

## Analysis the principles and Dimensions of Urban Parks with point on green spaces in Mashhad city, Iran

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**Abstract:** - There are heterogeneous in distribution of urban park spaces due to high expenditure of making green spaces. In order to the aim of this paper is analysis the principles and dimensions of urban parks with point on green spaces in Mashhad city. Its theory foundations is based on attribution and desk studies and field visits of related organizations. Information has been collected on their ecological characteristics using questionnaire. Finally based on the gathered information from Mashhad Urban Parks a comparison has been made with Iran existing standards and also international standards. Results showed that there are nongovernmental organizations and the general public who watch the trend carefully and exert controlling effects on public urban parks removal. In addition, the provinces of Iran are all under extensive land use evaluation and planning, the results of which will be available in near future.

**Key Words:** - Urban Parks, Green Spaces, Mashhad city, Public Satisfaction

### I. INTRODUCTION

Urban parks have long played a vital role in community-based programs for all people. Urban parks are now viewed as an important part of the broader structure of urban and neighborhood development rather than just recreation and leisure facilities (Bros, 2003; Meijer, 2013). Development of Urban parks dates back to the ancient times of the boulevard systems in Minneapolis and Kansas City. Beginning in 1859 when Frederick Law Olmsted, Calvert Vaux and more than 3,000 laborers created central park in United States of America, a wave of enthusiasm for urban pleasure grounds swept America and the world over (Harnik, 2003). Urban Parks in this study refers to specific piece of ground, excluding natural parks, within the City/town and set apart for use of the general public. It may be planted with trees, lawns and other shrubbery and include facilities for sport, entertainment and recreation (Rabare & et al, 2012).

The International Federation of Parks and Recreation Administration (IFPRA) is the unique international organization that represents parks, recreation, amenity, cultural, leisure and related services (Xang, 2012). Among the federation's aims are the advancement of parks, recreation, cultural and leisure services through representation and the dissemination of information; and the promotion of relevant research. During the past few years, IFPRA has refocused its activities more towards urban parks, which e.g., led to the establishment of a World Urban Parks Initiative together with a range of other national and international organizations. Moreover, IFPRA strengthened its scientific base by setting up as science task force at the IFPRA world congress in Hong Kong (autumn, 2010). At the end of 2011, the Executive Committee of Ifpra decided to assign a review study of urban park benefits. This work was to be coordinated by the Science TF. In response, a research team of four, representing three different institutions, three different disciplines, and four different nationalities was set up. The research team carried out a systematic review of the scientific evidence for urban park benefits during most of 2012 (Register, 2006; Defra, 2007). Urban planning is an instrument of town management. In the past, when it turned from an operational instrument into a legal duty, it became useless. Planning, as it has always been, is undergoing changes towards what they believe to be a more efficient working way. What looks a trend of the last decades is its market orientation, more precisely demand orientation, so that it can promptly meet it. Low et al, (2005) wrote that in this new century, we are facing a different kind of threat to urban parks not only one of disuse, but of patterns of design and management that exclude some people and reduce social and cultural diversity. Most parks in Mashhad city were created in the 1980s and 90s. The ancient

Mashhad settlers had an interest for recreational gardens and parks as this was in line with the interests of their countries of origin (Low & et al, 2005). Open spaces, playgrounds, sports fields, and recreational programs make an important contribution to citizen's lives. But to realize their full potential as community resources for youth development, parks can and should go beyond recreation. At their best, they can offer a wide variety of high-quality opportunities for citizens to build the skills and strengths they need to lead full and rewarding lives (Zarabi & Azani, 2011). Urban parks have always been vital in providing youth with recreational opportunities and enriching program initiatives. But a few are breaking new ground, with innovative programs for children and adolescents that are in keeping with recent advances in policy thinking. Three examples from beneficiaries of The Wallace Foundation's Urban Parks Initiative illustrate these new directions (Rahnama & Heydari, 2013). In other hand, in land use planning, urban open space is open space areas for "parks", "green spaces", and other open areas. The landscape of urban open spaces can range from playing fields to highly maintained environments to relatively natural landscapes. They are commonly open to public access, however, urban open spaces may be privately owned. Areas outside of city boundaries, such as state and national parks as well as open space in the countryside, are not considered urban open space. Streets, piazzas, plazas and urban squares are not always defined as urban open space in land use planning. The value of urban open space can also be considered with regards to the specific functions it provides. For example, the Bureau of Municipal Research in Toronto lists these functions as the nature function, urban design function, economic function, social retreat function, and outdoor recreation function (Bureau of Municipal Research, 1976). Another study categorizes the values open space offers from a sociological viewpoint, listing: civic and social capital, cultural expression, economic development, education, green infrastructure, public health, recreation, and urban form (Berry, 1976). These studies reiterate the same core benefits of urban open spaces and none of the options create any inconsistencies with the others. Additional beneficial aspects of urban open space can be factored into how valuable it is compared to other urban development. One study categorizes these measures of value into six groups: utility, function, contemplative, aesthetic, recreational, and ecological (Eysenbach, 2008). These categories account for the value an urban open space holds to the development of the city in addition to just those things citizens consciously appreciate. For example, the "function value" of an open space accounts for the advantages an urban open space may provide in controlling runoff. The final three values listed, aesthetic, recreational, and ecological, are essentially the same as the values that make urban open spaces consciously valuable to citizens. Of course, there are several different ways to organize and refer to the merit of open space in urban planning (Rahnama & Karimi, 2013).



