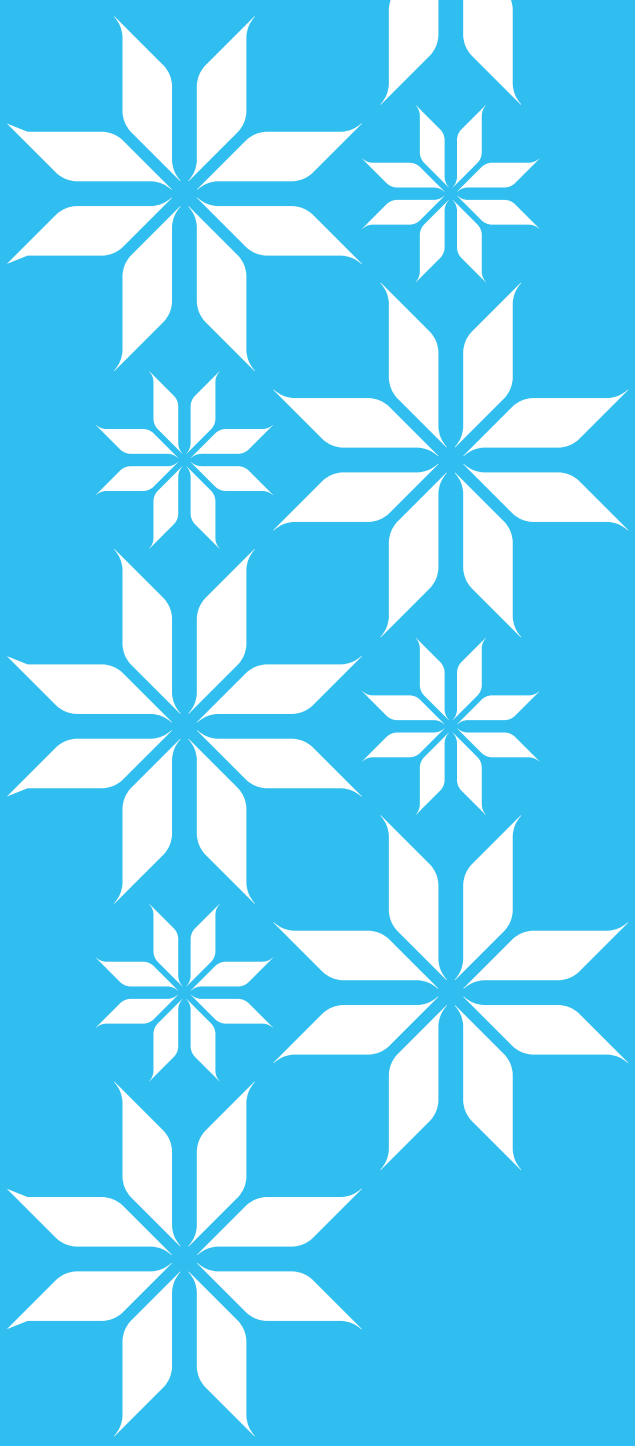

Republic of Estonia
Transport Administration

# YEARBOOK | 2020

**Content assembled with the help of OÜ Meediapilt**
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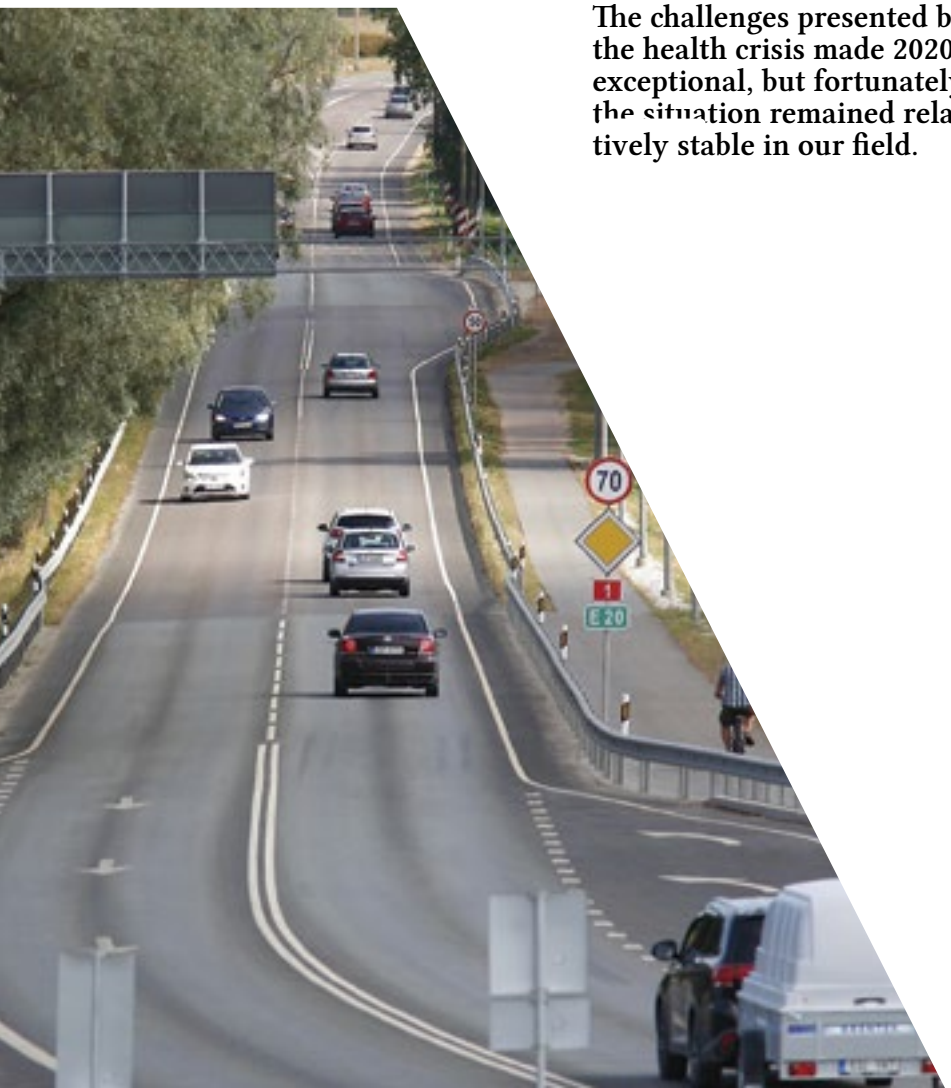
# ***Raido Randmaa:*** *An exceptional year that brought with it exceptional challenges*




**The challenges presented by the health crisis made 2020 exceptional, but fortunately the situation remained relatively stable in our field.**

We continued to invest in national roads, our objectives and plans were fulfilled and we found additional funding. At the same time, an entirely new world of work organisation was established when, one Friday in March, we were informed that we would be working from home starting from the following Monday.

Our employees managed to adapt and respond very quickly: we successfully learned to work from our home offices.

**The Traffic Service's year**

The Traffic Service experienced the greatest changes due to the crisis: bureaus had to be closed and driving tests suspended without notice, leading to long waiting lists. We had to find a way of offering services again. Within two weeks, chairs were being placed just behind the doors of our bureaus on or from which people could leave or collect documents.

We introduced a mobile test room to conduct national theory tests, and the possibilities it offers are being used to this day. The opportu-

nity to take the test outdoors was a major change, but it became possible thanks to tablets.

When we started to conduct driving tests again, it did not take us long to reduce the three-month waiting lists to just one month. The way the Traffic Service has handled the two waves of the crisis has been a real success story.

The crisis also boosted the use of the e-channels of the Road Administration: the initial goal for the year had been to carry out 67% of our operations via our e-channels, but the actual result was 77%. People had no other choice and adapted to the new situation very well, which rendered the result 10% more successful than planned.

**Strategic Planning Service**

The greatest achievement of the Strategic Planning Service was the renewal of the Road Maintenance Plan approved by the government, along with the implementation plan of the traffic safety programme. Progress was also made with PPP projects, for which procurement documents and contracts will soon be able to be drawn up. We have struggled with establishing a demerit point system: those who break the law more will receive demerit points that lead to stricter punishments. The idea had been awaiting approval for a long time. We had to come to an agreement with two ministries in this regard, which we did by the end of 2020. The traffic committee also decided to pursue the idea further, so more work lies ahead.

We were recognised for our achievements: Estonia was presented with the EU Road Safety Award on 17 June. This confirms that our endeavours and activities in connection with improving road safety are being noticed. The numbers reflect a trend in the right direction: nearly 500 people died in traffic accidents every year in the early

**Raido Randmaa**
ACTING DIRECTOR GENERAL OF THE ESTONIAN ROAD ADMINISTRATION

**We can only be satisfied when no one is dying or being seriously injured on our roads, which is the fundamental idea behind Vision Zero.**

1990s. Just 10 years ago that number was still 100, but the average in the last three years has dropped to 60. However, this does not mean that we can rest on our laurels. We can never forget that every traffic accident involves someone's life, their health, and the suffering of those close to them. We can only be satisfied when no one is dying or being seriously injured on our roads. This forms the basis of our approach to traffic safety: Vision Zero.

**Road Maintenance Service**

The Road Maintenance Service dealt with several large sites: the Kose-Võõbu section on the Tallinn-Tartu road and the Rõmeda-Haljala section on the Tallinn-Narva road were completed; 14 km of roads in the Setomaa region were maintained with a cross-border project of Estonia and Russia; and more. We are glad that the necessary measures were taken on construction sites, preventing coronavirus from interfering with our work.

Work volumes were large and we should praise everyone who contributed, as the completion of projects on this scale is always a collective achievement.

Maintenance crews also made an effort and adhered to requirements. Although one region was strongly affected by coronavirus in spring, we still managed to find reinforcements.

**Key connections**

2020 also brought with it better connections for the residents of Estonia. A contract was entered into with a new carrier to operate the Tallinn-Kuressaare air route with a larger plane with 48 seats.

A direct contract for public services was entered into in order to connect small islands: AS Kihnu Veeteed will operate the routes Kihnu-Munalaid, Kihnu-Pärnu, Munalaid-Manilaid, Sõru-Triigi and Rohuküla-Sviby for the next five years.

2020 also marked the end of an era in road construction: the Transport Administration was established in 2021, combining the Road Administration, the Maritime Administration and the Civil Aviation Administration. Our support services have made a huge contribution, determining our statutes, structure and staff and drawing up and approving the necessary documents. The pace of work was unbelievable, particularly in the last quarter of 2020.

*A big thank-you to all of you for your collective effort!*

# Implementation of the Road Administration's budget

**The Road Administration is a state authority under the administration of the Ministry of Economic Affairs and Communications. It is tasked with organising the maintenance of national roads, planning the mobility of people and vehicles and ensuring traffic safety.**

**The main activities of the Road Administration are performed by the Strategic Planning Service, the Road Maintenance Service and the Traffic Service.**

**The main tasks 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 transport;
- conducting supervision and misdemeanour proceedings in compliance with the requirements of legal acts regulating its area of activity and applying the enforcement powers of the state;
- maintaining 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 its area of activity;
- representing the state in international communication within its area of activity; and
- collecting, researching, preserving, organising and introducing to the public any materials that 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 Service, the Road Maintenance Service and the Traffic Service, each headed up by a director who reports to the Director General. Support services are provided by department managers and the General Manager of the Estonian Road Museum, who also report to the Director General.

**Majority of budget spent on preservation and development of road network**

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 amounted to 26.5 and 20.1 million euros in 2020, respectively. The main sources of funding expenses and investments are state revenue and external funds. The total amount of the investments made by the Road Administration last year was 174.3 million euros, 12% or 20.3 million euros of which was financed from external funds.

Operating expenses were 135.1 million euros, 27% or 36.1 million euros of which were national road maintenance expenses and 54% or 72.6 million euros of which were grants for the organisation of road, water and air transport.

Resources allocated for the preservation and development of safe and

# Implementation of Road Maintenance Plan investments in 2020

• In thousands of euros, with VAT **(incl. external funds).**

| Name of measure | *National Road Maintenance Plan 2020-2030 | Source of funding | Budget as of 31 December 2020 | Implementation of budget | Implementation % |
|---|---|---|---|---|---|
| Maintenance repair of gravel roads | 8600 | National funds | 8160 | 9354 | 115% |
| | | **Total** | **8160** | **9354** | **115%** |
| Maintenance repair of paved roads | 20,500 | National funds | 19,137 | 18,846 | 98% |
| | | **Total** | **19,137** | **18,846** | **98%** |
| Restoration repairs to paved roads | 21,200 | National funds | 28,822 | 27,384 | 95% |
| | | **Total** | **28,822** | **27,384** | **95%** |
| Restoration repairs to bridges | 6000 | National funds | 5941 | 5765 | 97% |
| | | **Total** | **5941** | **5765** | **97%** |
| Reconstruction | 43,700 | National funds | 50,911 | 54,978 | 108% |
| | | External funds | | 419 | - |
| | | **Total** | **50,911** | **55,397** | **109%** |
| Preparation of projects | 10,400 | National funds | 12,032 | 5197 | 43% |
| | | **Total** | **12,032** | **5197** | **43%** |
| Noise barriers | 500 | National funds | 485 | 40 | 8% |
| | | **Total** | **485** | **40** | **8%** |
| Reconstruction of accident blackspots | 6000 | National funds | 5746 | 7121 | 124% |
| | | External funds | | 142 | - |
| | | **Total** | **5746** | **7263** | **126%** |
| Programme for making national gravel roads dust-free | 15,500 | National funds | 20,076 | 15,161 | 76% |
| | | External funds | 850 | 791 | 93% |
| | | **Total** | **20,926** | **15,952** | **76%** |
| Other investments in roads | | National funds | 980 | 326 | 33% |
| | | **Total** | **980** | **326** | **33%** |
| Construction | 70,000 | National funds | 35,294 | 34,947 | 99% |
| | | External funds | 26,640 | 22,487 | 84% |
| | | **Total** | **61,934** | **57,434** | **93%** |
| **Total** | **202,400** | **Total** | **215,074** | **202,958** | **94%** |

well-functioning road infrastructure constitute the majority of the budget. In addition to ongoing maintenance, the costs of repair measures also form part of preservation.

Development includes road construction, the sealing of gravel roads, the establishment of noise barriers and the renovation of sites that pose a traffic hazard. One of the priorities of the traffic area is connected to the latter: the implementation of the road safety strategy. The expenses of service bureaus make up the largest part of the cost base in the field of traffic.

In recent years, the Road Administration has invested more in e-services in order to boost efficiency and the quality of services.

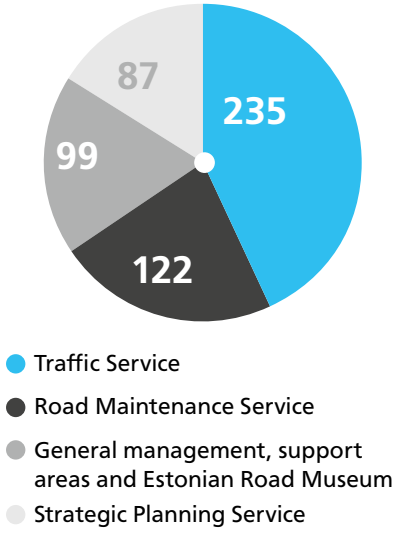
**174.3**

**million euros was the Road Administration's volume of investment.**

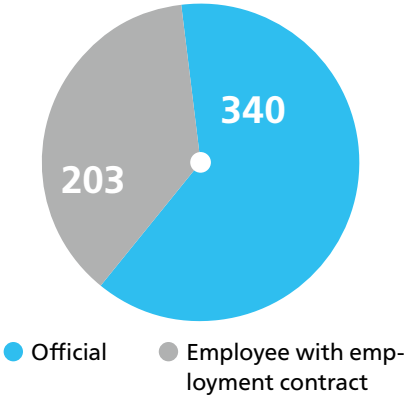
# Staff in 2020

The number of positions in the Road Administration in 2020 was 543. The employment relationships of the administration as a public-sector agency are governed by either public or private law, so staff are divided into 203 positions and 340 positions based on their employment contracts.

**In 2020, the 543 positions in the Road Administration were divided between four services as follows:**




**Division of staff by group:**




Employee turnover decreased significantly compared to 2019, amounting to just 8%.
The Road Administration hired 57 new employees in 2020.

# Significant structural changes

In addition to preparations for the merger of the administrations, the most significant structural change was implemented on 1 April 2020 when the Ministry of Economic Affairs and Communications confirmed the new number of staff as 543 and established seven additional service positions in order to focus more on the following:

**1.** Preparations for the reconstruction of the Tallinn-Narva, Tallinn-Tartu-Võru-Luhamaa and Tallinn-Pärnu-Ikla roads as four-lane roads
**2.** Cooperation in connection with the construction of viaducts crossing the Rail Baltic route, owner supervision and auditing of safety
**3.** Increasing the volume of covering national gravel roads with a dust-free surface

# Impact of coronavirus

Due to the state of emergency caused by coronavirus, the Road Administration faced unexpected challenges.

It became evident that quite a few of our services that had not been considered vital to that point were needed in order for society to function. For instance, operations in the motor register (incl. the registration of ambulances and tests for drivers of commercial vehicles) are essential for healthcare and trade. The use of the e-service of the Road Administration increased by around 20% in a short time, putting our IT systems to the test. It was important to provide public transport services on county routes, since frontline staff use these services, and in some places additional departures were added to the bus schedules to get them to work and back home again. We also assisted the Police and Border Guard Board in preparing border corridors. These and many other challenges were met through the joint efforts of our staff, and we were better prepared for the second wave of the pandemic in autumn 2020.

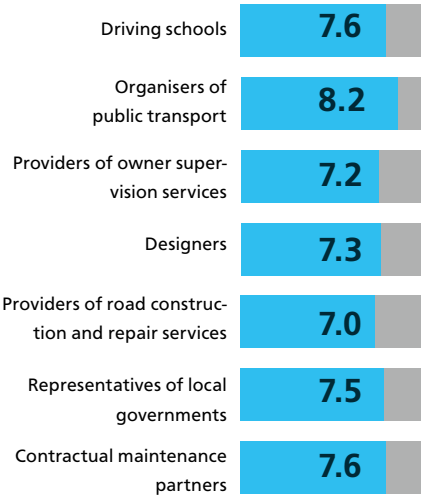
# Satisfaction survey 2020

In 2020, the Road Administration conducted a satisfaction survey among its strategic partners for the first time to find out how happy they are with us as a partner. The detailed survey focused on various aspects depending on the partner, and at the end of the survey our partners assessed their satisfaction with our cooperation on a 10-point scale. We also asked for feedback:

- Does the Road Administration provide sufficient information concerning planned activities that affect your work?
- Does the Road Administration fulfil its promises?
- Are the decisions adopted by the Road Administration clear and understandable?
- Does the Road Administration involve its partners in making decisions related to their fields?

**Satisfaction with the Road Administration as a cooperation partner**

on a 10-point scale



# Deeds and People of the Year 2020

## Siim Vaikmaa

ROAD MAINTENANCE SERVICE

As the head of the Traffic Management Centre, Siim Vaikmaa has taken its work to the next level: various ways of reporting enable road maintenance departments to better organise temporary traffic management. Moreover, 'Tark Tee' is turning into a more functional environment. Siim

## Leeni Langebraun

STRATEGIC PLANNING SERVICE

Leeni is the development manager for the digital collection of road data and has led the digitalisation of road lifecycle data. One of the three TEET developments was completed in 2020 – the design and land acquisition module.

## Crisis staff of the Traffic Service

TRAFFIC SERVICE

The crisis 'reserve' was established following the declaration of the state of emergency. The decisions adopted enabled around 100 companies in the sector to survive the hardest times, preventing a large-scale wave of bankruptcies.

## Erkki Aarma

SUPPORT AREAS

Erkki is a project manager in the field of reporting and measuring results. He developed the administration's reporting environment, Tableau, which enables employees to perform their duties more efficiently and managers to make decisions based on data. It covers an ever-larger part of the administration's activities.

## Completion of Kose-Võõbu section

ROAD MAINTENANCE SERVICE

After decades of planning and designing as well as complex challenges on site in the past three years, the Kose-Võõbu section has at last been completed. Such an integrated road section has never been constructed in Estonia before.

## Demerit point system concept

STRATEGIC PLANNING SERVICE

The demerit point system makes it possible to identify drivers who endanger others. By implementing the system, more than 70 traffic accidents that cause injuries, around 80 injuries and five deaths can be prevented each year.

## How the traffic area coped with coronavirus

TRAFFIC SERVICE

The coronavirus crisis presented the entire sector with challenges that required prompt, smart and innovative solutions. The way these solutions were found through cooperation is a true success story for the Road Administration.

## 'Inspirational mornings'

SUPPORT AREAS

In this series of talks, discussion or contemplation involving an opinion leader who is interesting and inspiring to the whole organisation takes place every month.

BEST CUSTOMER SERVICE SPECIALIST

## Kerli Roosna

Everyone who has had an issue with the service environment or needs to find information or just get some encouraging support knows Kerli. She takes the lead in every task and keeps the team's spirits up using humour. Kerli's way of helping people always raises a smile. Customers are provided with complete solutions, as Kerli is competent in a variety of fields.

BEST PRE-REGISTRATION INSPECTOR

## Vahur Pormeister

Vahur is one of the key figures in the field of pre-registration inspection in Tallinn. He helps his colleagues on complex operations and is a great instructor. His inspection reports are thorough and always correct – he even identified a number of stolen vehicles in 2020. Customers have also praised him for his professionalism and experience.

BEST EXAMINER

## Andres Veski

Andres has been working as an examiner since 2002. As an employee, he is competent and qualified to conduct tests in all categories. He is familiar with current legislation in the field and the other legal acts regulating his everyday work. Andres keeps himself up to date on the latest work-related information and events outside of the Road Administration. Customer feedback on his work has mostly been very positive: his satisfaction index is above 80%. This is the highest indicator in the eastern region.



# *A busy year for the* Surveillance Centre

**The Surveillance Centre of the Road Administration supervised three fields: vehicles, training and roads. A total of 471 national and administrative supervision proceedings were initiated in all fields in 2020, with 24 precepts being issued for the elimination of breaches.**

A total of 40,900 euros of penalty payment warnings were issued in 2020, and the penalty had to be implemented in the case of three supervision proceedings, with 4500 euros being claimed as penalties. 44 contractual penalties in the amount of 12,050 euros were imposed on the basis of contracts under public law within the framework of the administrative supervision of roadworthiness testing centres. In addition, 10 misdemeanour proceedings were carried out, seven of them resulting in a fine. Fines were imposed in the amount of 1020 euros.

## VEHICLES

Vehicle supervision includes:
- administrative supervision of roadworthiness tests;
- state supervision of the conformity of motor vehicles with type approval;
- state supervision of the determined technical services;
- state supervision of compliance with the requirements imposed on vehicles and their parts, system, equipment or separate technical unit (market surveillance);
- state supervision of the installation, repair and inspection of tachographs.

**The following was carried out in the field of vehicles in 2020:**

- 149 roadworthiness tests. One precept with a penalty payment warning of 1000 euros and 44 contractual penalties in the amount of 12,050 euros were imposed on the basis of contracts under public law.

Shortcomings identified: video recording missing or incomplete; the vehicle's data in the motor register (ARIS) were not opened at the beginning of the test; activities were carried out beyond the field of view of the recording devices; shortcomings were not listed on the certificate or the inspection was incomplete.

- 35 proceedings in the field of market surveillance. Two precepts were issued with penalty payment warnings in the amount of 6000 euros. As the market for vehicle spare parts and equipment is large, the LED light bulbs used in headlights, child-restraint seats, L-category vehicles, frontal protection systems and a Peugeot 5008 motor vehicle were inspected. Shortcomings identified: no type approval for products.
- 11 product safety notices from the Tax and Customs Board were dealt with within the framework of market surveillance: nine notices concerning two-, three- or four-wheel vehicles (83). 17 vehicles were not permitted to take to the roads because they had no documentation and/or markings. Moreover, two notices were issued concerning the spare parts of vehicles (29 brake discs and 23 brake blocks) which were not permitted to take to the roads due to the lack of type approval.
- We handled 308 RAPEX (*Rapid Alert System for Non-Food Products*) alerts, most of which were related to vehicle recalls.

RAPEX is an information system for the rapid exchange of information concerning goods that seriously endanger the health and safety of consumers between EU Member States and the European Commission.

- Three inspections of tachograph workshops. Shortcomings identified: periodic checks of tachographs were carried out with invalid accreditation.


Examples of proceedings in 2020: Peugeot 5008 on its way to a compliance check to obtain type approval; the storage of wood in the protection zone of national roads; end-of-life vehicles in the road protection zone and road area; an illegal exit.

## TRAINING COURSES

Training surveillance includes state supervision of compliance with the requirements of the professional and in-service training of drivers, the training of drivers of vehicles carrying dangerous goods and of transport managers. Furthermore, the training of drivers of emergency vehicles and motor vehicles as well as driving instructors and examiners is subject to supervision.

**The following was inspected in the field of training in 2020:**

- 23 professional and in-service training courses for drivers. Three precepts were issued with a penalty payment warning in the amount of 1100 euros. Shortcomings identified: study journals not signed by the teacher and students; timetable on the website not updated; study journals not maintained electronically; no notification of tests sent to the Road Administration.
- Five training courses for drivers of vehicles carrying dangerous goods. Two precepts were issued with penalty payment warnings in the amount of 200 euros. Shortcomings identified: there was no study journal and it was not maintained electronically.
- One training course for a transport manager. No shortcomings were identified.
- Two training courses for drivers of emergency vehicles. No shortcomings were identified.
- 49 training courses for motor vehicle drivers. Shortcomings identified: roadworthiness test of vehicles used for driving lessons not carried out; no instructor's label or indication of driving practice on vehicles. No precepts were issued because the shortcomings were promptly eliminated.
- One training course for instructors of motor vehicle drivers. No shortcomings were identified.

## ROADS

Road surveillance includes state supervision of the construction of public roads, compliance with the requirements for the condition of local government roads, the use of the protection zone of national roads and adherence to protection requirements and to the requirements imposed on companies and competent persons involved in road construction.

**The following was inspected in the field of roads in 2020:**

- The construction of 25 public local government roads (incl. one misdemeanour proceeding). Shortcomings identified: the thickness of crushed stone beds did not correspond to the design; the residual void content of asphalt cores exceeded the permitted limit; exit kerbs were higher than allowed. No precepts were issued because the shortcomings were promptly eliminated.
- 63 checks of compliance with condition requirements. Two precepts were issues with penalty payment warnings in the amount of 7900 euros.

Shortcomingsidentified:potholes/cracks in the road surface; uneven gravel roads; no drainage; restricted visibility (branches in the traffic area); cleanliness of the road surface; manhole cover/shoulder lower/higher than road surface; traffic signs not legible and shifted from position.

Seven presentations were held on the topic of road condition requirements in local governments.

- 107 checks of compliance with the requirements of the protection zone of national roads (incl. nine misdemeanour proceedings). 13 precepts were issued with penalty payment warnings in the amount of 24,700 euros. Shortcomings identified: an illegal exit; non-traffic means of information; littering of the road area; chopping/storing timber without permission + insufficient traffic management; illegal sales activities in the road area; accumulation of soil in a protection zone.

## THREAT FORECAST

In conclusion, the Road Administration has a large number of supervision and surveillance obligations and inspection requirements arising from legislation. Therefore, the Surveillance Centre largely carried out supervision on the basis of the threat forecast prepared according to the priorities of management.

