REPUBLIC OF ESTONIA
ROAD ADMINISTRATION

YEARBOOK 2019

PRIIT SAUK,
Director General, Road Administration

Dear yearbook readers,

The mission of the Road Administration is to develop a safe, functioning and economic traffic environment.

The 101st year in the history of the Road Administration passed in an instant and was very busy for all employees and officials. There is reason to be proud of our achievements, but we are also apprehensive about the future. Many thanks to every colleague and partner as well as every client for their commitment!

It has been a year of stable work. 2019 was historically the best year in terms of the monetary volume of the preservation and repair of public roads. In total, we used 149 million euros for the preservation and 83.4 million euros for the development of the road network. The yearbook also gives information on the number of kilometres covered by the works and the most exciting objects.

The satisfaction of the customers of our service bureaus remains extremely high. The satisfaction of drivers with road maintenance has improved in comparison with previous years. The clients of the public services provided by the Road Administration are increasingly using the online self-service environments. Efficient public administration as well as fast and convenient public services are the result of our long-term development activities.

The number of people using regular bus services in counties has strongly increased, and the constantly growing demand for connection with large islands has led to discussions of the need to order another ferry. Unfortunately, the Saaremaa flight procurement is still ongoing and the awarding of a new contract is delayed by numerous public procurement disputes. However, we hope to award the new contract in 2020, which would guarantee the people of Saaremaa a bigger and more comfortable aircraft for connection with the continent.

2019 can be considered a breakthrough year in the development of the organisation. As we are preparing the next step on the road to becoming the Mobility Administration or the Transport Administration, we carried out a significant structural reform as of 1 May 2019. The three whales on which we now rely in our activities are the Strategic Planning Division, the Division of Road Construction and Maintenance and the Traffic Division.

The two new divisions are managed by ambitious young men – Director of Strategic Planning Martin Lengi and Dirtector of Road Maintenance Raido Randmaa. Experienced manager Meelis Telliskivi will continue managing the division with the biggest number of employees as the Traffic Director.

Concentrating the state supervision activities previously performed in several departments into the Supervision Centre under the Legal Department was an important step in the reform. We rethought the principles of state supervision, assessed the importance of various supervision activities and agreed on the focus topics for 2020.

In addition to structural changes, the cooperation between divisions and departments still requires some practice and the review and specification of some processes. Fortunately, customer-focused thinking, describing services on the basis of process management principles and constant improvement are coded into the DNA of the Road Administration. Service owners have mostly understood their roles and we're improving and optimising the services in addition to describing them. We analyse the costs of services and look for innovation and efficiency in everything.

At the end of the year, the analysis working groups were launched once again with a directive of the minister in order to consider how investments in various types of transport in Estonia should be planned in the future and how to perform the routine management of various infrastructure objects or the network.

The result of the work of several working groups was formulated into a proposal in February 2020 and it was suggested to the Government of the Republic that a Mobility Administration be established on the basis of the Road Administration, the Maritime Administration and the Civil Aviation Administration. The goal is to launch the new administration on 1 January 2021.

There are certainly people who have doubts about the necessity and success of the merger. However, a similar process has been completed in nine smaller European Union Member States, especially in the Nordic countries. Once again, we took a closer look at the experience of the Nordic countries, especially our neighbour Finland. We have to admit that similar changes were made in Finland 10 years ago.

The Government of the Republic that stepped into office in spring 2019 has come up with many new ideas in the area of public road maintenance and development. The Road Maintenance Plan for 2020-2030 was approved on 9 January 2020 and above all, we received clearer goals for 2020-2023. This year, the focus is on continuing the development of the Võõbu-Mäo 2+2 road section of the Tallinn-Tartu highway.

One of the priorities of the government's action programme is to cover considerably more gravel roads with dust-free surfacing (all gravel roads used by more than 50 vehicles per day on average by 2030). The goal in 2020 is to make three times more roads dust-free than in 2019. No additional funds were allocated for this purpose, but priorities were reset on the account of other measures in the Road Maintenance Plan so that, for example, there will be fewer road reconstruction projects in the coming years.

The other important goal in the government programme is the construction of a safe 2+2 solution for all three main highways. This is a very ambitious goal in the opinion of the Road Administration, which would need ca 1.7-2.0 billion euros and would realistically take up to 15 years. Four million euros have been allocated for the preparation of building 2+2 main roads in 2020 in the approved Road Maintenance Plan. We hope that the funds required for the preparation of this significant goal in the development of main roads will be allocated at least for the next 10 years, and the possibilities of funding the construction will become clear in the next years.

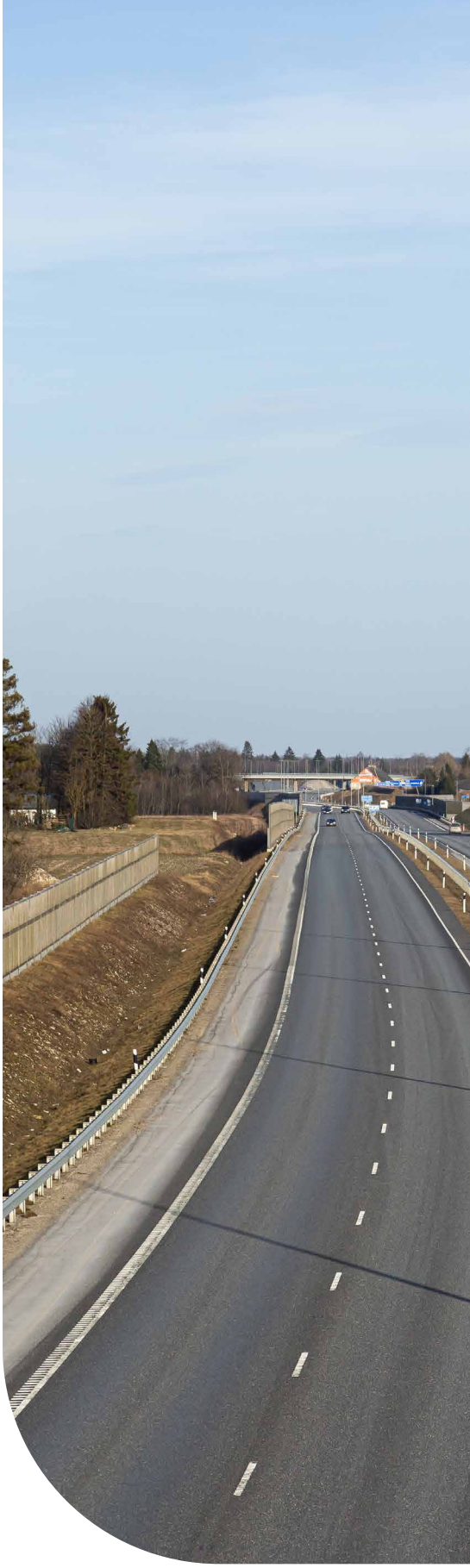
PPP or public-private partnership has been the magic expression on everyone's lips since autumn 2019. According to the Ministry of Finance, private investors are probably prepared to invest for the long term in infrastructure facilities, including road construction projects, that are important to the state. This would accelerate possible investments in the development of our road network and earn them long-term income. A specific pilot project on the Libatse-Nurme road section has been selected for this and various analyses have been initiated to assess the necessity and feasibility of the project, the state's repayment capacity, etc. We hope to complete the analyses by summer 2020 so that the Government of the Republic could rely on them and make an informed and justified decision – to start preparing and organising the procurement required for implementation of the pilot project.

Another exciting task of the Road Administration for 2020 is to develop the concept for the "Recording and Warning System of the Road Behaviour of Motor Vehicle Drivers". As a result of several serious road accidents, the Traffic Committee of the Government of the Republic set the Road Administration the goal to be prepared to introduce a general concept in the Traffic Committee in June and if it is approved, immediately start working on the necessary legislative drafting.

The idea of a permanent connection with isles of Muhu and Saaremaa is on the table again. The Road Administration ordered a study of the opinion of the residents of Saaremaa, Muhumaa and Lääneranna Municipality on the establishment of a permanent connection. 60% of the residents of Saaremaa and Lääneranna Municipality and 40% of the residents of Muhumaa were in favour of the permanent connection. The government is now considering the initiation of a special plan as a precondition necessary for the establishment of a permanent connection. We hope that the special plan will be initiated in 2020.

The cooperation agreement with Rail Baltic Estonia and RBR is certainly worth a mention – we agreed that the Road Administration will carry out the public procurement for the construction of 17 viaducts on the crossings of the main track of Rail Baltic with public roads from 2020-2022. The funding will be provided by the Rail Baltic project and the total amount is ca 60 million euros. The establishment of the first viaduct at Saustinõmme on Tallinn Ring Road started in 2019, when the cornerstone of Rail Baltic as a whole was also symbolically laid in the pillar of the viaduct.
Major projects important to the state of Estonia will also be established in 2020 and beyond. You will be able to read more about them in our next yearbooks.

Best regards to all!



CONTENTS

Photos: Sten Roosvald pp 1-3, 6-9, 13, 16-18, 34-39, 42-44; Edmond Mäll p 14.

ABOUT THE ROAD ADMINISTRATION

The Estonian Road Administration is a government agency within the administrative area of the Ministry of Economic Affairs and Communications tasked with organising the road maintenance of national roads, planning the mobility of people and vehicles and ensuring road safety.

The main functions of the Road Administration are:

- creating conditions for safe, sustainable and functional traffic on national roads and planning the mobility of people and vehicles
- planning and maintenance of national roads
- improving traffic safety and organising traffic education
- minimising the environmental impact of vehicles
- organising traffic and public transportation
- conducting supervision and misdemeanour procedures in compliance with the requirements proceeding from legal acts regulating the Administration's area of activity and applying the enforcement powers of the state
- maintaining the databases arising from legal acts
- participating in the development of policies, strategies, development plans and legal acts related to its area of activity and in the preparation and implementation of international projects
- implementing national policy and development plans within the Administration's area of activity
- representing the state in international communication within the Administration's area of activitycollection, scientific research, preservation, organisation and introduction to the public of any materials which reflect the history of Estonian roads and the development of road technology and traffic for educational and cultural purposes

The main activities of the Road Administration are performed by the Strategic Planning Division, Road Maintenance Division and Traffic Division, each managed by a director who report to the Director General, the general manager of the Estonian Road Museum and support service department managers.

The Road Administration and the maintenance of national roads are financed according to the Traffic Act. Most of the revenue collected by the Road Administration comprises state fees and road tolls, which in 2019 amounted to 30.1 million and 19.9 million euros, respectively. The main sources of funding expenses and investments were state revenue and external funds. The total amount of the investments made by the Road Administration last year was 196 million euros, 9.2% or 18 million euros of which was financed from external funds.

The amount of operating expenses was 70 million euros, 59.9% or 42 million euros of which were national road maintenance expenses.

The amount of the grants for the organisation of road, water and air transport in the budget of the Road Administration was 69 million euros in 2019.

IMPLEMENTATION OF THE BUDGET OF THE ROAD ADMINISTRATION FOR 2019

Thousand euros

	Budget	Implementation of budget	Implementation %
Total expenditure and investments:	**325,910**	**316,541**	**97%**
Total operating expenses:	**71,459**	**69,567**	**97%**
Labour expenses	16,782	16,174	96%
Management expenses	54,439	53,136	98%
Operating expenses incurred on account of revenue from economic activities	238	257	108%
Total investments:	**182,158**	**177,947**	**97%**
Buildings	722	722	100%
Purchase of land	2 400	2 348	98%
IT developments	2 034	1 934	95%
Other investments	738	727	99%
Aggregate public road project and self-financing by state	176,465	171,005	97%
Investments made on account of revenue from economic activities	799	1 211	152%
Total grants given:	**71,293**	**69,027**	**97%**
Organisation of road transport	45,098	43,604	97%
Organisation of water transport	23,195	22,447	97%
Organisation of air transport	3 000	2 976	99%
Total revenue:	**48,681**	**52,432**	**108%**
Sale of goods and services	30,553	31,847	104%
incl. state fees	*29,504*	*30,099*	*102%*
incl. revenue from economic activities	*1 037*	*1 686*	*163%*
Other revenue	18,013	20,166	112%
incl. road toll	*18,000*	*19,904*	*111%*
National grants received	115	419	364%

FOREIGN GRANTS IN 2019

Thousand euros

Foreign grants received	18 082
Investments made and operating expenses incurred on account of foreign grants received	17 991

STAFF OF THE ROAD ADMINISTRATION

The number of positions in the Road Administration in 2019 was 536. The employment relationships of the Administration as a public sector agency are governed either by public or private law, so the staff are divided into 333 public service position and 203 positions based on employment contracts.

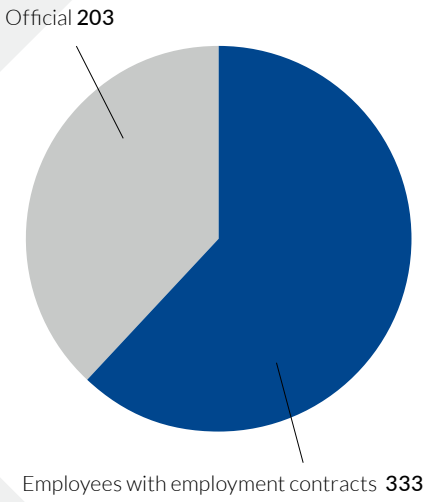


Figure 1. Division of staff by groups

Several significant changes occurred in the structure of the Road Administration in 2019. The new Statutes of the Road Administration entered into force on 1 May 2019, creating the basis for launching a management structure that supports the development, implementation and creation of sustainable, functioning and safe mobility.

The structure proceeds from the present and future needs of society, i.e. the need to provide more efficient and better public services to clients, process-based management, merger of the construction and maintenance areas and the practicality of redistributing functions in the area of the road network. The changes increase the attention given to the mobility planning stage and the modelling of mobility, which analyses the movement of people, goods and information and looks for the most practical solutions for the management of these flows.

Supervisory activities were also centralised in the Road Administration as of 1 May and a supervisory centre that covers the entire organisation was established in the Legal Department. Activities related to construction, technology and tests were concentrated in the centre. The objective of the change is to draw a clear line between state supervision and other control activities, harmonise the supervision process and guarantee its purposeful organisation and objectivity and concentrate and improve supervisory competencies.

In 2019 the 536 places of service of the Road Administration were divided between four areas as follows:

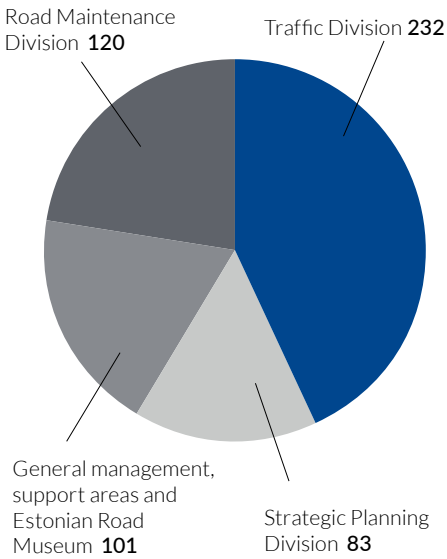


Figure 2. Division of positions on the basis of staff.

Total staff turnover remained at the same level as in 2018, i.e. around 12%. The Road Administration hired 65 new employees in 2019.

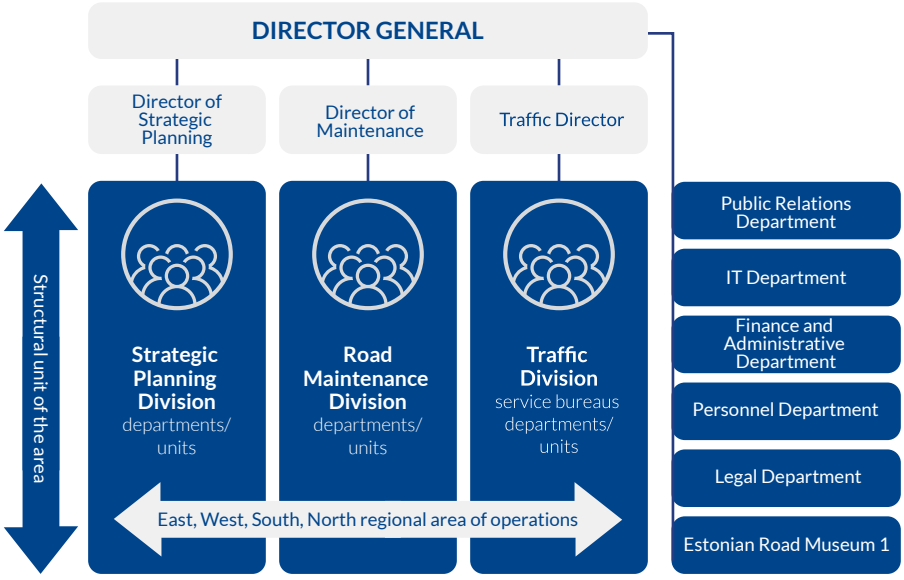
RISK MANAGEMENT

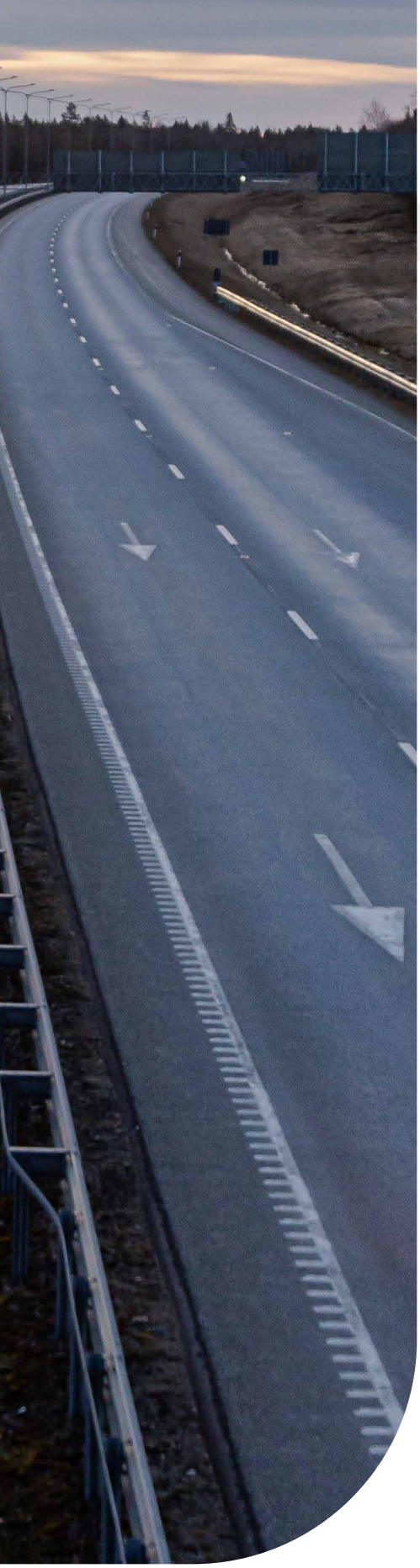
The purpose of risk management at the Road Administration is to acknowledge and manage all risks. In other words, if strategy tells the organisation where we want to go, then risk management allows it to achieve these goals safely.

We launched many important actions in 2019 in order to get closer to the goal. For example, we can highlight the mapping of the risks that may start obstructing the achievement of the organisation's goals and the planning of actions to manage them. We found approximately 200 risks across the organisation, and the departments have planned over 40 actions to manage them in 2020. Across departments, the risks in the Road Administration in 2020 are related to the increasing dependence on IT and the resolution of the bottlenecks arising from the structural changes made in 2019.

Prevention of corruption is an important activity in the area of risk management. Several training events were organised for this purpose in 2019, where the employees learnt about the various forms and possible consequences of corruption. In addition to raising overall awareness in the organisation, the representatives of certain service groups were also trained in the prevention of corruption.

STRUCTURE SUPPORTING PROCESS MANAGEMENT





EXISTING **ROADS**

The roads in the Estonian road network divide into national roads, local roads and private and forest roads. The Road Administration is responsible for the construction and maintenance of national roads, local governments are responsible for local roads and private roads are the responsibility of their owners.

The length of national roads in Estonia as at 1 January 2020 is 16,609 km, to which 87.6 km of temporary ice roads are added depending on the weather.

1609 km (9.7%) of national roads are main roads, 2405 km (14.5%) are basic roads, 12,479 km (75.1%) are secondary roads and other national roads and 116 km (0.7%) are connecting roads.

There are 1010 bridges on national roads and their total length is 26 km. The average age of bridges is 40 years.

TOTAL LENGTH OF ESTONIAN ROAD NETWORK

Road type	Kilometres (km)
National roads	**16 609 km**
incl. main roads	1609 km
basic roads	2405 km
secondary roads and other public roads	12 479 km
connecting roads	116 km
Local roads	**24 060 km**
rural highways	18 275 km
streets	5220 km
footpaths and cycle tracks	565 km
Private and forest roads*	**18 398 km**
Total	**59 067 km**

* Data of Statistics Estonia, 31 December 2008.

An E-road is a road named by the UN Economic and Social Council, i.e. a road of the European road network. A TEN-T road is a road located in the territory of Estonia, i.e. a road of the trans-European road network specified in Regulation (EU) No. 1315/2013 of the European Parliament and of the Council.

953 km of public roads are E-roads and 1294 km are TEN-T roads.

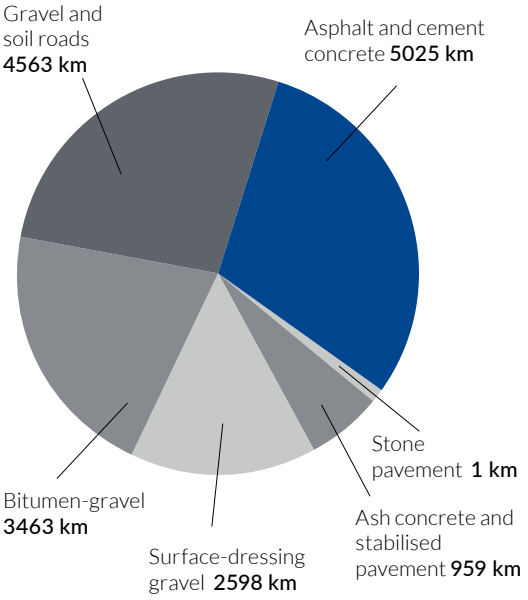
International public roads:

- Road No. 1 Tallinn-Narva (E20)
- Road No. 2 Tallinn-Tartu-Võru-Luhamaa (E263)
- Road No. 3 Jõhvi-Tartu-Valga (E264)
- Road No. 4 Tallinn-Pärnu-Ikla (E67)
- Road No. 5 Pärnu-Rakvere-Sõmeru
- Road No. 7 Riga-Pihkva (E77)
- Road No. 8 Tallinn-Paldiski (E265*)
- Road No. 9 Ääsmäe-Haapsalu-Rohuküla
- Road No. 10 Risti-Virtsu
- Road No. 11 Tallinn Ring Road (E265)
- Road No. 11174 Paldiski-Padise (E265**)
- Road No. 11180 Paldiski South Harbour Road (E265)

A road can be an E-road and a TEN-T road at the same time.

