

THE CONSTRUCTION OF LANDSCAPE PATTERN AT COMPREHENSIVE PLANNING LEVEL IN NORTHWESTERN CHINA —A CASE STUDY OF ANKANG CITY¹

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ABSTRACT: The authors study on the new urban form of Ankang city based on the landscape pattern. Through analyzing and evaluating the present conditions of land resources, historic and cultural attractions, and natural landscape from ecological perspective, finding out the problems in the current construction of urban landscape environment, considering with local special landscape themes. Besides, the authors also emphasizing and constructing the landscape patterns at comprehensive planning level by means of laying out city green corridor, preserving the wetland as the urban corn and improving the urban green space system in the principle of combining of historic and cultural with natural environment, urban space with urban spirit, and history with future construction.

KEYWORDS: local identity, northwestern China, landscape pattern, themes of landscape

At present, Chinese government is increasing investment on infrastructure construction to expand domestic demand to tackle the global economic crisis. It is an opportunity for the cities that have a low-speed of economic development in Northern China. It is a challenge for the cities to conserve and evolve the local identity involve fragile environment, landscape and culture while meet the requirement of urban construction at the stage of rapid urbanized advancement.

Ankang, a city located to the southeast of Shaanxi in Northwestern China, is in the period of rapid urbanized progress. The construction of landscape pattern in comprehensive planning provides guidance for Sustainable urban development.

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1. PRESENT SITUATION OF ANKANG CITY

1.1 Site condition

Ankang municipality located to the southeast of Shaanxi, east of Qin-ba mountainous region in Northwestern China. Qinling Mountains in the north and Bashan Mountains in the south formed (range upon range of mountains the hues rise around) peaks over peaks topographical features, and the city girdled by Hanjiang River formed the structure of “One River and Two Banks”. Wetlands lie in the east of the city, so does the Damiao Mountain. Niu Mountain and Longwang Mountain locate to the north of the city. Xiangxi cave and Niuti Mountain locate in the south. So valley plain in the west is the main urban expansion direction in Future. A network of Hanjiang River’s tributaries as Yue river, Huangyang river, Fujia river and Ji river crisscrossed the city, together with low mountain relief, hills, terrace, bench and plain, creates conditions for urban construction use.



Figure 1 the Site



Figure 2 “One River and Two Banks”

1.2 Landscape resources

The unique geographical position, natural conditions and historic Resources makes Ankang interesting and colorful natural scenery and places of historic figures and cultural heritage.

1.2.1 Natural scenery:Qinling Mountains locate in the North, Bashan Mountains locate in the south. The hills surrounding constitute the city’s environment background, and provide an abundant natural scenery resources.

As a mountainous area, the most important influencing factor is aslope topographies, which is different from plain cities. Cliff, sloping field, bank, terrace, plateau, flatland, Heights, strip of land



Figure 3 Natural scenery

between hills, cross and ridge combine with different land-use and facilities, would show various natural and artificial sights

The city is crossed by Hanjiang River from west to east, girdled by Huangyang River, Yue River and Ji River .These Rivers are the most important water resource and urban’s landscape axis. The wetlands located at the confluence of Huangyang River and Hanjing River is an important part of landscape. The Xiangxi cave and the Yinghu Lake Scenic Spot locate in the south are provincial-level tourist attractions. All these above make up the city’s landscape resources.

1.2.2 Places of historic figures and cultural heritage:Ankang, has a long history more than two million years, is one of cradles of the Chinese civilization. Its brilliant and gorgeous multi-culture, which involved in “Sanqin” culture, “Ba-Shu” culture, “Jing-Chu” culture, central-plains culture and “Di-qiang”cultur, has a homogeneity with Chinese culture, besides, it also has outstanding individual features, because of its geographical position and historic background. As a

result , ”Han-river” culture gets a profound and mystery charm, lots of “classics” and “primogenitor” in Chinese civilization were imprinted during long history.