**Fig. 1.** Mashhad city urban parks.

In this mean, applicability of green places that were constrained by unregularly growth of city band by converting the gardens and agricultural lands into city body, was faced by some problems such as incorrect zonation and establishment at city, use of unsuitable spaces and paying little attention to neighborhood's, per capitals and standards (Esmaeili 2002). Urban Parks are as a complement of urban physical structure. These spaces are a type of urban land-use that has ecologic and social traits. On the other hand, today planning and design is adaption green space networks (Ericson, 2004). Today, urban green spaces are introduced as appropriate method for promotion of life quality due to impressive social and ecological influences (Barker, 1968). So, an urban park space is important issue due to creating beautiful landscape, also it is as obstacle air pollution in cities.

## II. RESEARCH INVESTIGATION

Urbanization both in population and spatial extent, transforms the landscape from the natural cover types to impervious urban lands (Xian & et al., 2005). This phenomenon is one of the most important factors that changes land surface leading to modification of receiving environments which are usually composed of natural cover. The pressure for additional housing and business demands in towns and urban areas alters existing urban green park spaces even more in the route to development (world resources institute, 1996). Urban green spaces provide a variety of functions which can be grouped in three classes including architectural application and aesthetics, climatic and engineering functions (Miller, 1997). Also, urban parks provide the opportunity for recreation and experiencing nature. These functions are essential for improving the quality of citizen life. Therefore, allocation of urban land to green spaces as a class of land use is an important policy issue in almost all cities. However, due to physical expansion of Mashhad city, extensive destruction of urban park spaces has occurred that conflicts with an environmentally sound developing paradigm (Rafiee & et al, 2009). Old Mashhad according to natural condition has numerous trees and pastures. Old Mashhad is introduced as green city at previous time. But, green spaces have changed in last centuries due to development of city. According to research, in Mashhad the ratio of green spaces to city area is high at Qajar1 age. In 1922 decade (Pahlavi 2age) decrease this ratio due to physical development of city. After that, Mashhad had grown sharply in 1962 & 1972 decades due to immigration of rural that was led to destroying of gardens and green spaces and making apartments. This issue introduced urban park spaces as important topic in urban issues. On the other hand, by developing of Mashhad the garden and agriculture lands that has been located around the city, were combined with its (Taheri, 2007). In this stage decrease the area of urban space land-use due to lack of appropriate plan. Urban park space from city development point of view consists of different vegetative covers and as a living factor besides unloving framework of city determines city morphology structure. Open urban spaces consists of existing green space and from the other hand this urban spaces known as potential spaces for urban park space development. Sustainable urban development is defined as “improving or enhancement of urban living quality like ecological, cultural, political, social, economic and facilities without making any problem for future generations which these problems could originate from reductions in natural reserves and local belongings. In another way sustainable urban development is focusing on management and development paths that are sustainable and in these paths some aspects of sustainable development like energy efficiency, green space and neighboring units are improved. One the shortest definition which is given about the ecologic city is “the ecologic city is a healthy city from ecological point of view” and it proceeds that such city doesn’t exist (Adnr, 1994). There have been many studies and researches about Mashhad Urban Parks. Different researchers like Rahnama and Razzaghian (2012) and Khakpour et al (2010) have studied Mashhad Urban Parks. Some of these experts have focused on measuring Mashhad green space per capita. One of these experts is Bahram soltani which conducted a research in the year 1995. But until now there haven’t been comprehensive researches by means of geographical systems about Mashhad Urban Parks (Rahnama & Razzaghian, 2012).