Public roads are covered with different materials, which means that they can also be differentiated by the type of paving.

Data as of 1 January 2020



*E265 section only from kilometres 25.125-45.686
**E265 section and TEN-T network section only from kilometres 0.000-1.021

IMPLEMENTATION OF INVESTMENTS OF ROAD MAINTENANCE PLAN (INCL. EXTERNAL FUNDS)

THOUSAND EUROS

Name of measure	Source of funding	Budget	Budget Implementation	Implementation %
Construction	National funds	51 977	48 931	94%
	Foreign funds and grants	18 572	16 625	90%
	Total	**70 549**	**65 556**	**93%**
Reconstruction	National funds	57 353	51 918	91%
	Foreign funds and grants	-	67	-
	Total	**57 353**	**51 985**	**91%**
Maintenance repair of paved roads	National funds	19 513	20 677	106%
	Total	**19 513**	**20 677**	**106%**
Rehabilitation of paved roads	National funds	20 164	19 756	98%
	Foreign funds and grants	-	7	-
	Total	**20 164**	**19 763**	**98%**
Reconstruction of accident blackspots	National funds	6000	6082	101%
	Foreign funds and grants	-	190	-
	Total	**6000**	**6272**	**105%**
Design	National funds	-	840	-
	Total	**-**	**840**	-
Maintenance repair of gravel roads	National funds	8277	9717	117%
	Total	**8277**	**9717**	**117%**
Construction and repair of bridges	National funds	5065	5165	102%
	Total	**5065**	**5165**	**102%**
Paving of gravel roads	National funds	7616	7340	96%
	Foreign funds and grants	-	531	-
	Total	**7616**	**7871**	**105%**
Noise barriers	National funds	500	579	116%
	Total	**500**	**579**	**116%**
TOTAL	**TOTAL**	**194 921**	**188 425**	**97%**

VOLUMES OF MEASURES OF ROAD MAINTENANCE PLAN

Name of measure	Planned volume	Actual volume of works received
Maintenance repair of gravel roads	274 km	291 km
Maintenance repair of paved roads	1157 km	1184 km
Rehabilitation of paved roads	177 km	208 km
Construction and reconstruction	180 km	141 km
Construction	10 km	5 km
Reconstruction	170 km	136 km
Paving of gravel roads	88 km	77 km
Construction and repair of bridges	16 bridges	20 bridges
Accident blackspots	70 places	56 places

1901 km of constructed and repaired sections received in total

STRATEGIC PLANNING DIVISION

MARTIN LENGI,
Director of Strategic Planning

The Strategic Planning Division was established in 2019.

The Division includes functions from all earlier main activities of the Road Administration. We concentrated the Administration's strategy creation into the new division so that the development documents would be better connected to one another, support one another and form a whole. The division is now also responsible for the management of infrastructure investments, the planning and preparation of projects and asset management. New work streams were added, such as mobility planning and the creation of a national mobility model.

Services related to the role of infrastructure owner, such as granting third parties the right to change the infrastructure in such a manner that it remains safe and operational, and the management of road tolls are also provided by the division. As we built the division, we focused on regional cooperation with local governments and the need to lead the digitalization of the sector.

DIGITALIZATION

A software development project for the establishment of road lifecycle information system TEET was launched for the digitisation of the data of roads.

The establishment of a joint map-based data exchange environment for exchanging information and documents with partners when 'designing' the lifecycle stage of a road started in 2019 in order to establish an environment where the data on restrictions and cadastral units of land collected by the Road Administration can be viewed. The development of TEET information system will continue until the end of 2021.

REGIONAL VIEW

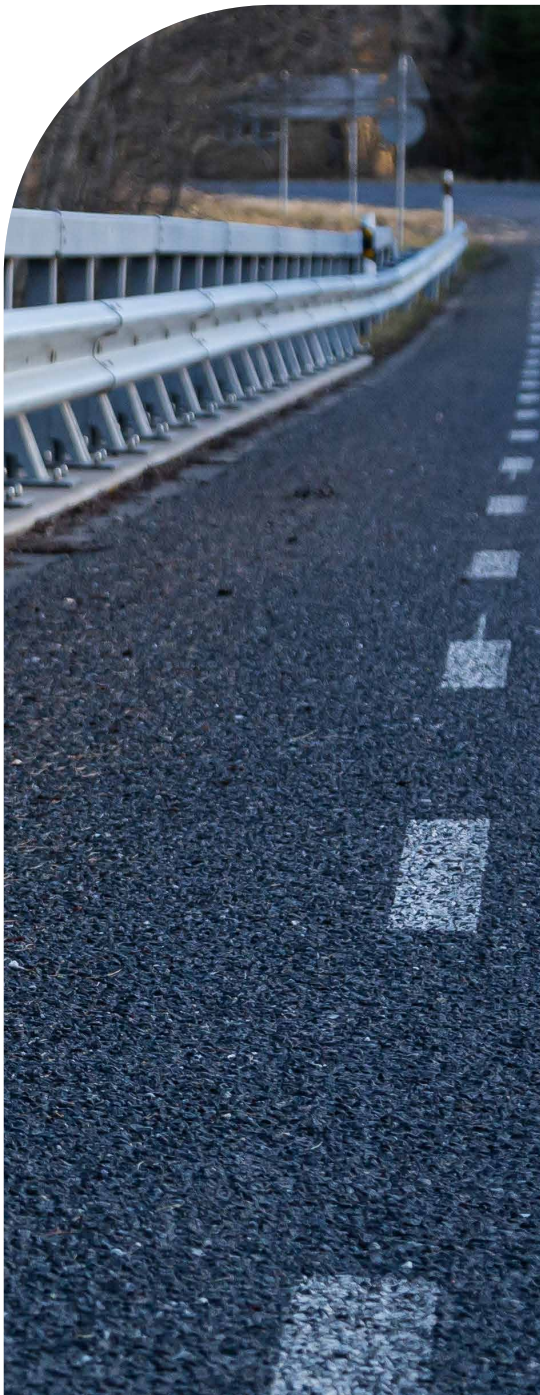
The North Region stands out with its large construction sites and although the focus is often on the road sections currently under construction, the more detailed planning of several forward-looking developments started in 2019. For example, the Tallinn Small Ring Road, the new 2+2/2+1 Tallinn-Rapla road, the continuation of Juuliku-Tabasalu road, the traffic junctions of Jõelähtme and Loksa.

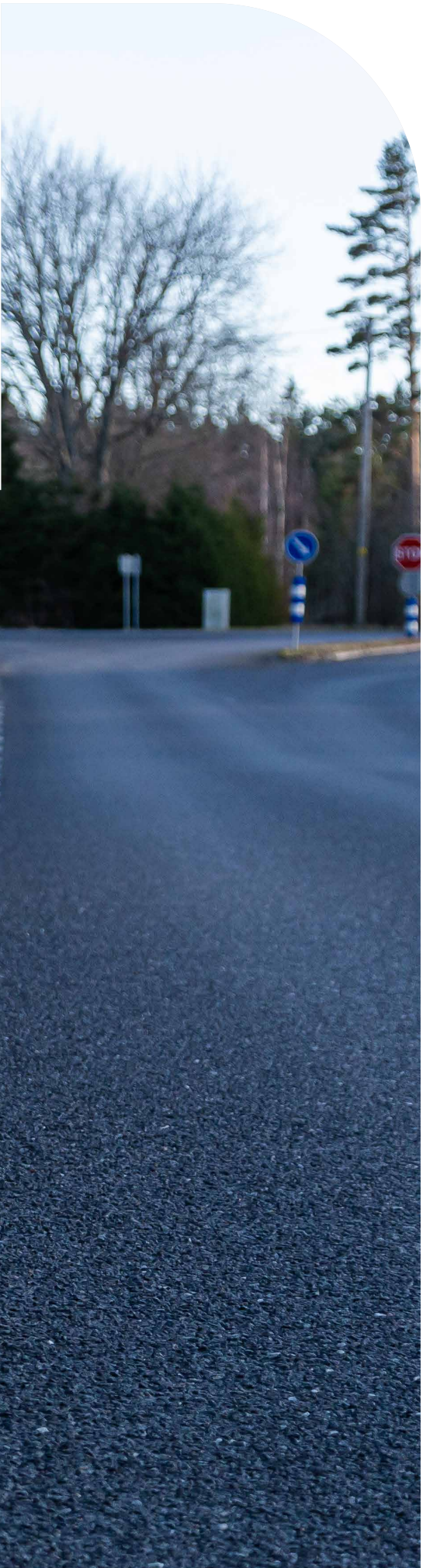
The local governments of the North Region have shown a lot of interest in the sites planned by the Road Administration and want to steer the developments with us. The focus is mainly on the desire of municipalities to develop the network of pedestrian and cycle roads and the improvement of road safety through the elimination of accident blackspots.

One of the biggest challenges in communication with local governments in the South and West Regions is the construction of pavements on gravel roads and the development of the main national roads. In the East Region, the focus was also mainly on explaining the plans for the development of the main national roads. An important role of the regional strategic planning managers throughout the year was to organise the acknowledgement of road safety measures and tasks in local governments as well as organise smooth cooperation between the Strategic Planning Division and the Road Maintenance Division in the Administration.

STRATEGIC PLANNING DEPARTMENT

2019 was a year of major changes for the Strategic Planning Department. The name was not the only thing that changed. In comparison with the previous activities of the Road Safety Department, the circle of topics has broadened considerably and the team has also





grown. The scope of responsibility increased as well. The successes of 2019 that deserve a separate mention are the completion of the database of traffic accidents and the considerable improvement of the accessibility of traffic accident data, the transformation of the work of the speeds working group, the impact analysis of speed cameras prepared by us and presented at international conferences and the significant contribution to the calming stop project and the Vision Zero conference. We launched many other mobility design activities in 2019 that are expected to have a significant impact on the future of the Road Administration and Estonia.

The sustainable urban mobility strategy of the Tallinn region that shows the general trends is supplemented by the cooperation agreement entered into between the Ministry of Economic Affairs and Communications and the City of Tallinn and the light rail transport survey of Harju County.

INFRASTRUCTURE DEVELOPMENT

The development of road infrastructure, the preparation of road projects and the management of investments concentrated in the Infrastructure Development Department. The centralisation of the processing of public road design conditions and building permits was launched in order to guarantee the even course and quality of the proceedings.

The entry into a cooperation agreement with OÜ Rail Baltic Estonia and RB Rail AS was remarkable and on the basis of this agreement, the Road Administration will organise the construction and supervision of the construction of the construction of the road interchanges on the Rail Baltic crossings.

The contribution to the preparation of the new version of the regulation that includes the requirements for designing roads initiated by the Ministry of Economic Affairs and Communications must also be mentioned as a significant activity.

The plants growing in one of the most significant habitats of the lady's-slipper orchid (*Cypripedium calceolus*) on the new Võõbu-Mäo road were replanted as a result of the efficient cooperation of the Environmental Division, the Environmental Board and the Estonian University of Life Sciences, which made it possible to proceed with the 2+2 road.

INFRASTRUCTURE MANAGEMENT

The Infrastructure Management Department, which was established largely on the basis of the former Road Network Department, acquired a new role and importance. The department acts as the owner of infrastructure assets and plans and manages the investments required for the preservation of the existing infrastructure. The Road Register Unit under the department continued performing its earlier functions. The development of policies concerning the ownership and classification of the infrastructure continued. From the infrastructure owner's view, the biggest challenge in the previous year was the preparation of a list of gravel roads that need paving for the next four years in a highly volatile political climate. The size of the list tripled in comparison with the previous plans.

INFRASTRUCTURE SERVICES

The volume of work of the Infrastructure Services Department increased by 16% in 2019 when compared with the previous year. The biggest growth occurred in the public service concerning utility networks – 46%.

The process of the service of building intersections (granting consent for connection with national roads) was thoroughly updated. The goal was to considerably shorten the time from the submission of an application to the acceptance of the exit and to make the process simpler. We managed to reduce the time almost twofold.

The nationwide preparation of spatial comprehensive plans after the merger of local governments continued in 2019.

Road toll was added to the department's service portfolio and the amount of tolls collected was 20 million euros. The unit number of road tolls purchased (734,000) increased by 7% in comparison with the previous year. Another major goal achieved was the completion of the road toll self-service environment, and we automated the process of requesting feedback on the road toll service.

2019 was an exciting and successful year for the Strategic Planning Service, full of manning new roles and getting them going, agreeing on work flows and optimising them and significant projects arising from the main functions of the division. A smooth and successful year of transition is confirmed by the good results measured on the Road Administration's performance card and the continued satisfaction of employees irrespective of the massive changes.

ENVIRONMENTAL MEASURES

In 2019 the Road Administration established five noise barriers that measured 987 metres in total.

The noise barriers were built by the Tallinn-Pärnu-Ikla, Tallinn-Tartu-Võru-Luhamaa and Jüri-Vaida roads. The investments in noise reduction totalled 771,496 euros. The wildlife accident database was updated and a new map application that indicates accident concentration sites was created.

NOISE REDUCTION IN ROAD DESIGNS

PIKKNURME-PUURMANI SECTION FROM KILOMETRES 142.2-146.9 OF THE TALLINN-TARTU-VÕRU-LUHAMAA ROAD

A noise barrier was established during the construction of the 2+1 exit areas on the Pikknurme-Puurmani section from kilometres 142.2-146.9 of the Tallinn-Tartu-Võru-Luhamaa road, the average height of which from the surface of the road is 3.8 m and average length 153.6 m. The noise barrier was designed by Reaalprojekt OÜ and built by Nordecon AS. The cost of the works was 92,000 euros incl. VAT.

VESKI-TAMMI TRAFFIC JUNCTION FROM KILOMETRES 13.0-13.7 OF THE TALLINN-PÄRNU-IKLA ROAD

Two road barriers 149 m and 45 m in length and 3.5-4 m in height were established as part of the construction of the Veskitammi traffic junction from kilometres 13.0-13.7 of the Tallinn-Pärnu-Ikla road. The reduction measures were designed by Reaalprojekt OÜ and built by Nordecon AS. The cost of the works was 120,600 euros incl. VAT.

NOISE BARRIERS ESTABLISHED ON THE BASIS OF ACTION PLAN

Three of the noise barriers designed in the document "Noise Reduction Action Plan 2019-2024" were selected for construction in 2019. One of them was not built because of the opposition of the land owner.

A noise barrier 445 m in length and 4.5-5 m in height was built for the three residential buildings located on kilometre 23.5 of the Tallinn-Pärnu-Ikla road to offer protection against noise coming from the road. A noise barrier 193 m in length and 4.5-5 m in height was built for the semi-detached building located at kilometre 7.9 of the Jüri-Vaida road.

The cost of the works was 579,000 euros incl. VAT. Aluminium acoustic panels produced in Poland (CALVERO Sp. z o.o Sp.k.) were used to build the noise barriers. The noise barriers were built by ViaCon Eesti AS.

NOISE MONITORING

The purpose of the project was to measure traffic noise in order to check the noise levels calculated in noise surveys and the efficiency of noise barriers. The locations of the measurement points were selected from the noise surveys of road projects, the strategic noise map and the data of the complaints filed. Measurements were taken at 20 points, at 10 of which noise was measured during both day and night. The measurement results mostly matched the results modelled in noise surveys (+/- 1-2 dB). Noise was measured and the research report was prepared by Akukon Eesti OÜ. The cost of the monitoring was 6027 euros.

WILDLIFE ACCIDENT MAP APPLICATION

Animals injured and killed on Estonian roads are reported to the environmental helpline on 1313. On average, the helpline receives 3000 reports about wild animals killed or injured on roads every year. The details of the accidents are sent to the Road Administration once a quarter.

The wildlife accident database (created in 2015), which is based on the reports made to the helpline, was updated in 2019 with the data received from 2014-2018 and an analysis was prepared to identify accident hotspots and display them in the map application.

18,401 reports were registered over five years, ca 60% of which could be geo-coded (the exact location of the incident was determined in the coordinate system) and entered in the database. The majority of the accidents entered in the register (ca 95%) involved large wild animals. Most of them were roe deer (8816 reports, i.e. ca 80%). The number of accidents involving moose registered in the database was 856, which comprised ca 8% of all accidents and 767 or 7% of accidents involved wild boar. The number of accidents involving large wild animals on our roads has decreased significantly: the level of accuracy of the reports allowed for

ELIMINATION OF **ACCIDENT BLACKSPOTS**

In order to improve road safety, the Road Administration consistently works on the identification and reconstruction of accident blackspots and dangerous intersections on national roads. The annual action plan concerning sites regarded as priorities in terms of safety is prepared within the scope of the budget allocated for this in the road maintenance plan.

Several departments of the Road Administration cooperate to carry out the planning process and organise the construction, and the activities are coordinated by the accident blackspot coordinator of the Infrastructure Development Department. 6-6.6 million euros per year has been allocated for the reconstruction of accident blackspots in the financial plan of the Road Maintenance Plan 2020-2023.

ORGANISATION OF ACCIDENT BLACKSPOTS ON PUBLIC ROADS

The hazardousness of a road section or intersection cannot be assessed only on the basis of the accidents that have occurred there, but the potential accident risk must also be taken into account. Information on accident blackspots and dangerous intersections is therefore collected from three sources.

1. Accident blackspots found on the basis of risk calculations. The safety of public road sections and crossroads is assessed on the basis of the forecast number of traffic accidents. The statistical method is used for forecasting, which takes into account the traffic accidents that have occurred on the specific section or intersection as well as the accidents that have occurred on other similar sections or intersections. Accident blackspots are ranked in order of significance according to the results of the forecast.
2. Accident blackspots found on the basis of the qualitative assessments of the traffic committees of counties. 20% of the annual budget for reconstruction of accident blackspots is allocated for the reconstruction of the accident blackspots presented to the Road Administration by the traffic committees of counties. These committees primarily inform the Road Administration of the problematic spots on public roads highlighted by the local people.
3. Accident blackspots based on other qualitative assessments. Information on accident blackspots, which is primarily based on accidents that have already occurred, is also sent to the Road Administration by third parties, such as the Police and Border Guard Board, the Committee for Investigation of Serious Traffic Accidents and local governments.

The identified accident blackspots are discussed by the team of experts of the technical working group, which analyses the information collected by the regional traffic managers and the data of traffic accidents and offers suitable measures for road safety for implementation or solutions for reconstruction of accident blackspots. The solutions and their costs are discussed and approved in the technical working group. The final approval of the lists of reconstructions of accident blackspots is given by the investment committee of the Road Administration.

ELIMINATION OF ACCIDENT BLACKSPOTS IN 2019

Various measures of improving road safety were implemented in 2019 on 56 sites and their total cost amounted to 6.3 million euros.

Measures that improve the safety of pedes-

trians, such as the construction of pavements, light traffic paths and road crossings, were implemented on 15 sites and the existing bus stops were reconstructed on eight sites.

The main measures taken to improve the safety of vehicles were the reconstruction of hazardous intersections on 15 sites and the installation of crash barriers on three sites.

Speed humps or chicanes were built on eight sites in total in order to calm traffic and reduce the speed of vehicles.

Additional lighting was installed on three sites, which cover intersections as well as road crossings.

40 accident blackspots were eliminated on main and main connecting roads, 16 of the 56 sites were located on secondary roads.

Accident blackspots were eliminated in all Estonian counties in 2019. The biggest number of hazardous sites – 16 – were made safe in Harju County, where traffic volumes on roads are highest. Six accident blackspots were reconstructed in Tartu County, and five each in Põlva County and Valga County..

The biggest sites that can be highlighted are:

- **Road No. 39,** Tartu-Jõgeva-
- Aravete, kilometres 45.3-45.7, reconstruction of the intersection in Jõgeva into a roundabout;
- **Road No. 39,** Tartu-Jõgeva-Aravete, establishment of overtake extensions from kilometres 8.3-9.8;
- **Road No. 15,** Tallinna-Rapla-Türi, construction of Kirdalu-Tagadi road section with central barrier from kilometres 17.6-21;
- **Road No. 6,** Valga-Uulu, kilometres 25.8-28.7, construction of traffic calming measures and reconstruction of road crossing on the Tõrva section.

6 million euros has been allocated for the reconstruction of accident blackspots in 2020 in the budget of the Road Administration. The plan is to use this amount to finance the implementation of various road safety measures on 46 sites.

SPEEDS IN **BUILT-UP AREAS**

Determining the highest permitted speed limit is always an emotional topic. The Road Administration has been planning to change the situation for some time and establish uniform principles for the determination of speed limits that would be based on calculation methods.

A three-stage study "Analysis of Speed Modes Effective in Towns and Built-up Areas" is set forth, among others, in point 2 "Safe Traffic Environment" of the 2016-2019 Implementation Plan of the Road Safety Programme. All three stages have now been successfully completed and the next step will be the implementation of the methodology on the streets.

The first stage was carried out by AS Teede Tehnokeskus and its purpose was to analyse the principles of implementing road traffic rules in built-up areas. The assignment was completed in 2017 and it gives an overview of the main problems of perceiving the start of a built-up area alongside possible solutions. The project of marking the spots where built-up areas start and testing traffic calming measures started in late 2019, when a variety of options for marking the start of built-up areas were established in Väike-Maarja and Kaarepere without changing the width of the road surface. The impact of various technical solutions on behaviour in traffic and their suitability for use will be clarified in the course of an analysis.

In the second stage, OÜ Stratum prepared methodology and a model for the determination of speed limits on city streets on the basis of the practices of foreign countries and the field work carried out in Tallinn. According to the model, the function of the street must be determined first of all and the reference speed arises from this. For example, the reference speed on a side street in a residential area is low, but much higher on a main road in a sparsely populated area. Additional parameters are then entered, which make the speed either higher or lower. For example, safe road crossings make it possible to increase the speed, but the absence of pavements means that speed has to be reduced to guarantee the safety and mobility of non-motorised road users.