Today, “Liujiaying” ancient ruins, “Xujiatai” tomb of Southern Song Dynasty, “Baiyun” temple, and the Great Hall of the Ankang Confucius Temple, “Dianan”tower, “Anlan” tower, east master of medicine temple, west master of medicine temple, “Xingwen” mosque, North mosque, South mosque, West mosque, These ruins and places above shows Ankang City’s historic figures and cultural heritage in different aspects

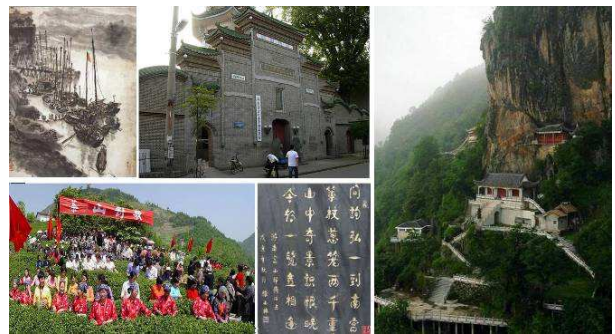


Figure 4 Historic heritage

1.3 Present Problem of Ankang City

1.3.1 Underemphasize on nature landscape

resource:The nature landscape resources formed by mountains and rivers around the city were not utilized effectively. The terrain features were not well connected with urban construction, not considered as one aspect for urban landscape either. Hanjiang River flow through the city from west to east, but the two banks of main stem in the city were not well greened, the landscape is not rich.

The abundant waterscapes were not considered as a whole with Hanjiang River Greening.

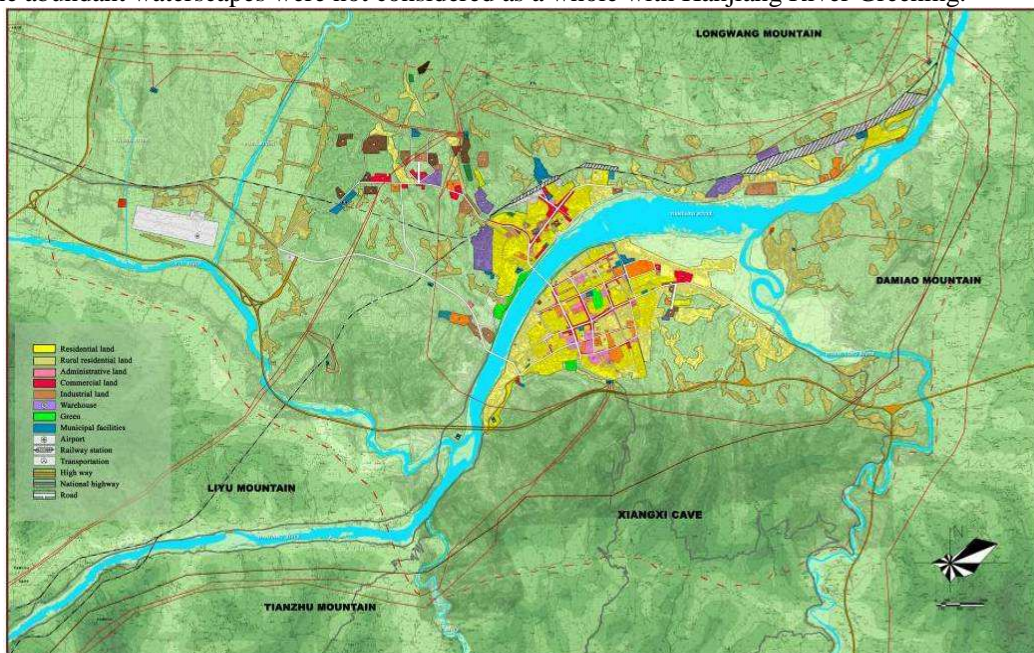


Figure 5 Present situation of Ankang City

1.3.2 Lack of Conservation and utilization of historic figures and cultural heritage:The unique landscapes under the city’s multi-culture, colorful humanity history background were not showed due to the lack of conservation and utilization. Such as liujiaying ancient ruins (a provincial heritage conservation unit), “Xujiatai” tomb of Southern Song Dynasty, “Baiyun” temple, and the Great Hall of the Ankang Confucius Temple did not considered as a role of historic figures and cultural heritage. Cultural forums of Muslims like”Xingwen” mosque, North mosque, South mosque and West mosque do not adapt to their surroundings. What’s more, the important Landmarks of the city like “Anlan”tower and “Dianan”tower are submerged in messy urban constructions.

1.3.3 Present situation of green space structure:At present, the green space structure of the city is imperfect at the points, lines , planes and surrounding levels of the structure. The existing landscapes are unattractive.

“Points”, the green spaces and city furniture are less in residential districts and industrial zones. The surroundings of railway station, bus stations, dock and bridge were not well greened.

“Lines”, the shortage of road planting along the roads as a connection between boundary lines of roads and property lines led to a poor streetscape.

