Investigating the process of Physical Development in City Urmia

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ABSTRACT

The city of Urmia has been faced with heavy damages due to the new developments of recent century, vehicle entrance into the city and construction of wide streets in old city center; including the loss of market integrity, destroying the connection between old neighborhoods and other existed elements. In early years of 1300AH Urmia city like other cities in Iran, was divided into different parts because of building broad streets which completely transformed the historic city. Before that, gates were connected to markets and city’s Grand Mosque through passages. Constructing these roads and inappropriate widening of passages, destroyed values of urban texture and caused irrecoverable damages. In continual ring of old dense texture and behind the city’s old fence, a dense but new texture exists which its communication network has broad roads and passing. In the next ring, a new texture can be seen outside the mentioned dense texture which its direct streets indicates the neighborhood’s character and a hierarchical network. There are straight and perpendicular streets with different widths without specified patterns and comprehensive and codified programs in recent decade which include the city’s construction after 1979. After evolutions caused by building streets, with the popularity of commercial centers in both sides of new streets, parts of inhabitant’s social and economic life have been transferred into streets. Therefore, the city’s physical construction is based on service-commercial axis. This axis is as same as the central axis of the pear shaped core which the administrative center is located in south and commercial center is in the middle of it.

Key words: old texture-new texture-middle texture-margin part-building density- communication network.

INTRODUCTION

With rapid development of cities in recent years, straight and crossing streets have been expanded along city’s central core. The proposed physical organization of city developments wasn’t based on the master plan but is still related to the city’s central core (despite many problems). Before the changes related to the last one hundred years, physical elements of the city’s shape were included the following elements [2]:
1- Walls and Gullies around the city and its eight gates
2- Market collections and the caravanserai and other services
3- The Grand Mosque which has been located inside the market
4- State and military buildings
5- Residential neighborhoods

Type of using the city’s land:

By the full use of bare lands inside the city and lands with low functionality around the city and relative increase of impure residential density which is to increase the efficiency of the city lands, the total area of the city is about 5587 hectares. The level of per capita of population decreases from 119.45m² to 109m². City areas can be allocated to 38.2% for housing, 21.2% for services and 20.5% for passages network. Therefore, 80% of the city land goes under the use of housing, services and passage which in comparing with present condition, is about 20% increased. With allocating new levels for service establishment, the per capita of citizen’s productivity has increased from 10.4 to 23.10 square meters and with appropriate distribution of population, per capita
of housing from 42.50 to 43.41 sq.m and passages from 23.24 to 22.25sq.m almost remains constant. Proportion of land use distribution in useful urban levels (housing, services and passages), indicates reduction in the proportion of residential land and enhancement of services and communication in the whole city. In current situation, the suitability of three applications above is 55.6% for housing and 42.4% for services and communication which changes to 48% for residential and 52% for services and communication at the end of the plan period. Despite the reduction in the level of whole urban per capita, per capita of productivity increased from benefit levels of 75.69 in present situation to 87.09sq.m in the suggested situation. Applying construction density and high population (beyond the norm) is avoided in accordance with the current culture during the planning for Urmia city. The face of Urmia city in the period of urban continuous development will be low-height, bungalow with extensive gardens and farms which in association with rangelands on the shore of the lake with new urban face and full use of prospect and visual variation height creates a special body in the Urmia city. New part of the lake’s edge with an area of 300 hectares and assuming an average density extend, will have a capacity of 375,000 people. The built city in the area is including the bare land, gardens, river and levels haven’t made which is totally over 3665 hectares. Level of urban per capita is 119 m and with eliminating the levels haven’t made and garrison it decrease to101 m. The total city level is dedicated to 35.2% for housing, 7.8% for services and 19.5% for passages network. Totally, 62.5% of urban lands are under the cover of essential levels, housing, services and passages and the rest of it belongs to levels haven’t made, garrison, gardens and etc. The per capita of three above applications is respectively 42.05, 9.31, 23.24 square meters [3]. The following diagram illustrates utilization ratio of land in Urmia city.

