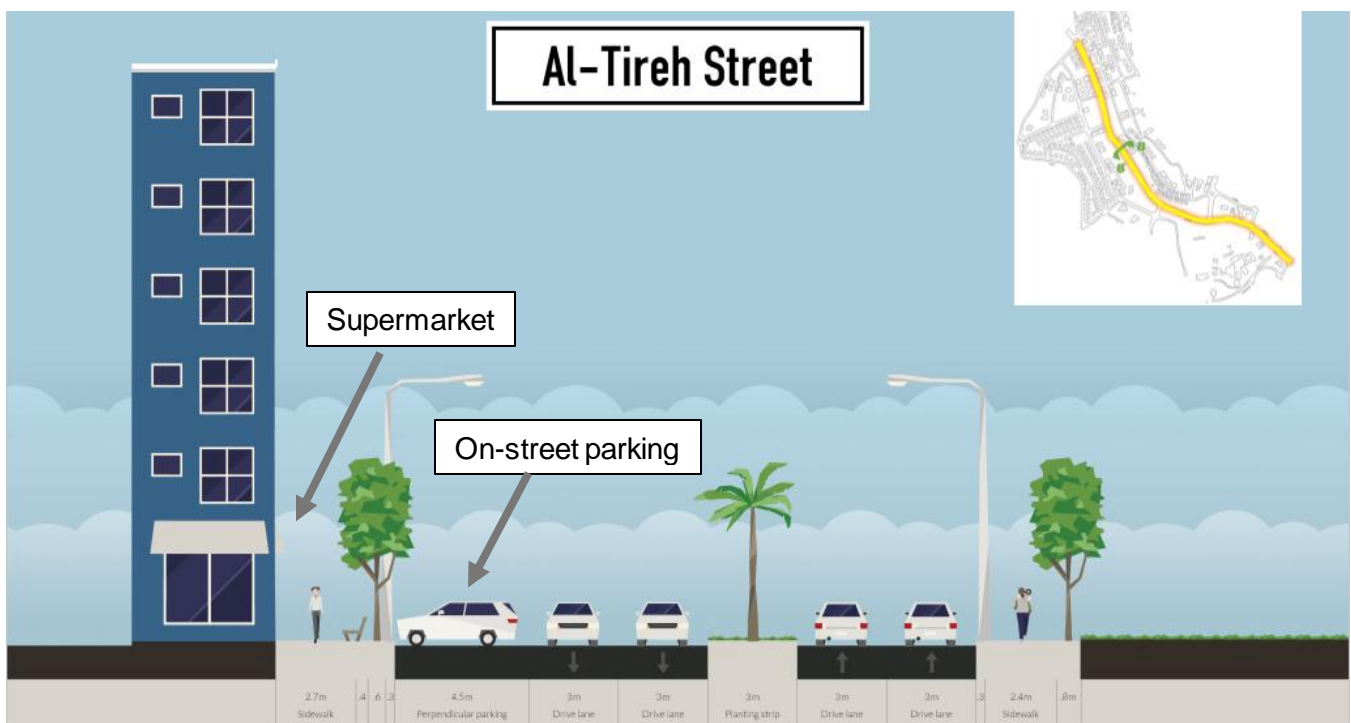


FIGURE 80 MAIN STREET SECTION ON SUPERMARKET AREA

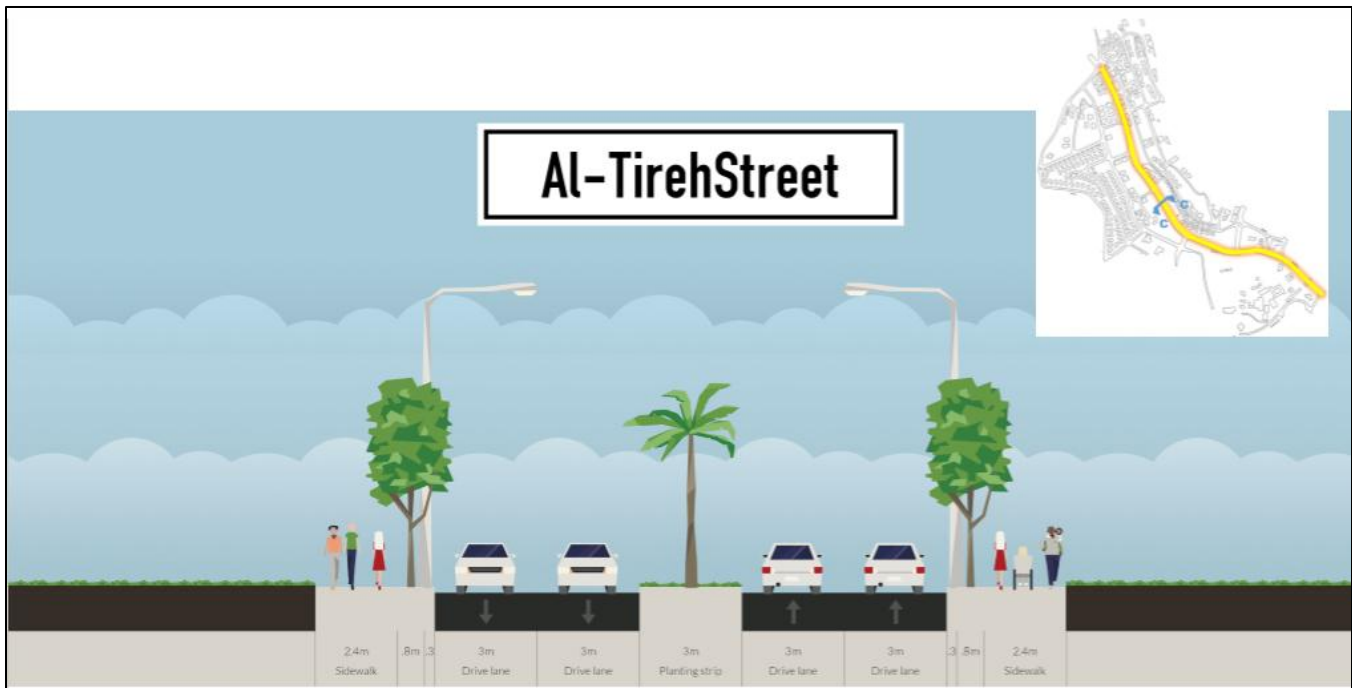


FIGURE 81 MAIN STREET SECTION WITOUT BUILDINGS ON SIDES WITH WIDER SIDEWALKS

And here the design for the ramps with stairs, the minimum ramp width is 7m, divided 2m for stairs and trees and barriers and 5m for cars (2 ways). If the ramp wider than 7m we can make to stairs on two sides but keep at least 5m for cars.