The threat forecast is reviewed every year to ensure the transparency of our activities, to assess the current situation and to intensify/alleviate supervision in certain fields accordingly.

# *Estonia's road network is developing* Existing roads

**The length of national roads in Estonia is 16,668 km, to which 87.6 km of temporary ice roads are added depending on the weather.**

**The increase in the total length of roads was largely due to new 2+2 road sections and their connecting and slip roads being added to the Register of Roads.**

950 km of national roads are E-roads* and 1291 km are TEN-T** roads. 1605 km (9.6%) of public roads are main roads, 2405 km (14.4%) are main connecting roads, 12,530 km (75.2%) are secondary roads and other public roads and 128 km (0.8%) are connecting roads.

The total length of national roads increased by 59 km during the year. This was largely due to new 2+2 road sections and their connecting and slip roads being added to the Register of Roads. The construction of a new 2+2 section on the Kose-Võõbu section of the Tallinn-Tartu-Võru-Luhamaa road, on the Rõmeda-Haljala section of the Tallinn-Narva road and on the Luige-Saku section of the Tallinn Ring Road and the construction of a 2+1 bypass in Kernu on the Tallinn-Pärnu-Ikla road are examples of this.

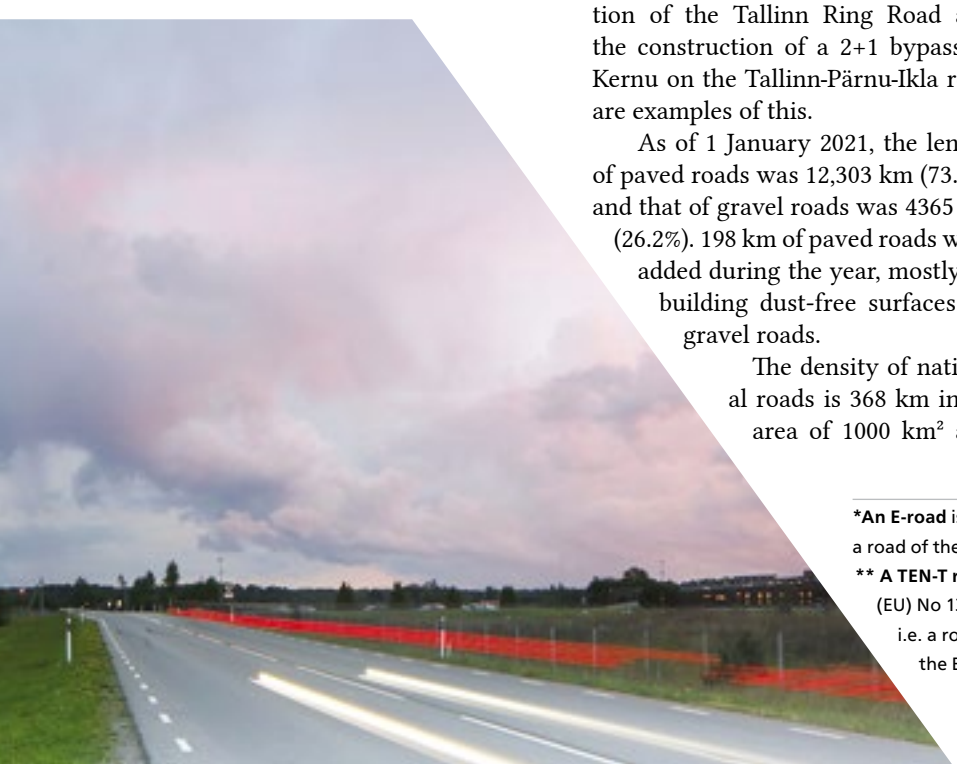
As of 1 January 2021, the length of paved roads was 12,303 km (73.8%) and that of gravel roads was 4365 km (26.2%). 198 km of paved roads were added during the year, mostly by building dust-free surfaces on gravel roads.

The density of national roads is 368 km in an area of 1000 km² and that of the entire registered road network 1301 km in an area of 1000 km². There are 1023 bridges with a total length of 26,370 metres on national roads, including five wooden bridges accounting for 86 metres.

Based on the Building Code, the Register of Roads is used to collect, process, store and disclose data concerning public roads. The register is a web-based national database containing data on both national and local roads.

It is available to all at https://teeregister.mnt.ee. The Road Administration is the controller of the Register of Roads. Data concerning national roads are submitted to it by the Road Administration and those concerning local roads by local governments.

Data are supplemented and new data are added to the register on the basis of acceptance documents for roadworks and additional inventories. Road layers based on the Estonian Topographic Database are used in cooperation with the Land Board. To visualise the data from the Register of Roads on a map, there is a map application in the geoportal X GIS of the Land Board with information about national and local roads.



***An E-road** is a road named by the UN Economic and Social Council, i.e. a road of the European road network in the Building Code.

****A TEN-T road** is a road located in Estonia as specified in Regulation (EU) No 1315/2013 of the European Parliament and of the Council, i.e. a road forming part of the trans-European road network in the Building Code.

## 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-Pskov (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 both an E-road and a TEN-T road at the same time.

**E265 section from 25.095-45.656 km only*

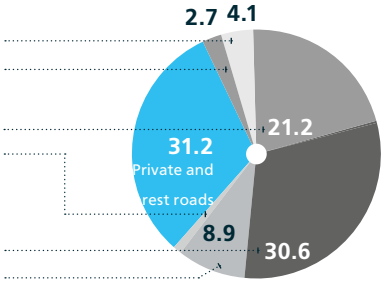
***E265 section and TEN-T network section from 0.000-1.021 km only*

## EXISTING ROADS

km %

| | |
|---|---|
| **National roads** | **16,668** |
| incl. main roads | 1605 |
| basic roads | 2405 |
| secondary roads and other national roads | 12,530 |
| connecting roads | 128 |
| **Local roads** | **23,920** |
| incl. highways | 18,029 |
| streets | 5252 |
| footpaths and cycle tracks | 639 |
| private and forest roads* | 18,398 |
| **Total** | **58,986** |

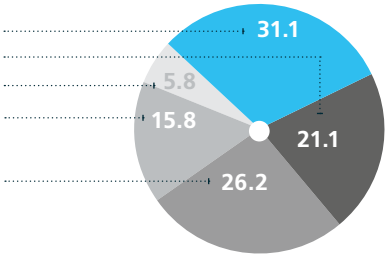
*From the Statistics Estonia website, 31 December 2008




## SURFACE TYPES ON NATIONAL ROADS

km %

| | |
|---|---|
| Asphalt and cement concrete | 5181 |
| Bitumen-gravel | 3517 |
| Ash concrete and stabilised pavement | 964 |
| Surface-dressing gravel | 2640 |
| Stone pavement | 1 |
| Gravel and soil roads | 4365 |
| **Total:** | **16,668** |




# 59 km

**was the increase in the total length of national roads in 2020.**

# Condition and renovation requirements of surfaces of national roads

**The roughness of road surfaces indicates the level of comfort when using the road. Since 1995, the roughness of national roads* (IRI – *International Roughness Index*) has been measured and defects in road surfaces have been recorded. The load-bearing capacity of roads (FWD – F*alling Weight Deflectometer*) has been measured since 1996 and the depth of ruts in the road surface since 2001.**

The measurement of road texture (macro- and megatexture) along with the roughness of road surfaces was introduced in 2011, using a new and more accurate laser device. Since 2014, the depth of ruts has also been measured with a new laser device that can measure the whole area of a lane. Data on the condition of road surfaces are included in the database of the Register of Roads and are publicly available.

The graphs on changes in roughness indicate improvement in the long term on all types of national roads. Old, uneven surfaces have largely been reconstructed on roads with higher volumes of traffic and the repair of ruts caused by wear is underway. Work on repairing the evenness of roads with lower volumes of traffic has been insufficient. The average IRI value of the paved national road network has improved over the years: the level of funds allocated for the construction, repair and maintenance of surfaces has been maintained and the objects to be repaired have been planned efficiently.

While the evenness of main roads is very good and that of basic roads has been regarded as good over the past three years, the IRI indicator of secondary roads remains too high and progress is slower than expected. For road users, this means less driving comfort and greater expenses.

The transport development plan for the period from 2014–2020 aimed to preserve the condition of main roads and improve safety and the smoothness of traffic. The proportion of basic and secondary roads that are in poor or very poor condition had to be reduced. The figure illustrates the changes in road conditions from 2008–2020, compared to the goal for 2020. The objective was a little too ambitious and was not in line with the financial possibilities for repairing road sections in poor and very poor condition. Most of these sections are on secondary roads, which also have the lowest volume of traffic.

## Condition analyses

The condition of road surfaces is analysed (ranking them according to condition, the need for repairs and profitability calculations, etc.) using the computer software EPMS and HDM-4. EPMS is software that was developed in Estonia for analysing the condition of road surfaces, while HDM-4 is internationally recognised as a tool for profitability calculations.

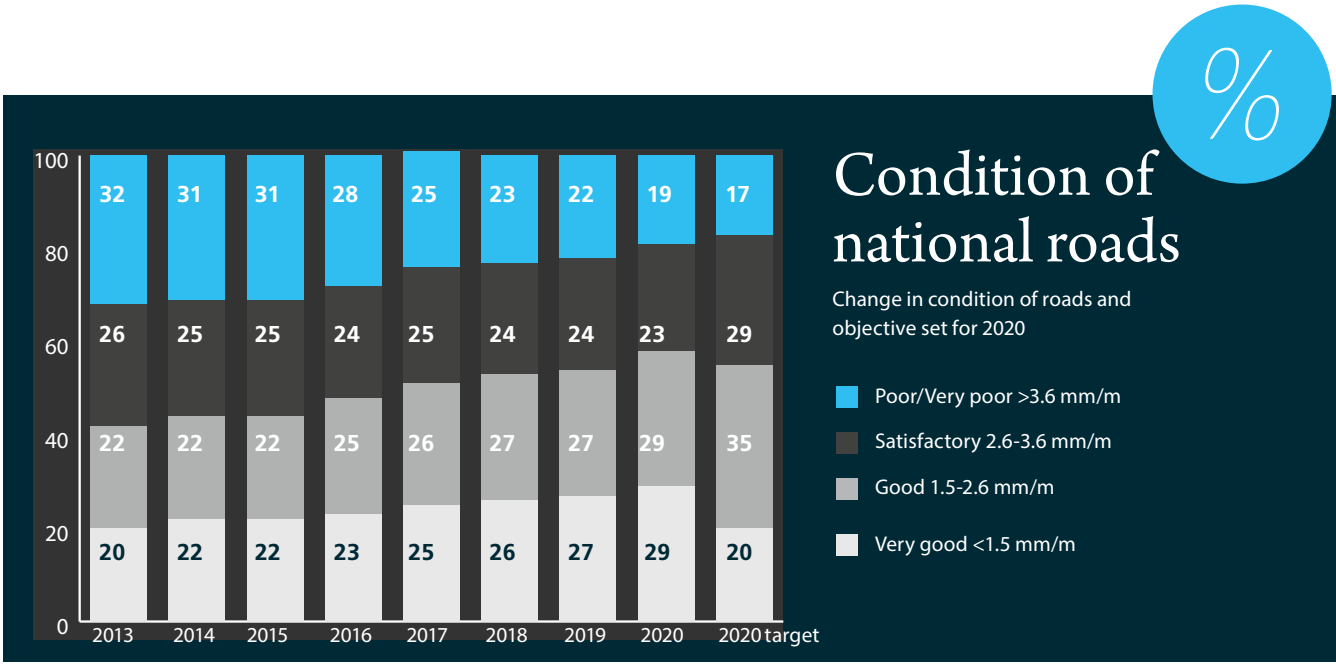
The following analyses are carried out using EPMS to compile the lists of repair types for the Road Maintenance Plan, following the selection principles stated in its annexes:

- analysis of maintenance repairs to paved roads;
- analysis of maintenance repairs to gravel roads;
- analysis of restoration repairs to paved roads;
- analysis of the reconstruction of paved roads; and
- analysis of the construction of surfaces on gravel roads.

Different indicators characterising roads and their condition are used in the analyses, which result in the compilation of rankings of potential sites that serve as the basis of repair lists.

- **Maintenance repairs to paved roads** (mostly surfacing) are a type of repair that aims to ensure the preservation of surfaces using appropriate repair measures, considering the period between repairs and the condition of the surface, as well as restoration repairs or reconstruction and the enhancement of road safety by increasing the adhesion coefficient and improving the road profile.

This type of repair is used on roads where the volume of traffic is generally less than 3000 cars per day, and the criteria used in the analysis are DS (% of all defects), age of sur-




facing (in years) and the MPD value of the surface macrotexture.

- **Maintenance repairs to gravel roads** are a type of repair which aims to improve the passability of gravel roads. The wear-off layer of roads is restored and their water regime may also be improved. The decision criteria are the age of the road (in years), the embankment's level of construction and the occurrence of frost-heaving.
- **Restoration repairs to paved roads** are a type of repair which aims to renew the upper layer of pavement either by repaving it or by milling and re-installing the pavement. The decision criteria include the depth of the ruts in the surface (mm), the age of the surface (in years) and the VAML (% of defects in the upper layer of the pavement).
- **The reconstruction of paved roads** is a type of repair which aims to restore or reconstruct the load-bearing structure of roads, along with replacing or repairing the structures connected to them and improving traffic safety. Uneven and defective roads with insufficient load-bearing capacity need to be reconstructed, since they cannot be restored by means of maintenance or restoration repairs. The decision criteria include the road condition index (roughness + number of defects + depth of ruts), the annual profitability index, the pavement age factor, the deficit in load-bearing capacity, non-compliance with the road class and the heavy-vehicle traffic factor.
- **The construction of surfaces on gravel roads** is a development measure aimed at making gravel roads that see considerable use dust-free by 2030. The indicators used for comparison include traffic volumes, heavy traffic, the existence of bus routes, the impact of dust (the number of front yards in the vicinity of the road) and the number of road users (people living close to the road).

## Repair debt remains

Strategic analyses of the need to fund the maintenance of national roads are periodically commissioned (currently once every eight years) for a period of 30 years. They provide an insight into the current condition of roads, the optimal level and disparities, based on existing conditions and funding. Teede Tehnokeskus AS has been selected to carry out the survey twice by way of public procurement. The most recent analysis took in all national roads and larger structures (bridges and viaducts) and the impact of various budget strategies. The disparity or repair debt of national roads was 689 million euros, which equates to five years according to the current budget. The result of the previous analysis exceeded that, so the level of repair debt has come down in recent years, but there is a long way to go to reach the optimal level. The optimal budget for maintenance measures in the Road Maintenance Plan was estimated at 193 million euros in the 30-year analysis period (2019-2048, in 2019 prices). This exceeds the level of the budget in recent and coming years (around 150 million euros per year). Taking changes in recent years into account, the condition of roads may improve a little, but it will not reach the optimal level, i.e. the expenses for road users will be larger than they might otherwise be and the repair debt will not decrease significantly.

The last survey also revealed the need to develop the road network: the construction of paved and unpaved roads, noise barriers and crossing points for animals amounts to 4290 million euros from 2019-2048. The average budget needed per year is 135-159 million euros, which encompasses bringing national roads into compliance with TEN-T requirements, making gravel roads dust-free by 2030, making the road construction level conform with traffic volume requirements and other investments.

# **Martin Lengi:** *Objectives met*

**2020 flew by for the Strategic Planning Service. We dealt with documents ranging from the Road Maintenance Plan and the Transport and Mobility Masterplan to the implementation plan for the development of public transport.**

The Road Administration supported the development of the new Transport and Mobility Masterplan for the period from 2021-2035. The Ministry of Economic Affairs and Communications worked on it with the help of consultants from the *International Transport Forum*, who modelled Estonian traffic and drew conclusions. In the course of preparing the masterplan, we gained valuable knowledge for creating an Estonian mobility model.

At the same time, we have ambitious goals with regard to a green world view and public transport, so we also prepared an implementation plan for public transport. We received the approval of the mobility plan's steering committee to go ahead with the implementation plan and establish a working group. An important new measure was added to the Road Maintenance Plan to develop public transport and sustainable modes of transport. The development of ITS infrastructure was also outlined, including its measures and funding.

**Road Maintenance Plan updated**

The Road Maintenance Plan pinpointing additional resources for the next two years was approved in December 2020. The Road Maintenance Plan for 2021 amounts to a record-breaking 326 million euros. However, a number of large projects planned for 2024 have been postponed until 2025 and 2026.

**Martin Lengi**
DIRECTOR OF STRATEGIC PLANNING AT THE ROAD ADMINISTRATION

**We pay attention to communicating with local partners so as to make the traffic environment equally safe and understandable on both local and national roads.**

**Infrastructure and investments**

The preparation of PPP projects was also significant in 2020. An analysis was commissioned for the Libatse-Nurme pilot project (incl. cost-benefit and risk analyses) which was completed in the first half of the year. The government's decision in connection with this assured us that we can continue to make preparations for the project. In August we entered into a cooperation contract with the Ministry of Finance to prepare procurement documents for the PPP project and to engage a consultant. The procurement for the consultant was launched that same month. The contract with the PPP consultant will be entered into in early 2021. We would like to find a private partner through the PPP procurement to design, construct, finance and operate the section for the next 20 years.

Progress was also made with the special plan for the Saaremaa bridge, and a Planning Unit was established under the Infrastructure Development Department. The new unit is focusing on preparing infrastructure development projects, setting design conditions and issuing construction permits for Road Administration projects.

The steps taken in the digitalisation of the road lifecycle with regard

# Keywords and significant works and achievements in 2020

- Within the framework of the TEET project, we plan to digitalise the entire lifecycle of roads from design to asset management. The software solution must enable us to collect, manage and access data.
The first of these three parts has already been completed, concentrating on the preparation of projects. Work will continue on the functionalities of construction, maintenance and asset management.
- Preparation of the implementation plan for public transport.
- Participation in the development of the Transport and Mobility Masterplan 2021-2035.
- Preparation of the Road Maintenance Plan.
- Preparation of PPP projects.
- Work on the special plans for the Saaremaa bridge.
- Amending design standards, where preparations are in the final stages.
- Working group on speed limits.
- Road map for self-driven vehicles: it will be years before they arrive on our roads, but we should start making preparations now.
- Renewing the strategy of the Road Administration: its goals are more comprehensive and the level of generalisation is more similar in its dimensions and volumes.
- Developing the concept of demerit points.
- Programme for gathering customer feedback.
- Recognition: Estonia received the EU Road Safety Award.

to the design of a complete system and the acquisition of land should also be highlighted. The completion of the next two components, which focus on construction and asset management, is planned for 2021. In addition, a significant proportion of the new design standards for roads were formulated.

The service volumes of the Infrastructure Services Department continued to grow despite the viral outbreak, in connection with granting rights for amending road infrastructure and collecting road tolls. The volume of the latter increased from 19 million euros in 2019 to 20 million in 2020.

**Working group on speed limits**

The activities of the working group on speed limits focused on four areas in 2020. Firstly, a vision was created with regard to planning maximum speed limits when constructing and reconstructing roads. This issue requires further discussion.

Secondly, the speed limits on existing roads were analysed and a speed model was commissioned for homogeneous sections. This is currently being validated. Work is also underway on a model for intersections. The aim is to harmonise the maximum permitted speed on existing roads.

Thirdly, cases where a speed limit of over 90 km/h can be allowed were analysed. An analysis of 2+2 sections was conducted to determine the parameters that need to be guaranteed in order to raise speed limits. The part concerning 2+1 and 1+1 roads has yet to be completed.

Fourthly, the issue of maintenance requirements for speeds above 90 km/h throughout the year was addressed: the experiences of similar countries were compared and the behaviour of road users was analysed in order to determine the essential requirements. It was concluded that higher speeds (100 km/h) may be allowed on 2+2 and 2+1 roads in winter. It was decided to put this into practice in winter 2020/2021.

**Strategic planning**

The formulation of the mobility vision was an important milestone: the traffic planning paradigm had previously been the focal point, but in the future, the focus should be on the planning of complete journeys irrespective of the type of transport. The vision serves as great input for the Transport Administration. A road map for self-driving vehicles was prepared in order to plan activities that support the introduction of such vehicles.

Last year was also remarkable in terms of safety: Estonia received the EU Road Safety Award for its accomplishments in previous years. The implementation plan for the Traffic Safety Programme was approved at the government level.

This provides a framework for a coordinated effort to achieve the aims of the programme in cooperation with our partners. We worked on the concept of so-called demerit points. Despite the lack of time, we managed to produce good results and found support among the members of the government's traffic committee. We must move forward with the implementation of this concept this year.

We also started gathering feedback from our partners and received assessments of and comments on our cooperation in providing services. The feedback was mostly positive. Exchange of information and engagement of local partners have improved: we have paid attention to communicating with local partners to make the traffic environment equally safe and understandable on both local and national roads. Therefore, we sought to strengthen our partnerships via regional managers.

I would like to thank the employees of the Strategic Planning Service whose knowledge supported the adoption of new ideas and the development of ongoing projects. Important work was accomplished thanks to you.

# ***The year in traffic:*** *Days are not brothers*

**In 2020, a total of 1365 traffic accidents resulting in injuries occurred, in which 1574 people were injured and 60 died. Compared to 2019, the number of traffic accidents decreased by 49 and that of injured people by 166.**

**2020 stands out for its sharp rise in the number of single-vehicle accidents, exceeding the previous year by 43%.**

An average of 3.7 traffic accidents took place every day in 2020. There were 23 days without traffic accidents, compared to 17 the previous year. The number of traffic fatalities exceeded the previous year by eight. The number of deaths has fluctuated in recent years. In the period from 2017-2019, 57 people died in traffic on average.

Last year, the number of traffic accidents was lower than the average of the three previous years in spring, in July and towards the end of the year. The number of vehicles counted on national roads indicates that traffic volumes were lower at the same time.

In March, May and July, the number of vehicles counted at permanent counting points on national roads had decreased by 12-14% in comparison with the same time in 2019, while in April it had dropped by a third. The decline in traffic volume was smaller at the end of the year: just 3-4%. The lower traffic volume and fewer accidents in spring were the result of restrictions that encompassed the whole country, but there is no convincing explanation for this phenomenon in July. It may have been caused by coronavirus and the unusual behaviour of road users during the summer holiday period or the cancellation of summer events, but this is hypothetical.

There were fewer restrictions in November and December, as they concerned only Ida-Viru and Harju counties.

**A tragic January**

Despite the smaller decline in traffic volume at the end of the year, the number of accidents decreased similarly to July. Compared to the average for 2017-2019, the number of accidents in November 2020 was 18% and in December 16% lower. The weather affected traffic to a certain extent: in January and February 2020 there were almost no wintry road conditions, and cycling was possible throughout the year.

The monthly figures for traffic fatalities generally remained between the highest and lowest numbers of previous years. An exception to this was March, when two people died, which is one person fewer than the minimum in previous years. The number of deaths corresponded to the lowest previous indicators during the restrictions in spring and in July. The aforementioned reduction in traffic volume probably had an impact on this.

Traffic volumes and the number of accidents resulting in injuries also decreased late last year, but the number of fatalities tended to be higher

than the average of previous years. January was a tragic month, with nine traffic deaths. A single traffic accident involving three fatalities had a significant impact on this.

**Type of traffic accident**

2020 stands out for its sudden increase in the number of single-vehicle accidents. There were 528 such accidents: 157 or 43% more than in the previous year. The number of collisions and other accidents between vehicles decreased significantly.

The increase in the number of single-vehicle accidents is primarily caused by the more frequent occurrence of accidents involving cyclists and motorcyclists. The number of accidents involving cyclists was 187 in 2020, which is 122 more than in 2019. Motorcyclists were involved in a total of 68 single-vehicle accidents – 32 more than in 2019. From March-May, the number of single-vehicle accidents involving cyclists exceeded that of the previous year by 56 and in the case of motorcyclists by 15. The pandemic probably had an impact on his, since people preferred to avoid public transport wherever possible.

It was also affected by the snowless winter to some extent: accidents involving cyclists also happened in January and February, which is unusual. At the same time, the number of accidents involving cyclists had been increasing slightly in previous years.

The number of single-vehicle accidents involving drivers of motor vehicles exceeded that of 2019 by 21. The total number of such accidents was 46, i.e. 15% more than in 2019.

There were 283 accidents involving pedestrians in 2020, in which 288 people were injured and 13 killed. No significant changes occurred in the number of such accidents compared to previous years. In addition, there were 15 collisions with animals. 45 people were killed while using public transport. These indicators are similar to those of previous years.

**Number of traffic accidents and fatalities, 2016-2020**

| | Accidents | Injured | Fatalities |
|---|---|---|---|
| 2016 | 1463 | 1841 | 71 |
| 2017 | 1414 | 1734 | 48 |
| 2018 | 1473 | 1837 | 67 |
| 2019 | 1413 | 1740 | 52 |
| **2020** | **1367** | **1576** | **60** |

**Road users killed by role and TSP goal as average for 2018-2020**

| | 2018-2020 average | 2018-2020 TSP goal |
|---|---|---|
| Motor vehicle driver | 32 | 22 |
| Pedestrian | 13 | 15 |
| Passenger | 11 | 10 |
| Cyclist | 4 | 3 |

# Traffic Safety Programme

The Traffic Safety Programme (TSP) aims to reduce the number of people killed or seriously injured in traffic. The situation that must be achieved by 2025 is one in which the three-year average of people killed in traffic does not exceed 40 and the number of people seriously injured does not exceed 330. We sought to reach a situation by 2020 where no more than 50 people were dying in traffic as the three-year average (2018-2020) and the number of serious injuries remained less than 370. On average, 60 people were killed in traffic in 2018-2020. This exceeds the goal by 10 deaths.

The TSP goal has only been achieved in the case of accidents involving pedestrians. 13 pedestrians were killed on average in the past three years, which is two fewer than the previously set limit. The goal was also within reach with regard to passengers and cyclists: deaths among them exceeded the TSP goal by just one in the period from 2018-2020. The situation with fatalities among motor vehicle drivers is the most problematic: the number of deaths exceeded the target limit by almost a third. The number of motor vehicle drivers killed in collisions and single-vehicle accidents is relatively even. No clearly identifiable changes have taken place in regard to these accidents in recent years. The number of collisions involving motor vehicle drivers remained 108 below the 2019 level, but the number of single-vehicle accidents increased by 48.

