

Discussion on Traffic Planning under the Concept of Green Transport

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Abstract

Green transportation is an important planning theory based on the concept of healthy cities. Traffic planning plays an important role in the development of China's social economy, and is an important measure to ensure that China's traffic problems are effectively solved. However, under the background of urban construction and development, it is difficult for the traditional traffic planning to meet the development needs of the times, not only because the quality requirements of transportation planning in China are higher, but also reflected in China's importance to energy consumption, environmental pollution and other issues, which is not conducive to the sustainable development of China's traffic planning. The application of green traffic concept in traffic planning can not only realize a good traffic environment, but also effectively reduce the problem of energy consumption, so that China's urban ecological environment has been effectively protected. This paper analyzes the green transportation system and puts forward some concrete measures according to the actual situation, hoping to provide an effective reference for the sustainable development of green transportation planning.

Keywords

Green Transport; Transportation planning ;Environmental protection.

1. Introduction

With the rapid development of China's social economy, the development speed of urban construction is getting faster and faster, and the problem of resource consumption is becoming more and more serious, in the case of the increasing environmental carrying capacity, the people of our country's attention to environmental pollution is gradually increasing, which brings some challenges to the development of China's traffic planning. At the same time, transportation is a basic industry with large greenhouse gas emissions, more resource consumption and more environmental pollution sources, which, while supporting the development of China's social economy, has also caused conflicts with China's urban environment and resources, which greatly restricts the sustainable development of China's social economy and transportation. In addition, compared with some developed western countries, China's transportation green level is relatively low, how to promote the sustainable development of the transportation industry has become an important research topic in China. Therefore, it is necessary to carry out an in-depth analysis of the connotation of green transportation system, so that effective measures can be taken to promote the smooth implementation of green transportation planning, for China's social economy and transportation sustainable development to lay a good foundation.

2. Meaning and Principles of Green Transportation

2.1. Meaning of Green Traffic

"Green traffic" is the concept of the current serious traffic pollution, specifically refers to the public transport-led and combined with walking, cycling and other low-polluting modes of

transport, "green traffic" is the main goal is to coordinate the transport system and ecological environment, economic resources of the common development, reduce traffic congestion to enhance traffic efficiency. Better to meet people's daily needs, so the relevant departments in the planning of urban traffic should be green transport concept as the most fundamental guiding principle, it should be integrated into the urban transport network planning.

2.2. Principles of Urban Transportation Planning based on the Concept of Green Transportation

The principle of people-oriented is to make any means of transport a pure tool, re-examine the "human value" and human feelings, and then reposition the urban transportation system, the previous motor vehicle-first transport system to public transport and slow-moving traffic priority transportation system, on the one hand to meet the basic travel needs of people, on the other hand to achieve the comfort, efficiency and convenience of travel. Insist ingons to respect nature, conform to nature, protect nature, put green development in a more prominent position, and effectively raise the green level of infrastructure, transportation equipment and transportation organizations, as reflected in the guidance of green travel concept, the shaping of green travel environment, the construction of intensive transportation system, green technology and the application of organizations. The "greenness" of urban transportation is reflected in the operational efficiency of urban traffic, and the improvement of efficiency depends on the effective integration and organic convergence of the system, mainly in: the effective integration of the transportation network, the good convergence of various modes of transportation, the organic connection between urban transportation and external transportation, and the integration of transportation and land, energy, science and technology.

3. Urban Transport Planning Method based on Green Traffic Concept

Green transportation system is based on the concept of public transportation and multi-modal balanced development, has a coordinated transportation system, with efficient, low-carbon and people-oriented characteristics. Based on the concept of green transportation, urban transportation planning should pay attention to the remodeling of urban traffic development-oriented and the optimization of the architecture, fully implement the priority development strategy of public transport, pay attention to the optimization and upgrading of the slow-moving system, and implement the urban transportation mode of "bus and bicycle and walk".

