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Study on environmental protection of urban traffic way to travel

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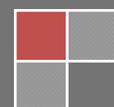
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ABSTRACT

with the development of economic construction, environmental pollution increasingly serious, the issue of environmental protection has become an important subject in the world to be solved. Different urban traffic ways to travel caused not the same degrees of environmental pollution. The article mainly studies on urban traffic ways to travel, on the clear basis of the problem bus travel is the way to travel of less unit discharge of pollutants, explore strategies to guide residents to use bus travel mode, and then puts forward the system proposals in environmental protection of constructing and perfecting urban traffic way to travel.

KEYWORDS

Transportation; Way to travel; Environmental protection; Bus priority.



THE BASIC SITUATION OF URBAN TRANSPORT DEVELOPMENT

Status of road traffic

Urban basic survey data which based on national multi-city planning department show that the level of urbanization of domestic medium-sized cities from 1980 to 2006 continued to hover at around 50 percent, but rapid increased from 2006 to 2012, now more than 60 percent, even close to 80 percent. In the 21st century, the number of motor vehicles in the city has a rapid increase more than 200 every day. At the end of 2012, multi-city vehicle fleet has more than 500,000. Rapid increasing urban population and economic development have made the state of road traffic in congestion. Old urban planning concept made urban development and road network level uneven, and the structure of road network showed "diabolo" shape and even "inverted pyramid" shape. The deletion of trunk and branch made more congestion in the road of urban trunk road. Accompanied by surging vehicle ownership and increasing traffic congestion, vehicle emissions forced pollution of the industry city aggravate, therefore the problem of environmental protection have to address at the moment.

Residents way to travel

As 2005-2010 traffic survey data shown, residents way to travel at the present stage was walking> Public transport> Private Cars> Non-motor vehicles. The proportion of public transport increased significantly, but failed to reach 40%. Public transport facilities were obsolete and could not be updated, so which be considered for the transportation of the "poor" used by travelers. The relevant departments of government had not given full attention to the problems, which even considered bad bus service should be accepted. Government officials which considering from political achievements and other aspects thought that subway and light rail were symbol of developed cities. Walking had gradually been accepted, but walking had a short distance travel and consumed long time. Walking is the most direct and effective way which could ease congestion of city center and reduce emissions. The proportion of non-motorized travel had a general decline at this stage among medium-sized cities. There were two subjective reasons. First, density of urban public transportation network increased and accessibility improved, which caused the proportion of transportation of bus increasing. Second, as standards of society living was improving in medium-sized cities, the cost of car was low except the fuel, a large number of wealthy people choose the car as transport. There were two passive reasons. First, now there are less space on urban roads will be reserved for non-motor vehicles, vehicles parking along the street would occupy the lane which should belongs to non-motor vehicles in some sections and non-motorized travel would be discriminated against on the right of the way. Second, with the rapid expansion of the city, limitations of non-motorized travel distance gradually reflected, emerging cities which economic growth rapidly were mostly resource-based cities, these cities had lots of natural steep slope, therefore bicycles travel would be inconvenient relatively. At the present stage, the surge of the numbers of private vehicles determined that private car travel would be the fastest growing mode of transportation, so private car travel would be the first choice of people because of convenient. Since 2008 year, the proportion of public transport travel declined because the way of private car travel was popular. In addition, most of medium-sized cities had appeared the stage of rapid development in the past, the development of infrastructure compared ahead of vehicle, but quickly became a serious lag after 2008. The creation and renovation of urban roads of 4-6 years consecutive high-intensity still could not meet the demand of fast-growing vehicles travel. The influence of the development of transport on the urban environment gradually revealed, such as intense noise, acrid exhaust and acid rain.