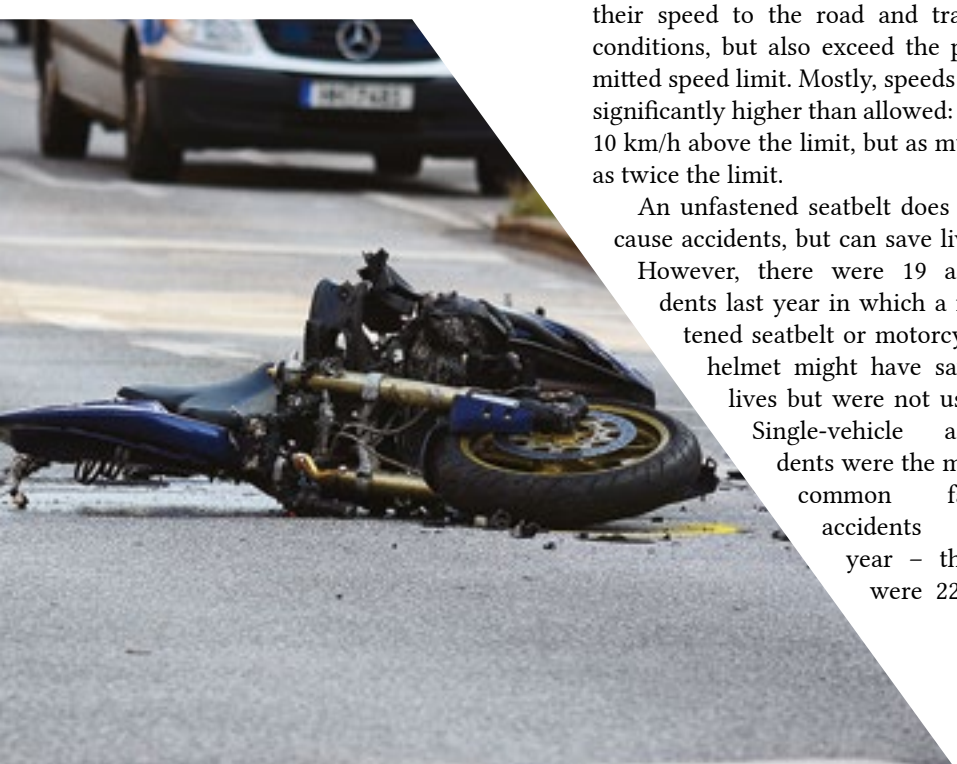
When considering the risk factors in traffic accidents resulting in fatalities, speeding, alcoholic intoxication and drifting out of the lane can be highlighted as the most common problems. Surveys show that the attitude of drivers towards the need to adhere to the speed limit has improved gradually over time, but progress remains moderate and changes in behaviour occur with a delay. Observing the speed limit is without doubt one of the aspects that has the greatest impact on the fulfilment of the programme's objectives.

There has been no improvement in regard to exceeding the maximum permitted level of alcohol – drink-driving became more frequent during the period in question. In previous years, there were hopes that attitudes towards drink-driving had changed permanently, but these proved to be false.

# *The causes of serious accidents remain the same*

**Last year saw fewer traffic accidents resulting in injuries or fatalities than in 2019, and the number of such accidents was at its lowest level of the past five years. The number of people injured in traffic also decreased to its lowest level of the five-year period. Unfortunately, the same cannot be said about people killed in traffic: 60 people lost their lives in traffic last year, eight more than in the previous year. There was one accident involving three fatalities and two accidents involving two fatalities.**

**It is unfortunate that there were accidents involving alcohol intoxication, speeding and the failure to use safety equipment.**



The expert committee for the determination of the causes of traffic accidents had a busy year: in addition to 56 accidents resulting in fatalities, they had to process six accidents in which five or more people were injured, with a total of 36 casualties. There were two accidents each involving five, six and seven people being injured.

The causes of many serious traffic accidents remain the same: intoxication or speeding are risk factors that lead to accidents year after year. Often, people not only fail to adjust their speed to the road and traffic conditions, but also exceed the permitted speed limit. Mostly, speeds are significantly higher than allowed: not 10 km/h above the limit, but as much as twice the limit.

An unfastened seatbelt does not cause accidents, but can save lives. However, there were 19 accidents last year in which a fastened seatbelt or motorcycle helmet might have saved lives but were not used. Single-vehicle accidents were the most common fatal accidents last year – there were 22 of them, one involving two fatalities. The majority were cases where people drove off the road. In the case of 17 accidents that happened on roads, eight drivers were intoxicated. Safety equipment was not used in 13 accidents and speeding was the risk factor in nine. The risk factors in five accidents on the roads were road conditions (wet or snowy), in three accidents the technical condition of the vehicle, in one accident the driver was likely distracted by other activities and in one case the driver had been issued with their licence only a couple of days previously. One accident was the result of force majeure when a tree fell on a moving vehicle in strong winds. Speed was the main risk factor in the case of three single-vehicle accidents in urban areas, while safety equipment was not used in two cases and in one case the driver was also intoxicated.

### Dangerous collisions

There were a total of 19 collisions last year, resulting in 22 deaths. Several people died in two accidents: three in one collision and two in the other. There were 17 collisions on the roads and two in urban areas. Drink-drivers were involved in three collisions. In 18 cases two motor vehicles collided,

while one collision on a road involved an elderly cyclist who turned onto the road in front of a motor vehicle.

Veering into the opposite lane was the cause of most collisions on roads. There were seven such collisions, including two involving an intoxicated driver and three that happened in the rain. Five collisions took place at intersections: in three cases, the vehicles drove onto the main road from a secondary road, and in two they were making a left turn. In one case, a drink-driver caused an accident due to careless overtaking, which resulted in the death of three people. In the case of two collisions on the roads, one vehicle collided with another from behind and in one case a vehicle that had been involved in a previous accident was hit. One of the collisions was related to careless overtaking on a road section between intersections.

Two collisions of motor vehicles took place in urban areas. In one case, a motor vehicle hit another from behind at high speed, causing the deaths of two people, one of them a pedestrian. Five people were injured and four cars were damaged. The second collision involved a passenger car crossing the main road from a secondary road and a motorcycle moving onto the main road.

**Pedestrians are the most vulnerable parties**

14 pedestrians were killed in traffic last year, one of whom was waiting for a bus when they were hit by a car involved in a collision. Seven pedestrians were involved in accidents in urban areas and six on the roads.

Eight pedestrians were killed in accidents that occurred in the dark, five of whom were not using a reflector or any other source of light. Three of those who died were intoxicated.

Seven pedestrians were killed in urban areas, six of whom were crossing the road when the accident happened. Two of these seven pedestrians were over the age of 80. Five people were killed on pedestrian crossings or in their immediate vicinity, three of them unregulated. Three of these accidents occurred in the dark and two of the three pedestrians who died were not wearing a reflector. One person was killed while crossing a pedestrian crossing when the light was red, one while crossing the road between crossings in a densely populated area, and one was hit by a reversing snow-removal tractor.

Six pedestrians were killed in accidents that happened on the roads. Four accidents took place in the dark. Two of the pedestrians who died in these were heavily intoxicated, not using a reflector or another source of light and walking on the road. One pedestrian was involved in an accident in an area with lighting, at a crossing next to a bus stop. One pedestrian was hit by a reversing vehicle from which they had just gotten out. The driver in this case had been issued with their licence seven months previously. Two pedestrians were killed after getting off a bus during the day when they tried to cross the road from behind the bus. One of them was elderly, the other a minor.

**Accidents involving two-wheeled vehicles**

Two-wheeled vehicles were involved in eight traffic accidents: four of them were bicycles, three were motorcycles and one was a moped.

Two cyclists died in single-vehicle accidents – both falling from their bicycles. One of them was heavily intoxicated and the other elderly. An elderly cyclist died in a collision with a passenger car and another rode in front of an oncoming train.

Two motorcyclists were killed in a collision with a car, while a third died after driving off the road, mere days after being issued with their licence. The accident involving a moped happened on a road outside an urban area: the elderly driver had not fastened their helmet and fell onto the road.

# Estonia wins EU Road Safety Award

Estonia has been presented with the EU Road Safety Award, recognising its investments and effort to reduce traffic fatalities over the past 10 years. Estonia is the second country in Europe to have received the award twice.

It is granted by the European Transport Safety Council. Estonia stood out for its proactive approach to the safety of infrastructure, research-based traffic safety planning and the contributions and engagement of local governments. The traffic situation between 2009 and 2019 was taken under observation in order to select the winner.

The number of traffic deaths is connected to risk behaviour – speeding, drink-driving, engaging in other activities while driving and failing to use safety equipment. The Traffic Safety Programme has significantly improved the situation. Its action plan for the next four years includes more than 150 activities, and the list is updated every year. The programme focuses on three main issues affecting traffic safety: responsible road users who perceive hazards; a safe traffic environment; and safe vehicles.

The starting point of the programme is Vision Zero, according to which tasks are assigned to all parties involved in traffic. This is based on the precondition that people cannot reduce the probability of making mistakes to zero by themselves.

As such, the traffic environment has to be shaped so that the possibility of human errors and damage caused by traffic accidents is reduced. According to this mindset, the responsibility lies with the planners, implementers and managers of the transport system. Road users are responsible for following traffic rules.

# Research into the attitudes and behaviour of road users

**On the basis of surveys and observations, we studied the attitudes and behaviour of road users in 2020 and any changes in them.**

**54% of respondents do not regard exceeding the speed limit by 10 km/h to be a serious hazard.**

Almost all of the respondents regard driving under the influence of alcohol, texting and using social media while driving and running red lights as the biggest risks. These three activities have consistently been rated as high-risk over the years (by more than 95% of respondents). The danger of drink-driving has achieved the exceptional result of 100% in the assessment of road users.

The following are considered dangerous by road users: crossing a road on a red light (94%); leaving your seatbelt undone (93%); driving without a licence (92%); driving when tired (91%); tailgating (91%); and overtaking across unbroken lines (85%). There have been no considerable changes with regard to these traffic hazards in the past four years. The opinions of those who consider the respective behaviour dangerous or very dangerous have remained the same.

Similarly to previous years, behaviours that are considered less dangerous include talking on the phone while driving (75% of respondents) and exceeding the permitted speed limit. 79% of respondents regard exceeding the speed limit by more than 10 km/h as dangerous. However, exceeding the limit by 10 km/h or less is the only case where the number of those who consider the violation of a traffic rule a serious hazard is lower than that of those who do not (45% *vs* 54% respectively). This primarily has an impact on the number of traffic accidents involving pedestrians in urban areas and the seriousness of their consequences.

## ATTITUDES AND BEHAVIOUR OF MOTOR VEHICLE DRIVERS

### Compliance with traffic lights

Compliance with traffic lights by motor vehicle drivers was monitored on regulated intersections on the streets of Tallinn, Tartu, Pärnu, Narva and Jõhvi and on the national roads around Tallinn. Drivers who could choose whether to pass through the intersection when the light was red or stop complied with the traffic lights in 89% of cases on average. Those who could choose whether to pass through the intersection when the light was amber or stop complied with the traffic lights in 46% of cases on average.

### Driver distractions

The drivers who took part in the survey considered texting and reading messages on your phone the most dangerous distracting activity. 66% of drivers use their phones while driving (68% in 2019). 11% use it often and 55% occasionally. 34% do not use their phones at all while driving (32% in 2019). 56% of those who talk on the phone while driving use hands-free equipment (51% in 2019); 12% hold the phone in their hand (15% in 2019). The proportion of those who always or frequently hold their phone in their hand has decreased by 11% over the last three years.

### Adherence to the permitted speed limit

According to the survey, 31% of drivers stick to the speed limit on main roads (27% in 2019) and 43% (36% in 2019) do so on smaller roads. 56% of drivers (54% in 2019) adhere to the speed limit in cities and built-up areas. 27% of drivers (28% in 2019) exceed the speed limit on main roads by more than 5 km/h and 3% do so

by more than 10 km/h. 19% of drivers (21% in 2019) exceed the speed limit on smaller roads by more than 5 km/h and 3% do so by more than 10 km/h. In cities where exceeding the speed limit even a little is dangerous due to the large proportion of light-vehicle traffic, 44% of respondents drive more quickly than allowed. Based on the results of the 2020 survey, it can be said that there have been only slight improvements in connection with speeding compared to 2019.

**Driving under the influence and travelling in an intoxicated driver's vehicle**

According to the 2020 survey, approximately 2.7% of drivers had driven a motor vehicle under the influence of alcohol or a narcotic substance in the preceding 12 months. Almost half of them had driven under the influence of alcohol on more than one occasion. 3% of those surveyed had travelled in a car with an intoxicated driver.

66% of respondents (58% in 2019) would report a driver who was under the influence of alcohol or drugs to the police in any case. 16% of respondents are prepared to report them in principle, but they would not do so if the driver was someone they knew. 42% said that they had actually stopped or tried to stop a drunk driver from getting behind the wheel.

**Giving way to pedestrians on unregulated pedestrian crossings**

Based on observations, the share of drivers who give way to pedestrians in larger cities in Estonia is 62%. Compared to 2019 (67%) this situation has deteriorated somewhat, returning to the level of 2018.

According to the survey, 41% of pedestrians (45% in 2019) say that the first car approaching the crossing gives way, while 33% (28% in 2019) say that the second car gives way. The majority of the pedestrians surveyed are of the opinion that the behaviour of drivers has not improved compared to 2019. 79% of drivers (76% in 2019) are prepared to stop at a pedestrian crossing even if there is only one pedestrian waiting to cross. This result reveals that the attitude of drivers has improved compared to previous years, but that this positive approach is not yet reflected in their actual behaviour.

**Use of seatbelts and child safety equipment**

The 2020 survey indicated that 99% of drivers, 97% of adult passengers in the front seat and 88% of adult passengers in the back seat use seatbelts, and that 99% of children use a seatbelt or special safety equipment. 48% of passengers (43% in 2019) generally fasten the seatbelt on a bus if one is available. 87% of respondents (83% in 2019) are aware that the seatbelt must also be fastened on a bus.

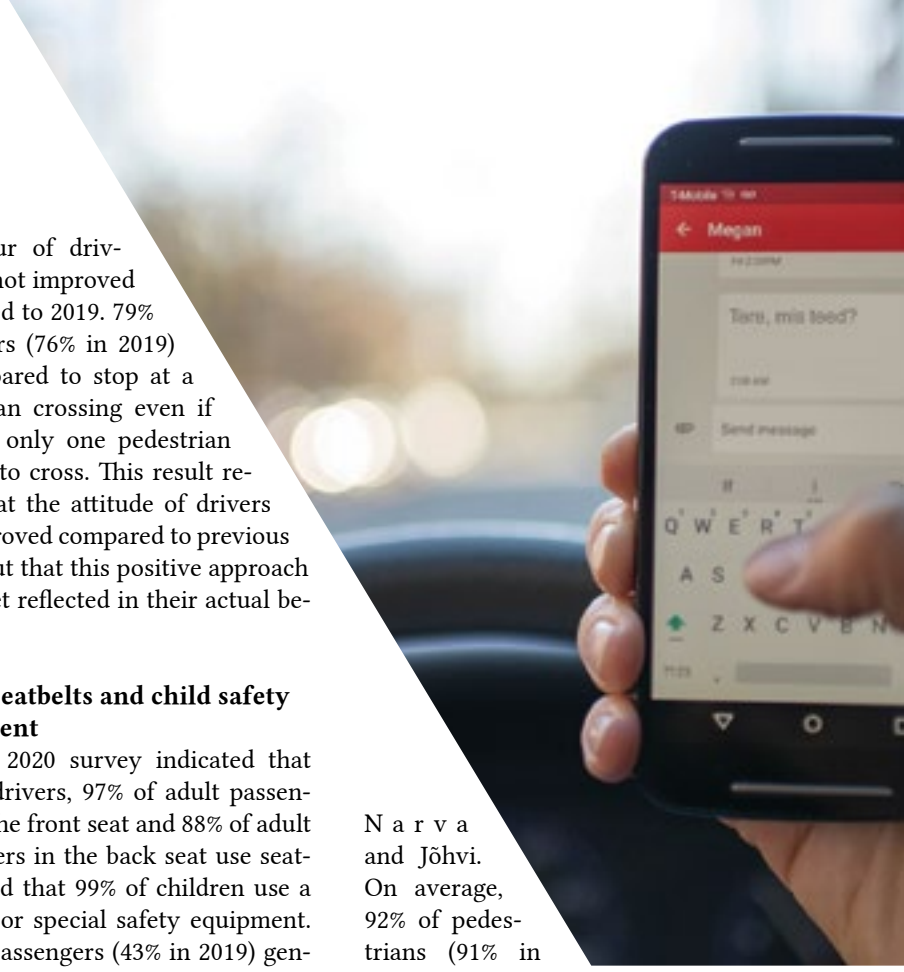
## ATTITUDES AND BEHAVIOUR OF NON-MOTORISED ROAD USERS

**Reflectors and other equipment improving pedestrian visibility**

62% of Estonian adults (64% in 2019) wear a reflector or use another item that makes them visible (torch, safety vest, etc.) as a rule, 22% doing so frequently. According to parents, 82% of children (85% in 2019) always wear a reflector. The proportion of those who wear a reflector as a rule has decreased by 6% compared to 2019. The ratio of children who wear a reflector has dropped to a certain extent in recent years, remaining at a level 10% lower than the best ever result (in 2013).

**Compliance with traffic lights**

Compliance with traffic lights among pedestrians was monitored on regulated pedestrian crossings and intersections in Tallinn, Tartu, Pärnu, Narva and Jõhvi. On average, 92% of pedestrians (91% in 2019) complied with red lights in 2020.




**Safety equipment of cyclists**

29% of adults (26% in 2019) and 79% of children (77% 2019) mostly or frequently wear a helmet when cycling. 9% of children never wear a helmet when cycling. 28% of adults (20% in 2019) and 39% of children (33% 2019) mostly or frequently wear a safety vest or other clothing that makes them more visible when cycling. 80% of cyclists have the white front light on and 77% have the red rear light on when cycling in the dark.

**Electric scooter traffic**

In the 12 months preceding the survey, 15% of adults had used an electric scooter. Men, people up to the age of 34 and residents of Tallinn are the most frequent users of electric scooter. Most ride them on paths meant for cyclists and pedestrians (79%). 25% consider it necessary for children under the age of 16 to wear a helmet and 64% deem doing so necessary for themselves and children alike. In reality, just 8% of those who ride an electric scooter wear a helmet.

# *Campaigns contribute to* ***traffic safety***

**Road safety campaign: 'A long-distance relationship is sometimes the best sort of relationship'**
More and more wild animals are being spotted on Estonia's roads. Awareness-raising activities were carried out from 4-31 May 2020 to draw road users' attention to what they should observe on the road and how to do everything they can to avoid hitting wild animals. TV clips, outdoor advertising, social media and an interactive web application were used. The campaign was carried out in cooperation with the Environmental Board, the Environment Agency and the Estonian Hunters' Society.

**Preparatory notification for the enforcement of the regulation concerning personal light electric vehicles: 'Electric scooters are small and quiet, so stay alert'**
The aim here was to turn people's attention to the safe use of light electric vehicles and to ensure the safety of road users. The message was displayed on a tram that served its route for six months. In addition, 20-second animations were posted on social media.

**Road safety campaign: "Don't let friends and family drink-drive!"**
The repeated campaign "Don't let friends and family drink-drive!", which was a follow-up to the earlier campaign "Don't let your friend drink-drive!", was run from 15 June-5 July 2020. Its purpose was to reiterate that friends and family can prevent those who have been drinking from getting behind the wheel. TV and radio clips, outdoor advertising and social media were used in the campaign.

**Road safety campaign: 'Take time, not lives! Stick to the speed limit'**
The repeated campaign 'Take time, not lives!' was aired from 13 July-2 August 2020 to get road users to realise how serious and irreversible the consequences of speeding can be. The campaign told the real stories of two families. TV and radio clips, outdoor and online advertising and social media were used.

**Road safety campaign: 'Set an example so that others will be cautious'**
The road safety campaign 'Set an example so that others will be cautious', which was aimed at parents, was broadcast for the third time from 17 August-6 September 2020. Its aim was to remind adults that they play the biggest role in fostering good traffic behaviour among children and that their behaviour is an example to children. TV and radio clips, outdoor and online advertising and social media were used. eKool was also included as an information channel.

**Road safety campaign: "If you're driving, then drive"**
The repeated campaign "If you're driving, then drive", which draws attention to the dangers of distractions, was run from 14 September-4 October 2020. The aim was to remind road users that letting yourself get distracted by other activities when driving is dangerous. TV and radio clips, outdoor and online advertising and social media were used.

**Road safety campaign: 'Winter is on the way'**
The information campaign 'Winter is on the way' was launched on 23 November to highlight the fact that road conditions change quickly in winter and that you have to adopt a safe driving style. The campaign also encouraged people to check road and driving conditions on the website Tarktee.ee before getting behind the wheel. The campaign lasted until the end of February 2021, based on the principle of a diversified media plan. TV and radio clips, outdoor and online advertising and social media were used.

**7 campaigns were conducted in 2020 to make traffic safer.**






Examples of campaign visuals from 2020 that were used to draw road users' attention to safety and to what everyone can do to make the traffic environment safe.


# *Mobility and the public transport implementation plan*

**In order to achieve the strategic objectives of the transport development plan, a Traffic Safety Programme and Road Maintenance Plan with specific activities are usually prepared, but the coordinated development of public transport has to some extent been ignored. 2020 was an historic year because of the preparation of a national coordinating Public Transport Development Programme for the period from 2021-2025.**

The five-year programme focuses on public transport by land, primarily the development of national and regional public transport and the improved integration of public transport with other modes of travel. In brief, the goal of the Public Transport Development Programme is to increase the proportion of public transport, cyclists and pedestrians in everyday commuting to 55% by 2035 (incl. 60% in urban areas). Based on the programme, the modal shift from passenger cars to public transport should be at least 10% by 2030.

Activities are planned with the purpose of replacing 10% of car transport with public transport and increasing the share of public transport in motorised mobility from 19% to 27%. There is potential for change with regard to the everyday commutes of people living, working or studying in urban areas (e.g. increasing the number of intra-city and county routes and rail passengers), improved interaction between public transport services and the smooth combination of bicycle, car and public transport. The use of public transport and combining it with other modes of travel can be turned into a quick and convenient alternative by organising public transport services, transport infrastructure and spatial planning more efficiently.

## PUBLIC TRANSPORT DEVELOPMENT PROGRAMME AND ACTIVITIES OF THE ROAD ADMINISTRATION IN 2020

- A mobility vision was formulated, focusing on the planning of complete journeys across types of transportation.
- It was confirmed that the development of public transport is fragmented at the state and county levels and requires a coordinated plan.
- Work on a Public Transport Development Programme started in cooperation with partners.
- At the same time, work was underway on the Transport and Mobility Masterplan 2021-2025, which has very ambitious goals in connection with the green transition – the habits of road users must be changed in order to achieve them.
- A sub-committee was established under the steering committee of the Transport and Mobility Masterplan which began operating in March 2021 to fulfil objectives connected to public transport, active mobility and accessibility.
- The Road Administration introduced a tool called Remix for the analysis and planning of public transport and a map application regarding the availability of public transport. See www.arcg.is/0euiDa.

## Targeted number of public transport users across types of public transport, provided that 10% of car transport can be transferred to public transport

| | 2019 | 2025 | 2030 | Total for 2030 | Change 2019/2030 |
|---|---|---|---|---|---|
| Total number of PT trips (1000) | **211,692** | | | **288,604** | **+36%** |
| *Additional* PT trips per year *vs* 2019 (1000) | | +38,456 | +76,913 | | **+36%** |
| Train | **8373** | +3706 | +7413 | **15,786** | **+89%** |
| Urban routes | **167,734** | +30,000 | +60,000 | **227,734** | **+36%** |
| Rural routes | **23,848** | +4500 | +9000 | **32,848** | **+38%** |
| Long-distance routes | **3898** | +250 | +500 | **4398** | **+13%** |

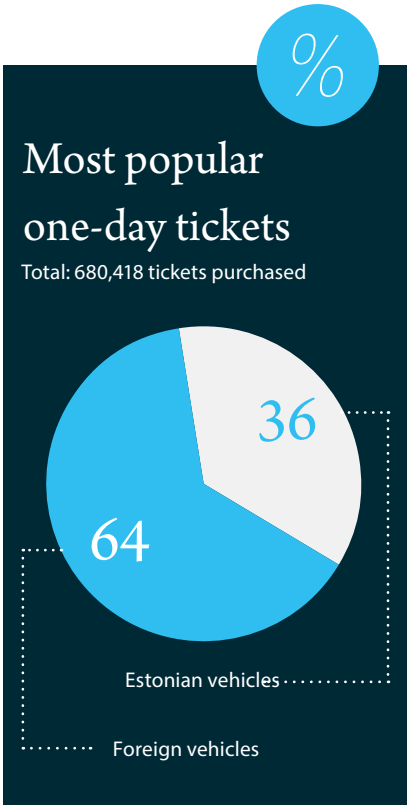
When setting goals beyond 2030, 2019 (the year before the onset of coronavirus) is taken as the basis.

# ***Road tolls collected*** *according to plan*

**In 2020, the Road Administration collected 20.1 million euros in road tolls and sold the right to use roads to 750,653 vehicles. The sum collected constituted 99% of the planned 20.4 million euros.**

In early 2020, economic restrictions imposed due to coronavirus affected the accrual of road tolls, causing the work volumes of transport companies to decline. 13.8 million euros was paid for Estonian vehicles and 306,248 tickets were purchased. 6.3 million euros was paid for Estonian vehicles and 444,405 tickets were purchased. Polish vehicles were the most common foreign vehicles – 1.86 million euros was paid for them (29.5% of the tickets bought for foreign vehicles). Latvia followed at 1.80 million euros (28.6% of tickets), Lithuania at 1.45 million euros (23%) and Russia at 580,000 euros (9.2%).

One-day tickets were the most popular: 680,418 of these were purchased. They were mostly bought for foreign vehicles (435,158 or 64%). 245,260 (36%) one-day tickets were purchased for Estonian vehicles. 90-day tickets were the second most popular (32,032), followed by 30-day tickets (28,671) and 365-day tickets (2251). Buying tickets for a longer period of time was popular primarily among Estonian carriers: 91.5% of annual and 96.5% of quarterly tickets were bought for Estonian vehicles. Road tolls are mostly paid via the website (76% of tickets and 87.6% of the amount).




**1.11 million**

**euros is the estimated sum of road tolls that went unpaid in 2020.**

**Road tolls in the self-service environment**

2020 was the first full year during which operations connected to road tolls could also be carried out using a self-service environment. In this environment you can view the current status of road toll payments, pay road tolls, forward letters and electronically fill in road toll refund requests. In 2020, 16.5% of tickets (for 96,346 vehicles) were bought using the self-service site. The site is used primarily by Estonian carriers – they accounted for 31.5% of users.

Road tolls were paid at border stations (i.e. on the eastern border and in the ports) in 43,400 cases (3.2%). There are sales points at all of the main border crossings. More detailed information about payment options can be found online at www.teetasu.ee.

**Over a million euros in road tolls went unpaid**

According to the data of the Tax and Customs Board (TCB), there were 56,222 trucks on Estonia's roads in 2020, around 25% of which were registered in Estonia and 75% abroad. Based on the TCB's analysis, 68% of trucks always paid their road tolls. This indicator was 56% among Estonian trucks and 73% among foreign ones. 8% of trucks constantly failed to pay their road tolls in 2020 (7% of Estonian and 8% of foreign trucks). The remaining trucks occasionally paid the tolls. An estimated 1.11 million euros went unpaid as road tolls in 2020, including 622,000 euros for Estonian trucks.

The police initiated 1187 misdemeanour proceedings, including 264 against foreign citizens who failed to pay their road tolls or paid them at a lower rate. The TCB, on the other hand, commenced 754 such misdemeanour proceedings, including 153 against foreign citizens.

# 2+2 roads
# *From planning to implementation*

**Developing infrastructure is a labour-intensive and time-consuming process. Planning large-scale infrastructure sites starts with the preparation of a plan that includes finding a suitable location for the road and the structures accompanying it. When planning 2+2 roads, the optimal solution has to be found for the surrounding road network as well. Environmental impact also has to be assessed, and alleviating measures need to be adopted.**

The preparation of the construction project can begin once the optimal solution has been found for the road and the road network connected to it. During the design phase, the location determined in the plan and the extent of the transportation land required for the construction of the road are specified. Detailed solutions are provided for the road and the structures connected to it. At the same time, an environmental impact assessment is carried out. Other environmental surveys are conducted where necessary. Detailed solutions include noise barriers, animal passages and other environmental measures.

