

Urban Transportation Development Strategy Oriented by Green and Low-Carbon Goals



Yang Tao*

Ph.D., Professor, Jiangsu Design Master, Nanjing Urban and Transportation Planning and Design Institute Co., Ltd., Nanjing, China

Submission: August 25, 2023; **Published:** September 12, 2023

***Corresponding author:** Yang Tao, Ph.D., Professor, Jiangsu Design Master, Nanjing Urban and Transportation Planning and Design Institute Co., Ltd., Nanjing, China, Email id: yangtao@nictp.com

Keywords: Urban transportation; Ecological Protection; Carbon Emission Peaking; Neutrality

Opinion

In 2020, General Secretary Xi Jinping proposed the commitment of “carbon peaking in 2030, carbon neutrality in 2060”, and the national “14th Five-Year Plan of China “ clarifies the timetable for carbon emission peaking. A series of plans, such as the three-year actions plan for carbon emission reduction in transportation (2021-2023) and the three-year actions plan for green travel (2021-2023), have set targets and action plans in terms of optimizing the transportation modal split, advocating green travel, managing the demand for car travel, energy transformation of transportation equipment, low-carbon infrastructure construction, smart transportation, application of energy-saving and carbon-reduction technologies, standard systems and basic research, and transportation carbon reduction mechanisms. The urban transport development strategy oriented by green and low-carbon goals mainly includes the following six aspects: Urban agglomerations and metropolitan areas will become the main forms of new-type urbanization in China. With the increase of urban spatial scale, the separation of work and housing has an increasing trend. Therefore, special attention should be paid to the rational urban spatial layout and delineation of urban boundaries to avoid the infinite expansion of cities; Intensive land conservation, mixed development, promote work-housing balance, shorten the radius of commuting space, reduce travel time consumption and total travel demand. Under the guidance of the TOD concept, actively promote the planning and construction of urban belts, urban agglomerations and metropolitan areas on the track, as well as transit cities, transit corridors, transit communities, and transit buildings. and do a good job in the comprehensive layout planning of urban functions and the synchronous construction of supporting public facilities. In the process of urban new construction and old city renewal,

optimize the spatial structure, and try to arrange more than 70% of residence, employment and consumption within 500 meters along the rail transit and around the transit hub, so as to achieve the balance between urban residence and employment and residence and consumption under the guidance of public transport.

Bus vehicles enjoy sufficient traffic signal priority at road intersections, and ensure sufficient bus departure frequency, so that residents can enjoy sufficient convenience, timeliness and reliability of public transport travel to the greatest extent, improve the competitiveness of public transportation for cars, and reduce residents’ dependence on car travel. To encourage slow travel and green travel (Mainly referring to walking and bicycle travel), we should pay attention to building a 5~10-minute slow travel convenient living circle around the rail and bus hub, supporting service facilities that meet daily life and leisure in the living circle, planning and building slow and friendly green streets, supporting slow travel facilities connected with public transportation, etc. Control car travel and reduce residents’ dependence on cars. through non-administrative means such as laws and regulations, economic levers, and normative standards, increase the cost of car ownership, car use, parking, and illegal costs, and reduce the demand for car transportation. On the other hand, through scientific traffic organization and design, intelligent transportation and other technical means to reduce traffic congestion, improve the efficiency of road network traffic, and reduce traffic carbon emissions. Optimize the transportation modal split and promote new clean energy transportation equipment. Changing the modal of logistics and transportation, developing multimodal transport, and increasing the proportion of waterways and railways in comprehensive transportation can reduce energy consumption

and pollution caused by logistics and distribution. Promote the application of new energy transportation equipment, introduce new energy vehicle purchase and operation subsidy policies, include the construction of charging piles in the parking space allocation standards of construction projects, formulate new energy distribution vehicle convenience policies, and improve vehicle traffic conditions.

Build green transport corridors. Urban transportation corridors have a significant role in improving traffic efficiency and regional connectivity, saving travel time and costs, and optimizing urban transportation modal, and also have significant effects in promoting the conservation of land resources and infrastructure construction in corridors, guiding and driving the agglomeration and reconstruction of urban functions and land use along the route, as well as energy saving, emission reduction, and pollution control. Promote green transport infrastructure and maintenance. The concept of ecological protection runs through the whole process of planning, design, construction, operation and maintenance of transportation infrastructure, and reduces the ecological impact caused by transportation construction. Reducing transportation energy consumption and carbon emissions should be the core, and measures should be taken in the use of materials, construction and maintenance. Among them, in terms of material use, full attention should be paid to the recycling of construction waste from the concept and management, and the recycling of waste pavement,

construction waste, industrial solid waste, etc. should be promoted in the field of transportation construction; Promote the use of new green paving materials to reduce energy consumption and exhaust emissions per unit mileage of automobiles. In the process of infrastructure construction and maintenance, management should be strengthened to ensure timely cleaning of the surrounding areas of construction, cleaning of construction vehicles, and control of road dust. Application of traffic and transportation informatization and intelligent technology. With the development of electronics, communications, Internet, 5G communication, artificial intelligence and other technologies, intelligent transportation technology has become a favorable tool for low-carbon green transformation of transportation. Studies have shown that intelligent transportation systems and traffic informatization can greatly improve urban transportation efficiency, reducing fuel consumption by 25%~50% . We should make full use of information and intelligent technologies to promote carbon reduction, consumption reduction, efficiency and quality improvement of transportation, including promoting the construction of intelligent transportation infrastructure, implementing precise and comprehensive congestion management with big data, building a transportation service system based on mobile terminals, cultivating a new model of "Mobility as a Service (MaaS)", and developing an intelligent carbon emission monitoring and management system.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/ECO.A.2023.03.555608](https://doi.org/10.19080/ECO.A.2023.03.555608)

Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats
(Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission

<https://juniperpublishers.com/online-submission.php>