

# Study on Bus Priority Regulation Management System

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**Abstract.** This article mainly aimed at the problem of "bus priority" law system in our country, through the research on public transport infrastructure, bus priority policy subsidies and investment policy, bus priority management security policy and bus priority management guarantee mechanism is put forward form to ensure system implementation of bus priority policy supporting system of traffic laws, provide legal guarantee for traffic management in accordance with the law.

**Keywords:** Bus priority, Regulation Management System.

## 1. Introduction

In recent years, with the continuous expansion of urban scale and the continuous improvement of residents' mobility level, the problem of urban congestion is increasingly prominent, and urban transportation is facing severe challenges. Therefore, it is urgent to speed up the priority development of urban public transportation and advocate green travel. Early western countries rapid economic development, especially the development of car industry period, caused the disorder spread of cities, in after the car transport of city disease, western countries gradually realize the importance of public transport, public transport priority in the early 1960 s first put forward by French Paris, then quickly in Europe and the United States and other big cities in the developed countries to promote. In 1975, the United States began to put forward the priority development of public transportation. The government promulgated the public transportation law to open bus lanes. In the 1990s, the government promulgated the ground transportation law to provide a legal basis for public transportation subsidies. France is among the first countries to put forward the "bus priority", the central government and local government attaches great importance to the development of city's public transportation, at all levels of government guarantee of bus priority on fiscal subsidies and investment, according to the French public traffic laws, set up a public tax on communication, need more than 9 people enterprises according to the total wages extract 1.2 ~ 2% of the public tax on communication, to ensure the priority to the development of public transport. France's "public transport" also published various investigation and research report about the "bus priority". So far, there has not been a systematic and comprehensive study of the implementation of "bus first" policies and technologies monograph. Although China has not formed a unified, fixed and comprehensive policy system and technical support system to ensure "bus priority". However, with the increasing emphasis on "bus priority" in China, the development of urban public transportation inevitably requires a comprehensive and systematic theoretical and practical research on "bus priority" as soon as possible.

## 2. Study on Bus Priority Regulation System

### 2.1 Analysis of Public Transport Infrastructure Construction Policies

#### (1) Policy analysis of rail transit construction

Building an efficient, safe and low-pollution public transportation system is the fundamental way to improve urban traffic conditions, and rail transit is the most effective way. It using a dedicated road, fast and efficient, safe and timely evacuation traffic, the traffic corridor zone, the connection between the major urban hubs such as role playing the other transportation way beyond compare, at the same time it has low energy consumption, saving land resources, the characteristics of low pollution, in addition, the development of rail transit function may guide shaft, urban morphology change, help to achieve business gathered benefits. Strengthening the policy support of rail transit

construction will be conducive to the healthy development of public transportation with high efficiency, safety and low pollution.

## (2) Policy analysis of bus station and hub facilities construction

We will vigorously develop infrastructure for comprehensive bus transfer hubs. The selection of hubs especially needs to pay attention to the layout of passenger flow hubs such as the city center, ports, long-distance passenger transport hubs. Large transfer hubs are set up in large passenger flow distribution centers in urban areas to provide convenient transfer for daily trips in urban areas. For major construction projects such as airports, railway stations, passenger terminals, residential communities, development zones, satellite cities and large public venues, the construction of the first and last stations or stops of public transportation shall be synchronously designed, constructed and completed as supporting facilities of the project. At the junction of various traffic modes in the city, the construction of a modern comprehensive three-dimensional transfer hub, the combination of ground and underground, multi-layer layout, complete functions; The transfer hub is built at the edge of the central city. Through the hub construction, an organic connection is established between the service lines outside the city and the lines inside the city.

Construction of a harbor - style station. The geometric design of bay bus stops can greatly reduce the impact of traffic congestion and congestion near the stops. For the roads above the newly built secondary main roads in the city, port stops should be reserved. In the process of road reconstruction in the old city, port stops should be added to the existing roads.