Before construction work begins, the transportation land required for the road and associated structures has to be acquired. The extent of the transportation land required is specified when preparing the construction project. The acquisition of transportation land encompasses the evaluation of land, negotiations with land owners, surveying and cadastral operations. Today, land swaps occur more often than they used to when acquiring land. These prolong the usual land acquisition process. A land unit suitable for swapping must first be found and evaluated.

Construction can start once the project has been prepared, the required transportation land has been acquired and the construction permit has been issued. The process preceding the construction of a road can take up to 10 years, depending on the location and the volume of plans and surveys carried out during the preparatory phase.

As such, it is important for the state to have a long-term vision when developing infrastructure and to ensure stable funding for the implementation of that vision. Stable funding is also significant from the point of view of partners, who can then plan their resources (labour and equipment) accordingly.

**Largest projects in 2020**

Around 100 km of 2+2 roads are being designed as of 2020. Among them, the sections on the

**2+2 roads are designed so that the maximum speed of 120 km/h can be allowed on them.**

Tallinn-Tartu-Võru-Luhamaa, Tallinn-Pärnu-Ikla and Tallinn-Narva roads make up more than 80 km. On the Tallinn-Tartu-Võru-Luhamaa road, work is being done on the designs of the Adavere and Põltsamaa bypasses and the Kärevere-Tartu section with a northern bypass around Tartu.

On the Tallinn-Pärnu-Ikla road, the Märjamaa and Libatse-Nurme sections are currently being designed. Work is also underway on the 10 km Jõhvi-Toila section of the Tallinn-Narva road. Road sections are designed so that the maximum speed limit of 120 km/h can be implemented wherever possible. Grade-separated crossings are planned on main roads, including for non-motorised road users.

ITS solutions are being increasingly taken into account when designing roads – integrated solutions for variable message signs, information boards and road equipment. As such, maximum speed limits can be changed according to traffic volumes and road users can be provided with other information concerning road or weather conditions and traffic congestion.

There are plans to start designing more than 80 km of 2+2 sections on national roads in 2021.

According to EU regulation 1315/2013 on the TEN-T transport network, the Tallinn-Tartu-Võru-Luhamaa and Tallinn-Pärnu-Ikla roads must be brought into conformity with the TEN-T traffic safety and environmental standards by 2030. The deadline for the construction of the TEN-T comprehensive network (incl. Tallinn-Narva) is 2050.

In order to comply with the standard for the TEN-T core network, existing 1+1 roads will need to be reconstructed as 2+2 or at least 2+1 roads where the main intersections are gradeseparated.

**BACKGROUND**

**The roads in the TEN-T core network correspond to the traffic safety and environmental standards of EU regulation 1315/2013 to the following extent:**

- 21% of the E67 Tallinn-Pärnu-Ikla road (39 km of 2+2 and 2+1 road sections from a total of 179 km);
- 30% of the E263 Tallinn-Tartu-Võru-Luhamaa road (87 km of 2+2 and 2+1 road sections from a total of 283 km).

The Tallinn-Narva route forms part of the comprehensive network and corresponds to the standards of the regulation to the following extent:

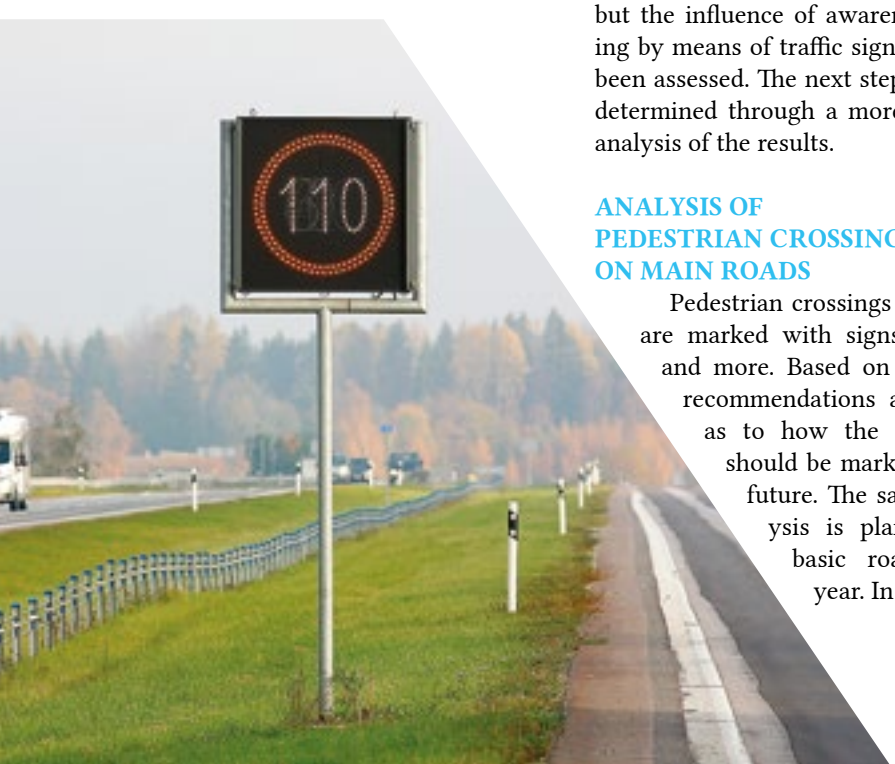
- 42% of the E20 Tallinn-Narva road (89 km of 2+2 road sections from a total of 209 km).

# **Major** *pilot projects*

**A number of pilot projects were carried out in 2020 designed to assist in finding the most suitable solutions and provide guidelines for the future.**

## GATEWAY PROJECT

The aim of this project is to make the traffic environment on national roads that pass through residential areas safer and to find suitable traffic-calming techniques for entrances to such areas. According to experts, problems are often caused by the fact that traffic signs designating the beginning of a residential area or restricting the speed limit go unnoticed. These markings were thus supplemented with gates, rubber traffic islands, additional traffic signs and road markings on the basic roads passing through Kaarepere and Väike-Maarja. Unfortunately, all of these solutions made it clear that drivers are in the habit of exceeding the permitted speed limit by 10 km/h.




In conclusion, it can be said that in one case the additional markings helped to reduce the speed by 10%, while in another there was an increase in speed and in two cases it remained the same.

## REMINDING DRIVERS OF THE NEED TO KEEP A SAFE DISTANCE ALONGSIDE CYCLISTS

Six traffic signs were installed on three secondary roads in Harju County to remind road users of the importance of keeping a safe distance alongside cyclists. The goal of the test was to measure the distance maintained when passing cyclists on road sections with traffic signs and on sections without them.

There is no statistical difference between sections with signs and those without them. It was minimal – less than 10 cm. The lateral distance was more than 1.5 metres in 72% of cases of overtaking and 0.5 metres or less in 6% of such cases. The most common distance was 1.5-2 metres, which typified 22% of the sample. Physical parameters were measured, but the influence of awareness-raising by means of traffic signs has not been assessed. The next steps will be determined through a more specific analysis of the results.

## ANALYSIS OF PEDESTRIAN CROSSINGS ON MAIN ROADS

Pedestrian crossings on roads are marked with signs, islands and more. Based on analysis, recommendations are made as to how the crossings should be marked in the future. The same analysis is planned for basic roads next year. In addition, all pedestrian crossings are mapped on the basis of the analysis. These data can be used when analysing traffic restrictions or accidents.

## TRAFFIC SIGNS WITH SENSORS

The speed limit at the Kasti intersection near Märjamaa on the Tallinn-Pärnu road is 70 km/h to allow safe manoeuvring from the intersecting road. However, measurements have shown that road users do not adhere to the restrictions here. They are known to trust electronic traffic signs more because they feel that they change according to the situation. Therefore, a solution is being tested whereby restrictions are only imposed when the sensor detects a car turning onto the main road.

## WEATHER STATIONS ON ROADS

Information from all weather stations is available on the TarkTee portal. In addition, it was decided to display the information on traffic signs alongside the weather stations so that drivers know whether the road is slippery or what its temperature is. The first traffic signs of this kind have been installed: one near Jõhvi on Narva Highway and the other in Urge on Viljandi Highway. There are plans to equip other weather stations with analogous sensors in the coming years.

## HEIGHT WARNING ON PAPINIIDU BRIDGE

The Papiniidu bridge in Pärnu is a little lower than others in terms of clearance and has occasionally been hit by taller vehicles. With the new system, a sensor will measure the height of approaching vehicles and display a red traffic light if it exceeds the permitted limit.

# **Smart** *traffic systems*

**Within the framework of *intelligent transport systems* (ITS), the Road Administration deals with smart traffic systems that make traffic safer, smoother and more sustainable. ITS solutions are planned across the administration to ensure interoperability and a long-term vision.**

The main solutions which stand out and have received positive feedback are variable message signs, which make it possible to impose speed limits according to weather and traffic conditions and to provide safety information. Behind these visible solutions is a central traffic management system which takes into account traffic conditions in real time and organises traffic on the basis of road conditions.

A road section with variable message signs was completed on the Kose-Võõbu section of the Tallinn-Tartu-Võru-Luhamaa road in 2020, where the speed can be adjusted to weather and traffic conditions. Speed limits are raised to up to 120 km/h in good weather conditions.

In addition, three innovative crossings for big game were constructed on this section. Animals crossing the road are detected with surveillance radars and the speed limit is reduced immediately so as to warn road users. This technological solution is new in the world, helps to alleviate the pressure on the environment and provides an alternative to building ecoducts in certain cases.

**Systems with changing information**

A new two-year ITS project called SMART E263/E77 was launched by Estonia and Latvia in 2020. Variable message signs will be installed on the 2+2 section between Tallinn and Kose, along with various information boards with changing information on the Mäo-Luhamaa section on the Tallinn-Tartu-Võru-Luhamaa road. This project will help save time and make traffic safer. The project is being co-funded by the EU via the Interreg Central Baltic Programme.

> **The monitoring system for big game is new in the world, helps to alleviate the pressure on the environment and provides an alternative to ecoducts in certain cases.**

Preparations continued during the year for the largest ITS project to date: the Tallinn Ring Road E265. It includes the establishment of a traffic management system with changing information in the 0-30 km section, the pilot use of information exchange between vehicles and infrastructure (V2I/I2V) and the construction of a safe and smart truck parking area with 100 parking spaces in Veneküla.

Preliminary designs for the parking area and the traffic management system were completed. Procurements will be prepared and the project will be carried out in stages by 2023. The project is being co-funded by the EU via the Connecting Europe Facility.

In addition to two large-scale ITS investment projects, several smaller local safety-related solutions were implemented, such as the variable speed limit at the Kasti intersection at the 67 km mark on the Tallinn-Pärnu road, where the speed limit on the main road is reduced if a vehicle is approaching from a secondary road. Variable message signs were installed at two weather stations: one in Jõhvi on the Tallinn-Narva road and the other in Urge on the Tallinn-Rapla-Türi road. Work also commenced on establishing a height warning system under Papiniidu bridge.

**Solutions continue to be developed**

In 2020, an ITS development measure was included in the Road Maintenance Plan for 2021-2025 for the first time in order to systematically plan smart solutions and develop them with a long-term vision. The Road Administration participated in the work of the ITS cooperation network in Estonia to advance the widespread use of smart solutions and make them more knowledge-based.

We also examined joint planning and development opportunities for ITS and road infrastructure. The analysis confirms that road infrastructure will be merged with information infrastructure for high-speed data communications, forming new services with 5G capability for major transport corridors.

This will provide a new perspective for self-driving vehicles and autonomous driving support that will make traffic safer, smoother and more sustainable.

# *Elimination of* accident blackspots

**The Road Administration consistently works to identify and reconstruct accident blackspots and dangerous intersections to improve road safety. A list of places that need to be made safe is compiled every year, and funds are allocated from the Road Maintenance Plan.**

## 7.3 million

**euros was the sum spent on implementing measures to eliminate accident blackspots in 2020.**

A number of departments work together to plan the elimination of accident blackspots and organise construction, with the activities coordinated by the accident blackspot coordinator from the Infrastructure Development Department. In the period from 2020-2023, 6-6.6 million euros per year is being allocated for the reconstruction of accident blackspots according to the Road Maintenance Plan.

**Elimination of accident blackspots in 2020**

Various measures were implemented to eliminate accident blackspots on 40 sites, to a total cost of 7.3 million euros. Reconstruction of dangerous intersections was the most common (20 sites). Crossings were constructed on six sites and five were provided with lighting. Measures to improve the safety of pedestrians (such as the construction of pavements, light traffic paths and crossings) were implemented on 10 sites, while bus stops were reconstructed on two sites.

Speed humps and chicanes were constructed on five sites to slow traffic down. Additional lighting was installed on three sites.Of the 40 eliminated accident blackspots, 24 were on main and basic roads and 16 on secondary roads.

Accident blackspots were eliminated in all 14 Estonian counties in 2020. The largest number of hazardous sites (11) was made safe in Harju County, where traffic volumes are the highest. Six accident blackspots were reconstructed in Ida-Viru and Pärnu counties.

According to the Road Maintenance Plan, 8.5 million euros will be allocated for the reconstruction of hazardous sites in 2021. The Transport Administration has increased the total sum for reconstruction to almost 12 million euros. Various traffic safety measures are to be implemented on 57 sites using these funds. There are plans to reconstruct four large hazardous sites (projects with budgets exceeding 500,000 euros), to install crash barriers valued at two million euros on the dividing strips of 2+2 roads and to spend 80,000 euros on relocating the booths for speed cameras.

## Worth knowing

**Major sites in 2020:**

- The Tallinn-Pärnu-Ikla road (63.4-64.7 km section) in Rapla County where the intersections in the village of Orgita were reconstructed, access roads to filling stations were repaired and the traffic directions on the main road were separated.
- The Narva–Narva-Jõesuu–Hiimetsa road (7.5-10.2 km section) in the villages of Kudruküla and Tõrvajõe in Ida-Viru County where three intersections were reconstructed (along with bus stops) and crossings were created (together with surface restoration).
- The Tallinn-Narva road (208-208.3 km section) in the village of Soldina in Ida-Viru County where intersections and bus stops were reconstructed and crossings and lighting were installed.
- The Harku-Rannamõisa road (2.1-2.3 km section) in the village of Rannamõisa in Harju County where an intersection was reconstructed.

# *Environmental measures* protect people and animals

**The Road Administration built two new ecoducts, three tunnels for small game, six tunnels for amphibians and a total of 1660 metres of noise barriers in 2020. The first environmental road safety campaign was organised.**

### Animal passages on the Kose-Võõbu section of road

The Kose-Võõbu section of the Tallinn-Tartu-Võru-Luhamaa road, which was completed in 2020, is a new road in a new location passing through natural landscapes – forests, marshes and bogs. The previously undisturbed habitats were divided by a four-lane road, which constitutes a major barrier to the movement and interaction of animals. In order to ensure traffic safety, the road section is entirely fenced. A number of passages were built for game and amphibians to facilitate the movement of animals and to ensure the functionality of the green network:

- The Rõõsa and Nõmmeri ecoducts (50 metres wide at their middle point) enable wildlife to cross the road safely at different levels.
- Three level crossings/gaps in the fence – innovative solutions equipped with animal detection systems and electronic signs warning road users. Animals cross the road at the same level as vehicles.
- Three tunnels for small game – enabling smaller animals such as foxes and badgers to move safely under the road.
- Six tunnels for amphibians with guiding fences – measures taken in the habitats of frogs to prevent them from being killed on the road and to link potential habitats and breeding sites on either side of the road. Smaller wild animals also use the amphibian tunnels.
- Shore paths under five bridges – paths were constructed for small game and amphibians to be able to cross the road safely. Wildlife fences direct animals to the shore paths and other passages.

The Kose-Võõbu road section was built by AS TREV-2 Grupp (Kose-Ardu) and AS GRK Infra and Graniittirakennus Kallio Oy (Ardu-Võõbu).

### Noise reduction in road design

- A total of 1530 metres of noise barriers, incl. 624 metres of noise walls made of gabions, were constructed on the Kose-Ardu 2+2 section located in the 40.0-52.7 km section of the Tallinn-Tartu-Võru-Luhamaa road. The rest were noise embankments. Granite was the main material used in the gabions, with glass waste being used as a test in an area of *approximately* 2 metres. The height of the noise barriers from the road surface is 4.0-5.0 metres. The noise walls were built by AS TREV-2 Grupp. The cost of the works was 773,630 euros plus VAT.
- In the course of the reconstruction of the 0-0.93 km section of the Jüri filling station road (national road 11332), a noise wall was built to protect the property at Viadukti põik 2 in Pildiküla, Harju County from traffic noise. The 130-metre-long and 5-metre-high noise wall was designed by InfraWay OÜ and built by Tallinna Teede AS. The cost of the works was 93,060 euros plus VAT.

### Noise monitoring in 2020

The aim was to measure traffic noise in order to check the noise levels calculated in noise surveys and the efficiency of noise barriers. Traffic noise was measured at 22 measuring points, with measurements were carried out during the day and at night at six of them. The duration of the measurements at one point was one hour. The results were mostly the same as those of the noise surveys and did not exceed the limits determined in annex 1 to regulation no. 71 'Normative Levels of Environmental Noise and Methods for Measurement, Determination and Assessment of Noise Level' of the Minister of the Environment. Traffic noise was measured and the research report was prepared by Akukon Eesti OÜ. The cost of the monitoring was 5270 euros plus VAT.

## Worth knowing

**Road safety campaign: 'Wild animals on the road'**

- In spring 2020, the Road Administration organised its first large-scale environmental road safety campaign, entitled 'Wild animals on the road – what to do' with the tagline 'A long-distance relationship is sometimes the best sort of relationship'.

The campaign focused on aspects of traffic safety associated with wild animals, providing information about the behaviour of animals and their periods of activity and instructions on preventing wildlife accidents and what to do in the event of an accident. Nature specialist Val Rajasaar shared his knowledge. An advertising clip, video story, outdoor posters and a campaign website were produced.

# **Raido Randmaa:** *A record-breaking year in terms of volume of work*

**2020 brought record volumes of work in road maintenance: 150 million euros was allocated for road maintenance and 143 million euros for construction work.**

This large budget pleased road users: among other things, 187 km of gravel roads were sealed. The total volume of work increased three times compared to previous years. In addition, a number of important sites were completed. Our budget has increased and this growth will continue in 2021, but we can expect it to tail off in the future.

When looking back on 2020, we remember major construction sites we can be proud of. The new Kose-Võõbu four-lane section with rest areas on the Tallinn-Tartu road received positive feedback. We are also completing work on the Rõmeda-Haljala 2+2 section on the Tallinn-Narva road. The first cooperation project with Rail Baltic on the Luige-Saku section of the Tallinn Ring Road also deserves to be pointed out. Long-awaited construction work started at the Väo intersection, i.e. the intersection of Narva Highway and the Tallinn Ring Road. The contract for the construction of the Võõbu-Mäo section was signed during the year, and in late 2022 we will be able to pass by Mäo on a four-lane road. The chance to reach Tallinn from Tartu 10 minutes faster is significant for everyone who travels on the route. At the same time, the Road Maintenance Service is actively acquiring land for road construction. Land acquisition and transfer procedures are often long and complicated. The Road Area Department under the Road Maintenance Service mostly deals with the acquisition of land for projects as well as the land areas under existing national roads that were returned by local governments to private owners in error during the earlier land reform. We accomplished considerably more than we planned for at the beginning of the year, but there is still a lot of work to be done for the construction of 2+2 roads. The department also grants the use of state assets and conducts proceedings for their transfer.

**Raido Randmaa**
ACTING DIRECTOR GENERAL OF THE ESTONIAN ROAD ADMINISTRATION

The Road Maintenance Service will contribute to the construction of Rail Baltic by providing assistance in building 17 viaducts in places where the future railway will intersect with national roads. We would have liked to launch procurements for 10 projects this year, but foreign specialists were unable to come to Estonia to carry out surveys due to the COVID-19 restrictions. We have agreed that Rail Baltic Estonia is responsible for the design work and that we will organise the procurements. However, the designs have not been completed and we will continue with our work in 2021.

The viral outbreak did not suspend the work of the Road Maintenance Service. We cooperated closely with companies and held weekly

meetings via MS Teams during the emergency situation.

**Road maintenance and new procurements**

We also cooperated with the state's crisis committees – road maintenance is a vital service which enables rescue services to reach those who need help quickly. As such, no concessions were made in terms of road maintenance requirements.

Road maintenance procurements for new periods were simultaneously conducted in four regions. Maintenance contracts are entered into for five years, and every year the term of three or four of them comes to end. Procurements were carried out in Viljandi, Valga, Hiiu and Järva counties in 2020.

The lowest price is no longer the only factor taken into account in selection: merit points are awarded for the competence of the team and the equipment and machinery they have at their disposal. More merit points are awarded for modern new technology. We entered into three contracts in 2020. Disputes arose in connection with the procurement in Hiiu County. A new procurement has been launched on Hiiumaa and the new road maintainer should begin their work in October 2021. As a significant change, snow clearing periods were shortened on roads with the lowest condition levels in the new contracts – they are now similar to de-icing periods. Snow ploughs have to respond and arrive more quickly than before.

In addition, we had to organise several traditional events during the year, including a professional competition in the field of road maintenance in October. We selected the best roadmaster and maintenance vehicle driver. The level among the participants was very good and there was fierce competition. We will definitely be organising this event again next year and beyond.

**When looking back on 2020, we remember major construction sites we can be proud of.**

## Road Maintenance Service 2020

- Work was completed on a number of large construction sites such as the Kose-Võõbu and Rõmeda-Haljala sections.
- Road maintenance procurements for the following periods were conducted.
- The working group on speed limits decided to develop uniform principles for determining speed limits on 2+1 and 2+2 roads.
- Work was done on the pilot project for e-waybills.
- Several traditional events took place, including a professional competition in the field of road maintenance.
- During the emergency situation caused by coronavirus, we cooperated with the state's crisis committees as well as companies.

**Working group on speed limits**

The working group's decision to develop uniform principles for allowing speeds above 90 km/h on 2+1 and 2+2 roads in winter came as an important milestone. Tests carried out in cooperation with the Strategic Planning Service revealed that in a situation where 2+1 roads are designed for overtaking, it is generally impossible to overtake when there is a speed limit of 90 km/h. 98% of vehicles in the second lane exceeded the permitted speed limit.

The experiences of Finns and Swedes were also studied and our maintenance requirements were compared to those in other countries. As our requirements are up to par with those of our northern neighbours, it was decided that speed limits would be raised on certain sections in 2020. Higher speed limits were established on the Tallinn Ring Road and some sections of the Tallinn-Tartu and Tallinn-Narva roads. It was also decided that the speed limit could be raised to 110 km/h with variable message signs on the Laagri-Ääsmäe section of the Tallinn-Pärnu road and the Kose-Võõbu section of the Tallinn-Tartu road if road conditions are good in winter.

Higher speeds come with higher risks. We sincerely hope that drivers use this opportunity, take responsibility and avoid unnecessary risks if road conditions are changeable. That way, tragic accidents will be able to be prevented.

**Pilot project for e-waybills**

The pilot project for e-waybills, which will replace paper waybills with a digital solution, is also worth mentioning from 2020. The EU as a whole is moving in the same direction. Estonia meets all of the preconditions to be able to adopt the digital exchange of data in the transport of goods ahead of the deadline set in the EU action plan, as there is well-functioning cooperation between the public and private sector.

The pilot project highlighted both bottlenecks and positive aspects, but the aim is to use digital waybills on all sites and to reduce bureaucracy in the future. Furthermore, the adoption of e-waybills will contribute to environmental protection: $CO_2$ emissions will decrease. This will also result in financial savings for companies.

# *Three major construction sites in the* northern region

## KOSE-ARDU AND ARDU-VÕÕBU ROAD SECTIONS

- Location: National road no. 2 Tallinn-Tartu-Võru-Luhamaa, 40.0-51.3 km section (Kose-Ardu); national road no. 2 Tallinn-Tartu-Võru-Luhamaa, 51.3-64.2 km section (Ardu-Võõbu)
- Designed by: Kose-Ardu: Kelprojektas UAB and Skepast & Puhkim OÜ; Ardu-Võõbu: Kelprojektas UAB and Reaalprojekt OÜ
- Contractor: Kose-Ardu: AS TREV-2 Grupp; Ardu-Võõbu: GRK Infra AS and Graniittirakennus Kallio OY
- Supervision on both sites: BRP Inseneerid OÜ
- Total cost: Kose-Ardu and Ardu-Võõbu: 83.7 million*
- Description:

The aim of the construction of the **Kose-Ardu section** was to continue work to transform the Tallinn-Tartu road into a class I carriageway, thereby increasing traffic safety. The new road has parking and rest areas for heavy-vehicle traffic, preventing traffic hazards caused by stopping on the side of the road. Important structures include a 2+2 road with a dividing strip that is 2.8 metres wide, the Torupilli tunnel as a continuation of secondary road no. 11708 Kuivajõe-Liiva, the Kose-Risti intersection at the crossing point of basic road no. 14 Kose-Purila and the new Tallinn-Tartu main road, the Rõõsa ecoduct across the new Tallinn-Tartu road and the Ardu intersection at the crossing point of secondary road no. 11141 Ojasoo-Ardu and the new Tallinn-Tartu road.

The aim of the construction of the **Ardu-Võõbu section** was to continue work to transform the Tallinn-Tartu road into a class I carriageway, thereby increasing traffic safety. The new road has parking and rest areas for heavy-vehicle traffic, preventing traffic hazards caused by stopping on the side of the road. The structures that were constructed include a 2+2 road with a dividing strip that is 2.8 metres wide, grade-separated intersections at Pala and Saarnakõrve, the Nõmmeri ecoduct across the new Tallinn -Tartu road and the Mustla intersection.

- Kose-Võõbu in numbers: The new 24-km section reduces the distance between Tallinn and Tartu by 3 km. *Around* seven minutes can be saved if the permitted speed limit is 120 km/h and *six* minutes if it is 110 km/h. 1.74 million $m^3$ of embankment material was installed. The area of the crushed aggregate bed is equal to around 180 football fields (1.35 million $m^2$).
- Unique features of Kose-Võõbu: Road signs with changing information. Single-level animal crossings. Maximum permitted speed limit 120 km/h

## CONSTRUCTION OF KERNU BY-PASS

- Location: National road no. 4 (E67) Tallinn-Pärnu-Ikla, 37-42 km section
- Designed by: Roadplan OÜ and Skepast & Puhkim OÜ
- Contractor: Nordecon AS
- Supervision: Sweco EST OÜ
- Total cost: 13 million*
- Description: A new *ca* 5 km long 2+1 road was built for transit traffic, with the existing road section passing through the village of Kernu serving local traffic from now on. The length of the 2+1 bypasses is between 1000 and 1100 m. Construction work included the Haiba grade-separated intersection (38.05-42.48 km section) and the Kernu intersection (36.7-38.05 km section) that connects the existing Tallinn-Pärnu-Ikla road and the Kernu bypass as well as the Ääsmäe-Kernu secondary road and the Kernu Manor road. Fences were installed along the length of the road, leaving one crossing for animals. Seven frog culverts were installed under the road. Light traffic roads were built for pedestrians.