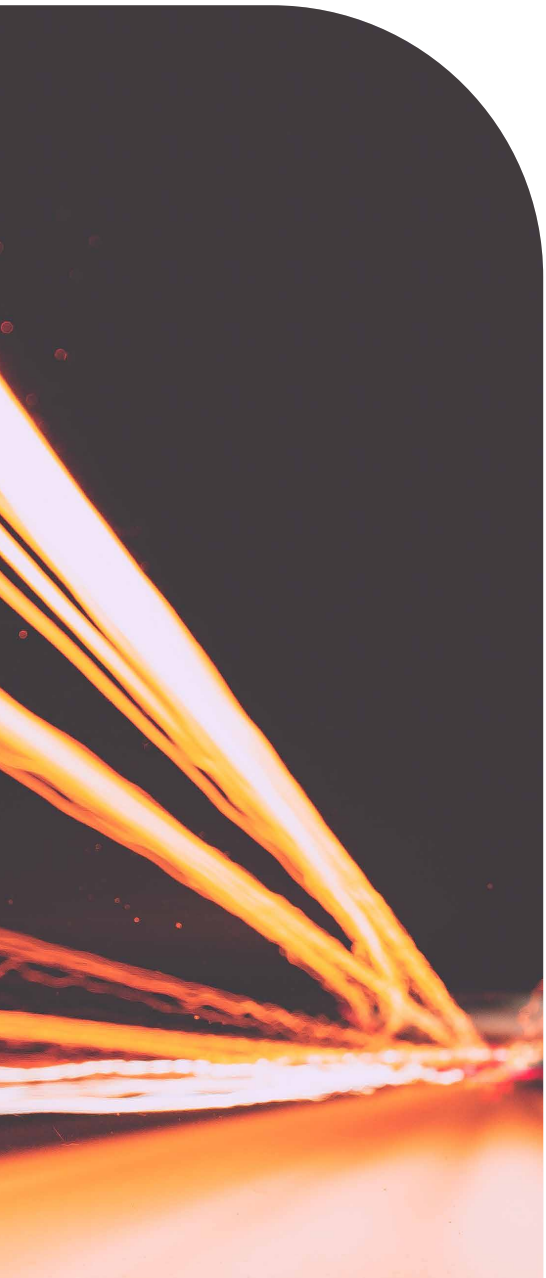
In the third stage, Teede Tehnokeskuse was given the task of testing the usability of the model and methodology throughout Estonia. Streets in Tartu, Pärnu, Narva, Viljandi and Rapla were analysed for this purpose. The function, traffic environment and actual driving speed of the roads were inspected. The cities covered by the study are important transport hubs passed by main roads and main connecting roads and they are also the end points of at least one main connecting road. The streets were classified according to their functions during the analysis and the types of traffic environments were determined. This was done using the data of the Road Administration on the course of the streets, the data of the Land Board on the buildings and land use next to the roads and the data of Statistics Estonia on the location of residents. 25 streets were chosen for a more detailed analysis, making sure that the sample was representative in terms of cities and street types. The number of traffic accidents involving non-motorised road users was the basis on which the ranking was prepared. The speed limit of each street, which would be optimal in terms of safety and capacity, was calculated according to the model.

The most noticeable differences between the actual and modelled speeds were on the long, straight streets in residential areas. Traffic calming measures are usually not implemented there and the speed limit is not reduced. An area with a speed limit and intersections of roads of the same type should be established on such streets and their surrounding areas in the interests of the safety of non-motorised road users; alternatively, traffic should be calmed with solutions that change the driving trajectory, such as pedestrian crossings with traffic islands or street-side parking spaces on alternating sides.

The second issue is related to the basic roads and main roads running through cities, where the effective and modelled speed limit is 50 km/h but where the actual speed tends to be closer to 60 km/h. As public transport vehicles also drive on these streets, then using vertical traffic calming measures would not be reasonable. Thus, attention should be given to factors that would make it possible to increase the model speed – better road crossing options, separation of non-motorised road users, etc. The new methodology gives a good picture of the factors that influence the speed limit on one street or another. Let's look at the system of pedestrian crossings. If the speed limit on the section should be reduced because of this, then maybe we should consider doing some-

thing about the pedestrian crossings instead. We shouldn't always rush to reduce the speed limit, but look for the reasons that force us to do so. Maybe they are easy to eliminate and the reduction in speed will not be necessary at all. A traffic island or traffic light is often a better solution. The street network of cities does not change much, but there are streets whose solution and functionality are in conflict. Signs are not always the most important things. If a street is slow, then it functions as a slow street irrespective of the signs.

The analysis did not reveal clear differences between the cities. The behaviour of motorists on streets with similar traffic environments was similar irrespective of the location. Verification calculations have indicated that the methodology can also be used on road sections near cities. The function of a street is the most important data unit in the model. The speed limit should be regularly reviewed on the basis of this if the use of land changes and the residents relocate. The Road Administration will continue introducing the model to local governments so that they can make informed decisions when determining speed limits.



DEVELOPMENT OF METHODOLOGY FOR **DETERMINATION OF SPEED LIMITS**

A Vehicle Speed Working Group (SPWG) has been operating in the Road Administration since 2018 and its goals include planning and determining suitable speed modes for Estonian roads by ensuring a safe and efficient traffic environment to satisfy mobility needs and take the expectations and opinions of target groups into account. This makes it possible to reduce the risk of traffic accidents and time consumption without compromising on safety, thereby improving the experience of road users on the roads.

So far, the establishment of speed limits has been primarily based on the values established in normative documents and often the practical experience acquired by engineers over time. The Road Administration does not have separate guidelines that should be followed upon the establishment of restrictions and there is no agreement on which speeds the road network should be planned for. As the experience and perceptions of engineers may vary to a considerable extent, a situation like this does not guarantee speed limits that are the same and understandable for road users throughout Estonia.

One of the tasks of the SPWG is to develop a uniform speed limit methodology for the existing roads and prepare the principles that help establish speed limits first and foremost on the basis of safety considerations. An approved methodology (calculation model), which will calculate the suitable speed limit on the existing road section according to the determined parameters, and a description of the process of determining speed limits will be prepared as a result of this work.

The initial calculation model and principles for determination of speed limits were developed by Janno Sammul in his Master's thesis "Principles for Determination of Speed Limits on Public Roads". In late 2018, the SPWG decided to carry out a pilot project that could be used to check the suitability of the parameters of the calculation model in the Estonian conditions by monitoring the behaviour of road users according to the changed traffic management.

The pilot project started in 2019. Two roads were selected for the project: main road number 3 Jõhvi-Tartu-Valga and main connecting road number 15 Tallinn-Rapla-Türi. The roads selected for the pilot project had to represent the various traffic situations that characterise the Estonian road network as a whole so that the results of the pilot project could be generalised in respect of the remaining main roads and main connecting roads.

As a rule, the highest suitable speed offered by the calculation model was used to determine speed limits on the selected roads. The selected sections were also visually observed and the speed limit between sections was harmonised. The speed limit was changed on 19 sections during the project and the total length of the sections on which speed limits were changed is ca 35 km.

The actual speed behaviour of road users on the selected sections after the traffic management was changed was observed, and feedback on the changes was collected from road users as well as experts. The collected data made it possible to validate the model and find bottlenecks in the methodology. For example:

- the model does not give reliable results in areas in which the population is growing fast and which are outside the official city borders;
- the model proceeds from the average values of the parameters and does not consider seasonal changes or the quality of the data obtained from registers;
- the places where the calculation model reduces the speed limit only because of visibility (e.g. vertical curves), which are not understandable to road users As a rule, stopping visibility in such places is limited in a very short area and there are no other risk factors.

The calculation model has clear potential to harmonise speed modes and establish understandable speed limits on the main roads and basic roads in Estonia. Development of the model will continue in 2020; the model will be taught to identify and exclude the exceptions found in the pilot project in the future and speed behaviour on pilot sections will be monitored. The calculation model and process for determination of speed limits on main roads and main connecting roads should be approved by the SPWG by the end of 2020.

TRAFFIC ACCIDENT DATABASE

The traffic accident database became even more comprehensive due to the updates made in 2019.

Links to the service of the Land Board, which makes it possible to update the location data of the Police and Border Guard Board (PBGB) and the Traffic Insurance Fund (TIF), were created in the first half of the year. A solution was created in the system which finds the closest addresses to the coordinates given by the data provider and links them to the received data. A link to the Road Register of the Road Administration was also created, which makes it possible to obtain information on the road environment at the scene of the accident. These data make it possible to update and check the scene of the accident and make the use of data more reliable by analysing them.

The problems in the services of the Land Board and the Road Register made working with location data difficult. We found several errors in the service of the Land Board in cooperation with our developers, which resulted in major developments and corrections for the Land Board. We used a previously developed solution for the link to the Road Register, but it also contained errors that had to be corrected. The errors were mostly related to the issue of wrong locations from the original databases.

The system for obfuscation of personal data was implemented in the database in the middle of the year. This solution makes it possible to reprocess the data in such a manner that personal data cannot be detected in them by turning them into codes where the data of a person always have the same code. The encryption key makes it possible to generate a unique code for a person in the system, but the generated code cannot be converted back to personal data. The system makes it possible to analyse which persons have been involved in accidents before, and obfuscated data may also be retained for longer than personal data.

The traffic accident data model changed considerably during the year as a result of the feedback received from users. The original data model, which was created on the basis of the initial knowledge, was used for a year. We collected feedback from users throughout the year and made updates on the basis of this. As a result, we managed to create an even more complete data model and many fields became considerably easier to understand. We are planning to update the data model further in 2020, considering more detailed location information, the driving licence data of the persons involved in accidents and the detailed data of vehicles.

We took a big step forwards with data checks in 2019. We created new verification rules for checking the data of the Police and Border Guard Board in cooperation with the PBGB. We also took into account the feedback of the persons who enter data and created a completely new solution where the persons who enter data can easily monitor the data quality of their prefecture. This solution makes it possible to display numeric data of accidents that are four times more accurate. A separate solution has been created for data checks in the database which verifies all of the data as soon as they are received in the Road Administration and prepares a list of errors for each data row. The solution will be updated in the first half of 2020. This solution makes it possible to create a quality assessment for each data field, which in turn makes it possible to use more accurate data in analyses, with the knowledge that they have been verified. Users are informed about defective data, and analyses can reveal that the used data may not have been the most accurate.

Comprehensive documentation was prepared for the traffic accident database, which describes how the systems work and how to act in the case of possible problems. The entire data model of the data system, which always corresponds to reality, is also described in the documentation.

VISION ZERO

The conference "Vision Zero for Sustainable Road Safety in the Baltic Sea Region" was organised in cooperation with Tallinn University of Technology on 4 & 5 December. Based on the level of the speakers, the content of the presentations and the status of the attendees, it was one of the most important road safety events in Estonia.

- Self-driving cars will not appear on Estonian roads as soon as some people think (according to forecasts, the first mass produced vehicle should become available after five years). Their impact on road safety is often overestimated. Even in the best case, a self-driving vehicle would not reduce traffic accidents by over 80%. Also, the risks associated with the introduction of self-driving vehicles on the roads have been overlooked.
- The road safety of non-motorised road users is a problem throughout Europe and requires more attention.
- Driving speed is still the key factor in solving road safety problems. A safe driving speed also has a positive impact on the achievement of environmental goals.
- Road safety and the sustainability of the transport system are very closely connected. The impact of the measures of both areas is usually one-directional and they should be viewed together.

ROAD SAFETY
PROGRAMME 2016–2025

On 17 February 2017, the Government of the Republic approved the Road Safety Programme for 2016-2025 and its Implementation Plan for 2016-2019.

REDUCING THE NUMBER OF DEATHS IN TRAFFIC

The objective was that no more than 55 people on average would be killed in traffic from 2017-2019. 56 people per year on average were killed in traffic over three years (2017-2019). Although the goal of guaranteeing the safety of pedestrians and cyclists was achieved, the three-year average number of killed motor vehicle drivers and passengers exceeded the established maximum.

IMPROVING SAFETY KNOWLEDGE OF ROAD USERS AND DEVELOPMENT OF ROAD SAFETY

The initial and expected target levels of the area were recorded for the assessment of changes. 16 out of 26 indicators improved. There were 10 indicators that stood out with negative developments by differing from the initial levels recorded in 2014: giving way to pedestrians on unregulated pedestrian crossings; use of reflectors by pedestrians – children; percentage of people who passed their driving tests first time; installation of additional side barriers on public roads; kilometrage of additional rumble strips on public roads; share of vehicles older than 10 years participating in traffic and the percentage of category M1 (passenger car), category M3 (bus), category N2 (lorry 3.5-12 tons) and category N3 (lorry over 12 tons) vehicles that pass roadworthiness tests first time.

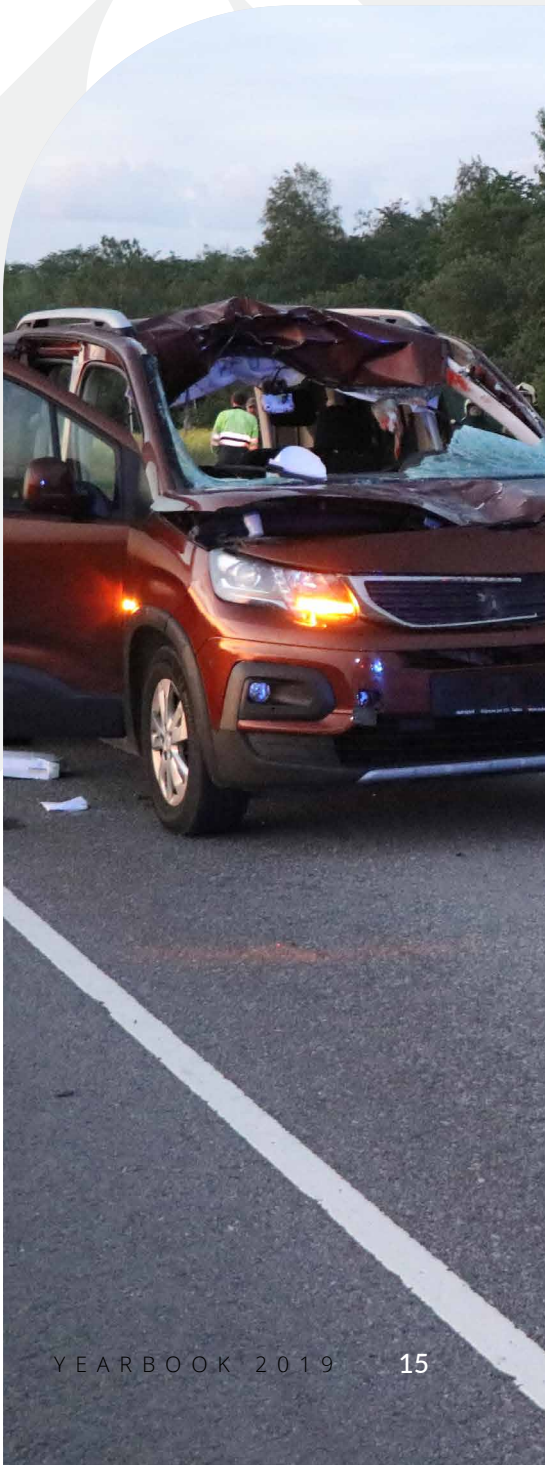
IMPLEMENTATION OF ACTIVITIES IN 2019

The Implementation Plan set out 97 activities for the improvement of road safety in 2019. 54 of the activities were implemented as planned, 20 were implemented partially or to a lesser extent than planned and seven were not implemented or were postponed. The implementation of seven activities required additional funding, which was not recognised in the state budget strategy. It is positive that targeted support was allocated for three of these activities (reconstruction of pedestrian crossings in Tallinn, Pärnu and Narva to make them safer) from the costs of the area of government of the Ministry of Economic Affairs and Communications in 2019. However, it was negative that there was no substantive intervention by the local governments whose impact in terms of road safety is the largest (Tallinn and Tartu) – Tartu did not participate in the call for proposals and the granted application of Tallinn has no direct impact on road safety and is not aimed at the elimination of the most critical problems.

Activities aimed at the development of responsible road users who perceive hazards were implemented the most. They focus on two aspects, one of which is related to the mindset and understanding of road users and the other to the traffic environment. The safe traffic environment measures focused on the development and management of the traffic environment so that it would be easy to understand, road users would sense the hazards that come therefrom, the possibility of mistakes would decrease and the mistakes would not have serious consequences. Safe vehicle measures were aimed at improving the safety and functioning of transport.

SYSTEMATICALLY FORWARDS

The Implementation Plan of the Road Safety Plan 2016-2019 is now history. Although the projected goal to reduce the number of people killed in traffic was not achieved by a small margin, some things have occurred in the area of road safety that deserve to be highlighted. Everyone can look back at the period, recognise achievements and plan effective activities for further development. It's important to not let 'home blindness' overcome us so that we can see and understand what we've achieved – the things that have earned the praise of foreign experts who have started to use us as examples to others.



SERIOUS ROAD ACCIDENT INVESTIGATION COMMITTEE

Last year, the expert committee for determination of the causes of traffic accidents (hereinafter referred to as the Committee) had to identify the causes of 63 traffic accidents.

51 of these accidents were fatal and 52 road users were killed in them. Two people were killed in one of these accidents at the same time. In addition to fatalities, many people – 33 – were also injured in these accidents. The investigation of three accidents revealed that the deaths were not related to the injuries sustained during the accident, but to health problems, i.e. the person died as a result of a health disorder. In addition to fatal accidents, the Committee had to investigate seven accidents in which five or more people were injured; 77 people in total were injured in these accidents.

Accidents are broadly divided into three: collisions, single vehicle accidents and accidents with pedestrians. The first of them involves collisions of vehicles, such as cars or two-wheeled vehicles, including bicycles. Single vehicle accidents are accidents that involve one vehicle and the most typical of these is driving off the road or overturning on the road. Accidents involving pedestrians mean a vehicle hitting a pedestrian. The fourth and the smallest group consists of other traffic accidents, which do not qualify. Other accidents mean hitting animals and a passenger falling in a public transport vehicle, which has unfortunately been becoming more frequent in recent years.

Collisions were the most common fatal accidents last year – there were 20 of them and they comprised almost one-fourth of all fatal accidents. The aforementioned accident with two fatalities was also a collision. 21 road users were killed in collisions. There were 16 collisions of motor vehicles on roads and two in built-up areas. Drunk drivers were involved in three collisions. The majority of collisions in the previous year and earlier occurred on roads outside built-up areas and they were caused by one of the vehicles veering or driving into the oncoming traffic lane. There were 10 such collisions in total. The main risk factors in the case of two collisions were road conditions in winter (sleet or snow on the road, slippery road) and also intoxication in the case of one of these accidents. The remaining five collisions were caused by the following factors:

- wet road and inappropriate speed,
- driving partially in the oncoming traffic lane on a narrow road,
- probably falling asleep,
- distraction.

One collision was likely caused by suicide.

Five collisions occurred on intersections; one of the vehicles was driving to the main road from a secondary road in the case of four accidents, one of the drivers who caused an accident was drunk and another was tired. One of the accidents on an intersection was related to a left turn.

One of the collisions that occurred on the road was related to careless overtaking. Two fatal collisions occurred in built-up areas. In one case, a lorry hit the side of a bus on an intersection and in the other accident, a passenger car making a left turn and a motorcyclist driving straight collided.

One third of fatal accidents in the previous year were single-vehicle accidents and there were 16 of them in total. Most single-vehicle accidents occurred on roads outside built-up areas, where speeds are higher. It is particularly saddening that the driver was intoxicated in the case of seven of the 12 single vehicle

accidents on roads. Safety equipment was not used in the case of four accidents. In the case of two single-vehicle accidents. the driver was probably distracted by other activities and one of the accidents was probably a suicide.

The risk factors in two single-vehicle accidents on the roads were road conditions in winter (sleet, slush, slippery spots) and incorrectly selected speed, and in the case of one of them the driver was probably distracted by other activities. One of the accidents may have occurred due to the condition of the road (irregularities, ruts, etc.), but the reason why two vehicles drove off the road is unknown.

Four single-vehicle accidents occurred in cities or built-up areas and three of the four drivers were intoxicated, two of them acutely – one man drove a car and the other drove a tractor into a pond and both of them drowned. It's actually questionable whether an accident like this is a traffic accident in the classic sense. Our Traffic Act says that a traffic accident is an event in which an individual is injured or killed or material damage is caused as a result of at least one vehicle moving on or off the road.1 In the case of the given accidents, it is questionable whether they can be called driving off the road. The third drunk driver drove his motorcycle off the road in a built-up area.

Two-wheeled vehicles were involved in seven traffic accidents. In addition to the aforementioned drunk motorcyclist who drove off the road, there were two other accidents with motorcycles where one biker drove off the road and the other was killed in a collision in a built-up area. There was also an accident involving a moped, which collided with an oncoming car on a road outside a built-up area.

All three cyclists killed last year were involved in accidents in built-up areas. One cyclist rode in front of a train, one fell when riding downhill and in one case, a van backed into a cycling child. None of the three cyclists killed was wearing a helmet.

PEDESTRIANS

The number of pedestrians killed last year was 13, which is 26% of all fatalities. Seven of them were involved in accidents in cities and six on roads. The main risk factor of the accidents that occurred in cities was age, as six of the seven pedestrians killed were older than 65 years, incl. four older than 80, and most of them were women crossing the road. Five pedestrians were killed on pedestrian crossings, three of them on unregulated ones. The last three occurred when it was dark and two of the people killed did not use reflectors. Two pedestrians were killed when crossing the road at a red light. One pedestrian was killed in a densely populated area when crossing the road in an area between crossroads and one was killed on the border of a built-up area when running across the road. This was the only traffic accident that involved a drunk pedestrian.

The main risk factors on roads were intoxication and darkness, and the people involved in accidents were mostly men. Six pedestrians were killed in these accidents. Four accidents happened when it was dark, three of the pedestrians killed in them were acutely intoxicated, two of them were lying on the road and one was walking in the middle of the road. None of them were wearing reflectors. The fourth pedestrian, who was killed when it was dark and was wearing a reflector and walking near the left edge of the road, was hit by a drunk driver. Two pedestrians killed in traffic accidents were crossing the road when it was light outside – in one case, an acutely intoxicated pedestrian who was pushing a bicycle stepped in front of a lorry and in the second case, a child who ran into the road from behind a standing vehicle was hit by a car driving past.

Two people were killed in other traffic accidents. A passenger on a bus was killed in an accident – an elderly man who had not managed to take a seat yet after boarding the bus. There was also an accident where a moose ran into the road – the animal was hit by a car, flew through the windscreen of the oncoming car and out of the rear hatch. The passenger sitting next to the driver was killed in the accident.

RESEARCH OF ATTITUDES AND BEHAVIOUR OF ROAD USERS

The overview covers the attitudes and behaviour of road users in 2019 and changes in comparison with the previous year. The results were obtained on the basis of surveys and observations.

Almost all of the respondents consider drunk driving the biggest hazard. Sending text messages and using social medial when driving is considered almost as dangerous as running a red light (98% of respondents in both cases). The opinion has remained high in the last five years and the share of respondents who consider this behaviour very dangerous has increased year-on-year. The following is considered dangerous by road users: crossing the road on a red light (95%), leaving the seatbelt unfastened (93%), driving without the right to drive (92%), driving a vehicle when tired (94%), tailgating (92%) and overtaking across a continuous line (85%). There have been no significant changes in these behaviours and activities that ignore traffic regulations in the last three years. The opinion of road users has remained more or less the same among the people who consider the respective behaviour rather dangerous or very dangerous. Exceeding the permitted speed limit and using a phone when driving have been considered the least dangerous behaviours that ignore traffic regulations in recent years. Whilst the share of people who consider the use of a hands-free phone system dangerous is increasing (the share of people who consider this very dangerous has increased by 7% in the last three years and reached 44%), the opinion on the dangerousness of exceeding the speed limit has remained unchanged. 78% of road users believe that exceeding the speed limit by 10 km/h is dangerous and only 29% consider it very dangerous. Only 11% of the respondents find that exceeding the speed limit by up to 10 km/h is dangerous and 50% of the respondents don't consider it dangerous at all.