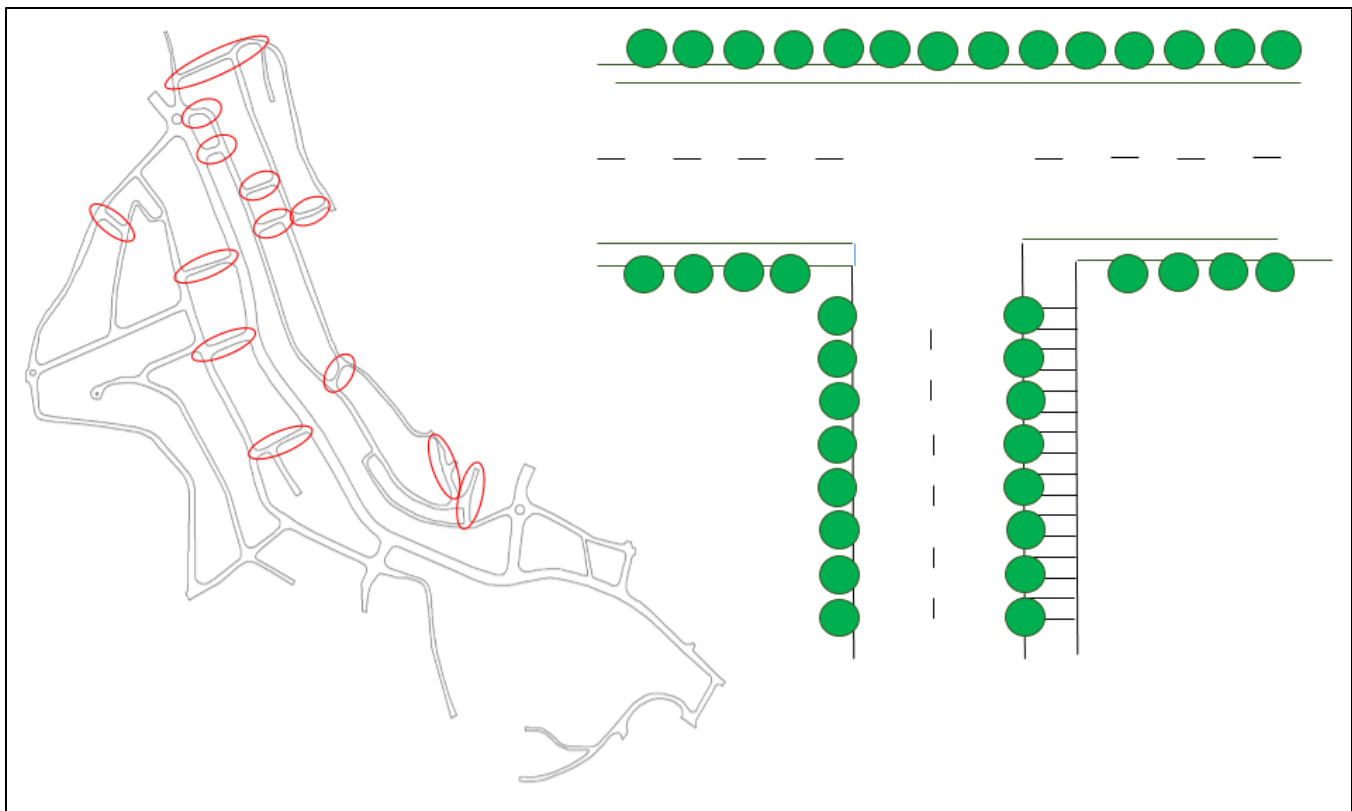


FIGURE 82 RAMPS DESIGN

To ensure that all streets are shaded and ever green, I suggest two types of trees that's already planted there in a lot of streets (*Ficus netida*, *Populus nigra*). And Substitute the non-shaded ones with these.



FIGURE 83 NON-SHADED TREES



FIGURE 85 *FICUS NETIDA*



FIGURE 84 *POPULUS NIGRA*

To solve the problem of hygiene I propose new system for trash in the neighborhood based on recycling, but before I recommend a proposal of national project for recycling in the West Bank to encourage people separate their waste.

According to the new system every building will have its own trash containers (waste, plastic, and paper) it means we need 260*3 (780) outdoor trash. For additional need the user can buy more.



FIGURE 86 3 TRASH CONTAINERS FOR EACH BUILDING



FIGURE 87 WOMEN CAN SEPARATE WASTE IN KITCHEN FOR PLASTIC AND PAPER AND OTHER WASTE.

And suggest locations with big containers for waste and others for plastic, paper, and glass, easy to reach from all buildings.



FIGURE 88 LOCATIONS FOR OUT DOORS TRASH CONTAINERS

Organizing with municipality trash will be collected twice a week, and the residents will know that, so they will put their trash containers out door in these days to be collected easily.



