

WAYS TO SOLUTION THE UNLOADING OF THE TRANSPORT NETWORK IN MODERN CITIES

Buzrukov Zakiryo Sattikhodzhaevich

*Candidate of Technical Sciences, Associate Professor, Namangan Engineering Construction
Institute Republic of Uzbekistan, Namanagan city, 12 Islam Karimov street.*

zsbuzrukov@mail.ru

Annotation. *The article sets out ways to solve the causes of traffic jams in modern cities of the country of Uzbekistan and shows the main shortcomings of the creation common transport infrastructure and traffic control systems of modern cities. In the course of the study, some ways of resolving issues for correcting traffic jams in cities were recommended .*

Keywords: *traffic jam, metropolis, congestion, transport infrastructure, street and road network, traffic capacity, parking lots, logistics system, popularization.*

Today, all countries are concerned about how to deal with traffic jams. The problem, which has become a real scourge of large cities around the world, continues its victorious march. In large metropolitan areas, they cope with it with varying degrees of success. In some places, the measures introduced are giving results, in others they are failing. In Uzbekistan, the most problematic region, naturally, is the city of Tashkent and the centers of the regions.

Despite the fact that traffic jams do not disappear, some methods of dealing with them are quite effective. The situation with the increase in traffic congestion is observed not only in large cities of Uzbekistan. Traffic jams are now possible in settlements where the number of inhabitants does not exceed 500 thousand people. But there is still a balance to be struck.

The transport system of a modern city, and especially large metropolitan areas, has been created for decades, and it takes time and significant investments to change it. The structure and extent of the city's street and road network is created on the basis of general development plans focused on a certain level of motorization.

Statistics from 2019 show that the roads in Tashkent are 61% congested, which means that drivers spend 61% more time on each trip due to traffic jams. In the evening, the figure grows: the indicator is equal to 110%. If we calculate how much time car owners spent in traffic jams in the capital last year, it turns out that this amount is even more than a week, about 3.5 days .

What are the causes of congestion? One of the main ones is the lack of roads. People are buying more cars, but the number of roads in the country is not increasing. Due to its shortage, even such an insignificant volume of cars by the standards of Europe is imprisoned in traffic jams. Move freely, freely obtained only at night.

The main disadvantages of the creation common transport infrastructure and traffic control systems of modern cities are:

- low specific density of urban highways and an underdeveloped network of secondary roads;
- low traffic capacity of city streets and intersections;
- combined movement of public passenger transport, cars, trucks and special-purpose vehicles;
- lack of information support system for urban traffic;
- lack of the required number of parking lots and car parks [1,2] .

Modern cities and megacities need a constant increase in the volume of transport communication, increasing its reliability, safety and quality. This requires an increase in the cost of improving the infrastructure of the transport network, turning it into a flexible, highly manageable

logistics system. At the same time, the risk of investments increases significantly if the patterns of development of the transport network and the distribution of the load on its sections are not taken into account. Ignoring these patterns leads to frequent traffic jams, significant overload of individual network nodes, an increase in the accident rate, and environmental damage.

Another constant cause of congestion is emergencies. Even a minor accident stops traffic. Instead of evacuating a car from the roadway on their own, car owners are forced to wait a long time for traffic police officers [5] .

Repair work is another cause of traffic jams. Probably, you have observed how during the active hours of the service they begin to eliminate the shortcomings of the roadway. If at the same time the repairmen do not have the necessary equipment or materials, all this is delayed. Well, when capital work begins, it becomes very bad.

We have named three main, topical causes of congestion. There are also others, for example, problems with the organization of road traffic. Let's take settlements between which only radial roads are located. Having such highways, residents of one area cannot easily get to another. According to the same principle, railroad tracks also make it difficult to move.

The road transport structure of our country is two-dimensional. On the territory of Uzbekistan, railway roads are located separately, highways are launched separately. And how to set up their intersection is an open question. The result of such a construction is huge overruns, disturbances of traffic participants, alienation of areas located near artificial obstacles [3,4] .

This naturally raises the question. How to cope with traffic jams on the roads of the city of Uzbekistan? We recommend 8 ways to resolve issues.

Method number 1: Construction of a multi-level road structure in large cities

This method is practiced in Japan. Highways are located at the upper levels, inter-district roads are located below, district roads close the networks. Of course, the system will require considerable financial investments, and not all cities will be able to afford it. But in order to ensure the safety of roads, maintain the economic and environmental standard of living of the population, funds must be directed to the solution of precisely these tasks.

