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Revitalizing Urban Voids by using GIS

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***RAMALLAH
CITY
URBAN
VOIDS***



DR. SALEM THAWABA

***TOLISTA BALLOUT
YUSEF MORCOS***



Table of contents:

Introduction	1
Literature review	2
Data collection	3
Study site	4
Methodology	6
Data analysis.....	7
Pocket garden.....	9
Open spaces for cafes & resting area.....	10
Open Spaces for Open Book Gardens & Recreational areas.....	12
Open Spaces for Play Grounds & Gardens.....	15
Open Spaces for multi. Play Ground.....	18
Open Space for Park.....	18
Result and conclusion.....	19
References.....	20

Introduction:

This report is mainly discussing the urban voids that formulated over time in a chosen study site, which is Ramallah especially in the city center as it considered nowadays a metropolitan city and one of the biggest cities in Palestine. Urban voids considered as a lost for any city because they affect the city negatively. So starting from here our goal is to determine which are the best urban voids in the mentioned area to be transformed into recreational nodes by following specific criteria. These recreational nodes will be pocket gardens, playgrounds for schools, parks, extensions for cafes, resting areas and recreational areas...etc.

Literature review:

Urban voids are pieces of land without function, purpose of use, abandoned, and in-between residential or commercial areas without proper definition of its existence. When two or more structures are built creating unconsidered lost spaces, these include empty buildings, dry lands and deserted places, that have the possibility to be recreated, rehabilitated and managed to serve the up growing cities that increase in population and requires livable and healthy places. Sometimes, these areas might be invisible to the naked eye and inaccessible. Passive application of building laws may lead to increasing the number of these wrong areas.

Identifying the significance of these spaces is essential in knowing its potential contribution to the social, economic and environmental aspects of a city. They have a negative effect on the appearance of the city causing eye pollution and may lead to insufficient abundance for future plans. Proper use of these sites in integrating them to the city's overall planning guidelines and making their contribution effective in building promoted cities with minimal land loss.

Urban void research studies begun approximately 30 years ago in developed and well industrialized countries as Roger Trancik mentioned in his book "Finding Lost Space". Lost spaces could be either private or public, left by owners due to several reasons like cultural, traditional, social, and the major one economic. Land value has been a major contributor in creating such spread vacant spaces, varying in size and shape located in centralized and habitual areas.(Jeong Lee et al , 2014). Another reason, the translocation of industries from the inner city to the edges due to globalization, this lead to the creation of "brownfields", vacant space in other words, as they cause pollution and contamination of surroundings (Mhatre, 2014).

These marginalized spaces could be seen as rich in relieving the city alternately turn them to regular well occupied and productive , the sooner these spaces are threatened the better these areas could be converted into living and working spaces, discharging society pressure, by Modifying the spatial conditions of urban voids making them more visible (Hudson,2011). As noted by(Nipesh,2012) urban voids could be the result of three factors .First, faulty process in planning cities referred as planning voids. Second, the functional voids which are dead spaces

between living masses. And last the geographical voids that formed due to the hard geographical areas.

Data collection:

The data was collected after several visits to authorized facilities, such as Ramallah municipality, Riwaq, Department of Geography In Birzeit University and the ministry of planning, which provided us with the needed information that helped us in the building of this project, this data include, aerial photos from different years, these years are 1942, 1997, 2006, 2011, and 2015, and AutoCAD drawings.



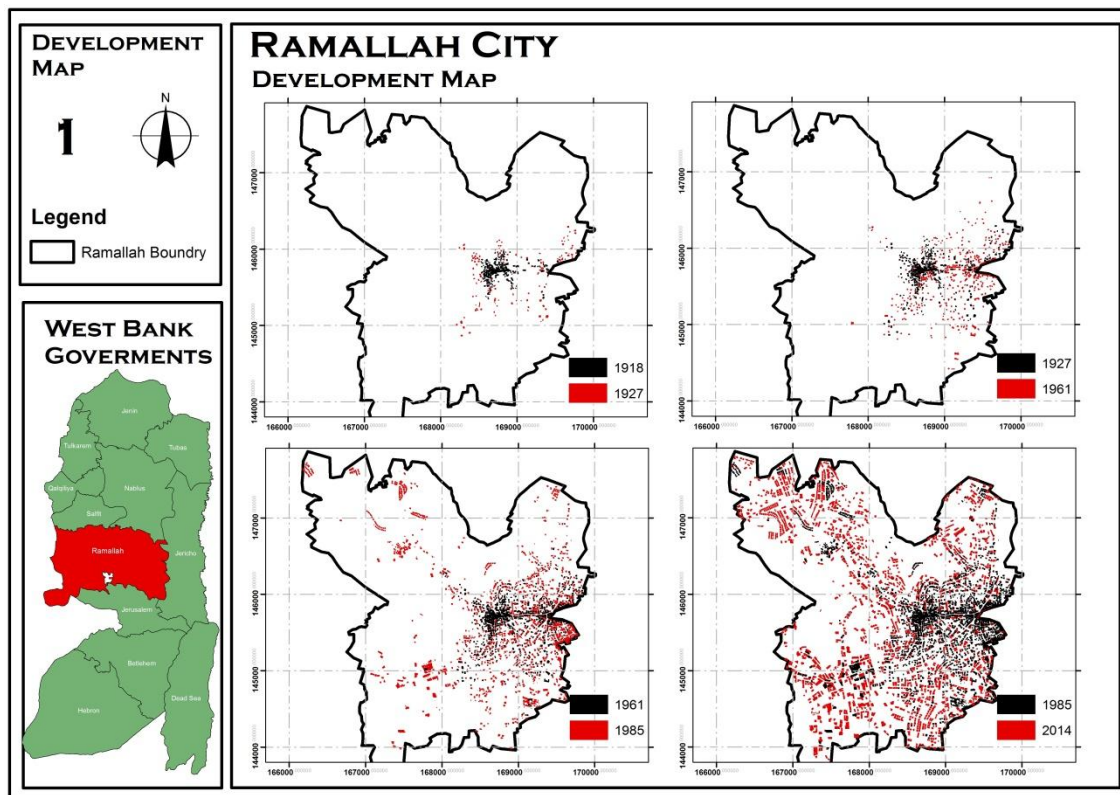
Figure (2): Ramallah development

Source: Riwaq

Study site:

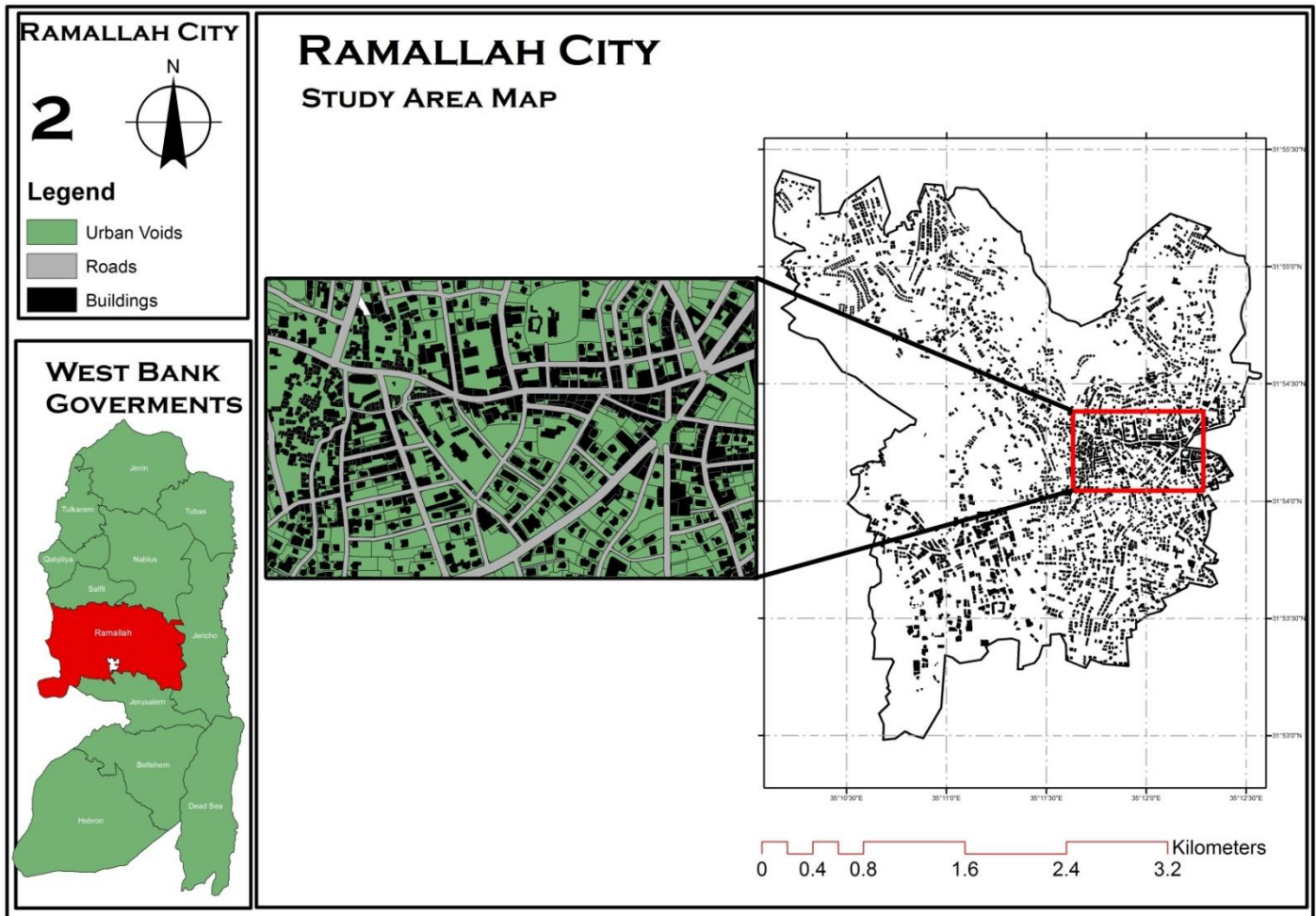
Ramallah is one of the biggest cities in Palestine. It is considered by the Palestinian people to be the largest city that evolves political, commercial, and employment opportunities. Its strategic location at the center of the west bank made it the focal and attraction point for the Palestinian population all around.

