INTRODUCING A NEW PRACTICAL MODEL FOR ROAD WIDENING - EXPERIENCE OF TEHRAN PROVINCE IN IRAN

Masoud MASOUMI

Master Degree In Urban & Regional Planning Field Of Study, Graduated From Architecture & Urban Planning College Of Shahid Beheshti University, Tehran, Iran

Email: M_masoumi33@yahoo.com

ABSTRACT
Most of Iran's oldest cities have an organic physical structure and texture. By entering and then increasing the number of cars, it was discovered in the 1300s that the organic urban texture did not have the ability to accept the presence of cars as a public and private vehicle. Hence, since then, the widening of roads was on the agenda of the government and the municipalities of the time, as a major developmental measure. This << Widening and demolition developmental activity >> has not been completed and it dedicates a significant portion of the development budget at the national and municipal levels annually. Several rules have been adopted and ratified in this area, and several executive practices have been gained and spread in recent decades as experiences. However, the widening of urban roads in Iran is considered costly, erosive, tedious, and even unnecessary! The process of widening the roads is influenced by several indicators and factors: the type of land and property ownership, the experience and knowledge of urban management, laws and regulations, the economic conditions and the degree of cooperation between owners and citizens with the institutions of urban management are including effective and determining factors. This article introduces a simple quantity-quality model that many problems in the process of widening will be resolved or weakened, through its implementation, a model that many of the above mentioned factors are included.

Keywords: Roads Widening, Demolition, Urban Organic Texture, Ownership

INTRODUCTION
Human activity in cities can be categorized as the four pillars of life, work, recreation and travel. The task of providing traffic is the responsibility of the road network, and for this reason, the road network is known as a basic user in the urbanization concepts. What is evident, the form and size of the roads must have a logical connection with the expected performance. In cities of Iran, cars play a decisive role in the design and implementation of roads, and, in fact, interference with urban organic textures has also begun along with the prosperity of traffic in cities. It has been over a hundred years since the arrival of the first car in Iran. In the year 1902, Mozafar al-Din Shah, during his trip to Europe, bought two cars and brought them to Iran. Later, the number of cars gradually increased and intensified, following Mozafar al-Din Shah Qajar by the aristocracy and the royal family. It lost its role as a luxury and aristocratic vehicle and became a public vehicle. From the very beginning, it became clear that the urban roads of Iran were not suitable for the presence of the automobiles, therefore, the widening and improving the road network for ease and the possibility of traffic was first implemented in Tehran (capital) and then for some cities, including Hamedan, Kerman, Isfahan, etc. For this purpose, in the year 1930, the first urban development plan, called "Street Map", was prepared and it was implemented by 1934, at city level. In these correctional designs, the design of the "Husman" was inspired in the 1920s of Europe. (Rahnamaei and Shah Hosseini, 2008,57)

Today, cars have penetrated among Iranian citizens, as a necessary means of personal and public transport, and over time, not only their penetration rate has not diminished, it is also rising. Therefore, the design and implementation of suitable roads, place and space for traffic and stop cars, are the requirements of planning and urban management in Iran.
However, more than eight decades have passed since the preparation and implementation of the first urban development projects in Iran. Nevertheless, most urban roads, especially in urban old textures, need to be widened and improved for traffic and transit. Less urban development projects have been seen in Iran, which widening and improving plan for roads has not been predicted in land use maps and their proposed road network map\(^1\). For this reason, the study of management and practical methods for widening and improving the roads can be very effective and efficient with the goals of reducing costs and the implementation time of projects.

The process of widening and improving has been widespread in Iran over the past 80 years, and several laws have been adopted to accelerate and facilitate the implementation of the plans for the widening and improving, but experience has remained in the traditional style, and it is necessary to introduce and experience better methods.

**MAIN OBJECTIVES OF THE ARTICLE**

The main objectives of this article are as follows:

A) Determining the problems caused by the use of current traditional methods for the widening and improving of the roads.

B) Introducing a simple model for widening and improving the roads that speeds up and facilitates the time and process of the project.

It needs to be explained that I introduced the new idea to the Tehran governorate in 2012, and it was implemented in urban development projects of two cities with the titles of Shahriyar and Pakdasht, and positive results have been obtained and experienced. Hence, in this paper, the proposed model is introduced scientifically and its aspects are discussed.

**DEFINITION OF WIDENING**

Widening is the increase in the width of the roads, so that the parts and real estate adjacent to the parts are seized in a legal way, and the parts are deducted and added to the width of the roads.

