REPUBLIC OF MOLDOVA

TRANSPORT COMMUNITY

MINISTRY OF INFRASTRUCTURE AND REGIONAL DEVELOPMENT

S.E. State Road Administration

May 28, 2024

S.E. State Road Administration

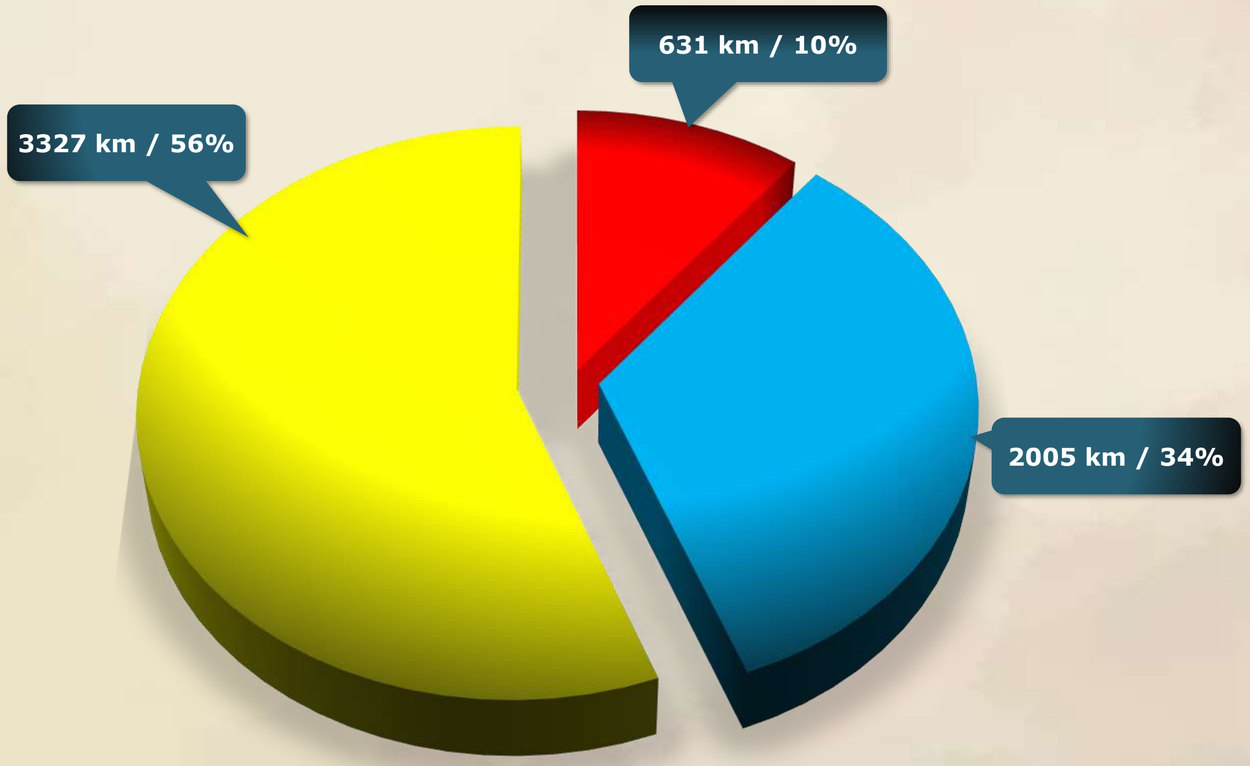
Established in 2002, the S.E. State Road Administration (SRA), is subordinated to the Ministry of Infrastructure and Regional Development.

The main activities of SRA are the following:

- Design,
- Construction,
- Modernization,
- Rehabilitation,
- Repair,
- Maintenance,
- Management and administration

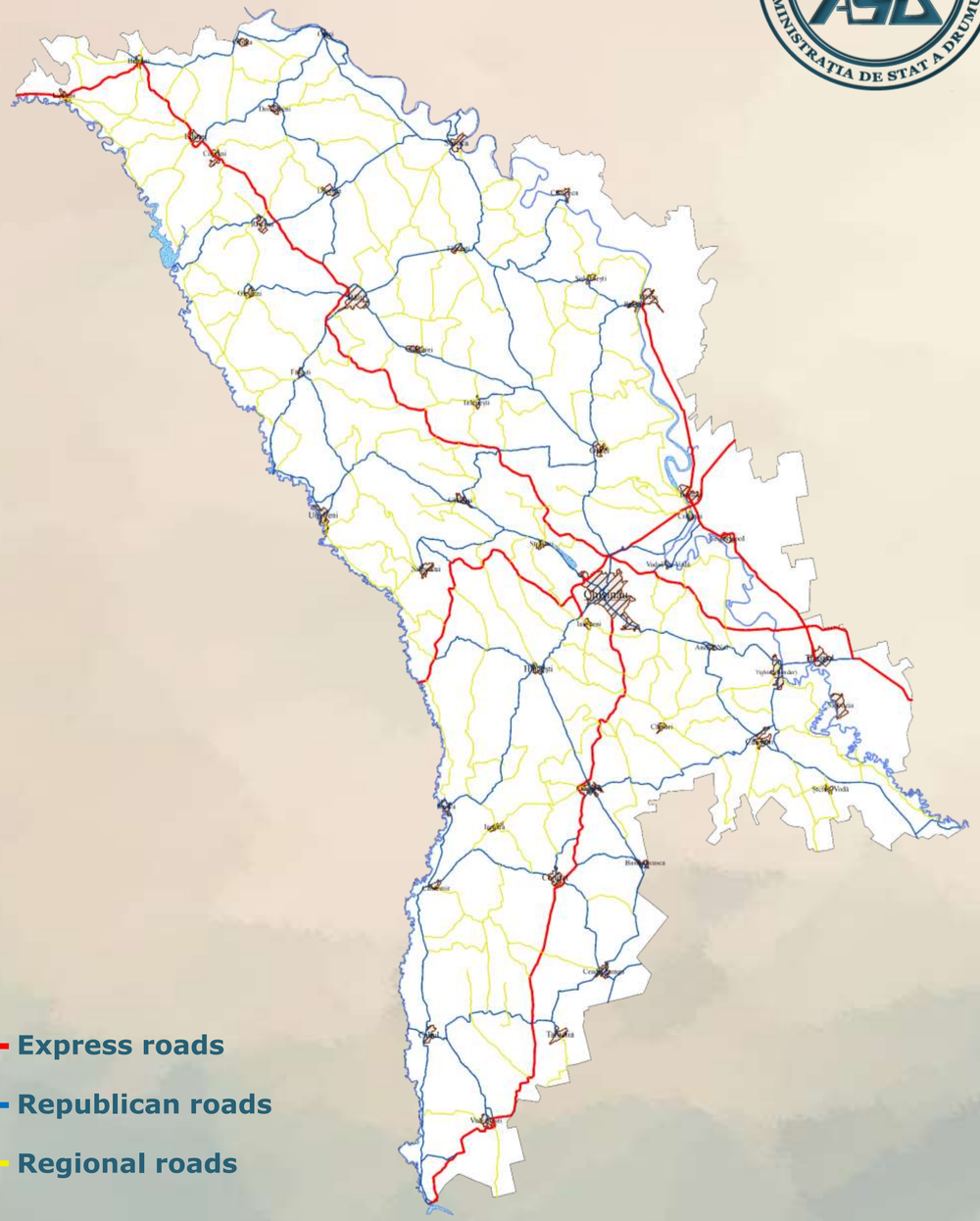
of national public roads, (M-express, R-republican, G-regional), as well as other road infrastructure elements in accordance with the law, in order to ensure safe conditions, fluency and continuity of roads for road users.

National Public Roads Network

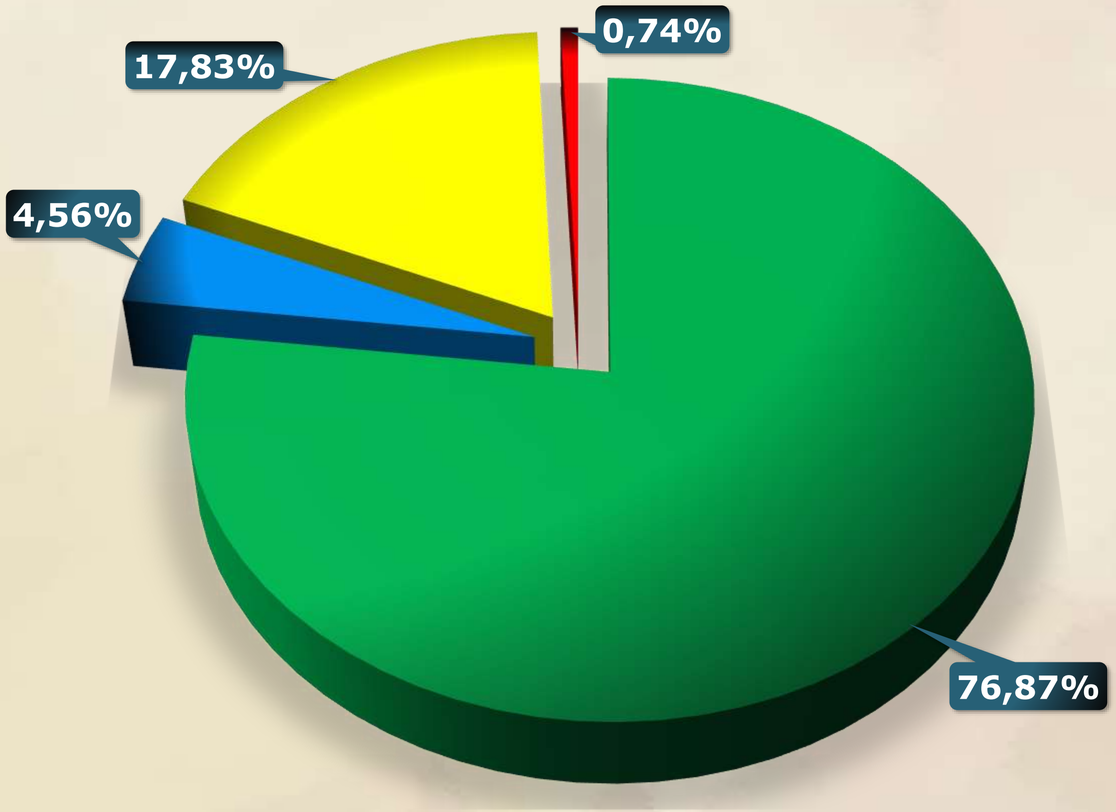


Total length of national public roads – 5963 km

- Express roads
- Republican roads
- Regional roads



Types of road pavement on national public roads M,R,G



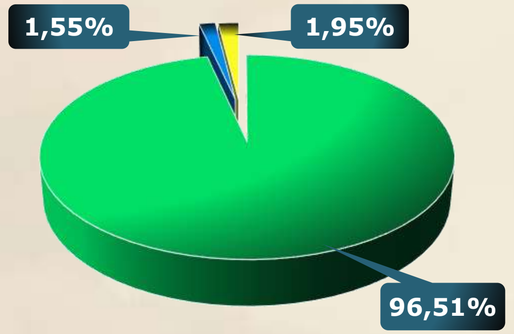
Types of road pavement	km
Asphalt concrete	4584
Cement concrete	272
Gravel	1063
Earth	44
Total:	**5963**

