مجلة المخطط والتنمية

Journal of planner and development

P-ISSN: 1996-983X

E-ISSN: 2960-1908

Vol 28 Issue 3 2023/12/27

المؤشرات الفعالة للمدن الصحية في مواجهة الكوارث الطبيعية-الامراض والاوبئة

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المستخلص:

النمو الحضري المفرط والسريع الذي تشهده معظم المدن في العالم يمكن أن يكون سبباً في ظهور الأمراض والأوبئة، خاصة المشاكل المتعلقة بالسكان (مشاكل النقل، كثافات المدن)، بالإضافة الى عدم الاهتمام بالتخطيط والتصميم الخاص بتلك المدن ليراعي فيها المجال الصحي للمدينة والوصول للرفاهية الصحية للسكان، ولكل من هذه المشاكل كان له آثار سلبية على الصحة بشكل عام وعلى صحة الإنسان بشكل خاص من خلال انتشار الأمراض المختلفة بين سكان المدن وهذا يتقاطع مع مبادئ التنمية المستدامة وأبعادها. لذلك ظهرت العديد من المفاهيم التي تعمل كأداة لتحقيق التنمية المستدامة منها مفهوم صحة المدن والذي يعرف بأنه المدن التي تعمل على تحسين بيئتها وتنمية مواردها من خلال تحقيق الصحة كقضية حضرية يجب تحقيقها في المدينة وعلى كافة المستويات المختلفة، ومن هنا جاءت مشكلة البحث: عدم وضوح مؤشرات المدن الصحية المؤثرة في تحقيق البعد الصحي للسكان وبالتالي تحقيق التنمية المستدامة، وبناءً عليه حدد هدف البحث في دراسة مفهوم المدن الصحية وعلاقتها المكانية بأنتشار الأمراض والأوبئة، للوصول إلى المؤشرات الفعالة والنتائج التي تسهم في تقليل سرعة انتشار تلك الأمراض والأوبئة، حيث يفترض البحث أن: مبادئ وأسس مفهوم المدن الصحية يمكن أن يكون لها أثر ودور واضح في تقليل الأوبئة. ولغرض تحقيق هدف البحث، تم تناول مفهوم المدن الصحية ومفهوم الأوبئة ومدى تأثيرها في المدينة للوصول الى علاقات واضحة ونتائج يمكن تطبيقها على المدينة العراقية (مجمع قرية الغدير السكني الاستثماري في النجف الاشرف) حيث تمثلت أهم النتائج بالحركة والنقل والكثافة والتنوع ولكل من هذه المفاهيم آليات لتطبيقها.

الكلمات المفتاحية: المدينة الصحية، الأوبئة، فيروس كورونا.

P-ISSN: 1996-983X
E-ISSN: 2960-1908

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Journal of planner and development

Vol 28 Issue 3 2023/12/27

Effective indicators of healthy cities in facing natural disasters (epidemics and diseases)

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Abstract:

The excessive and rapid urban growth witnessed by most cities in the world can be a cause of diseases and epidemics, especially those problems related to population, which include problems of transportation and increase in density in the centers, in addition to the lack of interest in planning and designing those cities to take into account the health aspect of the city and obtain The health well-being of the population, and each of these problems has negative effects on health in general and on human health in particular through its prevalence. Therefore, many concepts that serve as a tool for achieving public health and the physical health of the population have emerged, including the concept of city health, which is defined as cities that improve their environment and develop their resources by achieving health as urban. And the issue that must be achieved in the city and at various levels, hence the research problem. The lack of clarity of the indicators of healthy cities affecting the achievement of the health dimension of the population, and accordingly the goal of the research was determined to study the concept of healthy cities and their spatial relationship to the spread of diseases and epidemics, in order to reach effective indicators and results that contribute to

P-ISSN: 1996-983X
E-ISSN: 2960-1908
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reducing the speed of the spread of these diseases and epidemics, as the research assumes that: Principles can That the foundations of the concept of healthy cities have a clear impact and role in reducing epidemics. In order to achieve the goal of the research, the concept of healthy cities and the concept of epidemics and their impact on the city were dealt with in order to reach clear relationships and results that can be applied to the Iraqi city (Al-Ghadeer Village Residential Complex in Al-Najaf Al-Ashraf), where the most important results were movement, transportation, density and diversity, and each of these concepts has mechanisms for its application .