Fig. 2. A view of Mellat urban park in Mashhad city.

Urban parks are very important, firstly because of their environmental roles, and secondly because they serve as cultural and recreational places for free times. Standards and precipitate of urban green spaces before of every planning on development of urban green spaces, related standards and per capias should be determined. Now, it is necessary, for better introduction of issue, that the criteria should be defined. Standard is a level of

implementation that is determined by the measuring criteria, and considered for a given number of residential populations (Chehrzad & Azarpishe, 1992). With respect to the importance of green space and the necessity of its' creation in cities for the purpose air-conditioning, people's recreation and beautification of city, it seems that no limit should be considered for creating green spaces because how much the green spaces develop, still will not be enough in other word, the more green space as lung of city, the better the condition of that city. However, the related standards are not as the same relating to climate conditions, ecologic features and availability of water resources on one hand and cleaning air of city in polluted areas on other hand.

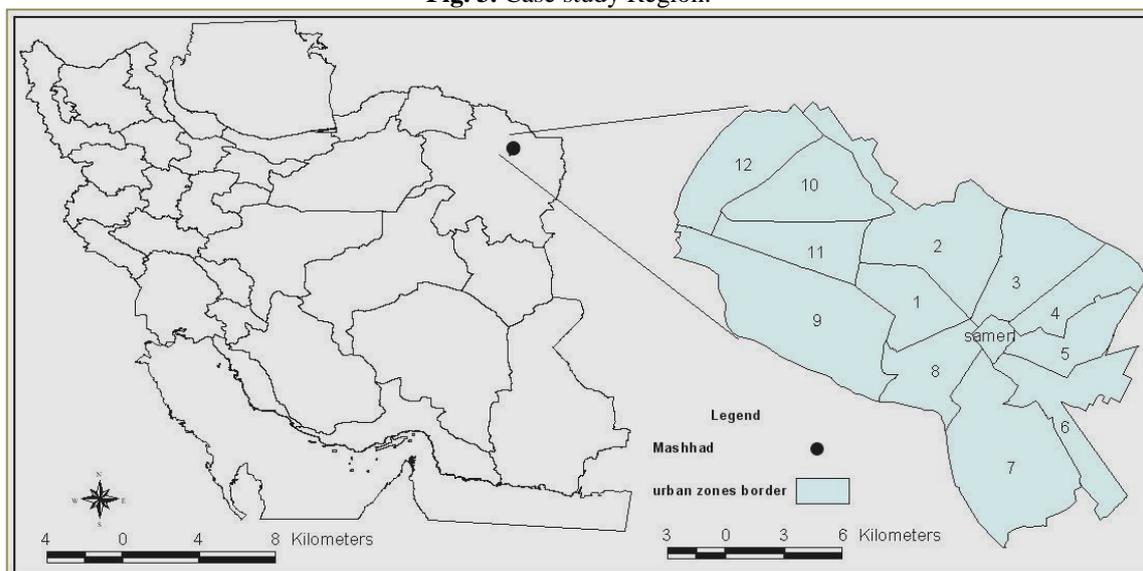
### III. METHOD AND MATERIAL

Present research has a descriptive- analytical method that is of applied kind. Its theory foundations is based on attribution and desk studies and field visits of related organizations. Information has been collected on their ecological characteristics using questionnaires (open and closed questions), along with interviews. This information is collected in two documents and field ways. In this part we have applied different approaches to calculate the relative of urban spaces and urban parks in thirty districts of Mashhad city. Then, we have compare the level of population density in each district with condense of urban parks in the same districts and continuous this process for other regions. After gathering needed data's, we used of different statistical methods for analyzing and discussion about research. Finally based on the gathered information from Mashhad Urban Parks a comparison has been made with Iran existing standards and also international standards. Iran standards includes some suggested standards by ministry of Roads and Urban development and international standards includes suggested standards by United Nations and public health bureau.