3.1. Integrated Planning of Transportation and Land Use and Urban Population as a Whole

In the planning, we should introduce the interactive mechanism of transportation and land use, especially to promote the intensive utilization of urban land by rail transit, optimize the urban spatial structure with rail transit corridors and sites, and form a public transport-oriented urban development model. In addition, we will strengthen the integration of regulations, implement urban transportation planning into the overall urban planning, control detailed planning, to ensure the implementation of traffic planning, especially major public transport projects.

3.2. Integrated Planning for Public Transport Systems

In the mode of public transportation-oriented urban development, building an integrated public transport system with large-medium-capacity public transport (rail transit or rapid transit) as its backbone is essential to ease urban traffic congestion and support sustainable urban development.

(1) Rail transit. Rail transit has the advantages of high efficiency and large capacity, and it is also the main development direction of large-scale urban public transportation. The design of

the rail transit network should pay attention to the planning coordination of urban development pattern, land use layout, population and employment distribution, study and analyze the urban large-scale passenger flow distribution points and the main corridor of urban passenger transport, and reasonably select the laying corridor of rail transit line. We should combine the construction of rail transit with guiding urban development, promote the development of new urban areas and the formation of urban development axis, and accelerate the construction of urban circles, urban groups and new development zones. In addition, around the rail transit station set up regular bus stops, bicycle parking lot, P-R common parking lot, reasonable planning of public transport access programs, to achieve the scale of urban transport integration.

(2) Bus rapid transit. Rapid transit A medium-capacity bus system, built in a city with rail transit can be used as a supplement to rail transit, in other cities can be used as a skeleton system of public transport. The BRT channel should be laid along the main corridor of bus traffic, taking into account the service function of urban land, try to avoid and fast roads, and choose the main road with better traffic conditions. At the same time, the BRT channel should consider the connection with rail transit and regular public transport, build a composite channel in the key corridor, and try to avoid competition with the long rail co-lines.

(3) Bus lanes. With the track, BRT and other public transport facilities to set up bus lanes, for the ground public transport to provide a reasonable right of way. The laying of bus lanes should take into account road traffic conditions and the number of buses. Passenger demand can meet dedicated

Road requirements, dedicated roads can ensure the basic speed of transport of buses, to avoid the waste of road resources.

(4) Harbour Bus Station. We will vigorously promote the construction of the harbour station, on the one hand, to transform the old road, and change the non-port-style port-type stop to the harbor-type docking station according to the land use conditions, and on the other hand, the new secondary highway above the road is fully equipped with the harbour-type docking station. In addition, in some bus lines, the implementation of double-station stops on busy roads, can effectively alleviate the lack of station capacity, peak bus station queue slack problem.

3.3. Proper Planning of the Slow-Moving System of Bicycle Lanes

Bicycles are ideal for green vehicles. Rational use of bicycles is one of the important ways to relieve traffic pressure and solve the problem of urban pollution. For a long time, the construction of bicycle lanes has been lacking in urban transportation planning. To realize green traffic and effectively relieve traffic pressure, we must first change the concept, formulate the development strategy of bike lanes, clarify the role and status of bicycles in the transportation system, actively build bicycle lanes, and improve the safety and stability of bicycles in the process of use. Focus on public transport hubs as the core, the formation of friendly slow-track channels, to guide residents to use slow and slow-track access to public transport. Pay attention to the distribution of the right of way of slow-track traffic, change the way of car-based in the design of urban roads in the past, redistribute the right of way in accordance with the priority principle of "pedestrians, cyclists and bus drivers", and coordinate the design of walking lanes, bicycle lanes, bus lanes, motor lanes, etc.

3.4. Control of Car Use

In the current urban traffic, cars occupy a lot of urban road resources, but these cars not only consume a lot of energy, but also consume a lot of energy at the same time produce a lot of exhaust gas. Therefore, it is necessary to effectively formulate traffic demand management measures, restrict the ownership and use of private cars, guide owners to use cars reasonably,

and reasonably limit the supply of parking spaces, to alleviate the traffic pressure in central urban areas.