introduction Existing cities still suffer from many social, economic, environmental and health problems as a result of excessive increases in growth and unplanned urban expansion, which led to pressure on basic services and thus access to a lack of services resulting from neglect of the health and environmental aspect of the population and the concerned authorities, which led to the emergence and spread of diseases in those areas. the cities. Many conferences and workshops have emerged that aim to gain knowledge in this field and discuss the interrelated relationships among them with the aim of raising the community's health awareness and implementing environmental and health projects. It also covers a wide range of characteristics and objectives related to some critical issues such as combating climate change, eliminating desertification and limiting the spread of diseases. In addition to devoting the idea of comprehensive, safe and healthy cities that achieve air quality and transportation as well, which are important determinants of people's health in cities.The researcher found number of studies and researches dealing with the concept of healthy cities and their relationship to environmental dimensions, including the study of (Hyam,

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E-ISSN: 2960-1908
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2016), which emphasized the integration between the health agenda and the achievement of sustainable urban development [1] while the study (Evelyne, 2017) dealt with theory, policy and practice. planning based on its objectives. Solving environmental problems, increasing green spaces, and achieving healthy and livable cities [2], and a study (Marcus, 2018) focused on places to support healthy lifestyles and reduce health disparities in the city while increasing the number of the world's population who chose the urban environment as their preferred home [3] The study (Ali, 2020) also dealt with a set of theories, practices, and literature on urban resilience, which means a set of reflections, preparations, and responses that deal with the concept of urban resilience and its impact on the city in the event of an outbreak of diseases or pollutants [4].

Research Methodology

The researcher relied on the method of office work and field visits to obtain data and information from various sources: academic researches, university theses, websites, and government departments, and using the descriptive analytical approach in building the theoretical framework and its relationship to the practical side, as between the concept of healthy cities and the concept of epidemics and the extent of the relationship Between them to reach the common aspects of effective indicators of healthy cities that reduce the risks of crises and natural disasters (diseases and epidemics), which at the same time represent the final results of the research.

Healthy city concept

The concept of a healthy city refers to the city's ability to continuously improve its physical and social environment, enabling residents to collectively support among

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E-ISSN: 2960-1908

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themselves and thus obtain all life functions entrusted to them to achieve development within their potential and optimal use of its resources. Residents are also obligated to access better physical and social environments, and any city can begin the process of transforming into a healthy city if it adheres to the minimum conditions, controls or principles that promote development and maintenance in physical and social environments that support raising the health and living standard (improving the quality of life of the population). [2,5]

The healthy city is a process that must remain continuous and not a result that is reached through the implementation of some activities for a specific period of time and then stops. Where this concept is reflected in the form of community activities that move between parts of the city so that the segments of society and its institutions interact with them in order to educate its members about environmental and health issues, therefore it can be said that the healthy city is a project that aims to reach the best physical, economic and social environments through efficient urban planning resulting of the necessary needs of the population, and the provision of societal resources that lead to support each other to perform all their functions and develop their capabilities to the maximum extent possible. [6]

Healthy City Objectives

The objectives of the healthy city are as follows:

1) Improving health and quality of life in urban areas through efforts to achieve urban development, especially for the low-income group, through the provision of key services.

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2) Achieving community participation in decisions through developing a comprehensive plan for the development of health and environmental conditions in the city.
3) Increasing the population's awareness of public health issues.
4) Using advanced technical methods in managing and addressing urban problems.
5) Forcing the population to educate and eradicate illiteracy and respond to emergency preparedness through a community information center.
6) Skills development and capacity building. [5]

The advantages of a healthy city

The following is a comprehensive set of features that create a healthy city [5]:

1. Enjoying a high degree of community participation in important decisions that affect the lives of the population, meaning that it is a strong, clean, safe and supportive society.
2. A diversified, vibrant and innovative urban economy with a high level of health in the city, in addition to the availability of basic needs.
3. Encourage interdependence with the cultural past and biological heritage of the city's residents and with other groups, and achieve the standards set by the competent authorities.
4. Supporting and strengthening the capacity of the governorates in dealing with health problems using the method of participation and cooperation among all members of society, and urging the competent authorities to develop an integrated strategy in which all sectors participate and work to achieve it.