THE BASIC ENVIRONMENTAL PROTECTION PROBLEMS OF URBAN TRAFFIC

Construction of green transportation system

Construction of green transportation system includes coordination of transportation system, urban structure and the nature of land use, transportation division, transportation systems and urban resources (energy). Green transportation system could be understood as rational planning of urban land use structure based on the above conditions, people would choice the more environmental way to travel, transport of resources (energy) consumption lower provides more convenient travel condition. From the point of view of transportation, green transportation system includes walking, bicycle traffic, regular public transport and rail transport. From the point of view of transport, green transport includes a variety of low-pollution vehicles, such as dual-energy vehicles, natural gas vehicles, electric vehicles, hydrogen-powered cars, solar cars. Green transportation also includes a variety of electrification of transport, such as trolley buses, trams, light rail, subway. According to the survey, the urban that has a high proportion of green transportation travel would be a great development which consumption of transportation energy and travel costs should be low, roads occupy less space.

Idea of bus priority

We have realized the city motorization is probably inevitable from the angle of social development; we must transform the thinking angle. We should consider how to make people flow, instead of thinking about how to make the car move. In other words, the target of us is to let the limited road for more travel service. The only method is that to vigorously develop public transport and implement the strategy of "bus priority". Meeting the current needs of the urban public transport, solving the problems of traffic jam and environmental pollution in reality, this is the primary task of public transport priority.

Public transit oriented development is a way of urban planning, namely, a collection of high-density residential and the development of market along the public transport corridors. We should greatly improve the convenience of people to use public transport, to reduce the use of private transportation travel. Based on the scarcity of urban land resources, development of urban traffic system must adhere to two cardinal principles: first, right of way which traffic tools have should be distributed by space utilization of unit pavement (Bus road utilization rate is the highest, which should be given maximum right of way; Private car which have the lowest average load should be limited used in central or parking); Second, the government should construct mass rapid transit system according to the economic law (increasing of large capacity, fast, economic, convenient traffic mode in the system, building the corresponding mass rapid transportation according to the needs of urban).

Public transit signal priority is a kind of traffic control technology which could reduce the delay of bus in signal intersection. Comparison of all people's total delay at the intersection, the delay between a bus full of passengers and a car is inequitable, let the bus priority in the intersection will greatly reduce the per capita delay at the intersection. Traffic signal control machine or detection equipment provide bus control system driving information, and according to these information with the intersection of release phase, timing and other parameters to optimize the processing, in ensuring the smooth traffic intersection and adjacent intersections without loss of coordination under the premise of prioritizing arrived at the intersection of the bus.

From the beginning of the 1980s, urban transport industry became more and more important, which policy gradually systematic and progressively set up the principles of sustainable development. "China Urban Transportation Demand Management Action Plan" and the "Beijing Declaration: Chinese urban transport strategy" appeared, which fully demonstrated the strategy of sustainable development of urban road traffic. Although the rate of return on investment of public transport industry was very low, but we have a policy and legal protection, the stability of the industry could still attract some potential investors. The focus of central government turned to macro level of strategy and planning, the solving of urban traffic problems had been new ideas --promoting sustainable development of the whole society. People-oriented is the fundamental principle of urban road traffic development, development of urban road traffic system should be based on the body condition of the city itself, following the principle of "people's accessibility and superior mobility vehicles", and encourages public participation in the green transportation lifestyle choices. Promote activity ratio of human and control line rate of vehicle. People should use reasonable social operation concept to get the achievement of integration of the various transport vehicles and transportation, reduce overall traffic volume community, thereby improving the environment of urban, and guide sustainable development of urban.

STRATEGIES FOR ENVIRONMENTAL PROTECTION OF URBAN TRANSPORT

Rational choice of travel mode

The priority of traffic travel of green transportation system is walking, non-motorized travel, public transport travel (including taxi trip), and private car travel and so on. Rational choice of travel mode is the most effective way to improve the environment of urban traffic.

Public transport has been recognized as the world's best way to travel which could solve urban traffic congestion, world made many excellent public transport system programs, such as BRT of Brazil, tram of Germany and Hungary, light rail lines of Canada. According to the shows of survey data comparison that public transport trips of medium-sized cities increased from 21 percent in 2005 to 34 percent in 2010, the highest peak appeared in 2009, the proportion of bus travel has reached 39 percent. Since 2005 year, the density of city's public transportation network increased each year, buses updated speedy, and the degree of social recognition to public transport improved. Lots of people chose public transport travel. At the same time as the procurement of government of large number of new buses and put into use, travel pressures significantly reduce of the urban morning and evening peak, the existing service quality of transport system and management level of public transport operators improve simultaneously. A detailed feasibility analysis of urban planning sector determines the project of the city center light rail line's construction.