ATTITUDES AND BEHAVIOUR OF MOTOR VEHICLE DRIVERS

COMPLIANCE WITH TRAFFIC LIGHT REQUIREMENTS BY PASSENGERS

Compliance with traffic light requirements by motor vehicle drivers was monitored on the regulated intersections on the streets of Tallinn, Tartu, Pärnu, Narva and Jõhvi and on the public roads in the close surroundings of Tallinn. The drivers who could choose whether to pass the intersection when the red light was on or stop complied with the requirements of the traffic lights in 86% of the cases on average (the indicator was the same in the previous two years). The drivers who could choose whether to pass the intersection when the amber light was on or stop complied with the requirements of the traffic lights in 51% of the cases on average (45% in 2018). Whilst the number of people who comply with the red traffic light requirements on roads and in cities has remained the same as in 2018 in terms of average indicators, the indicator in Tallinn has been deteriorating for a couple of years.

DRIVER DISTRACTIONS

Texting, posting on social media and reading text messages and social media posts are considered the most dangerous driver distractions.

68% of drivers use a phone when driving, 14% use it often and 54% of all drivers use it sometimes. 51% of people who use a phone when driving use a hands-free set (43% in 2018) and 15% (22%) use a hand-held phone.

Although the general indicators of phone use have remained almost the same in the last five years, the decrease in the use of hand-held phones can be highlighted as a positive change.

STICKING TO THE SPEED LIMIT

27% of drivers stick to the effective speed limit on main roads (30% in 2018) and 36% (40%) do so on smaller roads. 28% of drivers exceed the speed limit on main roads by more than 5 km/h and 2% exceed the limit by more than 10 km/h. 21% of drivers exceed the limit by more than 5 km/h on smaller roads.

54% (56%) of drivers stick to the speed limit in cities and built-up areas. 54% consider exceeding the speed limit to the extent of

10 km/h acceptable (50% in 2018). In general, the survey of 2019 indicated that the speed behaviour of drivers has not improved in comparison with the previous year. The most frequent reasons for speeding mentioned by respondents was overtaking (84%) and selecting speed because of the speed of other road users.

DRIVING UNDER THE INFLUENCE AND DRIVING IN AN INTOXICATED DRIVER'S VEHICLE

According to the survey of 2019, approximately 3.4% of drivers had driven a motor vehicle when under the influence of alcohol or a narcotic substance. A quarter of them have driven under the influence of alcohol on more than one occasion. In comparison with the surveys of the last couple of years, the decrease in the share of people who have driven under the influence has stopped and even started to increase. 58% of respondents (62% in 2018) would report a driver who is under the influence of alcohol or drugs to the police in any case. 23% of the respondents are prepared to report in principle, but they would not do it if the driver was someone they know. 43% of the respondents said that they have actually stopped or tried to stop a drunk driver from getting behind the wheel; 33% have done this in respect of their friends or acquaintances and 10% in respect of strangers.

GIVING WAY TO PEDESTRIANS ON UNREGULATED PEDESTRIAN CROSSINGS

Giving way to pedestrians was monitored on the unregulated pedestrian crossings in Tallinn, Tartu, Narva and Pärnu. The share of drivers who gave way to pedestrians was 67% in 2019. The situation has improved somewhat in comparison with the previous year when the relevant indicator was 60%. According to the survey, 45% pedestrians say that the first car approaching the crossing gives way and 28% say that the second car gives way. The responses of the pedestrians have remained more or less the same in recent years. According to drivers, 76% of them (75% in 2018 and 69% in 2017) are always prepared to stop by a pedestrian crossing even if there is only one pedestrian waiting to cross.

USE OF SEATBELTS AND CHILD SAFETY EQUIPMENT

The monitoring carried out in 2019 indicated that 99% of drivers, 97% of adult passengers in the front seat and 89% of adult passengers in the back seat used seatbelts, and children's safety equipment was used in 97% of the cases. The survey carried out among residents on the use of seatbelts gave similar results. 43% of the surveyed passengers said that they fasten the seatbelt when travelling by bus (if one is supplied), which was the same as in the previous year. 83% of respondents are aware that the seatbelt must be fastened on a bus. The use of seatbelts by people travelling in the front seats of a passenger car has always been high, and the use of seatbelts by passengers in the back seats has increased by 4% over the year. The long-term trend is also improving in this regard year-on-year.

ATTITUDES AND BEHAVIOUR OF PEDESTRIANS AND CYCLISTS

USE OF REFLECTORS AND OTHER EQUIPMENT THAT IMPROVE PEDESTRIAN VISIBILITY

As a rule, 64% of adults (68% in 2018) wear a reflector or another item that makes them visible (torch, safety vest, etc.), 18% wear it rather frequently. 8% of adults never wear a reflector. 85% of parents claim that their children always wear a reflector. The use of items that guarantee visibility among adults increased until 2013. There haven't been any significant changes in the last five years and use has remained at around 64-68%.

30% of respondents check the quality of the reflector when buying one. The share of people who check the CE mark has increased in comparison with previous years (the respective indicator in 2018 was 20%).

COMPLIANCE WITH TRAFFIC LIGHT REQUIREMENTS BY PEDESTRIANS

Compliance with traffic light requirements by pedestrians was monitored on the regulated pedestrian crossings and intersections in Tallinn, Tartu, Pärnu, Narva and Jõhvi. 91% of pedestrians on average complied with the requirements of the red traffic light in 2019. In comparison with the monitoring carried out in 2018, the situation has improved slightly in Tallinn and remained the same in the other cities. However, the result in other cities is still better by seven percentage points on average than in Tallinn. Children and elderly pedestrians crossed the road on a red light least frequently (5-7% ignored the red light) and men did it the most frequently (12% on average ignored the red light).

USE OF SAFETY EQUIPMENT WHEN CYCLING

77% of children (80% in 2018) and 26% (29%) of adults mostly or frequently wear a helmet when cycling. 9% of children never wear a helmet when cycling despite the respective requirement in the Traffic Act. According to parents, the main reason why children did not wear a helmet was that they didn't like it and that they were mostly riding their bikes in safe places in the opinion of their parents.

33% of children (46% in 2018) and 20% (26%) of adults mostly or frequently wear a safety vest or other clothing that makes them more visible when cycling. Both of these indicators have decreased considerably in comparison with 2018. 78% of cyclists have the white front light on and 80% have the red rear light on when cycling in the dark. There is no significant change here in comparison with the results of the previous years.

Road safety survey reports of 2019:

- Traffic behaviour monitoring
- Survey of use of vehicle safety equipment
- Cycling survey
- Children's road safety survey
- Survey of driving under the influence, when tired and selection of driving speed
- Survey of distraction in traffic
- Survey of road use in the dark, traffic education, crossing the road

ITS PROJECTS IN 2019

The four-year Estonian-Latvian traffic management project SMART E67 was successfully completed in 2019.

Over 40 traffic signs with changing information were installed on the Tallinn-Pärnu-Ikla road, which changed the Tallinn-Ääsmäe section into a road section with a speed limit that depends on the weather. The traffic light system with nine intersections on the Pärnu bypass was improved with the smart 'green wave', which reduces driving time. The central traffic management software OMNIA was implemented in the Road Administration at the end of the project, which connected all traffic signs with changing information, road weather stations, road cameras and traffic hazard details, and automatic traffic management was launched. OMNIA makes it possible to connect the ITS solutions to be created in the future to a whole.

Relying on the success of SMART E67 and good Baltic cooperation, the Road Administration submitted an application in March 2019 for the next joint Estonian-Latvian ITS project to the transportation measure financing round of the Interreg Central Baltic programme for the development of IT solutions for the Tallinn-Tartu-Võru-Luhamaa and Riga-Pihkva roads, incl. for the establishment of the dynamic traffic management system on the Tallinn-Kose section. The programme will make the financing decisions in early 2020.

The Road Administration installed two traffic information boards with changing information within the scope of the Real Time Ferries project of the Baltic Sea region in 2019. One of the boards was installed on the Ääsmäe-Haapsalu-Rohuküla road after Risti and the other at the start of the Risti-Virtsu road, where information on the departures of ferries will be displayed in addition to road information in 2020.

The implementation of local ITS solutions continued as well: two information boards with changing information were installed on a road section with difficult weather conditions in Sämi and Varja villages on the Tallinn-Narva road, which make it possible to display traffic information and warnings and inform of detours if necessary.

In summer 2019, the Road Administration launched its largest ITS project so far – the E265 ITS, which is the project for the establishment of dynamic traffic management and a smart lorry park on Tallinn Ring Road. The objective of the project is to install various smart technology solutions from kilometres 0-30 of the Tallinn Ring Road for traffic management, monitoring and informing road users and to establish a safe parking area for 100 lorries. C-ITS (Cooperative Intelligent Transport Systems) solutions as V2I/I2V (vehicle to infrastructure/infrastructure to vehicle) services will also be tested. The budget of the project is 5 million euros and it will last until the end of 2023. The project is co-funded by the Connecting Europe Facility (CEF).

All in all, it can be said that the implementation of ITS solutions was systemically increased in 2019 and the solution of road sections with variable speed limits was well received by road users. The Road Administration will continue implementing ITS solutions, which helps make traffic smoother and safer.

MOBILITY PLAN

The Sustainable Urban Mobility Strategy of the Tallinn Region 2035 was prepared in 2019 by the Road Administration, the City of Tallinn, the Ministry of Economic Affairs and Communications and the Harju County Local Government Association.

Vision of the Sustainable Urban Mobility Strategy: the Tallinn region is attractive to people, has a lively economy and is biodiverse and green.

The closest surroundings of Tallinn are very well covered by public transport and innovative mobility services as well as comfortable bicycle path and pavement networks, which are accessible and usable all year round for people of all ages.

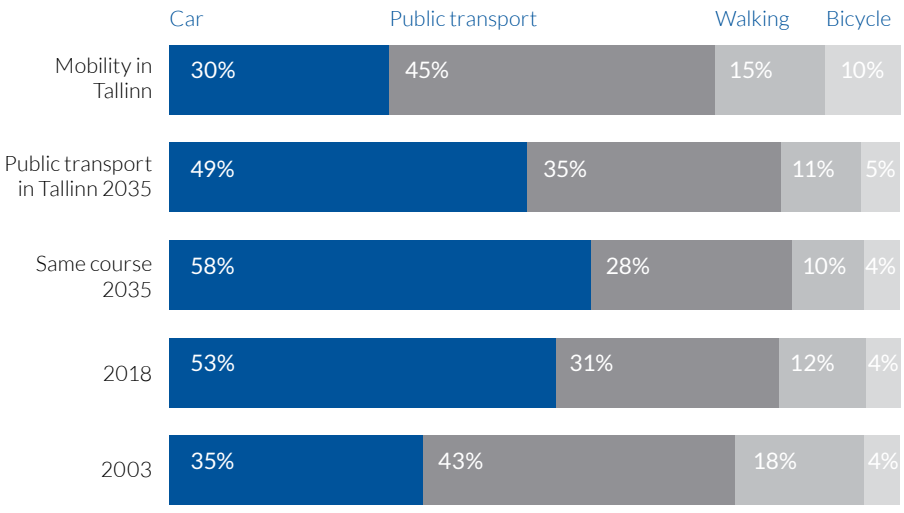
The objective for 2025 is that 50% of all commutes in the Tallinn and Harju County region are made by public transport, foot or bicycle and that the same indicator is at least 70% by 2035. The share of car use in Tallinn and Harju County at present exceeds 53% and the commute between the capital and nearby municipalities presents the best option for increasing the use of public transport and lift traffic.

According to the strategy, infrastructure planning should proceed from the general goal to reduce the increasingly more negative impact of transport on the environment. Good alternatives to motorisation are created for this purpose by planning populated areas and mobility as a whole. Cross-border mobility between local governments should also be simplified, and combining different ways of travelling should be easier.

The most important activities of the strategy, largely based on the example of Helsinki, are as follows:

- uniform organisation of the entire public transport network of Tallinn and Harju County;
- establishment of a uniform zone-based ticket system for all types of public transport;
- development of a network of bicycle paths in the region, which serves the main connections between the city centre and city districts in Tallinn, connects to the bicycle path network of Harju County and connects the main centres in Harju County with public transport hubs.

Preparation of the action plan of the mobility plan of the Tallinn region will continue in 2020 in the Tallinn Region Mobility Council on the basis of the memorandum of cooperation signed by Minister of Economic Affairs and Communications Taavi Aas and Mayor of Tallinn Mihhail Kõlvart.



RAIDO RANDMAA,
Director of Road Maintenance Service

ROAD MAINTE-NANCE DIVISION

2019 was a year of major changes in road maintenance, as the previously separate areas of maintenance and construction were brought together again in May.

This was a necessary step that strengthened the area. The merger process has gone rather smoothly and cooperation is working well. Setting joint goals in regions has certainly contributed to this.

The biggest change occurred in traffic management, where the employees that used to be under central management moved back under regional management. However, I believe that this is an extra step that will improve the overall vision of how to operate in the regions.

The goal is to keep pace with the new Strategic Planning Division established in 2019 because the accuracy and timeliness of planning and designing are extremely important for the achievement of the goals set in the road maintenance plan.

MAINTENANCE

We prepared new procurements for maintenance contracts in late 2019, which included a significant change in the evaluation criteria.

For the first time, cost will influence 80% of the result in the assessment of tenders submitted in maintenance procurements, and the remaining 20% will be based on the equipment and the experience of key employees. We have also set criteria for basic maintenance vehicles. Companies that have newer and fresher vehicles will score extra points for their tenders. This decision was made in cooperation with maintenance companies that expected the Road Administration to consider other factors in addition to the price. Our goal is to improve the quality of maintenance and reduce tenders that are too cheap, which could jeopardise the road maintenance capacity.

Competition on the market is tough and prices continue to go down over the years. At the same time, the requirements for road maintenance have become stricter. The Road Administration tries to achieve a balance so that the submitted tenders are realistic and the ability of the companies to cope is not jeopardised. We are also looking forward to new and innovative solutions which cannot emerge when companies are operating very close to the margin.

Another change we made is that contractors themselves must prove that they performed de-icing and that it was effective, which is how the company will prove that they did their work and that it is of good quality. Irrespective of this, the Road Administration will retain the role of supervisor, which it will certainly be performing as well.

It is important to road users that preventive de-icing is done as efficiently as possible. Roads are slippery in winter and preventive action must be taken to reduce the slippery period.

We receive information on the road conditions from road weather stations and cameras, but we want to make the overview even better and more accurate. For this purpose, the Road Administration acquired four optical sensors which manage to measure the temperature of the road and detect the layers of water, ice or snow that have appeared on the road. We installed sensors on buses because our prior experience showed that it is good to use long-distance buses that regularly drive on the same route. Optical equipment has now been installed on the Lux Express buses travelling the Tallinn-Tartu, Tallinn-Narva and Tallinn-Pärnu routes. Data are also transmitted by an extra bus that travels between larger cities throughout Estonia. The operative data transmitted by the equipment help road maintainers make quicker and better decisions.

Every year, we carry out a driver satisfaction survey to find out how they rate road maintenance. We were pleased to admit that the opinion of drivers on road maintenance in summer and winter improved in 2019 after a long time. One of the reasons for this is that we have increased the number of public roads with a considerably higher condition level, and the number of roads with the lowest condition levels has decreased. All in all, this means faster de-icing and snow control.

Coping with the changing weather conditions, which continue to have an increasingly larger impact on our infrastructure, was one of our biggest road maintenance challenges in 2019. Mild winters and constant rain have made the condition of gravel roads complicated. Gravel roads are full of water and have lost their load bearing capacity, which is why driving on them is difficult. The situation with road surfaces is also complicated. The constant alternation of cold and mild weather in winter and the resulting increase in the use of chlorides had made a mark on many roads.

We keep introducing and explaining the nature of road maintenance and the aspects that are important to road users. We spoke about them in *Delfi* at the start of 2019 and in *Postimees* at the end of the year. It would be good if the expectations road users have of road maintenance were realistic and took into account the actual situation

CONSTRUCTION

2019 was another successful year in the preservation and development of the road network. We are pleased to admit that financial and investment goals were met. Construction and repair works were done for 188 million euros on more than 1901 km of public roads. We are also pleased to admit that in addition to the Kose-Võõbu road section, works finally started on the dangerous Rõmeda-Haljala section on the Tallinn-Narva road, which will be reconstructed into a 2+2 road.

Road construction companies were affected by the problems in the import of bitumen in summer 2019 as well as by the tough competition on the market, but these circumstances must be taken into account on the present road construction market.

Similar to the maintenance market, the companies on the construction market are also having discussions on whether the lowest price should be the only factor that brings success in procurements. Competition on the market is tough, which keeps pushing prices down. In the opinion of the company, we have reached the situation where work is accepted at zero price or sometimes even for less.

This in turn creates the situation where companies start looking for cost cutting options. This situation is not good for us, as it is not sustainable in the long term and also has an impact on the creation and implementation of innovative solutions.

An important innovation project in the previous year was the testing of microsurfacing on the 15.7-km road section between Iisaku and Tudulinna. We have tried it before, but not as thoroughly as this time. We decided to test it again, as the use of microsurfacing is environmentally more sustainable than asphalting and surfacing. The Road Administration clearly wants to develop this direction further. We will find out in spring 2020 whether the material can resist our weather conditions and what the condition of the road is like after winter when the weather changes frequently.

The construction of the Luige-Saku section on Tallinn Ring Road is the first cooperation project of the Road Administration with OÜ Rail Baltic Estonia. One of the three viaducts that will be built on the road section, the Saustinõmme viaduct, will cross the planned Rail Baltic track. The cornerstone ceremony of Saustinõmme viaduct was held in autumn. In November, we signed a cooperation agreement for the construction of road viaducts in 2021 and 2022, which should bring 60 million euros to the construction sector.

The two sites that received the most attention from road users and the media were on Pärnu road on the border of Tallinn. They were two different sites completed at different times, but road users often took it as a single site. Its construction required cooperation with several contractual partners: the City of Tallinn, the municipality governments of Saue and Saku, Estonian Railway and the local community. It was a complicated site passed by ca 32,000 vehicles per day. Temporary traffic management at such a density was the biggest test.

At the end of the year, we announced public procurements for two long-awaited sites – the Väo traffic junction and the four-lane Võõbu-Mäo section. The Väo grade-separated traffic junction is located on kilometres 9-10.4 of the Tallinn-Narva road. The existing Väo intersection is no longer coping with the traffic volume. This is one of the busiest intersections in Estonia, which is passed by almost 49,000 cars per day. The section between Võõbu and Mäo is the last on the Kose-Mäo four-lane road section, which should completed by 2022.

In 2019 we summarised our present owner supervision experience, where we made payments on an hourly basis. It became evident that this system was not working either, just like the previous system of monthly remuneration, where owner supervision companies took on more sites than they could manage, so there were not enough supervisors for each site and the role of supervision weakened. We are now back at the point where we have to find a new suitable solution for owner supervision. However, this will be reviewed in 2020.

ACQUISITION OF LAND

Road construction often involves land acquisition and transfer procedures, which are often long and complicated. The Road Area Department under the Division of Road Construction and Maintenance mostly deals with the acquisition of land for projects as well as the land areas under existing public roads, which were returned by local governments to private owners in error during the earlier land reform.

The Road Area Department also administers the quarries belonging to the Road Administration, which will not remain in the ownership of the Road Administration in the future. This is why the department is organising auctions so that the management of the quarries can be transferred to the Land Board with the owner of the excavation permit and entry into a lease. We have also sold registered immovables at auctions and constantly streamline quarries. The third bigger role is to organise the use of public land for the construction of utility networks and other purposes.

In 2019 the Road Area Department entered into ca 500 notarised contracts for the acquisition of land. The biggest challenge here was the general implementation of the Acquisition of Immovables in Public Interest Act and the correct administrative procedure. Additionally the implementation of the other manners of acquisition (land swap, land consolidation, swap by changing land borders), as there is no specific procedural practice.

The second massive challenge was the task received from the Land Board, which required the Road Area Department to review and where necessary, draw the border suggestions necessary for the Land Board in the map application for around 10,600 unreformed land units in two and a half months. The Land Board intends to reform all of the unreformed land, i.e. make a mass entry in the Land Register.

The authorisation for use of land received from the Ministry of Economic Affairs and Communications after several years of negotiations can be considered a victory in 2019, as it will considerably accelerate the Road Administration's proceedings where land must be taken into use for the realisation of projects (e.g. pipelines and other facilities not located on public land).

At the end of the year, we were pleased that we could finalise the acquisition of land on the Võõbu-Mäo 68-85-km section. This was important so that we could continue with construction works on the new track of the Tallinn-Tartu road. It was a difficult task because land acquisition like this does not occur often. 61 cut-offs were made and 169 cadastral units were created in total.

TRAFFIC MANAGEMENT

In terms of road safety, we can highlight traffic signs with changing information, which were fully employed in 2019, as an extremely successful project. The most important thing to us is that we can use them to act operatively and bring the necessary information to road users.

Road users have also accepted the signs with changing information very well and the signs have proven themselves fully on the Tallinn-Pärnu road. The signs have allowed road users to drive at 110 km/h in winter when the weather is good. The positive experience means that road users expect the signs to be installed elsewhere as well. Therefore, we will definitely continue to install them on our roads.

MAINTE-NANCE OF **PUBLIC ROADS**

AS TREV-2 Grupp started with the new maintenance contract in the Jõgeva region on 1 October 2019.

Division between maintenance companies as at 1 January 2020 is as follows:

- AS TREV-2 Grupp, 4338 km – 26%; in Põlva, Valga, Jõgeva and Ida-Viru counties.
- AS Eesti Keskkonnateenused, 1242 km – 7%; in Viljandi County.
- AS Tariston, 1825 km – 11%; in the Kose region in Harju County and in Hiiu and Järva counties.
- OÜ Üle, 446 km – 3%; Kuusalu region in Harju County.
- AS Eesti Teed, 4262 km – 26%; Keila region, Lääne-Viru, Võru and Saare counties.
- OÜ Leonhard Weiss Viater, 1015 km – 6%; in Rapla County.
- OÜ Warren Safety, 775 km -5%; in Lääne County.
- OÜ Sakala Teed 2702 km – 16%; in Pärnu and Tartu counties.

41.7 million euros was used for road maintenance in 2019. 17.8 million euros was spent on maintenance in winter and 10.7 million euros on maintenance in summer. The maintenance expenses on the basis of the maintenance contracts of 17 regions per one kilometre of national road amounted to 2511 euros (2330 euros in 2018, 2499 euros in 2017 and 2591 euros in 2016).