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The concept of epidemics

An epidemic is defined as the emergence of cases of infectious diseases rapidly among the population in a specific geographical area and within a specific time range (a group of small and contiguous areas) and exceeds its usual rates as it results from a specific cause that does While a pandemic is defined as the emergence of cases of infectious diseases in more than one country in the world, which is difficult to control, threatens people's health and requires rapid medical measures and urgent plans to save people. [7]

The repercussions of the Corona virus on cities

The coronavirus pandemic has hit the city so badly that stay-at-home orders and other restrictions have turned it into a ghost town. Although these "non-drug interventions" limited the spread of the disease, they also brought a deep depression in it. However, not all cities suffered to the same extent. The spread of the virus in China was met with what was described as the largest medical alert in history at the level of one country. This also included unprecedented measures, including placing all urban residents under strict measures of isolation and prohibiting movement and transportation by stopping all public and private transportation in urban areas (external and internal) and by all land and air means. And special areas of tourist attractions to reduce the transmission of the virus. This led to success in limiting the worst manifestations of the epidemic and preventing it from spreading widely in larger and more central gatherings, especially in the most densely populated cities in the world. [8]

That is, the Corona virus has a set of social repercussions related to the population (increase in mental disorders, poor social interaction, difficulty in accessing and poor performance of services, in addition to the impact on human capital), and economic (high living prices, high rates of unemployment and poverty, closing of

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marketing centers), Tourism, cultural and environmental (travel and trade stopped, in addition to the cessation of social customs and traditions, increased energy consumption and internal housing insecurity), in addition to the urban aspect of the city, which is important in our research, as the repercussions of the virus were clear through placing restrictions on the use of spaces, and the lack of justice in the distribution of basic services And safety requirements, preventing movement in all its forms, which led to the streets losing their vitality, moving towards large areas located on the outskirts, choosing horizontal housing and redesigning it, increasing injuries in crowded areas). [14]

Al Effective indicators to reduce the risk of epidemics in the city

TABLE 1 - Shows the extracted indicators

Main axis	Main indicator	Secondary indicators	Investigation mechanism
Movement and transportation	Multiple means of transportation	Public transport	The existence of an efficient and high-quality transportation network distributed over stations and linked to specific timetables, and its number was increased during the spread period to reduce the number of passengers and thus limit the spread of the epidemic.
		Bikes	The presence of bike paths planned and designed effectively.
		Pedestrians	Designing paths with healthy standards that encourage them to

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			walk as well as continuity without obstacles (trees, furniture, shadows).
	Easy access	Easy access	The distance between basic services and housing and his ability to obtain them.
		Access to paved roads	Reducing the costs of obtaining services through the proximity of services to the dwelling and the availability of their primary sources.
		Access to the center of the complex	Access to services as soon as possible.
density axis	Services career progression	Non-concentration of services and their gradual distribution in the study area.	
	Population and housing density	Determining the net density of the complex and the dwelling at 65%, while the public and private spaces in the complex increase to reduce the total density.	
	Building density	The building density in the study area is low compared to the building percentage and the area of the housing unit.	
AL-Diversity	Mixed use	Existence of diversity in daily basic services (percentage of residential, commercial, entertainment,	

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		light industries, and public service institutions out of the total uses in the city).
	Diversity of housing style	Existence of residential areas 150 m, 200 m and 300 m, specifying the area of the internal garden of the dwelling, balconies, skylights, and the exploitation of other spaces.
	Diversity of secretion	The presence of horizontal and vertical housing.

Source: Researcher's work

study area

The city of Najaf is located on the edge of the western plateau, at a distance of (160 km) southwest of the capital, Baghdad, it is located at longitude (43.00ºE-44.4ºE) and at latitude (32.20ºN-30.00ºN). It is bordered to the north and northeast by the city of Karbala, which is about (80 km), as for the south and west, it is bordered by the Bahr al-Najaf depression, and from the east it is bordered by the city of Kufa, as shown in Figure No (1). [12,13]