**DEFINITION OF LAND USE IN IRAN**

"The Urbanism and Architecture Council of Iran" has defined the per capita rate and types of urban land use. According to the 2010-05-31 Decree of the Supreme Council for Urbanism and Architecture of Iran, urban land use can be classified into 20 categories: residential, educational, transportation and warehouse, services, etc. (Urbanism and Architecture Council of Iran, 833). Each land and building has a specific use. Obviously, the price of each one also varies. For example, in Iran, "commercial use" is the most expensive use. Accordingly, the owners of commercial buildings and in the second place, the building with the use of (Residential) demand a more expensive amount of money from the municipality at the time of determining their property prices.

**THE PROCESS OF DESIGNING AND IMPLEMENTING URBAN ROADS IN IRAN**

Before the start of this discussion, it should be noted that before the car entered the cities, the shape and size of the roads in Iran were subject to topographic conditions, economic, land ownership and property, and the like. That is, due to the lack of cars, the roads were suitable only for pedestrians and livestock along with the carriage, and the car agent was not involved in the formation of roads. The preparation of urban development plans was also legalized in 1968. It was expected that the problems of low-width or inappropriate shape of roads would be ended, a few years after the legalization of urban development plans. But urban organic expansion continued due to the lack of timely preparation of urban development plans.

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\(^1\) New cities, which are designed and implemented in virgin lands, usually do not need to be modified and expanded almost 20 years later in Iran. Because the cities are devoid of old and organic texture and are pre-planned and designed cities.
Unfortunately, even now, many cities lack the urban development plan and the formation of roads is done in an organic way.

It should be noted that Tehran province has 42 cities. The total area covered by these cities is 660,832 hectares. 6031 hectares of this area (about 10%) is considered to be a worn out texture. Worn out texture - According to the 2006-05-01 Decree of the Supreme Council for Urbanism and Architecture of Iran, is a texture that needs modernization and improvement. (High Council for Urbanism and Architecture of Iran, 2012, 623)

Design and construction of urban roads in Iran can be divided into several types from different aspects: (A) – The roads that are designed and implemented on virgin lands without construction. These types of roads are usually found on the land adjacent to the city, the lands that recently received the approval and permitting the annexation of the city and separation and construction of the building in accordance with the population increase and the need for the expansion of the city. (B) The roads that are designed and implemented on virgin lands without construction. And they are located in (new cities) or (towns covered by the Settlement Code). (C) The roads located within existing cities, dating back more than a few years to several hundred years. These roads were created before and even after the year 1968, and they were deprived of any designs.

**SOME LAWS RELATED TO ROADS IN IRAN**

Some legal articles related to roads in Iran are as follows: In Iran, roads have different types. In this article, as stated in the introduction, most of the roads within the urban area are discussed. Therefore, there are merely some laws related to urban roads:

1) According to Note 6 of Article 96 of the Municipal Law, "the lands of public streets and squares and pavements and streets and in general, the roads and beds of rivers and streams and sewers of cities ...., have general use and they are the property of the municipality." (Mansoor, 2007, 101)

2) According to Article 24 of the Civil Code: "No one can acquire the means and the public places and the alleys which are not dead end". (Hojati Ashrafi, 1996, 77)

3) According to paragraph (1) of Article 55 of the Municipal Law: "Establishing streets and alleys, squares, public gardens and waterways and developing roads, in the scope of the statute of law," are the duties of the municipality and in paragraph (2) of the article also mentions that: "The regulation, maintenance, and alignment of public roads and passageways and waterways, sewage and Qanat systems, and the dams for the city, and the supply of water and lighting, with the equipment", are also municipal duties. (Mansour, 2007, 76).

4) According to the article (1) of the Law on urban renovation and urban development, approved on 1968-11-29, "Modernization, construction and major reforms, and the provision of urban needs, the construction and development of roads and the creation of parks … are the duties of the municipality and municipalities are obliged to prepare basic plans and comprehensive map in the performance of their duties. (Mansoor, 2007, 253)

5) According to Note 3 below to Article 101 of the Municipal Law - approved by the Islamic Consultative Assembly on 2011-04-23, "On lands with an area of more than 500 square meters, which have Six Dong Document, the municipality receives the construction of harbors and general public roads by dividing...., to provide per capita public and service space, up to 43.75%, for the provision of necessary lands. 2 In Note 4 of the same article, it is also stated that: "All of the land resulting from Note (3) and public roads and service lands, which are caused by the division and issuance of the ownership document, belong to the municipality.

