



The Current State and Prospects of Development of the Network of Public Roads of Uzbekistan

Aslidin Urokov¹, Rakhimjon Soataliev², Bakhodir Kasimkhodjaev³, Alisher Mamatmuminov⁴

¹Doctor of Technical Sciences, Professor, Tashkent State Transport University

²Doctoral student, Tashkent State Transport University

³Senior lecturer, Tashkent State Transport University

⁴Assistant teacher, Tashkent State Transport University

ARTICLE INFO

ABSTRACT

Published Online:
21 April 2022

This article examines the current state of the road network of Uzbekistan. The state of the road network of Uzbekistan in relation to various countries of the world in terms of density, the specific weight of paved roads and the specific weight of gross domestic product (GDP) per capita is analyzed. The dynamics of funds spent on the public road network in Uzbekistan is considered. Conclusions and proposals for the development of the road network are presented.

Corresponding Author:
Aslidin Urokov

KEYWORDS: Road Network, GDP, Network Condition, Road Found, Maintenance, Road Database, Monitoring

INTRODUCTION

A highway is a complex of engineering structures designed for the movement of vehicles, ensuring their uninterrupted and safe movement with a given speed, weight, dimensions, as well as land plots provided for the placement of this complex and space within the established limits above the complex [1].

The highway network is a strategic object that is important for the economic and social development of any country [2]. Sufficient formation of the road network, the presence at a normal level of transport and operational indicators characterizing the state of the network, lead to a reduction in time and costs to reach a certain destination, as

well as to a decrease in the number of road accidents caused by a malfunction of the road. This, in turn, will avoid losses that are significant for road users and the state economy.

MAIN PART

The relative density of paved roads per million inhabitants can be considered as an indicator of economic development [3, 4, 5]. As an example, *Table 1* below provides data on the number of paved roads in the structure of the road network [6] in developed and developing countries and one of the main indicators showing their state economic condition, the volume of gross domestic product (GDP) [7] per capita.

Table 1

№	Country name	GDP (per capita, USD)	Length of road network, km	Paved roads		Population	Density of pavement roads, km / 1 million. population
				km	%		
1	Tajikistan	839	30000	18000	60%	9878907	1822
2	Kyrgyzstan	1224	34000	22740	67%	6695496	3396
3	Venezuela	1627	96155	32908	34%	28440608	1157
4	Uzbekistan	1901	209469	120289	57%	34235982	3514
5	Poland	13871	423997	291000	69%	37953180	7667
6	Czech	24539	130687	56000	43%	10641034	5263
7	Germany	44680	650169	656074	99%	82658409	7937
8	USA	56939	6703479	4300000	64%	325084756	13227

From the above data in *Table 1*, we see that currently developed countries, including the USA, Germany and the

Czech Republic, along with a higher share of paved roads in the network, occupy 5th, 17th and 41st places, respectively,

in the world ranking in terms of GDP per capita. The density of paved roads in Uzbekistan, Kyrgyzstan, Tajikistan and Venezuela is lower than in the USA, Germany, the Czech Republic and Poland and in these countries you can also see a difference in GDP per capita. One of the main reasons for this discrepancy is the fact that Tajikistan, Venezuela and Kyrgyzstan occupy 70, 119 and 122 places respectively among 130 countries in the World Economic Forum road quality rating [8]. This rating does not contain information

about the roads of Uzbekistan. Currently, the only official information on the state of the road network of Uzbekistan is presented on the official website of the Committee of Highways under the Ministry of Transport [9]. According to this information, today there are a total of 209469 km of highways in the republic, and the density of the road network is 47 km per 100 km² of area. The road network consists of public highways (42869 km), local roads and streets (141882 km) and departmental (24745 km).

The length of the highway network is 209,496 km.