3.5. Parking Planning

Planning and construction of green parking, three-dimensional parking building. We will implement mixed use of land, strictly manage the allocation of construction indicators, and strengthen the allocation of parking lots for new buildings. Improve the parking differential charging mechanism, in accordance with the "center higher than the peripheral, inside the road higher than the road, above the ground higher than underground" and other differential principles, research and develop different types and different areas of public parking charges.

4. Improvements to Green Transport Planning under the Sustainable Concept

4.1. Relationship between Traffic Demand and Supply

In the process of applying the concept of sustainable development, quality, fairness, quality and development need to be taken as the basic principles, and the maximum economic benefits should be realized under the conditions of protecting natural resources and providing services, so as to provide favorable support for social and economic development. The sustainable development of transportation is the coordinated development of social and economic development, the efficiency of transportation development and the cost of resources and environment, and the concept of changing the concept is an important prerequisite for realizing the efficiency of transportation development, not only by increasing the input cost to improve the traffic efficiency, but to focus on the expansion from quantity to the improvement of operational quality. Among them, social and economic development is the main goal of China's transportation development, the cost of resource environment is an important prerequisite to achieve the sustainable development of our society, and the core of sustainable development of transportation is the transformation of development mode, the reduction of the cost of resources and environment, and then promote the harmonious development of society, economy, environment, resources and transportation. The general transportation system can be distinguished into several parts, such as traffic demand, traffic supply and related system framework, which are mainly determined according to various factors such as social and economic activities, transportation supply is based on the relevant institutional framework, provided by the transportation system, and the relevant institutional framework plays a role in regulating traffic demand and transportation supply. In order to ensure that the urban transportation system can achieve the goal of supply balance, the traffic demand in the ability of traffic supply reflects a certain decisive role and relationship, according to the traffic demand for transportation supply, transportation equipment and transportation infrastructure construction scale can be effectively determined. However, it will also cause the spontaneous growth of various modes of transportation, cannot guarantee the degree of greenness of the traffic structure, it is difficult to fundamentally solve the problem of traffic supply. Therefore, in the whole project construction process, we should also realize the adjustment and control of the structure of traffic demand by management means, and effectively control the relationship between traffic demand and supply through scientific management methods, so that the sustainable development of transportation can be realized smoothly.

4.2. Process of Green Traffic Planning

It is an important measure to promote the sustainable development of transportation, which can effectively realize the coordinated development of different modes of transportation and make the transportation planning method more suitable for the requirements of sustainable development. The improved traffic planning process is as follows: (1) the traffic analysis is

divided, the traffic generation and attraction are forecasted, the traffic distribution is forecasted, the traffic volume of each channel is obtained in the light of the classification of the channel, and then the transportation demand capacity of each channel characteristic year is effectively determined. (2) According to the sustainable development requirements of the area where the traffic section is located, scientific analysis and prediction of the carrying capacity of the resource environment, and on this basis, the development goals of the traffic structure of each transport channel are reasonably determined, and then the division of the channel mode is obtained as the basis for the different modes of each channel to effectively determine the demand capacity of the different modes within each channel. (3) The demand ability of different ways in each channel is taken as the main basis, and the scientific traffic configuration is carried out according to the constraints of the construction environment of each route within the channel. (4) Set the road resistance function, after adjusting the policy, technology and rate parameters for each traffic route, the traffic is reasonably distributed, and the needs of each route needs are determined for each channel characteristic year. (5) After the distribution of traffic, whether the various modes in the channel meet the development requirements, if it does not meet the requirements and objectives of sustainable development of transportation, it is necessary to return to the fourth step, and vice versa can move on to the next step. (6) To carry out an effective ecological evaluation of the transportation planning scheme, if it does not meet the requirements, it is necessary to return to the third step, on the contrary, we can determine the end of the traffic planning program as the main basis for transportation construction.

5. Conclusion

In summary, in order to meet the green traffic planning under the concept of sustainable development, it is necessary to effectively adjust and control the relationship between traffic demand and transportation supply, promote the coordinated development of traffic demand, transportation supply and resource environment, and scientifically improve the process of green transportation planning, so that the requirements of green transportation planning can be effectively met, and provide favorable support for the sustainable development of transportation in China.

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