FIGURE 89 COLLECTING TRASH CONTAINERS IN AMSTERDAM

Separation small trash containers every 100m on the streets keeps streets clean and encourage people throw their waste in these container not on the streets. Moreover employing clean workers to monitor trash separation and keep the sidewalks and stairs clean in the neighborhood helps to make clean environment there, and encourage people to walk.



FIGURE 90 SMALL TRASH CONTAINER IN THE STREET



FIGURE 91 CLEAN WORKER

PUBLIC TRANSPORTATION

There is a taxi station for Al-Tireh neighborhood close to Al Manara roundabout (320m or 270m) the person can reach on foot, and then ride a taxi to reach Al-Tireh on the main street he will pay 3 NIS, but to reach anywhere not on the main street he will pay double (6 NIS).

And the opposite way from Al-Tireh to the CBD (central business district) it's harder because the person may find a taxi on the main street before returning to the station again, so Al-Tireh residents depend on private cars or private taxis.



FIGURE 92 TAXI PATH

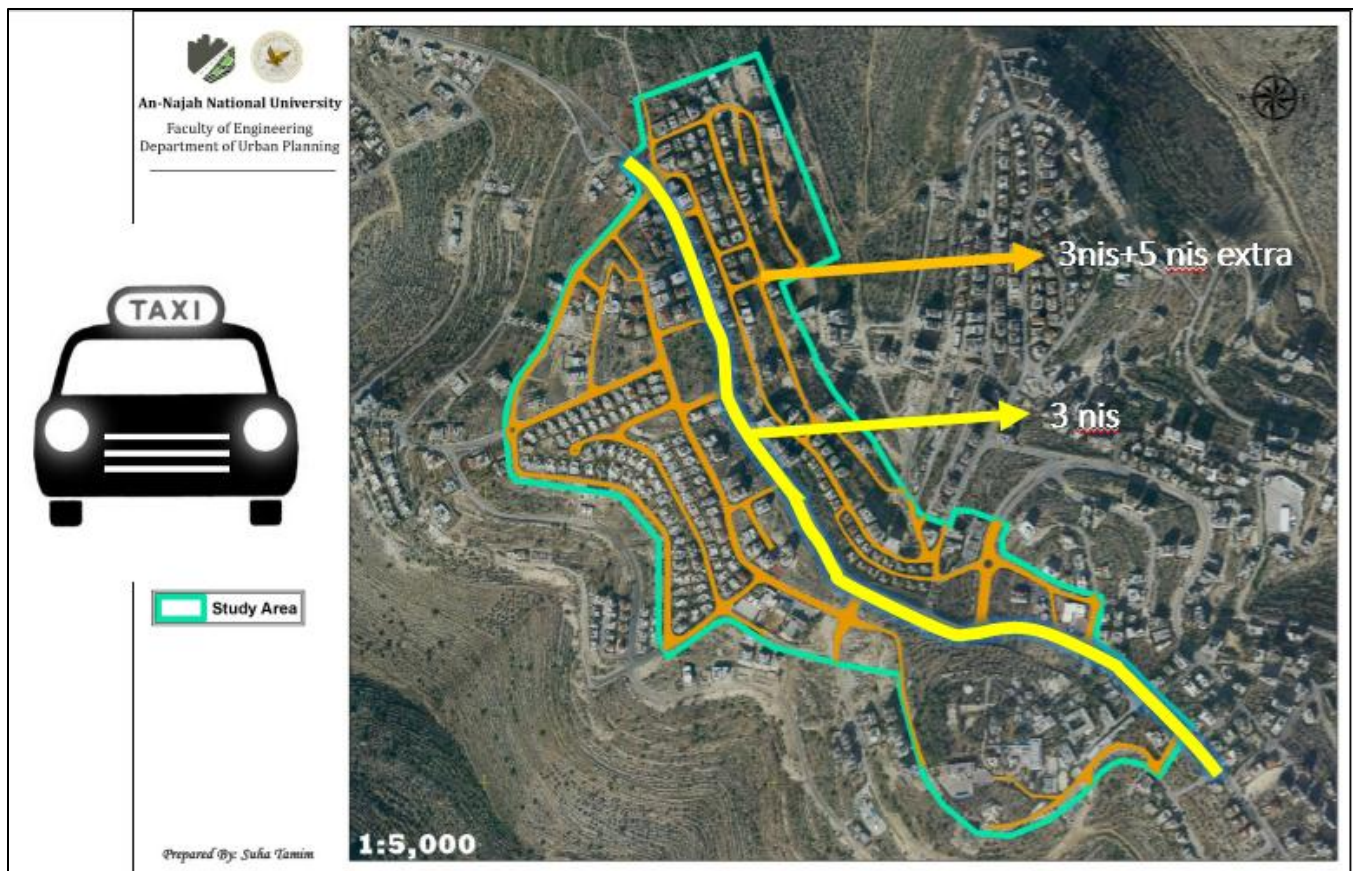


FIGURE 93 TAXI PATH IN THE NEIGHBORHOOD



FIGURE 94 THE TAXI STATION AND AL MANARA ROUNDABOUT



FIGURE 95 THE TAXI STATION AND AL MANARA ROUDABOUT

I think this system of public transportation is good in Al-Tireh, no need to big buses because there is no demand for that, but to solve the problem of low taxi supply from Al-Tireh to CBD I propose every 30 minutes 1 empty taxi go from the station to the neighborhood.

Thinking for future, the development and the rise in population make me suggest a tram connected with the city center to meet the future demand.

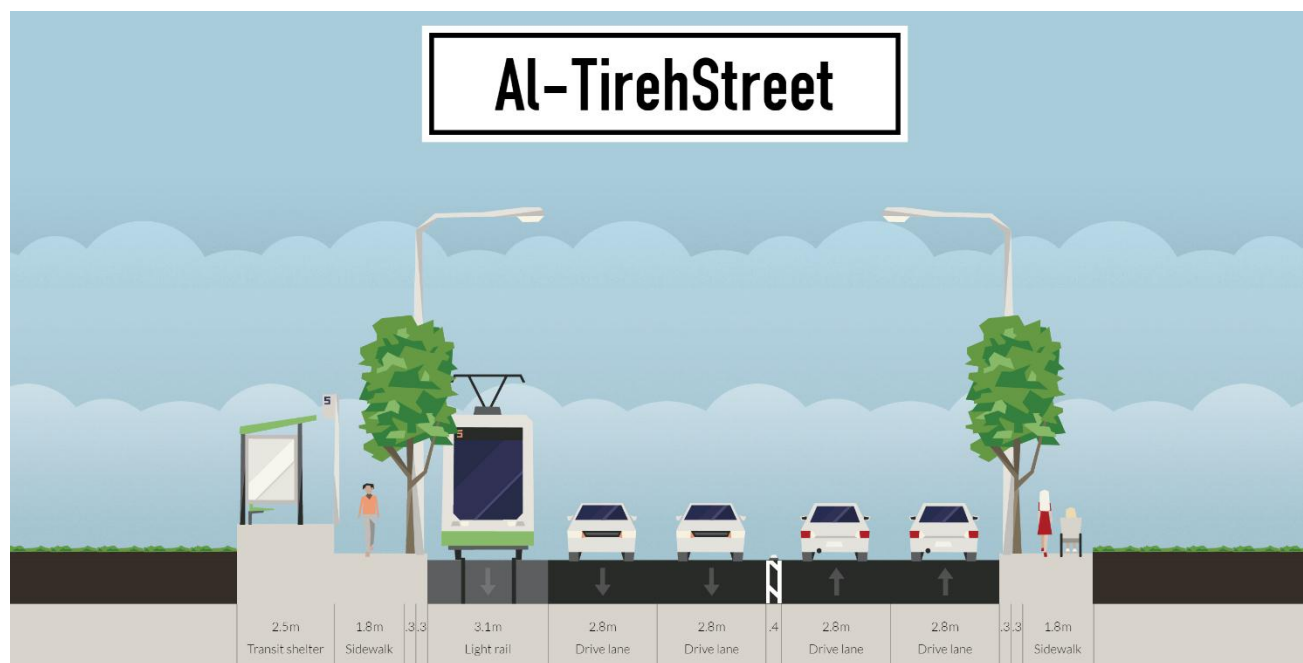
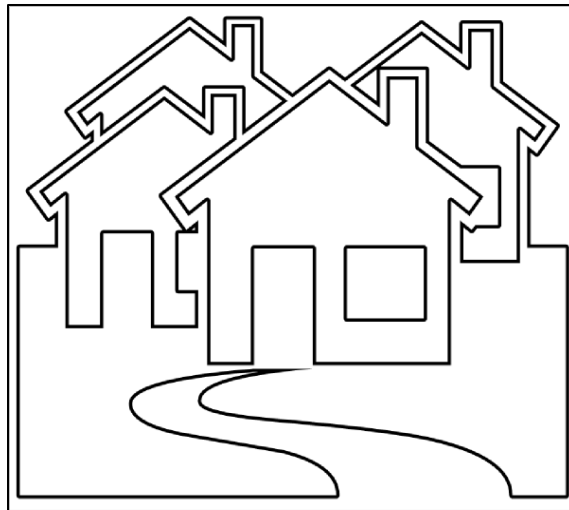