DRIVER SATISFACTION SURVEY

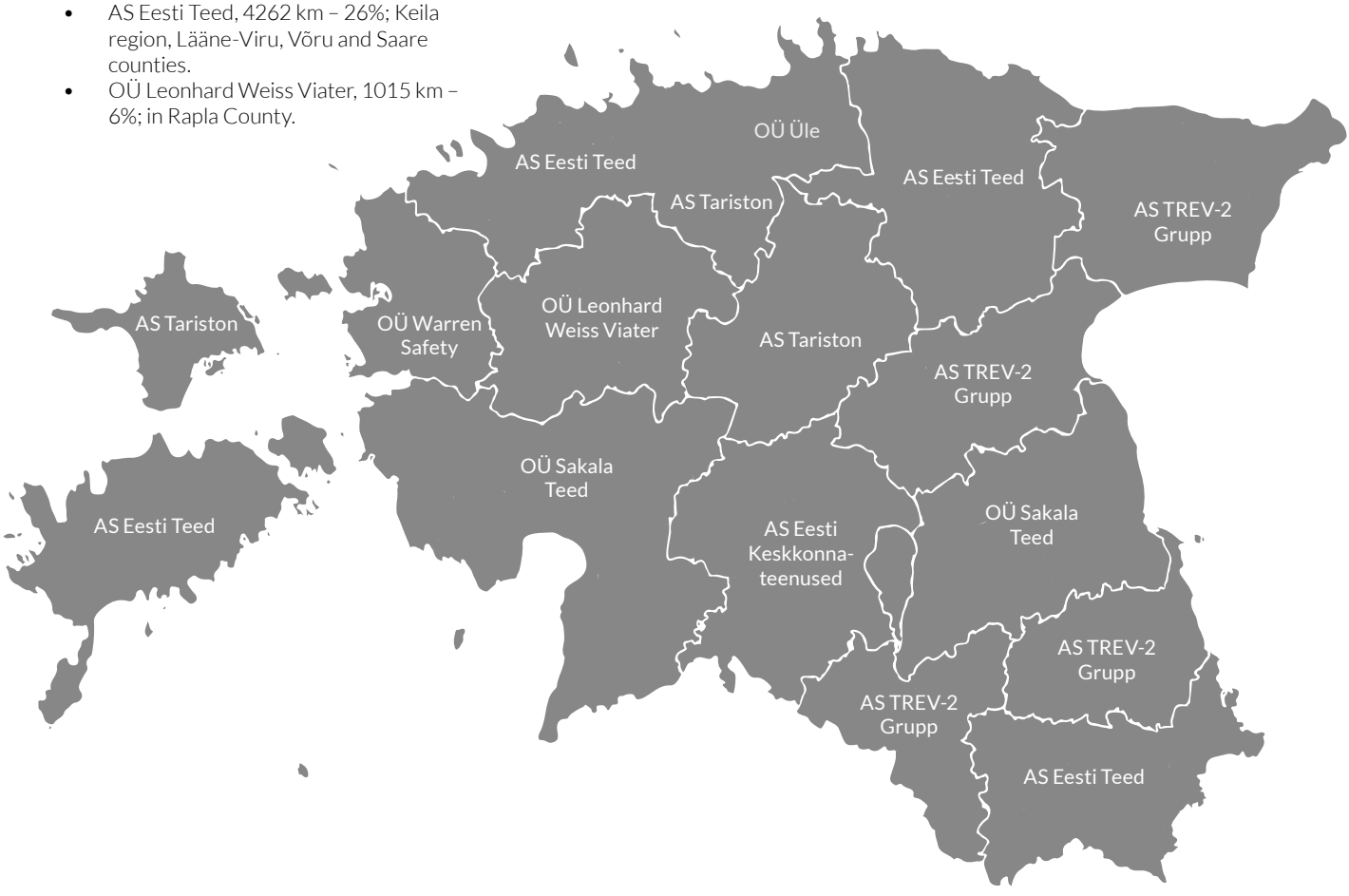
77% of road users rated road maintenance in summer as good or very good, which is 7% more than in 2018. 53% of road users rated road maintenance in winter as good or very good, which is 4% more than in 2018. These percentages are the highest of recent years and only bettered by the percentages of summer 2015 and winter 2016.

50% of vehicle drivers claim they are aware of the winter maintenance requirements applicable to public roads in Estonia; this indicator has increased by 4% in a year. 79% of the drivers who claim to be aware of the requirements of winter maintenance are satisfied with them and there have been no changes in this.

In terms of increasing the speed limit on 2+2 roads to 110 km/h and on 2+1 roads to 100 km/h all year round, 47% of the respondents thought that this should only be implemented in the areas covered by electronically changeable traffic signs. 29% of the respondents thought that the present requirements are sufficient and 13% thought that they could be increased in the future when the traffic culture has improved.

66% of drivers have seen the campaign "The road is slippery, adjust your driving style!" and 84% of the respondents considered it necessary. 50% of drivers thought that this campaign had an impact on behaviour in traffic.

According to the road maintainer bonus system based on satisfaction surveys, monetary bonuses were earned by AS Eesti Teed for the maintenance of roads in Lääne-Viru Country, AS TREV-2 Grupp in Jõgeva and Põlva and AS Tariston in Jõgeva County.



TRAFFIC MANAGEMENT RESEARCH

PRESENT AND FUTURE APPLICATIONS IN WEIGHING VEHICLES

The purpose of the establishment of a vehicle mass monitoring system and real time monitoring is to investigate and test the options of weighing heavy goods vehicles (HGVs) with new on-board weighing (OBW) systems integrated in the lorry.

As the stationary vehicle surveillance systems do not allow for the collection of data in the necessary volume and of the required nature, and the development of the respective stationary surveillance networks requires extremely large resources, we need to find and start using innovative methods for the collection of weight data remotely.

Contemporary vehicles are equipped with sensors, which transmit information that allows the control device to regulate the suspension according to the road condition and calculate and give information on the weight of the vehicle to the driver. This project also explored ways to collect remote data from vehicles using telemetry and telematics solutions.

The most important stages of the project:

- finding suitable vehicles, agreements with carriers and hardware tests
- creating a testing environment for monitoring vehicles, the necessary software updates, reading weight data from the vehicle's CAN network and saving them in the database
- control weighing of vehicles
- processing and analysis of measuring results

On-board weighing devices were interfaced with five HGVs. Data analysis highlighted various technical details that must be taken into account upon the broader implementation of the system. For example, the distribution of the load between axles changes when the vehicle is driven. Control weighing indicated that the total mass of a combined vehicle registered by the on-board weighing device does practically not differ from the result obtained with calibrated axle load scales. We are therefore planning to develop this technology further so that the number of HGVs ending up on expensive road structures in the future would be as little as possible. On the other hand, the collected data allow us to plan the road network better than before so that it meets actual demand. In the future, it will be possible to integrate the OBW technology in the green digital technologies of the e-CRM. The prototypes of this will be tested in 2020 by the Ministry of Economic Affairs and Communications.

FUTURE CONCEPT FOR PUBLIC ROAD MAINTENANCE

COMPARISON AND ANALYSIS OF PUBLIC ROAD MAINTENANCE WORKS

In Estonia, the role of the state in road maintenance has decreased gradually in the last couple of decades, but the state has increased its role in the performance of control and the organisation of supervision over the quality of road maintenance. Companies have been dealing with the maintenance of roads belonging to the state since 2008, incl. the public undertaking AS Eesti Teed, which has the biggest contract portfolio and a market share of ca one-third of the volume of public road maintenance. The public undertaking has been operating fully on the free market since 2017, incl. participating in procurements just like other companies.

In 2019 the state decided to sell its shares in AS Eesti Teed at auction and thus, the almost 20-year period of road maintenance transition to private companies will come to an end. The state has also tested procurement of the supervision of maintenance work from a private company in the last couple of years and decided to expand the pilot project throughout Estonia after the first year. Whether the selected model of outsourcing supervision services justifies itself will be analysed after the end of the second winter, i.e. in 2020.

A relatively similar performance based maintenance contract model has been used in recent years, where the maintainer is not paid for the performed work but for guaranteeing the condition level. This means that all of the risks of coping with the contract awarded as a result of a procurement for the offered price rest on the contractor. The risk of the base prices of a long-term contract increasing has to some extent been managed by indexing the price of the contract on the basis of the changes in the consumer price index. Recent experience has indicated that winters have become milder and weather conditions more unstable as a result of global warming, which means that forecasting the volumes of the necessary works is becoming increasingly difficult. The constant fluctuation of temperature around 0° C probably means that the volume of maintenance works will increase, which also means that the costs of winter maintenance will keep growing. On the other hand, the requirements set for road maintenance companies have been simplified, which has increased competition. Meeting all of the requirements precisely for the offered prices has become very complicated.

Experience has been obtain from other countries by the implementation of the currently used procurement and contract model, and the Finnish model has largely been the one selected. However, it is known that road users in Finland have become increasingly dissatisfied with the quality of road maintenance in recent years and the state of Finland has also found that the present model is not working that well in the changed conditions and something new must be found that would better distribute the risks between market participants and guarantee bigger transparency of costs, the ability to cope in difficult conditions and the sustainable operation of the company in the long term. Estonia, which is located in a similar climatic zone as Finland, is facing a similar dilemma: how to guarantee compliance with condition requirements when the external environment keeps making it more complicated. Should we make the requirements established for roads even stricter and implement more control or should we change the distribution of risks and increase the role of the state in having a say in road maintenance?

As the first stage of preparation of the maintenance concept, the Road Administration decided to carry out a survey to compare the organisation of road maintenance in Estonia and at least 10 other countries. An online survey consisting of 95 questions was prepared for this purpose, translated into English and sent to the organisations that order road maintenance in 12 foreign countries. The working group consisted mainly of the employees of the road maintenance departments of the Road Administration, and the Teede Tehnokeskus is responsible for the technical organisation of the survey, incl. the preparation of a report.

LIGHT SURFACE SURVEY

The Road Administration has been preparing the guideline for designing the repair of roads with gravel surface in the last three years. In 2019 the focus was on updating the light surface part of the guideline, as some of the gravel roads already have a light surface (e.g. partly amortised surfaced bitumen-gravel). Therefore, it's possible that more sustainable pavement solutions can be built on top of the existing solutions in certain cases without reconstructing the surface thoroughly. The goal of the Road Administration was therefore to expand the methodology for repair/renewal of low-class (gravel) roads to the existing roads with light surfaces.

The data and materials required for the analysis were collected from the pilot sites of Tallinn University of Technology and the technical descriptions and sample budgets of the road works were prepared on the basis of these. The road sample only included sections with existing light surfaces, which could potentially be strengthened with restoration repairs. This made it possible to compare and analyse the economic effect of the (restoration) repairs of light surfaces. Also, the sample sites of research and development works can be used as usual and the pilot sites are expected to last longer than they would have if the old methodology had been used, which is based on a non-constant quantity of source data.

The roughness of light surfaces (IRI) and the longitudinal road profile measurements were also analysed in said project, the Dynatest and KUAB FWD devices were compared and information was collected from Estonian and foreign experts who work with light surfaces.

In order to achieve the goals of the survey:

- the condition of roads with light surfaces was studied in three different locations in Estonia and repair solution proposals were prepared;
- work meetings were organised in the four road maintenance departments of the Road Administration in order to collect information on the solutions used and the experience gained
- work meetings were organised in Sweden and Denmark and the materials published about light surfaces in Finland and Russia were studied.

Based on the information obtained, it was possible to specify the light surface design process, which was used to update the Guideline for Designing Gravel Roads.

The methods of how to consider the ecological footprint of road construction and use, how to compare solutions with each other in order to guarantee the efficiency performance of the Paris Agreement in the Estonian transport sector, should be regarded as the follow-up activities of said study. The maximum use of light surfaces and local materials at suitable places will make it possible to reduce the greenhouse gas emissions of the road construction sector, but a methodology for assessing this has not yet been developed in Estonia.

IMPACT OF HEAVY GOODS VEHICLES ON BRIDGES: VALIDATION OF THESE LOADS ON REAL LOADS AND IMPACT ANALYSIS

The purpose of the study was to perform load tests with 52-ton HGVs on the existing standard bridges built in the Soviet era in order to test the potential safety factor and whether heavier vehicles could be allowed to drive on the standard bridges in certain cases. The calculated load of vehicles on standard bridges of the Soviet era were 18 and 30 tons. Another goal was to prepare a risk group or a list of bridges where 52-ton HGVs are not permitted and assess the need to invest in them.

As earlier studies of HGVs on bridges were done on the basis of theoretical calculations, actual tests with vehicles of the required mass were performed on the bridges during this survey. 14 bridges were selected and tested from September 2018 to June 2019. Heavy goods vehicles weighing 44, 52 and 60 tons were used. Most of the attention was given to HGVs with a maximum mass of 52 tons.

A theoretical analysis of the bridges was carried out before the testing, which included verification calculations of the bearing and limit conditions where the estimated sinkages and transition factors between the initial designed loads and HGVs were calculated. The condition of the bridges and the analysis of performance and probability of breakage were introduced as an additional nuance.

During testing, the HGV was placed on the bridge, the deflections of the bridge structures were measured separately on each beam and permanent deformations were also measured. Dynamic response to moving traffic loads was also measured by letting an HGV drive across the bridge. It became evident that whilst maximum deflections were 9% smaller on average according to calculations, the deflections of beams when under a load increased by 10% in most cases and by 20% in some cases, which caused cracks to open in the beams when under a load or crossed by vehicles.

The study revealed that the use of 52-ton HGVs must be restricted on 52 bridges (5% of bridges on national roads), nine of which are located on main roads.

If we want to allow 52-ton vehicles to drive on all bridges on national roads, it will cost over 43 million euros as at 2020. The study indicated that in principle, it would be possible to allow 52-ton vehicles on the bridges on public roads except for the 52 bridges mentioned above.

SELECTION OF THE **MOST IMPORTANT SITES** OF THE ROAD ADMINISTRATION IN 2019

NORTH REGION

Construction of Veskitammi traffic junction from kilometres 13-13.7 of Tallinn-Pärnu-Ikla road

Location:
National Road No. 4 Tallinn-Pärnu-Ikla km 13-13.7
Designed by:
Reaalprojekt OÜ
Contractor:
Nordecon AS
Supervision:
Taalri Varahaldus AS
Total value:
6.2 million euros
The project was co-funded by the European Union Cohesion Fund.

During the construction works, the 13-13.7-km section of the main road was brought into compliance with the requirements established for a Class I road. Collector roads and light traffic paths were built and the section was reconstructed from the city border to the Jälgimäe left turn. The crossings of Veskitammi, Nõlvaku, Vanasilla and Seljaku streets with the main road were reconstructed.

Three pedestrian tunnels were built near Veskitammi street, two of which are under the road and one under the railway. The tunnels are important connections for the residents of Saue Municipality and its vicinity.

Repair of section from kilometres 0-2.8 of Riisipere-Nurme road

Location:
National Road No. 11162 Riisipere–Nurme km 0–2,8
Designed by:
Tinter-Projekt OÜ
Contractor:
AS Tariston
Supervision:
Sweco Est OÜ
Total value:
1.5 million euros

The purpose of the construction works was to improve road safety and driving convenience and increase the road's load bearing capacity. The road section is located in the small town of Riisipere in Saue Municipality.

The construction works included reconstruction of the road, construction of new bus stops and a pedestrian and cycle road by the road up to kilometre 3.1, renewal of traffic control devices, road markings and lighting and streamlining of the water drainage system.

The main road was moved to a new track across ca 300 m at the place where it crosses the railway in order to guarantee the required 70° crossing angle of the road and Riisipere-Turba railway.

Reconstruction of Angerja-Urge section from kilometres 23-26.9 of Vaida-Urge road

Location:
National Road No. 11202 Vaida–Urge km 23–26,9
Designed by:
ViaVelo Inseneribüroo OÜ
Contractor:
AS TREV-2 Grupp
Supervision:
AS Teede Tehnokeskus
Total value:
1.3 million euros

A new asphalt concrete surface was built on the road, some sections of the embankment were repaired and the existing bus stops, exits, intersections and water drainage systems were streamlined and new traffic control devices were installed. Trees were removed to improve side visibility. The road was not widened, the width of the surface remained the same at 7 m – 2 x 3 of this is the width of the lanes and 2 x 0.5 m is the width of the shoulder.

A traffic island that separates the driving directions as well as shoulders were built on the Angerja intersection.

EAST REGION

Reconstruction of the Saara-Venevere section from kilometres 29-44.5 of Rakvere-Luige road

Location:
National Road No. 21, Rakvere-Luige, km 29-44.5
Designed by:
Landverk OÜ ja Roadplan OÜ
Contractor:
TREV-2 Grupp AS
Supervision:
AS Teede Tehnokeskus
Total value:
5.6 million

The purpose of the works was to improve the condition and load bearing capacity of the road section's surface in order to make driving more comfortable and safer. The reconstruction of the road section was planned for two seasons: the works started in May 2018 and were completed in August 2019.

The existing narrow embankment of the road was reconstructed to make it possible to build a 7.5-metre-wide asphalt surface. Three dangerous curves were straightened on the road section and lighting was provided on three roundabout intersections. Pedestrian crossings were built in the Muuga and Paasvere regions. The amortised Viru bridge was reconstructed into a steel arch bridge.

Reconstruction of the Iisaku-Tudulinna section from kilometres 0.8-16.5 of the Iisaku-Tudulinna-Avinurme road

Location:
National Road No. 35, Iisaku-Tudulinna-Avinurme km 0.8-16.5
Designed by:
Selektor Projekt OÜ
Contractor:
YIT Eesti AS
Supervision:
Lindvill OÜ
Total value:
4.2 million

The reconstruction of the road section was planned for two seasons: the works started in June 2018 and were completed in June 2019. The main works were completed in the 2018 season, but the installation of the road surfacing was left until the following year.

The existing surface was removed and the embankment was strengthened to ensure that the road section can be used by timber lorries all year round. The culverts were replaced and new side ditches were built. The Tagajõe bridge at the end of the road section was repaired.

The road surface used on this site was micro-surfacing technology, which has not been actively used in Estonia in the last 10 years. In terms of microsurfacing, the contractor cooperated internationally with Austrian company Vialit Asphalt GmbH and locally with OÜ Üle.

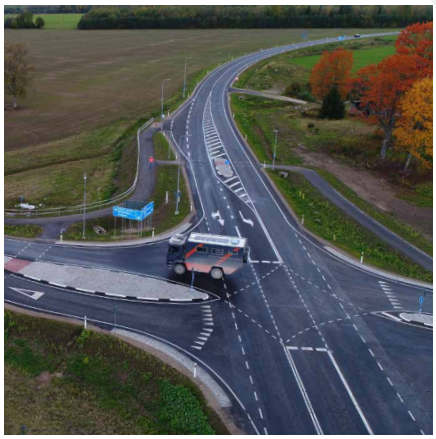
Interchange of the connecting road of the Tapa base and central polygon of the Defence Forces at Pärnu-Rakvere-Sõmeru from kilometres 141.4-142

Location:
National Road No. 5, Pärnu-Rakvere-Sõmeru km 141.4-142
Designed by:
Skepast ja Puhkim OÜ
Contractor:
GRK Infra AS
Supervision:
Infragate Eesti OÜ
Estimated cost:
0.48 million Road Administration;
0.8 million Centre for Defence Investment

The objective of the works was to ensure the connection of the Tapa bases of the Defence Forces and between the bases and the central polygon of the Defence Forces. Tapa is an important centre for the Defence Forces with a lot of traffic between the central polygon and the bases during training. Driving through the town takes more time and is also a burden for the local population. This is why the Defence Forces are building separate connections, which increase the safety of transport and also keep the costs of transport lower. As vehicles usually travel between the bases and the central polygon via motorcade and the number of motorcades is large during training sessions, the practical solution was to build the crossing of the main road and connecting road as an interchange.

The road was reconstructed to the extent of ca 600 metres so that the Defence Forces road to be built can be crossed with a viaduct. Temporary local detours were used during the construction to guarantee smooth transit and local traffic.

WEST REGION



Reconstruction of the section from kilometres 75.1-82.8 of Valga-Uulu road

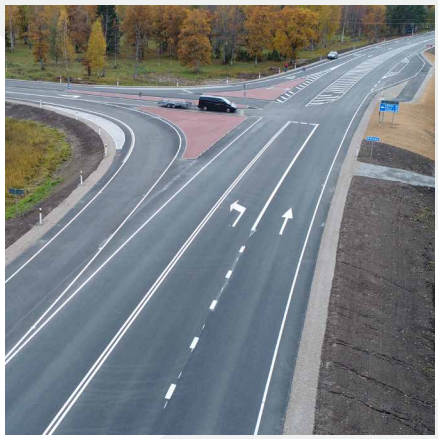
Location:
National Road No. 6, Valga-Uulu km 75.1-82.8
Designed by:
Tinter-Projekt OÜ
Contractor:
Yit Eesti AS
Supervision:
AS Taalri Varahaldus
Total value:
3.3 million euros

The purpose of the reconstruction of Valga-Uulu from kilometres 75.1-82.8 (Veskimäe-Umbsoo) was to increase the load bearing capacity of the road section and improve road safety and driving comfort. The reconstructed road remained on the existing embankment.

New side ditches were dug and new culverts were installed and a new two-layer asphalt concrete surface on a complex stabilised base was built. Bus stops were reconstructed. Exits were streamlined and brought into compliance with requirements, traffic control devices were replaced and a crash barrier was installed along 1021 m.

New lighting was installed on Mõisaküla intersection and safe road crossings and a new footpath near the intersection were established; the latter is connected to the existing footpath next to Mõisaküla road.

A pre-feeder was used to lay the asphalt concrete. The new road section is safer, more comfortable and even. Based on the surface roughness measurements carried out by AS Teede Tehnokeskus in 2019, the road was among the 10 most even roads with its IRI.



Risti-Virtsu-Kuivastu-Kuressaare from kilometres 50.1-56.4

Location:
National Road No. 10 Risti-Virtsu-Kuivastu-Kuressaare km 50.1-56.4
Designed by:
Landverk OÜ
Contractor:
TREV-2 Grupp AS
Supervision:
SwecoEST OÜ
Total value:
2.9 million euros

The purpose was to make the amortised surface of the road section comply with traffic volume and to improve driving comfort and road safety.

The reconstructed road remained on the embankment of the existing road. New side ditches were dug and the culverts were replaced and a new 9-m-wide two-layer asphalt concrete surface on a complex stabilised base was built. The public road intersections at Ridase and Karuse were reconstructed to make them safer. Bus stops and existing exits were reconstructed, traffic control devices were replaced and crash barriers were installed on dangerous sections.

Heated boxes were use to transport asphalt concrete to the site and a pre-feeder was used when it was laid.

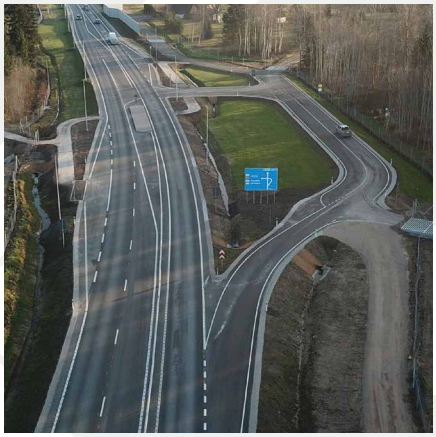
The road section used to be very amortised, but the new road section is safer, more comfortable and even. Based on the surface roughness measurements carried out by AS Teede Tehnokeskus in 2019, the road won the title of most even road in 2019 with its IRI of 0.58.

Sindi-Lodja-Silla reconstruction

Location:
National Road No. 19278, Sindi-Lodja-Silla km 0-3.7
Designed by:
Tinter-Projekt OÜ
Contractor:
AS Trev-2 Grupp
Supervision:
Taalri Varahaldus AS
Total value:
1.6 million euros

The purpose of the reconstruction was to improve road safety and driving comfort and extend the road's life. The width of the road was brought into compliance with requirements, intersections and exits were reconstructed and the section between Paikuse and Silla was made safer. The new road surface is two-layer asphalt concrete on a complex stabilised base. New traffic control devices were installed along the entire road. The site was a joint procurement of the Road Administration and Pärnu City, where Pärnu City financed the construction of the pedestrian and cycle road running through the city as well as its connections and lighting.