“Planes”: the park category is simple, random and small in quantity. There are only “Xingan”park, “Dianan Temple and “Guanjing”Hill three parks in the Center City. Public green space is not enough, the ratio of green space in urban construction land-use is 1.3%, 1.3 m² of per capita green space.

“Surrounding”, the rivers cross and girdle the city and the mountain around the city were not designed as one element of the green space structure.

2. IDEAS AND PRINCIPLES FOR THE CONSTRUCTION OF LANDSCAPE PATTERN AT COMPREHENSIVE PLANNING LEVEL

Comprehensive Planning is a forward-thinking programmatic document for guiding the future urban development, has a clear defining of urban development and land-use. The ideas and principles for the construction of landscape pattern at comprehensive planning level are defined to point out and ensure urban landscapes with regional features.

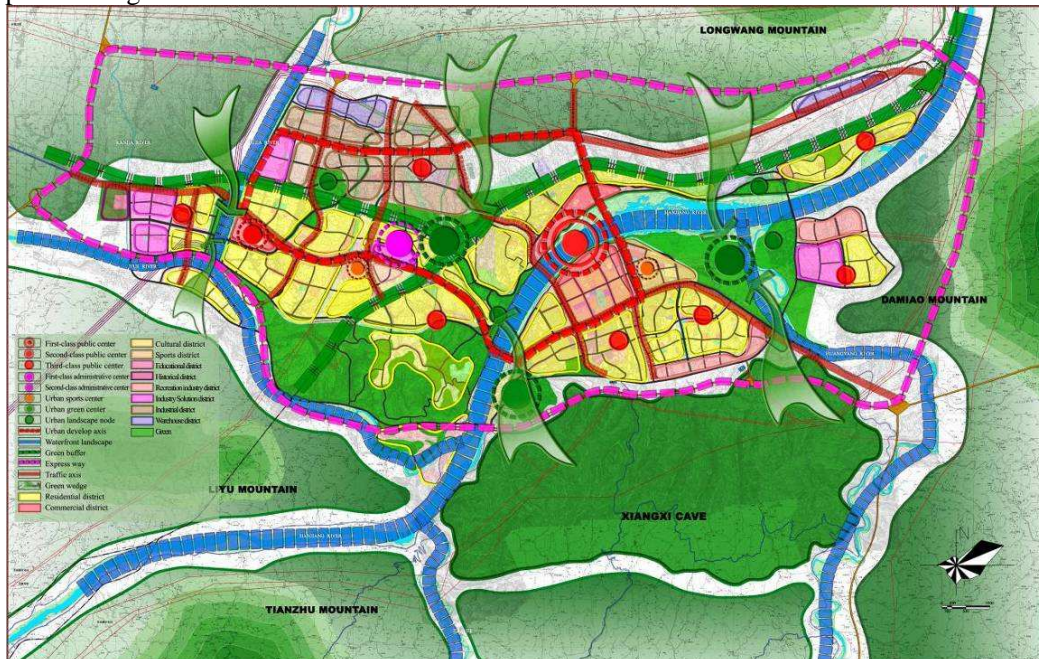


Figure 6 Structure of layout

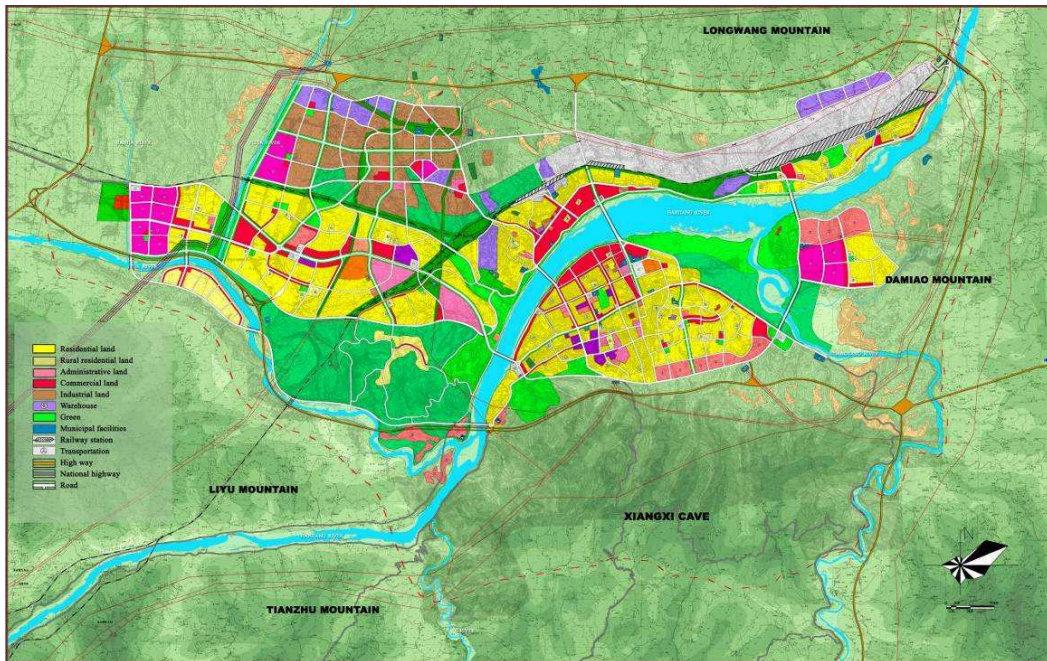


Figure 7 Layout of land-use

2.1 Historic and cultural combine with natural environment

Water is the main element of urban landscape characteristics, the city's essence. The utilization of water combined with historic and cultural environment, would make the city a lively place.

The terrain is another important part of landscape system. The utilization of natural terrain would enrich urban skylines. The rest, which is not suitable for urban construction, should be preserved as an ecological land.

2.2 Urban spaces and urban spirits

Different urban spaces integrate with different activities of inhabitant in the city while different space nodes show different city spirit. The constructions of site would show cultural connotation in different levels and aspects.

