PREVENTION OF TRAFFIC CONGESTION

[1]Masharibov Anvarbek Rashidovich,
[2]Rajabova Maftuna Zokir qizi
[1]Lecturer of Urgench State University named after Abu Raykhan Biruni
[2]Student of Urgench State University named after Abu Raykhan Biruni

Abstract. *One of the big problems facing big cities right now is traffic congestion. The problem of congestion is becoming a natural process that causes inconvenience to the lives of people in cities. The negative economic, environmental and social impacts of congestion have already become a global problem. There is a growing need to develop new projects and programs to address the problems caused by traffic jams in the Tashkent. The annual damage caused by traffic jams in Tashkent alone is estimated at $ 140 million.*

Many intersections and traffic lights in the city need to be upgraded. The geometric capacity of the roads needs to be improved. Ushbu maqolada yo'l harakatida yuzaga keluvchi transport tirbandliklari sabalari, tirbandlik oldini olish choralari muammolar o'rganilgan.

Keywords. *Congestion, causes, economic loss, environmental impact, social risk.*

Introdoction

The Transport system is one of the most basic elements in the development, economic growth of any state. A perfectly designed Road in all respects and a stable transport system built on it will improve the social and economic indicators of any state. One of the main problems of the transport system in large cities today is undoubtedly traffic jams on the roads.

Today, the initial stage of the introduction of innovative technologies "smart city" continues in Uzbekistan. Planning and implementation of preliminary testing projects on the areas of" Safe City smart meters smart transport, smart medicine are underway in Tashkent on the implementation of" smart city technologies. In addition to comprehensive work on the introduction of modern urban infrastructure in nurafshan, complex work is being carried out on the implementation of modern urban planning infrastructure within the framework of the Tashkent City and Delta city projects.

In this, the underdevelopment of information and communication technology infrastructure, a significant physical and spiritual obsolescence of the infrastructure of cities remains one of the main problems that prevent the effective introduction of "smart city" technologies. All this requires taking measures to modernize telecommunication networks, as well as looking for large sources of investment for the reconstruction of the infrastructure of cities.

One of the important tasks ahead on this basis is an in-depth analysis of decisions on these areas in foreign countries, conducting practical experiments within the framework of relevant experimental projects and laboratory and field research, as well as developing interesting investment schemes for investors in accordance with existing conditions and new proposals on flexible business models and searching for their available options. In world practice, ways have been developed to solve these problems by establishing public-private partnerships, involving private businesses in solving socially significant tasks. The introduction of smart city technologies increases the efficiency of city management by forming a single digital environment, while providing an opportunity to manage the city in one whole state.

Method and materials

Traffic congestion is a condition characterized by slowed speed in the traffic flow that constitutes traffic, longer running time, and increased car queues. That is, congestion is a condition when the traffic of vehicles exceeds the throughput of a particular road. If the demand for traffic is greater than the capacity of the road to conduct traffic flow, the interaction of vehicles reduces the speed of traffic flow, which leads to traffic jams. At intersections controlled by a traffic light, the capacity of the intersection depends on the saturated flow and the saturated flow rate.

The capacity is determined using the following formula:

$$C_i = S_i \frac{g_i}{C}$$

Here:

S_i - saturated flow rate for group i series;

g_i– effective green light time for Group I rows;

C – cycle length.

Earlier it was reported that the draft presidential decree on the state program on the implementation of the strategy “Uzbekistan-2030” in the “year of support for Youth and business"was put into discussion. With the project, measures are being taken to prevent traffic jams in the city of Tashkent, as well as to develop a public transport system. In particular, it is proposed to introduce a “smart management” system in order to prevent traffic jams and ensure the safety of pedestrians at the point. Also, due to the traffic flow, it is established to organize one-way traffic on certain streets, reduce the load on traffic at peak times due to the optimization of Study Times in Osms. During peak times, the movement of large-capacity and heavy-duty freight cars is restricted or regulated, while traffic flow at higher intersections is subject to revision of traffic light phases.lso, due to the traffic flow, it is established to organize one-way traffic on certain streets, reduce the load on traffic at peak times due to the optimization of Study Times in Osms. During peak times, the movement of large-capacity and

