



The Study on Transportation Strategies of Xicheng District, Beijing

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Abstract. Based on the study of the current traffic in Xicheng District, the traffic status was analyzed. At present, there are many problems, such as the unreasonable grading of road network functions and the level of public transportation facilities to be improved, with prominent contradictions. Therefore, Strategies are put forward from the equal emphasis of road facilities construction and management, the priority of the development of public transportation, encouraging walking and cycling, and the moderate control of parking in the core area of the central city, and so on.

Keywords: Transportation strategies · Xicheng District · Transportation Management

1 Introduction

In recent years, with the advancement of urbanization, people's dependence on private transportation is increasing, and urban traffic problems are prominent. The traffic status and problems of Xicheng District were analyzed mainly based on the statistical data of 2010 [1]. As one of the core areas of the capital, Xicheng has the urban pattern of coexistence of old and new cities, scarce land resources, and agglomeration of high-end and sophisticated industries, which have put forward new requirements and challenges for the carrying capacity and service efficiency of the comprehensive transportation system of Xicheng District. The scarcity of space resources such as land and roads, It is particularly urgent to realize the sustainable development of Xicheng District traffic system through the optimization and adjustment of travel structure.

1.1 Overview of Regional Developments

The total area under the jurisdiction of Xicheng is 50.6 m². By the end of 2010, Xicheng District had a resident population of 1.243 million, with a population density of 24,600 people per square kilometer, ranking 1st among the six districts of Beijing (The following were the rankings of the six districts); GDP reached RMB 205.77 billion, with an average annual growth rate of 12.8%, ranking 3rd; disposable income of residents reached RMB 31,600, ranking 2nd; motor vehicle ownership was 411,000, with 326,000

private minibuses, ranking 1st. The number of motor vehicles owned was 411,000, with 326,000 private cars, and the private car ownership rate was 262 cars per 1,000 people, ranking 1st.

The overall level of transportation facilities is very high. By the end of 2010, Xicheng District had 293.9 km of urban roads open to traffic (excluding neighborhood roads and hutongs), with a road network density of 5.81 km/km²; the overall road network plan realization rate of 61.3%, ranking 2nd. The density of rail network was 0.64 km/km², ranking first [2].

Traffic demand pressure and transit traffic impact was serious. Population density 24,600/km², ranking first. The travel intensity was 82,900 person-times/km², and the attraction intensity was 100,600 person-times/km², ranking first. 326,000 private minibuses, the ownership rate of 262 per thousand, ranking first. The proportion of transit traffic on main roads is 60–80%. Public transport accounted for 50%, car rental 33% and bicycle 14% (walking 23%) [2].

Traffic congestion was more serious and the traffic situation was severe. The peak hour speed of the whole road network was 20–22 km/h. In 2011, the congestion index of Xicheng District was 7.2, ranking 1st. Congestion index 7.2, ranking 1st [2].

2 The Main Problems and Contradictions

The current traffic problems in Xicheng District include: first, the function classification of road network is not reasonable, and the difference between the north and the south is great; Second, the level of public transport facilities and service needs to be improved; Third, the traffic environment of walking and bicycle transportation system needs to be improved; Fourth, there is a serious imbalance between supply and demand of the parking system, and the parking contradiction is prominent. The following points are the root causes of the above problems.

2.1 There Are Contradictions Between the Development of Major Functional Areas and the Expansion of Limited Facilities

According The 14th Five-Year Plan of Xicheng District, high requirements are put forward for the construction of a national fintech demonstration area, the overall protection and revitalization of the old city, and so on [3]. All these will further attract traffic and put great pressure on the transportation system. However, the capacity expansion of road network, rail transit, ground bus and other facilities in Xicheng District is limited, so how to solve the contradiction between the construction of functional areas and the capacity expansion of facilities will become one of the important challenges.

2.2 The Objective Demand and Implementation Possibility of Traffic Structure Optimization Adjustment Seems to Be in a Dilemma

As the core area of Beijing, Xicheng District must vigorously develop green travel modes such as public transportation and pedestrian bicycle transportation. At the same time, the future increase in the proportion of public transportation will depend on the improvement

of the level of public transportation services, for rail transit and ground bus, improve the level of connection and transfer, improve access speed and other improvements are more difficult.

