

## ANALYSIS OF METHODS OF REDUCING TRAFFIC ON CITY STREETS

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**Abstract:** *This article analyzes the methods of reducing traffic congestion in the city street network, which is becoming a global problem today. The results of the analysis of the methods of reducing traffic congestion at intersections are presented in the example of Tashkent city roads.*

**Аннотация:** *В данной статье анализируются методы снижения заторов в уличной сети города, которые сегодня становятся глобальной проблемой. Результаты анализа методов снижения заторов на перекрестках представлены на примере дорог города Ташкента.*

**Keywords:** *one-level intersections, traffic, traffic light, traffic flow, motor transport, safety, driver, city streets, traffic speed, density, road capacity.*

**Ключевые слова:** *Одноуровневые перекрестки, движение транспорта, светофор, транспортный поток, автотранспорт, безопасность, водитель, улицы города, скорость движения, плотность, пропускная способность дорог.*

**Enter.** The transition of the urban system to the automobile system, the sharp increase in the number of cars, and the increase in the amount of traffic on the roads. Basically, it causes a number of problems and traffic jams in the city streets and intersections, as a result of which every driver who is stuck in the traffic loses extra time, the vehicles emit harmful gases and damage the environment, unnecessary fuel consumption and the health of the drivers. leads to the observation of a negative effect.

According to the Decree of the President of the Republic of Uzbekistan dated January 28, 2022 PO-60, in the development strategy of New Uzbekistan for 2022-2026" [1] adaptation of road infrastructure to international standards, complete digitization of the traffic management system, to create suitable conditions for all its participants for safe movement on the roads and to pay special attention to ensuring wide participation of the public in the work in this field and to the effective use of the funds directed through the information portal "Open Budget" in this direction. loaded.

In such a case, increasing the capacity of roads at city intersections, properly organizing traffic lights, and developing measures to prevent traffic jams are considered to be one of the current problems.

**The main part.** The problem of traffic congestion at intersections also has a significant negative impact, holding back the economic and social development of many countries. At the national level, according to the World Bank, traffic accidents cause economic losses equal to 1-3% of the gross national product. Worldwide, global economic losses exceed 500 billion US dollars per year. In developing countries alone, the annual loss from road traffic accidents exceeds 100 billion US dollars.

*According to the information of the Statistical Committee of the Republic of Uzbekistan on January 1, 2022, the total number of cars owned by individuals in the Republic is 3,051,734 [2]. Figure 1 shows the number of cars owned by individuals in regions.*

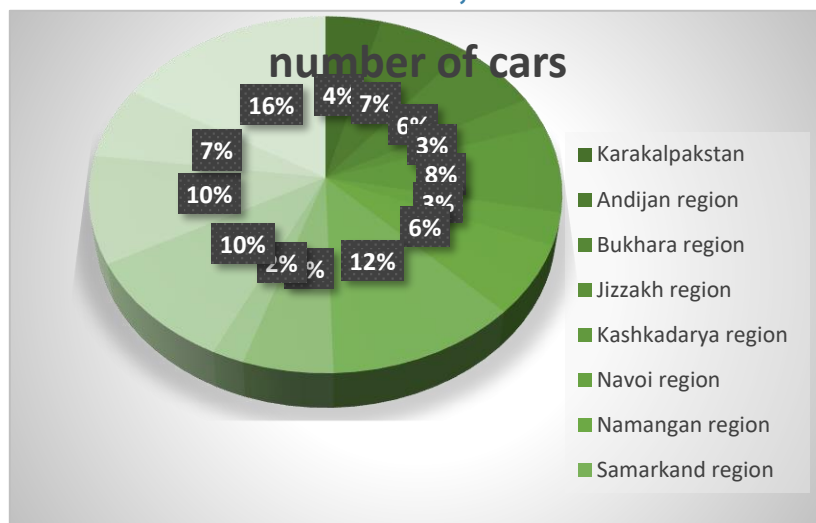


Figure 1. In the republic in the region the number of cars owned by individuals

Recently, the increasing number of traffic jams on the roads of Tashkent worries everyone. This problem, which disturbs all megalopolises of the world, torments the residents and visitors of our city today, causing them to waste time, nervousness, and violations of traffic rules.

It is true that the expansion of the roads of our capital, the qualitative renewal of the asphalt layer, the construction of bridges, overpasses, and the installation of surveillance cameras were of great importance in solving the problem. However, in this regard, there are still such "artificial" obstacles that, without removing them, no matter how smooth our roads and streets are, the traffic will increase and not decrease.