Expres

asphalt concrete	409	km
cement concrete	222	km
Total:	**631**	**km**

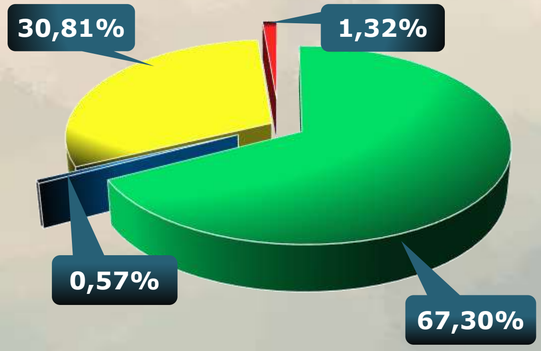
Republican

asphalt concrete	1935	km
cement concrete	31	km
gravel	39	km
Total:	**2005**	**km**



Regional

asphalt concrete	2239	km
cement concrete	19	km
gravel	1025	km
earth	44	km
Total:	**3327**	**km**

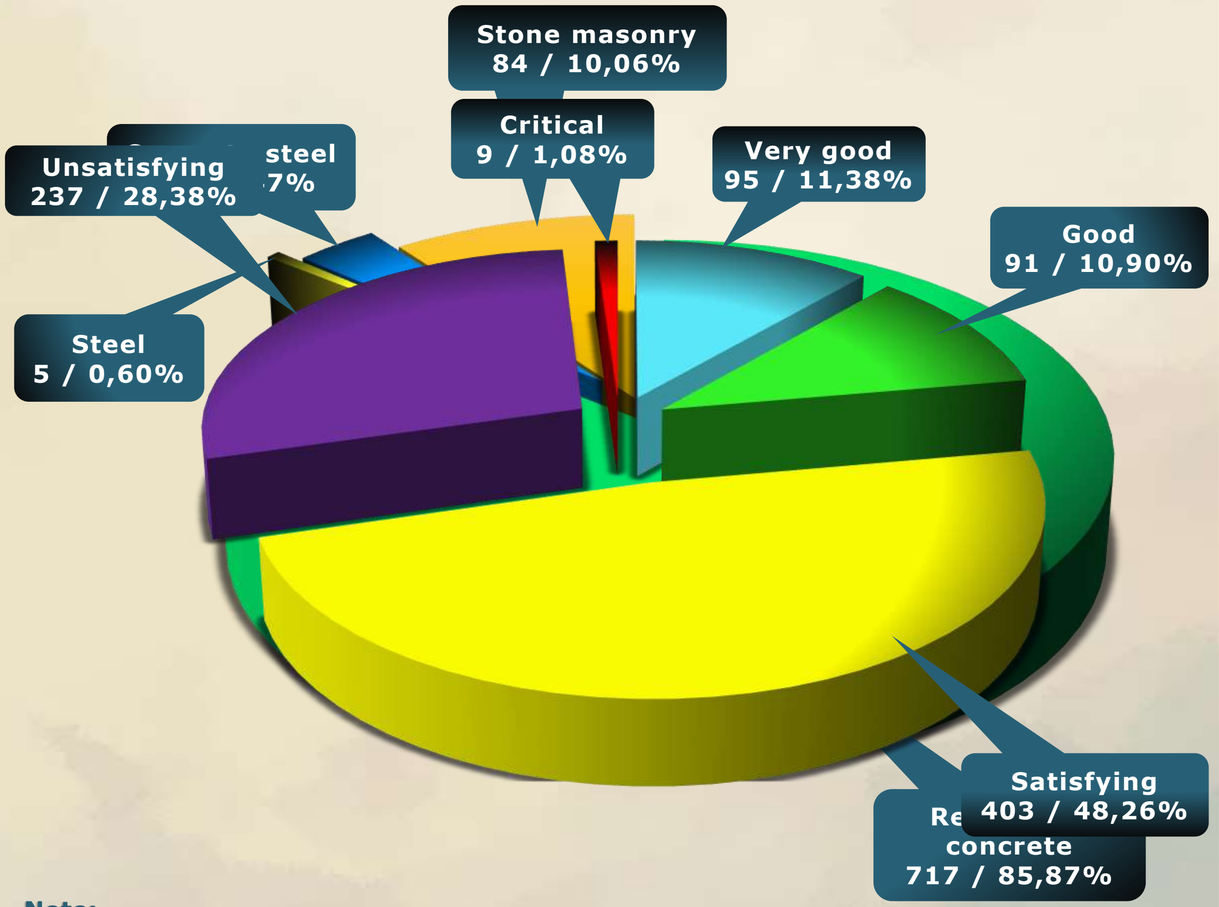


The S.E. State Road Administration has among other objectives, the succesfull management of bridges, overpasses and culverts, which are located on the national public roads. There are 835 bridges and approx. 5014 culverts.

(pcs./%)

Classification of bridges according to construction material

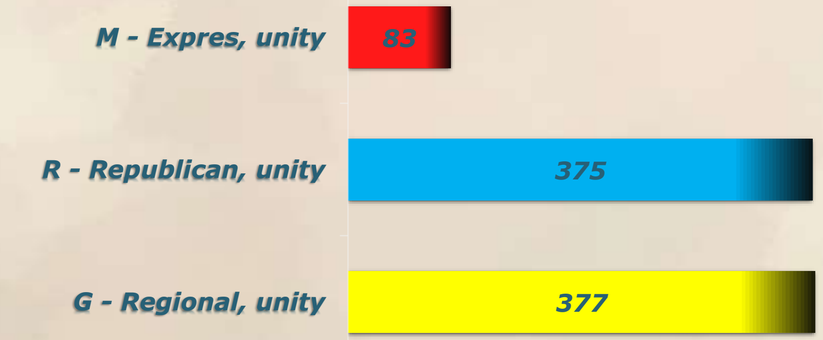
Technical condition of bridges



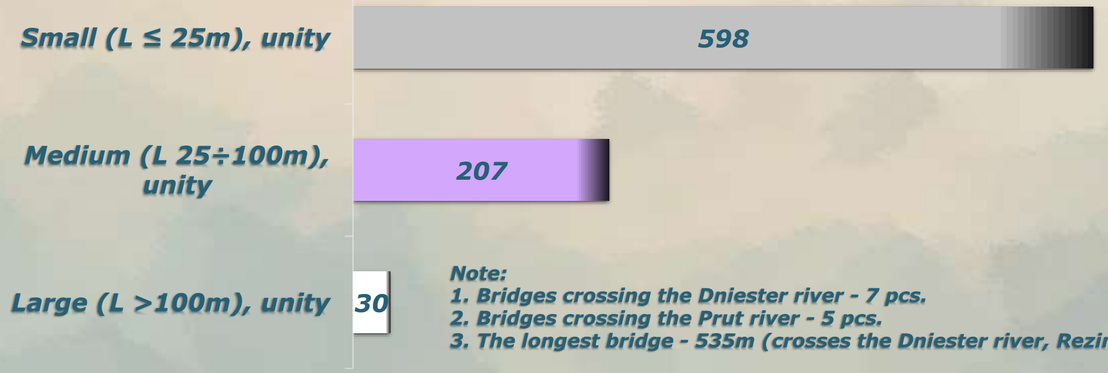
Note:
Total number of bridges - 835 pcs.

Bridges managed by the State Road Administration - 835 pcs.