heavy-duty freight cars is restricted or regulated, while traffic flow at higher intersections is subject to revision of traffic light phases. In addition, 255 intersections and intersections are transferred to the coordinated traffic light control — "smart traffic lights" system. At least 10 streets provide toll parking along the roadway. On the main highways entering the city, stationary benches will be created for weight and gabarite control. On these tasks, in February, the development of the corresponding program is established. Until March, the implementation of a unified intellectual system of public transport management is noted in the capital. Reconstruction work was carried out on 8 main transport corridors (83 intersections and 41 pedestrian crossings) with a length of 29 km to ensure bus traffic and pedestrian safety. Suburban areas include separate express bus routes from Nazarbek area to Chorsu and Pakhtakor metro station and from Uchkahramon area to Yunusabad peasant market and Shahristan metro statio econstruction work was carried out on 8 main transport corridors (83 intersections and 41 pedestrian crossings) with a length of 29 km to ensure bus traffic and pedestrian safety. Suburban areas include separate express bus routes from Nazarbek area to Chorsu and Pakhtakor metro station and from Uchkahramon area to Yunusabad peasant market and Shahristan metro station. 11 new metro trains (44 metro cars) will also be purchased for the Tashkent Metro. In September 2023, the head of state expressed the need for a wider implementation of "smart crossroads" and "smart traffic light" control systems for the reform of the road economy sector. Earlier, the president noted that traffic jams in Tashkent are becoming a big problemn September 2023, the head of state expressed the need for a wider implementation of "smart crossroads" and "smart traffic light" control systems for the reform of the road economy sector. Earlier, the president noted that traffic jams in Tashkent are becoming a big problem. On some streets, traffic jams averaging 7-9 points on weekdays, sometimes 10 points, with 2 times as much load falling on some. In the center of the regions, there are plans to limit the traffic of cars that do not comply with the Euro-5 standard. In Tashkent, Motor Transport, intended for cargo transportation, with a permissible full weight of more than 10 tons, is prohibited during rush hours.

Should the road be narrow or wide? Entering the city of Istanbul, we saw that only metrobus and tram were running, a separate corridor was established, and cars were driving on the narrow road that exceeded it. Like many, I thought that if highways are extended in large cities, traffic will be picked up. In the case of a large megapolis – Istanbul, the situation is different hould the road be narrow or wide? Entering the city of Istanbul, we saw that only metrobus and tram were running, a separate corridor was established, and cars were driving on the narrow road that exceeded it. Like many, I thought that if highways are extended in large cities, traffic will be picked up. In the case of a large megapolis – Istanbul, the situation is different. Roads are much narrower

compared to roads in Uzbekistan, with few rows. Here the question arises: should roads be wide at the request of urban planning or vice versa?

Road expert Shuhrat Mirkhojayev described it in detail: "any road width depends on the speed of movement of the road. Uniyam has a limit. A sharp expansion of urban roads, of course, does not increase the safety of movement, but can lead to deterioration. Why? For example, the speed and duration of a piece's crossing will be greater. Crossing a wide road requires more time on foot compared to a narrow road .Shuhrat Mirkhojayev described it in detail: "any road width depends on the speed of movement of the road. Uniyam has a limit. A sharp expansion of urban roads, of course, does not increase the safety of movement, but can lead to deterioration. Why? For example, the speed and duration of a piece's crossing will be greater. Crossing a wide road requires more time on foot compared to a narrow road. As a result, the traffic light stays red for longer, causing traffic jams on the road. For this reason, the drastic road widening in cities does not always have a positive effect on vehicle traffic.