The method of organizing the movement of vehicles on the roads should be chosen based on the density of vehicles, the composition of vehicles, the permeability of the road, etc. [4].

Information on hourly and average annual traffic speed is used to solve the problem of traffic management. This indicator is determined by observation or automatically.

Visual (observation) method - the speed of movement on a certain part of the road is calculated on a special form, in which the vehicles that have passed in a unit of time (minute, hour, day) are recorded.

Automatic methods - speed is determined based on the use of the following sensors; pneumatic, photoelectric, ultrasonic, mechanical, radar, inductive, electronic, etc.

In this work, an analysis of intersection traffic conditions in Tashkent city was carried out using an automatic method.

If we look at the studies of our scientists on the prevention of traffic jams, Ph.D. In his research, Alexei Valeryevich Kostsov studied the speed of public transport, as well as the level of traffic on the main streets of the city. Work was carried out to determine the dependence of the speed of vehicles and rolling stock on the movement of public transport. Recommendations for improving public transport traffic by creating additional sections for public transport were developed. (If we look at the example of Figure 2). One of the important indicators describing the working conditions of Tashkent city road networks in modern conditions is the distribution of car and public passenger transport between these routes. The communication speed of vehicles is slightly different from each other. As the level of road congestion increases, the speed

of public transport will decrease significantly, resulting in a significant decrease in the quality of transport services for all road users in high traffic conditions. [3]



Figure 2. The allocation of a separate road lane for public transport

With a further increase in the speed of loading on the road ( $2 > 0.7$ ), only the influence of the speed of truck movement and rolling stock on the contact speed is significantly reduced (Fig. 3). Dependence of the speed of rolling stock transfer on the level of filling the central streets with content: a) in conditions of movement of public transport rolling stock in separated areas; b) public transport movement in mixed traffic flow. According to him, the movement of public transport in a separate lane does not have a negative impact on the increase in road traffic, the ease of movement of the population, and the quality of transport services. Public transport conditions can be improved by creating additional public transport areas. Of course, in several streets of the capital Tashkent, public transport is separated from the general flow of traffic by 1.1 horizontal lines.

a) b)



Figure 3. The content of movement of cars

a) public transport rolling stock in conditions of movement in separated areas;  
b) public transport movement in mixed traffic flow

Ph.D. In his research, A. Lipnitsky considered ways to implement the traffic order at intersections and intersections by changing the order of traffic at intersections. According to international statistics, turning uncontrolled intersections into small and medium-diameter circles not only reduces traffic by 40-80 percent, but also has a positive effect on the movement of public transport and other types of transport. The conversion of all intersections at one-level intersections of urban highways and level intersections into roundabouts at all sections of urban highways depends on the geographical location, architectural and construction conditions, economic costs, road conditions, traffic flow, (Fig. 4). Another important aspect of the



organization of public transport depends on the dimensions of this type of transport. It is known that public transport is wider and longer in size than other means of transport. At regular intersections and intersections, for example, left-turning public transport vehicles are known to take up more space when turning from intersections due to their relatively large size and to some extent restrict the movement of oncoming vehicles. This, in turn, affects the movement of the intersection and the movement of other vehicles. Therefore, it is necessary to find a solution that does not interfere with the movement of other types of vehicles, taking into account these features when organizing public transport traffic at intersections and intersections.



**Summary:** We have reviewed some of our scientists' scientifically proven methods that can be used to reduce traffic on city streets. It is necessary to increase the speed and safety of public transport in order to avoid traffic jams at intersections and roads in general. For this, it is necessary to widely use such methods at the city level, regardless of the amount of funds.

#### **References:**

1. Decree of the President of the Republic of Uzbekistan dated January 28, 2022 No. PF-60 "On the development strategy of the new Uzbekistan for 2022-2026",
2. Information of the Statistics Committee of the Republic of Uzbekistan on January 1, 2022 at <https://kalampir.uz/uz/news/uzbekiston>,
3. Driver reliability. Textbook. / A.N.Romanov, P.A.Pegin - Khabarovsk: "Pacific Ocean" publishing house. 2006. - 376 pages,
4. Spirin I.V. Organization and management of passenger car transport, M., Academy, 2010. – 400 p,
5. <http://dy.uz/KV25H>.