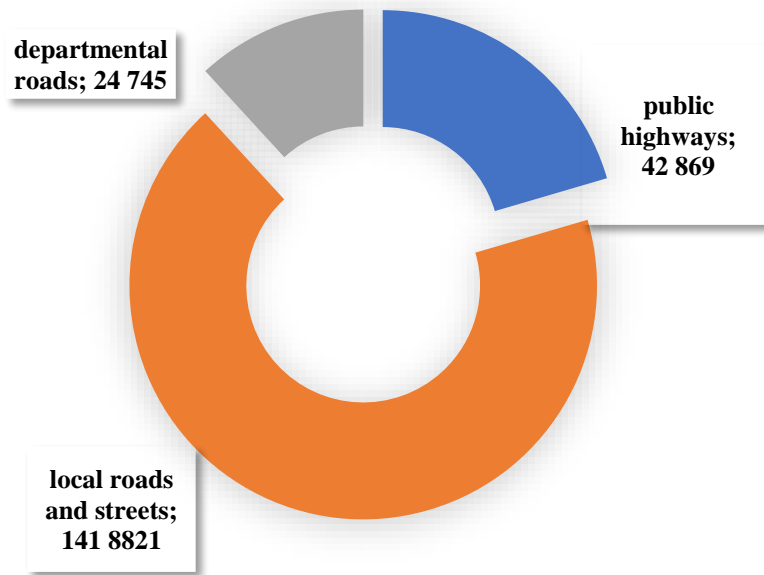


Figure 1.1. Structure of the road network of the Republic of Uzbekistan

Public highways-roads included in accordance with international treaties of the Republic of Uzbekistan in the international network of highways, providing transport links between the administrative centers of regions and districts, cities of regional subordination, cultural and industrial centers, as well as connecting these centers with roads of international importance, airports, railway stations, ports and ship repair plants, and also with the twin cities of the participating states of cities, villages and villages with the administrative centers of the districts, as well as roads, connecting the city with roads of national importance[1]. These roads today serve as the main means of transportation of goods and passengers at both international and local levels on the territory of our republic.

We can see data on the state of the public road network, its length, classification according to various characteristics

(technical category, type of pavement, number of lanes) in studies conducted in recent years [10, 11]. The main part of the public road network of the Republic was formed until the 90s of the XX century, and in 1991-2022 certain changes were made to the network. As of January 1, 1991, the length of the public road network was 39,828 kilometers [12], and by 2022 it will reach 42869 kilometers.

RESULTS AND DISCUSSIONS

Over the past 10 years, a total of 32 trillion UZS have been allocated from the state budget for the construction, reconstruction, repair and maintenance of public roads about rubles were spent. We can see the distribution of allocations by year in Figure 1.2 below.

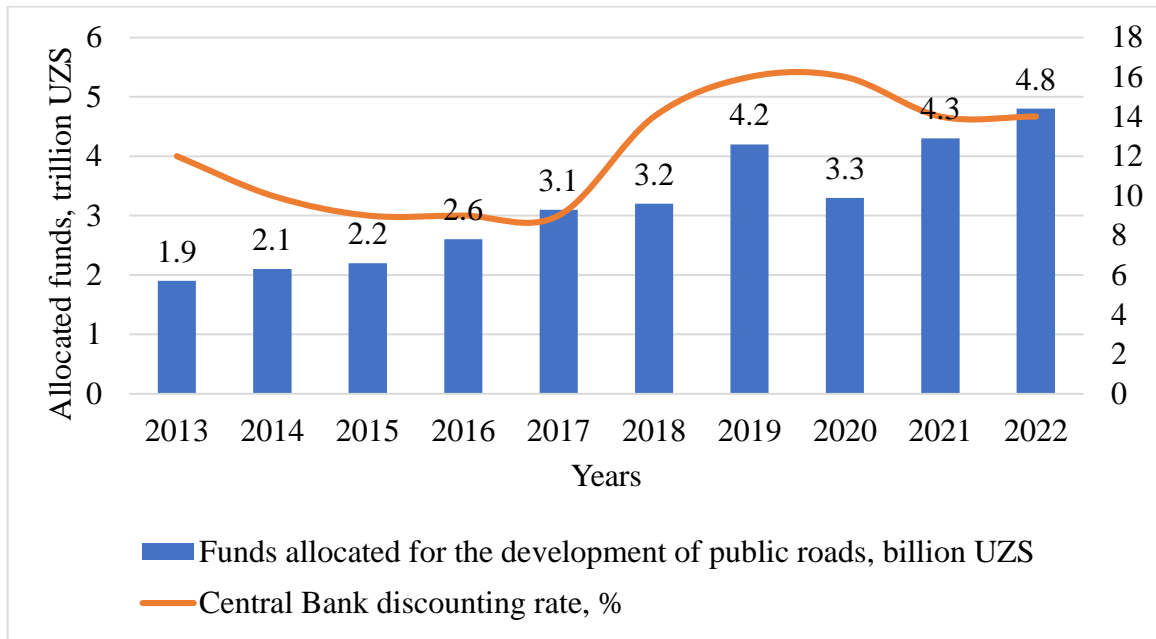


Figure 1.2. Funds allocated for the development of public roads in 2013-2022

Considering that in 2013-2022 the Central Bank's discounting rate will average 12.3%, the amount of funds

allocated for the development of public roads, compared with 2013, will look as follows [Fig.1.3].