SOUTH REGION



Construction of 2+1 bypasses on the Pikknurme-Puurmani section from kilometres 142.2-146.9 of Tallinn-Tartu-Võru-Luhamaa road

Location:
National Road No. 2 (E263) Tallinn-Tartu-Võru-Luhamaa km 142.2-146.9
Designed by:
Skepast & Puhkim OÜ ja Reaalprojekt OÜ
Contractor:
AS Nordecon
Supervision:
Sweco Est OÜ
Total value:
6.1 million euros

The purpose of the construction works was to construct road sections with 2+1 and 1+1 lane bypasses with a central barrier. A crash barrier that separates the directions of traffic was installed in order to prevent head-on collisions, intersections were reconstructed and duplicate intersections were demolished. The road surface and traffic control devices were replaced along the entire section. Bus stops were moved and connected to intersections, and footpaths leading to the bus stops were built. Noise barriers were built at places where the noise level exceeded the norm. Collector roads and maintenance roads were built by the main road. Wildlife fences were installed to guarantee road safety. Water gutters were also built and ditches were dug.

The 2+1 lane Pikknurme-Puurmani road section on kilometres 142.2-146.9 of the bypasses to be built on kilometres 127-182 of the Põltsamaa-Tartu road section is the third.

Reconstruction of Missokülä-Hindsa section located on kilometres 209.2-217 of Riia-Pihkva road

Location:
National road No. 7 Riia-Pihkva km 209.2-217
Designed by:
Skepast & Puhkim OÜ
Contractor:
AS Nordecon
Supervision:
AS Taalri Varahaldus
Total value:
5.9 million euros

The two-kilometre section by the small town of Misso and the 7.7-km section from Missokülä to the Luhamaa border checkpoint were reconstructed during the reconstruction of Missokülä-Hindsa. Shrubs were removed to improve side visibility, the road embankment was repaired, a new drainage layer was built, ditches were dug and cleaned, old culverts were repaired and new ones were built.

The new road surface is two-layer asphalt concrete on a complex stabilised base. Chicanes were built on the exits to Misso, lighting was installed on the Misso section, 1.5 km of footpaths and bicycle paths were built and the Misso car park was reconstructed. New traffic control devices were installed, bus stops were constructed, the intersection on roundabout 2 was canalised with raised traffic islands.

Reconstruction of Leevi-Vinso section located on kilometres 16.6-26 of Võru-Räpina road

Location:
National road No. 65 Võru-Räpina km 16.6-26
Designed by:
Reaalprojekt OÜ ja Novarc Group AS
Contractor:
GRK INFRA AS
Supervision:
Teede Tehnokeskus AS
Total value:
3.8 million euros

The Võru-Räpina Leevi-Vinso section of Public Road No. 65 was reconstructed in 2019 on the order of the Road Administration. The embankment and surface of the road were repaired during the reconstruction and the width of the new complex stabilised two-layer asphalt concrete surface is now 8 metres.

The Vinso intersection was constructed into a roundabout and equipped with lighting. The intersections and exits were reconstructed, existing ditches were cleaned and new ones were built. The culverts of the road and the exits were also reconstructed. The road area was streamlined and the trees that reduced visibility were cut. The traffic control devices on the road section were replaced, a crash barrier was installed on dangerous road sections and bus stops were reconstructed.

MICRO-SURFACING

Microsurfacing is carried out using a mixture of polymer modified emulsified asphalt, mineral aggregate, mineral filler, water and other additives, which is laid on a road as a layer up to 30 mm in thickness.

An important innovation project in the previous year was the testing of microsurfacing on the 15.7-km road section between Iisaku and Tudulinna. It has been tested before, but not this thoroughly. We decided to test it again, as the use of microsurfacing is environmentally more sustainable than asphalting and surfacing. The Road Administration clearly wants to develop this direction further. We will find out in spring 2020 whether the material can resist our weather conditions and what the condition of the road is like after winter when the weather changes frequently.

The Road Administration sees microsurfacing as a quick solution to preservation repairs in built-up areas on roads with a lower traffic volume. The problem with these sections in summer is 'sweating', which certainly does not meet the expectations of the road users. There are also other situations where road users must be disturbed as little as possible during the repairs.

The most important thing in the first winter is to see whether microsurfacing can withstand vehicles with studded tyres. The work process used this time made us forget the experience of 2012/2013. Baseline measurements of ruts and macro-texture were also carried out on the Iisaku-Tudulinna site late in the year, which can be renewed and used for conclusions every year.

IMPLEMENTATION OF **InfraBIM** IN ROAD CONSTRUCTION

The Road Administration continued with the implementation and testing of InfraBIM in 2019.

The Road Administration continued using the digital Building Information Modelling (BIM) system in pilot projects in 2019.

BIM tools were used in cooperation with external consultants in five road projects. BIM was implemented in cooperation with Rail Baltic and according to their guidelines, also in the construction design of the Luige-Saku 2+2 road section of Tallinn Ring Road, where the main road crosses the track of Rail Baltic at the location of the Saustinõmme viaduct.

Carrying out traditional process projects has continued at the same time the pilot projects have been carried out. In some cases, this has resulted in the duplication of work for the project participants, which has reduced their motivation to some extent. The plan is to reduce the share of the traditional process in the next pilot projects, i.e. to reduce duplication of work, and thereby increase the interest of external partners in the innovative approach. The focus of the pilot projects carried out in 2018 and 2019 was primarily on the use of BIM tools and the model itself and its content were not yet at the centre of attention. The format of data transmission and the content of the data need attention in the future, and it's important to focus on the information that is necessary and important to the participants during the life of the road.

Digital construction remains topical in the Estonian construction sector and is broadly covered. The Road Administration has been an active partner in cross-sectoral cooperation by participating in the working group of public sector contracting entities as well as in the InfraBIM working group of the Digital Construction Cluster. In 2019 the Road Administration also participated in the development of the uniform Estonian BIM requirements initiated by the Ministry of Economic Affairs and Communications.

PILOT PROJECT OF **SUPERVISION** IN PÄRNU

In 2018 the Road Administration took a step that is important to the entire road maintenance market when it decided to test the inspection of road maintenance by ordering it on open market conditions on the basis of a public procurement.

The substantive goal of the pilot project was to find a contractual partner, who would supervise the activities of the maintenance partner outside the working hours, at weekends and on public holidays. An authorisation contract was entered into with AS Taalri Varahaldus as a result of a public procurement.

The pilot project assigned the contractor AS Taalri Varahaldus the task to supervise the performance of the national road maintenance contract in Pärnu County, West Region, during the winter months. The supervision was carried out at weekends and on public holidays over a period of five months from 1 November 2018 to 31 March 2019. The supervision inspected the guarantee of the requirements for the condition of national roads and the compliance of maintenance with requirements and the effective maintenance contract.

Said pilot project was extremely important to the Road Administration because it was the first time the inspection of road maintenance was ordered from an independent entity on the open market instead of the agency's own employees. Similar to the supervision of road construction, it meant that the service of maintenance supervision moved to the private sector. The pilot project was a success and gave the push for the follow-up project of supervision of winter maintenance in 2019 on the national roads of the entire country.

TRAFFIC MANAGEMENT CENTRE

Structural changes brought about many significant changes in the duties of the Traffic Management Centre.

The management and development of the road toll system that used to be our responsibility was transferred to the Infrastructure Services Department in May.

New duties were assigned to the Traffic Management Centre:

- keeping the database of traffic controllers
- recognition of trainers of traffic controllers
- management and development of the contract of the road information hotline 1510, which has been offered to us by the Alarm Centre since 2017

Some duties were transferred from the Road Maintenance Organisation Department as of the start of 2020:

- management, maintenance and development of road weather stations, road cameras and weighing points
- the road weather forecast service.

MThe number of positions in the Traffic Management Centre also increased from six to seven as a result of the change, and restructuring created two new positions: road information analyst and road equipment expert.

2019 was largely marked by the development of the system for controlling signs with changing information. A traffic management system depending on the weather, which is based on the Swarco OMNIA platform developed in Italy, was prepared for the management of the signs with changing information located on the Tallinna-Pärnu-Ikla road. The system works semi-automatically during the day, whereby the traffic controller approves or rejects the system's control decisions, and is fully automatic at night when the Traffic Management Centre is not working.

The Traffic Management Centre has constantly adjusted the system's control rules and developed the skills of traffic controllers in using the system and responding to incidents. All new road sections equipped with signs displaying changing information will be interfaced with the management system in the coming years. In 2019, new information boards were added to the Tallinn-Narva road at Sämi and Varja and on the Ääsmäe-Haapsalu-Rohuküla road at Risti. The biggest challenge in 2020 is the launch of traffic management with innovative wild animal identification solutions on the new Kose-Võõbu road section on the Tallinn-Tartu-Võru-Luhamaa road.

The development of the traffic information portal Tark Tee (Smart Road) continued in 2019. It is possible for local governments to enter the restrictions on their roads in the Tark Tee portal since summer. The first of them immediately started using this option, but we hope to increase the use of the portal considerably in 2020. The traffic restrictions that will start in the future are displayed in the Tark Tee portal (up to seven days in advance), which is an important innovation.

In early 2019, the Traffic Management Centre moved the process of applying for traffic prohibition permits to the e-service, which makes the process considerably easier for clients and shortens the time required for processing the permits. 1231 traffic prohibition permits were issued last year, which is almost twice as many as in 2018. 15,479 special transport permits were issued in 2019, which is 2.2% fewer than in 2018, but the receipt of permit fees increased by ca 1.3%. We have managed to increase people's satisfaction with the permit application service for the second year in a row in terms of the structure of the service as well as its speed.

13,922 calls were made to the Road Information Helpline 1510, which is 6.3% fewer than in 2018.

Traffic counting data have been used in the Road Administration for many years. A couple of years ago, traffic counting data was only used on the basis of average daily traffic volume results. The use of more detailed information increased considerably in 2019 and we're therefore planning to establish a traffic counting database in the Road Administration.

There were 100 permanent counting points and 47 periodical counting points in the traffic counting information system at the end of 2019, all of which generate data 24 hours a day. The data are sometimes very detailed and help us better analyse traffic flows and driver behaviour.

The changes in the economy of Estonia are directly reflected in traffic counting results. Whilst the traffic volume increased constantly from 1998-2007, reaching 6-10% per year on main roads and basic roads, it decreased considerably from 2008-2010. In 2011 and 2012, traffic volume remained at the same level as in 2010 and started growing again as of 2013, reaching 2.0-5.9% from 2013 to 2018. In 2019, traffic volume increased by 3.8% in comparison with 2018.

The busiest road section is still on the border of the City of Tallinn on the Tallinn-Pärnu-Ikla road – the annual average traffic volume measured on its km 13.0-13.8 section was 33,794 cars per day.

SPEED CAMERAS

There are 66 measuring booths for speed cameras on public roads and the Road Administration can also use two measuring booths in Tallinn. There are 68 measuring booths of speed cameras in Estonia in total. The Road Administration uses 45 measuring devices on national roads, which are relocated between the booths.

Speed is measured in both directions in four measuring booths. These measuring booths are located at the Puhu intersection in Põltsamaa, Libatse Village in Pärnu County, Rannu Village in Ida-Viru Country and Kiia Village in Harju County.

Speed cameras have been used in Estonia for almost 10 years. The first speed camera was installed in July 2009, but it started working on 10 May 2010. The first fine notice was sent to a woman who had been recorded on camera two minutes after the system was turned on.

PROFESSIONAL SKILLS COMPETITION OF MAINTENANCE VEHICLE DRIVERS IN SÄREVERE

The Road Administration organised another professional skills competition for public road maintenance drivers after a five-year hiatus. This is a continuation of the professional skills competitions of employees that started in 1973. The last professional skills competition of maintenance vehicle drivers was held in 2004.

The objective of the professional skills competition is to harmonise the level of public road maintenance, use contemporary working methods and exchange experience as well as popularise the field and improve its reputation. Another goal of the competition is to encourage companies and employees to constantly learn and develop themselves.

The professional skills competition of public road maintenance vehicle drivers was held at the Särevere study base of the Järva County Vocational Education Centre, where students can study road maintenance. A team included a maintenance vehicle driver and a representative from each maintenance contract region, 34 competitors in total.

Leonhard Weiss Viater OÜ and Warren Safety OÜ (Rapla County), AS TREV-2 Grupp (Jõgeva County), Tariston AS ja Eesti Teed AS (Harju County), Eesti Teed AS (Tartu County), Warren Safety OÜ ja Leonhard Weiss Viater OÜ (Lääne County), AS TREV-2 Grupp (Põlva County), Tariston AS (Järva County), AS TREV-2 Grupp (Valga County), Eesti Teed AS (Lääne-Viru County), Eesti Teed AS ja Eesti Keskkonnateenused AS (Saare County), AS TREV-2 Grupp ja ÜLE OÜ (Ida-Viru County), Eesti Teed AS (Võru County) and the team of students of the Järvamaa Vocational Education Centre were represented. There were individual (traffic test + obstacle course) and team (theoretical knowledge quiz) competitions.

Tarmo Eiling (L. Weiss Viater Ehitus AS) was declared the best maintenance vehicle driver. Ago Mänd from the Jõgeva unit of TREV-2 Grupp came second and Aivar Lepp from Tariston AS finished third.

THE **BEST** OF THE ROAD MAINTENANCE DIVISION

BEST ROAD BUILDER – **AS TREV-2 GRUPP**

The best road builder of 2019 stood out with two strongly managed road construction sites:

- the Tuudi-Ridase section from kilometres 50.1-56.4 of the Risti-Virtsu-Kuivastu-Kuressaare road
- reconstruction of the Saara-Venevere section from kilometres 28.9-44.5 of the Rakvere-Luige road

On the Saara-Venevere site, they managed to stick to the general deadline as well as the strict interim deadlines (45 days from milling to asphalting layer I).

The contracting entity did not have to impose traffic management fines on either site.

BEST ROAD DESIGNER – **LANDVERK OÜ**

The best road designer of 2019 was the company that prepared the design for the reconstruction of the Tuudi-Ridase section from kilometres 50.1-56.4 of the Risti-Virtsu-Kuivastu-Kuressaare road and the Saara-Venevere section from kilometres 28.9-44.5 of the Rakvere-Luige road. The biggest success for the contracting entity in the case of this project was that very few mistakes were found when the design was reviewed. Construction went smoothly according to this design as well.

Any problems during construction were only created by geological unpredictabilities (cobblestone paving at one of the spots) and the unexpectedly high limestone layer in Paasvere. There were also problems in determining the extent of the fly-ash stabilised surface, but as it's underground, it is difficult to predict without opening the surface.

The project was prepared in 3D according to contemporary trends. Additional files were also prepared on the request of the contracting entity so that the project manager could use them for checking the construction process in Infrakit. As the designer sent the additional files quickly, it was obvious that the design had been created in great detail and the designer was highly skilled in working with the software.

BEST BRIDGE BUILDER – **JÄRELPINGE INSENERIBÜROO OÜ, VASALEMMA BRIDGE**

This was a complicated site where the old Vasalemma bridge on kilometre 15.2 of the Keila-Haapsalu road had to be demolished and a new bridge had to be built. The length of the new reinforced concrete arch bridge is 38.3 m, the opening is 28.9 m, travel gauge 10 m and width 11.2 m.

Considering the scope of the works and the desire to disturb road users as little as possible during construction, the planned duration of the site was 16 months. The contractor had to keep in mind that works in the body of water could be performed from 16 June to 15 September. Completion of the works took nine months from April to December.

Construction of the bridge pillars proved to be more complicated than usual because of the pressure in surface water. Works in the foundation trench were performed below the level of the river, so sheet-pile walls were used. The most powerful pump accessible had to be used in both trenches where a stream was running between the limestone layers.

The arches of the bridge were made of 15.3 m elements that had been made on site.

The site as a whole set many technological challenges that brought out the contractor's initiative and ability to use environmentally sustainable solutions.

BEST BRIDGE DESIGNER – **STRICTO PROJECT OÜ**

Stricto Project OÜ prepared the designs of Räägu bridge, Vasalemma bridge and the light traffic tunnels under the Veskitammi intersection road and railway. Checking the existing structures, assessing the measurement results and performing strength calculations are important elements in the reconstruction of old bridges. The solutions offered by the designer were always well

thought through and considered. There were few mistakes in the designs and the solutions were reasonably structured in engineering terms.

BEST ASPHALT PAVEMENT INSTALLER – **AS TREV-2 GRUPP**

The asphalt surface laid on the Tuudi-Ridase section from kilometres 50.1-56.4 of the Risti-Virtsu-Kuivastu-Kuressaare road by AS TREV-2 Grupp deserves recognition. The average IRI of the surface was very good. The use of a pre-feeder can be highlighted as a positive.

BEST OWNER'S SUPERVISOR – **TIMO TSEFELS** (TEEDE TEHNOKESKUS)

Timo Tsefels deserves recognition for his good cooperation with the contracting entity as well as the contractor. The engineering teams managed by him always complete their road construction inspection and receipt operations correctly and in a timely manner. The engineer always has an overview of the activities they have to complete and they don't have to improvise on the site. Timo Tsefels's knowledge is also impressive.

BEST ROAD SURFACER – **AS EESTI TEED**

AS Eesti Teed surfaced 183 km of public roads in two counties and made profile corrections with asphalt on some road sections in 2019. In addition to this, 117 km was surfaced in Lääne-Viru County and 48 km in Ida-Viru County. 348 km of surfacing works were completed in four counties in total.

The works were performed in a timely manner and with good quality despite the problems they faced, such as the deficit of the base bitumen used to produce bitumen emulsion and the poor weather conditions. Communication and cooperation with the contractor went well and problems were solved constructively.

BEST ROAD MAINTAINER – **WARREN SAFETY OÜ**

Warren Safety OÜ proved to be the best according to the assessment method, where the criteria taken into account included the failure to adhere to deadlines in the elimination of deficiencies, contractual subtractions and contractual penalties, the results of inspections and the information received from road users on ice and snow on the road.

BEST TRAFFIC MANAGER – **RAMUDDEN OÜ**

The work of Ramudden OÜ in the management of traffic on construction sites can be characterised with the words 'good old Swedish quality'. The most important solutions are generally discussed before the start of the design process and the proposals of the road owner are taken into account. The company provided information on any problems that have occurred in changing or readjusting the organisation of traffic. The company responds quickly if any problems appear on the site and doesn't look for reasons as to why things cannot be done.

Drawings are prepared correctly, traffic control devices are new and comply with all requirements. New traffic management solutions have been implemented. Temporary traffic management was carried out on complicated sites such as the construction of the Veskitammi traffic junction and Tallinn-Rannamõisa-Kloogaranna as well as other sites throughout Estonia.

MEELIS TELLISKIVI,
Traffic Director

TRAFFIC DIVISION

We will remember 2019 for the significant structural changes as well as the excellent cooperation of our customer service, Technical Department and Vehicle Registry Department in the improvement of the service.

The traffic area became the Traffic Division after the major structural change that occurred on 1 May. The supervisory part of the Technical and Examination Department was transferred to the Legal Department. The decision was made to transfer road safety campaigns to the Public Relations Department. The Strategic Planning Department was established in another division. However, we managed to give the Ministry of Economic Affairs and Communications an overview of what should be done for the improvement of road safety and what the budget for these activities should be before the changes were made.

Customer Service, the Vehicle Registry Department and the Technical Department first reviewed the pre-registration inspection process in order to make it simpler. We've received confirmation from the Ministry that in the future, clients will only have to visit our bureau once with their vehicle acquired from a foreign country. According to the plan, our pre-registration inspection specialist will only check the compliance of the vehicle brought from abroad with the documents; the compliance with technical requirements will be inspected by the testing centre. This will make the process considerably faster and shorten the waiting lists.

In spring, the representatives of three departments went on a tour of Estonia in order to meet with car sellers. They collected ideas on how to make our existing service better and if possible, direct their selling activities to the e-service. The golden trio also developed our information system ARIS and the business assistance system in the previous year so that our service bureaus can offer even better service to our clients.

I am pleased to admit that all of the service bureaus maintained the service level set for them and rose to the challenge. They worked particularly well during the peak season from April to September. For example, the service index of the Saare County service bureau reached the maximum, i.e. 100, in the fourth quarter. The Vehicle Registry Department worked hard to reduce the workload of service bureaus and encourage leasing companies to use our e-service.

Whilst the Technical Department installed cameras at testing centres in 2018 in order to reduce the risk of corruption, it took a step forwards in 2019. The first testing centres are now equipped with automated measuring equipment, which sends data directly to our ARIS database. This innovation means that data can no longer be forged and the vehicle inspector no longer has to perform pointless manual work. This will also reduce the pressure on the vehicle inspector, as they can turn down any acquaintances who ask to pass the test with a faulty vehicle.

36,207 tests were conducted in 2019 and 49% of people passed them. This year will be shadowed by long waiting lists for tests. 11,598 tests were taken for the first time. This is a very small number. Last year, our producer of driving licences and tachograph cards moved abroad, which caused a lot of confusion and increased the time for delivery of the documents. The situation will be improved by the amendment to the minister's regulation, which will change the entire the process of receiving driving licences. There are also several changes in the training of future drivers, which will hopefully improve their preparation and more people will pass tests.

Changing the behaviour of people is the biggest test for the Prevention Department. We have received feedback from many educational institutions that our prevention team is doing a great job. The biggest challenge in the new year will be establishing focuses and increasing the efficiency of activities. We want to reach the information field of men aged 25-36 with our messages.

The Public Transport Department had to spend a lot of time on both the organisation of the flight procurement that was plagued by problems and the supervision of public transport centres. The problems kept appearing and we were constantly searching for solutions. Despite this, we managed to complete statistical models which show us the routes that are and are not used. This is an excellent tool for the Public Transport Department. A new journey planner was completed in 2019 and we will hopefully be able to start using it in early 2020.

The new solution should help people plan their journeys better by offering them the best options for reaching their destination.

I am pleased to admit that the people working in the Traffic Division are reliable and determined, which has helped us solve all of the problems we've encountered and achieve great results.

MOTOR VEHICLE INSPECTION

PRE-REGISTRATION INSPECTION OF VEHICLES

47,827 pre-registration inspections were carried out in 2019, which is 6.5% more than in 2018.

Vehicles were declared non-compliant with technical requirements on 3998 occasions and the deficiencies had to be rectified before registration; the indicator increased by 13.7% in comparison with 2018.

The Road Administration found that the kilometrage reading had been reduced in the case of 206 vehicles and also disclosed this information in the background checks of the vehicles in the e-service.

The Road Administration's 137 contractual partners that sell new vehicles carried out 40,906 pre-registration inspections – a 1% increase in comparison with 2018.

50 new contracts were entered into and eight contracts were amended in 2019.

