

**PROBLEMS OF URBAN TRANSPORT IN DEVELOPING REGIONS (EXAMPLE OF
ANDIJAN REGION)**

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Annotation: The article, based on an analysis of international experience and successful practices, has developed strategies suitable for the Andijan region. The research results provide scientifically based and practically significant recommendations for improving the transport system of developing regions. This work will contribute to increasing sustainability and efficiency in the development of urban infrastructure.

Keywords: experience, strategy, transport, contract, transit, flow, foot.

Introduction. Problems of urban transport in developing regions are a pressing issue today, which is directly related to economic growth, urbanization, and population growth. This article is devoted to a comprehensive study of the problems of the urban transport system using the example of the Andijan region (Uzbekistan). During the study, the main problems were identified as a lack of transport infrastructure, difficulties in effectively managing passenger flows, excessive road congestion, environmental problems, and insufficient implementation of modern technologies. The purpose of the study is to analyze existing problems in the urban transport system, to propose innovative and sustainable solutions for their solution [1].

In developing regions, the urban transport system is important for the quality of life of the population and the economic development of the region [2]. Andijan region is one of the most densely populated regions of Uzbekistan, and as a result of urbanization processes and rapid population growth, serious problems arise in the urban transport system. Insufficient development of transport infrastructure, difficulties in managing passenger flows, environmental problems, and low efficiency of public transport negatively affect not only economic stability, but also the health and living standards of the urban population [3].

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Methods. It is aimed at identifying problems arising in the urban transport system of the Andijan region and developing proposals for their solution based on international experience.

Within the framework of the study, the current state of the transport system is analyzed, and sustainable and innovative strategies for solving problems are proposed. These strategies will help create an effective transport system for developing regions and ensure positive environmental and economic results [4].

Also, the best practices for solving urban transport problems in other developing regions of the world will be studied, and solutions suitable for the conditions of Andijan will be proposed. Thus, the research results can be valuable not only for the Andijan region, but also for other similar regions.

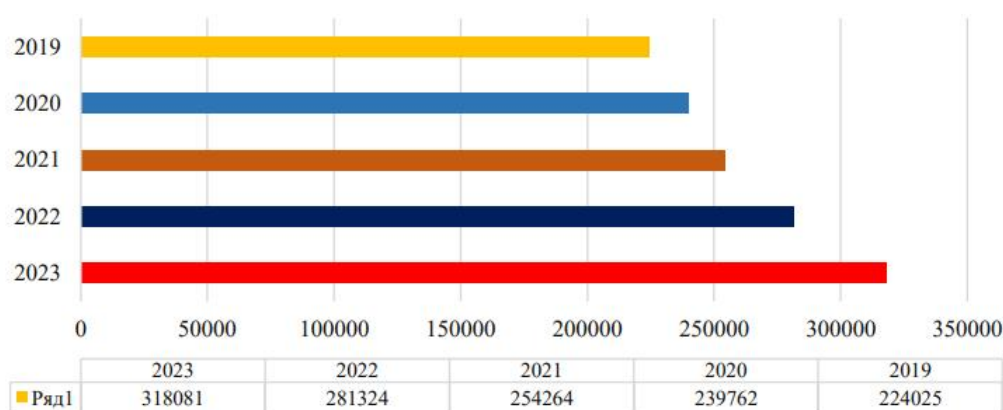


Figure 1. Number of vehicles in Andijan region in 2018-2025

The number of vehicles in the Andijan region alone increased by 42% between 2018 and 2025 (Figure 1). This, of course, directly affects the traffic flow in the city and leads to a deterioration of the city's ecology. At the same time, it leads to free movement of public transport, operational speed, and traffic jams at intersections. In developed countries, the processes associated with the increase in the number of vehicles are systematically addressed by gradually taking necessary measures [6]. Also, during the studies in the city of Andijan, flows entering the city are directly entering through the central streets of the city. When entering the territory of the city of Andijan, flows enter in 6 directions (a, b, c, d, e, f).

The route enters through: a) Andijan, Izboskan, and Pakhtaabad districts, b) Altynkul and Balykchi districts, c) Khojaabad, Bulakbashi, and Kurgantepa districts, as well as the city of Khanabad, d) Asaka and Markhamat districts, e) part of the Andijan district through Soy, f) the world market of the region. The total number of daily passengers entering the city is more than 100 thousand (Fig. 2).