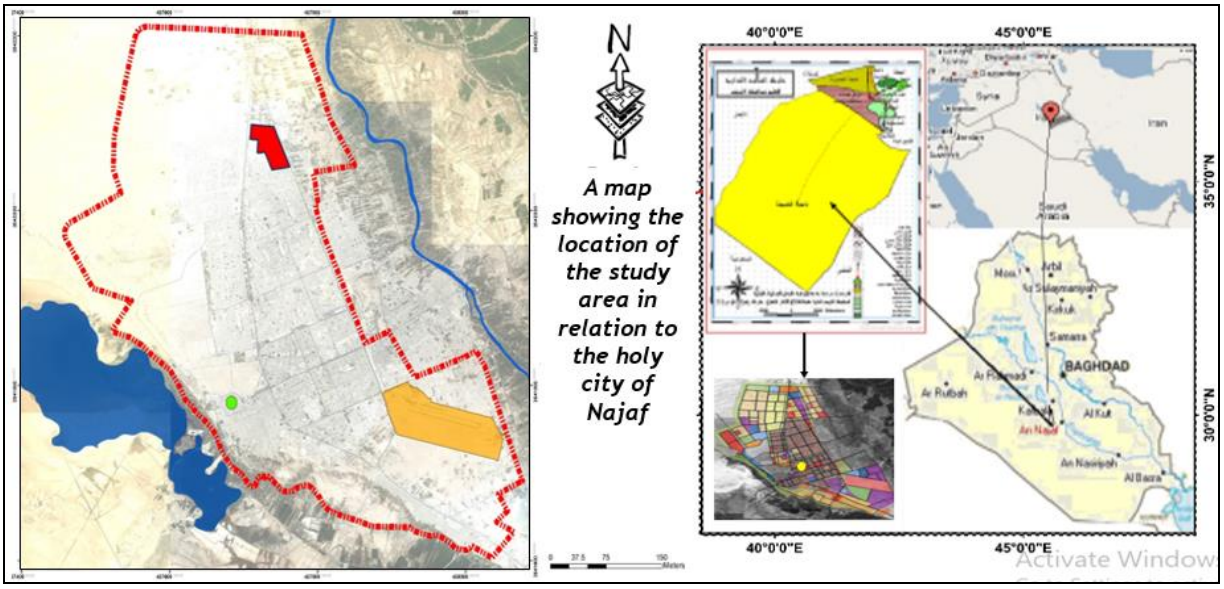

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FIGURE 1. Najaf city location. [12]

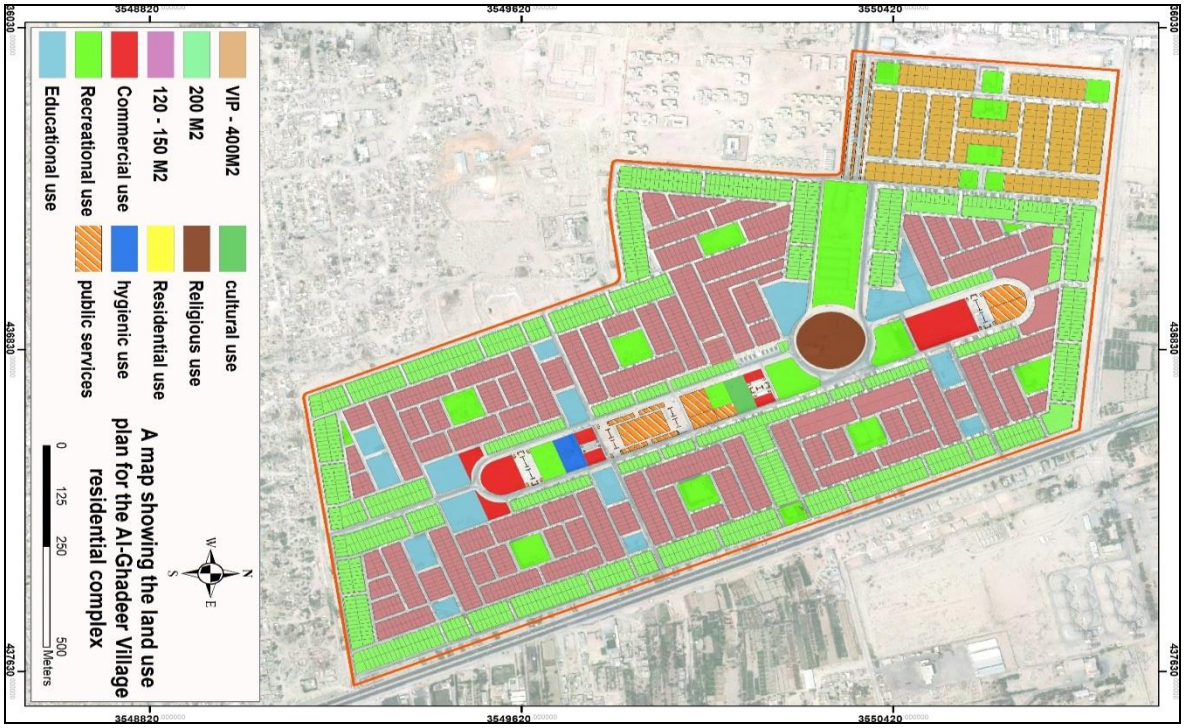

FIGURE 2. a map showing the plan of land uses. [15]