The traditional spirits involved with mountains and water will be showed according to arranging open spaces for the performance of natural and activities relevant to natural environment. Urban land-use will be arranged based on the natural environment to show the features of

2.3 History and future construction

Historic and cultural resources are the foundation of urban spirit. The urban future should be highlighted through the utilizing historic and cultural landscape, promoting the features of regional culture in urban landscape, and retaining the trait of national and regional culture. Modern urban system of landscape and open spaces is constructed to emphasize the integration with traditional culture and modern civilization, and show the local characteristics.

The constructions style will be defined according to the style and features of each district. The history and traditions will be showed and spread by mean of integrating the traditional activities and urban open spaces.

3. THEME OF LANDSCAPE

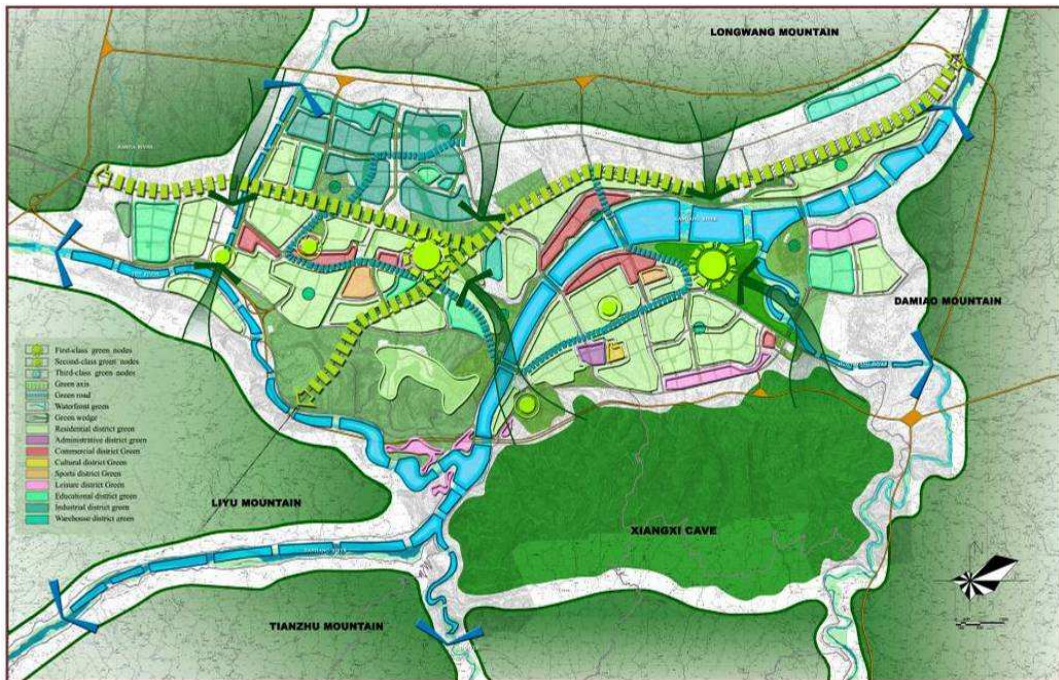


Figure 8 Green space structure of Ankang City

3.1 Waterfront landscape

Waterfront, mountains and rivers set different tones of urban landscape, and would create different characteristics of urban landscape. Hanjiang River, the mother river of Ankang city, has been entitled the first emblem by the public and Tourists. The essence and soul of the city should be integrated with the Hanjiang River. In the future, as the expansion of city spaces, different theme of each zone will be formed.