In Uzbekistan, the width of the road strips is defined as at least 3.5 meters. But based on modern standards, we are conducting experiments to make the width of the road straps 3 meters. For example, this experiment was used on the Fergana Road in Tashkent. Why is the width of the road straps reduced? The reason is that the width of the largest vehicle is 2.25 meters. Uzbekistan, the width of the road strips is defined as at least 3.5 meters. But based on modern standards, we are conducting experiments to make the width of the road straps 3 meters. For example, this experiment was used on the Fergana Road in Tashkent. Why is the width of the road straps reduced? The reason is that the width of the largest vehicle is 2.25 meters. This means that moving within 3 meters of tape will not cause them problems. If the lane tape is narrower, the driver of the vehicle will focus on the track and move within its limits. In addition, if each of the 3 straps is reduced from 3.5 meters to 3 meters, we will save 1.5 meters of track. The most important thing is that through this we will ensure that the participants in the movement are free to move and that they are safe. In fact, traffic jams cannot be avoided with road widening. Traffic jams can only be eliminated by regulating traffic on the roads.n addition, if each of the 3 straps is reduced from 3.5 meters to 3 meters, we will save 1.5 meters of track. The most important thing is that through this we will ensure that the participants in the movement are free to move and that they are safe. In fact, traffic jams cannot be avoided with road widening. Traffic jams can only be eliminated by regulating traffic on the roads. According to regulatory documents, the one-way highway is allowed to be built in the cities of Uzbekistan with a maximum of 6 lanes. These norms are developed on the basis of the norms of the former Union. There is no one-way 6-lane road in Tashkent. In the city of Tashkent, the one-way road is built with a maximum of 4 lanes. It is also possible to have 5 rows with additional rows.

The most effective way to prevent traffic congestion in the city is to develop public transport. In the countries we envy, public transport is very developed. So far, this is not the case in Uzbekistan. For this reason, many prefer to drive in their personal car. The formation of veloils is also a very good solution. Currently, about 100 km of veloylaks have been formed in the city of Tashkent. But there are very few people who use it. When people form a culture of going to work, study on bicycles, traffic jams are greatly reduced if the infrastructure of the bike, safety is fully ensured. In Turkey, as in Uzbekistan, YPX employees work, which ensure the safety of movement. They formalize data online. Every time we stopped, our driver showed the check paper to the employee.hen people form a culture of going to work, study on bicycles, traffic jams are greatly reduced if the infrastructure of the bike, safety is fully ensured. In Turkey, as in Uzbekistan, YPX employees work, which ensure the safety of movement. They formalize data online. Every time we stopped, our driver showed the check paper to the employee. The driver took the check from a special speedometer installed closer to the seat. It is said that this device records at what time, where and at what speed the car moved. The unit is mounted on each vehicle, allowing control of the vehicle's speed of movement even in an area where no radar is installed. That is, there is no chance that the driver will break the rule. It is clear that this will dramatically reduce the risk of road violations and a possible road traffic accident.

According to regulation, when YPX employees stop the driver, he or she submits a check out of the speed recorder. If the speed of movement reflected in the check is exceeded the established norm, the employee ramifies an electronic act on his tablet to fine the driver. Otherwise, the driver will be released. It became known what work is planned to be carried out to prevent traffic jams in the city of Tashkent. While the 10-point traffic jams observed in Tashkent last night have greatly decreased, the issue of traffic jams in the capital has not yet fallen from the agenda. Especially during the rush hour of the day, a number of streets in the city are observed with traffic jams.Seeing similar cases, one can realize that the city of Tashkent, like large megacities, is faced with the problem of traffic management. As an example, today in the city of Tashkent there are 5 million inhabitants, the number of which is increasing to 100 thousand per year, the existing 760 thousand motor vehicles, to 76 thousand per year. The population's need for daily mobility is 9 million, of which 3 million are commuting on foot, and 6 million are commuting.s an example, today in the city of Tashkent there are 5 million inhabitants, the number of which is increasing to 100 thousand per year, the existing 760 thousand motor vehicles, to 76 thousand per year. The population's need for daily mobility is 9 million, of which 3 million are commuting on foot, and 6 million are commuting. 25% of traffic, 1.5 million in buses, subways and minibuses, the remaining 4.5 million, is handled by one million (760,000 on the permanent register and 240,000 day arrivals) day-time motor vehicles in the city. The above reasons, the

lack of road repair work and an effective traffic flow control system, the speed of movement in traffic jams drops to 7 km/h, the time spent by the population on the road has almost doubled compared to 3 - 4 years ago, followed by economic losses due to excessive fuel consumption of slow-moving vehicles and the release of harmful gases, as well The satisfaction of the population's need for daily mobility, increasing the efficiency of the time and material resources spent on the road, is achieved by introducing a high-quality, convenient, safe and attractive public transport system according to world experience. From this point of view, the attention of the government's relevant organizations to the issue of traffic prevention is growing. In particular, in the current state, the implementation of a system of public transport with stable speed, convenient connection of routes, work carried out on three main routes, stops and infrastructure facilities arranged on the principle of “one step” to crowded places, which are effectively organized by the directions and times of movement of the population..