### IV. CASE STUDY REGION

Mashhad is the capital of Khorasan Razavi Province of Iran (Fig. 3). It is one of the most important cities because of its religious, historical and economic values that attract a large number of people each year. In 1986, its population was 668,000 whereas its current population is about 2.8 millions. Since 1987, built-up areas in the city have expanded significantly (Rafiee, 2007); the city has witnessed a rapid growth in construction which has caused destruction of green spaces areas. This trend in the urban park is in sharp contrast with the rules governing improvement and establishment of new urban parks within the current boundary and the projected future of the city. In fact, municipality closely attends to the urban parks and scrutinizes even single tree uprooting. On the other hand, there are nongovernmental organizations and the general public who watch the trend carefully and exert controlling effects on public urban parks removal. In addition, the provinces of Iran are all under extensive land use evaluation and planning, the results of which will be available in near future. The application is mostly environmentally oriented giving high value to public urban parks and aims to upgrade the per capita green areas in the newly built regions. However, there are other players in the filed including major private stakeholders who have influence in deciding the physical and biological properties of built-up area development plans.

Fig. 3. Case study Region.



Source: authors adopted Rafiee & et al, 2009.

### V. DISCUSSION AND RESULTS

Mashhad is located in the north east of Iran country close to the borders of Afghanistan and Turkmenistan. Mashhad as other shrine cities in the world has different potential's in the field of attraction urban tourism. In this between, advertising as a powerful tool has a key role in exacerbated of this process. With attention to need of citizens, people, children, tourism and other groups to passing of their free times in urban parks, green spaces and other spaces, the municipalities and NGOs must have special programs to created happiness in citizens. In order to, the aim of this research is analysis the principles and dimensions of urban parks with point on green spaces in Mashhad city. About urban parks with point on urban green spaces in Mashhad have done many researches but every ones of them has point on special approaches and don't has any attention to spatial and human structure of these spaces. In really we must know, we create urban parks and urban green spaces for human and for peoples then we should try to have more urban and green spaces points with high joy. In Mashhad city the results of plans and program stage show the lack of land has been led to increasing the value of lands so, has changed park spaces land-use to other land-uses.

**Table 1:** Total Area of Urban Parks and Green Spaces in Mashhad city

Area	Urban parks and urban green spaces in Mashhad city	Total area
1	36	263037
2	58	6493534
3	24	6480747
4	10	5157623
5	17	3446556
6	34	4994155
7	22	24119223
8	20	733.025.1
9	68	10574022
10	65	5987321
11	25	9069732
12	9	549629
Samen	9	282147
Total	397	8.711.531

Source: Authors, 2013.

There are heterogeneous in distribution of urban park spaces due to high expenditure of making green spaces. Even, in some cities per capita of green space land-use is low from optimum range. The green spaces development process of Mashhad city show that the first modern green space is not racemization correctly and different groups have different idea about this subject but what of many of citizens have agreed about that is the Kohsangi urban park is an old urban park in Mashhad but National garden park in fact is the oldest park in Mashhad city. It has been made in 1952. Then, in order to balancing between urban park, green spaces land-use and other land-uses (such as: residential, commercial, administrative and etc.) were made parks in 1962 decade. The studies show urban green spaces increase to 11.1 km<sup>2</sup> in 1998 that the numbers of parks are 184. In 2003, the numbers of parks increase to 672 and the area of parks is 12076761 hectare. After that urban green spaces development is important in 2006 & 2007 due to increasing air pollution. The area of green spaces in 2006 & 2007 are 6882 & 7244 hectare. In 2008, the area of urban green spaces increase to 7990 hectare that consist 130% of city area.

**Table 2:** Population density and its change in different zones of Mashhad city in 2012:

Mashhad Regions	Total population	Male to female ratio	Mean age (years)	Family size	Population density (thousand sq.m)
1	176104	94.8	35.3	3.2	11.76
2	485833	98.8	28.7	3.2	14.98
3	322018	100.3	28.2	3.4	93.929
4	244944	100.2	27.6	3.4	144.107
5	168876	100.1	27.2	3.4	12.03
6	253963	99.9	27.3	3.4	17.32
7	206968	102.2	28.2	3.4	4.24
8	940040	97.8	33.5	3.2	5.84
9	300246	100.4	31.4	3.4	6.77
10	246523	109.7	29.4	3.1	12.2
11	192223	103.6	33	3.6	12.2
12	39636	97.1	26.6	3.5	1.84
Samen region	16884	106.7	32.3	3.4	4.72

Resource: Authors, 2013.