Take care of the bus operation facilities. Use advanced technology, speed up vehicle renewal and maintenance, change the city bus (electric) vehicle broken, old, damaged condition, shorten the running time of vehicles and reduce accidents, achieve the maintenance and increase in value of bus operation facilities.

Public transport uses "time and space first" to travel. Appropriate traffic management techniques and measures should be adopted to open up bus lanes or special bus lanes for a certain period of time on crowded road sections on the basis of existing road resources, so as to ensure the right to use public transportation sections, that is, space; In order to ensure the priority of bus passing at the intersection, the special entrance approach and special signal light are set up.

Introduce intelligent bus management system. Based on the optimization of bus system, using system engineering theory to traffic flow guidance technology, differential GPS positioning technology, GIS and map matching technology, bus operation optimization and evaluation technology, computer network technology, database technology, communication technology, electronic technology, advanced technology such as smart card technology integration of science, form a set of intelligent scheduling, bus electronic toll collection, information services, network communication in the integration of advanced public transportation management system.

## 2.2 Preferential Fiscal Subsidies and Investment Policies for Public Transport

Establish scientific public transport priority financial subsidy policy. Give priority to the legislative protection of financial compensation. Establish and improve the urban public transport ticket price management mechanism, giving consideration to the interests of enterprises, society, citizens and other aspects. At the same time, we should further improve the urban public transport fare hearing system, improve the scientific and transparent fare formulation, and strengthen social supervision. Through comparative analysis of the public transport industry in various cities, reasonable man-vehicle ratio, fare and competition mode are determined, and "public transport priority" of each city is evaluated. Establishing clear policy subsidies and the way of measuring assessment index, strictly divided policy-related losses and the scope of business losses, all public welfare function policy-related losses caused by the subsidized government, for the policy-related losses, should not give subsidies.

Establish a scientific public transport priority investment policy. In terms of policies, efforts should be accelerated to attract investment, diversify investment entities, and encourage social capital, including overseas capital, to participate in investment, construction and operation of public transport in the form of joint venture, cooperation or entrusted operation. We should increase government

investment and improve the way of government investment and financing. Bank credit should be inclined to urban public transportation. For projects such as field (factory) station construction and vehicle purchase in urban public transportation, the bank should give priority to the arrangement of credit and supporting asset plan, and ensure the timely availability of funds. At the same time, the government can encourage bus enterprises to develop tourism, property development and other profitable sideline businesses. Through the rolling development of bus enterprises, enterprise development and government tax increase can be realized to maximize the limited investment benefits. In addition, value innovation plan can be implemented to give overall consideration to the construction of public transportation infrastructure and the development of land in surrounding areas.

### **2.3 Research on Bus Priority Management Guarantee Policy**

The priority of public transportation planning and construction land shall be guaranteed by legislation. For example, the priority of public transport planning and construction land shall be guaranteed clearly in traffic laws and regulations, and those who violate the planning and occupy public transport infrastructure and construction land shall be investigated for legal liability, so as to ensure the priority development of public transport planning land.

The use and protection of urban public transport facilities shall be guaranteed by legislation. To punish according to law the occupation of public transport facilities, destruction and theft of urban public transport vehicles and facilities. Good urban public transport facilities are the material conditions for the implementation of public transport priority.

The public transport priority policy has been incorporated into traffic laws and regulations to provide legal basis for the government to formulate measures to give priority to the development of public transport.

Formulate reasonable bus fare policy. In accordance with the price law of the state, price hearings and other forms shall be adopted, and opinions and Suggestions from all walks of life shall be widely solicited. To establish a price evaluation system, the relevant departments should effectively supervise the financial management of bus enterprises, scientifically calculate the operating costs of the enterprises, and the social intermediary organizations authorized by the government should conduct regular dynamic monitoring of the cost-benefit of bus routes. The low-ticket price policy is the basic principle of urban public transportation in China, so the ticket price deviates from the value seriously. The internationally recognized principle of bus pricing is that the ticket price must make up for all the operating costs of the bus company.