Axis of movement and transportation

1- Multiple means of transportation [13]:

a) Public transport:- The transportation line, called the Mujamma'at line, passes from the internal garage, which is located near the old city of Najaf, to the point of arrival, without going through the study area and its center, but rather it is in the vicinity of the area.

b) Bikes:- Specialized paths for cycling are allocated in the designs of the healthy city, where the width is (2m), which is non-existent in the design of the Al-Ghadeer Village Residential Complex, as the space is not taken care of, and dedicated paths are not allocated for that.

c) Pedestrians:- The healthy city emphasizes the concept of pedestrians and allocates specific paths for them, as it did not allocate special paths for pedestrians and isolated from the roads of cars in the study area, there are

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paths with a width of (1.5 m) called sidewalks and they extend parallel to the roads.

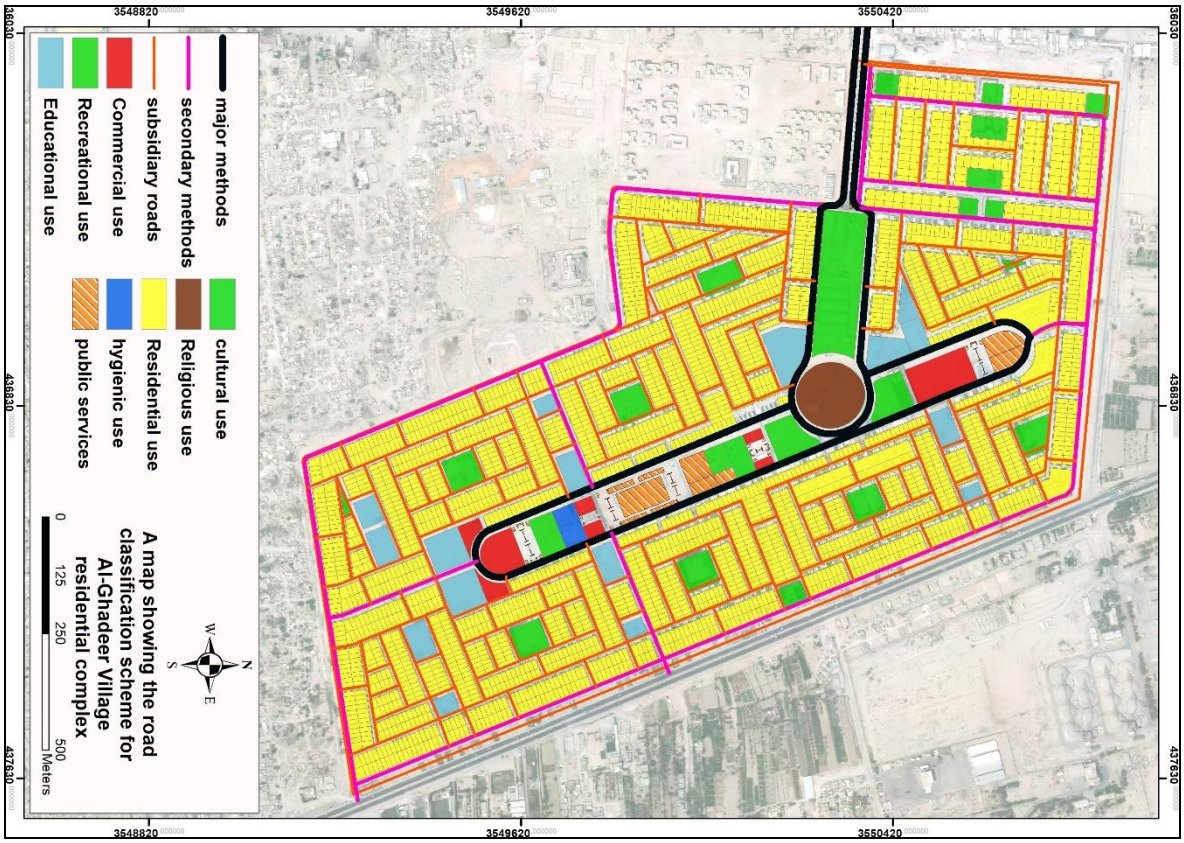

FIGURE 3. A map showing the scheme of transportation routes. [15**]**

2- Easy access[13]:

a) Easy access:- The percentage of the number of dwellings connected to the paved street network is (100%), which is one of the good health and urban indicators in the study area.