2.3 Xicheng District's Transportation System and Central City Transportation System Is Not Yet Fully Integrated

Xicheng District needs not only to bear the pressure of traffic demand in Xicheng, but also to coordinate with the overall traffic system of the central city. The main traffic corridors of the city need to undertake the transit traffic function of the city. Therefore, the future traffic development of Xicheng District needs to deal with the relationship between transit traffic, inbound traffic and intra-district traffic, so as to not only serve the transit function of the city, but also avoid bringing too much interference to inbound traffic and internal traffic of Xicheng District.

2.4 The Supply and Demand of Parking System Is Seriously Out of Balance, and the Contradiction of Parking Is Very Prominent

The gap between the supply and demand of residential parking Spaces is large, and the problem of parking in residential areas is prominent at night. The existing parking resources are not fully utilized. The utilization rate of public parking, unit compound, public construction and distribution is high during the day, but the parking resources in residential areas are idle and prominent. At the meanwhile, the utilization of parking resources in residential areas is basically saturated at night, but the utilization rate of parking space in unit compound and public construction and distribution of parking Spaces is relatively low. There is a lack of supervision, widespread illegal parking in old cities and hutong areas, and serious erosion of walking trails and bicycle lanes.

3 Transportation System Improvement Strategy

The transportation development of Xicheng District cannot be separated from the organic coordination with the surrounding areas and even the whole city. The transportation development strategy in the district should also be adapted to local conditions, taking into account the basic requirements of urban organic renewal and historical and cultural protection, and realizing the seamless connection between the transportation system and transportation service in the old and new urban areas.

3.1 Pay Equal Attention to Road Facilities Construction and Management

Road facilities construction to improve the road network structure, increase the micro-circulation of secondary roads and branch roads as the focus, while the construction of road facilities in the old city to obey the requirements of historical and cultural city style protection. Pay attention to the management of road facilities, focus on creating good conditions for public transport, pedestrian traffic and bicycle traffic, to achieve a fair distribution of traffic resources.

3.2 Give Priority to Public Transport

In planning, investment, construction, management and other aspects to give priority to public transport, the establishment of public transport as the main, coordinated operation of multiple modes of transport, closely linked to the integrated passenger transport system. The focus is to ensure that the bus station land, improve the function of the station; expand the bus network coverage, improve the depth of public transport access; build an efficient and convenient transfer system; expand and improve the bus lane system, the allocation of road resources and road traffic management to give full priority to public transport.

3.3 Encourage Walking and Bicycle Travel

Pay attention to and give full play to the convenience and short-distance travel advantages of walking and bicycle transportation, and do a good job of reasonable connection and interchange with other modes of transportation [4]. The effective width, continuity and road level of the walkway should be ensured, and pedestrian crossing facilities should be mainly in the form of planes, supplemented by three-dimensional ways. Physical separation between motor vehicles and bicycles should be achieved on secondary roads and above, as well as on urban roads where conditions exist, to ensure safe and smooth bicycle traffic. Take effective measures to eliminate the obstruction and threat to bicycle traffic when public transportation stops.

3.4 Moderate Control of Parking in the Core Area of Central City

Integrate parking resources in Xicheng District, moderate control of parking in the core area, on the one hand, moderate to meet reasonable parking demand, on the other hand, combined with traffic demand management, the implementation of differentiated supply policies by region, to play the effect of static braking. The recent integration of resources, the use of information technology and intelligent management tools, combined with the differences in parking demand in time and space, fully exploit the potential of existing parking resources; at the same time can also make reasonable use of urban land and space resources, according to local conditions, flexible and diverse layout of parking, to solve the problem of parking difficulties and parking chaos [5].

3.5 Establish a Sound System of Laws and Regulations

At present, with the absence of parking related laws in Beijing, the motor vehicle purchase policy linked to the fixed parking space has not yet been established. Other management policies (such as passenger car lottery) can play a limited role in regulating the potential demand of passenger car purchase. It is suggested to draw on the experience of Japan and other countries to introduce laws and regulations related to parking, especially in the old city, to give priority to owning parking Spaces as the basic premise of buying cars, so as to raise the retention threshold of cars. Establish the parking policy zoning in the central city, clarify the differentiated parking policies, and realize the mutual coordination of relevant legislation, policy research and law enforcement guarantee.

4 Conclusion

Urban traffic management is a complex system engineering involving many departments, such as traffic management, planning, residential construction, municipal administration, industry and commerce. There are still many challenges to realize the organic docking and coordinated development with the transportation system of the central city. As the core area of the capital, Xicheng District needs to consider land use, fund security, system and mechanism in the future.

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