Control the use of cars through taxation and other means. At present, China is still in the early stage of car development, but it has caused such serious traffic congestion. The government can control the ownership of cars and limit their use frequency by means of taxation, to reduce individual traffic demand. This needs to combine this part of legislation with our tax law.

### **2.4 Research on Bus Priority Management Guarantee Mechanism**

Introduce competition. We will promote marketization of urban public transport operations, and make enterprises independent operators, responsible for their own profits and losses. Private enterprises and overseas enterprises will be introduced to participate in bus operation in the city, and an orderly market competition mechanism will be established to attract passengers with high-quality services and reasonable prices for competition. On the basis of ensuring the dominant position of state-owned companies, expand the scope of social capital and private enterprises to enter the urban public transport sector. Gradually form the state-owned public transport as the main body, the public from all walks of life to participate, state-owned, private and foreign-funded public transport enterprises to develop together. In policy guidance and management measures in place, on the basis of actively encouraging advantages of public transport backbone enterprises through cross-regional, cross-regional, across the city form of equity participation, holding or entrusted management mergers and weak, small and medium enterprises, small and medium-sized cities to participate in public transport management, through the assets reorganization, the backbone enterprise management to the

intensive, large-scale development, achieve complementary advantages make full use of the experience, and money.

Management reform of bus enterprises. First, property rights reform. Straighten out the property right relationship, establish the property right of enterprise legal person, and establish the corresponding enterprise legal person system and limited liability system. Second, the improvement of corporate governance structure. The company implements the standard corporate governance structure of general meeting of shareholders, board of directors, general manager and board of supervisors. Third, reform of the supervision mechanism. On the basis of retaining the original functional commission, discipline commission and inspection office, three levels of supervision shall be implemented: the investor shall exercise the main duties of the board of supervisors and supervise the behavior of the company and its managers in accordance with the relevant provisions of the company law; The party committee of the company shall supervise the general manager and other personnel in abiding by laws and regulations and carrying out the party's principles and policies. The shareholders' meeting and the trade union shall supervise the company's operations and management and the protection of the legitimate rights and interests of its employees.

Implement the franchise system. Enterprises that have passed the qualification certification can participate in the bidding and obtain the route franchise and operate the bus business exclusively within the franchised route. The implementation of line franchise is conducive to the government's management according to the different lines, to distinguish policy losses from operational gains and losses, and to increase the enthusiasm of enterprises to generate income. The granting of the right of management of public transport lines belongs to the scope of franchise management. The granting of the right of management of public transport lines should be carried out in accordance with the principles of "breaking monopoly, moderate competition, standardizing service and facilitating the people", and limited competition should be implemented under the supervision of the government. According to different cities, regional franchise or line franchise can be implemented. Small cities, newly built cities and satellite towns can be reformed in one step, while megacities and large cities should be reformed in stages. For the original operation of good bus lines, should basically maintain the status quo; For newly built roads, roads leading to rural areas and newly built bus routes, bidding for the right to operate can be used to select the best operating enterprises, not only taking economic benefits as a reference index, but also taking social benefits into account.

### **3. Conclusion**

It is urgent to implement bus priority and green travel, which requires strong policy guarantee. From the existing research foundation and development situation, the policy and regulation guarantee of bus priority development is still weak. In view of these key issues, it is very necessary to carry out major special research on bus priority and green travel guarantee system. This topic through the bus priority and green travel security system study, play to the advantages of bus rapid transit system and the slow traffic system, play to the scientific research achievements in urban transit, slow traffic industry technical guidance, efficient service, standardized management, for the green low carbon transport system to provide powerful policy guarantee. The government should speed up the formation of a complete system of traffic laws and regulations to ensure the implementation of the bus priority policy, so as to provide legal guarantee for the management of traffic according to law.

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