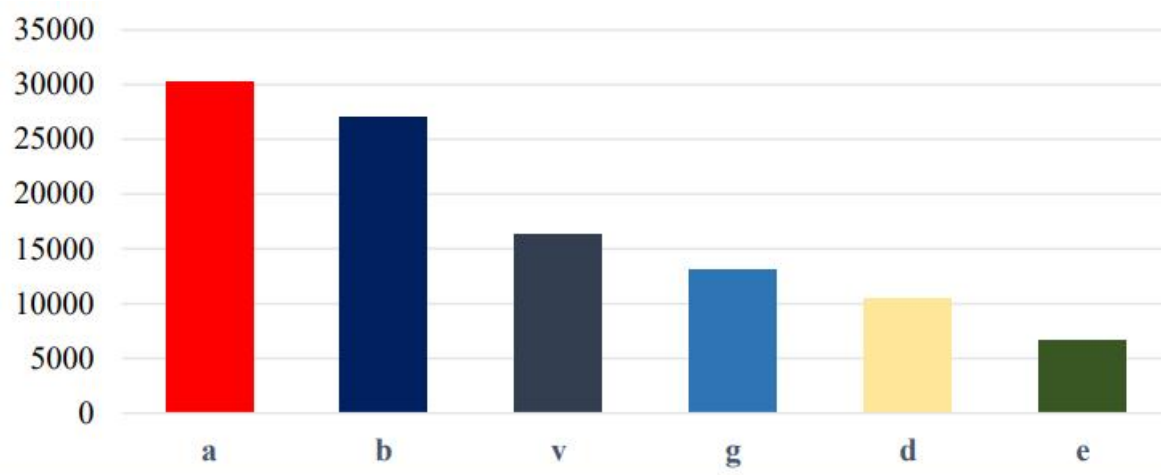


Figure 2. Daily inbound passenger flow

Passengers arrive partially by public transport, route taxis (Damas), non-route and private vehicles. It is becoming increasingly clear that the existing road infrastructure in the city cannot withstand the ever-increasing traffic flow in the city. In this method, it is noted that the use of intelligent transport systems in public transport affects infrastructure, vehicles, and benefits road users, such as drivers and passengers. It was also noted that increasing the speed of public transport will help reduce travel time and improve traffic safety. The purpose of this article is to assess the factors determining the development of intelligent transport systems in the regions of the Russian Federation. The results will lead to the organization of high-quality public transport to the population, ensuring priority on existing public transport routes in the Russian Federation [7].

In this method, it is noted that when distributing passengers by modes of transport (public transport, route taxis, taxis), it is necessary to implement a number of measures to stimulate the use of public transport and reduce the attractiveness of private transport, and it is sufficient to implement a number of measures to increase the level of public transport use. Possible measures to increase the attractiveness of public transport are: planning and construction of a road network of a common express bus route that can compete with cars, organization of separate lanes for buses.

At the same time, it is noted that a comprehensive approach to improving the public transport sector will allow increasing the volume of passenger transportation, increasing the profits of motor transport enterprises, reducing traffic congestion in the city, increasing the speed of passenger transportation, increasing traffic safety, and improving the environmental situation [7]. In modern methods of organizing traffic safety in cities, traffic jams on highways are detected in real time using GPS or GLONASS systems. Based on this, it is necessary to organize the operation of green and red traffic lights in real time in accordance with existing traffic jams as a result of the increase in urban traffic flows on sections of routes. This method is explained by a mathematical model using the MATLAB program. It was noted that in improving the public

transport system, which is the main means of transport in the city, it is possible to ensure the priority of public transport in the city, first of all, through the optimal placement of pedestrian and bicycle paths and the organization of bus stops in passenger-friendly sections.

Result and discussion. During the study, there are several factors influencing the priority of public transport in the city of Andijan. Of these: - Increase in the number of personal vehicles; - The absence of separate lanes on highways that ensure the priority of public transport; Lack of integration of traffic lights on city roads; On the routes, there are passenger taxis (Damas) parallel to bus routes. At the same time, there are factors that directly affect urban public transport in the existing parts. One of them is the Central Farmers Market of the city of Andijan, part of Abdurauf Fitrat Street. The street consists of two sections: entering 1-A and exiting 1-B. In this section, road 1-A has 2 single-lane lanes, and 1-B also has 2 lanes. However, on the 1-A highway, public transport covers a distance of 410 meters in 362 seconds, and the operating speed is 1.13 m/s. Through section 1-B, public transport covers a distance of 430 meters in 122 seconds, the operational speed is 3.54 m/s. It is known that this indicator negatively affects the overall traffic schedule, taking 10% of the total time of public transport movement. The sharp increase in demographic growth rates in the city of Andijan, as well as the convenience created for operating as a route taxi on the basis of a license and license card in the prescribed manner after state registration as a self-employed person, are causing various traffic jams on the city streets. At the same time, the Andijan-Namangan-Tashkent railway line, crossing the center of the city of Andijan, has an impact on the intervals of public transport (buses) movement, causing partial traffic jams in the areas where it intersects with highways.

In world practice, the function of bypass ring roads is considered the most optimal solution for entering and exiting the city territory, preventing the accumulation of existing flows into one place.

In megacities, the number of ring roads ranges from three to seven. Transportation on international highways occupies an important place in the country's economy. Because exports, imports, and transit cargo serve as the main factor in improving the socio-economic situation of the country and raising the standard of living of the population. The length of the international highway passing through the Andijan region alone is 103 kilometers. The number of international and transit vehicles passing through this A373 "M39 highway Gulistan-Angren-Kokand and through Andijan-Osh" is growing year by year. The growth of traffic flow on international roads leads to an increase in the direct impact on traffic safety, urbanization, service, and infrastructure facilities on international roads [19-23]. It became known that the daily increase in the load on public transport as a result of the increase in the number of people and vehicles in the territory of the city of Andijan will lead to the solution of existing problems in public transport.

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