**Fig. 4.** National Garden as one of the oldest urban parks in Mashhad city.  
Source: authors, 2013.

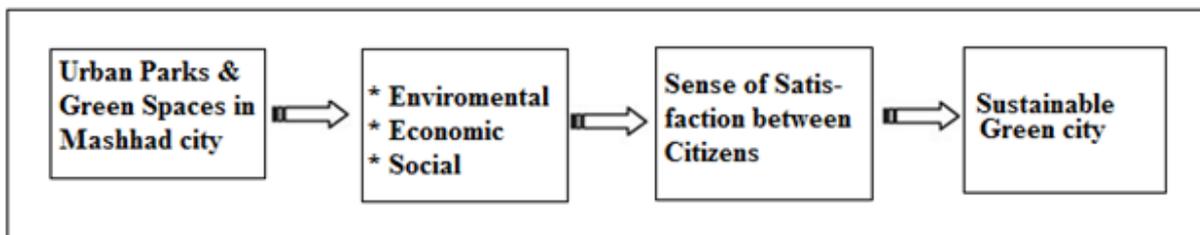
It is strongly believed that developing more sustainable cities like Mashhad is not just about improving the biotic aspects of urban life, it is also about the social aspects of city life that is among others about people’s satisfaction, experiences and perceptions of the quality of their everyday environments. In the context of this study, the relation between urban parks and city sustainability in Mashhad city is addressed through the investigation of the value of urban nature as provider of social services essential to the quality of human life, which in turn is a key component of sustainable development.

**Table 2** Total Area of Urban Parks and Green Spaces in Mashhad city

Land use	Compatibility	Per capita	In Mashhad city
Residential	Minimum in low density	50%	70%
	Minimum density in average density	40%	24%
	Minimum density in high density	30%	6%
Urban park and green spaces	Small sector	1.2	0.5
	Neighborhood Park	1.5	1.5
	Regional Park	1.8	2
	Parks and gardens around the city	4.5	2.75

Source: Authors, 2013.

Furthermore, aesthetic, historical and recreational values of urban parks in case study region increase the attractiveness of the city and promote it as tourist destination, thus generating employment and revenues. Furthermore, natural elements such as trees or water increase property values, and therefore tax revenues as well.



**Fig. 5.** Pattern of Sustainable city in Mashhad city.

The administration of Mashhad city has been distributed between organizations. But there isn’t cooperation between organizations. So, the organizations need to cooperate each other. However, there are some organizations for administrating of city, but also the main organization is parks and green spaces organization. For promoting of green space management, gardens official was established in 1961. After that, change to parks and green space organization in 1964. Also, the basic changes were created in structure. The traditional methods were removed and were replaced modern technique for administrating city. In Mashhad city, projects for the enhancement of urban improvement mainly with the arrival of the Islamic city council, the organization of

gardens and sidewalks was dedicated to the interests of the native symbols with respect of the economic aspect of nature in Iran. The projects were related to the interests of promoting knowledge about the economic possibilities of the local and exotic flora. Preservation of green space and implementation urban plans in Mashhad show, process of green spaces development is appropriate. Indeed, developing of urban green spaces is the best solution for achieving sustainable city. Implementing of urban green spaces development plans have important role in urban life especially in Mashhad city. In these city urban management both should create urban green spaces and should protect green spaces. Appropriate and systematic plans are necessary for developing of cities. On the other hands , studying of urban plans show , green spaces are the best solution for decreasing air pollution, mental diseases and social problems in metropolitan cities (such as Mashhad ).