## NATIONAL ROAD NO. 11390 TALLINN-RANNAMÕISA-KLOOGARANNA, 2.6-4.1 KM SECTION

- Location: National road no. 11390 Tallinn-Rannamõisa-Kloogaranna, 2.6-4.1 km section
- Designed by: Reaalprojekt OÜ
- Contractor: AS TREF Nord
- Supervision: OÜ Lindvill
- Total cost: 2.8 million*
- Description: The aim of the project was to improve traffic safety and increase the capacity of the road section in question. The section was transformed into a four-lane road, intersections were reconstructed and the organisation of traffic was changed. Traffic directions were separated with a crash barrier. The T-shaped intersection of Vana-Rannamõisa Road and Rannamõisa Road was replaced with a turbo roundabout. Lighting was installed on the roundabout. Additional footpath sections and a noise wall were constructed and landscaping work was carried out.

**All costs include VAT.*

# ***Three major construction sites in the*** *southern region*

### NATIONAL ROAD NO. 69 VÕRU-KUIGATSI-TÕRVA

- Location: National road no. 69 Võru-Kuigatsi-Tõrva, 9.4-22.1 km section
- Designed by: Sweco Projekt AS
- Contractor: Verston Ehitus OÜ
- Supervision: Taalri Varahaldus AS
- Cost: 4.8 million*

The Road Administration commissioned the reconstruction of the Varese-Vaabina section of national road no. 69 Võru-Kuigatsi-Tõrva in 2020.
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 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 tidied up, with trees that reduced visibility being removed.
The traffic control devices on the road section were replaced, crash barriers were installed on dangerous sections and bus stops were reconstructed.

### NATIONAL ROAD NO. 69 VÕRU-KUIGATSI-TÕRVA

- Location: National road no. 69 Võru-Kuigatsi-Tõrva, 57.2-65.4 km section
- Designed by: Reaalprojekt AS
- Contractor: Nordecon AS
- Supervision: Infragate Eesti AS
- Cost: 4.4 million*

The Road Administration commissioned the reconstruction of the Kuigatsi-Soontaga section of national road no. 69 Võru-Kuigatsi-Tõrva in 2020.
An 8.1-km-long road section between the Kuigatsi crossroads and the Väike Emajõgi River was reconstructed. Two layers of asphalt were installed on a complex stabilised base and rainwater systems were repaired. The embankment was reinforced on a section covered with peat, and additional weight was placed on it during construction to ensure the stability of the embankment. The new Kuninga and Soontaga bridges were built in this section. The narrow Kuninga bridge, which had low load-bearing capacity, was reconstructed as a steel flat-profile tube with a 2.1-metre opening. The dangerous Soontaga bridge was demolished and replaced with a new rigid-frame bridge with a footpath.
A 250-metre footpath was constructed in the Soontaga village section. 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 tidied up, with trees that reduced visibility being removed.

### NATIONAL ROAD NO. 70 ANTSLA-VAABINA

- Location: The reconstruction of national road no. 70 Antsla-Vaabina (0.0-6.9 km section) and national roads passing through the town of Antsla
- Designed by: Reaalprojekt AS
- Contractor: TREV-2 Grupp AS
- Supervision: P.P. Ehitusjärelevalve OÜ
- Cost: 7 million*

The Road Administration commissioned the reconstruction of national road no. 70 Antsla-Vaabina (1.0-6.9 km section) and the national roads passing through the town of Antsla in 2019 and 2020: no. 70 Antsla-Vaabina (0.0-1.0 km section); no. 23129 Laatre-Antsla (12.9-16.4 km section); no. 25183 Antsla-Kanepi (0.0-0.2 km section) and no. 25194 Antsla-Haabsaare (0.0-1.2 km section).
A new roundabout was built at the crossing point of roads no. 70, 25194 and 25183. The embankment and surface of the road were reconstructed and a new complex stabilised two-layer asphalt concrete surface was built, which is now 8 metres wide (7 metres in the town sections). Intersections and exits were reconstructed. Ditches were constructed and a closed rainwater system was installed in Antsla. Street lighting was updated in the sections passing through Antsla and 3.4 km of pavements and light traffic paths were built along with a 2-km light traffic path connecting Antsla with the village of Kraavi. The work was a joint procurement of the Road Administration and Antsla municipality. The latter financed the construction of the light traffic path between Antsla and Kraavi and the installation of lighting. It emerged in the course of the work that the road would have passed through the foundations of Vaabina Manor. The design therefore had to be adjusted to preserve the remains of the foundations.

**All costs include VAT.*

# ***Three major construction sites in the*** *eastern region*

## CONSTRUCTION OF THE RÕMEDA-HALJALA 2+2 SECTION ON THE TALLINN-NARVA ROAD

- Location: National road no. 1, Tallinn-Narva, 78.5-87.4 km section
- Designed by: Selektor Projekt OÜ
- Contractor: Merko Ehitus Eesti AS
- Supervision: OÜ Toomtsentrum
- Total cost: 16.2 million*

The aim was to reconstruct the existing road section as a safe 2+2 road . The first part of the section at the end closer to Tallinn was already a 2+2 road for more than 1 km, but the road heading to Tallinn was narrow and did not meet the standards. The rest of the section had two lanes separated by rubber posts. Prior to reconstruction, tragic accidents had occurred on the two-lane Aaspere-Haljala section: 12 people had been killed in traffic accidents since 2005. All single-level exits and intersections were closed off after the construction work. Local residents were guaranteed access via collector roads and access routes. A grade-separated intersection was built in Aaspere and an intersection in the village of Vanamõisa. As the section has four lanes, the maximum speed limit in summer is 110 km/h and the limit for winter has been raised to 100 km/h (for now).
Communication with the local government and residents was important in the planning phase. Before completing the principal design, improvement suggestions were gathered from locals and a public meeting was organised after completing the design.

## RECONSTRUCTION OF THE SAE-ANGUSE-PALASI SECTION OF THE RAKVERE-RANNAPUNGERJA ROAD

- Location: National road no. 88, Rakvere-
Rannapungerja, 21.3-33.1 km section
- Designed by: Selektor Projekt OÜ
- Contractor: Nordecon AS
- Supervision: Sweco EST OÜ
- Total cost: 3.8 million*

The aim of reconstructing the Sae-Anguse-Palasi section of this road was to improve the condition of the surface and make traffic safer and more convenient. The road surface was extended from the existing 6-6.5 metres to 7.5 metres and curves were widened to improve safety. For the financially optimal solution, the design of the section includes a single-layer asphalt concrete surface on a bitumen-stabilised base. With only one layer of asphalt concrete, the shear stress between the base and the asphalt surface would be too high, reducing the lifespan of the road. As such, a layer of pavement is added between the base and the asphalt. This section also includes the Nõva bridge, which was reconstructed in 1978. The original bridge was built in 1936 and widened with a separate structure in 1978. The new bridge was designed as an archway bridge of reinforced concrete with one opening. Its deck plate is supported by the arches via spandrels. The arch is monolithically supported by two bridge abutments that transmit the load into the soil. The abutments are constructed on pad and pile foundations.

## RECONSTRUCTION OF THE MÄEKÜLA-SUURPALU SECTION OF THE MÄEKÜLA-KOERU-KAPU ROAD

- Location: National road no. 25, Mäeküla-Koeru-Kapu, 0.0-5.5 km section
- Designed by: Tuulekaru OÜ
- Contractor: Verston Ehitus OÜ
- Supervision: Esprii OÜ
- Total cost: 2.9 million*

The aim of reconstructing the Mäeküla-Suurpalu section of this road was to improve the condition of the surface and make traffic safer and more convenient. There was considerable pedestrian traffic between the village of Sargvere and the institutions and bus stops in Mäeküla. Therefore, a light traffic path was built to connect them in cooperation with Paide City Government. In addition, two sharper curves with poor visibility were straightened out.
Within the framework of the contract, the Mäeküla
intersection was reconstructed to provide crossing options. Buses operating on the Tallinn-Tartu route stop at the intersection and are used relatively frequently.
From a technological point of view, the site is special because it includes the first road section in Estonia in which plastic waste was used as an ingredient in the asphalt concrete. One of the plastic supplements helps to improve the qualities of the bitumen used in asphalt and the other helps to reduce the quantity of bitumen used. As a result of these tests, we will be able to provide an initial assessment of the resistance of various mixtures to heavy-vehicle traffic and our climate conditions.

**All costs include VAT.*

# ***Three major construction sites in the*** *western region*

### RECONSTRUCTION OF THE SUURE-JAANI–OLUSTVERE SECTION

- Location: National road no. 24116 Suure-Jaani–Olustvere, 0.8-6.0 km section
- Designed by: Skepast & Puhkim OÜ
- Contractor: Tallinna Teede AS
- Supervision: Teede Tehnokeskus AS
- Cost: 2.9 million*

The 5.3-km-long Suure-Jaani–Olustvere section started in the town of Suure-Jaani, passed through the villages of Kõidama and Kärevere and ended in Olustvere. The aim of the project was to construct a safe and convenient road with a better load-bearing capacity meeting the requirements of a class V road. The two-layer asphalt surface is 7 metres wide, except in the last kilometre passing through the avenue of trees in Olustvere, where the surface is 4 metres wide due to heritage protection restrictions. In addition, five lay-bys were constructed 80-160 metres apart. The trees in the area of the Olustvere avenue were partially assessed in 2017. During construction, it had to be ensured that neither the trees nor their roots were damaged. The construction work was carried out under heritage conservation supervision: Kärevere village turned out to be an ancient settlement site in which 150 objects were found. The most notable findings were a pendant link with two bells, a horseshoe brooch and a silver Viking coin from the 11th century.

In addition, the four-way intersection of national roads no. 57 and 24116 was reconstructed as a fully lit roundabout. To connect the light traffic paths, a new path was built in the 4.3-5.1 km section.

### RECONSTRUCTION OF THE TALLINN-PÄRNU-IKLA SECTION

- Location: Restoration repairs to the surface of national road no. 4 Tallinn-Pärnu-Ikla (122.6-134.5 km section) and the replacement of the joints in Uussild (Papiniidu) bridge
- Designed by: Tuulekaru OÜ
- Contractor: AS YIT Eesti
- Supervision: Lindvill OÜ
- Cost: 1.6 million*

Restoration repairs to the surface were carried out, the load-bearing capacity of the lanes that carry the most heavy-vehicle traffic at intersections was increased and the joints in Uussild bridge were replaced. This was a pilot project to a certain extent. The minimum requirements of the aggregate materials of asphalt mixtures were relaxed compared to those stated in the guidelines for constructing asphalt pavement layers. The aim was to give the producers of the asphalt mixture more freedom with regard to source materials (incl. allowing the use of cement or slaked lime as additional fillers), while ensuring the required characteristics of the final product. The requirements of the deformation resistance of SMA and AC bin asphalt mixtures and of the wear resistance of SMA were tightened by one category compared to the strictest requirements in the guidelines. AS YIT Eesti made skilful use of the relaxation of requirements. Slaked lime was used as an additional filler for the first time in Estonia. The joints in the Uussild bridge were replaced, with PolyFlex PA 30 subsurface joints being used. The total movement range of these joints is 30 mm, which should ensure the proper functioning of the bridge.

### RECONSTRUCTION OF THE KURESSAARE-TÕLLI SECTION AND MATU BRIDGE

- Location: National road no. 78 Kuressaare-Kihelkonna-Veere (2.4-8.3 km section) and Matu bridge (3.7 km section)
- Designed by: Nordecon AS
- Contractor: AS TREV-2 Grupp
- Supervision: Lindvill OÜ
- Cost: 2.6 million*

The purpose was to make the amortised surface of the road section comply with traffic volumes and to improve driver comfort and road safety. The reconstructed road remained on the existing embankment. New side ditches were dug, new culverts were installed and a new asphalt concrete surface on a bitumen-stabilised base was built.

In addition, the intersections of the national roads in Randvere and Tõlli were made safer,
bus stops and existing exits were reconstructed, the road area was tidied up and traffic control devices were updated.

The Matu bridge on the Irase River (3.7 km section), which was built in 1959, was reconstructed because its width did not comply with requirements. An environmentally-friendly crash barrier was installed on the bridge.

A fully lit light traffic path was built between Laheküla and Kellamäe Manor which forms a uniform whole with the network of light traffic paths at the Kihelkonna roundabout and the Kuressaare Ring Road.

**All costs include VAT.*

# *Survey of driver satisfaction* with the maintenance of national roads in summer

**A survey was carried out in cooperation with Turu-Uuringute AS to determine whether road users are satisfied with road maintenance and temporary traffic management in summer, whether information concerning driving conditions reaches them and how campaigns influence them.**

**Road maintenance in summer**

The majority of people are indeed satisfied: 82% agreed that road shoulders and green areas are mown sufficiently and at least 75% said that winter damage, rubbish on roads and loose crushed stone, etc. are removed quickly enough.

43% of respondents felt that gravel roads are maintained effectively. However, a third of those surveyed could not answer this question, indicating that they do not use them. The proportion of those who agree with the statements has not changed significantly in a year. More people agree that the maintenance of gravel roads is effective.

Drivers from Saare, Tartu, Võru, Harju and Lääne counties are largely satisfied, while those from Põlva, Jõgeva and Rapla counties tend to be unsatisfied.

**Temporary traffic management**

People are mostly satisfied with temporary traffic management. 75-87% of respondents agreed with all of the statements in connection with it. The majority of those who agreed with all of them were from Valga, Viljandi, Hiiu, Saare, Lääne and Järva counties. Drivers from Põlva, Jõgeva and Rapla counties are less satisfied – the same counties where discontent with road maintenance in summer was high. The assessments of professional drivers and those over the age of 50 were higher than average.

**Road users are largely satisfied with road maintenance in summer, temporary traffic management and information on driving conditions.**

**Searching for information on driving conditions**

Satisfaction with information concerning driving conditions is high. 71% of drivers, most from Tartu and Võru counties, agreed that the available information is understandable. 65% said that information on driving conditions is easy to find. This viewpoint was common among drivers from Lääne and Võru counties and those above the age of 49.

Both statements found readier agreement among drivers who speak Estonian and come from rural areas or those who look for information before going for a drive. Non-Estonians and drivers from smaller urban areas tended to disagree. Compared to the past two years, the number of respondents who agreed with both statements is significantly lower, albeit the same as last year. 54% of drivers look for information on driving conditions. They are often professional drivers, non-Estonians and drivers from urban areas.

The main sources of information include smartphone applications (more than half), online news portals and the radio (one-third). The planning app 'Tark Tee' is used by 25% of drivers.

**Noticing campaigns**

The news section 'Roadworks this summer' was noticed by 8% of drivers in the period from April-October 2020, i.e. 38,300 ± 8000 drivers. Drivers who speak other languages, are from Ida-Viru County and urban areas noticed it less frequently. The news section is regarded as necessary by 56% of drivers. 52% of those who had seen it felt that it influenced their behaviour in traffic.

The campaign "Don't pass me too closely" was noticed by 42% between April and October, i.e. 188,600 ± 13,800 drivers. Drivers from Pärnu and Saare counties noticed it most often. The campaign was most frequently noticed on TV (one-quarter), followed by the radio, outdoor advertising and social media (one-third). The campaign is considered necessary by 59% of drivers: they are mostly under 34, Estonians, from rural areas and residents of Järva, Saare and Valga counties. 52% of those who had noticed the campaign felt that it influenced their behaviour in traffic.

# ***Traffic management*** *and road maintenance*

## ROAD MAINTENANCE CONTRACTS

To ensure the required levels of the conditions on national roads, companies maintain them on the basis of 17 contracts.

Maintenance contracts are entered into for five years. In 2020, road maintenance procurements were conducted in Viljandi, Valga, Hiiu and Järva counties.

Price factors are taken into account when making decisions. As a new principle, merit points are awarded for the competence of the teams and their modern equipment.

Snow-clearing periods were shortened on roads with lower condition levels so that they are similar to de-icing periods.

## VOLUME AND COUNTING OF TRAFFIC ON NATIONAL ROADS

According to the traffic counting results for 2020, the average volume of traffic on national roads decreased by 2.4% compared to 2019, i.e. from 1032 cars a day to 1007. In 2019, the traffic volume increased by 3.8% in comparison with 2018. Traffic-counting results provide important input for the designing, construction and maintenance of roads, for carrying out traffic safety and management activities, for the allocation of funds and for compiling guidelines and other documents.

In 2020, the average volume of traffic was 5407 cars a day on main roads (a 3.5% decrease compared with 2019), 1641 cars on basic roads (a decrease of 1.3%) and 321 on secondary roads (0.0% change).

**69**

**is the total number of camera booths. There are 44 measuring systems which are relocated from time to time.**

Greater traffic volumes are concentrated around larger cities and industrial areas. The road section with the heaviest traffic is the 9.2-11.0 km section of the Tallinn-Narva road, where the annual average traffic volume was 33,507 cars per day. Other road sections with higher traffic volumes include the 13.0-13.8 km section of the Tallinn-Pärnu-Ikla road (28,259) and the 5.7-8.5 km section of the Tallinn-Tartu-Võru-Luhamaa road (25,539).

Traffic volume and increases therein are influenced by general economic development, changes in fuel prices, taxes, the development of local infrastructure and land use, road capacity and more. The coronavirus crisis and the accompanying restrictions had a significant impact on the volume of traffic in 2020. There were 109 permanent and 41 periodical counting points in the traffic counting information system at the end of 2020.

## SPEED CAMERAS

The adoption of speed cameras is a joint project of the Transport Administration and the Police and Border Guard Board, implemented as part of the national Traffic Safety Programme.

In 2020 there were 67 speed-check booths on state-owned roads in Estonia, five of which allowed measurements to be taken in both directions. In addition, the Transport Administration is able to use two booths in Tallinn.

There are 69 booths in Estonia in total and the Road Administration has the use of 44 of these measuring systems, which are relocated from time to time. Locations are chosen based on statistics on road accidents involving fatalities over the past five years, volume of traffic , the speed of vehicles on that section of road, access to electricity and local conditions. Traffic signs informing road users of speed cameras have been installed on these road sections.

Based on the experience of other countries, speed cameras help to reduce the number of road accidents involving fatalities by approximately 20%. High speeds account for around 20% of road deaths in Europe, meaning that speeding causes around 8500 deaths per year.

# *Focal point:* **Innovative solutions**

## PLASTIC IN ASPHALT

The Road Administration has tested the use of recycled plastic waste in asphalt pavement for the first time with Verston Ehitus OÜ. The test was carried out when reconstructing the Mäeküla-Suurpalu section (0-2.3 km section) of the Mäeküla-Koeru-Kapu road. In addition, almost 2 km of pavement was constructed next to the road using various concentrations of the same supplement. Products made by the Scottish company MacRebur were used. The aim of the test was to monitor the resistance to our climate and traffic of asphalt concrete containing plastic. Initial conclusions can be drawn once the first winter has passed. There are no definite plans for the widespread use of plastic waste in asphalt concrete mixtures, but considering the global pressure in connection with environmentally friendly technologies, we need to be ready for it.

## PILOTING REMOTE MONITORING

Machine control is common in road construction because it makes it possible to build more accurately and efficiently. The field of 3D surveying and the use of drones have developed to a great extent in recent years. Using pictures taken by generally readily available drones and photogrammetry, it is possible to create a 3D surface model that can be used as source data when designing. The reliability of such methods was studied as part of the pilot project for the construction of a dust-free surface on national road no. 15160 Köisi-Koigi in 2020. The objective was to determine how accurate drones are in surveying and compiling source data for the preparation of working drawings for construction machinery. It also demonstrated the suitability of the use of machine control in the construction process on a site with a relatively small volume of work. The project was successful: drone surveying helped to save time and to avoid burdening surveyors during the peak season for construction. In addition, closely surveyed points constitute a surface model that cannot be manipulated in bad faith. This differs from traditional geodetic surveying, where single points are taken as a basis. The accuracy of drone surveying requires further research and analysis to determine the layers of pavement or embankment for which it could be used as a routine operation.

## Worth knowing

- According to Statistics Estonia, 28.4 million tonnes of goods were transported internally and internationally in 2019, and road transport turnover was 4794.4 million tonne-kilometres. Domestic transport amounted to 23.4 million tonnes (82%) and road transport turnover was 1710.2 million tonne-kilometres (36%). If we were to take €0.10 as the average price per tonne-kilometre and increase the efficiency of road transport by 1% by means of electronic freight documents, we would save five million euros per year and reduce $CO_2$ emissions.
- Three pilot procurements were carried out in 2020 and the feedback from builders, owner supervision and other parties to the memorandum was largely positive. It was decided to continue piloting as part of 14 procurements before making it mandatory in all construction procurements in 2022. The Ministry of Economic Affairs and Communications and the Estonian Association of Information Technology and Telecommunications also sought to join the memorandum.
- The Road Administration successfully tested the eCMR international e-waybill in 2020. A domestic e-waybill will be developed along with relevant regulations in the coming years.

## DEVELOPING AN E-WAYBILL FOR BULK MATERIALS

A cooperation memorandum for the development of an e-waybill for bulk materials was entered into between eight parties in May 2020. The parties to the memorandum were the Estonian Asphalt Pavement Association, the Union of Estonian Automobile Enterprises, the Association of Estonian Cities and Municipalities, the Estonian Association of Construction Entrepreneurs, the Association of Construction Material Producers of Estonia, the Road Administration, the Tax and Customs Board and the Police and Border Guard Board. The parties acknowledged that the supply chain of bulk materials cannot be sufficiently monitored in real time, making it difficult to ensure compliance with mass restrictions. One solution to the problem is the creation of a digital supply chain, i.e. the introduction of e-waybills. According to a survey on the economic impact of the real-time economy, the introduction of e-waybills will lead to savings of around 44 million euros and 15,710 tonnes of $CO_2$ per year in Estonia. More than two million waybills are currently being printed on paper in Estonia.

# ***Traffic Management Centre:*** *2020 brought new and innovative systems and better prognosis*

**The pandemic led to changes in the work organisation of the Traffic Management Centre. The majority of employees had to work from home to avoid contact. Fortunately, all of our systems had been developed to allow for remote work, enabling us to reorganise our work smoothly.**

Starting from early 2020, the centre's new tasks include the management, maintenance and development of road weather stations, road cameras and weighing stations and the development of the road weather forecast service.

**New road weather stations and cameras**

We installed nine new road weather stations and 40 road cameras to accompany them during the year. The completion of the development plan for road weather equipment was a significant milestone.

According to the development plan, around 60 road weather stations will be replaced or installed from 2021-2024, establishing a network of 100 base stations on our national roads. The main challenge in connection with this is the creation of a new road weather information system that encompasses the collection, storage, issuing and presentation of data, and entry into long-term contracts for the purchase and maintenance of equipment.

We continued to cooperate with the Environment Agency to develop a road weather forecast service. The quality of forecasts improved notably through our joint efforts.

**Wildlife detection systems are innovative on the global scale – speed limits are reduced when an animal is detected.**

The development of a control system for variable message signs continued in 2020. We integrated the signs and weather stations on the new Kose-Võõbu section into the system. Similarly to the Tallinn-Pärnu road, speed limits and warnings are adjusted to road and weather conditions there. Automatic wildlife detection systems started operating in this road section: users are warned and the speed limit is reduced if an animal is detected. This is an innovative solution on the global scale and we will continue to develop it in 2021. We also added new variable message signs to our system which display road and air temperatures at weather stations in Jõhvi and Urge.

A vehicle detection system was installed at the Kasti intersection in Märjamaa. Thus, the speed limit is automatically reduced on the Tallinn-Pärnu road if a vehicle approaches on a secondary road. Furthermore, the control system now displays an accident warning on electronic information boards if an accident has been registered on the road section ahead by the Emergency Centre.

**Satisfaction with permit services**

We continued developing the 'Tark Tee' portal in 2020. The portal now displays the current status of variable speed limit and warning signs, and the users who set restrictions (companies and local governments) can be managed more flexibly.

We issued 1289 traffic ban permits during the year, which was slightly more than in 2019. 15,479 special transport permits were issued – 12% fewer than in 2019. The receipt of permit fees decreased by 17%. The most important development in the special permit application system VELUB was the automatic issuing of special permits in certain cases, which makes the application process faster and reduces labour costs. Around 8% of permits are issued automatically. We aim to gradually increase this proportion. Satisfaction with permit application services has been increasing over the last three years.

We renewed our contract with the Emergency Centre for the road information helpline service for the next three years. Instead of the former road information helpline 1510, the new state helpline 1247 can be used to forward road information starting from 2021.

Anti Palmi and Raimo Unt receiving their awards.

# **Aadu Lass** *Awards*

**The road sector awards, which are named after engineer Aadu Lass, are presented in two categories: the Aadu Lifetime Achievement Award and the Aadu Engineering Award. In 2020, Anti Palmi received the Engineering Award and Raimo Unt the Lifetime Achievement Award.**

## ANTI PALMI: Winner of the Aadu Engineering Award

Anti Palmi started his studies at Tallinn University of Technology in autumn 2004 with his sights set on becoming a road engineer. He joined the Road Administration on 13 April 2009. Major sites to which Anti has contributed include the following:

- Construction of the Aaspere-Haljala road
- Tapa viaduct (BIM pilot project)
- Mäeküla-Suurpalu (construction of gravel roads using Infrakit)
- Valgejõe-Rõmeda construction site
- Construction of the two-level railway intersection at the Port of Sillamäe and reconstruction of the Sillamäe section
- Padaoru culvert
- Kunda bridge

A number of innovative new solutions are being tested or have been adopted on Anti's initiative. Digital construction is a significant field he oversees.

Anti considers it important that 3D design, a.k.a. Infrakit, has reached almost all designers in recent years. Infrakit makes it possible to introduce the new living environment to locals by means of visualisation. Anti has also participated in TEET projects in the design, construction and maintenance stages and in the application of the *Building Information Model* (BIM). He tries to find innovative and environmentally-friendly solutions: he introduced the use of microsurfacing, which had been tested in 2008 but was not adopted at the time. In 2019, he initiated new tests on the 15.7-km-long Iisaku-Tudulinna section in cooperation with YIT Infra Eesti AS and OÜ ÜLE. In summer 2020, Verston Ehitus OÜ tested an asphalt pavement containing recycled plastic waste pellets on the Mäeküla-Suurpalu section for the first time. Furthermore, almost 2 km of pavement will be constructed alongside the road using the same supplement.

Anti also wants to bring the use of technology into supervision. The

asphalting bonus system initiated by him and adopted in the eastern region is worthy of mention here. The aim of the system is to pay a bonus for better quality. In 2018, spreaders on some test sites were equipped with thermal scanners that record the installation temperature across the pane. With an even temperature, there are fewer porous points and other defects. The new system was applied to a larger number of sites in 2019, and starting from 2020, all contracts include the bonus option.

Anti was one of the initiators of the 'Engineers to Schools' project of the Road Administration and the Estonian Asphalt Pavement Association. He himself also showcased his profession at a number of schools. In addition, Anti gives lectures on road maintenance economics at TalTech. He also participates in the work of the professional qualification committee. To him it is important that examinees understand the responsibility they are taking on.

The Road Administration knows that Anti is always prepared to contribute to new projects and appreciates the fact that he offers innovative solutions. His colleagues value him as a manager who is there for people. Where necessary, he offers constructive criticism both within the organisation and outside of it, because he wants things to be done as well as possible.

### RAIMO UNT:
### Winner of the Aadu Lifetime Achievement Award

Raimo Unt's life work was leading the modernisation of the road maintenance machinery fleet in the period from 1988-2008: replacing Soviet equipment with Western machinery of better quality and training specialists on courses and through professional competitions. He graduated from the Tallinn Polytechnical Institute in 1972 with a diploma in mechanical engineering and was the chief mechanic with the Rapla Road Repair and Construction Administration for 15 years. He had extensive knowledge of Soviet road maintenance technology. In 1988 he became a technical adviser with Estonian Roads (the Road Administration as of November 1990) and started looking for opportunities to replace Soviet technology. The earliest opportunities to do so were created with the aid programmes of the Finnish and Swedish Road Administrations, which were carried out under Raimo's leadership. Western technology turned out to be considerably more effective than even the most cutting-edge Soviet machinery.