b) Access to paved roads:- Access to the center, which contains basic and necessary facilities and services for the population, such as shopping, health and some public services, with a walking distance of (400 meters), which can be covered within 5 minutes, which is confirmed by the standards of the healthy city. Some peripheral areas were found in the study area not served from this side.

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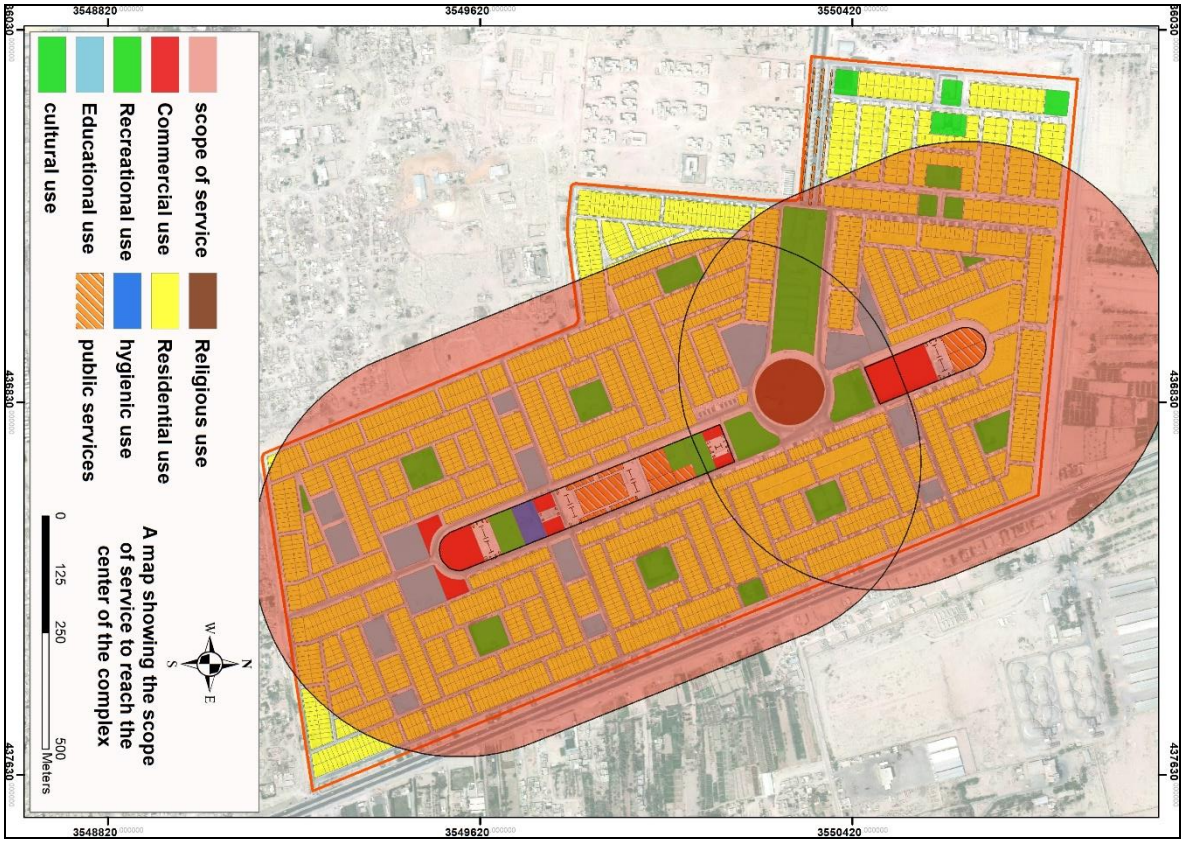

FIGURE 2. A map showing the scope of service for the service center of the complex. [15]

c) Access to the center of the complex:- It was achieved through easy access to the central religious, commercial and administrative center of the city.

