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TRANSPORT UNIVERSITETI**

Tashkent state
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Articles are published in Uzbek, Russian, and English, ensuring a wide-reaching audience and fostering cross-cultural academic exchange. As a beacon of academic excellence, the "Journal of Transport" continues to serve as a vital conduit for knowledge dissemination, collaboration, and innovation in the transport sector and related fields.

The impact of road infrastructure on traffic safety

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Abstract: This article develops proposals and recommendations based on experimental research to ensure the safety of vehicles and pedestrians on the Fergana Highway and to organize safe traffic, while assessing the negative impact of road elements on vehicles and pedestrians.

Keywords: pedestrian, bus, road traffic accident, sidewalk, traffic lane

Yo'l infratuzilmasining harakat xavfsizligiga ta'siri

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Annotatsiya: Ushbu maqolada Farg'ona yo'li ko'chasida transport vositalarining shuningdek piyodalarning harakat xavfsizligini taminlash va ko'chadagi yo'l elementlarining transport vositalari hamda piyodalar harakatiga salbiy tasirini baholagan holatda, xavfsiz yo'l, havfsiz harakatni tashkil qilish uchun eksperimental tadqiqotlarga asoslangan holda taklif va tavsiyalar ishlab chiqilgan.

Kalit so'zlar: piyoda, avtobus, YTH, yo'lak, harakatlanish tasmasi

1. Kirish

Avtobuslar uchun alohida ajratilgan harakatlanish bo'laklarning standartga mosligi, transport vositalarining tezlik ko'rsatkichlari, yo'l elementlarining sifati va o'tkazish qobiliyati, piyodalar yo'laklarining joylashuvi kabi havfsiz harakatlanishga ta'sir etuvchi omillar eksperiment tadqiqotda o'rganilishi natijasida ulardagi kamchiliklar baholanib ijobiy yechimlar berilgan. Tadqiqot natijasida o'rganilgan kamchiliklarning yechim va tavsiyalari amaliyotda qo'llanilsa, ko'chadagi tirbandliklar sezilarli darajada kamayadi, YTHlar va jamoat transportining ko'chalarda ushlanib qolishi kamayib, transport vositalari va piyodalarning harakat jadalligi va havfsiz harakati taminlanadi. Ushbu maqola shaharlarda transport vositalarining havfsiz harakatlanishini ta'minlashda amaliy ahamiyatga ega.

2. Tadqiqot metodologiyasi

Umuman olganda har qanday harakatni tashkil qilishda inson uchun xavfsizlik birinchi o'rinda turuvchi omil hisoblanadi. Transport vositalarining havfsiz harakatlanishini taminlash va ulardan samarali foydalanish va jamiyatning keng qatlamlari uchun yo'lovchi transportini arzon qilish, yo'l infratuzilmasini to'g'ri tanlash va loyihalash, piyodalar havfsiz va erkin harakatlanishi uchun havfsiz muhit yaratish shahar hayotining barqarorligini belgilaydi. Shu boisdan, yo'l elementlarini to'g'ri tanlash va yo'l harakati qatnashchilarining havfsiz harakatlanishini taminlash maqsadida yo'l belgilari va svetaforlarni asosli to'g'ri o'rnatish jamoat transporti turi va harakatini to'g'ri tashkil qilish, harakatlanish xavfli bo'lgan uchastkalarni

aniqlash, mavjud transport infratuzilmasida kuzatilayotgan kamchiliklarini bartaraf etish va xavfsizlikni oshirish bo'yicha ilmiy asoslangan chora-tadbirlarni ishlab chiqish katta bugungi kunning dolzarb masalasidir.


Toshkent shaharidagi magistral ko'chalaridan biri bo'lgan Farg'ona yo'li ko'chasida eksperiment va eksperimental tadqiqot ishlari olib borildi va yo'l infratuzilmasidagi kamchiliklar tufayli harakat qatnashchilariga to'sqinlik qiluvchi omillarga ilmiy asoslangan yechimlar tahlili asosida tavsiya qilinadi.

3. Tadqiqot natijalari

Farg'ona yo'li ko'chasi Toshkent shahrining markaziy magistral yo'llaridan biri bo'lib, transport harakati zichligi yuqori bo'lgan ko'chalardan hisoblanadi. Ko'chadagi yo'l elementlarining holati, harakatlanish tasmalari soni va piyodalar o'tish joyi va yo'laklari mavjudligi hududdagi transport oqimining shakllanishiga ta'sir ko'rsatadi. Ko'channing umumiy uzunligi transport vositalarining harakatlanish vaqti hamda tirbandlik darajasini belgilovchi muhim omillardan biri hisoblanadi. Shuningdek, harakatlanish tasmalari soni transport oqimining samaradorligini ta'minlash, jamoat transporti harakatini yaxshilash va yo'llardagi yuklamani muvozanatlashtirishda katta ahamiyatga ega. Farg'ona yo'li ko'chasining yo'l-transport infratuzilmasi ko'rsatkichlari 1-jadvalda keltirilgan.