To streamline cooperation with our northern neighbours even further, Raimo set up a working group that included the chief mechanics from road offices. He was also a member of the management board at the Baltic Road Association, organising cooperation with colleagues.

One of the biggest undertakings was the production of road graders on the initiative of the private sector. Raimo's experience as a mechanic also played a role in this. He assisted the company alongside the working group, developing a range of Corbex road graders.

The introduction of modern technology led to the need to train workers. As there were no specialists who were able to use Western technology, Raimo got instructors from Finland, Sweden and the Netherlands involved. He also conducted professional competitions for grader operators and maintenance vehicle drivers after Aadu Lass retired. The tradition of competitions for maintenance vehicle drivers was revived in 2019 on the initiative of the Road Administration. Raimo, who had already retired by this point, developed guidelines for the renewed competition and provided advice. Raimo was the patron of the professional competition in 2020.

He has also been active in developing the Estonian Road Museum. Its collection of machinery was put together under his leadership.

## Road maintenance competition 2020

**On 15 October 2020 the best maintenance vehicle driver and roadmaster of the year were selected in a professional road maintenance competition at Järva County Vocational Training Centre in Särevere.**
In the category of the best maintenance vehicle driver, Endel Teder (TREV-2 Grupp AS) was awarded 1st place, Margus Jõõger (Eesti Teed AS) 2nd place and Kert Kaljuste (Lääne Teed OÜ) 3rd place. In the category of the best roadmaster, Tarvo Kuldkepp (Warren Safety OÜ) took 1st place,
Jaanus Kirsipuu (Eesti Keskkonnateenused
AS) 2nd place and Leho Laik (TREV-2 Grupp AS) 3rd place.
The Road Administration as the authority commissioning road maintenance work is continuing with the tradition of professional competitions that was initiated in 1973. The aim of the competition is to motivate and encourage companies and employees in the field to develop themselves further, promote the field and exchange experience. The competition was organised by the Road Administration in cooperation with Appleton OÜ, Eesti Teed AS and Järva County Vocational Training Centre in Särevere.

**Among other things, Raimo Unt initiated the restoration of the unique V-1 road grader on the basis of contemporary drawings.**

# *The Road Maintenance Service's* **best partners**

**The Road Maintenance Service highlighted the great work of 10 partners in 2020, including designers, builders, representatives of owner supervision, traffic managers and road maintainers.**

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

AS TREV-2 Grupp was recognised for its smooth, successful, on-time and high-quality construction of the Kose-Ardu road section. According to the measurement data of Teede Tehnokeskus AS, this section boasts the most even asphalting of any road built in 2020. Nevertheless, there were other sites around Estonia where the contractors stood out for their well organised and high-quality work.

### BEST ROAD DESIGNER – KLOTOID OÜ

Klotoid OÜ is a small company, but one which focuses on high-quality projects. Apart from the company itself, designer Andri Põrk deserves a mention for his safe solutions and keen supervision.

### BEST BRIDGE BUILDER – NORDPONT OÜ

Nordpont OÜ is focused on finding solutions and performing only the highest-quality work. The proper performance of contracts and outstanding end results are important to its team. Everything is thought through before work commences, and the best solutions are found based on the situation.

### BEST BRIDGE DESIGNER – OÜ MAANTEED

In 2020, a number of significant structures designed by OÜ Maanteed were built, such as the Haiba viaduct on the Kernu bypass, the Kernu filling station viaduct, the Mustla bridge on the Ardu-Võõbu road section, the bridge over Lintsi River and the overpass at the Pala intersection. All of these projects were prepared to a very high level and were well suited to their environments.

### BEST ASPHALT INSTALLER – TARISTON AS

Tariston AS stood out for its efforts to ensure the quality of asphalting in 2020. The Road Administration's bonus system is an indicator in identifying good asphalting. Tariston AS has enjoyed very good bonus results: the quality of its asphalting on one site was so high that the maximum contractual amount was reached before the 'quality ran out'.

### BEST OWNER SUPERVISION – URMAS KONSAP (BRP INSENERID OÜ)

For three years, Urmas Konsap and the owner supervision team at

BRP Insenerid OÜ carried out the kind of engineering work on the Kose-Võõbu road that every customer dreams of. He solved problems, checked the quality of the work, monitored the performance of contracts and was demanding, but equitable at the same time. It was no doubt thanks at least partly to this that the work was completed ahead of the deadline and that deductions related to quality were marginal.

## BEST ROAD SURFACER – ÜLE OÜ

Üle OÜ stood out for its surfacing work in Harju and Rapla counties and elsewhere in Estonia. The company does not settle for substandard quality on its construction sites, carrying out its duties with the utmost professionalism, commitment and sense of responsibility.

In addition to high-quality work and very good organisation, Üle OÜ piloted the use of e-waybills, which provided important information and feedback for the future.

## BEST TRAFFIC MANAGER – AS SIGNAAL TM

We noted the major contribution and the great efforts of AS Signaal TM during the construction of the Rõmeda-Haljala 2+2 section. Since the road was widened on both sides of the existing road and work was carried out without suspending traffic, all changes to the organisation of traffic had to be made quickly and with careful consideration.

The company provided a sufficient number of workers and they were poised to respond promptly day and night where necessary.

## BEST MAINTENANCE COMPANY 2020 – ÜLE OÜ

When analysing shortcomings overdue for elimination, deductions, deviations in periodic reviews and road users' notices forwarded to the helpline 1247 (previously 1510), Üle OÜ proved to be the best maintenance company in the Kuusalu area.

## BEST REGIONAL MAINTENANCE COMPANY 2020 – AS EESTI TEED

The team at AS Eesti Teed Saaremaa consists of qualified specialists with many years of experience who are among the leading experts in the field of maintenance. Their high level of road maintenance is reflected in the satisfaction of the contracting authority and road users. Cooperation has been smooth, competent and professional. Activities have always been carried out according to plan and the team is able to respond to problems as they arise.

**The Road Maintenance Service of the Road Administration has selected its best partners in 2020, all of whom contributed to the completion of extensive and significant works.**

# **Meelis Telliskivi:** *The organised work of the departments continued during COVID-19 crisis*

**According to Meelis Telliskivi, Traffic Director at the Road Administration, the Traffic Service faced major challenges in the exceptional circumstances caused by coronavirus.**

Meelis Telliskivi

TRAFFIC DIRECTOR

## SERVICE BUREAUS

Service bureaus had to reorganise their work due to the outbreak of the virus. At times, customers were unable to be served in the bureaus. However, the bureaus managed to cope with the first wave of the virus and the emergency situation and were active in proposing solutions to problems. Suitable solutions were found despite the fact that some activities are strictly regulated.

The focal point was popularising the e-service: now, 76.71% of all operations related to vehicle registration are carried out online. Therefore, mobile services were developed to provide our customers and partners with easier access to public services.

The employees at our bureaus were able to step into the shoes of customers and make sure that people got everything done while wasting as little time and energy as possible. There was a sense of working together for a common cause – we formed a team that sticks together and supports one another, which was a very positive experience.

## TECHNICAL DEPARTMENT AND VEHICLE REGISTRY DEPARTMENT

The Technical Department and Vehicle Registry Department are the departments most closely connected to our service bureaus, particularly in unusual circumstances, which were of course in abundance in 2020.

The Technical Department developed a system enabling pre-registration inspections of vehicles to be carried out using photos. Based on this, the employees of the Road Administration can draw up a report.

All factories still send information concerning the type approval of their vehicles as PDF documents. This has to be entered into databases manually when registering vehicles. Now, some larger factories have started to change their type approval documents (i.e. the 'birth certifi-

cates' of vehicles) into electronic machine-readable documents that do not have to be reprocessed when registering vehicles in the EU. The proportion of manual documentation is decreasing considerably as a result.

Whereas the Technical Department deals with technical documentation, the Registry Department supports bureaus by making legal documentation for the registration of vehicles available. They also had to reorganise their work during the coronavirus crisis.

At the outset of the crisis, everyone was able to register their vehicles based on photos, but later the concept of 'recognised sellers of used cars' was introduced. This means that if a seller meets certain criteria, they can register vehicles based on photos. Those who do not meet the criteria have to present the vehicle itself.

## EXAMINATION DEPARTMENT

Tests were suspended for a time during the emergency situation, with a total of almost 4000 tests being cancelled. Naturally, this meant a lot of catching up later on.

Our examiners were therefore equipped with effective masks and visors and their cars with disinfectants. It was decided that everyone would have to wear a mask during the tests. If the examinees did not have a mask, an employee of the Road Administration would provide them with one. The aim was to ensure that no one would be infected during a driving test.

A significant proportion of examinees, *around* 2000 people, were from the Defence Forces. Therefore, a mobile test class was established, equipped with 20 tablets. This made it possible to organise theory tests outside of our bureaus.

At the same time, examiners remain concerned about the poor results of some driving schools and the fact that they do not take responsibility for their own failings. The pass rate is unacceptably low in a number of driving schools.

**There was a sense of working together for a common cause – we formed a team that sticks together and supports one another, which was a very positive experience.**

However, I would like to commend those who had the courage and the will to conduct tests in difficult times and who continue to do their jobs very well.

## PUBLIC TRANSPORT DEPARTMENT

During the first wave of coronavirus, the Public Transport Department had to reorganise all public transport routes, including buses, ferries and domestic flights. This led to the formation of a crisis team, which later expanded to the entire Traffic Service.

Those managing the nationwide crisis had not been able to deal with public transport by this point, but we made an effort to protect bus drivers from the risk of infection.

It was decided that the front doors of buses would remain closed and that drivers would not sell tickets. Thus, free public transport services were provided throughout the country for some time.

Air traffic, as well as ferry traffic between Saaremaa and Hiiumaa, was quickly suspended. This was requested by the residents of Hiiumaa, since Saaremaa was the epicentre of a viral outbreak in spring.

Additional buses started operating on routes in Ida-Viru County. Solutions were therefore found based on regional needs.

The state procurement in spring to find an operator for the Tallinn-Kuressaare air route was successful. The first flight to Kuressaare took to the air on 21 December. In conclusion, the Public Transport Department coped very well with the challenges it faced.

## PREVENTION DEPARTMENT

The Prevention Department prepared and offered distance learning opportunities to kindergarten children, school students and cycling trainers in order to still deal with traffic subjects during the emergency situation.

The department also started to use Moodle to carry out online training courses. The 'ABC of Cycling' training model was redesigned, with the course being made more accessible, some of it being conducted online and the quality of learning being enhanced.

The www.liikluskasvatus.ee website was moved to a new platform: its ordering centre is now to be found at liikluskasvatus.ee/et/tellimiskeskus. Two new sets of study materials were created and distributed free of charge to support the attainment of the traffic-related objectives of the state curriculum (the traffic game 'Liiklustarga liiklusmäng' and the web environment 'Aga mina liiklen ohutult'). Two webinars were organised for kindergarten and school teachers.

# *A special year for* customer service

**2020 was such an exceptional year that it is difficult to compare it to previous years. The situation was different here and around the world: doctors learned to treat a new disease, teachers to teach remotely and the Road Administration to serve customers contact-free.**

The total number of customers who visited our bureaus in 2020 was 205,069, but this does not include those whose documents were left on a chair in front of the door during the emergency situation or those who were served by e-mail. We are truly grateful to and admiring of our employees and customers who handled the ever-changing influx of information about our work organisation in spring.

**Customer service at our bureaus**

The usual customer service process was suspended due to the emergency situation. Bureaus closed on 16 March and we sought to offer services with minimum contact. At times, determining who needed a service urgently was the most difficult aspect of our work.

Our four bureaus in Tallinn, Tartu, Pärnu and Jõhvi accepted customers based on bookings so as to provide vital services. Inspections were carried out on vehicles that needed to be registered to resolve the emergency situation (vehicles transporting food or pharmaceuticals and ambulances). Tests for drivers transporting dangerous goods continued to be conducted.

Documents which had been delivered to bureaus were posted out to their recipients and vehicle number plates were sent to parcel terminals.

A procedure for inspecting and registering vehicles on the basis of photos was temporarily put in place. This service was initially only offered to companies selling cars, but it was opened up to everyone after just one week. Since Mother Nature cannot wait, visits were immediately organised to inspect agricultural machinery.

The shortage of personal protective equipment caused difficulties at first. As no one knew what the next day would bring, smaller groups of employees came to work to avoid the spread of the virus. Work was organised in shifts so that employees

**Customers are happy to use our e-service if we encourage and support them.**

spent one shift in the office and the next one at home, helping our information centre by answering calls and e-mails. As the situation calmed down in late spring, employees used protective equipment, glass screens were installed in their workspaces and our bureaus were opened, but customers had to book a time in advance. This situation lasted from mid-May through to the end of June.

Re-registration for theory tests that had been cancelled since mid-March began in May, and the tests were conducted in June.

We also used this time to replace the camera systems in our bureaus. Furthermore, a number of bureaus were refurbished in summer and autumn: those in Pärnu, Narva, Jõhvi and Jõgeva.

The situation worsened again in late summer, and unfortunately some of our employees were also infected. At the end of August, we had to close our bureaus in Rakvere, Narva and Jõhvi to customers for two weeks, and in late autumn for two weeks again in Jõhvi. This time we were prepared and followed the instructions from spring. One positive is that our customers noted our efforts: the level of satisfaction with bureau staff was maintained (a service index of 88%) and in the case of pre-registration inspection staff it even rose by 5% (to a service index of 76%).

To make the work of our best customer service staff easier, they were issued with a handbook entitled The ABC of Customer Service Specialists in autumn. The publication is useful for those who need to revise how to serve customers in person, over the phone or by e-mail.

**Customer service at our information centre**

The past year gave rise to a lot of questions among our customers. Whereas the number of bureau visits decreased, that of calls made to our helpline increased by 31% (from 115,653 to 151,579) and that of e-mails received by 16% (from 80,007 to 93,087). The information centre would not have been able to cope with this volume without assistance from our bureaus. The e-mails and calls received were like a litmus test for the crisis: customers were annoyed during the first week and defiant during the second, but humour helped defuse the situation during the third.

Since many customers obtained much-needed help from the e-service, it was confirmed that the 80/20 principle also applies here. While 40% of customers can find their way around the e-service on their own, another 40% have to be encouraged in order to boost their confidence. However, 20% are against it out of principle, and it takes time and patience to deal with their feelings on the matter.

A new contact centre system was introduced in early summer. On the one hand it offers more options for serving customers (including web chats), but on the other, the transition was complex and time-consuming due to technical failures.

**Customer service using the e-service**

There is no good without bad in the world. The past year gave us the opportunity to place more emphasis on our e-service and customers had the chance to use it more. The e-service operated at full speed throughout the year, and most customers were able to be served, even when our bureaus were closed.

In 2020, the proportion of operations in the e-service rose to 76% of all of the services that are also provided at bureaus. The growth rate here was 9% in comparison with the previous year. Since change in ownership is one of the most labour-intensive services, this grew by 18% (69% in 2020 compared to 51% the year before) and satisfaction with the e-service remained at the same level, i.e. 89%.

Alongside the rapid developments in the crisis, the e-service was also improved. It can now be used to report vehicle transfers; it adapts to mobile devices; and a uniform authentication service is being used for logging in.

Videos about the use of the e-service featuring stars from our bureaus and departments were made in 2020.

**Lessons learned from the year**

We also have to take something positive from the year with us to the Transport Administration, which will start operating in 2021: the knowledge that if we encourage and support customers, they are happy to use the e-service. Car sellers recognised by the Road Administration can continue to use photos to complete pre-registration inspections. We are considering how to make the registration process even more independent of bureaus.

Customers accepted the system of booking pre-registration inspection times relatively calmly, as it is more convenient to come at an agreed time and be served quickly than wait in the car park for hours.

Moreover, our employees felt like a team more than usual during the year. These are the people who answer calls and e-mails, serve customers at our bureaus and provide meaningful services.

# **Testing centre:** *Fewer repeated tests in 2020*

**The testing centre conducted 36,652 driving tests in 2020, of which 19,412 were successful. The proportion of those who passed was 52% in all categories. 58% of learner drivers, i.e. 11,854 people, passed the test on their first attempt, and there were 20,254 first tests in total.**

| Driving test 2020 | Number of tests | Number of tests passed | % of tests passed |
|---|---|---|---|
| 1st time | 20,254 | 11,854 | 58 |
| 2nd time | 8246 | 4057 | 49 |
| 3rd time | 3974 | 1827 | 45 |
| Total of all tests | 36,652 | 19,412 | 52 |


It is worrying that we had to conduct 3661 repeated category B tests where the examinee was taking the test for anywhere between the fourth to the ninth time, and in 260 cases for more than the 10th time. It is positive that the number of such tests was lower than the previous year, but it remains significant. The quality of learning and instructors at driving schools is important here, and the most significant link in the chain is the learner themselves.

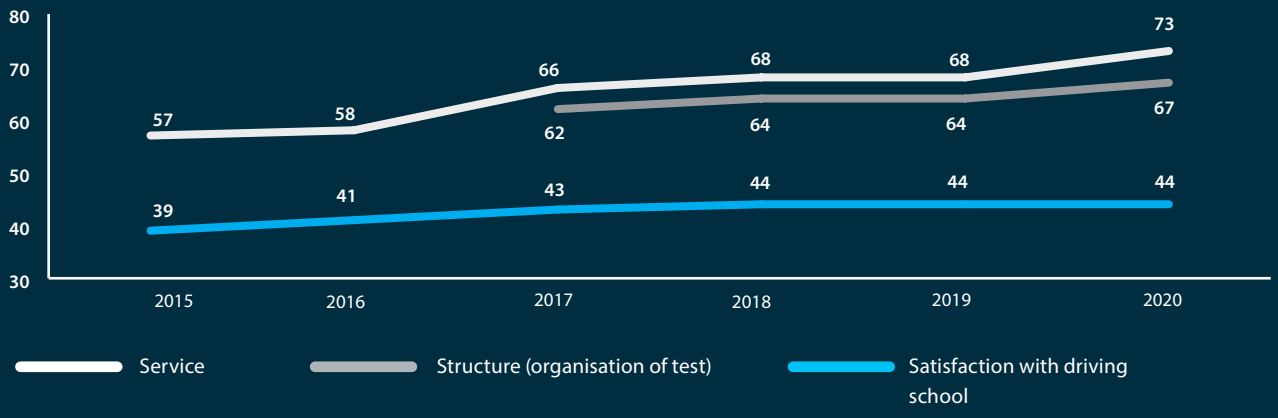
At the beginning of the year, driving tests were cancelled for around two months due to the emergency situation, adding *approximately* 4000 cancelled tests to the usual waiting list. These were eventually conducted in summer, when there was no rest for our examiners. We added test times in the mornings, with tests also being conducted by employees from the Examination Department. Everyone on the parallel waiting list for driving tests that had been cancelled was tested by the end of summer. Two logistics experts dealt with this cat's cradle, working late into the night.

745 people did not come in to take their tests last year, and 31 failed to do so more than once. Thus, these test times were wasted and we lost a total of 124 working days of an examiner.

**Follow-up training**

On 1 February 2020 a new procedure was introduced: after failing to pass their test three times, learners must now take additional lessons at a driving school. This must be done

# Satisfaction index




after every three failed attempts. It is positive that 59% of students who have studied according to the new curriculum are passing their driving tests on the first attempt, 51% on their second attempt and 49% on their third attempt.

1291 people took additional lessons in 2020. 520 of them retook their third test, 44% of whom passed. 44 people took additional lessons twice, 46% of whom passed their test.

**Theory test**

It is a curious fact that one woman failed her theory test for the 33rd time in 2020. She nevertheless faced competition from a man who failed his test for the 25th time. More than 26,000 category B theory tests were conducted in 2020, which was around 3000 more than in 2019. Despite the emergency situation in spring, which complicated the organisation of tests, more theory tests were carried out in 2020 in total than in 2019. Theory tests continued to be run by the Defence Forces using a mobile test room and to a smaller extent (to ensure safety) at service bureaus before the end of the emergency situation. When restrictions were lifted, the mobile test room continued to be used for tests by the Defence Forces (1200 tests) so that people could take the test at service bureaus as quickly as possible.

**Challenges**

276 decisions were issued in regard to challenges in 2020, i.e. 70 more than in 2019. This increase is quite substantial, as there were practically no challenges for a period of two months (during the emergency situation). 259 challenges were lodged in connection with driving tests, of which 25 were partially or completely successful. 17 decisions were issued with regard to challenges submitted about theory tests. The number of decisions was lower than 10 in all other categories.

**Satisfaction with services**

People are satisfied with the driving test services of the testing centre. Unfortunately, the level of satisfaction with driving schools is not as high. Improving the quality of learning at driving schools is our objective for the coming years. We will be working with higher education institutions and professional associations to this end.

**There was no rest for our examiners in summer: we added test times in the mornings, and tests were also carried out by employees from the Examination Department. Everyone on the parallel waiting list for driving tests that had been cancelled was tested by the end of summer.**

# *Basis of vehicle inspections overhauled*

**38,984 pre-registration inspections were carried out by the Road Administration in 2020 – 19.5% fewer than in 2019.**

2997 vehicles were declared non-compliant, whose shortcomings had to be eliminated in order to register them. This indicator decreased by 25% in comparison with 2019. At the same time, our 141 contractual partners who sell new vehicles carried out 30,947 pre-registration inspections, i.e. 24% fewer than in 2019. In addition, 32 new contracts were entered into with companies selling new vehicles and 18 contracts were amended.

### The emergency situation and pre-registration inspections

To ensure the provision of customer service in the emergency situation, new solutions were presented for pre-registration inspections. The inspections were carried out on the basis of photos or videos in the case of vehicles registered in a Member State of the EU that have EC type approval. More than 75% of decisions were made based on photos during the emergency situation. This service functioned very well with users who are regular customers of the Road Administration, i.e. companies selling vehicles. It proved so successful that the decision was taken to continue with this practice. A procedure was established for recognising companies that sell vehicles. There were 65 such companies in 2020 and they submitted 2114 applications for pre-registration inspections. The new solution has considerably reduced the time customers spend registering vehicles and has made the process more customer-friendly. In addition, the use of the personnel resources of service bureaus was improved: inspectors who work in Võru, for example, can inspect a vehicle located in Tallinn.

### Type codes and eCOC

The service bureaus and the Technical Department check and enter data concerning vehicle types into the motor register the first time. A type code is generated when these data are entered. The technical data of vehicles were added to or amended in the type codes 16,433 times.

- 5032 type codes (15% fewer than in 2019) were created on the basis of the pre-registration inspection certificates submitted to the service bureaus.
- 4703 type codes were created on the basis of applications filed by vehicle importers, which is 13% fewer than in 2019.
- 2678 type codes were created on the basis of applications for the pre-registration of vehicles with European type approval received by the e-service.

The eCoC pilot project was launched in 2020. This solution enables manufacturers to forward the technical data of vehicles to the Road Administration in a machine-readable format. eCoC is an electronic certificate of type approval conformity which will be compulsory in the EU for all vehicles manufactured after 5 July 2026. These are electronic data that have been structured in an agreed format. The technical data of vehicles can thus be entered into the motor register quickly and without additional procedures requiring intervention by people. The first vehicle was registered on the basis of eCoC on 8 October 2020. A total of 227 vehicles were registered in this manner in 2020.

### Mileage

The Road Administration joined the EUCARIS MILEAGE service in 2020, incorporating it into the motor register information system. Other members include Latvia, the Netherlands and Slovakia. The mileage recorded in these countries is automatically added to the vehicle history. In addition, it is possible to check mileage data recorded in Finland, Poland, Sweden, Denmark, Lithuania and Italy, but these are manually entered in the register.

A reduction in mileage was detected in the case of 600 vehicles (almost three times more than in 2019) and this information was published in the e-service.

### Roadworthiness testing centres

689,000 roadworthiness tests were performed on a total of 557,000 vehicles in 2020. The number of roadworthiness tests and vehicles submitted for testing increased by 4.7% compared to the year before. Repeated roadworthiness tests accounted for 15.17%.

The number of vehicles referred for repeated testing has increased by 6.2%, but the average age of the vehicles that have passed roadworthiness tests remains 14 years.

## Vehicles registered for the first time from 2016-2020

| Year | 2016 | | 2017 | | 2018 | | 2019 | | **2020** | |
|---|---|---|---|---|---|---|---|---|---|---|
| Type | First | incl. new | First | incl. new | First | incl. new | First | incl. new | First | incl. new |
| Vessel with total length of less than 12 m | 44 | 23 | 37 | 26 | 63 | 39 | 46 | 30 | 69 | 44 |
| Car trailer | 6754 | 5566 | 6900 | 5825 | 7345 | 6184 | 7122 | 6069 | 7570 | 6356 |
| Bus | 414 | 171 | 469 | 212 | 371 | 142 | 440 | 201 | 334 | 223 |
| Personal watercraft | 92 | 56 | 84 | 68 | 130 | 94 | 126 | 85 | 127 | 95 |
| Mobile machinery | 397 | 311 | 382 | 296 | 377 | 296 | 375 | 289 | 344 | 234 |
| Off-road vehicle | 252 | 129 | 212 | 78 | 219 | 68 | 307 | 128 | 185 | 102 |
| Motorcycle and moped | 3788 | 1782 | 3290 | 1291 | 3297 | 1372 | 3400 | 1386 | 3228 | 1410 |
| Passenger car | 47,128 | 23,020 | 49,395 | 25,621 | 50,432 | 26,299 | 52,960 | 27,579 | 39,259 | 19,295 |
| Tractor | 721 | 617 | 1039 | 944 | 1073 | 973 | 1288 | 1152 | 1251 | 1109 |
| Tractor trailer | 248 | 222 | 267 | 242 | 275 | 247 | 236 | 224 | 250 | 248 |
| Truck | 9351 | 5234 | 9980 | 5830 | 10,447 | 6100 | 9683 | 5491 | 7455 | 3807 |
| Recreational craft | 1300 | 767 | 1139 | 705 | 1179 | 644 | 1228 | 665 | 1348 | 725 |
| **Total** | **70,489** | **37,898** | **73,194** | **41,138** | **75,208** | **42,458** | **77,211** | **43,299** | **61,420** | **33,648** |

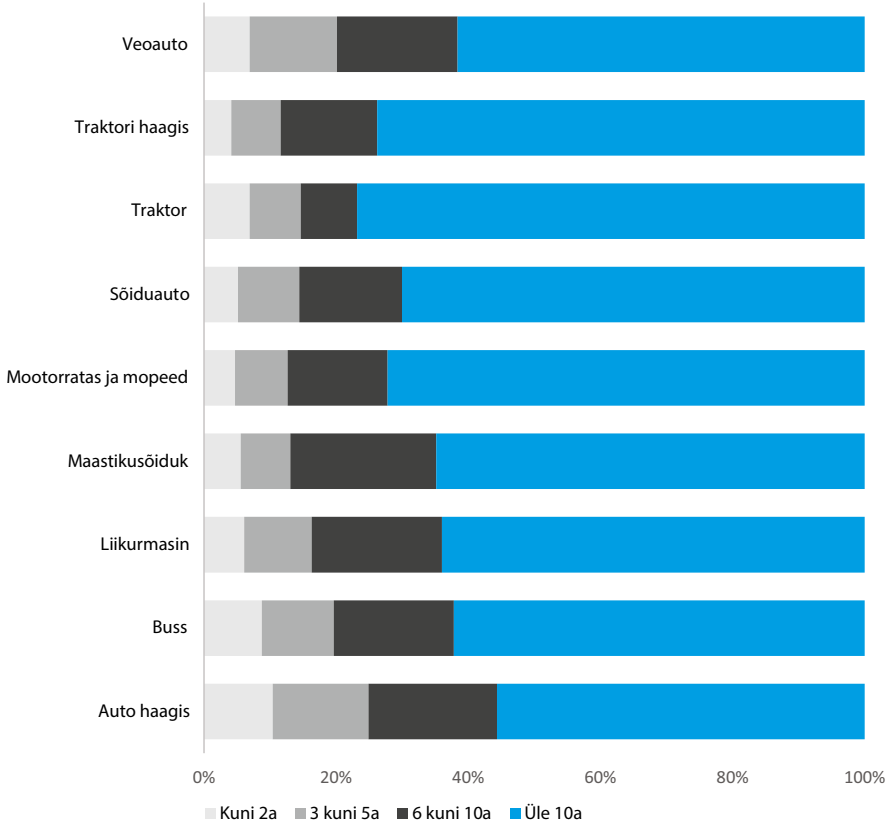
Another training course for roadworthiness vehicle inspectors was organised in autumn 2020 on the initiative of the Estonian Vehicle Inspection Association and in cooperation with the Police and Border Guard Board. 68 vehicle inspectors took attestation examinations, just 10 of whom (15%) failed. 85% passed the exam on their first attempt. The exam results have changed slightly: the number of people who passed the exam on their first attempt was 2% lower than in the previous year.