The city has tolerated many eras of changes that made it transform from a small village to a considered metropolitan city. These dramatic changes made it urbanized and developed regardless of other Palestinian cities. This urbanization and fast growing of the city and the absence of the power to apply law had its negative Impact on forming urban voids. (See map 1) Urban voids are defined as vacant spaces that lack any integration to the city's activity, these areas need to be assessed and studied for further development and promotion to be an effective part of the city's action.



Map (1): Ramallah development , Source: done by the author

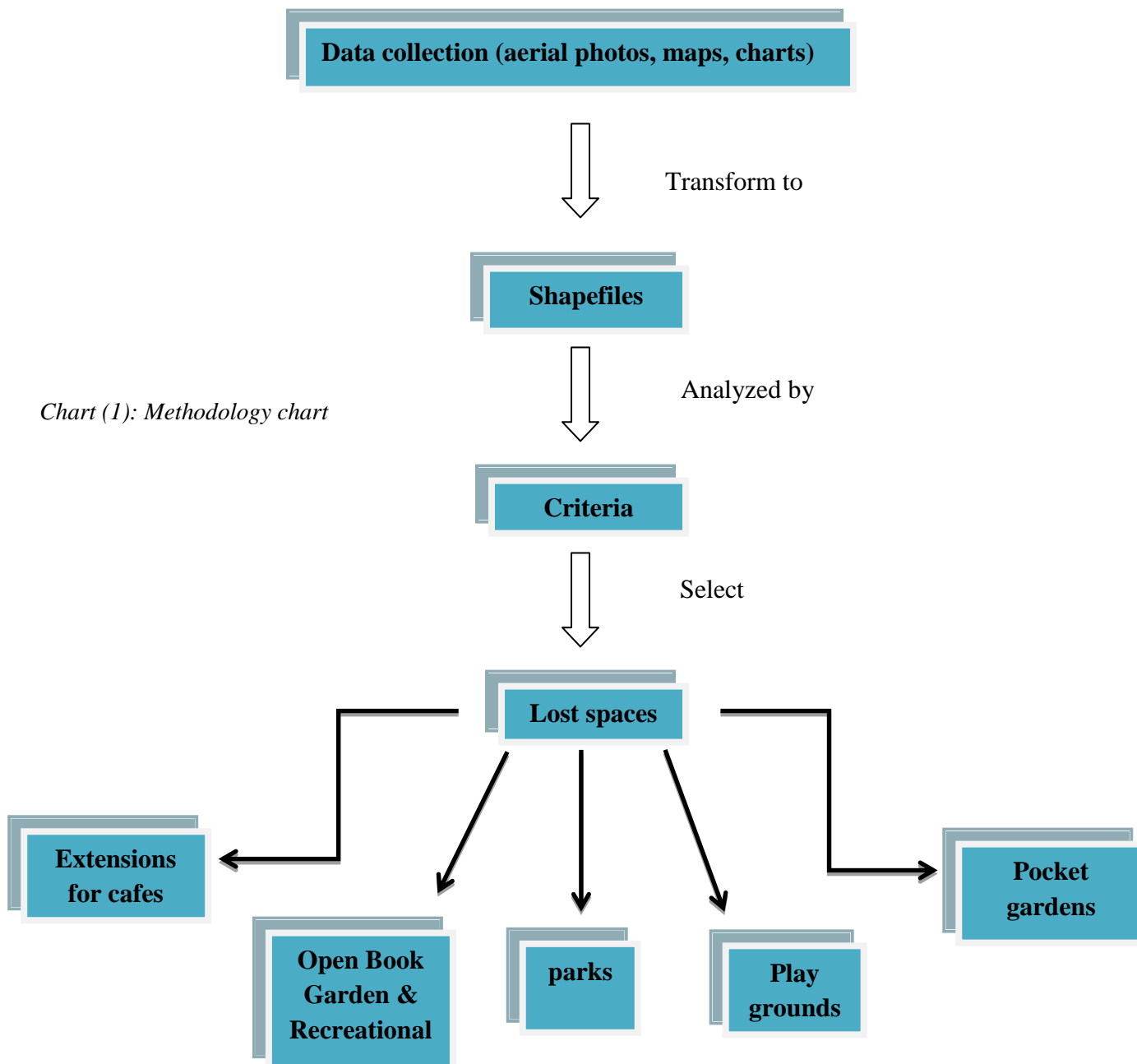
So our study site will be in Ramallah, the old fabric to Al-Manarah square. See map (2)



Map (2) Ramallah city. Source: done by the author

Methodology:

Our methodology is to transfer the data collected into shapefiles in order to use them in the analysis process of the urban voids selection using GIS taking into consideration the previous criteria as a reference. After determining the urban voids we will use the different selection methods in GIS in order to come up with a final result about which are the best voids to be transferred to the recreational nodes. (See chart (1))

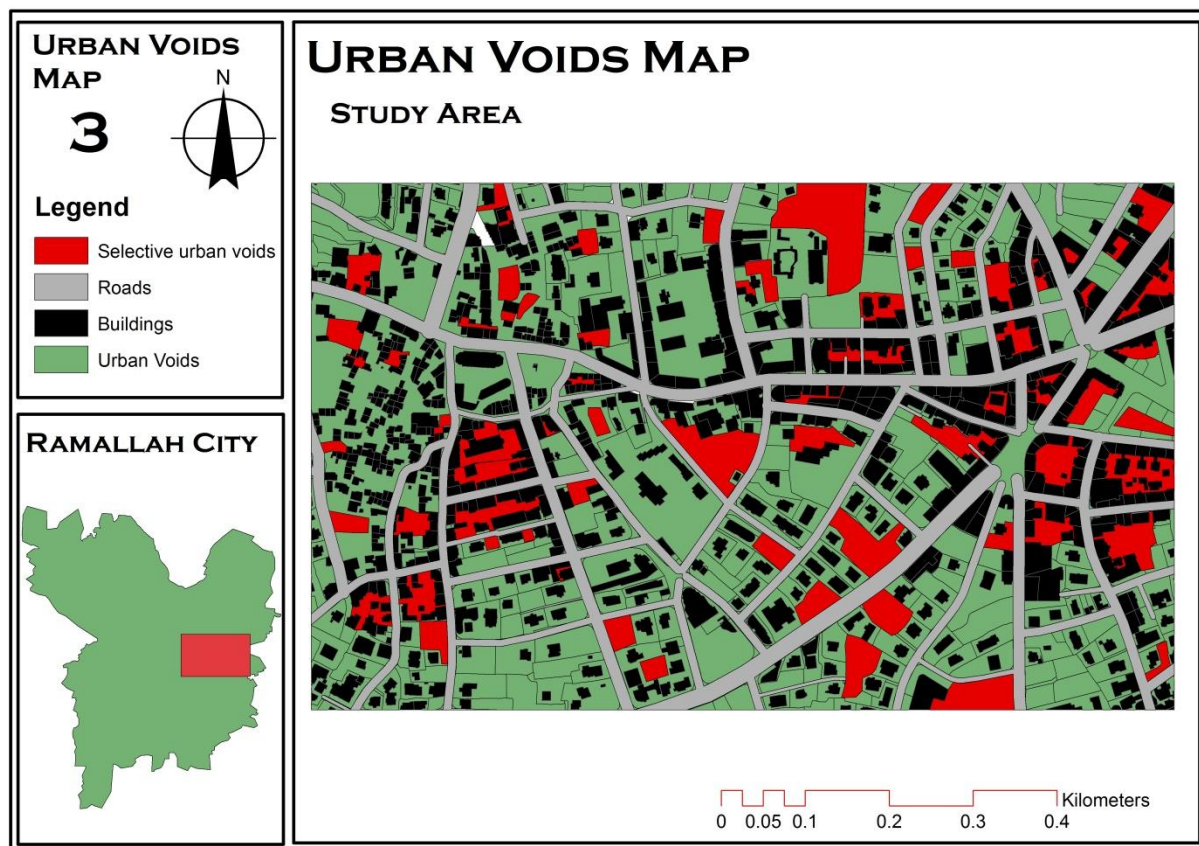


Data analysis:

In order to define the urban voids in Ramallah city we should set clear criteria that form the base in determining urban voids. These criteria are mainly:

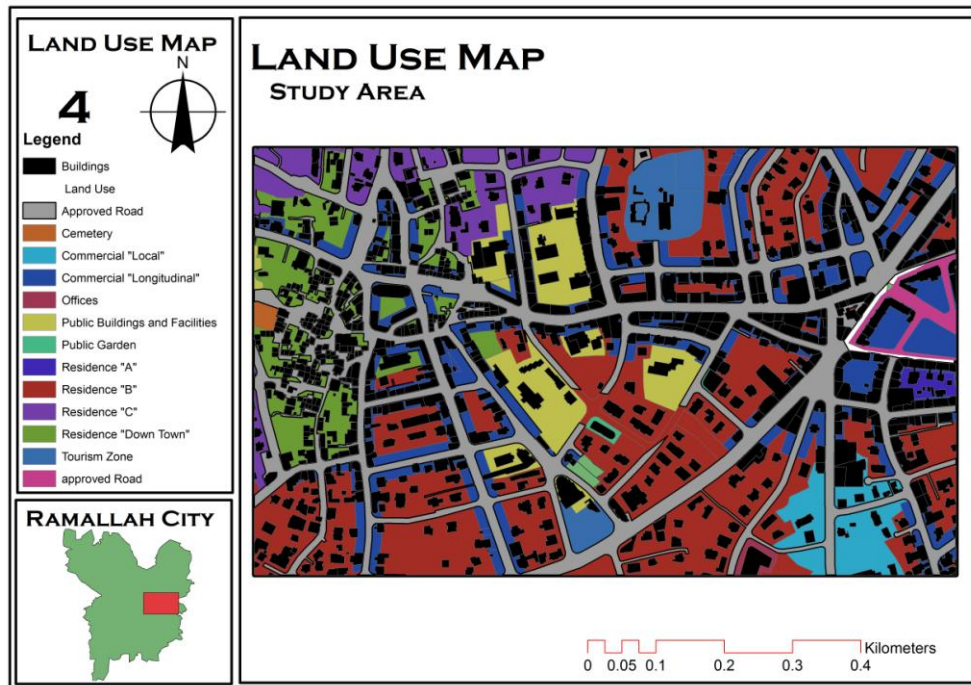
- 1- Negative impact on environment: lost spaces are basically the spaces that affect the environment negatively such as the lands that were transformed to waste dumps.
- 2- Density around it: lost space is defined relevant to the surrounding density of the block.
- 3- Ignored spaces: ignored space is a lost space
- 4- Eye pollution: if the land is visually uncivilized, then it is lost spaces.

After taking the previous points as our criteria, the urban voids where determined. (See map 3)



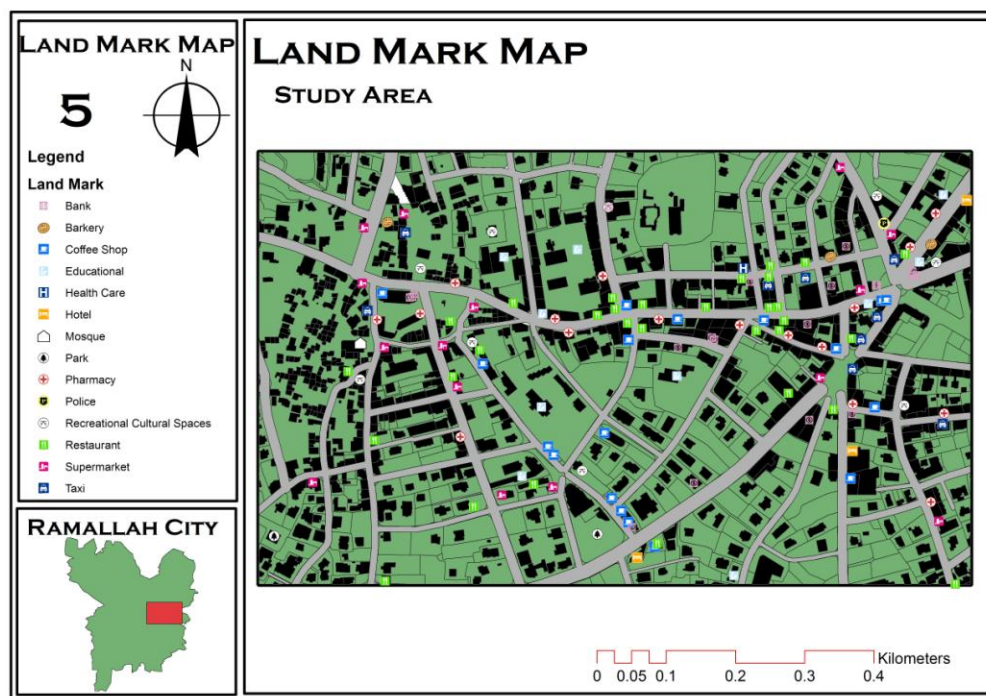
Map (3) Urban voids in the study area. Source: done by the author

To make sure select the best urban voids that needs to transformed to the previous mentioned recreational areas. We put clear criteria for each recreational function to choose the best urban voids beside taking in account the landmarks and the land use in the study area (see map 4, 5)



Map (4) Land use in the study area.

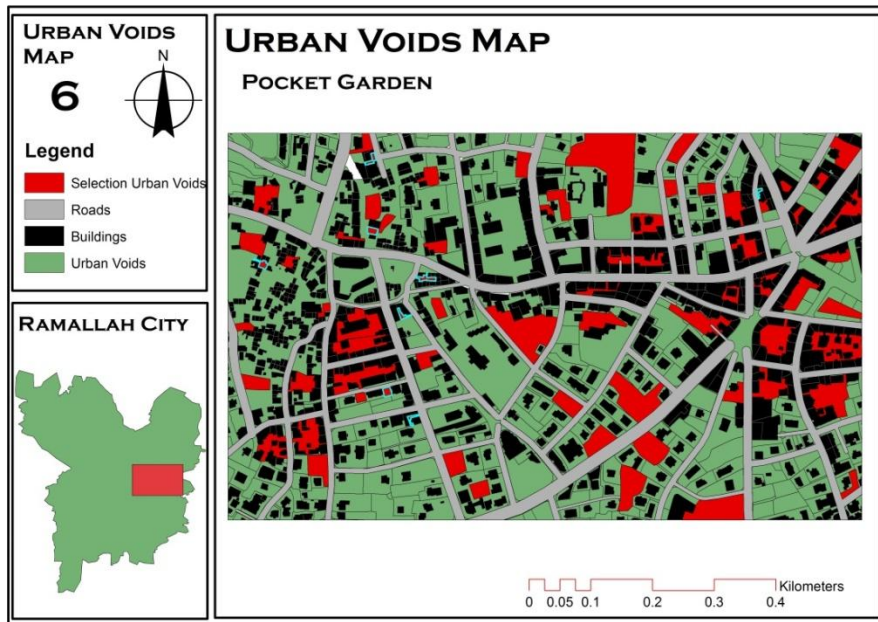
Source: done by the author



Map (5) Land marks in the study area. Source: done by the author

Pocket garden criteria and selection :

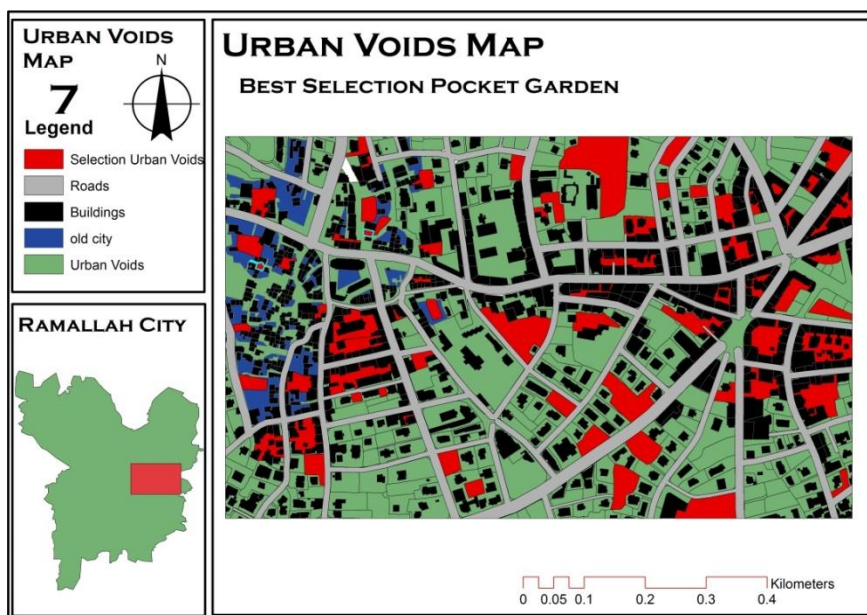
- 1) Area between 50-200 m² :



Map (6) Pocket garden, 50-200m².