To embody the urban features and characteristics, the authors take the mountains as the background or the interface, and utilize the waterfront as the important part of the whole landscape. The features of waterfront landscape, a sense of urban awareness, and a sense of belonging would be showed through limiting the dense building areas in waterfront, controlling the contour of spaces, exploring the cultural connotation. The connection between waterfront and urban areas would be enhanced by adding walking trails. The facilities and spaces for leisure and tourism activities are to be enhanced while dividing the functions of waterfront. Then, the unique feature of waterfront can be formed by conserving the waterfront of other related rivers like Yue river, Huangyang River, protecting the existing bank line from trace damage, river landfill, water pollution; and designing important urban nodes combined with rivers.

3.2 Mountains landscape

The comprehensive plan integrates the city and mountains around like Longwang Mountain, Liyu Mountain and Xiangxi cave by means of organizing landscape vista, establishing the connection between mountains and the city.

The mountain is to be made an important part of identification system of the city by designing and building well-marked construction or Landmark. The foot line of the mountain should be opened, and get rid of the constructions occupying the foot line of mountain like an obstacle of landscape. Greenbelts or roads can be utilized to separate buildings from blocking mountain landscapes. In addition, public walking trails should be opened up to make it easier for people to get to the mountains.

3.3 Nodes and Areas Landscape

Based on design of urban space nodes, distinctive urban landscape areas will be formed, such as urban culture and administrative center, sports center, drum tower historic district, “Changling” vacation village district, and central business district, Hongyang river wetlands area and so on.

Cultural relics and historic sites will be more renowned through the establishment of ancient ruins and tombs tourist spots while raising people’s cultural conservation consciousness. Green spaces and

construction lands around the cultural and historical heritage sites in historic districts are in shortage. Since the green spaces cannot be arranged to form a certain scale, the authors suggest making full use of space to form a good surrounding as much as possible. Important nodes in the urban green space landscape system are constituted to form the construction model of “one object-one scene”.

Historic districts are a carrier of local cultures, an important part of landscape and an important factor of the diversity of urban landscape. In drum tower historic district, historical constructions should be strictly protected. Renew these historic districts based on preserving the original structure. While the height, scale, size and color of the new constructions are controlled to accommodate the historical constructions. The Muslim historic districts should maintain the original scale, and prevent altering present appearances and layout. In the future, new districts should integrate with multi-culture to show Ankang’s profound culture.

Compared with the historic districts, the new districts have more rooms for development of cultural and historical heritage. In this condition, the authors insist protect their premier and proper style, shape adapted space environment. Since the historic sites of Ankang city have a different cultural background and landscape features, the comprehensive plan integrates them with their historic value, sets up different scopes of protection, and chooses different methods of reservation to reflect its proper landscape style.

4. CONSTRUCTION OF LANDSCAPE PATTERN



Figure 9 Landscape structure of Ankang City

4.1 Natural environment patterns

In the process of urban expansion, the maintenance of the regional landscape patterns and continuity and integrity of the topography is the key to keep the urban ecological environment. Because undermining the continuity of landscape pattern will cut off the natural circulation, including wind, water, species, nutrition, and lead to an unhealthy urban development, even lose lives. The authors insist maintain the mountain contour lines, and forbid any act of destruction to the mountains nor the large scale urban construction in the mountains. So protecting these mountains Longwang Mountain, Liyu Mountain, Damiao Mountain as the ecological environmental background of landscape is important.

River is the lifeline of the earth and the major element of landscape. Nowadays, pollution, floods and drought are three water serious issues in China's water system. In Hanjiang River water system of Ankang, the most important problem is pollution and flood. After instructing urban land suitability evaluation, the change of original river channel is avoided in the city construction process, and the ecology water network should be constructed integrating the Hanjiang River and its branches like Fujia River, Yue River, Ji River,

etc. The authors also insist protect the original river morphology to maintain and enhance the most important position of Hanjiang River in Ankang city's landscape and ecology. Reserving sufficient green buffer space along both sides of Fujia River, Yue River, Huangyang River, meanwhile, the land-use in future of two banks should be clearly defined.