### Vehicle reconstruction, ATP and EC type approval

759 vehicle reconstructions were registered in 2020. The number of reconstructions increased by 10% in a year. A total of 254 ATP (Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for Such Carriage) certificates were issued. In addition, 41 type approvals were issued for category R tractor trailers as well as category O1 and O2 trailers and components, 22 of which for new types and 19 for new extensions.

**Vehicles in motor register. Note: Vehicles with a suspended registry entry are included.**

As at: 31 December 2020



# *Public transport services* praised by users

## BUS TRANSPORT

In 2020, county bus routes served 17,891,914 passengers. Compared to 2019, this was a drop of four million or 20%. This decline can be attributed to coronavirus: people travelled less during the emergency situation.

Although the number of passengers decreased significantly, it was important to continue operating county bus routes. As such, every effort was made to ensure the safety of bus drivers and passengers. For example, a sanitary zone was established from the front door to the first row of seats in which passengers were not allowed to stand (in order to protect the driver), and the validation requirement was suspended on buses with more than one door.

People use county public transport to go shopping or to commute to school or work. According to a satisfaction survey carried out by the Road Administration, users of county public transport are quite satisfied or highly satisfied with the services offered. They are most satisfied with the convenience of purchasing tickets, with ticket prices and with the reliability of county routes.

However, they feel that the number of connections, routes and transfer options needs to be improved. To resolve these issues, the route network was extended by 6% last year: county buses now travel 43,540,474 km per year. In order to make Estonian public transport even more convenient, a modern journey planner was introduced online at www.peatus.ee.

Passengers mostly look for information concerning bus timetables on the www.peatus.ee portal, on the information boards at bus stops or on the t-pilet.ee portal.

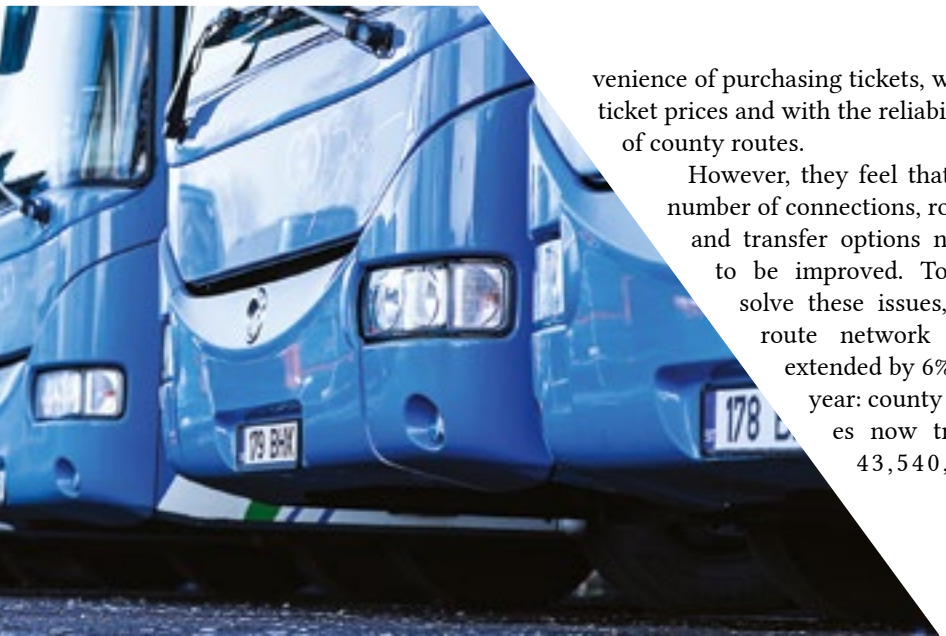
The www.peatus.ee web portal was visited 9,288,462 times in 2020. It is important to point out that 46% of the users of the new portal are quite satisfied or highly satisfied with it. 21% of users gave it a medium rating, while 24% were unsatisfied. Easy access to information and the fact that the portal is fast, convenient and understandable are highlighted as its key positive features.

### Statistics

- Number of passengers

| | |
|---|---|
| Ferry | 2,167,682 |
| Plane | 24,863 |
| County bus | 17,891,914 |

**Every effort was made to ensure the safety of both drivers and passengers: a sanitary zone was established from the front door to the first row of seats and the validation requirement was suspended.**



## AVIATION

NyxAir's 48-seat ATR 42-500 started operating on the Tallinn-Kuresaare route on 21 December 2020. This is the largest plane that has ever served the route. 12 trips are made each week.

## MARITIME TRANSPORT

The Road Administration entered into a contract with AS Kihnu Veeteed to organise ferry traffic between small islands and the mainland. According to the contract, the new carrier is organising the ferry traffic as follows:

- on the Kihnu-Munalaid and Munalaid-Manilaid routes starting from 1 October 2020;
- on the Sõru-Triigi route starting from 2 February 2021;
- on the Rohuküla-Sviby route starting from 1 June 2021.

# **County bus routes** *are used in the vicinity of people's homes*

**A survey concerning satisfaction with county bus routes was carried out in 2020, revealing that 91% of respondents had travelled by bus in their county of residence and 23% in another county. These results are similar to those from 2019.**

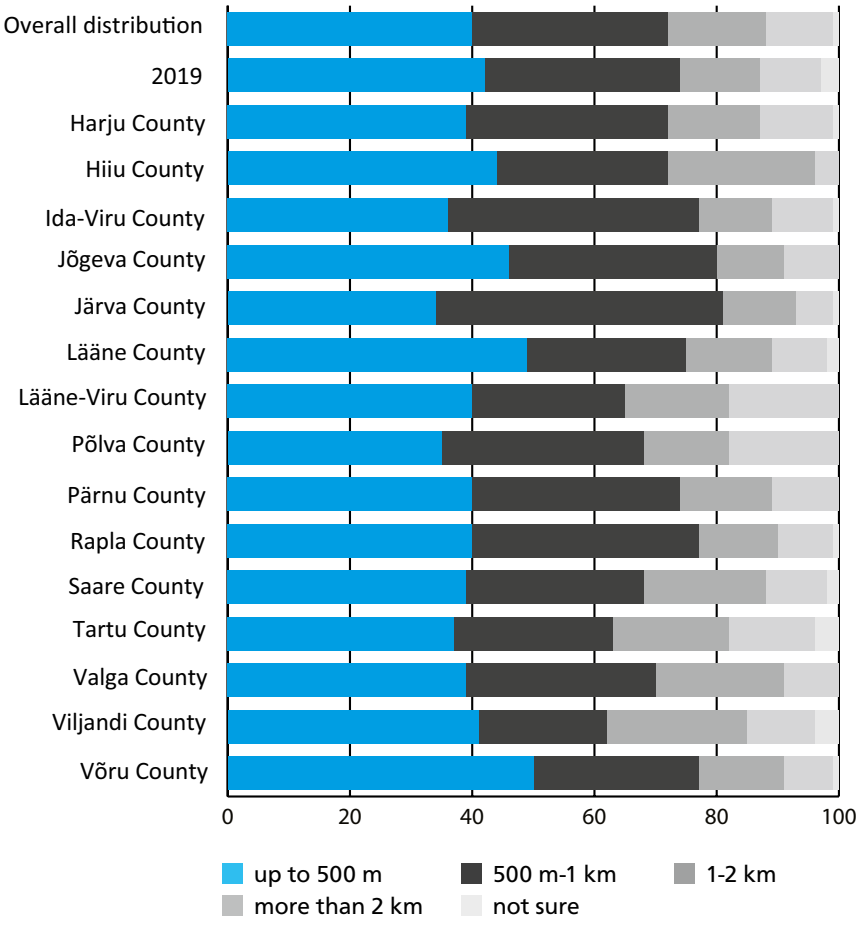
The number of people who use the bus routes of other counties is higher among the residents of Hiiu, Jõgeva, Rapla and Valga counties. For the majority, the county route bus stop is up to 3 km away. The distances are slightly longer than average in Lääne-Viru, Tartu and Viljandi counties. It is considered important that transfers take place where there are weather-proof pavilions. In addition, the total price of the trip should not be more expensive than on a direct route, and one ticket should cover the entire journey, including transfers.

The general frequency of the use of county routes in 2020 is similar to 2019: 28% of the sample travel on county bus routes at least once a week. In the case of city buses, the situation is also similar to 2019: 25% of respondents use them at least once a week.

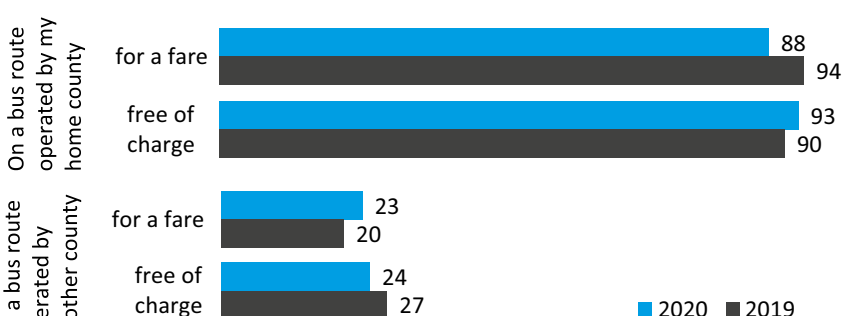
The number of people who use county routes at least once a week is above average in Ida-Viru, Jõgeva and Lääne-Viru counties. In general, differences between counties are minor. 63% drive or travel as a passenger in a car at least a few times a week.

## Distance of bus stops from place of residence

**How far is the county route bus stop from your place of residence or the starting point of your journey? N=1610**




**Travelling on bus routes of one's county of residence and other counties, % of sample**



# Traffic education activities for residents

**Vision Zero forms the basis of traffic safety in Estonia. Its four principles concern the different aspects of guaranteeing a safe environment for road users. Nevertheless, road users will remain one of the key factors for a long time to come. The aim of prevention and traffic education is to support road users in a changing environment and to influence their behaviour in traffic by means of educating them.**

### Children and teenagers

In 2020, the Prevention Department organised 453 prevention activities for children and teenagers, getting 20,285 children involved.

### Teachers

83 prevention activities involving 1961 participants were carried out for teachers in 2020.

### Residents

The Prevention Department took part in information activities aimed at residents 166 times, with *around* 12,000 people taking part.

### Police and Border Guard Board prevention activities for non-motorised road users

The Police and Border Guard Board (PBGB) carried out approximately 560 prevention activities related to traffic in 2020, involving 14,000 children and 3200 adults.

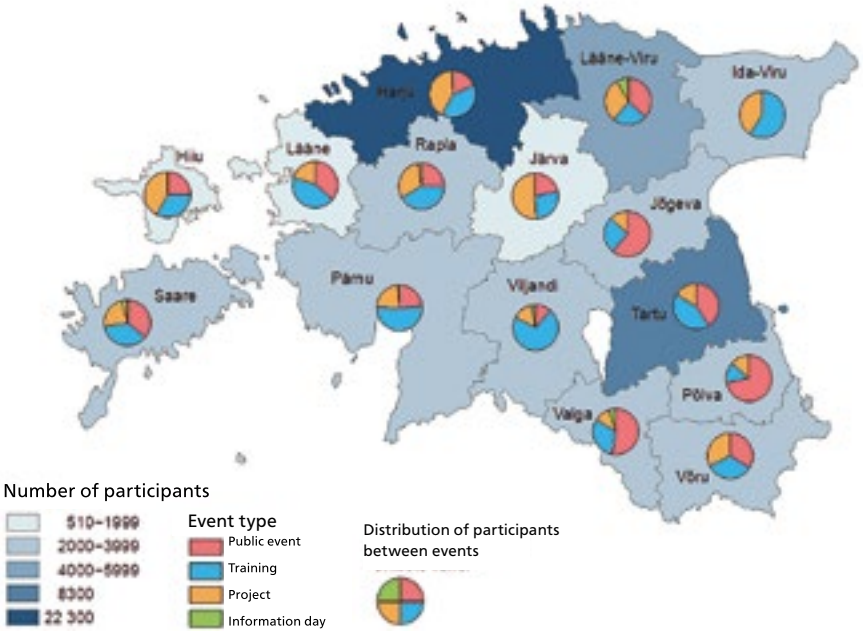
It is often said that 2020 was a special year. As the key target groups of traffic education and prevention (teachers, students and the elderly) were endangered by the coronavirus, a large part of the planned training and awareness-raising had to be cancelled or new approaches found.

For example, we created a distance learning page on the traffic education website and started to use the Moodle learning environment to carry out contact-free training courses during the emergency situation. We organised webinars for the first time, developed new learning materials and updated existing ones.

A new e-learning environment, **liikluskasvatus.ee**, was completed in 2020, offering educational institutions free learning materials. In addition to the traffic education site, we share information concerning traffic education and safety on our Facebook page and in the learning environment 'Aga mina liiklen ohutult' ('I get around safely') developed by the Road Administration, the NPO Aga Mina and the Consumer Protection and Technical Regulatory Authority. The website is primarily for parents and teachers of small children. You can find important traffic safety information on the site, look at traffic situations with your child and discuss topics regarding safe traffic. The website was visited more than 25,000 times in 2020.

The Road Administration organised a total of 702 traffic education and prevention activities in which 34,159 people took part.

> **Many training activities planned for teachers, students and the elderly had to be cancelled or new solutions found, such as the distance learning website.**




Road Administration's traffic education and prevention activities by county and type in 2020.

# Road safety award winners in 2020

**The Road Administration recognises its best partners with the road safety award every year in order to value individuals and organisations that stand out for the example they set or their professional or social activities in organising traffic education or developing traffic safety.**

• Viru-Nigula municipal government

### RESPONSIBLE ENTREPRENEURSHIP AWARD:

• SA Narva Linna Arendus

### SURPRISE OF THE YEAR IN TRAFFIC SAFETY:

• Conference: 'Vision Zero for Sustainable Road Safety in the Baltic Sea Countries 2019'
• Calming stops on Estonian roads. 'Win a minute – lose an hour!'

### EXAMPLE IN TRAFFIC SAFETY:

• Raul Annuka, judicial representation group of the Traffic Supervision Centre at the Public Order Bureau of the Northern Prefecture, senior official conducting misdemeanour proceedings

### AWARD FOR PARTNER IN TRAFFIC SAFETY:

**NATIONAL:**
• Ylle Tampere, publisher of Accelerista
• Ain Saare, Graphic Designer at Operation Lifesaver Estonia
• Triinu Uiboleht, Chief Specialist with the Consumer Protection and Technical Regulatory Authority
**NORTHERN REGION:**
• Kätlin Murre, youth police officer for the regional group at Lääne-Harju Police Station in the Northern Prefecture
• Kristel Põhjala, youth police officer for the regional group at Rapla Police Station in the Western Prefecture
**SOUTHERN REGION:**
• Jõgeva regional group of Tartu Police Station
**EASTERN REGION:**
• Ivika Abner, Service Manager at OÜ Keerub
**WESTERN REGION:**
• NPO Pärnumaa Ühistranspordikeskus (Pärnu County Public Transport Centre)

### AWARD FOR TRAFFIC SAFETY EVENT:

• Northern region: Rapla ÄKK
• Southern region: Publishers Maurus OÜ
• Western region: V.Õ.M.M.

### AWARD FOR TEACHERS OF TRAFFIC SAFETY:

**NORTHERN REGION:**
• Jaanus Madissoo, Head of the Northern Region at OÜ Autosõit, theory and driving instructor
• Pilvi Pregel, Rapla Vesiroosi School, class teacher
**SOUTHERN REGION:**
• Aive Zirk, Nõo Basic School, social pedagogue, traffic education
• Eva Tammemägi, Konguta School, Grade 6 class teacher, social pedagogue
• Gunnar Taras, theory and driving instructor at OÜ Autosõit
• Ülle Vatman, teacher at Meelespea Kindergarten in Tartu
**EASTERN REGION**
• Svetlana Lisina, teacher at Pääsuke Kindergarten in Kohtla-Järve
• Elena Chistyakova, teacher at Aljonushka Kindergarten in Kohtla-Järve
• Külli Tropp, class teacher at Rakvere Gymnasium
**WESTERN REGION:**
• Sirje Laidma, SA Tartu Kiirabi, first aid instructor at the Viljandi County Society of the Estonian Red Cross
• Hiie Tamm, instructor/advisor at Hiie Koolitus OÜ
• Rita Pomber, Viljandi Avatud Noortetuba, youth work project manager

### SPECIAL PRIZES:

• Saviour of human lives 2020: Lilli Tarakanov
• Contribution to traffic education:
• Raul Rom, Traffic Expert with the Strategic Planning Department
• Urve Sellenberg, Head of Office at the Education and Youth Authority

# *Estonian Road Museum:* *A record-breaking year*

**2020 was a record-breaking year for the Road Museum: it received 40,000 visitors. This is the largest number of visitors in its 20 years of operation. We are glad to see so many people showing an interest in roads and the history of mobility.**

The number of visitors was particularly surprising because the museum, like other cultural institutions, was closed for two months due to coronavirus.

We opened the summer season in mid-May, taking more stringent precautionary measures than usual and adhering to the restrictions imposed by the government. Of course, we trembled a little before the uncertainty – how could we retain our employees and keep up our visitor numbers? In the end we coped very well, and thanks to efficient communication we set a positive example of an institution pulling together to get through hard times.

The great level of interest among visitors was also influenced by the end of the first full season of the exhibition 'The Rule of Machines', which opened in the new machinery hall in 2019. The spacious exhibition area of the new building suited the conditions of the coronavirus-affected summer. The multifunctional traffic education room in the exhibition hall proved to be a flexible and suitable event location which exceeded expectations. A number of exhibits, programmes and services were made smoother and more user-friendly based on the experiences we gained.


Lada's birthday and parade in the museum yard were said to have been the largest gathering of these vehicles in the past 30 years.

**Lada's anniversary breaks records**

After Midsummer it became clear that 2020 would be a great year for domestic tourism: the number of visitors we were receiving reached 200 a day. The record was reached on 25 July, when the museum celebrated its 20th birthday and the anniversary of the VAZ 2101 or Lada. The car of the Soviet people, the Lada was the centre of attention during the festivities. A total of 230 cars from Estonia, Latvia and Finland arrived at the museum to mark the occasion. More than 2000 people visited us that day.

The owners of the Ladas shared their impressions, stories and spare parts among themselves and with visitors. A variety of competitions and workshops were organised. The guided tours on the day focused on Soviet machines and garage culture.

> **The great level of interest among visitors was influenced by the end of the first full season of the exhibition 'The Rule of Machines', which opened in 2019.**

**Successful gathering of memories**

The memories we sought to collect ahead of the special day proved more successful than expected. Thanks to the specific topic, a large variety of materials managed to be collected in a short time in connection with many research questions concerning the car culture of Soviet Estonia. 45 people shared their stories, photos and other materials over a two-week period. The materials were of very different types: they included

The V-1 road grader will be built from these parts in three years on the basis of drawings dating from 1947. A significant machine in the history of Estonian road construction.

longer biographical stories, anecdotes and fragments of memory. Family photos, Soviet advertising and press pictures were shared. A car trip photo album from the 1970s was added to the museum's collection. We have had very few such items at our disposal so far. Less researched subjects included contemporary stories of cars as a hobby and the views of those who were involved in the Soviet car sector on the operating logic of the field and deficit networks. These collected memories are a great addition to the museum's existing research in the field of car-buying stories and wider Soviet car culture. The day was nominated in the annual awards of Estonian museums. The winners will be announced in June 2021.

The 5th Children's Traffic Conference was also recognised in 2020. Shaping traffic attitudes and conducting research into traffic history form part of the museum's work. Apart from the usual education programmes, we have made use of a format that children are unaccustomed to: a conference for Grade 3 students. 60 students from all over Estonia took part with their teachers. Workshops and presentations focused on activities that distract people while in traffic, plus railway safety and traffic noise. We hope that the knowledge the students gained at the conference will be passed on to their classmates and other pupils. Children at that age can even set an example in terms of appropriate traffic behaviour to their parents.

**Outdoor areas renewed and supplemented with a tyre exhibition**

The traffic town in the outdoor area of the museum was renewed at the start of the season. Children can gain their first experiences in traffic on electric and mechanical machines in a mini-version of Tartu, as almost all of the street views have been photographed there.

Additions were also made elsewhere during the season. In cooperation with Teede Tehnokeskus, epoxy cross-sections of roads were created for the open-air exhibition 'Road Time', along with a road laboratory in the machinery hall, which showcases the fascinating nuances of road construction for future roadmasters. In the laboratory, visitors can find out why our roads are the way they are and how their quality is tested. Cross-sections illustrate the development of the construction quality of our roads.

The seasonal exhibition 'Tyre Story' about the history of wheels and tyres in historic road space touched on current problematic issues, highlighted the environmental problems associated with tyres and showcased an inconspicuous but important object from an exciting and unexpected perspective. 'Tyre Story' was awarded 1st place at the 21st Estonian Museum Festival.

A second conference organised by the museum was dedicated to the history of tyres. It addressed the past, present and possible future development of tyres.

**18 exhibitions and hundreds of new items**

18 exhibitions were held in the museum, including pop-up exhibitions, virtual exhibitions and additions to the main exhibition. The collection of the museum comprised 43,813 items at the end of the year, with 273 new items having been obtained. The most expensive acquisition was a 1934 Citroen 7CV, which supplemented the permanent exhibition in the machinery hall as a symbol of the motorisation of the first Estonian republic.

411 road passports and appendices from the period from 1947-1990, which had previously been confidential, were added to the collection. Appendices to road passports include data concerning bridges, culverts, bus pavilions and civilian buildings alongside roads.

The museum launched a major project to restore (by 2023) the V-1 road grader built under the aegis of engineer Arnold Volberg in Paide in 1948. This was the first autograder in the Soviet Union. Only 122 were manufactured at the time, but none are known to have been survived to this day. The aim is to complete the V-1, serial number 123, in cooperation with respected road engineers and the teachers and students from Järva County Vocational Education Centre.

It can be said that the museum is also collecting the future. Machines from the future are our most unique items. The exhibitions were supplemented with the lunar rover Äke built in Estonia for the 2013 NASA competition; one of Starship's first parcel robots; and the electric scooter Tuul, the first to be manufactured in the series in Estonia by Comodule OÜ.

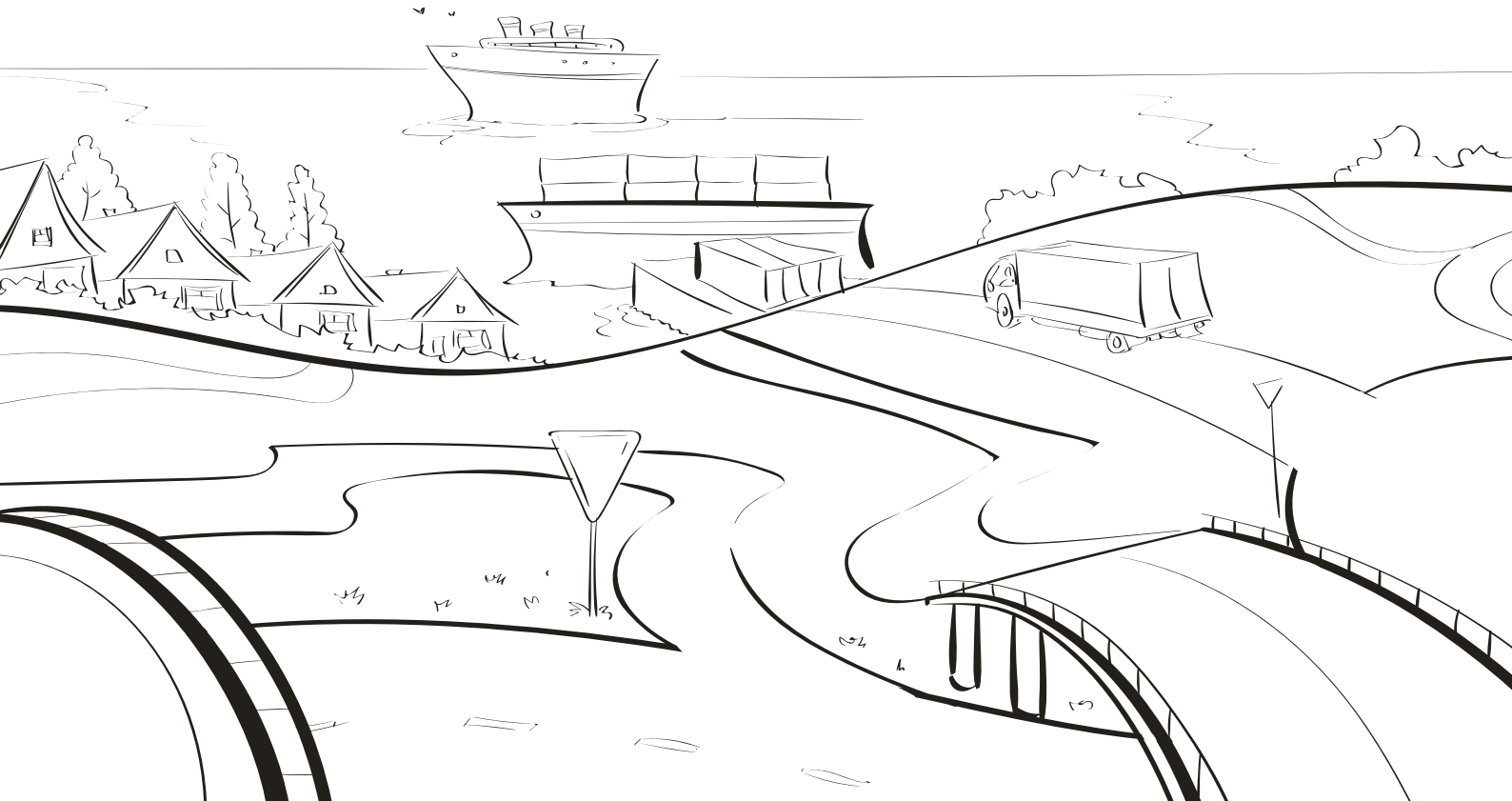
# ***Our people:*** *Roads that bring us together and drive us forward*

2020 was a year of great adjustments, thinking through changes and finding new roles.
**Annika Kitsing**

We are very forgiving of those taking driving tests these days, but dangerous mistakes that could hurt others are neither forgiven nor forgotten.
**Tarmo Vanamõisa**

E-services have helped in situations where service bureaus would find it difficult to cope with masses of clients.
**Tatjana Portnova**

Traffic education is never-ending work it is impossible to do too much of or consider complete.
**Raul Rom**



There are situations in which road users should assume greater responsibility to decide, but there are also instances that require fixed rules
**Andrus Prükk**

Expectations concerning road development always exceed financial possibilities.
**Hannes Vaidla**

New technology and materials should effectively solve problems related to increasing traffic volumes.
**Tõnis Tagger**

There is no competing with nature, only adjusting to it, and road maintainers are not required to be superior to nature either.
**Rain Hallimäe**

It would be good if people in Estonia could use a single card to get from one side of the country to the other.
**Kirke Williamson**

The Nordic countries prepare their road construction plans much further in advance and discuss major projects in parliament.
**Janar Taal**

# ***Annika Kitsing:*** *Every change is a challenge*

**Annika Kitsing, the head of the Personnel Department at the Road Administration, has had an unprecedented year: adjusting to the coronavirus crisis; restructuring in spring and during the second wave in autumn; and introducing substantial changes in connection with the establishment of the Transport Administration.**

"The idea of merging the Road Administration, the Civil Aviation Administration and the Maritime Administration had been under consideration within our institution and at the state level for a long time, but specific plans were only prepared in late 2019," Kitsing recalls. "Merging institutions takes months, sometimes years, as it requires legal preparations and for everyone to work towards a common goal, which is even more important."