Available construction materials:
During years of 1966-1996 in Urmia city, building made of brick, iron or clay and iron or stone and iron or concrete and metal skeleton, gradually allocated the dominant contribution to itself. Therefore in 1996, 66% of units which were built after 1966 in Urmia were made from the mentioned materials (Safamanesh et al, 1999).

Check the status of public services in Urmia city:

Electricity:
About how to supply electricity in Urmia city it should be noted that the required energy of the city and its suburbs are provided form posts 230.20, 132.20kV Urmia, Anhar, Rashkan, ghushchi, Sayyar Arashlo, Sayyar Balanej, post No.4 by 47 output fiber. In 2002, over 545 villages out of 609 villages in Urmia city with 51,716 rural households have enjoyed electricity services which the amount of consumed electricity was over 89 thousand MWH. According to statistics taken from the province yearbook in 2008, 603 villages of 609 villages in Urmia city have enjoyed the gift of electricity.

Water and municipal wastewater:
In terms of population access to drinking water in urban, during periods 2006-2007 the population has raised from 1.68 million to 1.7 million which shows increase about 1.2% and about 12.7% from the splits of urban water. Coefficient of variation of the volume of water storage tanks has increased about 10.5% during the mentioned period.

Parking lot:
In general, there are 10 public parking for heavy vehicles in Urmia city which their distribution procedure and capacity are as follows:
Three parking lots with capacities between 50 and 100 device in Shuhada Street, three parking lots with capacities of 15, 20 and 550 device at the Salmas road and four parking lots with capacities of 5, 15 and 20 device located on the ring road [4].

Population possibilities and capacity of population acceptance:
The city’s population acceptance:
The maximum population of Urmia is about 516 thousand people during 1996-2006 which based on the limitations of continuous development levels, some parts of this population are residing in the discontinuous range of the city. In current situation, in terms of existing, vast areas of gardens, bare lands, garrison and a river in the city level, the impure density is 84 persons per hectare. Whereas by separating garden neighborhoods from city’s compact texture, impure density of compact texture will be about158 persons per hectare. This density against impure density of garden districts is 23
persons per hectare that covers slightly more than 50% of the city lands that indicates conditional distribution of more than 86% of population in 46% of lands and the remaining 14% includes the residents that are deployed in 54% of lands in the garden districts. Moderating the above ratio is one of the essentials for harmonious development.

Therefore, the proposed population of this plan is 516,816 people that are residing in 214,120,767 m² of an area and based on this, the impure density are respectively equal to 93 and 241 persons per hectare.

Based on assumptions and objectives of urban physical development program, maintain gardens and fields inside the city are plan principles. The economic importance of this action is in preserving agricultural lands with high functionality inside the city and preserving the landscape and the city’s clean air as an effective tourist attraction and the physical characteristics of Urmia. Thus, the purpose of distributing the population is to convert the density into the city level and providing the residents productivity from urban services with the minimum cost of construction. Thus, with the use of bare lands and maintaining the city’s residential framework, numerous densities in crowded downtown areas, average impure density of 150-100 person per hectares in garden districts with specific density and low (5,000 persons and 100-50 person per hectares) and based on facilities, high density in some parts of the city (200-150 person per hectares) were applied [6].

By applying number densities (Reduce traffic in populous and crowded neighborhoods, maintaining the average density in the city and the use of bare land for population displacement) in the continuous development range, 450,000 people will be able to deploy. The city’s capacity is continuous in texture and 13% more than estimated population of the city for short terms. Distribution of population based on proposed density represents productivity increase for majority of the population from the useful level of the city. In such a situation, the impure density of city’s full texture (without garden neighborhoods) will be 123 person per hectares and 123 person per hectares for the impure density. Despite the increase in impure density, the net density remains (238 person per hectares in current situation) about 241 person per hectares [4].