Distribution on national public roads

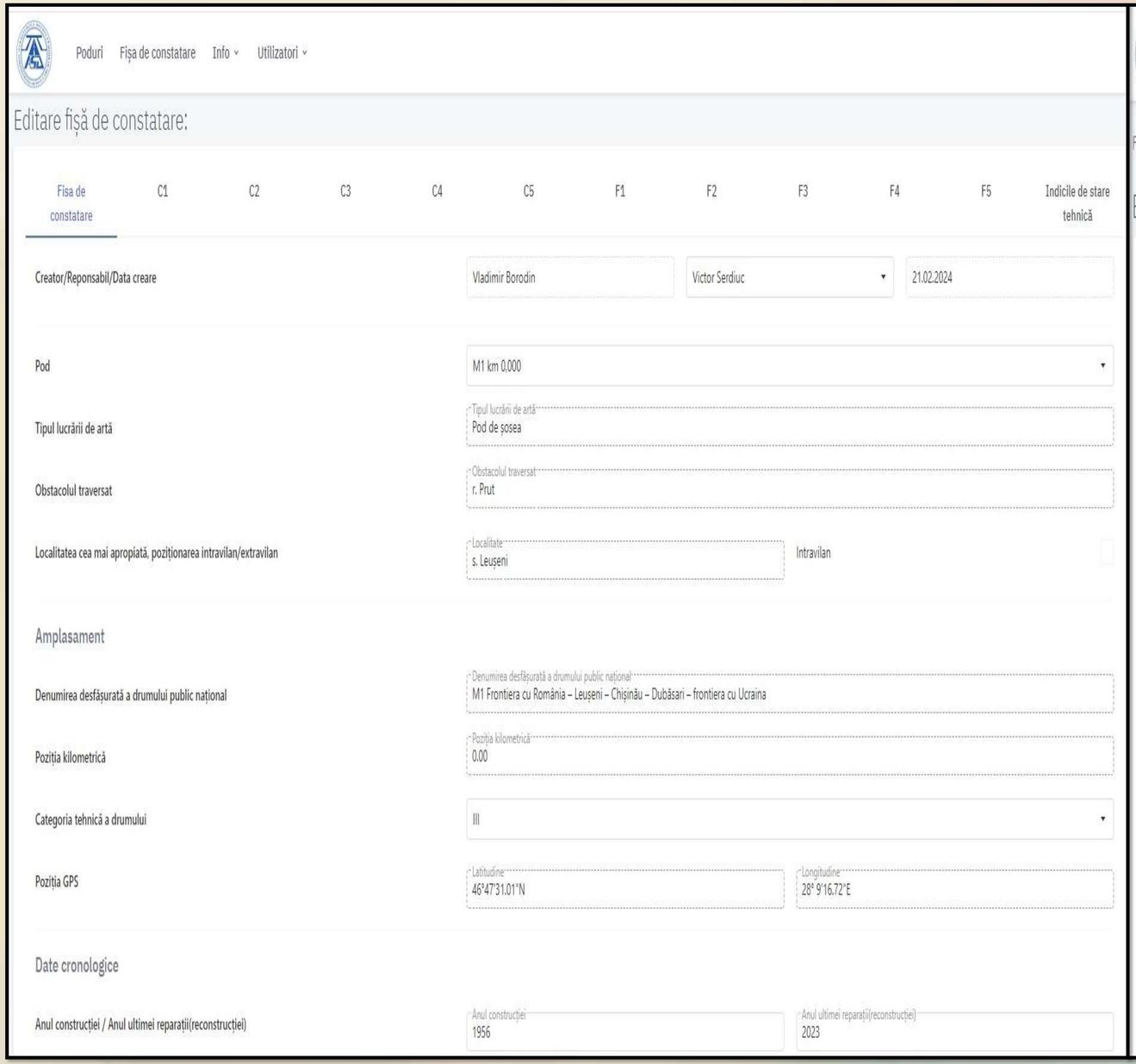


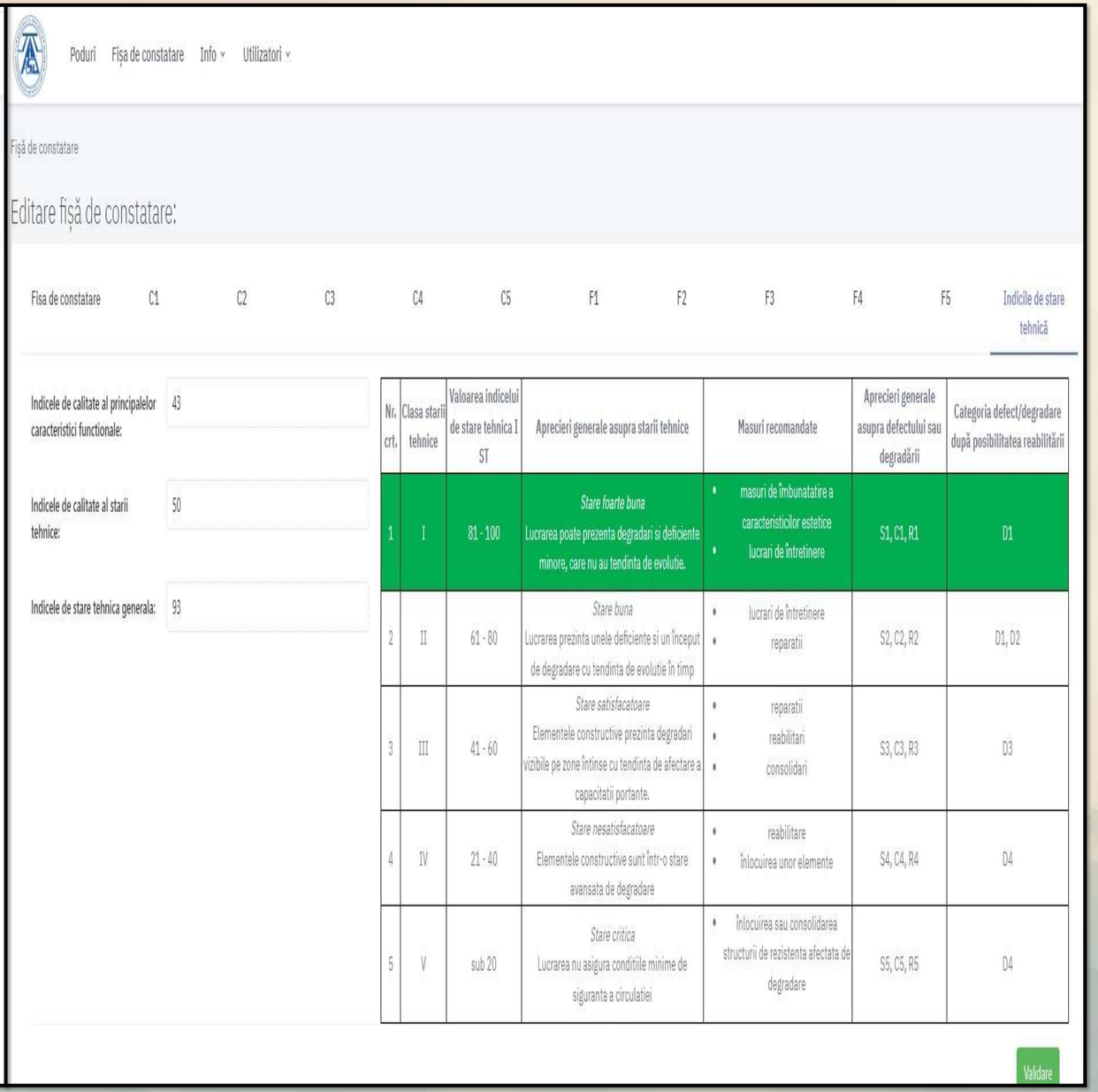
Classification by length



Note:
1. Bridges crossing the Dniester river - 7 pcs.
2. Bridges crossing the Prut river - 5 pcs.
3. The longest bridge - 535m (crosses the Dniester river, Rezina town).

Digitization of the process of periodic inspection of bridges and culverts, including eventual provision of services for Local Public Authorities





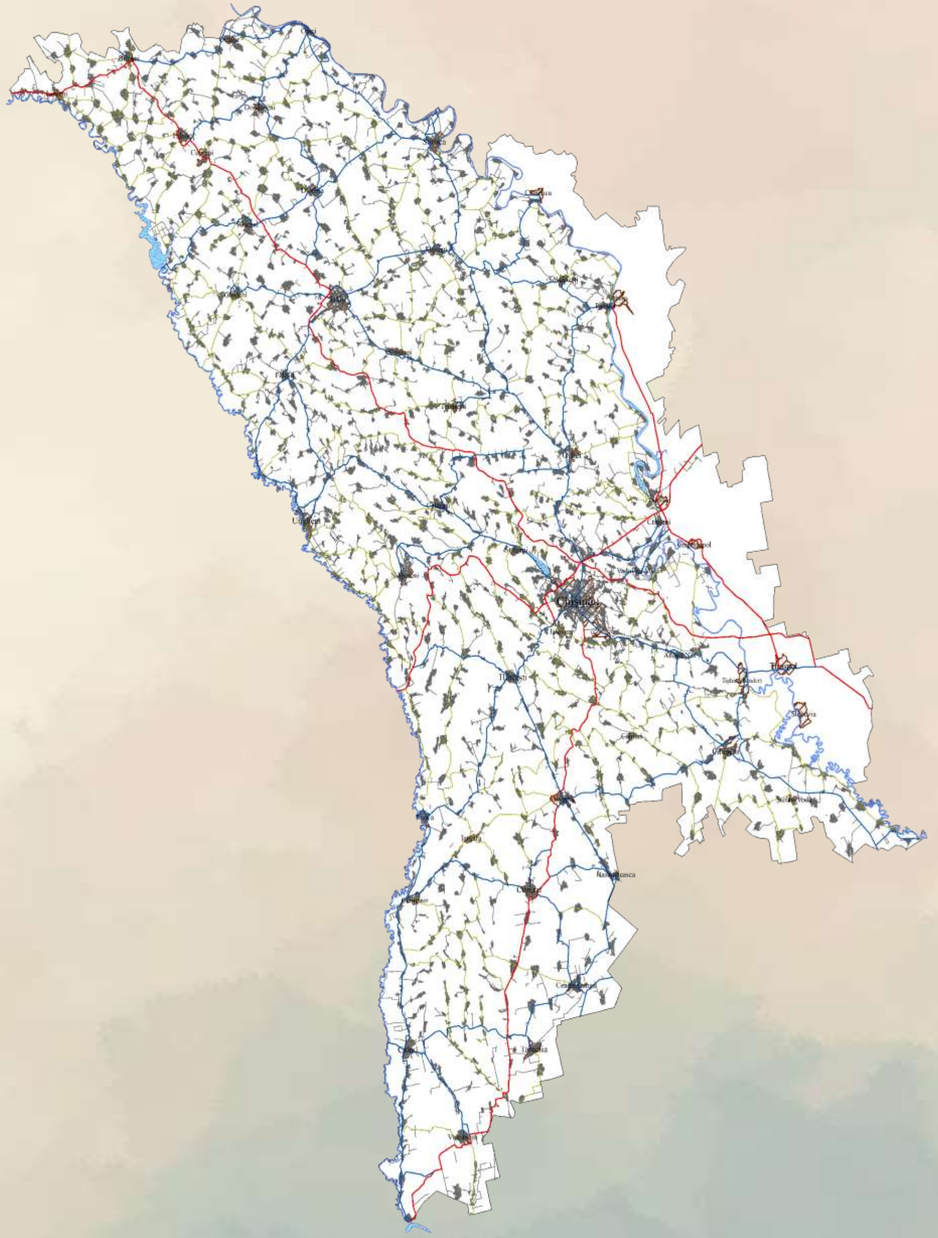
Nr. crt.	Clasa starii tehnice	Valoarea indicelui de stare tehnica I ST	Aprecieri generale asupra starii tehnice	Masuri recomandate	Aprecieri generale asupra defectului sau degradării	Categoria defect/degradare după posibilitatea reabilitării
1	I	81 - 100	*Stare foarte buna* Lucrarea poate prezenta degradari si deficiente minore, care nu au tendinta de evolutie.	• masuri de îmbunatatire a caracteristicilor estetice • lucrari de întretinere	S1, C1, R1	D1
2	II	61 - 80	*Stare buna* Lucrarea prezinta unele deficiente si un început de degradare cu tendinta de evolutie în timp	• lucrari de întretinere reparatii	S2, C2, R2	D1, D2
3	III	41 - 60	*Stare satisfacatoare* Elementele constructive prezinta degradari vizibile pe zone întinse cu tendinta de afectare a capacitatii portante.	• reparatii • reabilitari • consolidari	S3, C3, R3	D3
4	IV	21 - 40	*Stare nesatisfacatoare* Elementele constructive sunt într-o stare avansata de degradare	• reabilitare • înlocuirea unor elemente	S4, C4, R4	D4
5	V	sub 20	*Stare critica* Lucrarea nu asigura conditiile minime de siguranta a circulatiei	• înlocuirea sau consolidarea structurii de rezistenta afectata de degradare	S5, C5, R5	D4

Map of bridges and culverts managed by S.E. State Road Administration

Bridges on roads (M,R,G – 5951 km) – 835 pcs.

Culverts on roads (M,R,G – 5951 km) – cca. 5014 pcs.