The number of small private car of the medium-sized cities in our country had an explosive development in 2007. The average annual growth of motor vehicles was that from an average of about 25000 vehicles in 2006 sharply to 49000 vehicles. The rapid developments of the private cars to a certain extent led to the local economy, but made traffic environment a heavy burden on his back. Private cars to travel have a free, convenient and could realize "door to door" and other benefits, at the same time also have a low efficiency, high energy consumption, high pollution and per capita social services narrow problem. Private cars to travel are the main reason which causes the urban traffic congestion. Localization of medium-sized city, the needs of economic development could not be strict control of the car development, but on the limit of the city car use has made the effort. New special lines of argument and set, the central business district and its surrounding parking facilities controls, the layout of station area diversion hard isolation facilities such as the measures are effective to ease the congestion of the city.

Develop and improve the legal system of road traffic noise and pollutant emissions

The noise intensity of road traffic closely relates with the type of car, engine power, speed, vehicle density, road longitudinal slope, and distance between intersection, road grades and other factors. In order to solve the problem of urban road traffic noise perfectly, construct green transportation system, the author recommends to improve China's existing

"Environmental Protection Law", "Environmental Noise Pollution Prevention Law," "Environmental Noise Pollution Prevention Act," and "Environmental Quality Standard (GB 3096-2008)", on this basis, learn some cities which have developed and implemented "traffic noise regulations," and then develop "Urban Environmental Noise Control Act", which could strictly regulate traffic noise problems at the legal level.

Traffic pollution closely relates with and traffic, vehicles, fuel, running, road conditions and weather geographically, which has random changes in different seasons and times. Vehicle emissions have become a major source of pollution of the ambient air. Vehicle emissions have become a major source of pollution of the ambient air. For vehicle pollutant emissions, the author recommends to improve China's existing "Environmental Protection Law", "People's Republic of China Air Pollution Prevention Law", "Ambient Air Quality Standard" (GB3095-96) and "limit vehicle emissions of pollutants and test methods" (GB14961-99). The government should increase the intensity of environmental regulation and management, and strengthen settings of environmental management agencies at all levels, in strict accordance with detection methods by the law implementing for monitoring and management of environmental pollutants, people who violate the rules would be punished by appropriate penalties.

Legal aspects of protection of bus priority strategy

Our country has promulgated "Highway Law" and "Road Transport Regulations", is seeking "Urban Public Transport Regulations" (Draft). From a legal point of view, "Urban Public Transport Regulations" (Draft) should become the basic law of urban public transportation. In the absence of the law of the situation, "Construction Opinions on the Priority Development of Urban Public Transport" (city [2004]38) describes the public transport policy of the government. The experience of developed countries is that the policy and the law were clear, the definition of rights and responsibility was clear.

Under the background of bus priority strategy, the legal status and transport priority of public transport should be written to "Road Traffic Safety Law". Based on the basic purpose of public transport, bus road right-of-way and the above special vehicle expression should be different in law. The basic purpose of setting of bus road right of way is to make public transport vehicle running speed and improving the transport capacity, so the law should be clear right of way on public transport vehicles in the city roads. But the public transportation in safe passage for basic conditions, so the priority compared with special vehicles there should be no retrograde, burst signals, such as priority, but rather to its operation to other social vehicles interference is prohibited. Therefore, the author suggests: first of all, the legal status of public transport and priority seating arrangement should be to make clear in the general part of "Road Traffic Safety Law"; Next, add the specific provisions in the law on road traffic safety, clear bus road right of way, banning social vehicles for public transportation priority conflict, reduce the interference of social cars running on the bus, and clear the legal responsibility. "Urban bus priority" strategy is a major measure which builds a harmonious society for move with the times, but we should not be constrained by the strategy. To justice in the context of the rule of law, we should give more attention and consideration in the law, which is the rule of law in.

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