Criteria and regulations:
1- Total density of residential building in different urban areas:

Residential places constitute 73% of all areas in Urmia. This proportion in two similar regions of 1 and 2 which most places such as markets, administrative and police centers are placed in there and is lower than 73%, 60% in similar region 1 and 70% in the similar region 2 and in region 3 and 4 is above the whole city. Residential places constitute 74% of all areas in region 3 and 78% of all areas in region 4. In the whole city, 45% of buildings are one-storey and 30% are two-storey and 5% consisting of more than two-storey buildings. The above proportion in marginal population areas perfectly shows the excellence of one-storey buildings than other structures. In similar region 1, 60% of buildings are one floor, 28% of building are two-floor and 12% of buildings are 3 and 4 floors and more which is placed the city center and a location for economic-administrative activities. Similar area 2 has the minimum numbers of one-floor buildings. Above proportions in region 2 are 51% one-storey, 40% two-storey and 9% 3 and 4 or more. In similar region 3, 58% of buildings are one floor, 38% of buildings are two floor and 4% of buildings are 3 and 4 floors or more. The maximum numbers of one-floor buildings are placed in marginal population areas (matched 4) 80% of buildings are one-floor, 19% two-floor and 1% of buildings are 3 and 4 floors or more.

2- Land ownership and denotive parts of residential land:

The average separation of parts in Urmia city is 246 square meter. Also the average level of per capita in Urmia is 42.05sq.m. The most common way of having housing units in Urmia city is the ownership of residential units. 41.5% of families are owners of residential places. This proportion in the matched area 1 is up to 84% and is limited to 43.8% for matched area 4. Occupancy of rented houses in the whole city includes 32.2% of residential units. Seizing in form of aristocratic ownership is mostly in region 4 and includes 43% of all the occupancy. This kind of seizing in the whole city is 14.2%.

1- Public ownership:

Information and studies show that significant portion of land ownership in the public sector is respectively related to military and police departments, the municipality, higher education and various departments.

2- Private ownership:

Private ownership is the most common form of seizing residential units in Urmia city. 61.5% of households are owners of their residential units. This proportion reaches to 34.8% in northern neighborhoods. The form of seizing rented houses is 23.2% in form of mortgage, 0.5% and governmental 0.6% includes all seizing of residential units in the city [7].
The diagram below illustrates the average per capita level in matched areas.

**Density of various areas of the city:**

1. **The overall density of residential buildings:**

   Residential places constitute 73% of all areas in Urmia city. This proportion in two homogeneous regions of 1 and 2 which most places such as markets, administrative and police centers are placed in there and is lower than 73%, 60% in homogeneous region 1 and 70% in homogeneous region 2 and in region 3 and 4 is above the whole city. Residential places constitute 74% of all areas in region 3 and 78% of all areas in region 4.

   In the whole city, 45% of buildings are one-storey and 30% are two-storey and 5% consisting of more than two-storey buildings. The above proportion in marginal population areas perfectly shows the excellence of one-storey buildings than other structures. In homogeneous region 1, 60% of buildings are one floor, 28% of building are two-floor and 12% of buildings are 3 and 4 floors and more which is placed the city center and a location for economic-administrative activities. Homogeneous area 2 has the minimum numbers of one-floor buildings. Above proportions in region 2 are 51% one-storey, 40% two-storey and 9% 3 and 4 or more. In homogenous region 3, 58% of buildings are one floor, 38% of buildings are two floor and 4% of buildings are 3 and 4 floors or more. The maximum numbers of one-floor buildings are placed in marginal population areas (homogenous 4) 80% of buildings are one-floor, 19% two-floor and 1% of buildings are 3 and 4 floors or more [1].

The following diagram illustrates whole density of residential buildings:

**Communication Network of Urmia city:**

Each municipal transport network is responsible for two important and essential tasks:

A – Translocate people and goods along the network

B - Mount the people and goods along the network

These two tasks actually represent two main properties of network which are providing motion (movement) and access supply. Based on this and according to design regulations of urban roads (approved by the Ministry of Housing and Urban Development), the following whole classification is about the city’s passages network in Urmia:

1. **Arterial streets of grade 1:**

   In arterial roads of grade 1, the movement is known as the primary role. Therefore the main function of these arterial roads includes connecting remote areas of major cities to each other and linking network of inter-urban roads to the outer-urban roads network.