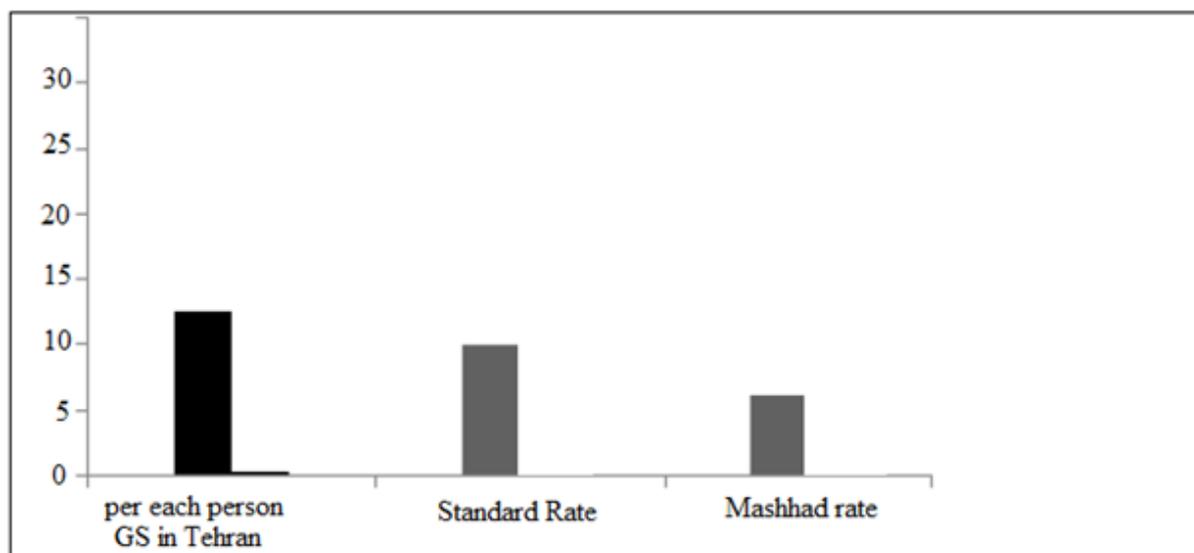


Fig. 6. GS & Urban park with standard rate and compare it current rate in Mashhad city.

The analysis of the change in the landscape patterns provided insight into the nature of the changes that had taken place in the Mashhad city. We conclude that urbanization in the Mashhad city has had important effects upon the urban environment through which urban parks and green spaces have been converted into built-up areas with corresponding loss of functions of the green areas. Players with some roles in shaping the city and its expansion are now reaching some consensus as to the balance between built-up and natural areas. This is especially backed by the ongoing land use planning project in the Province which together with the activities taken by NGO's and the Foundation of Holy Imam Reza Shrine contributes to development of a new trend in protecting green areas. In summer time, the population of the city doubles by the pilgrims who are happy to have even a single joy space and tree to set up their tent and stay in the city. With the rapid downgrading quality and quantity of the green spaces in the Mashhad city, managers are required to take a timely measure to reverse the trend of changes that were partially shown in this study. Otherwise, soon we will face a totally artificial and unpleasing urban environment with lost functions and services of the green areas.

## VI. CONCLUSION AND SUGGESTIONS

Green space areas in the densely populated cities of today are valued more than before while at the same time are suffering shrinkage due to pressures for more open lands for housing development. The results of this study revealed that green space areas in the Mashhad city during the years 1987–2012 have become isolated and decreased. Even, in some cities per capita of green space land-use is low from optimum range. The green spaces development process of Mashhad city show that the first modern green space is not racemization correctly and different groups have different idea about this subject but what of many of citizens have agreed about that is the Kohsangi urban park is an old urban park in Mashhad but National garden park in fact is the oldest park in Mashhad city. It has been made in 1952. Then, in order to balancing between urban park, green spaces land-use and other land-uses (such as: residential, commercial, administrative and etc.) were made parks in 1962 decade. The studies show urban green spaces increase to 11.1 km<sup>2</sup> in 1998 that the numbers of parks are 184. In Mashhad city, projects for the enhancement of urban improvement mainly with the arrival of the Islamic city council, the organization of gardens and sidewalks was dedicated to the interests of the native symbols with respect of the economic aspect of nature in Iran. In summer time, the population of the city doubles by the pilgrims who are happy to have even a single joy space and tree to set up their tent and stay in the city. With the

rapid downgrading quality and quantity of the green spaces in the Mashhad city, managers are required to take a timely measure to reverse the trend of changes that were partially shown in this study. Otherwise, soon we will face a totally artificial and displeasing urban environment with lost functions and services of the green areas:

1. Multipolar urban management in Mashhad city has been make different problems for this city (Astan Quds, Municipality, military organizations and Legal rules Islamic religious).
2. Collusion between the various institutions which involved in the urban management is another factor of inefficient systems of urban development in Mashhad city.
3. Non- cooperative urban management in Mashhad city especially in marginal areas has created serious problems for sustainable urban development.
4. Correction of old laws that had been approved in previous time.
5. Preparing financial sources for using modern equipments and technique.
6. Making standard in urban management.
7. Codification urban forest plan.
8. Presenting of different models and other urban green spaces plans.
9. Creating urban green spaces should be adapted to unique system.
10. Strengthening of natural scopes that have been located in Mashhad.
11. Prevention of mountainous open space by using native plants
12. Changing industrial land-uses to green space land-use.
13. Rivers is the most important natural element. So must be prevented from destroying themes.

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