Method number 2: Organization of connected roads

Multi-level road networks are a good solution, but they do not always help improve the situation in the city. They need to be placed in certain places. In other areas, the construction of linked roads should be considered. This will allow car owners to quickly get to the desired point. With such a road structure, cars will be evenly spaced along the highways, as a result, traffic will improve.

To solve this problem, the construction of bridges, the construction of overpasses are suitable, and it is better to take the railway lines to another level. Of course, this requires a lot of money.

The construction of parking lots also helps to get rid of traffic jams. Cars that are adequately parked do not interfere with the road.

Method number 3: Considered development

If you analyze where traffic jams most often appear, you will see that they occur not only at the intersections of district roads and highways, but also where shopping centers, offices, and residential high-rise buildings are built.

In order to solve the problems of congestion, you need to think about the topic of development. Calculated from the construction policy, the uniform placement of points of attraction for cars (offices, shopping centers) will minimize the traffic load in these peak places.

However, in the central cities we see the opposite picture. As a rule, almost 100% of business centers and retail space are located in the city center; people go there in their own cars.

Method number 4: Prompt elimination of accidents on the road

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Here the solution is simple. First, road users must understand that you need to remove the affected car from the roadway as quickly as possible. If the accident is on a more serious scale, then city services, inspectors must respond promptly, preventing traffic jams. It seems that it sounds easy, but drivers usually wait a long time for traffic police, and the services themselves do not strive to be in the right place quickly.

For public transport, special dedicated lanes have been created for the fast movement of buses.

Method number 5: Carrying out work during the hours of the least traffic congestion

Recall that one of the causes of traffic jams is the repair work on the roads. To prevent this from happening, they must be carried out like special operations: quickly and silently. Of course, this does not apply to large-scale transformations of the road structure. But the repair of pits, the cleaning of the roadway, the application of marking lines should be carried out promptly and not at the time of increased traffic. Again, this will be possible when the executive services accept this information. So far, they regularly perform all repair operations precisely at rush hour.

Method number 6: Popularization of public transport

Of course, not a single bus or other type of public transport will be on the same level with a personal car in terms of convenience and comfort. But if the authorities improve public transport, the schedule of its movement will be accurate, then many drivers will painlessly agree to become passengers.

Method number 7: Placement of parking lots

If car owners have the opportunity to leave their car in a park and ride and continue on public transport, then there will be fewer people who want to go to the city center in a personal car. But for the organization of parking spaces need space. Unfortunately, the authorities are giving away such territories for the construction of offices and retail space. As a result, the load on the road increases even more. But for parking, for which you have to pay, the state spares no money.

Method 8: Creating Reversible Road Lanes

Reverse lanes don't seem to have much of an impact on traffic. But if we are talking about rush hour, then they will be an effective solution, especially in those areas where it is not possible to expand the street. Based on the time (day, evening, night), part of the road with the help of this solution (reversible road lanes) changes the direction of the car flow. This helps the main lanes to pass a huge number of cars.

Some cities, using this practice, place the necessary barriers on the reverse roads in the morning, which separate the lanes. In the evening the barriers move. Such actions create a safe environment for the movement of motorists. [4-10] .

In the near future, the following actions should be taken as priority measures:

- organization of deceleration and acceleration lanes at all interchanges to prevent deceleration of the main flows;
- prohibition of parking on motorways;
- prohibition of movement at low speed in rows for straight ahead (except for the right one);
- organization of a "green wave" on radial highways with regulation of the arrival of cars from adjacent streets;
- creation and implementation of an intelligent transport system (ITS).
- prohibition of parking on sidewalks, driveways, in the yard, i.e. where interference is created with the movement of cars and the operation of public and special transport. Any section of urban space (street, driveway, sidewalk, yard) has an owner, which is either the municipality, or the owner of the house, or the owners of apartments. Parking unauthorized by the owner is an offense. Parking fees should increase progressively as you get closer to the city center.

Taking action against congestion is the goal of the authorities in many countries. True, each state determines its own solutions. Some devote their energy to the reconstruction of the road structure, someone imposes restrictions on the ownership of a personal car, someone popularizes public transport, bicycles and roller skates. Summarizing, we will say that there are methods of dealing with traffic jams, but nevertheless, the solution of the problem must be approached fully and systematically, spending a lot of effort and money on this.

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