Farg'ona yo'li ko'chasidagi transport harakat miqdori (jadalligi) va harakat tarkibi vizual tarzda aniqlandi. 2-jadval, bu ko'channing qanday ahamiyatga ega ekanligi va harakatlanuvchi tarkib haqidagi ma'lumotlarni baholashda

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muhim o'rin tutadi va ko'chaniy transport o'tkazuvchanligini baholaydi.

Ko'chaniy yo'l infratuzilmasi esa havfsiz harakatlanishni taminlab, bevosita transport vositalarining ekspluatatsiya qilinishida eng katta ahamiyatga ega.

1-jadval

Farg'ona yo'li ko'chasidagi transport harakat miqdori (jadalligi) va harakat tarkibi vizual tarzda aniqlandi

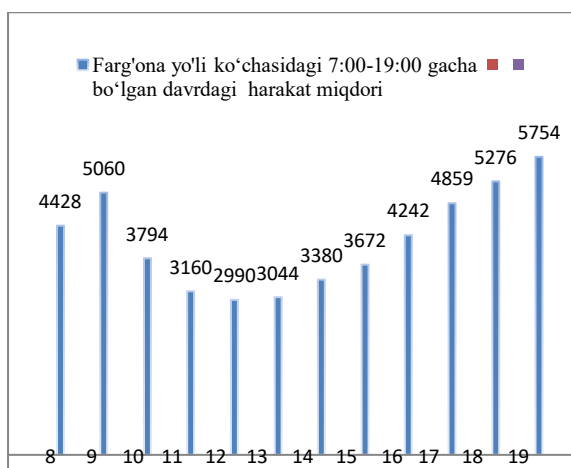
Harakatning hisobiy tezligi km/soat	Harakat yo'lagining eni, m	Avtobus qatnov qismi yo'lagining eni	Harakatlanish tasmalari soni	Ajratuvchi bo'lak (bardiyor)		Trotuaming eng katta eni, m	Yashil maydon kengligi, m	Latok	
				Eni, m	Balandligi, m			Eni, m	Chuqurligi, m
60	290-3.20	2.22-3.55	8	0.80	0.30	3	2-5	0.70	0.50

2-jadval

Farg'ona yo'li ko'chasida soat 700-1900 gacha bo'lgan davr harakat miqdori

Vaqt	Yengil avtomobil	Jamoat transporti	Yuk avtomobili	Mototransport	Jami transport
07:00-08:00	4188	86	130	24	4428
08:00-09:00	4786	98	148	28	5060
09:00-10:00	3590	72	112	20	3794
10:00-11:00	2992	60	92	16	3160
11:00-12:00	2828	58	88	16	2990
12:00-13:00	2888	56	84	16	3044
13:00-14:00	3212	60	90	18	3380
14:00-15:00	3488	64	100	20	3672
15:00-16:00	4032	66	122	22	4242
16:00-17:00	4624	70	140	25	4859
17:00-18:00	5016	78	152	30	5276
18:00-19:00	5440	112	170	32	5754
12 soat	47084	880	1428	267	49659





1-rasm. Vizual tarzda olingan ma'lumotlarga asoslangan holda transport vositalarining umumiy harakat jadalligi diogrammasi

Farg'ona yo'li ko'chasidaharakatlanuvchi transport vositalarining hamda piyodalarning havfsiz harakatlanishiga ta'sir qiluvchi omillardan biri bu yo'l infratuzilmasidagi bazi kamchiliklar hisoblanadi. Tadqiqot natijasida Farg'ona yo'lida harakatlanuvchi transport vositalarning xavfsiz harakatlanishiga ta'sir qiluvchi orolcha aniqlandi 2-rasm. Bu orolcha yo'lning qatnov qismida joylashgan bo'lib yo'nalishli transport vositalari va undan tashqari barcha turdagi transport vositalarning harakatlanishiga to'sqinlik qiladi, ayniqsa kunning qorong'u paytida yo'ldan birinchi foydalanayotgan haydovchi, transport vositasini boshqarib kelayotgan shaxsning keskin harakatni amalga oshirishi, manyovr qilishiga sababchi bo'ladi. Bu esa normal harakat xavfsizligi me'yorlariga mos emasligini ko'rsatadi 2-rasm.



2-rasm. Farg'ona yo'li qatnov qismida joylashgan va harakat xavfsizligiga ta'sir qiluvchi orolcha

Bunday vaziyatda harakat xavfsizligi ta'minlanmaydi va tirbandliklar ortadi chunki eng chetki o'ng harakatlanish tasmasidan kelayotgan transport vositalari ikkinchi tasмага o'tish uchun to'xtab, harakatlanish tasmasini o'zgartirishga majbur bo'ladi bu vaziyatda xavf ortadi.