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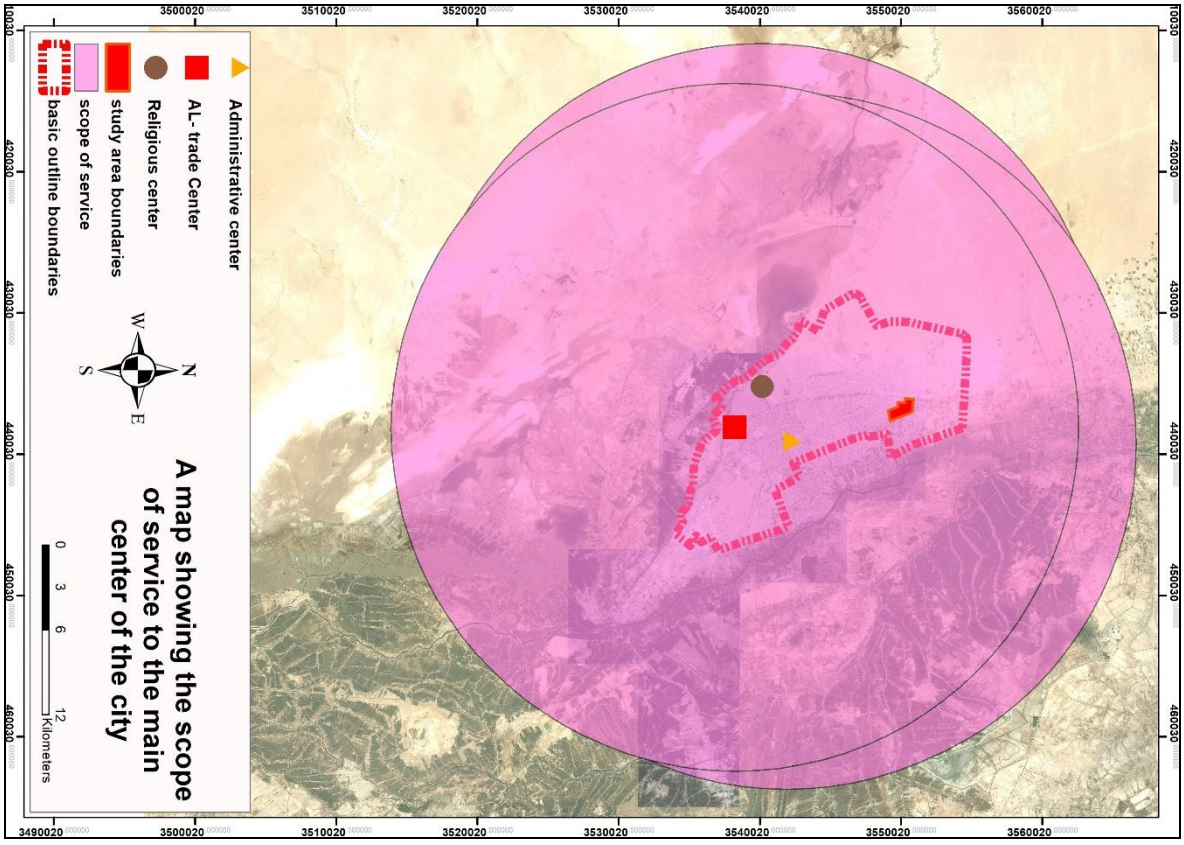

FIGURE 2. A map showing the scope of service for the main city centre. [15]

density axis [13]

1- Services career progression: The planning and design of Al-Ghadeer Village residential complex depends on centralization in the provision of main services, as the main center of the strip-shaped complex represents all health, commercial, recreational, cultural and religious services, in addition to the public services represented by the fire station, the municipal center, water and electricity, which contradicts the principle of a healthy city.

2- Population and housing density: It was not achieved because it did not meet the following criteria:

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TABLE 2 - Density standard to be applied in the city.		
Net Density	Residential	(40-50) U/H
	Population	(120-200) P/H
Total Density	(30-40) U/H	

3- Building density: The building density in the study area is high when compared to the standard specified in the healthy city, which exceeded 73%, while it was specified in the standard as a maximum of 65%.