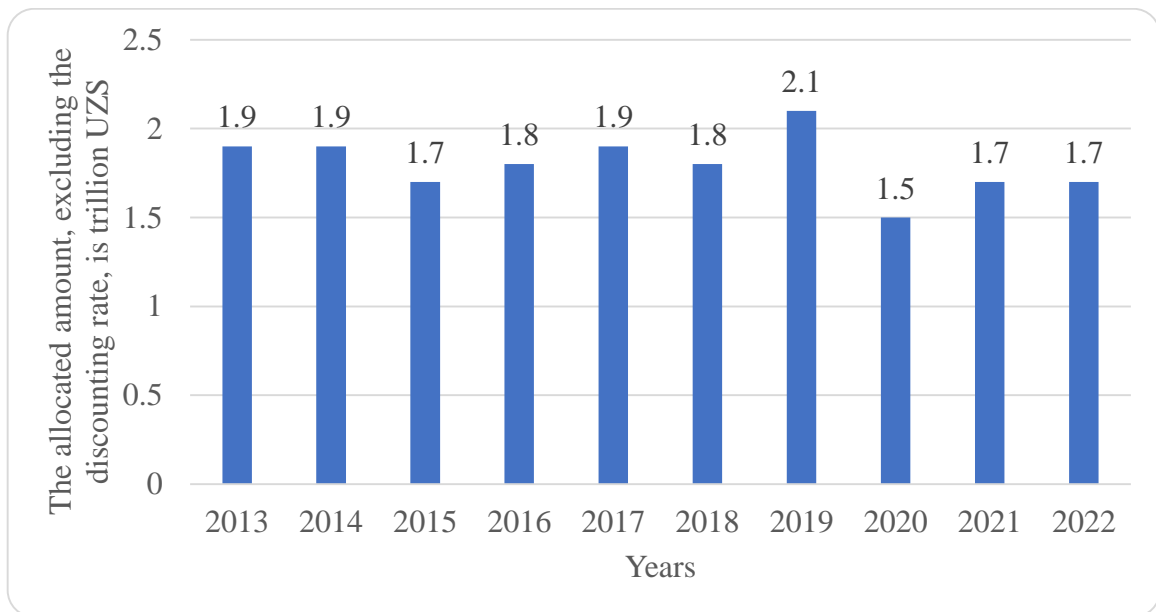


Figure 1.3. Allocations for the development of public roads in 2013-2022 (excluding the refinancing rate in relation to 2013)

Based on the data shown in Figure 1.2 above, at first glance it seems that the funds allocated for public roads in 2013-2022 will amount to 1.9 trillion. of these, 4.8 trillion. we can conclude that it has been done. In fact, this condition, without taking into account the refinancing rate, the amount decreased from 1.9 trillion. UZS up to 1.7 trillion. UZS (see Fig.1.3). This circumstance does not remain without influence on the state of the road network. Insufficient allocation of resources for the development of the road network, maintaining its condition at a normal level leads to an increase in the proportion of roads that cannot be repaired in the network.

To date, according to the results of studies conducted by a number of authors, in the data on the state of the public road network of Uzbekistan, roads that cannot be repaired account for 65-70% of the total network [13, 14]. But according to the analysis of official data provided by the Committee on unified technical policy in the field of highways, this figure is 17% (Fig.1.2). In addition, based on the data of the Committee of Highways, it can be seen that of the 141882 km of on farm roads available in Uzbekistan, 74219 km (52%) are under repair.