Result and discussion

In order to improve the current situation, to satisfy the population's need for mobility through quality, convenient and safe services, the following work is observed:

- The introduction of short-distance bus routes with the widespread use of favorable tariffs intended for peresadka, in order to increase the efficiency of public transport, reduce the time spent by passengers on movement.

- In order to ensure the safety of movement of buses on congested streets, to reduce the time lost in traffic, to introduce on the streets only the right-going main bus routes.

- To create a comfortable safe pedestrian environment (infrastructure) for daily entry into the capital from suburban areas and at the intersection of delivery and highway routes.

- On the basis of the corridor principle, it is required to improve the coordinated management system of traffic lights and the infrastructure of public transport (providing priority, comfort and safety), carry out their work in our corridors with a total length of 472 km, 605 traffic light facilities.

In the first stage of this work, the main loadings and traffic jams with a total length of 125 km should be carried out on the streets observed during the day. For reference: of the necessary works cited, the 55 km sections of the 125 km road street network that are currently in actuality, according to the development of solutions based on the corridor principle (A.Timur, Shahrisabz, Sh. In the first stage of this work, the main loadings and traffic jams with a total length of 125 km should be carried out on the streets observed during the day. For reference: of the necessary works cited, the 55 km sections of the 125 km road street network that are currently in actuality, according to the development of solutions based on the corridor principle (A.Timur, Shahrisabz,

Sh.Rustaveli, New Sergeli, Babur, Samarkand gate, Skyscraper gate, Beshqayrağach, etc.):

- Improving the railway passenger transport system connecting the agglomeration area, introducing new bus routes and reducing the flow of incoming traffic into the city by establishing convenient transport crossing links.

- To limit the traffic of freight transport in the city and direct it to circular traffic along the THAY, to clearly define the time and ways of movement of freight transport within the city.

- Construction of bridges and overpasses connecting areas over canals at intersections of the highway with the railway, in areas with high demand for transport dependence (determined on the basis of established criteria).

Since the beginning of the sharp development of the automobile industry, traffic jams have been tirelessly occurring in large cities, including in the capital. As a result, the valuable time of many people is passing on the street. Several factors contribute to the origin of traffic jams on roads. In particular, excessive number of cars, the conduct of construction and repair work on the streets, the irregular movement of drivers, the occurrence of road accidents or unfavorable weather conditions can limit the movement of cars.In this regard, representatives of local authorities carry out projects tested in foreign experience, defining measures aimed at preventing traffic jams as their main tasks.In particular, excessive number of cars, the conduct of construction and repair work on the streets, the irr

Conculation

The main goal of holding a"car-free day" is to promote a healthy lifestyle. There are also plans to protect the environment from harmful emissions from cars, reduce traffic congestion in large cities, and bring public attention to the issues of developing a public transport system. The Ministry of Ecology urged everyone not to be indifferent to the "day without a car", to use vehicles that cause less atmospheric damage, such as public transport, metro, bicycles, instead of personal cars. Earlier it was reported that the draft presidential decree on the state program on the implementation of the strategy “Uzbekistan-2030” in the “year of support for Youth and business"was put into discussion.With the project, measures are being taken to prevent traffic jams in the city of Tashkent, as well as to develop a public transport system.In particular, it is proposed to introduce a “smart management” system to prevent traffic jams and ensure pedestrian safety in the capital.Earlier it was reported that the draft presidential decree on the state program on the implementation of the strategy “Uzbekistan-2030” in the “year of support for Youth and business"was put into discussion.With the project, measures are being taken to prevent traffic jams in the city of Tashkent, as well as to develop a public transport system.In particular, it is proposed to introduce a “smart management” system to prevent traffic jams and ensure pedestrian safety in the

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