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2 (25 % for per capita public and service space & 18.75% for roads, Alleys & Streets)
And the municipality will pay nothing to the owner of the property, in return for it. (Approved by Parliament on 2011-04-16)

**ESSENTIAL CHALLENGES FOR WIDENING AND IMPROVEMENT OF PUBLIC ROADS IN IRAN**

Some of the major challenges in terms of widening and improving public roads in Iran are as follows:

1) Private ownership of real estate: more than 95% of the cases in the cities of Iran, the lands and real estate in widening and improving projects are privately owned. In other words, the municipality must purchase the property in order to capture and implement the correct area, or obtain the consent of the owner in some way, and compensate the property rights through the purchase or assignment of the privilege or damages.

2) The expensive price of urban real estate in Iran: Urban property in Iran, as a commodity, is always very expensive due to private ownership and the sale and purchase of property as a commodity. Most citizens consider property as a permanent capital, and property is the main source of wealth of citizens. Interestingly, according to current laws in Iran, any pricing of land and real estate, located on the roads at pricing time, is priced without affecting the land. In other words, at the time of pricing, the official experts determine the price of the piece area, which is included in the widening plan, regardless of the type of user's usage. Therefore, the price is significant. There are very few owners who are willing to give the municipality the amount of corrective area, and they do not ask for the privilege or amount.

3) Necessity of exposure and assignment with each owner: Given that the parts on the sides of the road are formed in a row. A separate case must be filed, to obtain favorable opinion and satisfaction of each owner. In such a way, each piece must be individually determined and the owner's consent will be obtained. Owners have their own taste and opinion. In some cases, the owners do not agree with the municipality and the parties' problems are reviewed and resolved, through the long process of judicial authorities.

4) Step-by-step and one-to-one widening of registration plate is a boring process, and in particular, the expected performance of the total road for moving will not be met until the complete detachment of parts and release of roads.

5) Long-term widening of the roads, practically leads to leaving the building materials on the sides of the road for a long time, which does not have a good shape and creates a disturbance and dustiness.

**THEORETICAL FRAMEWORK**

Today, the use of personal cars in Iran is increasing. There is a car for every 175 people in Iran. (Khaksari, Ali, 43) Iranian citizens have extreme tendencies to use personal vehicles, due to the lack of availability of various types of public transport. The requirement for owners and builders to build and provide parking, even within their own property, is emphasized in terms of urban planning. In other words, Iranian urban planning laws (except in very few cases) tend to enter cars into the city and even old neighborhoods and worn out texture. In the cities of Tehran province, at least one parking unit is required for each residential unit. Similarly, three parking units are required for every 100 square meters of pure commercial center.

Another point is that the road widening is not only influenced by the presence of cars. But, in terms of architecture, there must be a logical connection between the height and the performance of the building, with the width of the roads. It's interesting to know that it is recommended only a building in three floors for roads with widths of 10 to 12 meters. Also for roads less than 8 meters, buildings are recommended with the 1 and 2 number of floors. Lighting and good circulation of air are other reasons for the trend of Iranian architects and urban planners to widen roads.

Recently, the issue of "non-active defenses" in Iran is the subject of the day in urban and architectural circles. The non-active defense brings about the security of the citizens during the crisis. The design, the form and
the length and width of the roads should be such that, in addition to being responsive to citizens' traffic, guaranty the health and safety of citizens in times of crisis and the emergence of a variety of tensions, as well.

Personally, I believe that the tendency toward road widening is an extreme in Iran. You need to know that one third of all three urban roads must be somewhat widened in the comprehensive plan of the Varamin City, approved in 2013. In a 10-year process, one owner from all three owners must refer to the municipality and pass separate administrative processes to widen the roads near to their property and unit. (Engineers of Research and Civil Advisors, 2013)

The prices of land and real estate in the cities of Iran are expensive, and on the other hand, the municipal budget for the widening is very small. In such a situation, it is not possible to buy and own lands and buildings located in the widening during the lifetime of the urban development plan. The duration of each urban development project in Iran is 10 years, and with this condition, the municipality needs more than 70 years according to its budget. In practice, it implies failure to implement the plan during the program period and the lagging. It is the problem that urban executives and planners are currently facing.

INTRODUCING THE NEW IDEA
The new idea, discussed in this article, facilitates and accelerates the implementation of the widening plan, and many of the above problems are eliminated or very faint. A typical idea, which will be introduced, has been modeled on some kind of local tastes and habits. In a way that ultimately, an operational model adapted to the local conditions of each city will be achieved from the study of past experiences and its integration with the ideas of urban planners. The model that has variables, including land prices, the importance of implementing widening plan for urban management, the quality and life of the building and the percentage of property that are included in the widening plan.

