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Source of Noise and its Distribution and its Description

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ABSTRACT: This article describes the procedure for performing geodetic and cartographic mapping of urban noise maps. Modern geodetic (shumometric) devices used to measure noise frequencies, and the coordinates of the limit of noise impact on urban buildings and structures using GPS technology and processing of measured data using modern geodetic software (Panorama).

With the help of the panorama program, noise maps of the noisy streets of Samarkand were created based on the legend

KEYWORDS AND EXPRESSIONS: Shumometr, gps, optimalnyy, panorama, geomodelirovanie, chastota i skorost, dukhovnost, landshaftnyy design, monitoring, kartograficheskie znaki, innovatsionnyy, arhitekturnyy, ekologicheskiy, akusticheskiy landshaftnyy design.

I. INTRODUCTION

A comprehensive study of man, his relationship with the world around him, has led him to understand that health is not only the absence of disease, but also the physical, mental and social well-being of man. Man has always lived in a world of sounds and noises. Every day we are exposed to different frequency sound waves as a result of general traffic, evening TV or listening to music.

Problem statement. Measuring the propagation of a noise wave, its impact on the environment, and geomodeling are becoming one of the current tasks of modern geoinformatics.

This is due to a number of factors, the main of which are:

- Intensive urbanization of areas with an increase in the number of noise sources;
-increase in the number of vehicles and the need to control their noise;
- Densification of territories with increasing demands for the welfare of the population;
- increase in the number of sources of noise at work and in human life

In our study, we aimed to develop a set of measures to protect against the effects of traffic.

It is more difficult to minimize the sum of losses in determining the high effectiveness of measures to protect against the effects of traffic, as the project process has not yet developed a thorough method of calculating the damage to the economy from exhaust gases in the vicinity of the highway.

To determine the optimal set of conservation measures, the indicator th, which minimizes changes in the state of the urban environment and should be minimized, was used:

$$\theta = K_K / F \qquad (1)$$

here,

K_K –taking into account the value of the urban area - capital expenditures for activities, mln. soums.

F –engineering-technical weight of the completeness coefficient accumulated on a number of factors

$$K_K = \sum_{j=1}^{K} K_j + K_x \sum_{j=1}^{K} S_j$$

here,

K_j–j–measure - the incurred costs of the event facilities and their operation, mln. soums;

K –the number of measures included in the complex;

K_x – economic and social value of the city area, mln. soums / ha;

S_j –j–the area required to implement the measures, e.

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The determination of the minimum assessment was carried out in the programs, which allowed to improve the project in accordance with the objectives of transport ecology, ie the gradual reduction of the impact of road transport and the implementation of measures in turn.

It was argued that the application of environmental protection structures and underground roads in urban planning and the justification of its areas is one of the important tasks that arise in economic, aesthetic, various urban-transport conditions.

The efficiency of the protection facilities in the regions was determined by the decrease in noise level and the decrease in the amount of exhaust gas.

Noise is the sum of sounds of different frequencies and speeds, which have an unpleasant effect on the human body. Noise is the vibration of this air environment.

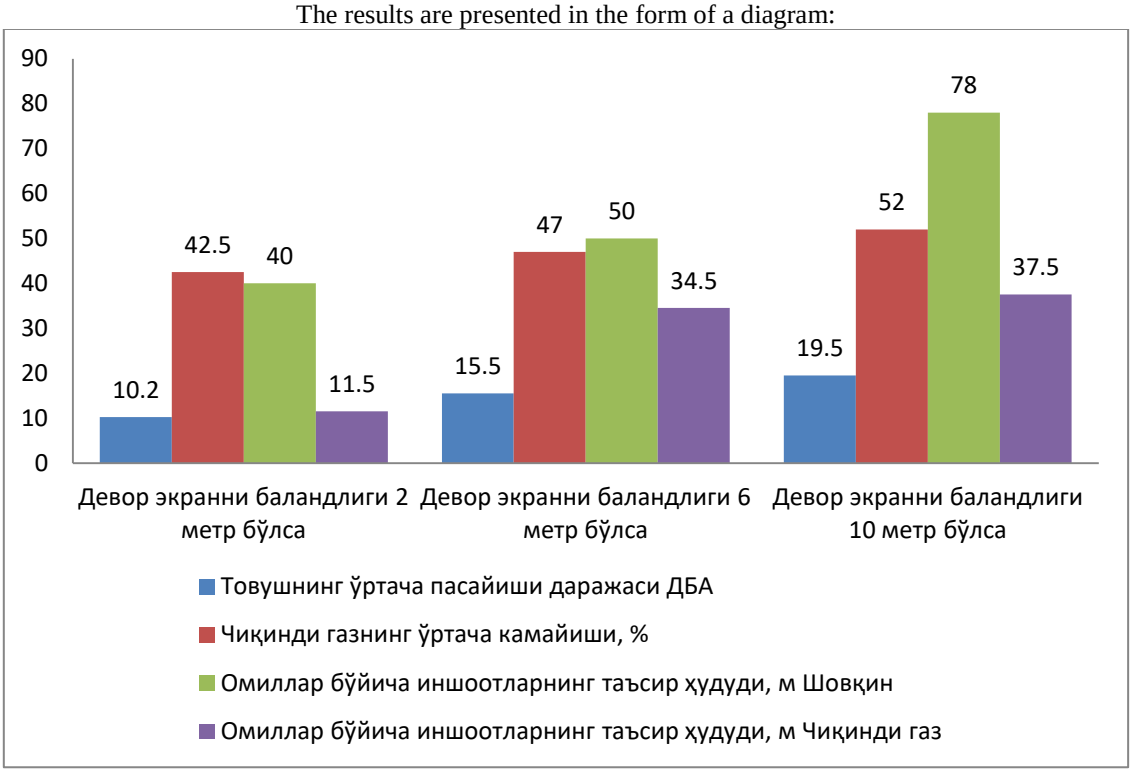
Noise and gas protection measures - An analysis of the measures showed that the screen-barrier located on the construction line was the most effective structure. It reduces the noise level from 25 DBA to 35 DBA and the exhaust gas from 65 to 80%. All other types of construction and methods (landscaping and landscaping) reduced the noise level by 10 - 20 DBA, and the exhaust gas by 20 - 65%.