   In street’s design and operation, an excellence is given to movement’s property of motor vehicles. For providing this superiority, motor vehicles access to the street and crossing the sidewalk are controlled and limited.

   In arterial streets of grade 1, in terms of providing optimal performance, intersections have to be non-coplanar as much as possible. (Particularly for pedestrians) and also the distance between intersections, in case of non-coplanar ones, is at least 500m and for coplanar intersections at least 2.5 km.
Marginal Park in these types of streets is forbidden. The number of lanes in each direction of the streets is at least 5 lines. (Three crossing lines plus two tardy lines or four lines with an emergency stop line) [2].

In Urmia city, the following places are examples of arterial streets of grade 1: Khattam-al- anbia highway, boulevards: Valfajr, Imamate and Imam Ali (AS), highways: Doctor Bahonar and Shahid Rajai and also parts of the Shuhada boulevard and University. The streets in connection with the entrance gates of the city, while transferring a sizable proportion of transiting traffic, involves effectively in movements of inner-urban trips especially inter-regional trips.

2- Arterial streets of grade 2:

In arterial roads of grade 2, transportation is a major task, but isn’t the only main role, unlike grade 1 and also must compete with the role of access. Due to the conflict between roles of access and movement, more accessibility leads to lower displacement property. Arterial streets of grade 2 creates the network and the main skeleton of inner-urban roads and according to its role, property of movement and access in these passages can be separable in two main groups:

1 – Collector-distributor main streets:
In these passages the property of displacement and mobility is very high and accessibility is very low.

2 – Collector-distributor subsidiary streets:
That in these passages the property of displacement and mobility is almost in equal terms.

Based on the number of lines (or traffic performance of these passages), the width of arterial streets is separable as follows:

Arterial passages of grade 2 (main distributor road): the total width of roadway is 16 to 27 meters (total width of 26m and more) as a marginal park line and at least 2 passing lines in each direction, with or without middle refuge.

Arterial passages of grade 2 (secondary distributor road): the total width of roadway is 10 to 15 meters (total width between 18m-25m) as a marginal park line and at least 1 passing lines in each direction, without axial refuge.

In current situation, streets such as Vali Asr Avenue, Valiat Boulevard, Resalat Boulevard, Shahid Dastghieb Boulevard, Madani Boulevard, Ershad, Modares and Bargh are examples of main distributor streets and the following streets are samples of subsidiary distributor streets like Emam street, Motahari, Khayyam, Kashani, Shahid Montazeri, Pezeshkiyan, Janbazan, Shahid Mofateh, Ammar, Mirza Shirazi and Taleghani.

Fig. 12: Example of a main street (distributor).

Conclusions:
Urmia city has suffered heavy damages due to new developments in the last century, vehicle entry and construction of wide streets in the old center which includes the loss of cohesion and separation in two market parts, also losing connection between old neighborhoods and other elements. In early years 1300(AH) Urmia city like other Iranian cities was divided into parts by building broad streets which completely changed the historic city. Before that, gates were connected to markets and city’s Grand Mosque through passages. Roads construction and unprincipled widening ruined the values of the urban fabric and caused irreparable damage. In the continual ring of old dense texture and behind the city’s old fence, a dense new texture exists which its communication network has broad roads and passing. In the next ring, a new texture can be seen outside the mentioned texture which its direct streets indicate neighborhood’s character and have a hierarchical network. There are straight and perpendicular streets with different widths without specified patterns and comprehensive programs in recent decades which include the city’s construction after 1979. After evolutions caused by building streets, with the popularity of commercial centers in both sides of new streets, parts of inhabitant’s social and economic life have been transferred into streets. Therefore, the city’s physical construction is based on service-commercial axis which is like the same central axis of the pear shaped core that the administrative center is located in south and commercial center is in the middle of it.
REFERENCES