Source: done by the author

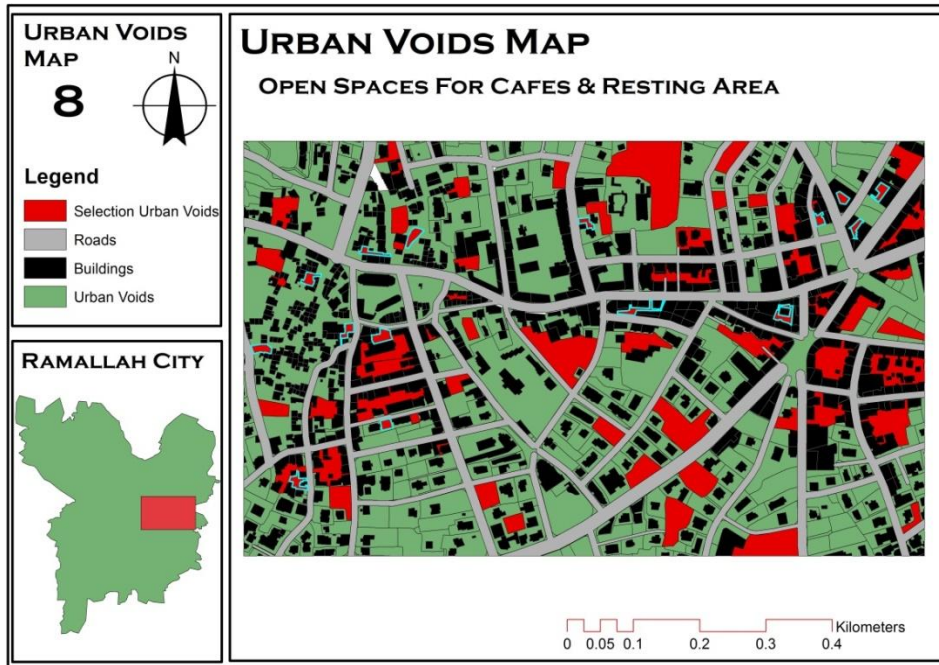
- 2) Area between 50-200m² and are in the Down town (old city):



Map (7) Pocket garden, 50-200m², and in the old town. Source: done by the author

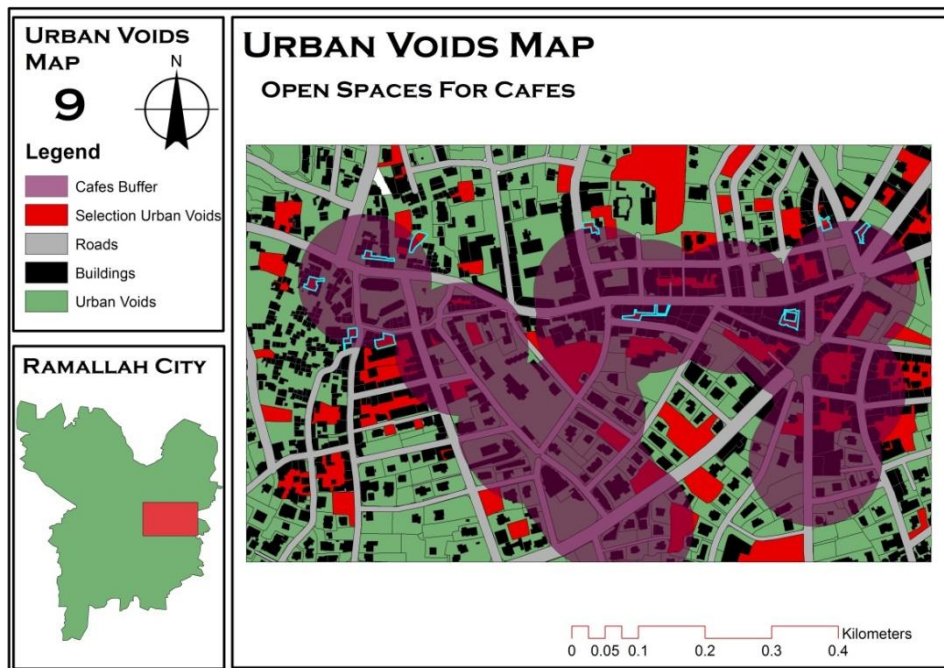
Open spaces or extension for cafes & resting area criteria and selection:

- 1) Area between 200-450 m²:



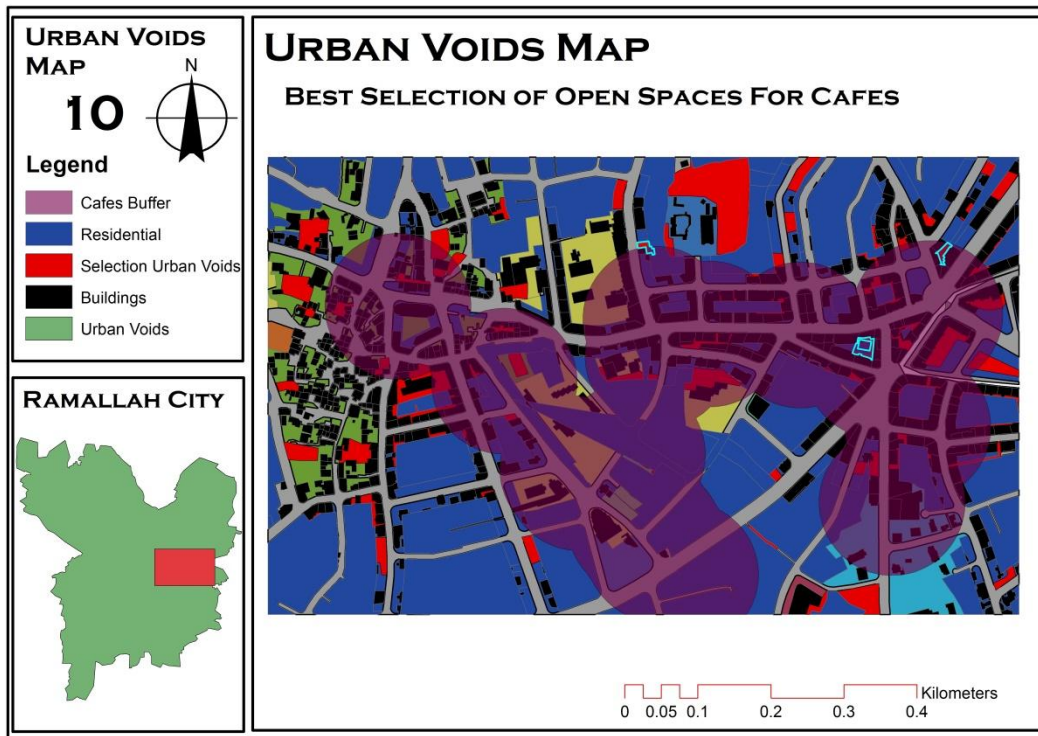
Map (8) open spaces for cafes 50-200m², Source: done by the author

- 2) To be in a range of 100m radial from the cafes in the study area:



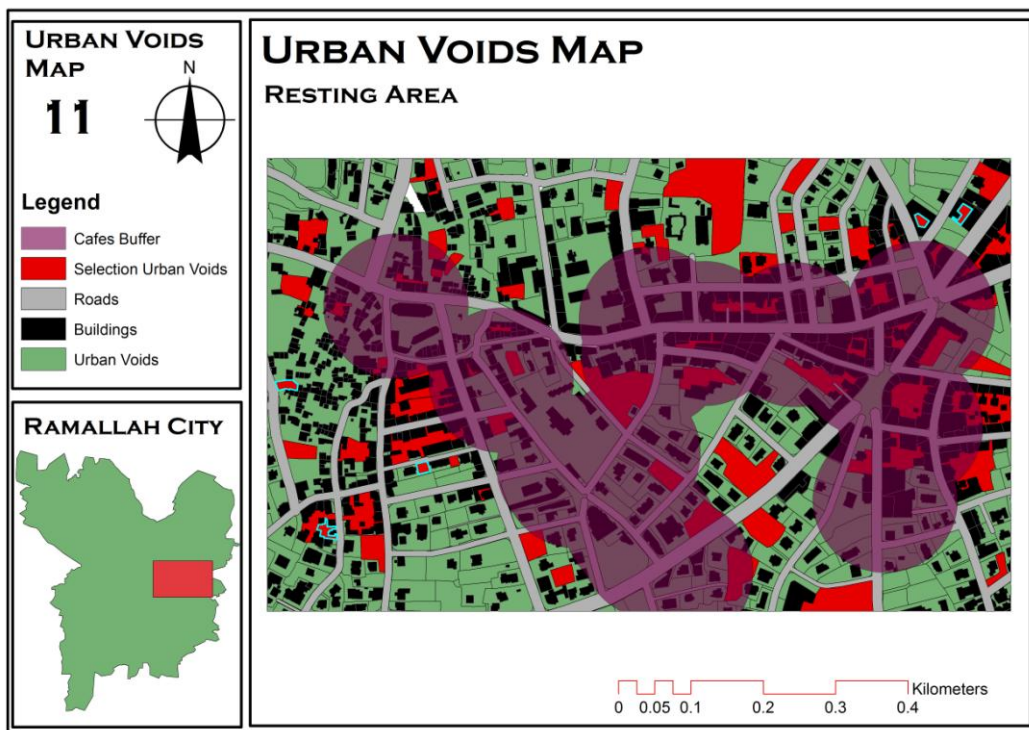
Map (9) open spaces for cafes in 100m buffer range, Source: done by the author

3) If the land use is residential then they are the best voids to become open spaces for cafes :



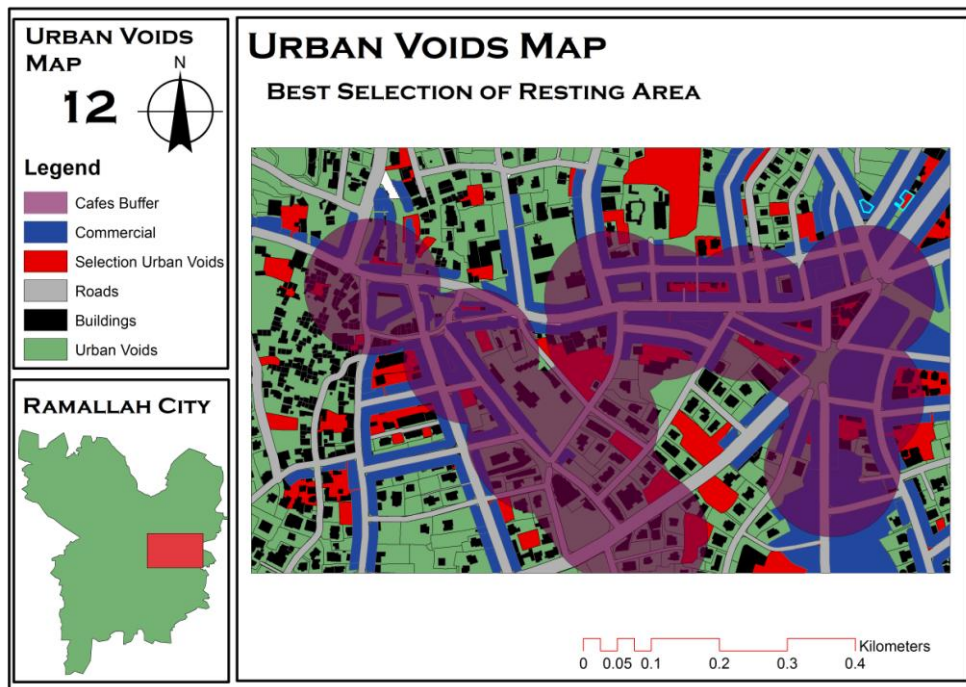
Map (10) best selection for cafes, Source: done by the author

4) If the voids are out of the 100m radial buffer café then they become resting area:



Map (11) resting area, Source: done by the author

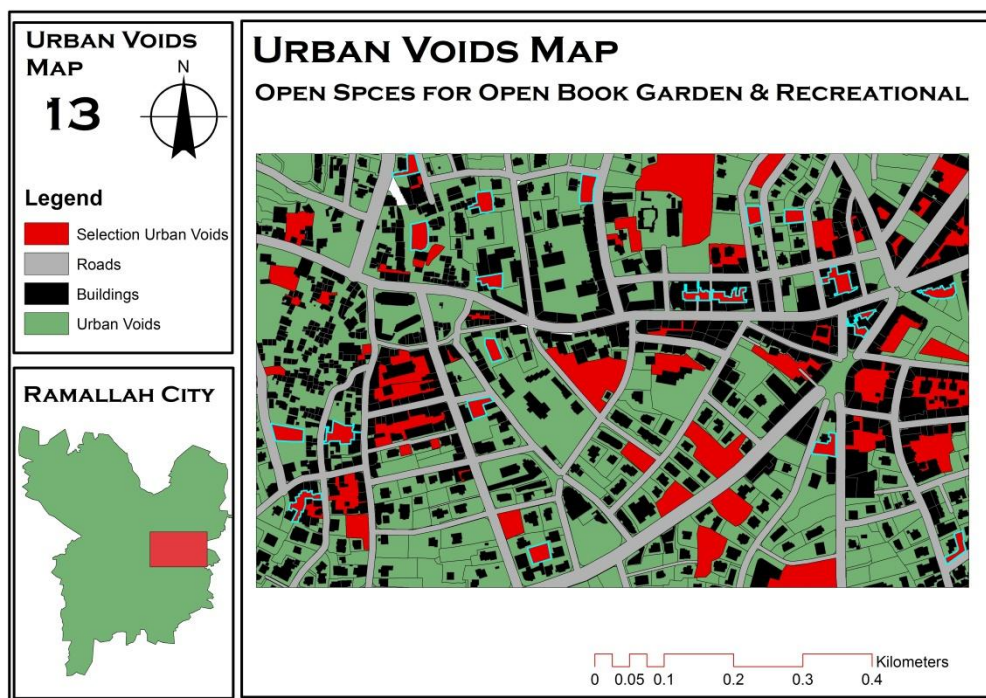
- 5) If the voids fulfilled the previous criteria and lay in commercial zones then it is the best voids to transform into resting area:



Map (12) best resting area location, Source: done by the author

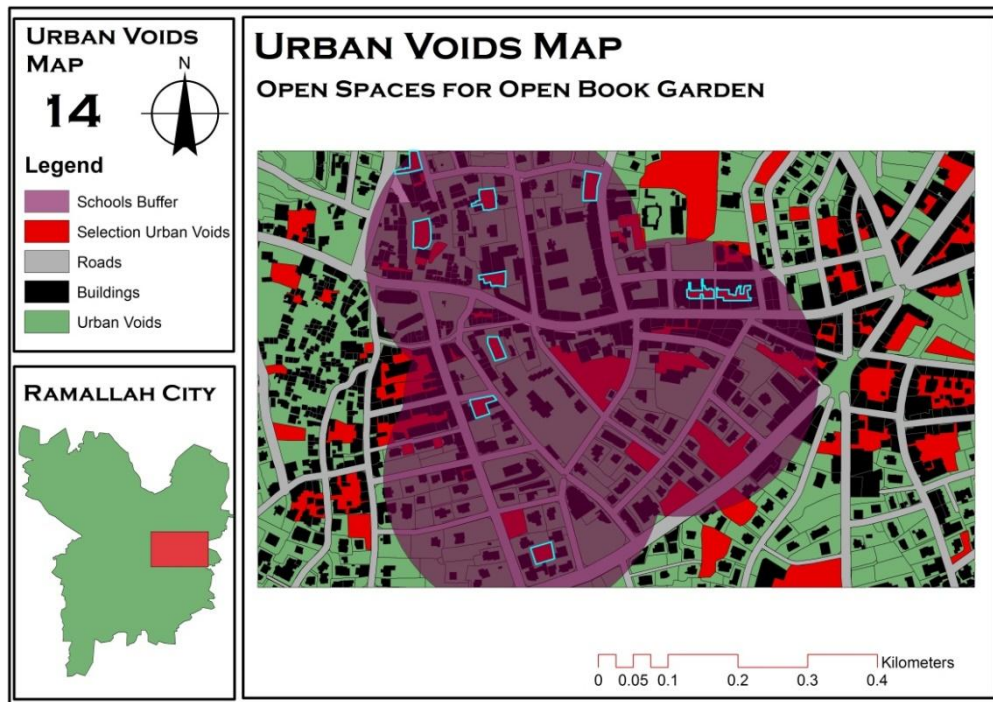
Open Spaces for Open Book Garden & Recreational criteria and selection:

- 1) Area between 450-1000 m²



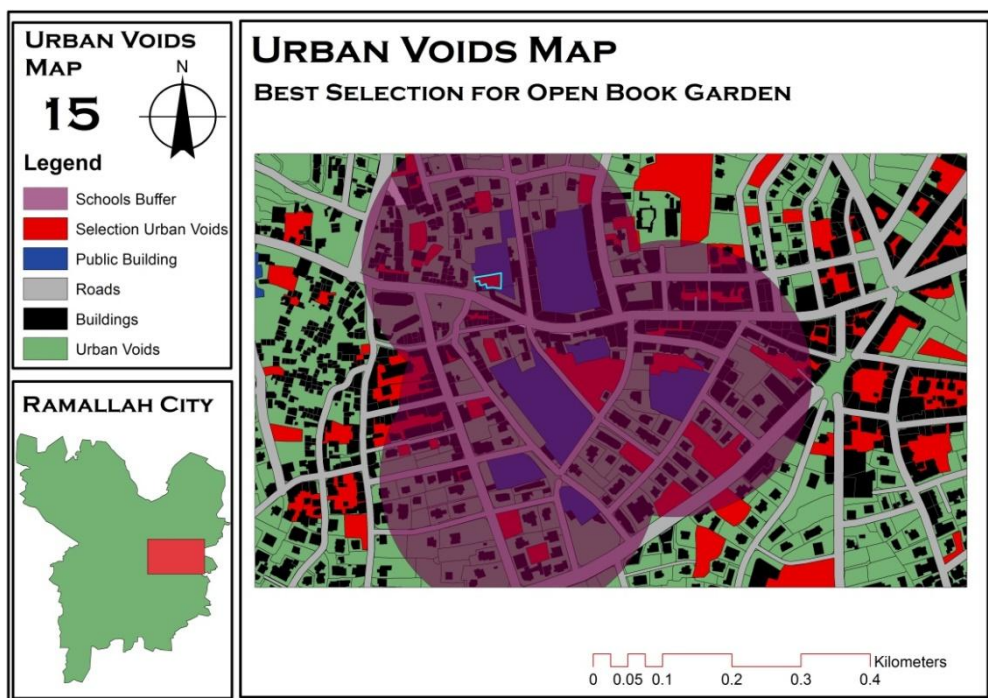
Map (13): voids area between 450-1000m², Source: done by the author

- 2) If the voids within a 200m radial buffer of schools then they will become open book garden



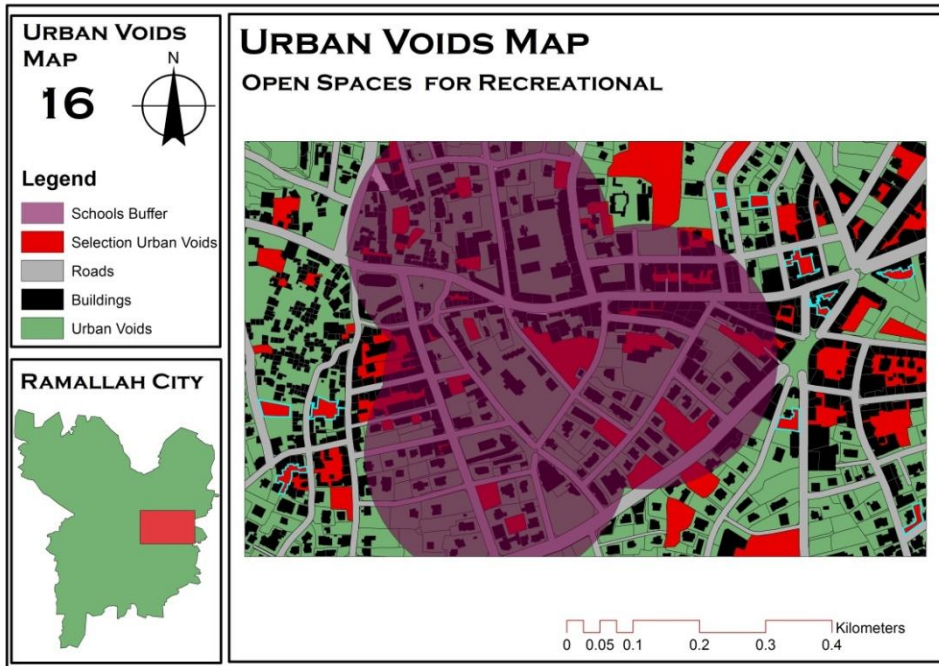
Map (14): voids within 200m school buffer, Source: done by the author

- 3) If the voids fulfilled the previous criteria and are within public building or facilities then they are the best to be transform into open book garden:



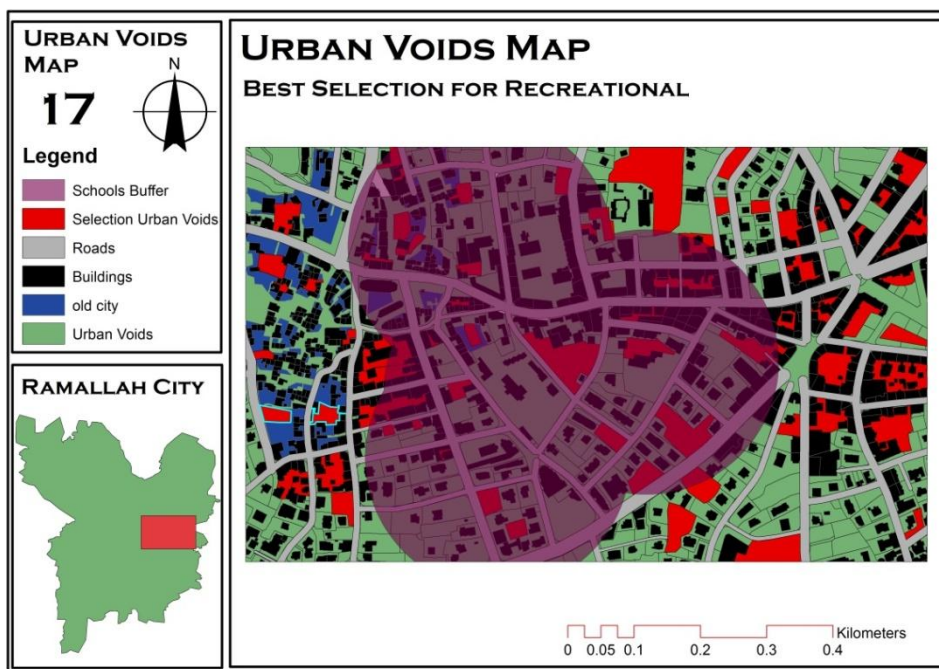
Map (15): best voids for book gardens, Source: done by the author

- 4) If the voids are out of the 200m radial buffer of schools then they will become recreational areas:



*Map (16): voids for recreational areas,
Source: done by the author*

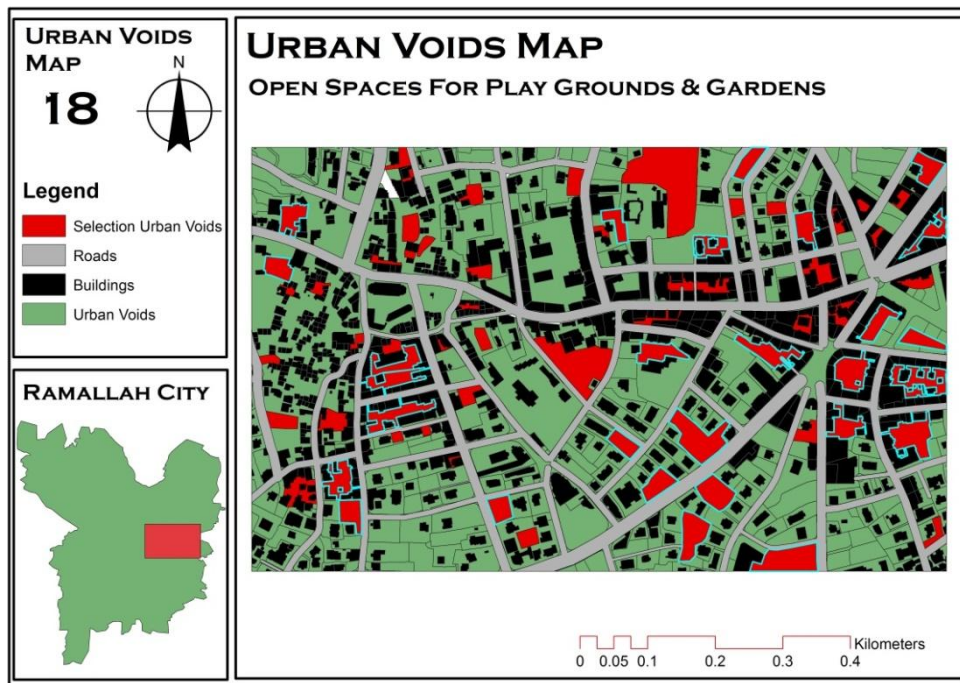
- 5) If the voids fulfilled the previous criteria in number (4) and lay in the old fabric then these are the best voids to become recreational areas:



Map (17): best voids for recreational areas, Source: done by the author

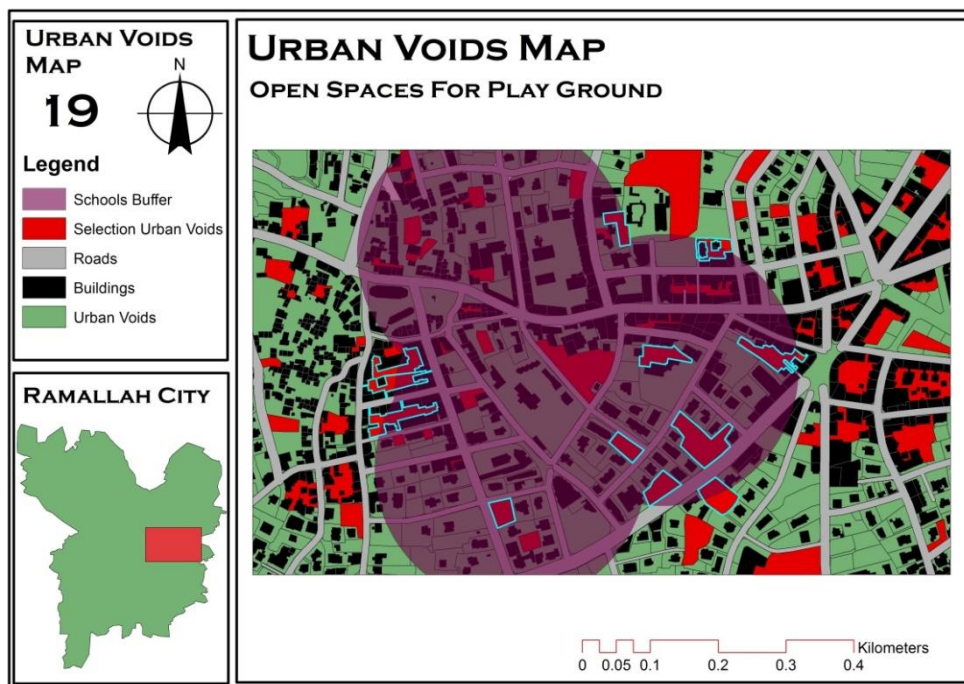
Open Spaces for Play Grounds & Gardens criteria and selection:

- 1) Area between 1000-4000 m²:



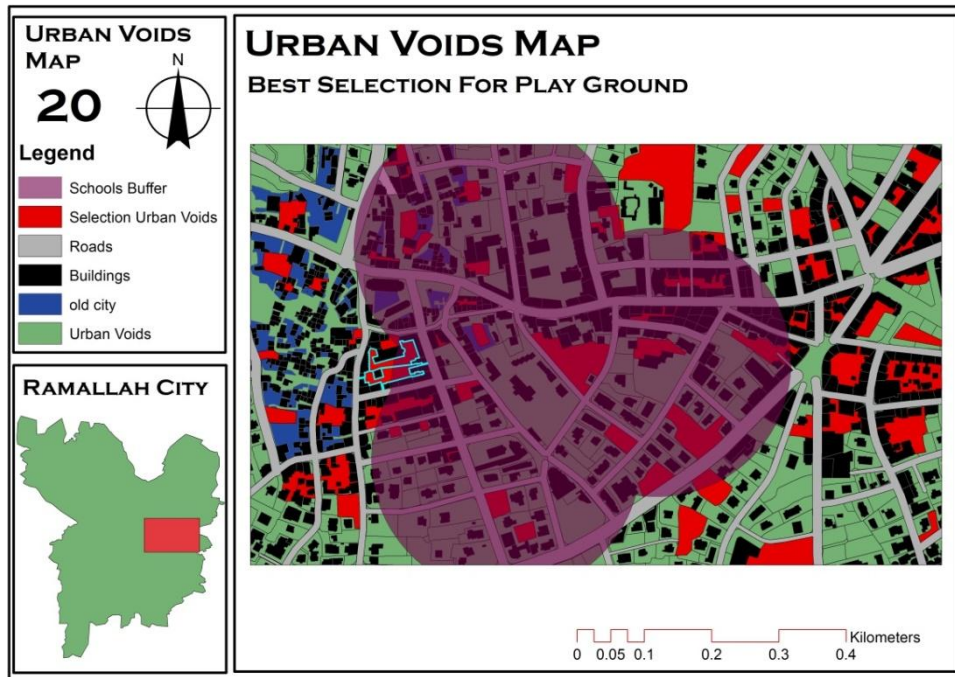
Map (18): voids area between 1000-4000m², Source: done by the author

- 2) If the urban voids are within a 200m school buffer zone, these voids will become playgrounds.



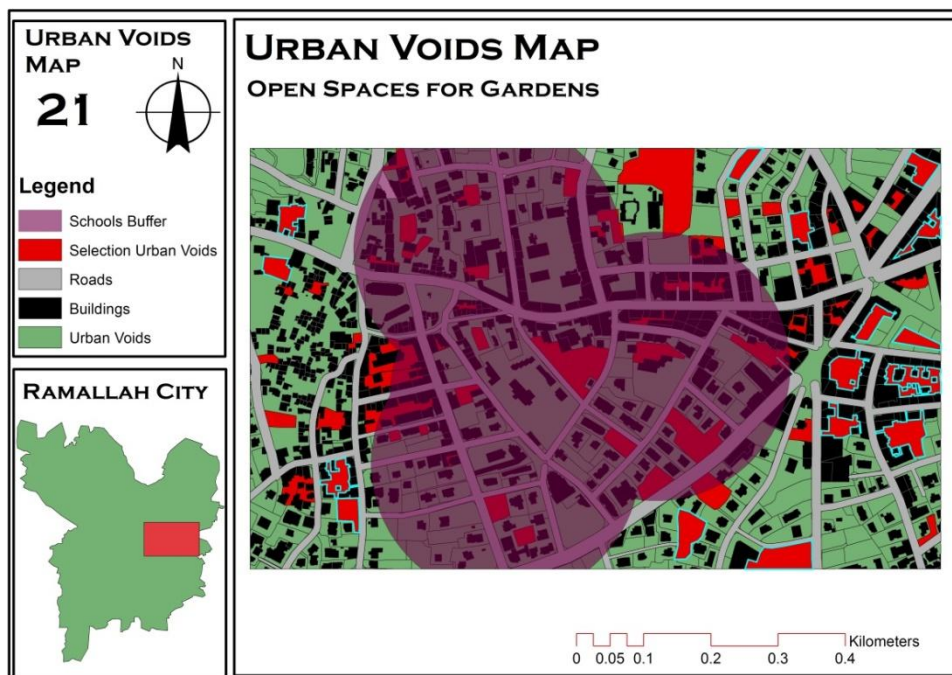
Map (19): voids within 200m² of school buffer zones, Source: done by the author

- 3) If the voids fulfilled the criteria in number (1) &(2) and lay in the old fabric then , these voids are the best choice to transform into playgrounds:



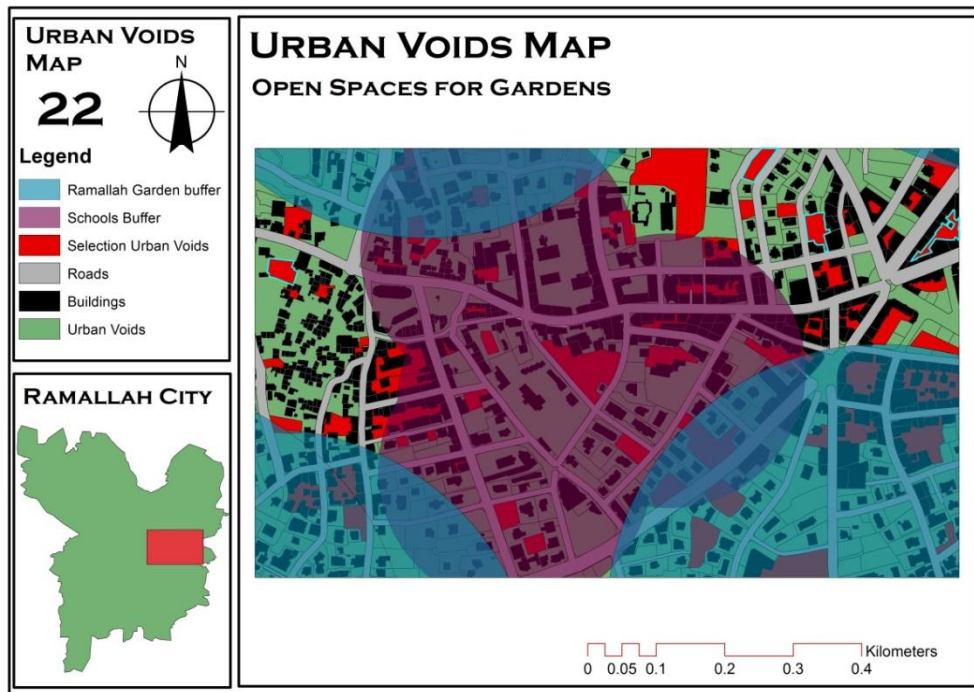
Map (20): Best voids for playgrounds, Source: done by the author