Technical performance of engineering structures

Table 1

Type of protection structures	Height, m	The average rate of decrease in volume DBA	Average reduction of exhaust gas, %	Area of influence of structures on factors, m	
				Noise	Exhaust gas
Wall screen	2 6 10	10,2 15,5 19,5	42,5 47,0 52,0	40 50 78	11,5 34,5 37,5

The results are presented in the form of a diagram:



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In our research, we identify and create a map of traffic noise in traffic jams on the streets of A. Rudaki, M. Ulugbek, Registan, AR Beruni in Samarkand. A geodetic base was created using a GPS instrument, and observations were made on each base using the VShV 003 sumometer to determine the area of noise. (Fig. 1) In the measurements given, the geodetic foundations were made at distances of 150-200 meters.

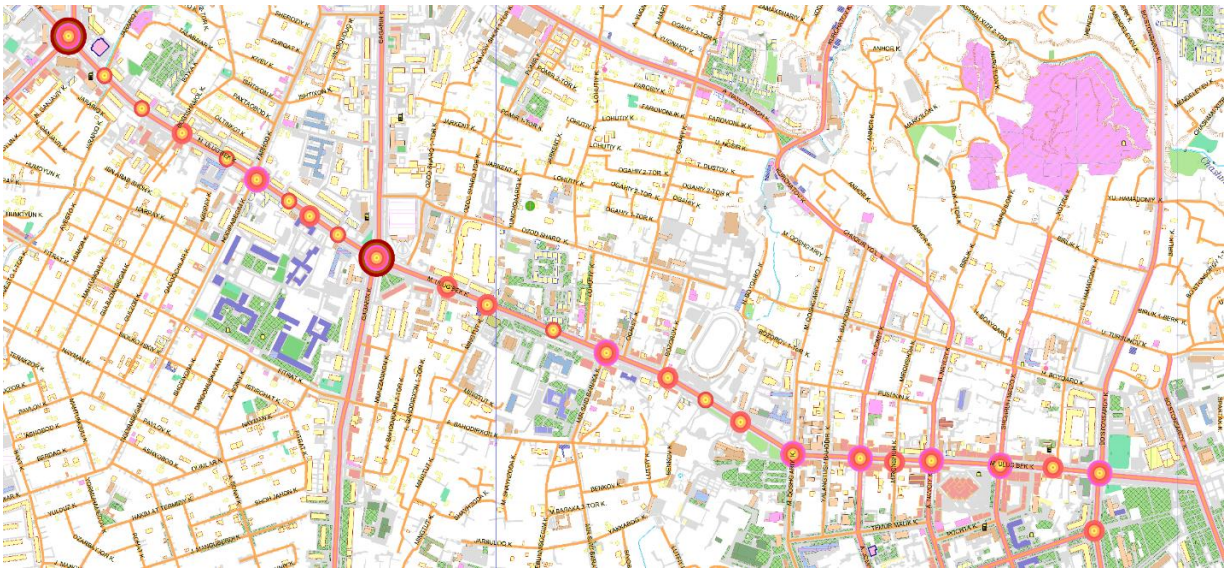

Figure 1 Noise distribution map of Mirzo Ulugbek Street

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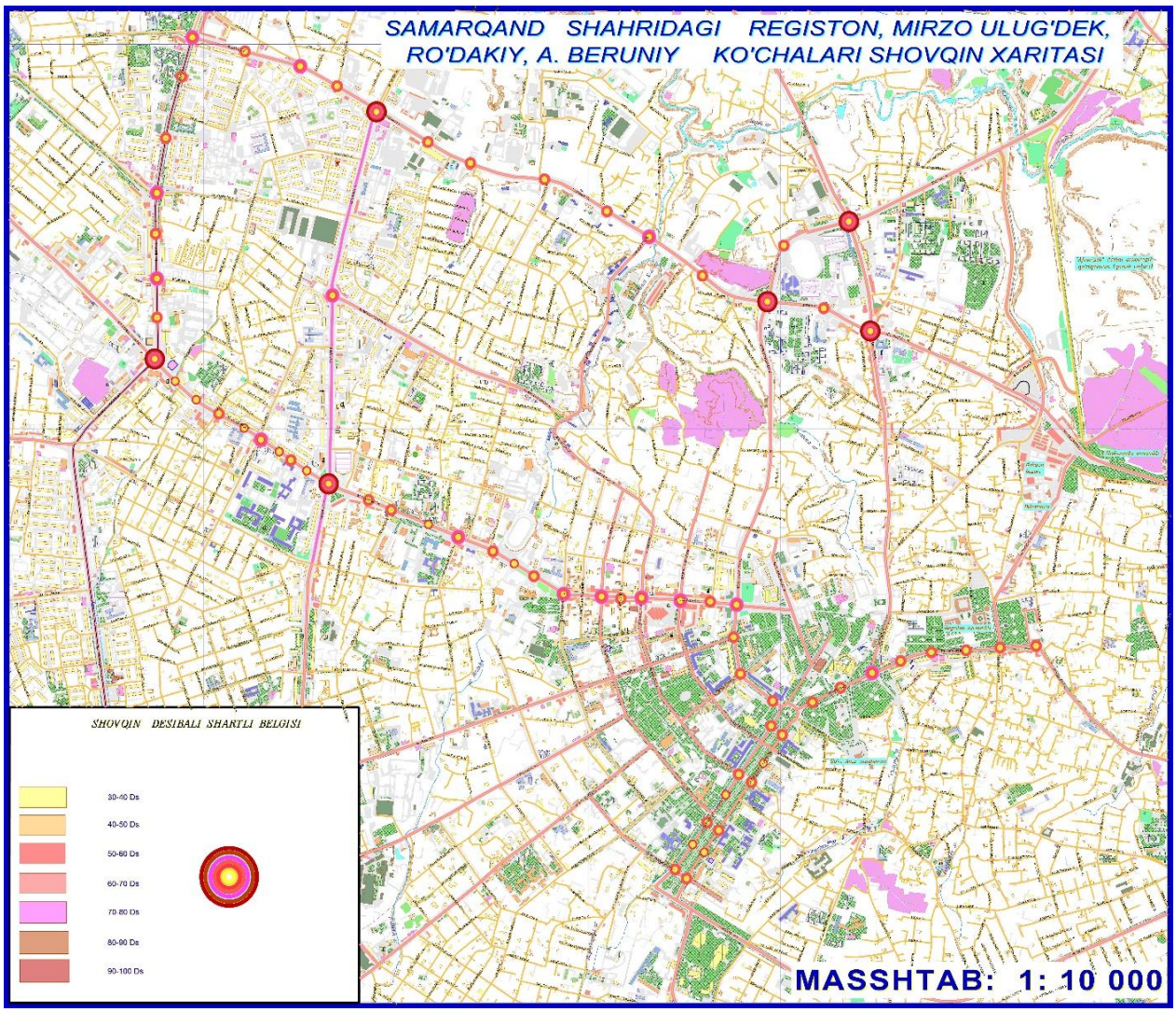

Figure 2 Noise distribution map of Samarkand city Registan, Mirzo Ulugbek, Rudaki and AR Beruniy streets

(Figure 2) The noise propagation in the noisy streets of Samarkand was measured in DB, and the noise distribution on the map was created using conditional symbols using cartographic images.

When creating a city noise map, the distribution of noise from the foundations installed on the streets is described on the basis of cartographic symbols

The results of the innovative work will make it possible to monitor the overall architecture of the city and the protection of health and the environment in the creation of a map of the noise distribution of cities in practice.

Conclusion: Thus, the acoustic beautification of urban areas, the creation of an optimal acoustic environment is an important task of modern spatial planning. To solve this problem, it is necessary to start with the organization of continuous monitoring of noise levels in the city.

Noise maps should be available to governments and design organizations to develop measures to address this problem and to select and install noise reduction tools to protect the urban population from it. Noise maps The main sources of urban noise are preliminary information about their acoustic parameters, the level of noise pollution in the city and the appropriate selection of means to reduce urban noise and create a project of its placement.

According to the results of geoinformation, there is an opportunity to develop a set of special measures for planning and noise protection, optimal and rapid distribution of traffic flows.

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Based on the strategic noise map of the city, the master plan will be able to use "sleeping areas" in the quiet part of the city and in the noisy part - acoustic screens, soundproof houses, other means and measures to reduce noise (for example, removing noisy businesses from residential areas organization of operating modes and routes).

Thus, noise maps are the basis for assessing the current and estimated noise regime in the city. They allow you to identify areas that are inconvenient in terms of noise conditions.

Important tasks to be solved in solving these problems:

• Continuous monitoring of urban noise create a system

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