Map of public roads in Republic of Moldova
43 125 km

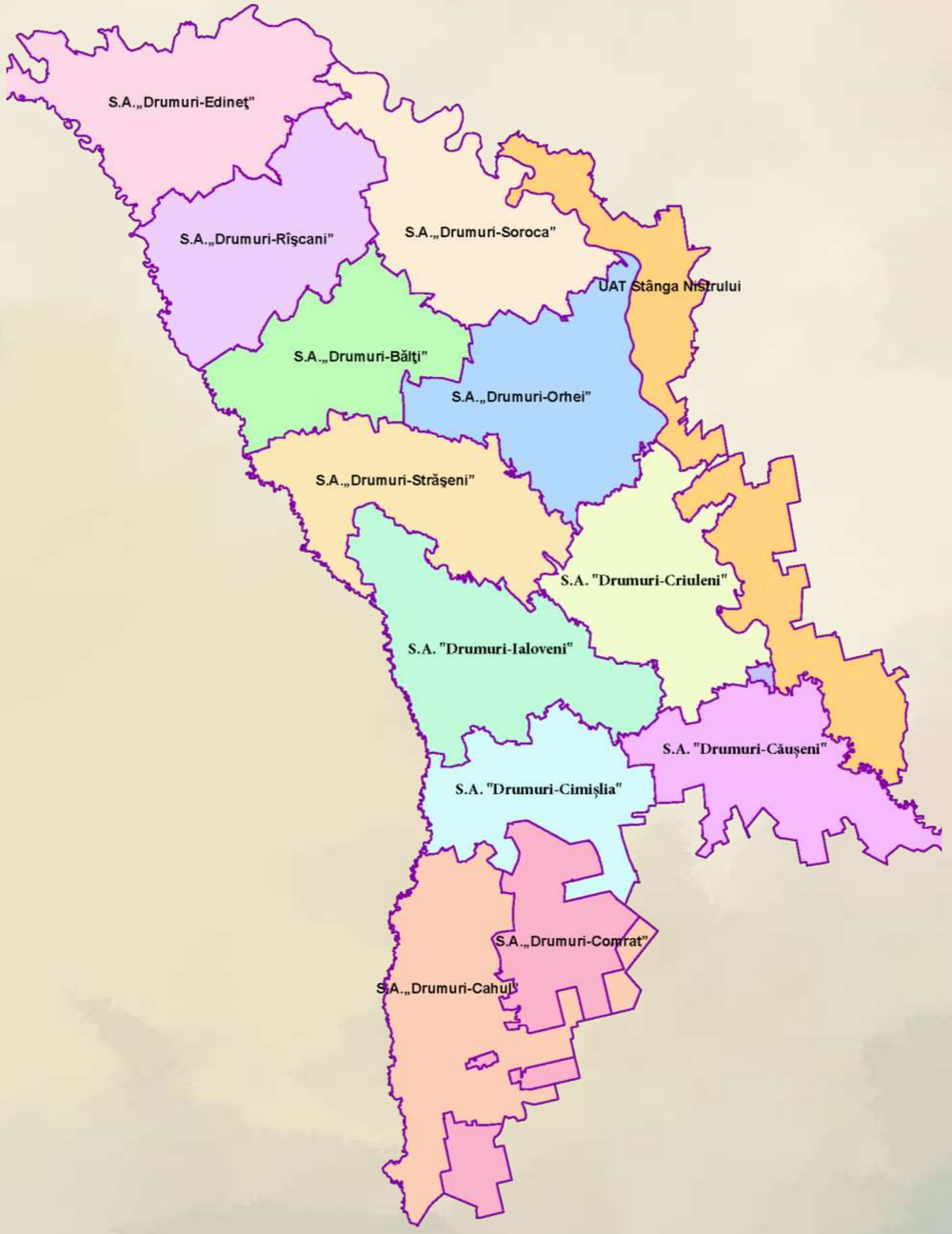


Map of bridges and culverts located on public roads

Bridges on public roads – 6 500 pcs.

Culverts on roads – 27 800 pcs.

Road Maintenence



Road maintenance is carried out through 12 Road Joint Stock Companies S.A. Drumuri, with 100% state capital, which are located throughout the Republic and have under their management 39 road exploitation sectors.

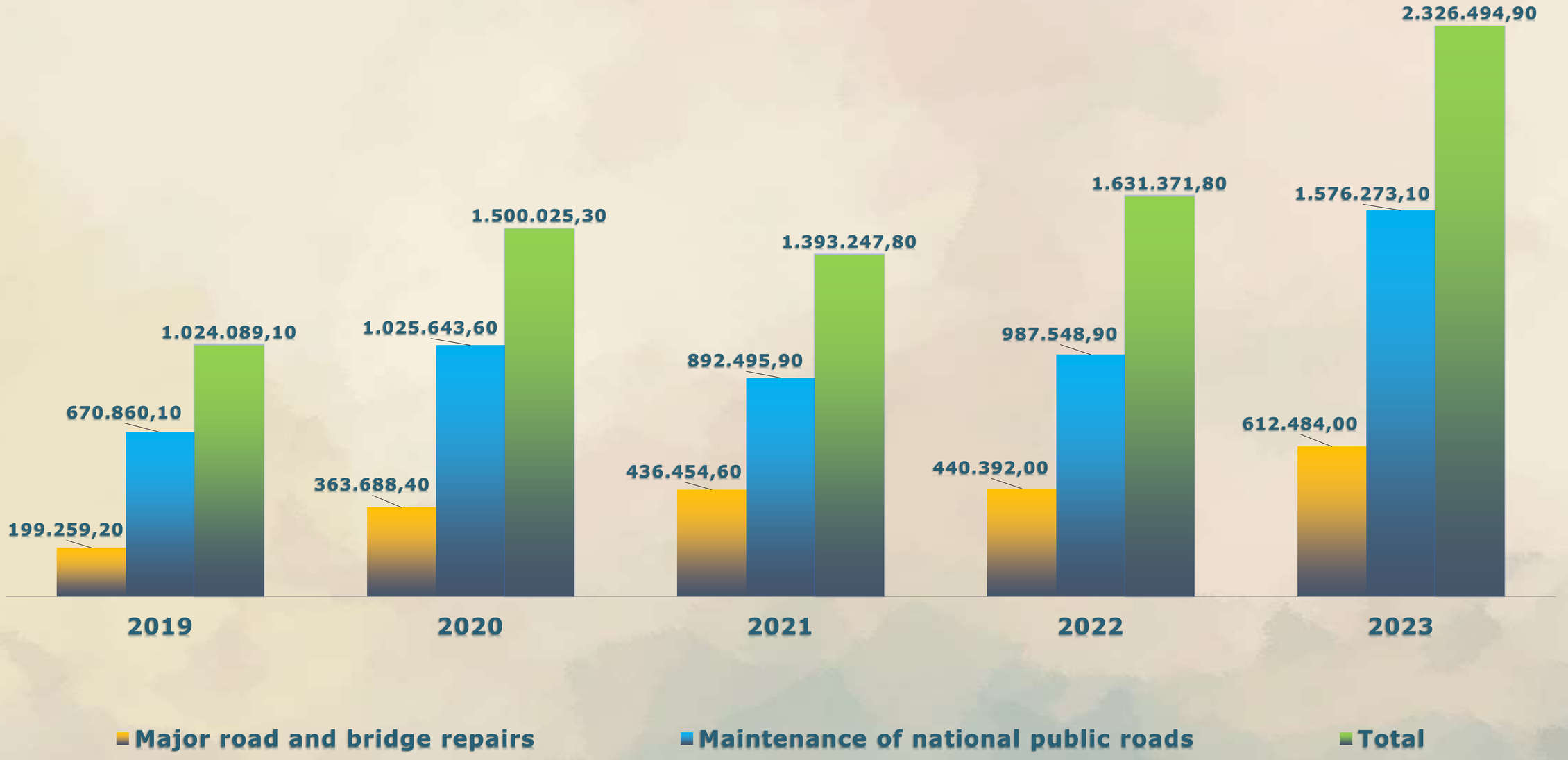
Following maintenance works are carried out:

1. **Current road maintenene during summertime,**
2. **Current road maintenenc during wintertime,**
3. **Works and services carried out for periodic maintenence,**
4. **Road and Bridge Repair Works,**
5. **Public road management.**

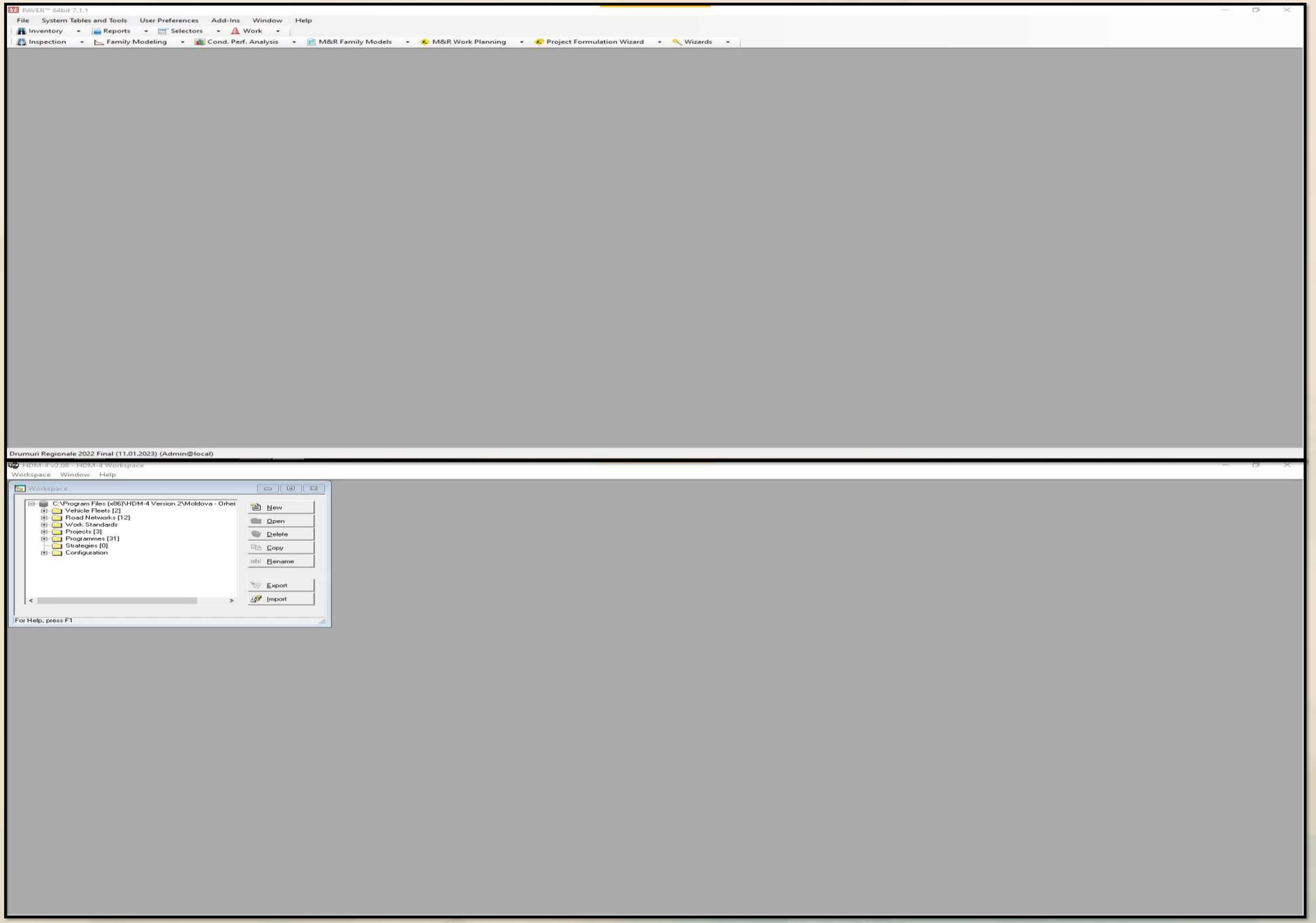
It is worth mentioning that S.E. State Road Administration is currently in the process of reorganization by shifting into a Joint Stock Company "National Road Administration" with full state capital, which will be the successor of the rights and obligations of the State Enterprise "State Road Administration", and the next stages consist in taking over the management of the existing 12 Joint Stock Companies.

Capitalization of the means of the road fund for national public roads for the period 2019 – 2023

(thousands of MDL)



Road Pavement Management System. Prioritization of the National Public Road sectors.