3-jadval

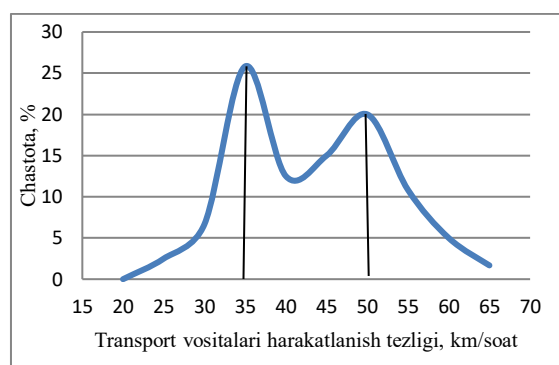
Avtomobillarning harakat tezligini statistik qayta ishlash

Turkumlar, km/soat	Takrorlanish, dona	Chastota, %	Yig'ilgan chastota, %
25-30	3	2,5	2,5
30-35	8	6,67	9,17

35-40	31	25,83	35
40-45	15	12,5	47,5
45-50	18	15	62,5
50-55	24	20	82,5
55-60	13	10,83	93,33
60-65	6	5	98,33
65-70	2	1,67	100

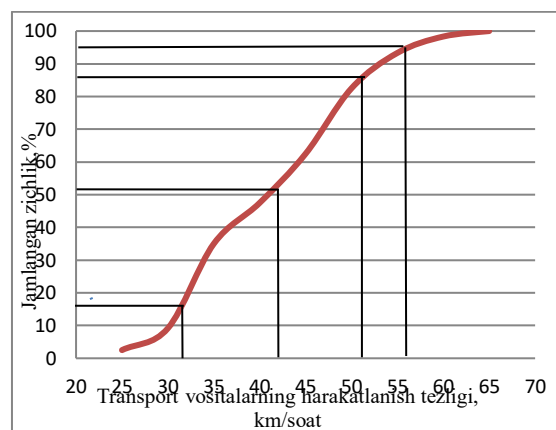
Farg'ona yo'li ko'chasidan olingan eksperiment natijalaridan modal tezlikni normal taqsimot grafigi orqali aniqlaymiz va u quyidagi ko'rinishni oladi 3-rasm.

Grafikdan ko'rinib turibdiki Farg'ona yo'lida eng ko'p transport vositalarining harakatlanish tezligi 26% zichlikda 35 km/soatni va 20% zichlikda 50 km/soat tezlikni tashkil qilmoqda.



3-rasm. Farg'ona yo'li ko'chasida transport vositalari tezligining normal taqsimot grafigi

4-rasmida Farg'ona yo'li ko'chasidagi transport vositalarining kumulyativ egriligi grafigi keltirilgan bu grafik yordamida biz ko'chadada harakatlanuvchi transport vositalari zichligi va tezligining variatsion ko'lamini aniqlashimiz mumkin. Farg'ona yo'li ko'chasida harakatlanuvchi transport vositalari 85% taminlangan tezliklari 52 km/soatni tashkil qilmoqda bu Farg'ona yo'li ko'chasining transport intinsivligi yuqori ekanligidan dalolat beradi.



4-rasm. Farg'ona yo'li ko'chasida transport oqimi tezligining kumulyativ taqsimoti



Transport vositalari tezligi variatsion ko'lamni aniqlash orqali quyidagi hulosaga kelindi.

$$R = V_{max}^i - V_{min}^i$$

$$R = 65 - 20 = 45 \text{ km/soat}$$

45 km/soat variatsion ko'lam esa ko'chada harakatlanuvchi transport vositalarining tezliklari harakatlanish tasmlariga nisbatan o'zgaruvchan ekanligidan dalolat beradi. Bu esa Farg'ona yo'lining qatnov qismida joylashgan orolcha transport tezligi va havfsizligiga ta'sir ko'rsatishini bildiradi.

4. Xulosa

Farg'ona yo'li ko'chasining yo'l infratuzilmasidagi kamchiliklar xar-hil turdagi transport bilan yuklanish darajasi, harakat jadalligi va transport oqimiga ta'sir etishi aniqlandi va baholandi, ayniqsa kunning tig'iz vaqtlarida transport harakati yuqori zichlikka ega ekani aniqlandi. O'tkazilgan kuzatuvlar asosida shunga amin bo'lindiki yengil avtomobillar ulushi boshqa transport vositalariga nisbatan juda yuqori bo'lganligi va ko'p hollarda yo'lining qatnov qismida joylashgan orolcha oldida turib qolishi tufayli bitta harakatlanish tasmasida sezilarli darajada transport zichligi va xafli holatlar kelib chiqishi kuzatildi va orolchani olib tashlash taklifi berildi. Noto'g'ri tashkil etilgan kirish-chiqish yo'llari, yo'l belgilarining noaniqligi kabi omillar YTHlar soniga bevosita ta'sir qilayotgani qayd etildi. Jamoat transporti tezligi, qatnov jadvali va transport vositalarining texnik holati bilan bog'liq muammolar aniqlanib, ularning bartaraf etilishi zarurligi asoslab berildi.

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