Pre-registration inspections of compliance with technical requirements

Year	Inspections by the Road Administration	Inspections by partners
2015	43 965	31 309
2016	42 472	35 644
2017	43 373	39 098
2018	44 734	40 451
2019	47 827	40 906

ROADWORTHINESS TESTING CENTRES

658,000 roadworthiness tests were performed on 532,000 vehicles in total in 2019. The number of roadworthiness tests increased by 6% in comparison with the previous year and the number of vehicles brought in for roadworthiness tests increased by 5%. It can also be noticed that the number of vehicles referred for repeated testing has increased by 2% and the average age of the vehicles that have passed the roadworthiness tests is still 14 years.

Training courses for roadworthiness vehicle inspectors were organised again in spring and autumn 2019 at the initiative of the Estonian Vehicle Inspection Association and in cooperation with the Police and Border Guard Board. 62 vehicle inspectors took attestation examinations after the training and only eight of them failed. 87% of those who took the examination passed it on the first attempt. The examination results remained at the same level as in the previous year.

DATA SET OF THE VEHICLE

The Technical Department checks the data of the vehicle types appearing in Estonia for the first time and enters them in the database of the Traffic Register.

The data set of a vehicle is generated when these data are entered. 12,460 data sets were created or updated in 2019, which is as many as in the previous year. 5911 data sets or 8% fewer than in 2018 were created on the basis of the pre-registration inspection certificates of vehicles with technical requirements submitted to the bureau of the Traffic Register.

5380 data sets were created on the basis of the applications filed by vehicle importers, which is 9% more than in 2018. 1169 data sets were created on the basis of the applications for pre-registration of category M1 and N1 vehicles with European type approvals received in the e-service, which was 10% more than in 2018.

The number of data fields of data sets has also increased year-on-year, which is why the preparation of each new data sets takes more time. In order to compensate for this, three inspectors of pre-registration compliance with technical requirements assisted the type approval experts of the Technical Department in 2019. Each of the inspectors was able to assist the experts once or twice a week. This made it possible to create data sets in a reasonable time – around 10 working days on average.

MODIFICATION OF A VEHICLE, ATP AND EU-TYPE APPROVAL

688 modifications of vehicles were registered in 2019. The number of vehicle's modifications has remained at the same level as in the previous year (2% increase).

Year	Number of reconstructed vehicles
2018	672
2019	688

212 ATP (Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for Such Carriage) certificates were issued in 2019.

In 2019, 28 type approvals were issued for category R tractor trailers as well as category O1 and O2 trailers and components, 17 of which for new types and 11 for new extensions.

PUBLIC TRANSPORT

The key word in the area of public transport in 2019 was the increase in the number of public transport users. The number of trips made by passengers increased in ship, air and county bus traffic.

The kilometrage covered by county lines in 2019 increased by 3.4 million line kilometres, i.e. by 8.8% in comparison with 2018, and totalled 42.3 million line kilometres. The number of passengers increased by 3 million, i.e. by 15.1% during the year. The number of journeys by passengers increased the most in Harju, Pärnu, Viljandi and Valga counties. The user profile of county bus services has become younger and the share of people who travel once a month or less frequently has increased.

Passengers travelled by ship 2.6 million times in 2019, which is 4% more than the year before. The number of flights to large islands and Ruhnu increased by 7% in comparison with the previous year and the number of passengers increased by 12%.

There are 45 effective contracts for serving bus routes as at the start of 2020, which is three contracts per county on average. Five of these have been entered into for serving public long-distance routes. Public long-distance lines are also included in other public service contracts.

Four new contracts with a larger transport service volume entered into force for serving county routes in Harju, Pärnu and Valga counties in 2019. The procurement ended and a new contract was entered into for serving county lines in Harju County as of 1 February 2020.

Due to the threat of interruption of regular services, the Road Administration entered into two direct contracts in Ida-Viru County, and service on the basis of these will also commence as of 1 February 2020.

Updating the Public Transport Register continued in 2019. The peatus.ee and m.peatus.ee sites were visited 11 million times in 2019. The number of visits increased by 25% in comparison with 2018.

60 line permits for national commercial long-distance regular services were issued and 80 timetable changes for the routes served on the basis of existing line permits were approved in 2019.

Carriers stopped serving 30 routes early and the respective line permits were declared invalid. The issue of a line permit was refused once.

SUPERVISION OF PUBLIC TRANSPORT

215 misdemeanours were processed in 2019, 179 of them were travelling without a ticket (breach of subsection 85 (1) or (2) of the Public Transport Act).

Three main groups can be highlighted in the case of the remaining 36 proceedings:

1. violations by drivers,
2. violations by operators,
3. other violations.

The number of more serious violations is increasing – for example, regular services are provided with buses that have not passed roadworthiness tests, the performance of state supervision is obstructed. Proceedings concerning legal entities is a rising trend.

Fines in the amount of 14,483 euros were imposed in 2019, 13,382 euros or 92% of them were received, and penalty payments were imposed in the amount of 5100 euros, of which 1850 or 36% was received. The reason for the low level of receipt is that the due dates of two penalty payments will arrive in 2020.

57 enforcement proceedings were initiated for enforcement of the fine and penalty payment decisions, which is 31% fewer than in 2018. In the opinion of the Road Administration, this refers to improved legal obedience.

Three administrative supervision summaries were prepared in 2019 – on the Valga County Public Transport Centre, Kohtla-Järve City Government and Ida-Viru Public Transport Centre. Administrative supervision included inspecting the organisation of public transport and making proposals for improving and changing the situation, or specific substantive deficiencies were pointed out.

230 procedural protocols were prepared for carriers in 2019, which is 18% more than in 2018.

The main problems of the carriers are related to leaving stops earlier than the departure times specified in timetables, not serving a stop and other violations in a few cases (absence of the documents required by law etc.). The lion's share of proceedings concerned public services.

2019 was remarkable in public transport supervision because 93 procedural protocols, i.e. 40% of all procedural protocols issued, were prepared for companies related to ATKO Grupp.

31 precepts were issued to the carrier because of violations, which is similar to 2018 when 30 precepts were prepared.

A new procedural document – supervision certificate – was implemented in 2019. This document is used to identify deficiencies in the organisation of public transport, but the preparation of the document as such does not end in a specific measure such as a precept or a fine. 36 such certificates were prepared and they mainly concerned infrastructure (unsafe locations of stops, bad traffic conditions, amortised stops, etc.), but also references to mistakes in the National Public Transport Register.

14 officials worked in the Public Transport Control Service in 2019 and they all worked hard to ensure that the people of Estonia could use public transport that is safe and meets their needs.

Inspected buses	3027
Inspected trains	2270
Number of inspected passengers*	21 758
Processed misdemeanour documents	253
Prepared supervision certificates	36
Inspected infrastructure sites	140
Prepared precepts	31
Initiated enforcement proceedings	57
Collected fines, €	21 968
Prepared procedural acts	230
Penalty payments imposed, €	5100

* The number of inspected passengers is per bus, as the statistics of ticket inspections on the trains of AS Eesti Liinirongid is missing due to deficient software.

CUSTOMER SERVICE

SERVICE BUREAUS

Visits to the service bureaus of the Road Administration take place in 10-year cycles. This mainly depends on the expiry of driving licences. Replacement of driving licences reached the bottom in 2019. The number of operations performed at the service bureaus of the Road Administration was 6% lower than in 2018.

Keeping customer satisfaction at a high level is the most complicated. The goal for 2019 was to keep customer satisfaction with the service provided by bureaus at 85%, but it was even a little higher than that by the end of the year – the service index of bureaus was 87%.

Last year, we started sending satisfaction surveys to the clients who had passed pre-registration inspections as well. This is the service that requires more time and work than any other, and the waiting lines are often long. This is why the satisfaction goal established was 65%. 71% of clients were actually satisfied with the service.

The service premises in Tartu and Paide were thoroughly renovated last year. Clients were served in portacabins next to the buildings during the renovations. Looking back, it seems that the concerns about creating difficulties for the clients and employees were unjustified because clients calmly accepted that we had to move to less spacious premises.

Computer screens were removed from test classrooms in the second half of 2019 and theory tests are now taken on tablet computers. The small fears we had about this were also unfounded, as clients and employees alike accepted the more contemporary devices positively.

A service standard was completed last year to ensure that service skills are the same throughout the country. Preparing this was the responsibility of our own employees, as they also provided information on the aspects the document had to cover.

INFORMATION CENTRE

118,817 calls were made to the Administration's helpline in order to request information or ask for advice. The number of calls is the same as the year before.

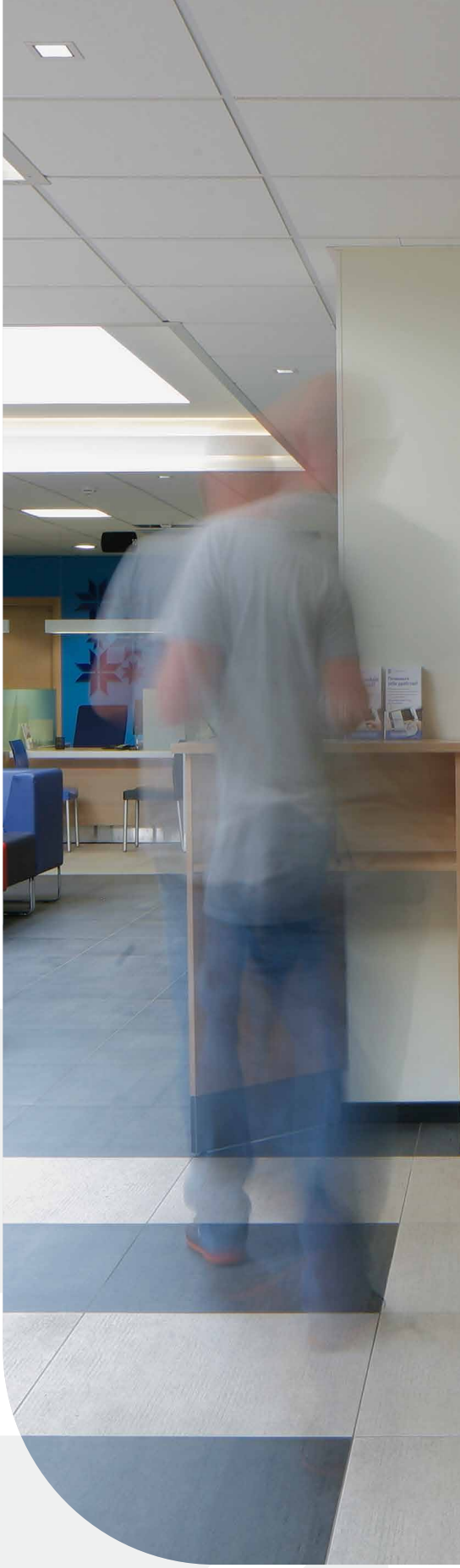
The role of the Information Centre is constantly changing – increasingly more calls made to the helpline also concern the other services offered by the Road Administration. The employees of the Information Centre must learn to ensure that they can answer all of the questions.

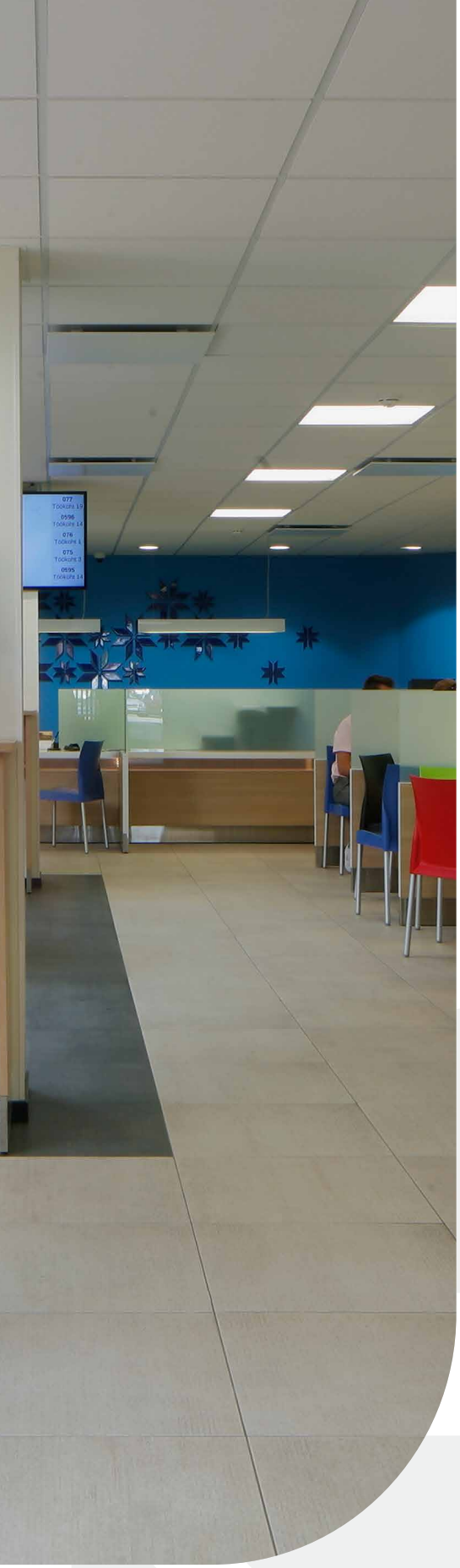
The number of calls is related to seasonality as well as areas prone to problems. The number of calls immediately increased by 5% in summer when the waiting lists for driving tests and type codes became longer.

Information was given by e-mail 80,007 times, which is 15% less than before. The decrease was the result of our closer cooperation with leasing companies and car sellers.

Customer satisfaction with the speed of response to information requests and the content of the responses improved by 1 per cent and reached 59%.

Our customer service team is happiest when reading feedback received from clients and would like to share this happiness with you.





FEEDBACK TO BUREAUS

Our clients wrote:

- *I was totally panicking about what was going to happen next, but the customer service agent immediately managed to calm me down and answer all of my questions.*
- *The situation in the hangar was getting critical, but everything went well and when I compared it with my experience from the last year, it seems that they are no longer trying to split a hair into six with a razor when inspecting a vehicle.*
- *The customer service agent was warm, extremely helpful and gave me all the information I needed. Having my driving licence changed at the Road Administration turned out to be good therapy!*
- *The service was very good, especially considering that the working conditions were more difficult due to renovations.*

FEEDBACK TO INFORMATION CENTRE

- *A couple of times, I asked about the change of owners of an inherited vehicle, which was more complicated than usual. I ended up speaking to different employees and they were all calm and polite and gave me good advice, which meant that everyone involved saved time and things were sorted out quickly.*
- *I always got very clear answers to questions that I thought were difficult.*
- *The person who answered the phone is the best, 10 points again!*
- *It was clear that I had called the wrong place, but the person who answered my call was friendly and told me who I should call and also found the number for me! Thank you :)*

E-SERVICE

Approximately 1.6 users used the e-service of the Road Administration 9.5 million times in 2019. An ambitious strategic goal was set – 65% of the services provided at the bureaus and in e-services are done electronically.

The goal was achieved, primarily by increasing the number of changes of owners registered in the e-channel. One of the reasons for the growth was waiving digital signatures in the case of changes of owners and requesting electronic confirmations from the seller and the buyer. Renewal of powers of attorney was also made easier.

Requesting permits for traffic restrictions on roads is a new service provided in the e-service. It is important to those who need to drive heavier vehicles on roads on which mass restrictions are established, e.g. during the thaw in spring.

The Road Administration is proud to introduce the options of its e-service to others as well. Delegations from Uzbekistan, Ukraine (representatives of local governments and reporters) and Kenya visited the Road Administration last year. The e-services were also introduced at the annual meeting of the e-Reg, which was attended by representatives of all EU Member States.

The use of the e-service is also based on informing clients at the right time – 1.9 million notices or reminders were sent to clients over the year.

The recommendation index of the e-service remained at 89%.

- *I have used the e-service MNT.ee. It's brilliant. I ordered a duplicate of my category A licence plate on Thursday and it was in my mailbox on Saturday!*
- *Informing people of the arrival of the expiry date of their driving licences is very well organised and requesting a new licence is very easy.*
- *Everything makes sense and there was even an instruction video.*
- *The service is very user-friendly and also very quick. Thank you very much!*
- *I have recommended it to my friends and will continue doing so because the e-service is really easy to use + you can save a lot of time when you don't have to go to a service bureau to do the same things.*

EXAMS

Significant changes in the organisation of national traffic theory tests took place in 2019.

The theory classrooms started using tablet computers, the questions were changed and they are now among the most up-to-date in Europe. The use of new traffic theory questions started on 3 June and each of the questions has only one correct answer.

The questions focus primarily on solving everyday traffic situations and understanding them and support the driving test that requires the existence of a good theoretical base. The deficiencies in theory primarily become evident in the results of driving tests and in everyday traffic. Although each question now only has one correct answer, the percentage of people who pass the test did not change drastically and only went up by a couple of percentage points. The fears of driving schools that the number of people who pass theory tests would decrease as a result of the new questionnaire also proved to be unfounded.

The national theory test is constantly discussed in the media, mostly positively. We also created the possibility to take theory tests in mobile test classrooms, which helps us shorten waiting lists at service bureaus and reduces the costs for consumers (especially the Defence Forces). 10 tablets are used in the mobile classroom, which allow for a lot of flexibility in terms of the time and place of the tests. Only an Internet connection is needed.

Estonia is the first country in the world to include questions on self-driving delivery robots in the theory test. This attracted attention outside Estonia as well and caused excitement at conferences.

In terms of driving tests, 2019 was predominantly the transition phase for the changes that will take place in 2020, which will considerably change the structure and exercises of the tests. The requirements and assessment will become more realistic and the general competence of the future driver in coping in traffic will be checked during the test. Assessment in the national driving test is already competence-based, which puts more of the responsibility for the result on the future driver, and the role of the driving school is to encourage people to learn rather than teach them.

Theory test 2019	First half of the year	Second half of the year	**Total**
Number of tests	14 960	19 108	**34 068**
% of persons who passed	66	76	**72**

It is unfortunate that future drivers (especially in category B) are more oriented on the process than the result. Their biggest concern is to take the test as quickly as possible and the result of the test is not that important. The statistics of tests indicate that nobody learns anything new or drives a vehicle in the time between tests, and the percentage of people who pass keeps decreasing with each follow-up exam. The only ray of light in the darkness is future category A drivers, who are very passionate about their hobby and their performance is also praiseworthy. The results of people applying for heavy machinery driving licences have also improved in recent years because they are motivated by their desire to find a job that requires such a licence.

Although we were a few examiners short, the general number of tests taken has remained the same as in previous years and we have the capacity for ca 36,000 tests, which indicates that the Examination Centre is good at planning and works efficiently.

However, 733 people seem to think that the state fee of 40 euros and other costs are not remarkable because they didn't even bother to turn up for their tests. Failure to turn up for a test creates the situation where the driving time slot remains unused and figuratively speaking, an examiner is without work for seven months.

206 decisions on challenges were prepared on theory and driving tests in 2019 (203 in 2018). Most of these decisions were made on category B driving tests (161 in total), theory tests (18) and category A tests (12). Decisions were changed on the basis of the decisions on challenges (188 in total) in 16 cases, i.e. in 8.5% of all cases. The results of these 16 decisions: 11 persons were given the right to retake their driving tests without having to pay the state fee; the result was annulled in one case (the person had already passed the test) and the person could request a refund of the state fee; the driving test was deemed passed in four cases.

The challenge proceedings indicate that future drivers are unaware of the nature of the challenge proceedings. They tend to file challenges just in case without delving into what actually happened during the test, and thus the decisions on challenges mostly just state the facts and refer to laws instead of being documents that analyse traffic situations.

Driving test 2019	Number of tests	Number of people who passed	% passed
after the 1st attempt	20 681	11 598	56
after the 2nd attempt	7298	3352	45
after the 3rd attempt or more	8228	3072	37
Total	**36 207**	**18 022**	**49**

PREVENTION

The objective of prevention is to support road users in the changing environment and improve their behaviour in traffic with outreach and traffic education.

The task of prevention experts is to increase the traffic knowledge of various target groups and influence the attitudes of road users, which in turn will help improve traffic culture, reduce the number of traffic accidents and help achieve the goals of Vision Zero. This requires systematic activities and consistency – values, attitudes and behaviour change slowly. The 20 years of prevention by the Road Administration has had a significant impact on the everyday traffic behaviour and habits of people: wearing a reflector, fastening seatbelts in cars, using children's safety equipment in cars and condemning drunk driving have become the new normal. Today, experts also have a say in lifelong traffic education in addition to prevention. The important keywords here are cooperation between parties, joint responsibility in being a role model to young road users, caring about and considering others in traffic, knowledge and skills for safe road use, lifelong learning, etc.

2019 was a busy year for the Prevention Department of the Road Administration:

- 62,842 people were involved in the 1028 activities aimed at road safety
- 641 training events were organised for various target groups, which were attended by 20,911 people
- outreach was organised 155 times at public events, 27,501 people attended
- 13,512 people in total participated in projects
- 23 information days were organised, which were attended by 918 people.

An online environment was prepared in cooperation with MTÜ AgaMina, which is mainly aimed at the parents of small children and the teachers who deal with the children and their parents. The purpose of the 360° road safety tour of the Road Administration on the AgaMina website is to support parents and teachers in ensuring the safety of children and helping them become polite road users.

A traffic game that supports the national curriculum, "Liiklustarga liiklusmäng", was created for pre-school teachers, which aims to help them cover the topic of traffic in an interesting, easy and efficient way at pre-schools. The traffic game supports teachers in training people who know how to use roads safely.

TRAFFIC TRAINING

Omniva organised a traffic month for its employees in spring, which included internal traffic training carried out throughout Estonia in cooperation with the Prevention Department. The training events took place in six counties in April and they were attended by 93 Omniva postmen and couriers.

134 training events were organised for school teachers in 2019, which were attended by 1835 teachers. The training events were divided as follows:

- traffic training for pre-school teachers at 29 pre-schools, 454 teachers attended
- training events for teams of school teachers at 12 schools, 263 teachers attended
- 16 trainings for 6th grade teachers within the scope of the KEAT project, 168 teachers attended
- 45 training events for persons accompanying groups of children, 625 teachers attended
- 13 training days for cycling trainers, 117 teachers attended
- 19 other training events on various topics (teacher's safety handbook, summer school for cycling trainers, etc.), attended by 208 teachers.

The first nationwide summer seminar for cycling trainers was held in August 2019. 33 teachers attended, including a trainer from Latvia. As the feedback received from the attendees was very good and interest in the event is high, the seminar will be organised again in August 2020.

The third traffic education survey "Traffic education in pre-school and school" was carried out in 2019. 404 pre-schools (64% of the total number) and 335 schools (62% of the total number) participated in the survey.

The survey indicated that planning in pre-schools has shifted towards group activities; the integration of the topic of traffic has increased in several subjects as well as in the establishment of playing environments. Teachers are very satisfied with the quality of training. The percentage of schools that offer cycling training remains high (84% of the schools that responded). Teachers mostly contribute to the organisation of the training themselves, which means that they continuously need our support (teaching materials, training for cycling trainers, project to support cycling training).