PAVER

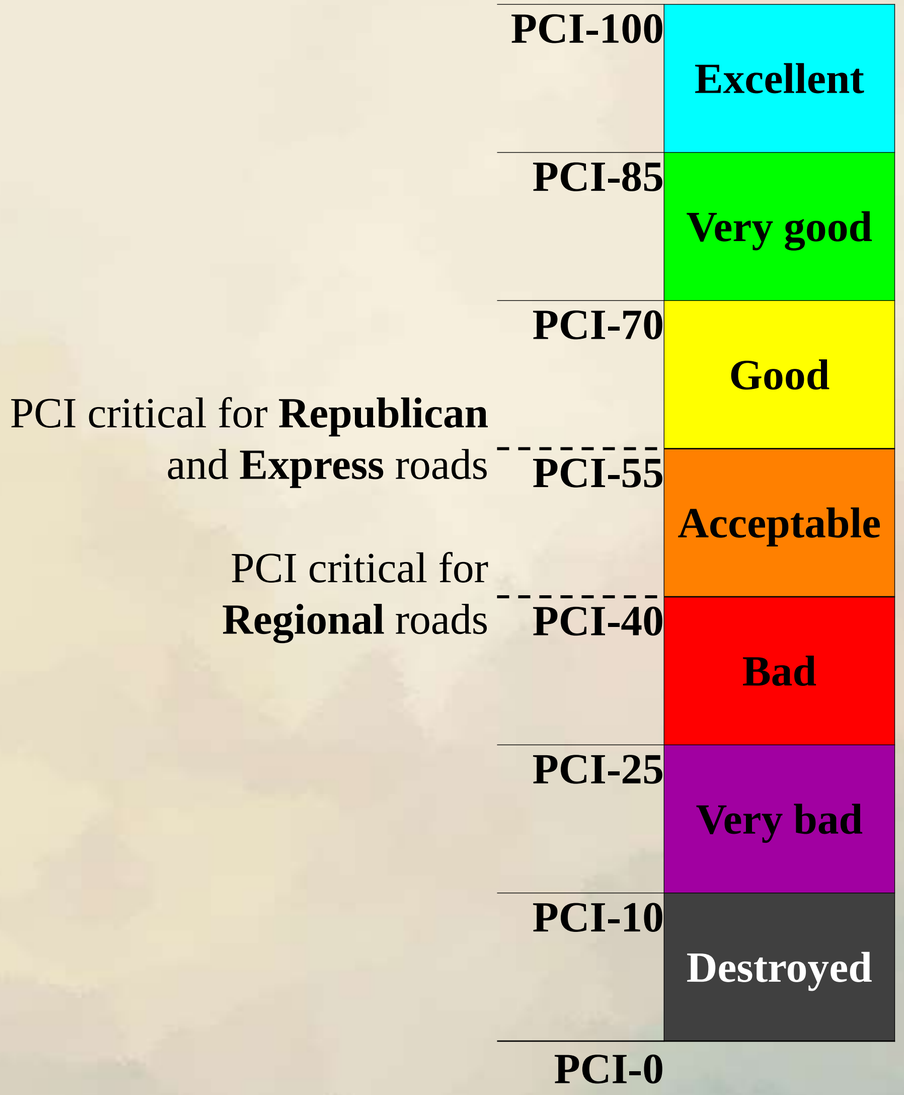
represents a road wear management system that was developed for the purpose of inventory and analysis of roadway damage. This program uses visual inspection data to calculate the Pavement Deterioration Index (PCI). This index is used for a consistent description of the condition of the running surface and for establishing effective maintenance strategies for a specific period of time.

HDM-4

is a program designed to analyze total transportation costs for alternative road improvement options and maintenance strategies based on economic analysis over the life of the road. As basic parameters for performing the analysis, the program uses data on the intensity of road traffic and the international flatness index IRI.

PCI and IRI gradation for assessing the technical condition of the road network
(Regional, Republican and Express Roads)

PCI - Pavement Condition Index



IRI - International Roughness Index

Examples of the PCI index

R7 - (PCI – 4 - Destroyed)

G12 - (PCI critic 40 - Bad)

R25 - (PCI critic 55 - Acceptable)

R1 - (PCI – 100 - Excellent)

Examples of the IRI index

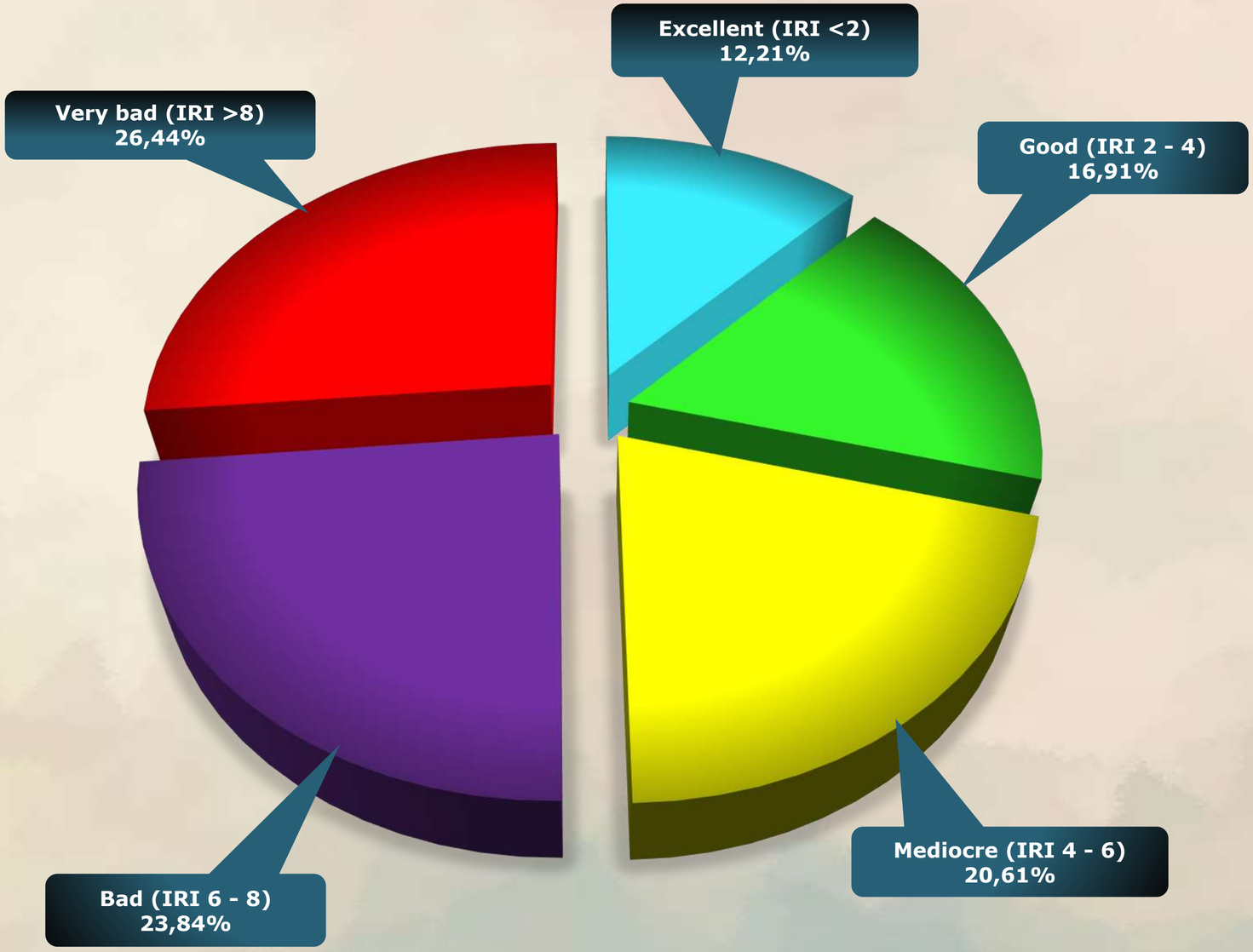
M1 – (IRI - 1.17 - Excellent)

G69 – (IRI – 3.57 - Good)

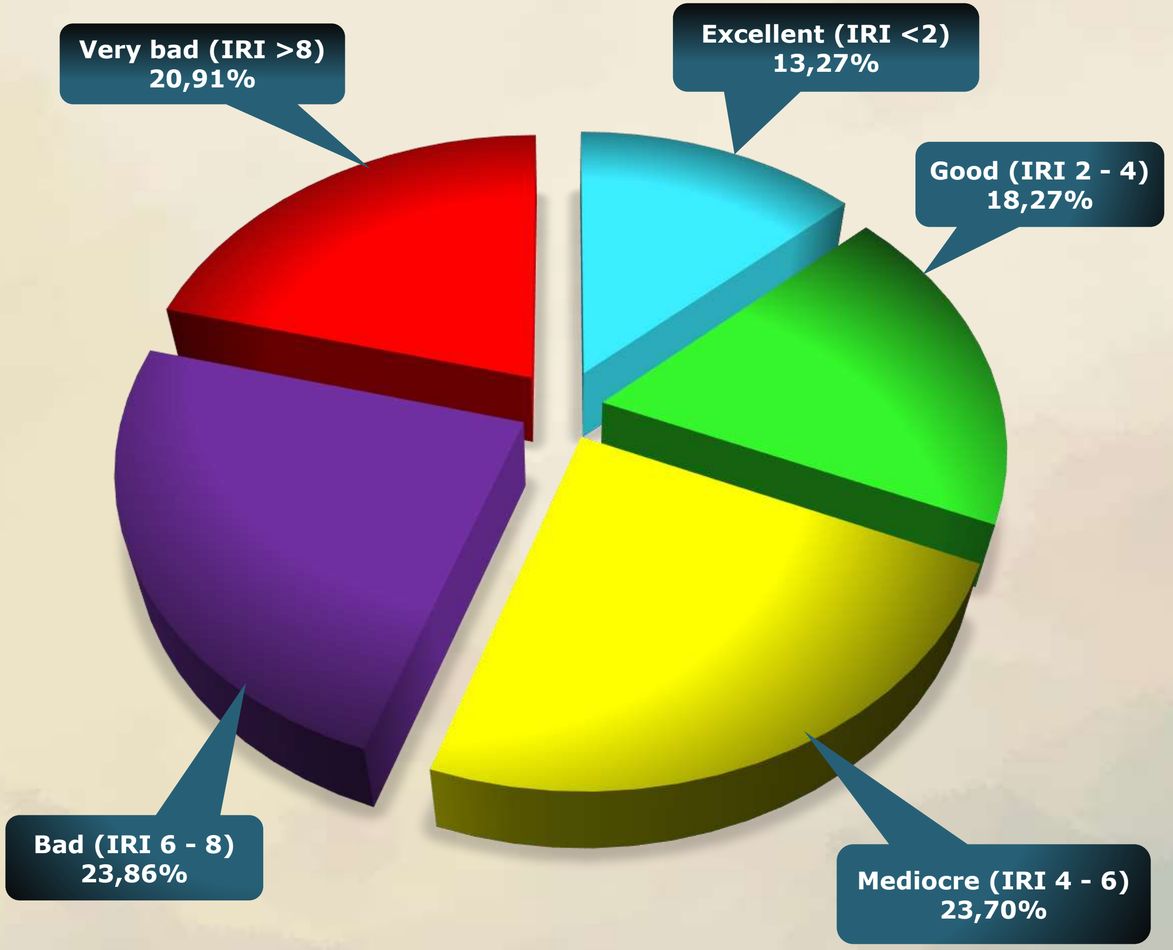
R16 – (IRI – 5.86 - Mediocre)

R3 – (IRI – 7.67 - Bad)