FIGURE 96 FUTURE THINK FOR TRANSPORTATION

AFFORDABILITY

It's hard to apply the factor of affordability in a neighborhood like Al-Tireh, as mentioned before the definition of livability varies from place to place, it depends on the priorities and culture the country, so it's hard to make an affordable housing in Al-tereh but the trend now a days is to build small apartment to reduce the cost.

I think it's better if the future development in the neighborhood goes toward multi stories buildings to serve more limited income people.



OTHER PROPOSALS

❖ Forming a neighborhood committee

Forming a neighborhood committee for all Al-Tira (not just for the study area) linked to the Municipality of Ramallah with special budget to do some commitments, thus relieving citizens and reduce the pressure on the municipal if every neighborhood form its own committee.

Things relay to the committee:

1. Delivery of official mail or any order from the Municipal to the residents.
2. Follow-up waste collection and cleanliness of the streets and the commitment of residents to separate waste.
3. Follow-up to the needs of the residents of the daily services.

❖ Numbering System

This project is already underway in Ramallah, I think it's very important, it makes life easier and helps committee to connect with residents.

I propose to make mailbox to each building too to receive newspaper, mails, offer magazine from supermarkets, etc.) Instead of throwing it out doors and waste streets.



FIGURE 97 NUMBERING SYSTEM / MAILBOX

❖ Encourage recycling

The supermarkets can help encouraging people to recycle by putting machines for plastic bottles substitution with voucher.

They also can help by disallow plastic bags for buyers and sell privet bags special for the supermarket, so the users will use them every time they will buy goods, instead of using a lot of plastic bags.



FIGURE 98 PLASTIC BOTTLES SUBSTITUTION MACHINE



FIGURE 99 SPECIAL BAGS FOR LIDL SUPERMARKET

CONCLUSION

Everyone need to live easily in comfortable neighborhood with clean and healthy environment, and that is not hard, we can make a livable communities by making livable neighborhoods depending on walkability first then on public transportation, and then privet cars.

This paper shows that we can make a livable neighborhood in Palestine even if it's bit expensive first but it will prevent wasting money in a long-term and that is more sustainable.

Ramallah municipality can apply this on Al-Tireh after divide it to neighborhoods (each neighborhood help the other in services if there is overlap in the scope of the service), and same to other parts in Ramallah like Al-Masyon and Al-Ersal, to get finally livable Ramalla.