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CONSIDERING REDUCING NOISE FROM VEHICLES WHEN ROAD DESIGNING

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Abstract: As we know, as the number of vehicles on the roads increases, the problems and inconveniences they can cause also increase. These include environmental problems, traffic accidents, traffic jams, and noise from vehicles. It is important to take the above problems into account in the design, construction, and equipment of roads. The article presents recommendations and suggestions for reducing traffic noise, one of the growing problems in our cities, in the process of equipping roads.
Keywords: transport, noise, traffic jams, accidents, intersections, transportation, artificial walls, unevenness, friction, braking, natural obstacles, road equipment, nervous diseases.

Introduction. Currently, the total length of highways in our country is 29,495 km. These figures are increasing from year to year.

Number of vehicles As of July 1 of this year, the number of vehicles registered by individuals in Uzbekistan amounted to 4,612,700. The bulk of these vehicles are passenger cars - 4,289.0 thousand (approximately 92.98%, i.e. ~93 percent). The distribution by other models is as follows:

- Trucks - 302.6 thousand (approximately 6.56 percent);
- Minibuses - 7.7 thousand (approximately 0.17 percent);
- special vehicles - 7.3 thousand (approximately 0.16 percent);
- buses - 6.1 thousand (approximately 0.13 percent).

The increase in the number of vehicles is considered to be of great importance for the development of the economy. Currently, the majority of freight and passenger transportation in our country is carried out by road. The increase in the number and type of vehicles leads to an improvement in the convenience of freight and passenger transportation in all respects. In fact, this is how it should be.

The main part. There is also a second side of the coin, namely, the increase in vehicles causes many other types of problems.

Figure 1. Situation at city intersections

Figure 2. Transport flow

The most analyzed are…., the impact of toxic and harmful gases emitted by vehicles on the environment.
In addition, the rapid deterioration of the pavement, which is often encountered on highways, traffic congestion, an increase in traffic accidents, and noise emitted by vehicles.
It is no secret that all of the above problems have their own impact on the environment and human health. To reduce toxic gases emitted by vehicles, plants are planted on the roadsides that absorb toxic gases and produce oxygen. In addition, many light vehicles now run on electricity. This reduces fuel consumption and, as a result, reduces gases emitted into the atmosphere. The improvement of coatings from year to year or the more frequent maintenance and maintenance work from year to year is smoothing out the traffic process. As a result, the number of traffic accidents is also reduced.
So, some of the problems on the roads listed above are finding their solutions.
Economic development processes are rapidly taking place in our region, the living standards of people are improving. The number of vehicles in neighborhoods, streets and cities is increasing day by day.
The number of light vehicles is increasing in the centers of the cities of Fergana, Andijan, Namangan in the valley regions. It is no exaggeration to say that the level and quality of service to passengers is very high. Of course, there is a culture in driving vehicles. Driving in accordance with traffic rules is important for one's own and others' lives. Increased healthy competition has its own impact on improving the quality of service. However, increased service on the roads causes various noises to arise from them. Another aspect we should pay attention to is that even if the unevenness (erosion) of the coating increases, the noise dB (decibel) increases.
Deformations occurring in coatings are crushing, shifting, waves, and in a solid layer, they consist of ridges and uneven subsidence.
Due to poor-quality processing and laying of the materials used in the coating, and due to the presence of water in the composition, particles are separated from the coatings treated with cement concrete, asphalt concrete and organic binders under the influence of traffic, spalling occurs. If the mixtures laid in a boiling state are overheated (burned), and if a low-viscosity binder is used, a scaly surface is formed in the coating, which is added in a smaller amount than the norm. When a new cement concrete coating prepared in place is exposed to cold and poor-quality material is used, flaky spalling is observed.
The roughness of the road surface is one of the important transport and operational indicators of the road, which causes the contact of vehicle wheels with the surface.
The surface of road surfaces is divided into the following types according to the macro roughness:
-Smooth, the average height of the roughness is not more than 0.3 mm;
-With small roughness, their average height is from 0.3 mm to 1 mm;
-With medium roughness, their average height is from 1 mm to 2 mm;
-With large roughness, their average height is more than 2 mm.
It is clear that as the size of the roughness increases, the friction between the surface and the wheels of the vehicle becomes more difficult. As the friction increases, the stresses in the internal gears of the vehicle increase, which results in noise.
There are various forms of noise on the roads. Noise generated by the vehicle itself, friction noise, warning sound noise of the vehicle, vehicle noise generated during sudden stops or acceleration. If the surface roughness exceeds the norm, that is, the roughness exceeds the indicators mentioned above, it also causes noise to increase. Noise has a negative impact on the environment and people. High-frequency sounds cause fatigue in the human brain, irritability, the appearance of various sounds in the ears, and ultimately mental illness in humans. Especially

in the centers of the valley regions of our country, the frequency of excessive sounds during vehicle operation is high. Therefore, in order to reduce noise in these areas, we need to use more effective technologies to eliminate these shortcomings and problems in the process of equipping highways.

Imagine that you and your family members go on a trip to some city for aesthetic and spiritual relaxation, but you feel increasingly tired. To relieve fatigue, the architectural landscapes of the city center, buildings, bridges and all other creative objects, act as information to your brain. In addition, the sounds around you, the sounds emitted by vehicles, affect the human nervous system and cause fatigue. You feel the signs of fatigue in your soul, as if you have worked hard.

So this is a serious and noteworthy situation. Creating sound-absorbing walls on the sides of the road in the noisiest and busiest areas of the highways will reduce the spread of noise to the surroundings. In addition, growing various types of trees and plants on the sides of the road will also help reduce noise.

Figure 3. Noise propagation around the environment

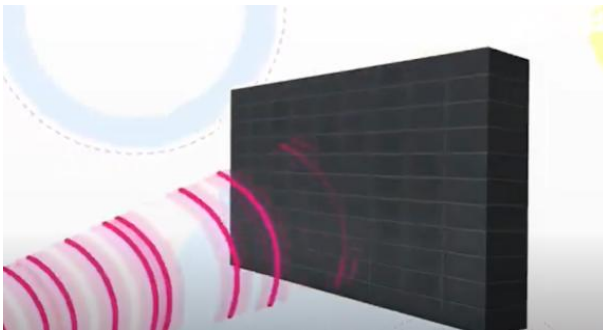

Figure 4. Noise-absorbing wall

As the number and flow of traffic on our roads increases year by year, the noise emitted from them naturally increases. If we first of all improve the condition of the pavement to reduce noise, if we master the laws and regulations in traffic management, and if we properly equip our roads, we will not only reduce the number of traffic accidents, but also reduce the excessive noise emitted from them.

Conclusion. A highway is an artificial structure built to allow vehicles and people to reach their destinations comfortably and safely. Therefore, we must pay attention to comfort and safety, as well as human health. In the process of equipping, we should widely use technologies that absorb noise or reduce the frequency of noise in the pavement, as described above.

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