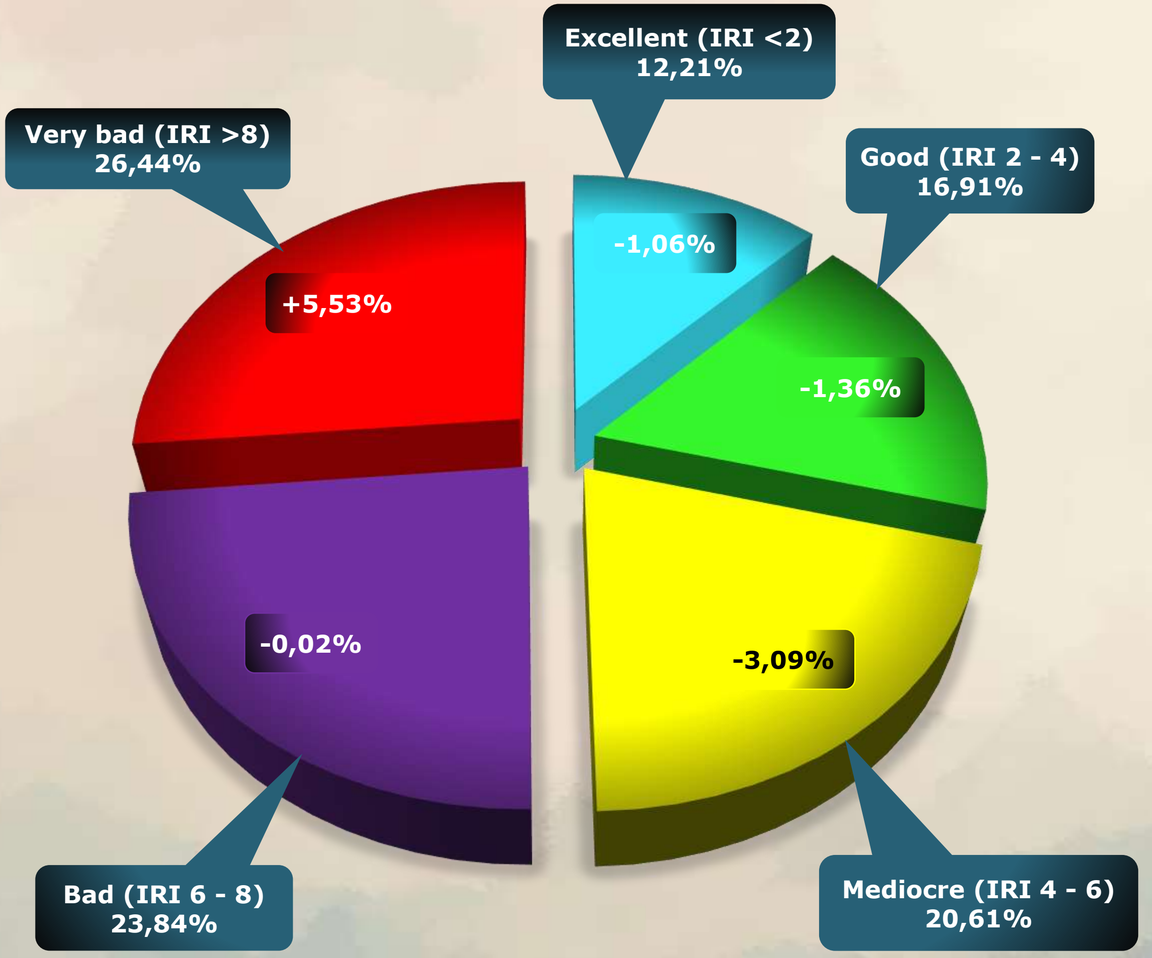
The current state of national public roads M,R,G in the Republic of Moldova, according to the IRI index



The evolution of road condition of national public roads according to the IRI index during the years 2022-2023