TRAFFIC EDUCATION PROJECTS AND COMPETITIONS

The Liiklusvanker traffic education project for pre-schools and the Vigurelemendid project for schools have been organised for years and are well received by educational institutions.
In recent years, educational institutions have been joining two projects more actively:
"Free Cycling Training for Every Child of 10". The project supports general education schools that offer free cycling training to children. The goal of the project is to support the accessibility of training and improve road safety by offering thorough training to cyclists. Over 4200 children from 152 schools participated in the project in the 2018/2019 study year.

The project "STOP, LOOK, BE SURE!" is aimed at 5th and 6th grade students and its objective is to teach them to pay attention to the safety of crossing the road on unregulated pedestrian crossings. 128 schools participated in 2019 and there were approximately 500 marked places. Said projects will also continue in 2020.

COMPETITIONS FOR YOUNG PEOPLE OF EDUCATIONAL INSTITUTIONS WERE CARRIED OUT FOR THE SECOND YEAR

The organisers of the creative competition „I♥Life" looked for entries dedicated to the topic of distractions in traffic. The competition was held for three age groups and this year, it was aimed at 3rd to 12th grade students.

Photos or ideas of how to make yourself visible in traffic in an interesting and creative way were sought in the competition "Outstanding Estonian Resident". The keywords in this year's competition were care and innovation, and students could take part by themselves or with a friend.

RECOGNITION OF BEST CONTRIBUTORS TO ROAD SAFETY

It is great to see that the cooperation network in traffic education has expanded considerably over the years and the goals are even bigger. The Prevention Department would like to include more volunteers, especially those who are role models with their traffic behaviour and find that contributing to road safety is important.

The outstanding people who have promoted road safety have been noticed and recognised for a decade. Outstanding promoters of road safety were honoured at Kuremaa Castle on 28 November 2019.

The objective of the road safety award is to show our appreciation and gratitude to the people and organisations who have stood out with their work or activities in the organisation of traffic education and promotion of traffic safety at their institution or in their region.

The regional and national awards were presented in seven categories: local government, responsible company, road safety role model, surprise in road safety, partner, event, teacher (incl. pre-school and school teachers, driving school instructors and traffic trainers, youth workers and volunteers).

ROAD SAFETY CAMPAIGNS

DISTRACTIONS

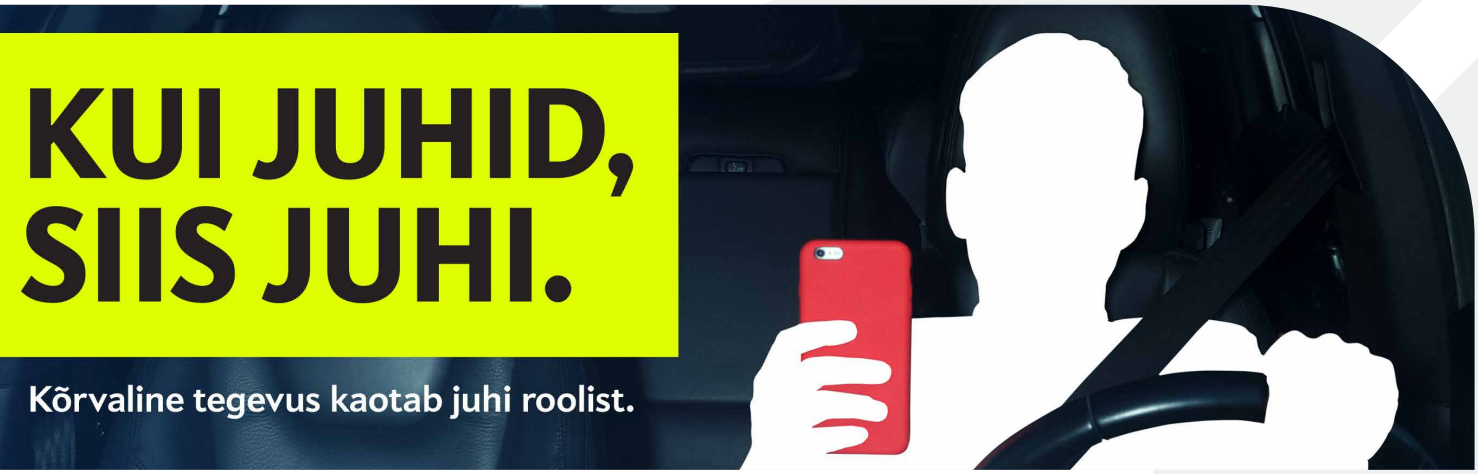
Road safety campaign "If you're driving, then drive!"

The campaign "If you're driving, then drive!", which draws attention to the dangerousness of distractions, was held from 16 September to 13 October 2019. The objective of the campaign was to make road users remember that letting yourself be distracted by other activities when driving is dangerous and people cannot do two things that demand attention at the same time without mistakes, meaning that the driver basically disappears from behind the wheel.

Surveys have indicated that if a driver speaks on the phone when driving, the decrease in their ability to acknowledge and perceive their surroundings is the same as after drinking two or three glasses of wine. Speaking on the phone when driving reduces the driver's focused field of vision by half. A driver who is texting whilst driving moves their glance from the road for five seconds on average, but the situation in traffic can become dangerous in a fraction of a second.

TV and radio clips, outdoor and online advertising and social media were used in the campaign. Messages were also communicated on in-store radios and at cinemas.

The survey carried out after the campaign indicated that 72% of motor vehicle drivers noticed the campaign.



DRUNK DRIVING

Road safety campaign "Don't Let Your People Drive When Drunk!"

The information campaign "Don't Let Your People Drive When Drunk!", which was a follow-up to the earlier campaign "Don't Let Your Friend Drive When Drunk!", was held from 10 June to 7 July 2019. The purpose of the campaign was to reiterate that friends and relatives are the people who can prevent those who have been drinking alcohol from getting behind the wheel.

There are a variety of people in every group of friends. Some are more cautious than others. Some are more sober than others and realise that getting behind the wheel when drunk is a bad idea. Unfortunately, they don't always have the courage or decisiveness to keep others in check. The purpose of the campaign was to encourage them by giving them a reason and justification for intervention.

Alcohol increases bravado, restricts the field of vision and reduces reaction speed and coordination. Alcohol also deteriorates the ability to perceive and assess speed, time and distance, reduces the ability to focus and increases tiredness.

TV and radio clips, outdoor advertising and social media were used in the campaign. Messages were also communicated on in-store radios, at cinemas and in the service centres of the Police and Border Guard Board. Shelf talkers in Selver supermarkets and Stockmann were also used. The website of the campaign was kainejuht.mnt.ee.

The survey carried out after the campaign indicated that 62% of the population noticed the campaign.

CROSSING THE ROAD

Road safety campaign “Sina oled ettenäitaja, et tema oleks ettevaataja” /You Are the Example, So They Will Be Cautious/

The Road Administration organised the road safety campaign “Sina oled ettenäitaja, et tema oleks ettevaataja”, which is mainly aimed at parents, for the second time from 13 August to 9 September 2019. Its aim was to remind adults that they have the biggest role in the development of the traffic behaviour of children and that their behaviour is an example to children. Every child must know that before crossing a road, they have to stop, look both ways and make sure that it’s safe to cross the road either as a pedestrian or cyclist.

Parents must understand that children need practice in order to cope in traffic, which is why the week of 26 August to 1 September was dedicated to participating in traffic as pedestrians with children. Parents were invited to participate in traffic as pedestrians with their children as much as possible and teach them how to cross the road safely. The “Liiklustarga liiklusnädal” traffic week, which was aimed at popularising safe walking and cycling and encourage parents to teach their children how to stay safe in traffic was held in pre-schools from 9 to 13 September.

5th and 6th grade students marked the reminder “Stop, Look, Be Sure!” at road crossings mapped by them for the fourth time in autumn 2019. TV and radio clips, outdoor and online advertising and social media were used in the campaign. eKool was also included as an information channel. The campaign website was ettenaitaja.mnt.ee. The campaign also won the clear message award in the category of best consumer text with a clear message and consumer image.

The survey carried out after the campaign indicated that 58% of the population noticed the campaign.

SINA OLED
ETTENÄITAJA,
ET TEMA OLEKS
ETTEVAATAJA.

Meil kõigil on laste liikluskäitumises oluline roll.
Peatu, vaata ja veendu, et oled hea eeskuju.

SPEED LIMIT

Road safety campaign “Take Time, Not Lives! Please Stick to the Speed Limit.”

The speed campaign “Take Time, Not Lives!” was on air from 23 April to 20 May 2019. Its aim was to make road users understand how serious and irreversible the consequences of speeding may be.

The campaign told the real stories of two families. Külliki lost her father and her children’s grandfather in an accident where speeding played a major role. Madis’ brother Siim and brother’s girlfriend Maili were also killed in a traffic accident where one of the major causes was speeding.

Speeding does not affect one risk component alone, but has a domino effect of many factors. The driver’s field of vision shrinks as speed increases and the driver is therefore unable to notice everything ahead of them, and the vehicle’s braking distance and time also become longer. Even if we think we only exceed the speed limit a little, we put ourselves and other road users at risk. You should take time, not lives, when driving.

TV and radio clips, outdoor and online advertising and social media were used in the campaign. Messages were also communicated on in-store radios, at cinemas and in the service centres of the Police and Border Guard Board. The campaign website was kiirus.mnt.ee.

The survey carried out after the campaign indicated that 55% of vehicle drivers noticed the campaign.

The opening of the Machine Hall increased the interest of visitors on roads. In addition to exhibitions, the new building can be used for cultural events and seminars.

ESTONIAN ROAD MUSEUM

The doors of the new Machine Hall in the museum opened in July, as did the permanent exhibition "The Rule of the Machines". This was another major development of the museum that took more than five years and was financed by the Road Administration and European support funds.

The exposition, which is dedicated to cars, road safety and road construction machinery offers 1500 square metres of excitement, 120 tons of equipment and unmeasurable contributions of specialists.

Kadri Valner and Karl Saks were the project managers of the development, Paavo Kroon was the curator of the exhibition and Andres Seene, Annika Kupits, Rain Rikas and the whole museum family took care of the content. The building was designed by Salto Arhitektuuribüroo and built by Eviko AS, the exposition design was made by Produktsioonigrupp OÜ and it was built by TM Development OÜ and RMK-Invest OÜ.

The exhibition's ambiguous title "The Rule of the Machines" marks the controversial relationship of power between cars and their drivers and introduces life in Estonia over the last decade. A trip down the memory lane for Estonians and the joy of discovery for foreign visitors.

The new building, partly built on the structures of the old hall, helps introduce the topic with three expositions:

Journey through the rule of cars shows how cars turned from luxury items into commodities and the rise of the importance of cars in society.

Road machinery exhibition is a proud overview of the best works of Estonian machine engineers as well as road construction giants from the Soviet Union.

The **interactive exposition of the Traffic Education Centre** gives an overview of car mechanics and the rules of physics in traffic, road safety and the construction of safe roads.

The new permanent exhibition of the museum won the title of Deed of the Year in the field of support of the Road Administration. The Museum Council of the Ministry of Culture selected it as one of the most outstanding and best permanent exhibitions of 2019.

RESEARCH AND EXHIBITIONS

In recent years, the research and exhibitions of the museum have focused on the car culture and road construction in the 20th century. The book "The Rule of the Machines. A Small Guide to the History of Cars and Traffic Culture" was compiled for the opinion of the Machine Hall on the basis of the materials of the new permanent exhibition. The history of one of the icons of the 20th century – the car – was opened to readers with a series of articles in the magazines *Imeline Ajalugu* and *Teeleht*.

As the new centre can be used to organise events for up to 150 people, the first international conference "Man and Machine" was held here in September. In addition to Estonians interested in the history roads, the conference was attended by road museum employees from Latvia, Finland, Sweden, Poland, Iceland and Norway.

Although the museum's small team and their helpers dedicated five years to the exhibition "The Rules of the Machines", we also opened six temporary exhibitions in 2019. As it was the year of the Song and Dance Festival, the museum linked two of them to this significant event in the cultural history of Estonia that started 150 years ago. The summer season was opened by the nationwide time journey "Choir Bee of 1869". This was supported by the moments photographed with a 150-year-old camera for the exhibition "Singers Now Going", which introduced all the means of transport used by people to go to the festival in different times.

The basement exhibition "Journey to Tartu – 1869" retraced the various roads taken by people to get to the first festival in Tartu,

The new permanent exhibition "The Rule of the Machines" introduces the last century in the era of cars and invites you to take a closer look at the 'inner lives' of machines.

how long their journeys were and what kind of emotions the people experienced.

The museum organised a mini exhibition for the professional skills competition of public road maintenance vehicle drivers that was first held in 1973 and an exhibition of major past achievements was prepared for the 70th jubilee of the Tartu Car Repair Pilot Plant.

In summer, the main attraction for visitors was the 10 motorcycles produced in the Soviet Union from 1947 to 1971, which comprise almost all of the collection of light motorcycles and were fixed by the museum's restorer Üllar Meho..

VISITORS

Although the museum was only partly open until the end of June, the opening of the Machine Hall and people's interest in this increased the number of visitors to 32,000. The museum team are happy that up 1500 people per month came to learn about the history of roads even in autumn, which is usually the quiet season.

The Road Museum as a thematic museum can deal with many areas that interest its visitors. This is why the traditional museum night "Patterns in the Night" was popular as always and attracted 1200 visitors. The other major summer events proved to be just as popular with visitors.

As the employees of the Road Museum are used to organising major events, we helped the Ministry of the Interior to organise a crisis seminar during the working week of state employees in Southeast Estonia. The employees of the Road Museum consider it important that this takes place in their yard, as roads and their usability are important in times of crisis.

One of the museum's traditions is to celebrate Grandparents' Day with a parade of old vehicles. The jubilee of Jawa motorbikes was celebrated this time.

EDUCATION

In 2019 the museum offered 10 educational programmes to various age groups from pre-school children to adult learners.

There were 122 museum lessons in total, which were attended by 2605 people. The focus in the establishment of new museum lessons was on the machine hall exposition, especially on the programme "Man – Master of Machines?" The two-day children's camp organised by the museum's programme manager Kerle Kadak was a new initiative. Children's Traffic Conference IV proved to be popular again, this time focusing on smart traffic and road safety on streets and railways.

SEVERAL TONNES OF MATERIAL ADDED TO MUSEUM COLLECTIONS

474 items were added to the museum collections in 2019. The majority of the items were records and photos.

Many of them are of particular interest. For example, the museum received old road passes and the walking excavator Schaeff HS40 from OÜ ÜLE and purchased the tipper ZiL-555 from a private individual and road grader Corbex-Vammas CG-18 from the TREV-2 Group. This grader, which was made in Estonia in 1993 after the restoration of independence, bears the factory marking 001.

Restorer at the museum Üllar Meho streamlined the collection of small-displacement motorbikes for exposition, restored the motorbike IZH Jupiter 4 and carried out restoration repairs of the carts in the outdoor area.

The restoration of a road marking machine on the basis of M-403 and GAZ-53 was a complicated job completed outside the museum.

Corbex-Vammas CG-18, the first road grader made in Estonia after the restoration of independence, which was built in Kohila in 1993 and is marked with factory number 001, is now part of the museum's assets.

DEEDS AND PEOPLE
OF THE YEAR 2019

DEED OF THE YEAR 2019

Design and completion of the construction of Veskitammi traffic junction on km 13-13.7 of National Road No. 4 Tallinn-Pärnu-Ikla

Everyone who has visited the centre of the Road Administration in the last two years has come into contact with this site, which is passed by ca 32,000 cars per day. This site was a challenge to the entire Road Maintenance Department of the region and probably also to the other relevant departments of the Road Administration. The end result is impressive and the project management and completion of a site like this certainly deserves attention.

Relocation of a protected flower, i.e. the lady's slipper orchid, and rescue of the Võõbu-Mäo road project

In summer 2019, it suddenly became evident that one of the best habitats of the lady's slipper orchid (*Cypripedium calceolus*) in Estonia, in the Võõbu forests, had not been taken into account in the design and environmental impact assessment of the Kose-Mäo road section of the Tallinn-Tartu-Võru-Luhamaa road. As a result of the quick and efficient action taken by the Environmental Board, Professor Tiiu Kull of the University of Life Sciences and the head of our Environmental Unit Villu Lükk, the 90 lady's slipper orchids growing there were safely replanted in Kullamäe. However, the exact location of this mysterious place will remain a secret!

Road crossing campaign of the Road Administration "Sina oled ettenäitaja, et tema oleks ettevaataja" /You Are the Example, So They Will Be Cautious/

The objective of the campaign "Sina oled ettenäitaja, et tema oleks ettevaataja" /You Are the Example, So They Will Be Cautious/ was to make people realise that the way children behave in traffic is often a reflection of the behaviour of the adults around them. The campaign emphasised that a parent being a good role model and practising safe behaviour in traffic helps make a child's walk to school safer. The campaign included the first week of participating in traffic as pedestrians with children, which was aimed at encouraging parents to practice correct behaviour in traffic.

Road Museum – completion of the Machine Hall and its exhibition environment

We opened the new Machine Hall of the Road Museum and its new permanent exhibition "The Rule of Machines" in 2019. The exhibition building, which is built partly on the structures of the old hall, is divided into three sub-expositions in terms of space and concept. The interactive traffic education exposition can be found in the central, heated part of the hall, and road construction machinery and cars are placed along the sides of the hall. The exhibition's title "The Rule of the Machines" marks the controversial relationship of power between cars and their drivers.

PERSON OF THE YEAR 2019

Tiit Vunk – Project Manager, Infrastructure Development Department

Tiit has been a Project Manager at the Road Administration for 11 years. The quality of the road projects ordered by the Road Administration is good and they are completed by their deadline thanks to the work done by him. Tiit is valued by his colleagues and cooperation partners alike because he is focused on solutions, professional, highly committed and capable. Tiit is also extremely helpful and always happy to share his knowledge and experience with colleagues.

Reimo Tarkiainen – Analyst, Strategic Planning Department

30 years ago, Reimo would have been called a mechaniser. He knows and understands the possibilities of technology and uses them very successfully for solving complicated tasks and for the automation of routine functions. Reimo is helpful and his activities are always aimed at the achievement of goals. Unlike your average hacker, he knows how to explain what he's done and document it in such a manner that it can always be understood, even after many years.

Sulev Vill – Chief Specialist, Vehicle Registry Department

Sulev is the stand-out man at the Road Administration. He has been working for the Road Administration (including its legal predecessors) for more than 28 years. He always supports his colleagues, including the employees of the service bureaus, in any way he can. Sulev is so helpful that he will go and help others even if it means he has to put his own work on hold for a while. He is very diligent and committed, and his colleagues appreciate and value him highly!

Kai Simson – Communications Expert, Public Relations Department

Kai deserves recognition for being systematic, conscientious and highly capable. She is a reliable colleague who never forgets to do what she's promised to do, she is an expert in her field and respectful of others and makes every effort to achieve the common goal. Kai herself has said that she's happy when she feels that she has contributed and made an effort to get the best coverage for the topics of road maintenance or construction, and she has been successful in this – what she does helps our people.

EXAMINER OF THE YEAR

Taavi Lillepärg

Taavi stands out with his constructive attitude towards work and is clearly focused on solutions; he often suggests various ways of improving work and making it easier, even without being asked. The score he achieved for the last qualification test was excellent, which highlights his high professionalism.

BEST CUSTOMER SERVICE EMPLOYEE

Elli Elva-Päll

Elli Elva-Päll has great communication skills which allow her to easily build a rapport with clients and colleagues. The number of operations completed by her is the highest among all chief specialists and her reputation for spotting forgeries is equivalent to that of a document expert. Under her leadership, the entire team works hard to detect signs of forgery on foreign driving licences and spot any differences from the specimens.

BEST PRE-REGISTRATION INSPECTOR

Jaak-Valter Lõhmuspuu

Jaak-Valter Lõhmuspuu is curious and thorough and takes advantage of every opportunity to learn. He also enjoys participating in everything the team does. He is the youngest pre-registration inspection specialist and the 2148 pre-registration inspection certificates and type codes prepared by him stand out for their level of detail and accuracy.

ENGINEER AADU LASS
ROAD SECTOR AWARD

On 5 November 2019, the Road Administration and the Asphalt Pavement Association declared the recipients of the Aadu Lass Road Sector Award for the second time. The Aadu Lass Engineering Award went to Märt Puust and the Lifetime Achievement Award to Koit Tsefels.

WINNER OF ENGINEERING AWARD
MÄRT PUUST

Märt Puust has been working in the road sector since 1995. He has been the Assistant Director-General of the Road Administration and the CEO of the Asphalt Pavement Association. Märt has been working as the ITS Project Manager in AS Teede Tehnokeskus since 2015. He has focused on road weather for the last 20 years and his contribution to the establishment or development of the Estonian road weather station network and road maintenance support system is difficult to underestimate. There is no doubt that Märt is the best expert of road meteorology in Estonia, his knowledge is valued and recognised by the best known Estonian weather forecasters as well.

The online environment of the Road Information Centre (Teedeinfokeskuse, TIK), which has become an extremely important tool for all public road maintainers, has been developed under the leadership of Märt over the last three years. One of the main values of the Road Information Centre is forecasting the condition of the road surface, which allows road maintainers to make the correct decisions when performing winter maintenance. This system makes it possible to change de-icing into preventive de-icing, which may save the life of a road user.

LIFETIME ACHIEVEMENT AWARD
KOIT TSEFELS

Koit Tsefels was born in 1946 to the family of roadmaster Kirill Tsefels in Paunküla, Järva County. He caught the road builder's bug from home and has also passed it on to his son and daughter, who are both working in the road sector at present. In 1967 he graduated from the School of Construction Mechanics (now Tallinn University of Applied Sciences) and in 1972 from Tallinn Polytechnical Institute (now Tallinn University of Technology). Koit started his career in TREV-2 even before enrolling in university and worked as a roadmaster and head of department in the Tallinn Road Use Administration. Later as the Deputy Director and Chief Engineer of Harju AS TREV. He ended his career in the position of Deputy Director-General of the Road Administration in 2010 after being the acting Director General of the Road Administration for six months.

Koit's biggest achievement is turning the socialist-era road system into one that corresponds to the model of contemporary society. His contribution to the reformation of the modern Road Administration as an organisation and the development of the road maintenance system is priceless. The privatisation of road maintenance works started on his initiative. Road maintenance regions were assigned to companies for five to seven years by way of public procurement. The long terms of the contracts allowed the companies to acquire contemporary equipment. The adopted principle was that if private companies can do something better and more efficiently, the state has to give it up, even though there we people who doubted and opposed this both here and in our neighbouring countries.

The doubters now also understand the importance of this major change. The Road Museum and the Road Information Centre were established on the initiative of Koit. Now retired, he is organising a roundtable for the Road Administration with his former colleagues in order to contribute to the development of road management in the Republic of Estonia.

The recipients of the awards were chosen by a nine-member jury formed by the Asphalt Pavement Association and the Road Administration. The objective of the award is to promote the profession of road engineer, value professional activities and outstanding achievements and recognise the engineers who have shown commitment to the area of roads and influenced the development of this field.

Aadu Lass worked in the Estonian road sector for 50 years. He was the chief engineer of Estonian roads for 33 years – a career which started at a time when major changes were occurring in the Estonian road sector. Aadu Lass worked with passion, commitment and conviction to guarantee the even development of the Estonian road network.

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