It was mentioned in the previous pages that there is usually not enough budget to widen urban roads, in Iran. And, frankly, a privilege should be given to the owners. Scores should be such that the cost of demolition and renovation compensates the withdrawal of the building from the road and brings benefits to the owner, in such a way that the owner does not suffer financially and gains a privilege for the widening.

The owner's taste for receiving privilege is different from city to city and even from a neighborhood to another. Taking commercial use of the residential space surplus is one of the main demands of the owners. For example, a 40-square-meter plot of land (land to be deducted from the ownership document, and annexed to adjacent road) is included in the widening plan, and the owner usually satisfies to receive a privilege for creating 20 square meters of commercial use for 40 square meters of land (half a square meter of commercial space for each one square meter that must be deducted from the ownership document). Or he satisfies for the transfer of 40 square meters of land, to 60 square meters of residential infrastructure (one and a half square meters, incentive for each square meter of widening).

Of course, this method was generally discussed in the above paragraph. Date of construction, type of building materials, width of road, number of owners, land position, possibility to design and supply parking, price of usage (commercial, residential, office, etc.), construction criteria, size limit for each commercial unit (for example, 20 square meters) or residential (for example, 100 square meters) and ... are indicators that should be considered in the formulation of the model.

Of course, the output of this pattern should be limited. For example, if more than 60 percent of the land is in widening, the residential privilege for the rest of the area is so much that the number of floors and the final height of the building will be much higher. For example, it is by no means impossible to construct a building of 5 or 6 floors in a land of 400 square meters and only 160 square meters of it remains, and its road width is 12 square meters. It is because of the problem with the lack of parking and its height does not fit with road width. Another important point is the loading of a population, which must necessarily be
calculated piece to piece so that it should not be more than the projected population, for the neighborhood or region. Perhaps, population density and construction, in other parts of the city or town, should be reduced in order to increase the population density of the blocks covered by this model.

Some limiting indicators include: population, height, not overlooking the neighboring real estate, user compatibility with the general conditions of the area, the possibility of parking, not cutting the trees, the city's need for that user, the consent of the owner, etc. For example, pay attention to the following proposed digits, which are examples of the proposed pattern:

- Equivalent to two square meters of residential space will be given for every 1 square meters of land with a residential use in the widening.
- Equivalent to two and a half square meter of residential space will be given for every 1 square meters of land with a residential building in the widening.
- Equivalent to half a square meter of residential space in the garden will be given for every 1 square meters of garden, which inevitably is demolished and deducted.
- Equivalent to one square meter of commercial space will be given for every 4 square meters of land with a residential use in the widening.
- Equivalent to one and half square meter of commercial space will be given for every 1 square meters of land with a commercial, which is demolished.

FEATURES AND BENEFITS OF THE PROPOSED MODEL

The above proposed model has the following benefits:

- This approved or privilege is not given to a particular owner. But it is given to the whole road. (Color and sign) are marked on the road, even in urban maps of the proposed urban land use, and not on a specific part or register. Privilege incentives to owners require a legal agreement between the municipality and the owner and the obligation of the owner to widen the road and then, have the incentive privilege.
- Given that a number of parts are included, it must first be approved by the city council in accordance with the law related to the duties of the city councils, in other words, it should have the public support.
- A fair and single decision is taken for individuals with similar situations and similar properties, and the owners become aware of their rights and procedures.
- In the event of restrictions such as height and ... the skyline is observed, and the buildings are subject to special discipline.
- The process of obtaining the consent of the owner and, in general, the widening and improving of the road will be accelerated.
- Due to the proximity of the parts together, the type of parts use will be homogeneous. For example, they will often be commercial, or residential.
- Types of Indicators are observed in granting the incentive privileges, even the owner has the right to have a combination of desires (of course, in the form of rules and regulations of the urban development plan)
- The number of open files in the judicial authorities is greatly reduced to solve the people's problem with the citizens.
- It is emphasized that this privilege is granted to uses such as commercial, residential, and the likes. In fact, it is granted to use that the possibility of constructing the building is allowed and owns the private owner and it is not granted to users such as educational, therapeutic, green spaces and parks. Because the use of green spaces and parks lacks the criteria and permission to construct the building. Educational or therapeutic users, in principle, have a government custodian and they have their own standards and the relevant ministries for the construction of the building, and, in principle, the discussion of encouraging congestion is meaningless.
REFERENCES
The Islamic Consultative Assembly, the Law on the Amendment of Article 101 of the Municipality Law, passed by the Islamic Consultative Assembly on 2011-04-17.
Mansoor, J, Collection of laws and regulations related to the province, city, city, village and municipality, Tehran, Didar publication.2007.