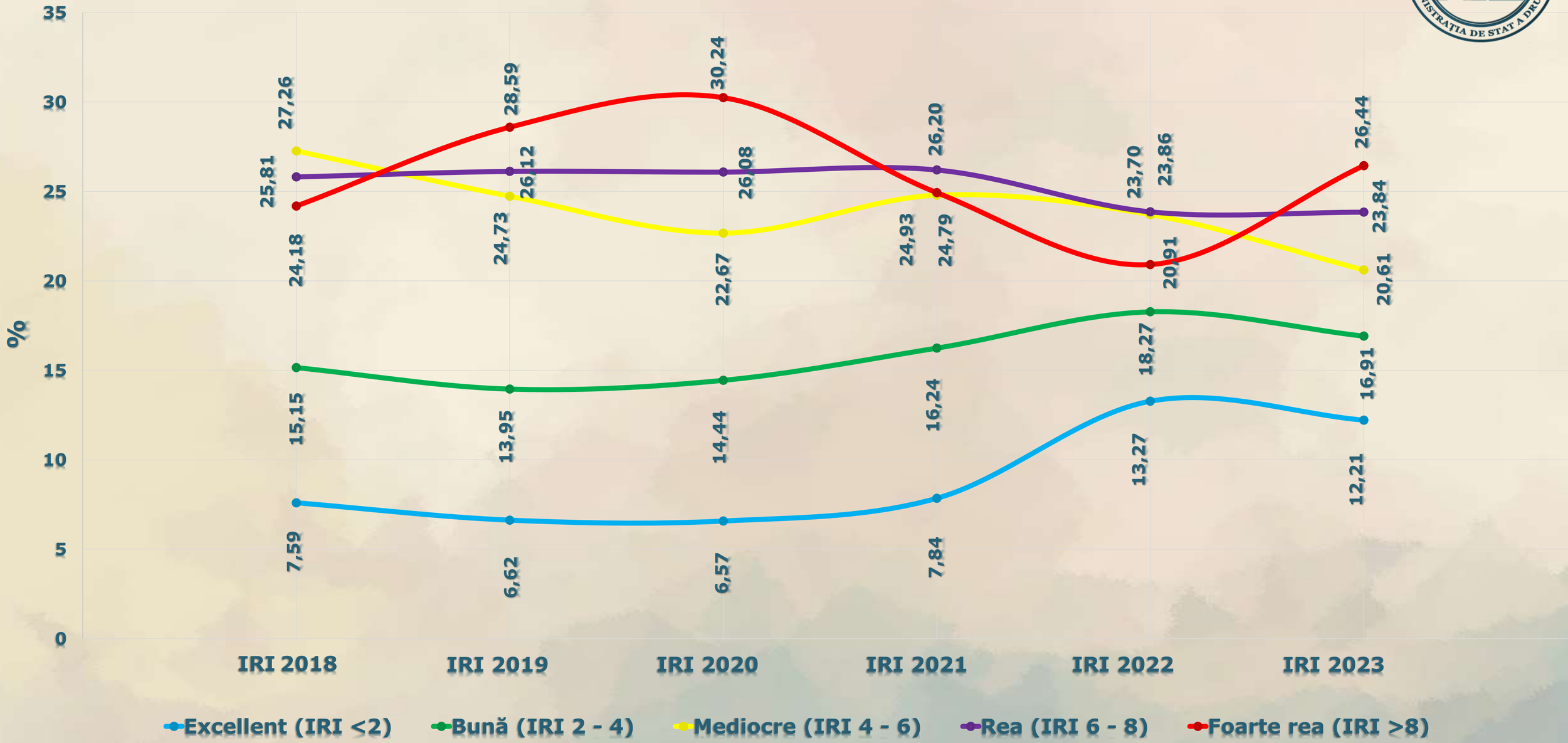


Year 2022

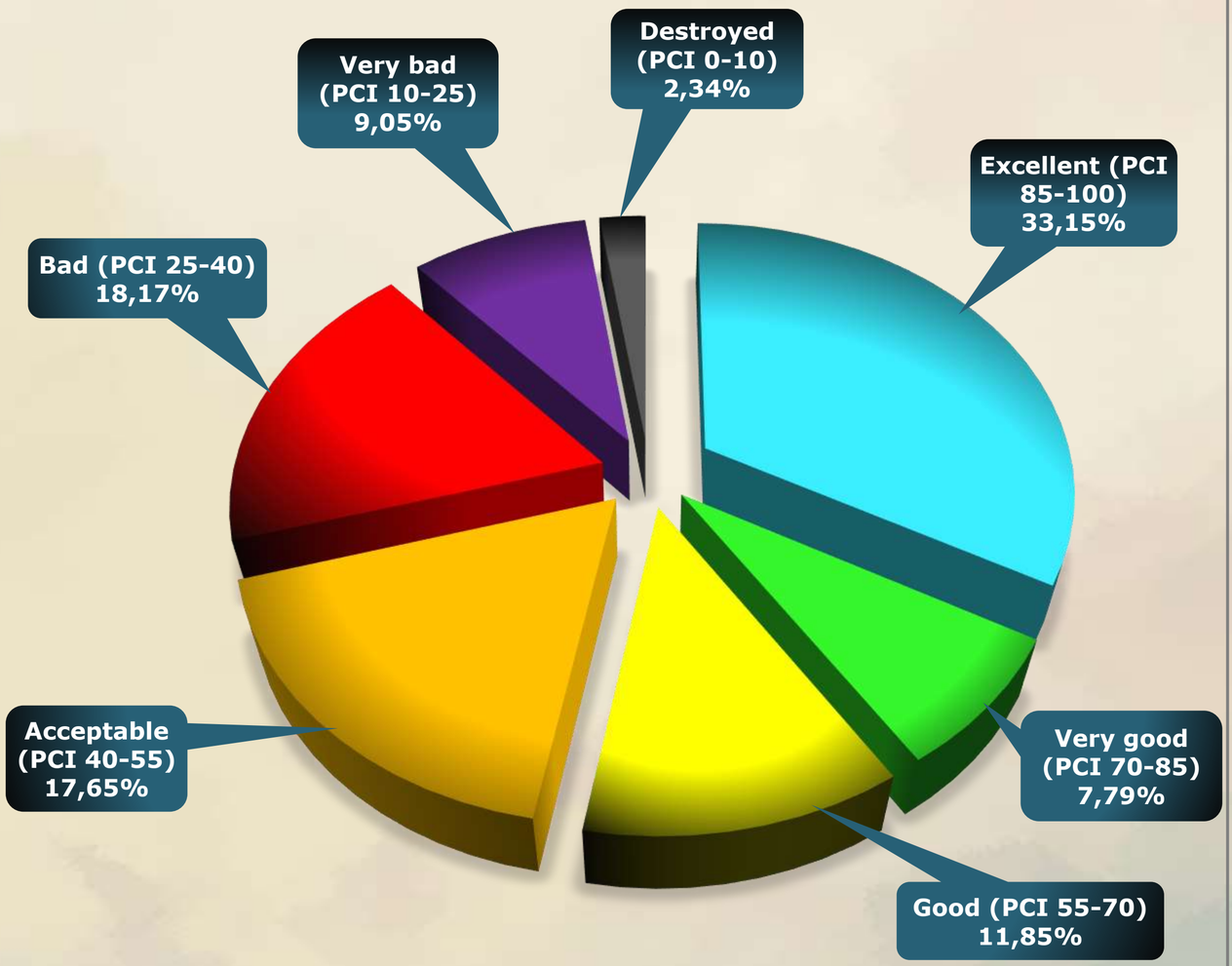


Year 2023

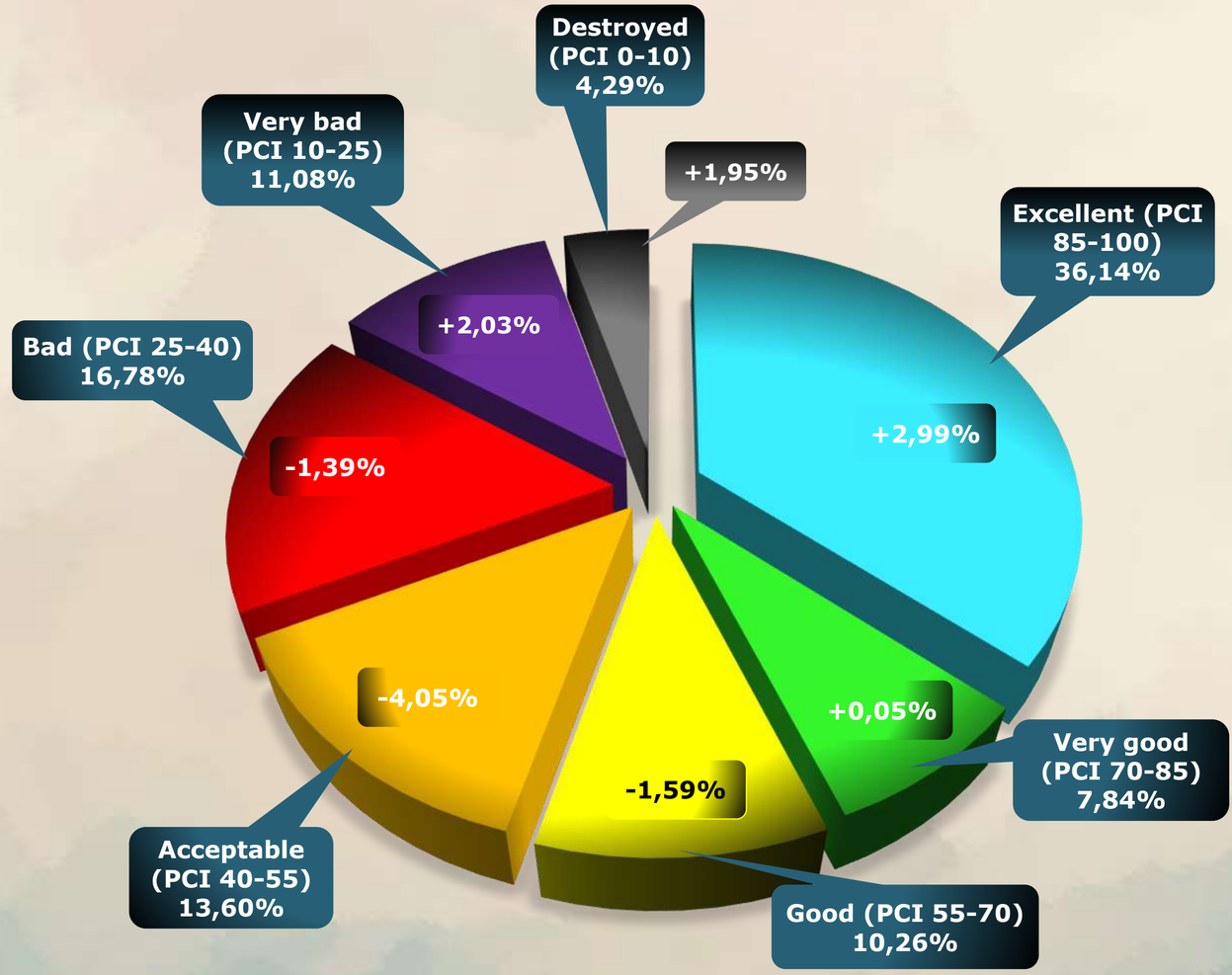
The evolution of road condition of national public roads according to the IRI index during the years 2018-2023



The evolution of road condition on the sectors of national public roads with asphalt concrete pavement according to the PCI index during the years 2022-2023



Year 2022



Year 2023

Annual Review
Multi-criterion system based on the following criteria:

Technical criterion

- Traffic Intensity (AADT)
- Percentage of heavy vehicles (HV)
- State of Degradation of the Road (PCI)
- Road Surface Flatness (IRI)

Economical criterion

- Investment costs per km. of road
- Internal rate of return (IRR)

Road safety criterion

- Frequency of traffic accidents

Social criterion

- Number of towns connected by road
- Number of people served per km. of road

Environmental criterion

- The percentage of the roads that cross localities
- The presence of the risk of blocking traffic on the road due to geological and climatic hazards

Annual Review
Multi-criterion system based on the following criteria:
Technical Criterion

Regional road network

Criteriul	Punctajul total	Punctajul maxim	Indicator	Gradația îmbrăcămintei din asfalt		Gradația îmbrăcămintei din pietriș	
				AADT (vehicul/zi)	Nr. de puncte:	AADT (vehicul/zi)	Nr. de puncte:
TEHNIC	45	10	A.1 Intensitatea medie zilnică anuală	> 3,500	10	> 1 000	10
				751 3,500	7	>500 ≤1,000	7
				201 750	4	>100 ≤500	4
				≤ 200	1	≤ 100	1
		5	A.2 Procentul autocamioanelor din intensitatea traficului totală	HV (%)	Nr. de puncte:	HV (%)	Nr. de puncte:
				> 20%	5	> 20%	5
				>10% ≤20%	3	>10% ≤20%	3
				≤ 10%	1	≤ 10%	1
		15	A.3 Starea de degradare a părții carosabile (PCI)	PCI (puncte)	Nr. de puncte:	PCI (puncte)	Nr. de puncte:
				≤ 11	7	≤ 11	7
				>11 ≤26	9	>11 ≤26	9
				>26 ≤41	15	>26 ≤41	15
				>41 ≤56	12	>41 ≤56	12
				>56 ≤71	5	>56 ≤71	5
				>71 ≤86	3	>71 ≤86	3
				> 86	0	> 86	0
		15	A.4 Planeitatea părții carosabile (IRI) (m/km)	IRI (m/km)	Nr. de puncte:	IRI (m/km)	Nr. de puncte:
				≤ 2	0	≤ 4	0
				>2 ≤4	3	>4 ≤6	3
				>4 ≤6	15	>6 ≤8	15
				>6 ≤8	11	>8 ≤10	11
				> 8	7	> 10	7

Express and Republican road network

Criteriul	Punctajul total	Punctajul maxim	Indicator	Gradația îmbrăcămintei din asfalt		Gradația îmbrăcămintei din pietriș	
				AADT (vehicul/zi)	Nr. de puncte:	AADT (vehicul/zi)	Nr. de puncte:
TEHNIC	45	10	A.1 Intensitatea medie zilnică anuală	> 16,001	10	> 16,001	10
				>8,001 ≤16,000	8	>8,001 ≤16,000	8
				>3,501 ≤8,000	6	>3,501 ≤8,000	6
				>751 ≤3,500	4	>751 ≤3,500	4
				≤ 750	2	≤ 750	2
		5	A.2 Procentul de vehicule grele	HV (%)	Nr. de puncte:	HV (%)	Nr. de puncte:
				> 20%	5	> 20%	5
				>10% ≤20%	3	>10% ≤20%	3
				≤ 10%	1	≤ 10%	1
		15	A.3 Starea de degradare a părții carosabile (PCI)	PCI	Nr. de puncte:	PCI	Nr. de puncte:
				≤ 11	7	≤ 11	7
				>11 ≤26	9	>11 ≤26	9
				>26 ≤41	12	>26 ≤41	12
				>41 ≤56	15	>41 ≤56	15
				>56 ≤71	5	>56 ≤71	5
				>71 ≤86	3	>71 ≤86	3
				> 86	0	> 86	0
		15	A.4 Planeitatea părții carosabile (IRI) (m/km)	IRI	Nr. de puncte:	IRI	Nr. de puncte:
				≤ 2	0	≤ 4	0
				>2 ≤4	3	>4 ≤6	3
				>4 ≤6	15	>6 ≤8	15
				>6 ≤8	11	>8 ≤10	11
				> 8	7	> 10	7

Economical Criterion

Criteriul	Punctajul total	Punctajul maxim	Indicator	Gradația îmbrăcămintei din asfalt		Gradația îmbrăcămintei din pietriș	
				Cost de investiți (mii $/km)	Nr. de puncte:	Cost de investiți (mii $/km)	Nr. de puncte:
ECONOMIC	20	10	B.1 Costuri de investiții pe km (mii $/km)	≤ 10	0	≤ 10	0
				>10 ≤100	10	>10 ≤50	10
				>100 ≤200	6	>50 ≤100	6
				> 200	3	> 100	3
		10	B.2 Rata internă de rentabilitate (IRR)	IRR:	Nr. de puncte:	IRR:	Nr. de puncte:
				> 50%	10	> 90%	10
				>20% ≤50%	7	>50% ≤90%	7
				>10% ≤20%	3	>20% ≤50%	3
				≤ 10%	0	≤ 20%	0

Criteriul	Punctajul total	Punctajul maxim	Indicator	Gradația îmbrăcămintei din asfalt		Gradația îmbrăcămintei din pietriș	
				Cost de investiți (mii $/km)	Nr. de puncte:	Cost de investiți (mii $/km)	Nr. de puncte:
ECONOMIC	20	10	B.1 Costuri de investiții pe km (mii $/km)	≤ 10	0	≤ 10	0
				>10 ≤100	10	>10 ≤50	10
				>100 ≤300	6	>50 ≤100	6
				> 300	3	> 100	3
		10	B.2 Rata internă de rentabilitate (IRR)	IRR:	Nr. de puncte:	IRR:	Nr. de puncte:
				> 50%	10	> 90%	10
				>20% ≤50%	7	>50% ≤90%	7
				>10% ≤20%	3	>20% ≤50%	3
				≤ 10%	0	≤ 20%	0

Annual Review
Multi-criterion system based on the following criteria:

Road Safety Criterion

Express, Republican and Regional road network

Criteriul	Punctajul total	Punctajul maxim	Indicator	Gradația	
SIGURANȚĂ RUTIERĂ	10	10	C.1 Frecvența accidentelor de trafic	Frecvența AT:	Nr. de puncte:
				≥1 ≤3	3
				>3 ≤6	7
				≥ 7	10

Environmental Criterion

Regional road network

Criteriul	Punctajul total
SOCIAL	15

Social Criterion

Express, Republican and Regional road network

Criteriul	Punctajul total	Punctajul maxim	Indicator	Gradația	
MEDIU	10	5	E.1 Procentul din lungimea drumului care trece prin localități	% lungime drum prin localitate:	Nr. de puncte:
				> 50	5
				>30 ≤50	3
				≤ 30	1
		5	E.2 Prezența riscului de blocare a traficului pe drum din cauza pericolelor geologice și climatice	Risc blocare trafic:	Nr. de puncte:
				Da	5
				Nu	0

Express and Republican road network

Gradația	
Cost de investiți (mii $/km)	Nr. de puncte:
> 1500	10
>600 ≤1500	7
>200 ≤600	4
≤ 200	1
Nr. de localități conectate:	Nr. de puncte:
> 20	5
>10 ≤20	3
≥1 ≤10	1
< 1	0

Tools and techniques for collecting, processing and using road infrastructure data.