- 4) If the voids lay outside the 200m school buffer zone ,these voids will transform to gardens:



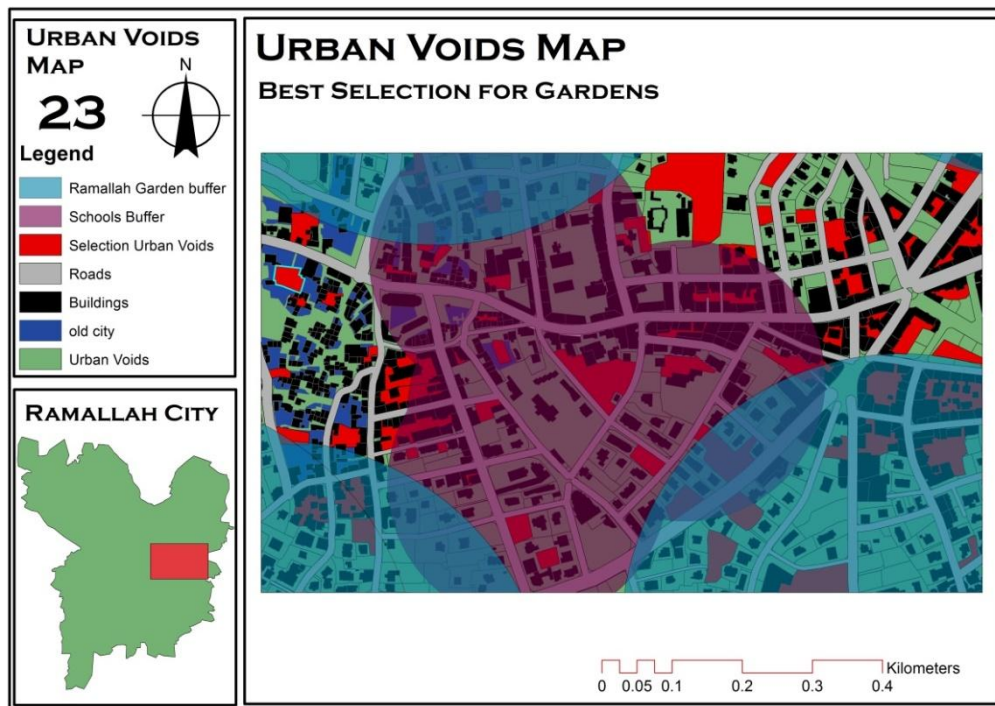
Map (21): voids for gardens, Source: done by the author

- 5) If the voids fulfilled the criteria in number (4).and are out of the exciting gardens buffer zone, these voids are the best to be transform into gardens:



Map (22): voids for gardens, Source: done by the author

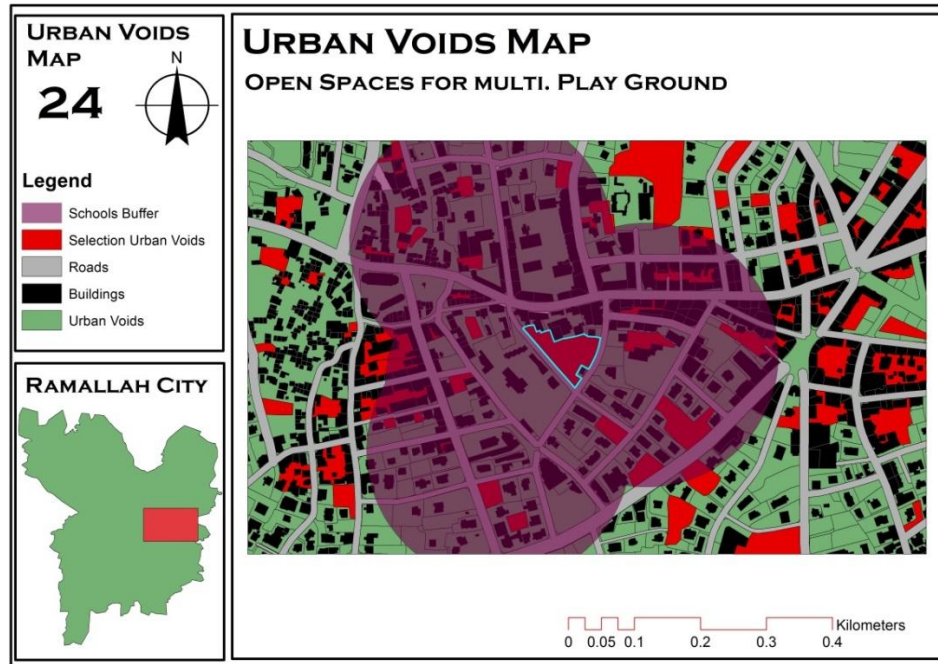
- 6) If the voids fulfilled the criteria in number (5)and lay in the old fabric , then these voids are the best to transform into gardens:



Map (23): best voids for gardens, Source: done by the author

Criteria and selection for multi play ground:

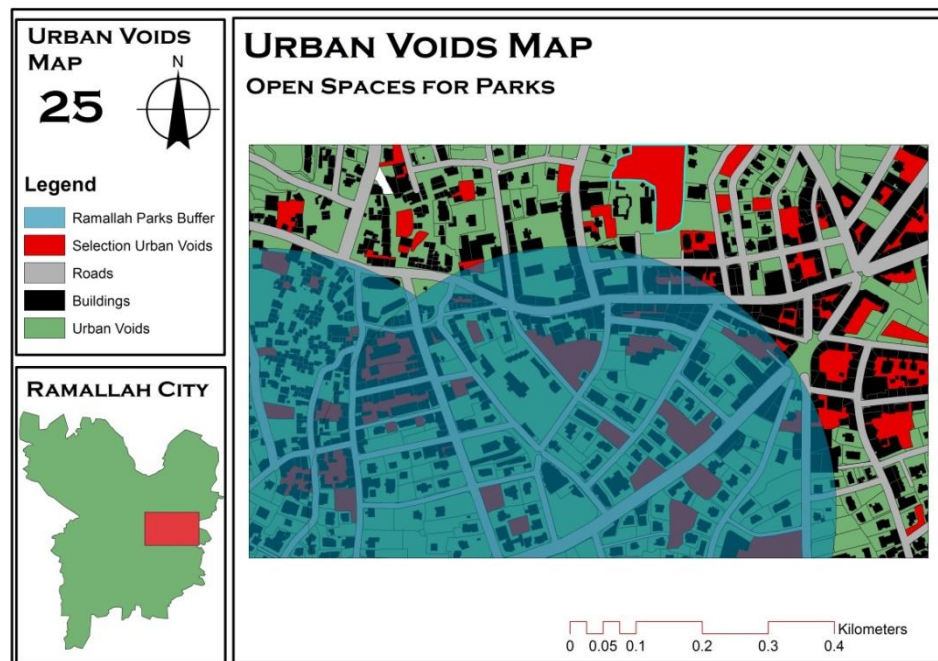
The area between 4000-8000m² and lay in school buffer:



Map (24): best voids for multi playgrounds, Source: done by the author

Criteria and selection for Park:

The area bigger than 8000m² and lay out of the buffer parks:



Map (25): best voids for parks, Source: done by the author

Conclusion and results:

As a result after making the previous selection following the proposed criteria we get the result as shown below:

urban voids are best to become pocket garden in our study site , three voids are the best for café extension, two for resting areas, one for open book garden ,two for recreational areas ,one play ground ,garden,multi- playground and finally one park.

The research shows the significant number of the urban voids in the city. These urban voids could easily be transformed into lively pinpoints that could contribute in the revival of deprived neighborhoods throughout the cityscape. This leads to the importance of constantly spotting these spaces in order to use them for the good of the community.

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