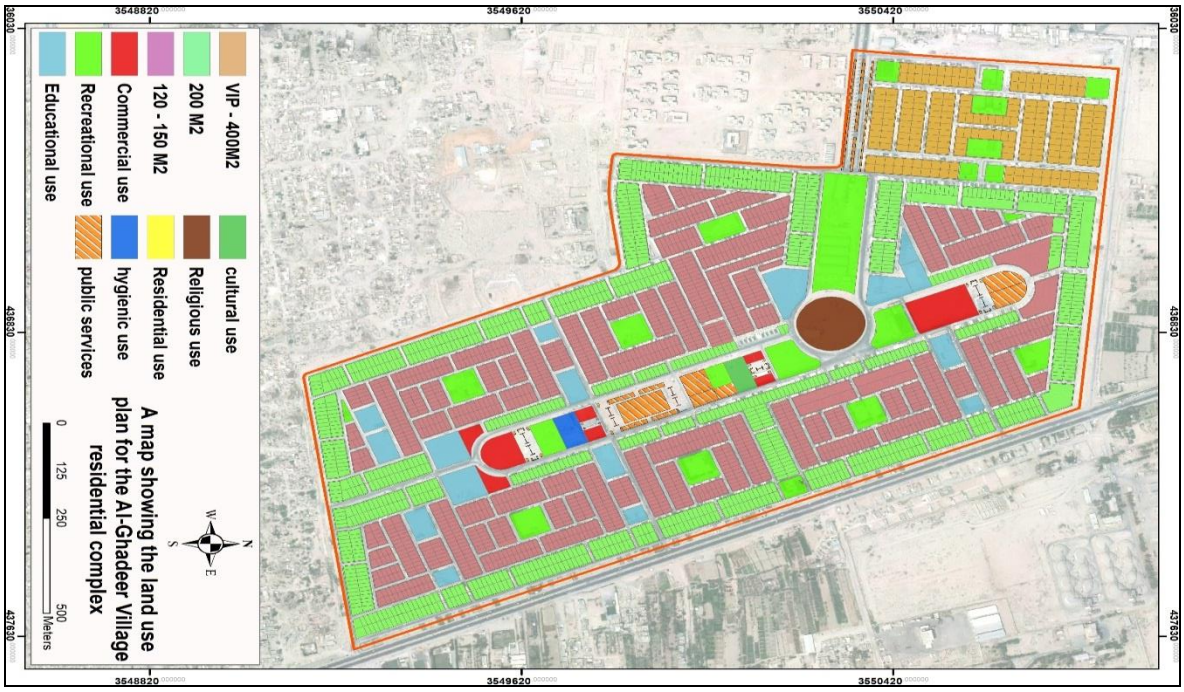

FIGURE 2. A map showing the built-up density of the study area. [15**]**

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AL-Diversity [13]

1- Mixed use: This indicator is important because it can show the dominance of areas and patterns for a particular use at the expense of other uses.

2- Diversity of housing style: The field study of the researcher in the Al-Ghadeer Village residential complex showed the dominance of the horizontal housing pattern completely at a rate of (100%) in all units, and connected in the form of a long chain, as the total number of horizontal housing units is (3200) housing units.

3- Diversity of secretion: The study area includes a diverse number of residential excretions and is divided into four types of housing units, the first three types implemented by the prefabricated method, and the (VIP) category implemented by the normal way.

CONCLUSION

1. It is assumed that the results of applying the foundations and principles of the concept of healthy cities will be beneficial to all.
2. Achieving the principles of a healthy city leads to progress in the sustainable development of any city.
3. Achieving the standards of any city would reduce the social, health and economic problems that the residents suffer from.

recommendation

1. Drawing lessons from the heritage architectural and engineering designs in the region and integrating them into the future modern designs of cities.
2. Developing and improving local production and using materials from the local market to support long-term investments (providing sustainable products that contribute to reducing the energy used by the product).

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3. Ensuring the application of rational design characteristics in building design to lay sustainable foundations for the performance of these buildings before seeking energy conservation using modern technologies.
4. Attention and focus on pedestrians and providing their needs and comfort.
5. The use of renewable energy to obtain lighting, which enhances the principle of sustainability and other.
6. Encourage contractors to apply basic standards as well as waste recycling at sites as well as reduce the packaging of purchased materials in a step aimed at reducing the total amount of waste in line with the principle of preserving the environment.
7. Emphasizing the application of standards and stressing them.

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