4.2 Urban Green Corridor

Based on the design of urban spaces relations between “chart” and “bottom”, the relationship between urban construction land extension and urban green space is to be controlled. In comprehensive planning of Ankang city, analysis and research are implemented within the various mountains and hills stretching into city to determine which land can be used for urban future development construction. Moreover, other mountains, hills, high-voltage and railway shelter-forest that are not suitable to urban development will be reserved or restricted to develop as urban ecological conservation land.

The green corridors, combined with Longwang Mountain, Liyu Mountain, Damiao Mountain, Hanjiang River, Yue River and huangyang River, connect mountains with the city will be formed.

Bring the entire natural environment to the city by stretching Mountains to the city and extending green in the city to contact with all levels of public activity centers and establish relation between nature and artificial.

4.3 Urban green space systems

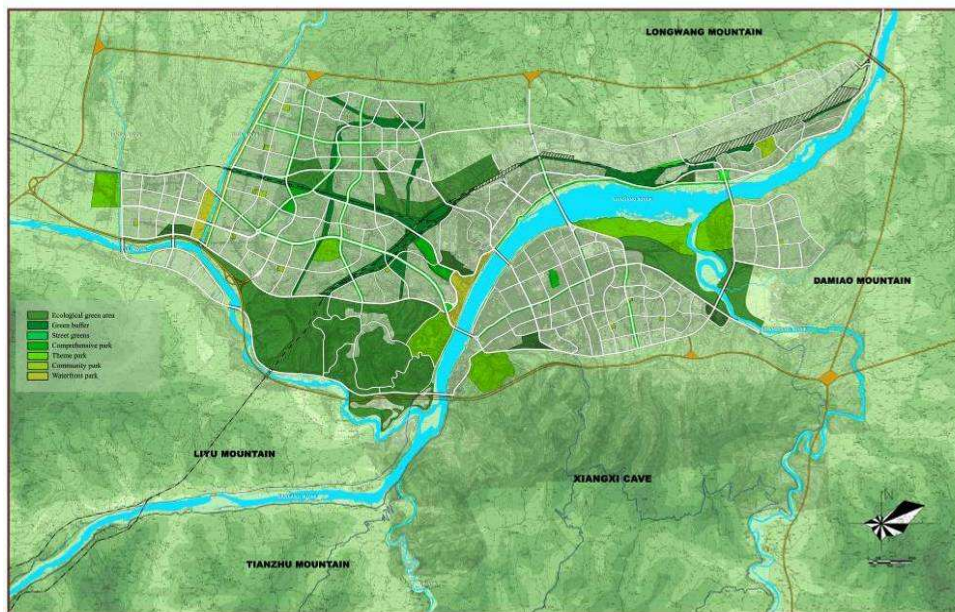


Figure 10 Green space system of Ankang City

Urban green space system is an important content of establishing urban landscape character, and the system should be formed organically in the levels of “point”, “Line”, “plane”.

“Garden city, landscape city” is the goal, and making activity is the way. The natural ecological corridors that established by mountain forest around Ankang city together with the groups and city’s parks are connected.

According to natural features and land-use layout of the city, the authors insist on taking natural landscape in city areas as ecology-based “plane”, taking city parks and green spaces of each group as “point”. And water green, avenue, high-voltage and railways’ green buffer are constructed to such as “Line”. Those elements in different levels above are combined with the mountain woodlands, landscape woodlands and ecological green spaces form an organic combination characteristic appearance.

4.4 Wetlands

In the process of Ankang urbanization, due to the increasing expansion of construction land, wetlands

near urban will be embraced by urban constructions gradually.

The junction of Huang Yang River with the Hanjiang River is the most important wetlands in Ankang city ought to be an Ankang city's green core. Define its borders so that the Wetlands can exert effectiveness in a various ecological services functions and socioeconomic value for city and the residents without being corroded by urban construction.

5. CONCLUSION

The conversation and improvement of urban special features is not only the appearance of local natural environment, multi-culture and regional economy and living standard, but also the embodiment of the city spirit, the urban competitiveness and new urban culture based on local traditional culture. It is a long-term process to construct the urban landscape with the development of cities, and it is the first step of this process to construct the urban landscape pattern at comprehensive planning level in China.

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