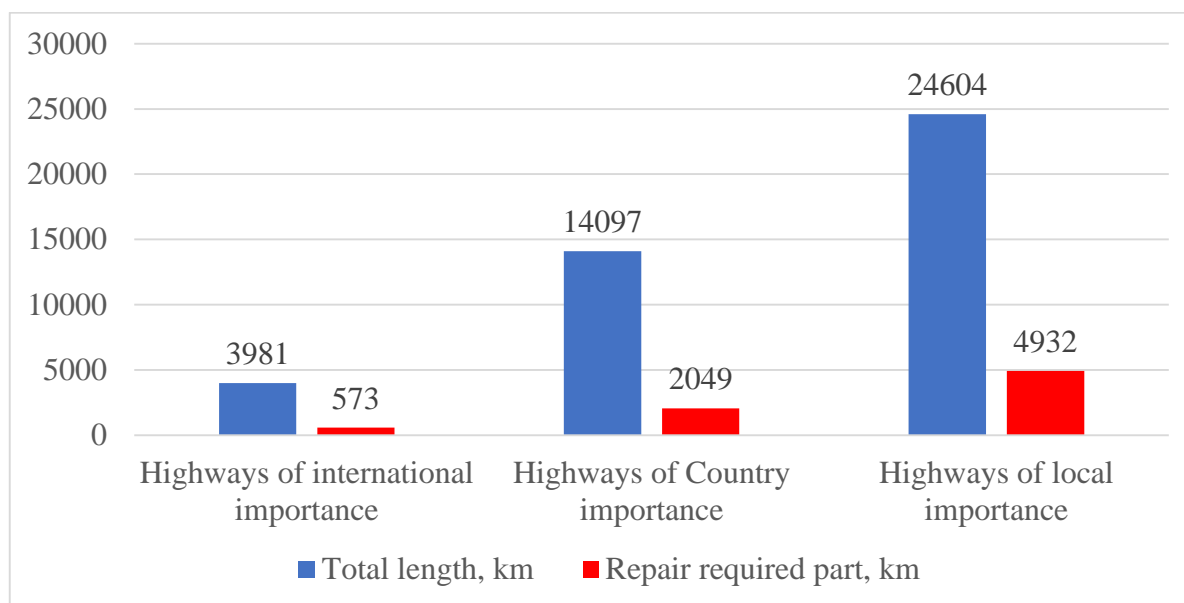


Figure 1.4. Condition of public roads

An abstraction of the real state of the road network can be seen from contradictory data such as the above.

CONCLUSION

The current real situation and the level of development of the road network in Uzbekistan necessitate the development of concrete and effective measures in all areas of the road economy, the implementation of additional measures aimed at a qualitative change in the state of the road network in accordance with the needs of the economy and the population. This, in turn, means the need for research on the technical assessment of the real state of the road network and effective planning of repair work.

REFERENCES

1. The law of the Republic of Uzbekistan on highways, 02.10.2007 № 117, <https://lex.uz/docs/-1254490>
2. T. F. Fwa, The Handbook Engineering of Highway. 2006.
3. Mobility 2001 — World Mobility at the End of the Twentieth Century and its Sustainability. World Business Council for Sustainable Development, Geneva, Switzerland.
4. Queiroz C., Haas R., and Cai Y. 1994. National Economic Development and Prosperity Related to Paved Road Infrastructure, Transportation Research Record 1455. Transportation Research Board, National Research Council, Washington, DC, pp. 147–152.
5. Uddin W. Life cycle analysis for investment decision-making to revive ancient silk road and enhance the economies of central Asian countries, *Int. J. Pavements, IJP* 2002, 1,2,84 –97
6. https://en.wikipedia.org/wiki/List_of_countries_by_road_network_size
7. <https://data.worldbank.org/indicator/NY.GDP.PCA.P.CD>
8. https://reports.weforum.org/pdf/gci-2017-2018-scorecard/WEF_GCI_2017_2018_Scorecard_EOSQ057.pdf
9. <https://www.uzavtoyul.uz/ru/page/avtomobil-yollarining-holatini-ko-rsativchi-och-iq-elektron-xaritasi.html>
10. Sadikov I.S., Urokov A.X. Evaluation road network quality// Proceedings of XIV International conference. – Ivanovo: IGACU, 2007. – pp. 262-268.
11. Urokov A.X. Zoning traffic condition in Uzbekistan. TAYI, 2012, 129 pp
12. Urokov A. X, “An Integral Road Accessibility As a Criterion for Assessing the Quality and Condition of a Road Network,” *Int. J. Civil, Struct. Environ. Infrastruct. Eng. Res. Dev.*, vol. 10, no. 1, pp. 1–8, 2020. http://www.tjprc.org/view-archives.php?keyword=&from_date=&to_date=&id=&jtype=2&journal=11&page=25.
13. Aslidin Urokov, Raximjon Soataliyev, Shaxnoza Xalimova “AVTOMOBIL YO‘LLARINING MA‘LUMOTLAR BAZASINI YARATISHDA ZAMONAVIY, RESURS TEJAMKOR TEXNOLOGIYLARDAN FOYDALANISH,” *Probl. Archit. Constr.*, vol. 4, no. 10, pp. 67–69, 2021.
14. OH. Urokov, R.R. Soataliev “Possibilities for measuring and visualizing the evenness of road surfaces based on smartphones in Uzbekistan” Collection of the international scientific and technical conference “Transport: current challenges and innovations”. 2021, pp. 301-304