Mobile road laboratory "Трасса" is used for diagnosis of measurement of the main geometric basic parameters of the road, control of transport and the condition of road operation.

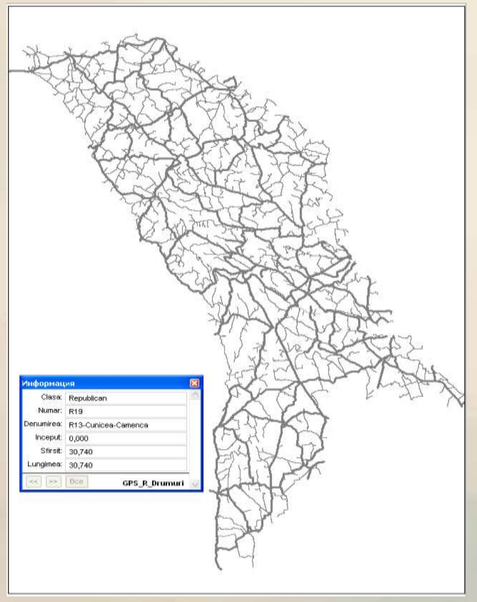
The program works as part of the mobile laboratory of «Трасса» and КР-514
SMP models are equipped with following sensors:

- **traveled distance;**
- **gyroscope;**
- **video recording system of the traveled route;**
- **defect fixing system by means of the video camera;**
- **transverse flatness assessment sensors;**
- **georadar (ОКО-1000);**
- **GPS;**
- **running surface flatness measurement system (IRI - international flatness index)**

Титул-2005
СОДЕРЖАНИЕ АВТОМОБИЛЬНЫХ ДОРОГ И ИСКУССТВЕННЫХ СООРУЖЕНИЙ

Data collection

Processing/Storage



Geospatial Representation

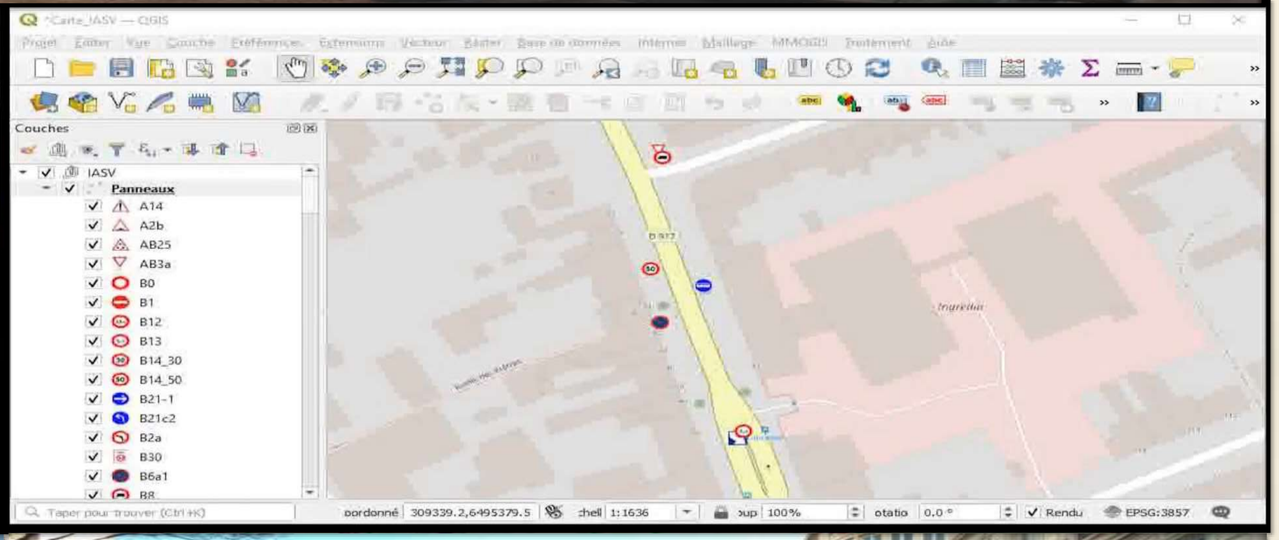
2.85.250.355 (БД: 9) - "Дорога-ПРО" (зарегистрирован на Государственное предприятие «Государственная администрация автомобильных дорог»)

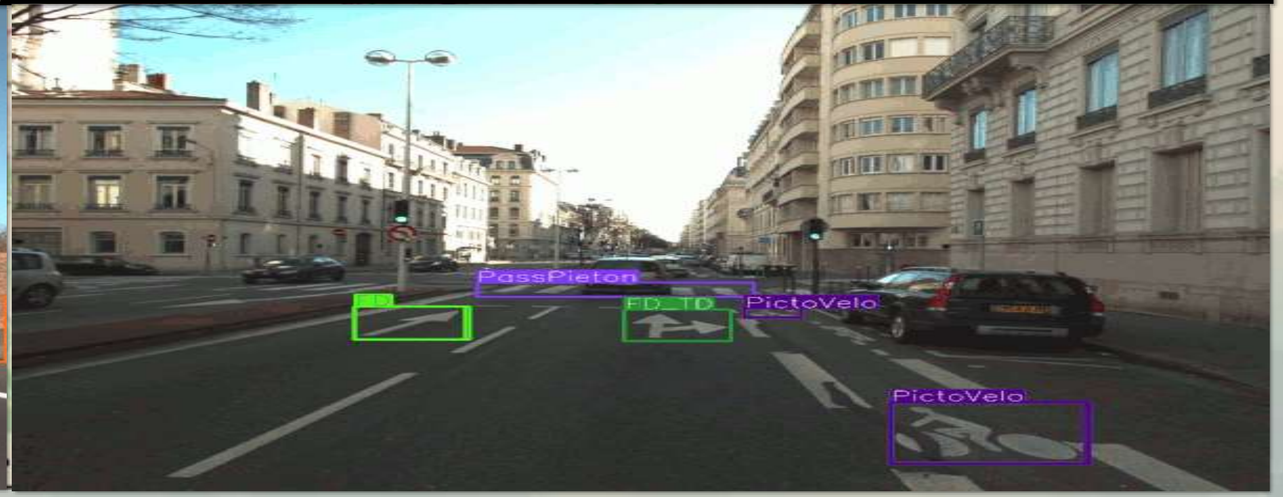
Просмотр и обработка результатов измерения

Видеосъемка

Ситуация | Видеосъемка

Smart systems for the inventory of roads and adjacent elements

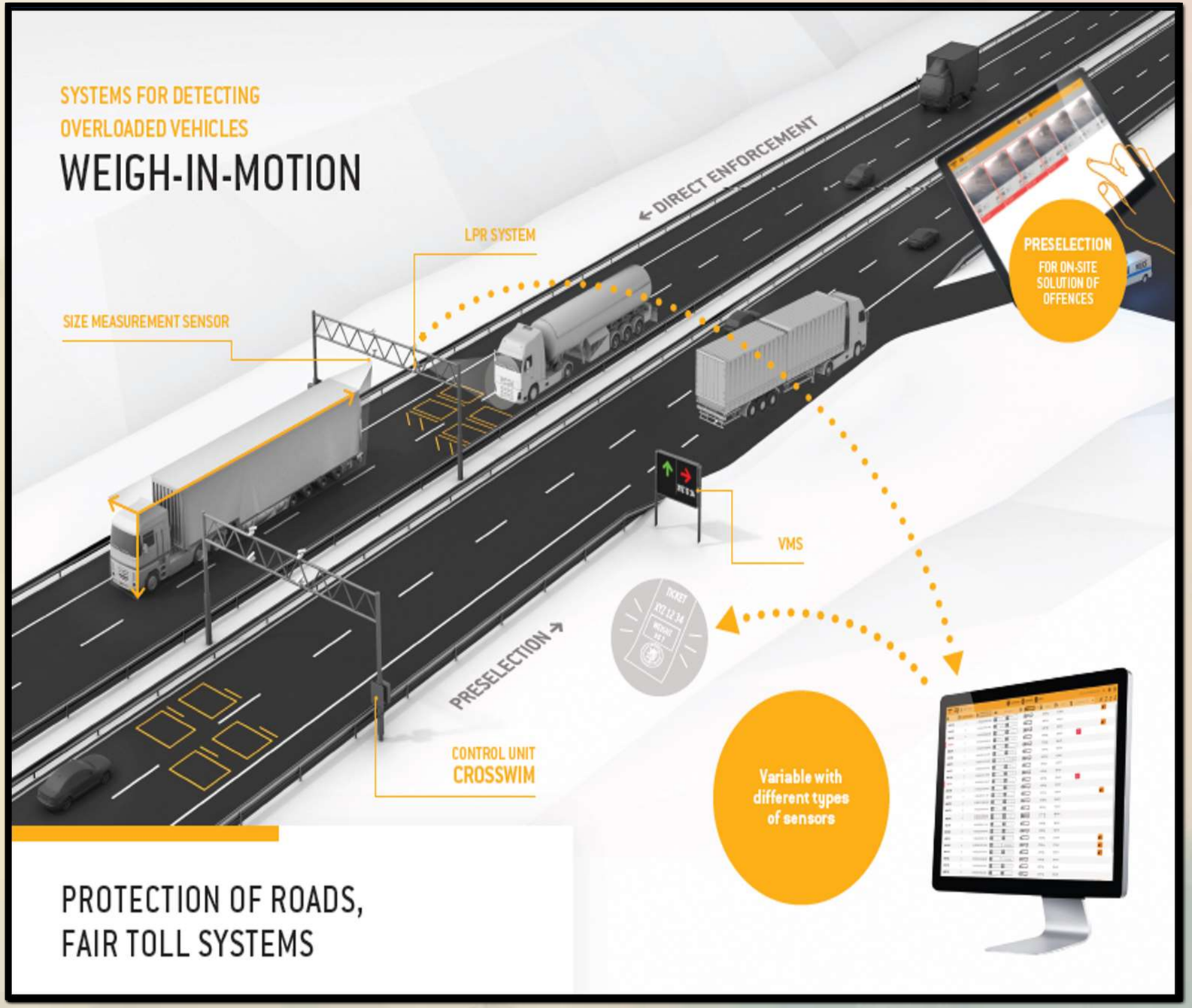




Road safety
Planned and ongoing actions

- Installation of intelligent traffic light objects;
- Implementation of the infrastructure for alternative transport (including the improvement of the legal framework);
- Replacement of road signaling elements and effective contemporary additional solutions to increase road safety;
- Additional solutions to increase road safety nearby educational institutions;
- Solutions for setting up roundabout intersections on road sectors with increased traffic intensity;
- Setting up the waiting stations.

Digitization of processes within S.E. State Road Administration



- **Prioritization of works based on HDM 4 and Paver programs;**
- **Register of public roads (systematic updating of road infrastructure data using geographical information systems (bridges and overpasses, road safety elements, pavilions, registry of road, etc.); GD no. 319/2024**
- **Automated road traffic census via monitoring units;**
- **Forecasting interventions during winter based on data obtained from road weather stations;**
- **Use of modern equipment to check the execution of works (mobile laboratory, drones, testing laboratory);**
- **Implementation of the process of weighing in motion of the transport units, in accordance with GD no. 960 dated 06-12-2023.**

S.E. State Road Administration

Thank you for your attention!

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