Those involved in the merger had to determine the structure, teams and initial allocation of tasks, review the functioning of services, agree on the continuation of cooperation with managers, harmonise motivation packages, establish the new organisation of work, find common ground between organisational cultures and think through a million details in a very short time. "Everything's easy on paper, but we'll see how the ideas work in reality soon enough!" Kitsing laughs.

**A year of preparations**

According to Kitsing, 2020 was a year of great adjustments, thinking through changes and finding a new role. "Every change is a challenge," she says. "We've gone through significant changes before. When I took up my post as a training manager, work was just starting on the privatisation of road maintenance and regional reforms. I've been with the Road Administration for 18 years now and I can see that changes are a part of everyday life in a developing organisation that adjusts to new needs. No one asks when the changes will end so that we can get a bit of peace at work anymore. We've learned to be flexible, and our ability to adapt has improved a lot over time."

> **2020 was a year of great adjustments, thinking through changes and finding new roles.**

Kitsing says that although we are accustomed to changes in areas connected to road maintenance and traffic, we have to find a new kind of

synergy between the new fields. "In the course of the preparations, we all learned what true fear was, turning innocent shadows in the corners of the room into something more menacing!" she smiles. "Failure and success are both the result of the relationships between people. Through joint training and meetings, we've learned there are people like us with similar fears and expectations in the new organisation, which has brought us closer together. We actually think alike and want to make a go of working together."

Kitsing believes that moderate change keeps your mind fresh and your brain in good shape, since it pushes you out of your comfort zone. They are a natural part of life. The Road Administration is a part of the state and develops in tandem with it. As with all institutions, there are those who look for new challenges and employers at the Road Administration, but its employees are generally satisfied with the organisation and their own development. The natural movement of people and changes in personnel are necessary so that fresh ideas and experience can contribute to development. "It's a big compliment that more and more people are looking to come back to us," Kitsing says. "After working for other institutions and companies, they realise our appeal. I guess the Road Administration is doing something right if people want to come back to their old teams and managers."

The importance of managers is increasing every year: they are valued and work to improve both themselves and their teams. Whereas managers previously fulfilled the role of specialists, now they are expected to want and to be able to motivate their teams and manage development in the field. "There's been a paradigm shift in people's thinking over the years: managers are now leaders, guides, providers of feedback and encouragement and supporters of development," Kitsing explains. "It seems this breakthrough in our way of thinking has been a success."

In 2020, the coronavirus emergency and remote work were keywords throughout the country. The Road Administration also went through a baptism of fire in this regard.

**Lessons learned from remote work**

"We've looked at how people cope and what kind of support they expect from the organisation," Kitsing says. "Remote work presents a psychological challenge. We worked from home at the end of the year as well, but in general it seems the pressure has eased and there are fewer problems. I guess people are very adaptable creatures. We were afraid of bigger psychological issues and greater distancing from work due to the lack of immediate contact, but fortunately that hasn't happened. In the case of some diligent people who really enjoy working from home, there's instead a risk of overworking."

Managers have learned to adjust work routines. Regular online meetings, often very long, are no longer organised, since experience in spring showed that they grew tiring and were of little use.

"Training and development of personnel constitute an important part of HR work," Kitsing says. "We struggled to strike a balance with regard to offering development activities online. Service providers adapted their environments, programmes and methodologies over the summer, so it's a little easier to decide whether to hone people's competences through online courses or to wait for restrictions to be lifted. But the online world can be a bit surreal: you have to transfer from one web space to another during the day, teleport from one training or group work session or meeting to another, occasionally getting lost on the way and wondering why your colleagues aren't there, whether you're in the wrong room or why someone in a tank top with mussed-up hair is on the other side of the screen, feeling right at home," Kitsing laughs. Employees with young children face a major challenge when working from home. "One of our area managers even suggested that we recognise all the parents who reconciled their work and family lives in spring as our People of the Year! They had to handle their work while dealing with their kids, and even teaching the littles ones who would otherwise have been going to primary school. They were really up against it."

**Moderate change keeps your mind fresh and pushed you out of your comfort zone. It is a natural part of life.**

Letters of appreciation were also forwarded to the best employees in the three services of the Road Administration, and the most noteworthy deeds were acknowledged. The year's best examiners and customer service specialists were recognised. The icing on the cake was the recognition given by colleagues to an employee who stood out in some way, be it selflessly sharing their IT knowledge or sacrificing hours of sleep to help resolve a crisis. "It's important to notice enthusiasm, altruism and empathy, which is to say people who do more than is expected of them, are active in society, conquer the world doing some interesting hobby or who are able to reach out a helping hand or give words of support at the right time," Kitsing says.

## A BRAND NEW INITIATIVE: 'INSPIRATIONAL MORNINGS'

A new series of talks entitled 'Inspirational Mornings' is a success story summarising 2020 as a whole. Since the initial plan to come together did not work out, the talks were carried out online. Opinion leaders and experts from certain fields shared their thoughts and experiences each month. Be it culture, management or economy, the idea is to share experiences from various fields with the audience.

"It's nice that we can invite more people to take part virtually," says Kitsing. "People from the Civil Aviation Administration, the Maritime Administration and the Ministry of Economic Affairs and Communications can also participate and get to know one another."

Coronavirus also gave rise to other initiatives that would otherwise never have emerged. The summer retreat, birthday celebrations and December gala, for which preparations were long since underway, had to be cancelled, but we managed to shoot a feature film whose surreal journey summarises the ideas from the last gala. "We were all able to watch it at home at the same time," Kitsing explains. "It's not some middle-of-the-road thing designed for average tastes – the director, Uku Uusberg, gave his artistic spirit free rein and his bold ideas led to something that hadn't been done before, and probably won't be again in the future either," Kitsing says proudly.

The concept of 'traffic ambassadors' should also be praised as a positive initiative. The Road Administration's task is to set an example in creating a safe traffic environment, and its employees promote this principle by setting their own example. "Talking about traffic awareness at your children's school or kindergarten and with your friends and behaving appropriately in traffic have been our recent focus," Kitsing explains. "It should be coded into the DNA of our employees and the new Transport Administration that speeding or scoffing burgers behind the wheel is not allowed."

# Additional activities motivate and contribute to self-development

**Conducting driving tests lends your main job added value, allows you to escape everyday routine and contributes to your main duties.**

# Opinion

**Robert Rimm, specialist with the Construction and Services Supervision Department of the Road Administration**

Communication is well-organised and open in the Road Administration. If an employee has an idea, they're free to talk about it. Ideas aren't criticised, and if it turns out they can't be implemented, it's explained why. First, we try to find common ground between the idea that's been suggested and the existing organisation of work. If people are pro-active, they get the opportunity to apply themselves in a range of activities.

In addition to my main job, I conduct driving tests. This lends my main job added value and allows me to break out of my everyday routine. After graduating and obtaining a qualification as an examiner, I was given the opportunity to use my knowledge in assisting the Examination Department. On the one hand, this meant I was able to apply my knowledge, and on the other, I was helping to reduce waiting times for driving tests. These activities don't directly complement each other, but as an examiner I can make observations about driving schools that can be taken into account in supervision.

They certainly foster communication skills and improve your self-expression, because everything has to be as it should be in driving tests, and I can't allow myself to make mistakes in my main job either.

# ***Raul Rom:*** *Consistent awareness-raising efforts help to ensure safety*

**Rom, who has been actively promoting traffic education since Estonia regained its independence, considers our traffic situation to be a complex one. This makes it difficult to assess situations at certain speeds and to respond accordingly. Therefore, the maximum speed limit within urban areas should be lower than the current limit of 50 km/h.**

Raul Rom is a traffic expert with the Strategic Planning Department of the Road Administration. His primary task is to make traffic in general safer. More specifically, he has to shape the behaviour of road users and design a traffic environment in which everyone is safe. Furthermore, his work requires the instincts of a psychologist, because he needs to understand the nuances of human nature that make us behave the way we do in traffic.

After graduating from Tallinn University of Technology in 1991, Rom worked at the Estonian Industrial Project's design institute for a year or so before taking up a post at the Road Safety Agency, which was a separate authority at the time, led by legendary traffic educator Hellat Rumvolt. The authority itself had been established when Estonia regained its independence; it merged with the Road Administration in 1995. The Estonian Motor Vehicle Registration Centre was incorporated into the Road Administration even later, and they have functioned as a single authority ever since. Ensuring traffic safety and advocating correct behaviour in traffic have always been an inseparable part of their development.

Traffic education formed a significant part of Rom's duties before

**Traffic education is never-ending work it is impossible to do too much of or consider complete.**

structural changes were implemented in 2014. This is never-ending work it is impossible to do too much of or consider complete. The organisation of traffic safety campaigns is among its most important output.

**Road users continue to need educating**

"Traffic safety has always been one of the most important areas of activity for the Road Administration," Rom says. "We strive to make the traffic environment safe, simple and comprehensible. The rules that are established have to be implementable,

understandable and clear to everyone. The number of serious accidents is one of the indicators of the efficiency of our work. In 1991, a total of 491 traffic fatalities were registered in Estonia. That's probably the largest number of deaths we've ever had. It started to decrease from then on, but remained at around 300 a year until 1995. As such, on average, someone was losing their life in traffic just about every day."

Of course, this tragic period in traffic may have been the result of general processes in society as Estonia moved towards stability after troubled times. An exceptional number of accidents occurred not just in Estonia, but also in other countries in Eastern Europe at the time.

**People have to be reminded of traffic safety again and again**

Compared to the period almost 30 years ago, the number of vehicles on our streets and roads has increased significantly and traffic is more intense, but the number of traffic accidents has still decreased almost 10-fold: 52 people were killed in traffic in 2019, 67 the year before that and 48 in 2017. As for the reasons behind this, Rom suggests vehicles becoming better and safer, road conditions improving and the behaviour of road users moving towards increased awareness, including in connection with the use of safety equipment. "In the early says, pedestrians and cyclists moving around in the dark without any lights posed the biggest problem," he explains. "We targeted that group in our very first campaigns. We started advocating the need for reflectors, above all on roads outside of urban areas, and notifying people of their obligation to fasten their seatbelt. A campaign about children's safety equipment followed soon after that, and the obligation to use safety equipment for small children in cars was enforced in 1995. Estonia was one of the first to do that at the level of legislators among the countries that regained their independence at the time." While the use of seatbelts and children's safety equipment has since been saved in the muscle memory of road users, the need to use reflectors has to be reiterated like a mantra to this day – people may have forgotten to take their reflector with them, lost it or attached it to another coat.

"Without a reflector, people simply aren't visible to drivers from the distance that's needed to stop the car in the dark," explains Rom. "If people are aware of that, they're able to protect themselves, even if they don't have a reflector on them. It's possible to survive on dark roads if you know that drivers can't see you, by walking on the left-hand side of the road and keeping away from the road when a car passes, observing the movement of the car and making sure you're not in its way."

Reminders concerning one or another traffic safety issue are still needed now and again. While the use of seatbelts has become elementary in passenger cars, this requirement was only introduced on buses relatively recently. Now, seatbelts must be available on all new buses and passengers are obliged to use them.

As such, the aim of constant awareness-raising and the campaigns supporting it is to shape people's habits so that they become rooted in their behaviour. "Forming habits takes quite a long time, so awareness-raising work has to be consistent," says Rom. "A single issue requires years of work, appealing to the emotional side of people and trying to engage them."

There is an aspect of safety or behaviour behind every rule, which will be reflected in traffic safety eventually. "People feel that not all of the provisions of law concern them individually and they're not able to set priorities for safety," Rom says. "For this reason, authorities responsible for safety have been established whose task is to consistently explain the hazard levels to people. That way, road users can develop a balanced perception of their rights and obligations. Knowing your rights isn't always enough to ensure safety."

**Forming habits takes quite a long time, so awareness-raising work has to be consistent.**

**Actively contributing to the development of legislation is important**

Laws play a significant role in shaping traffic habits. Rom says that the development of legislation was particularly intense in the years after Estonia regained its independence. This is quite a lengthy process: the Traffic Code adopted by the government was the valid document that determined traffic rules until 2010. Serious work on a new law regulating traffic began in the early 2000s, and it took 10 years before the Traffic Act was adopted by the parliament as a legislative document in its current form: it entered into force on 1 July 2011.

Moulding the physical environment so that people can avoid mistakes is an important part of ensuring traffic safety. This includes traffic management, geometric solutions on roads, speed limits and everything else that helps road users safely follow the established rules. Alongside the construction of new road structures, work is done every day to make old road infrastructure safer and more helpful to users. Our own

leading knowledge as well as that of our neighbours is used for this purpose. "The specialists and experts at the Road Administration try to help local governments as much as they can so that they're able to ensure the appropriate level of safety on their roads," explains Rom. "By doing research into the statistics of traffic accidents and accidents with serious consequences, we can analyse where accidents happen most frequently and what their causes are."

**Audits could be commissioned more often as they help to prevent accidents**

Statistics from traffic accidents provide unquestionable evidence of accident blackspots. In addition, the probability of accidents occurring in various places is analysed. Intervention should take place before accidents happen.

Rom confirms that sometimes the only option is to restrict road users using physical obstacles to make traffic safer, but he is of the opinion that every measure should meet the needs of the specific environment. To a certain extent, you have to be a psychologist in his line of work in order to understand what a group of road users perceives or how they behave in a certain situation. "We can't be certain what attitude a person will adopt or how they'll behave in a real situation merely by looking at a standard on paper," he remarks. "Traffic safety audits and inspections of road sections or structures help us resolve such situations. Experts with the relevant training have to assess the traffic environment, focusing on how people perceive it, how they might behave, where they might go wrong and what could be done differently to make the situation more understandable and safer for everyone." He also encourages local governments to order more audits in order to prevent accidents and underscores the importance of traffic safety education in childcare facilities and schools.

# Statistics

## Campaigns for safer traffic

- The Road Administration has run between four and six traffic safety awareness campaigns each year since 1995: fewer at first, more in recent years.
- Spring 1995 saw a nationwide traffic safety campaign aimed at young drivers within the framework of UN Road Safety Week: 'Save your life and your car!'
- Four nationwide traffic safety campaigns took place in 1996, focusing on seatbelts and the need to use children's safety equipment, promoting the use of reflectors, drawing people's attention to children's safety in traffic and informing them of the obligation to use winter tyres.
- 1997 saw a campaign for preventing drink-driving. The focus on the use of seatbelts was replaced with a campaign carried out in cooperation with Edelaraudtee to enhance the safety of crossing railways.
- In 1998 there were campaigns to influence the behaviour of young drivers, increase the safety of cycling, reduce the incidence of drink-driving, promote the selecting of safe driving speeds outside of urban areas, enhance the traffic safety of children and encourage the use of reflectors. Surveys based on a similar methodology were launched in connection with the attitudes and behaviour of road users. The first addressed the issue of using reflectors. The number of traffic fatalities increased sharply in 1997, but stabilised in 1998 and declined over the following three years.
- In 1999, the system for running traffic safety campaigns was reorganised. Following the principle of consistency, campaigns continued to deal with the safety of cyclists, reducing the incidence of drink-driving and increasing the safety of pedestrians in urban areas and safety when moving around in the dark.
- The period from 2000-2005 saw all of the campaigns from 1999 re-run with the exception of the one concerning cycling safety. A campaign aimed at increasing the use of seatbelts was launched.
- In 2006 and 2007, in connection with preparations for the obligation to wear a helmet when cycling, a campaign focusing on the need to wear helmets was carried out.
- The number of traffic deaths increased again in 2006, but started to decline after stabilising in 2007.
- 2008 saw a campaign drawing attention to two-wheeled vehicles being run due to a sharp increase in the number of accidents involving motorcyclists.
- In 2009, the Road Administration launched an annual campaign to encourage adherence to the speed limit on roads outside of urban areas.
- In 2011, in addition to main topics, there was a campaign informing people of the obligation for children under 16 to use a helmet when cycling. The same campaign was carried out in 2012. The new Traffic Act entered into force.
- In 2015, the campaign topics were supplemented with warnings concerning distracting activities, which have become an inseparable part of prevention due to the increase in the use of smart devices.

Source: Road Administration

# *Janar Taal:* *We have to look to the future more*

**Janar Taal, the head of the Southern Road Maintenance Department, stresses that while the existing road network has to be maintained, development and investments depend on funding.**

"Long-term planning is problematic," he admits. "The period from idea to design and land acquisition can take anywhere from seven to 10 years with large investments. When governments change, viewpoints change with them, even with regard to whether and to what extent 2+2 roads should be built or how to approach PPP projects. That makes implementing long-term investments difficult. We need to plan ahead more, and not just in Harju County, but the rest of Estonia as well."

Taal points out that Nordic countries prepare their road construction plans for much longer periods. "The Finns think there should be a road in a certain place in 30 years' time," he says. "Large projects are discussed in parliament. Our democracy is younger than theirs. The government makes decisions and these decisions can change just two or three years later. Sometimes it feels like we're afraid of looking to the future. We need development plans and a substantive vision of which roads we need to build and how to maintain them."

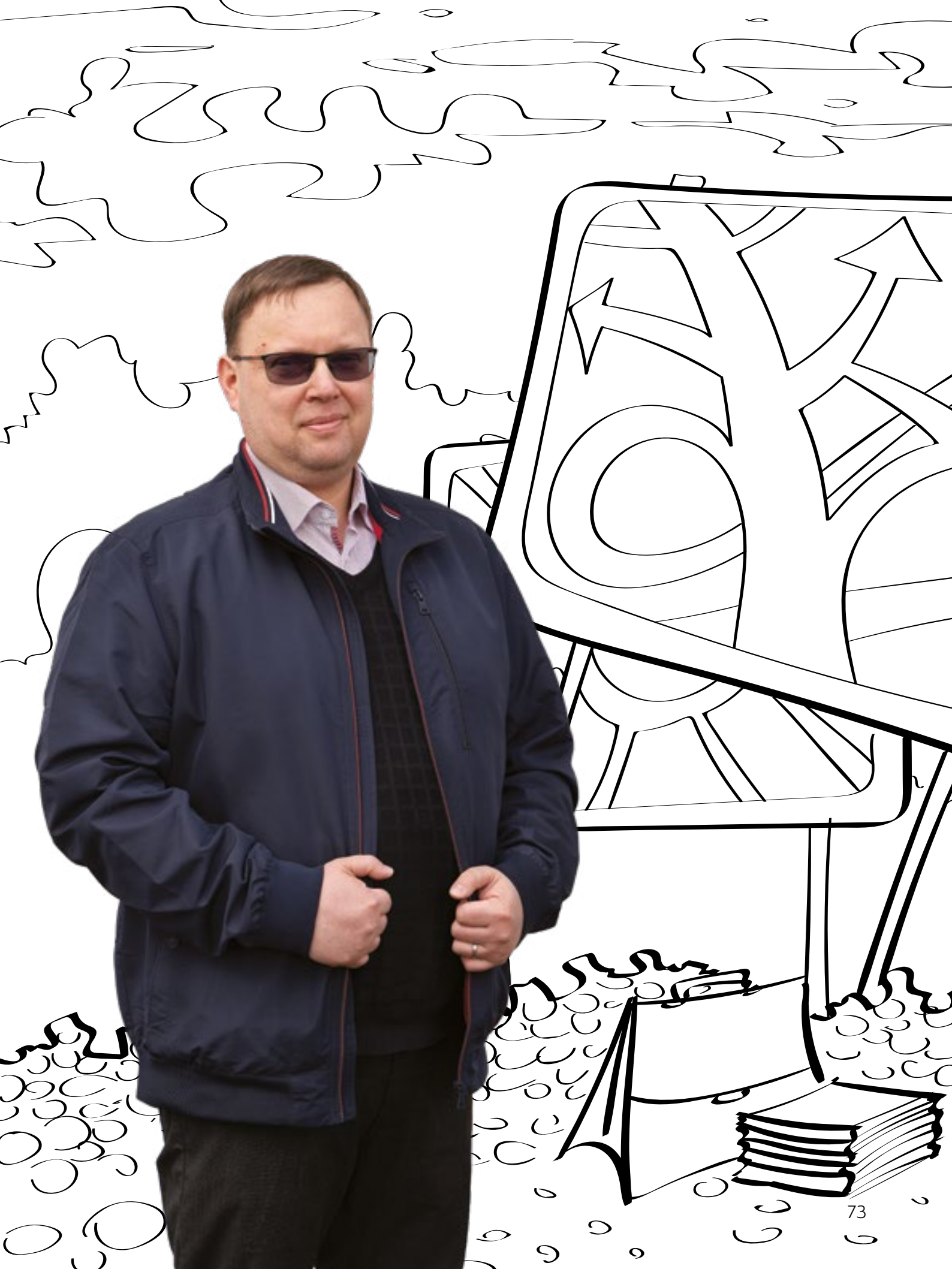
According to Taal, the inclusion of the mobility measure in the Road Maintenance Plan is a positive step forward in terms of the bigger picture, as it helps us think through mobility investments, be they a car park, a footpath or some larger connection. "We need to be creating an integrated whole," he advises. "We overdo it in developing certain places and hold back too much in others. Society evolves and expectations grow. The state has to keep up with them in finding solutions."

> **Nordic countries prepare their road construction plans for longer periods of time and large projects are discussed in parliament.**

One thing is clear: needs always exceed available funds, and despite expectations, we simply don't have the resources to build light traffic paths alongside every road. There are also differences between regions: compared to Harju County, the population is smaller in Eastern and Southern Estonia, which determines the solutions used in road construction.

**Large-scale work in the southern region**

Construction crews will have their hands full in the coming years:



the Riia intersection and Kärevere-Kardla section must be completed in that time.

"The Riia intersection is a very difficult site," Taal frowns. "We have to divert traffic flows, take into account utility networks and take on board the wishes of a whole range of different parties, which makes the process time-consuming and complex. Reorganising traffic in cities causes a lot of inconvenience. There's nothing else to do but just get through the construction period. We've done our best to make construction progress smoothly: we made thorough preparations for traffic management, communication and detour routes as well as for ensuring access routes to businesses and reorganising the water supply and heating systems in Tartu."

The Road Administration also sets interim target dates for smaller deadlines when it comes to significant intersections. The contractor has to ensure that a 1+1 section is open during the day on the Tallinn-Tartu-Võru and Tartu-Elva roads. Leaving only one lane open is allowed at night.

**Increasing pace of work**

Compared to five years ago, roads are being built more quickly, but capabilities are being pushed to the limit on quite a few sites and it would be difficult to increase the pace of work. "For example, the deadline for the Riia intersection is just 21 months," Taal notes. "To get it done, we need two bridge brigades as well as various smaller brigades who are responsible for street sections. At first glance, 21 months seems like a long time, but we have to take various restrictions into account, including the ban on nighttime noise. We were able to work 24 hours a day at the Koidula border station, but we can't do that in the centre of Tartu."

Highways are asphalted at night to avoid congestion, but residents have to be guaranteed quiet nights in cities. "The flipside of the coin is that we wouldn't have enough workers for a double shift anyway," Taal admits. "15-hour shifts were a thing 15 years ago, but workers these days value their own time more. Estonian laws support this approach, too."

Builders generally prefer to avoid work stoppages as well. Those who are unable to manage their work earn no profit, because renting equipment is a key cost item. "GPS-based management is used to achieve optimality and make maximum use of equipment," Taal explains.

**Solutions for gravel roads**

A key initiative which was launched in the southern region is finding sustainable and cost-effective solutions for gravel roads so as to make maximum use of available funds in a reasonable way.

"If we're looking for ways of enhancing the load-bearing capacity of roads, sometimes going back to old technology provides the solution," says Taal. "Oil shale fly ash was once used to construct stabilised surfaces in Lääne-Viru County. With current technology, we want to avoid the mistakes made 40-50 years ago so as to reduce the appearance of cracks. The amount of ash added back then was uncertain. It was mixed using a grader and the dosage was inflexible, leading to cracks in the surface. Current technology is far better than it used to be. We can now measure out amounts and mix them better to find the optimal proportions and avoid cracks."

According to Taal, the aim is to seal gravel roads with larger volumes of traffic and to lift mass restrictions. "It's an important issue for society as a whole, and a financial win," he says.

The optimal technological solution is currently being sought for a cement-stabilised mixture. Test sections have been selected and procurements launched. Two solutions are being tested: in the first case, the contractor decides the amount of hydraulic binder (cement) in the pavement; in the second, they are given instructions based on the results of test pieces.

**Builders generally prefer to avoid work stoppages as well. Those who are unable to manage their work earn no profit.**

**Durability of roads**

More and more attention is being paid to the durability of roads and therefore also to the quality of asphalt installation. "Builders receive a bonus for good work," Taal explains. "The impact might only become visible after five or 10 years, but if a road lasts incredibly well, the builder clearly paid attention to the whole: the quality of the mixture as well as the installation of asphalt. Today's technology is far better than it was even five or seven years ago. Our experience and knowledge are on another level as well, and requirements have changed a lot, improving the products we make. Most roads make it through the warranty period."

In addition to the dubious quality of construction and materials, capacity-exceeding loads also cause damage. "Roads are designed to bear a certain axle load, and if the load exceeds the recommended limit for a long period of time, hat has a negative impact," Taal explains. "During construction, material loads mustn't weigh any more than allowed. And since the fines are substantial, builders tend not to take the risk."

# The keyword for 2020 in the northern region is large investments

## **Janar Tükk:** On the whole, Estonia's national roads are in good condition

Janar Tükk, the head of the Northern Road Maintenance Department, says that 2020 was a year of large investments in road construction: the Kose-Võõbu section on the Tallinn-Tartu road and the Kernu bypass on the Tallinn-Pärnu-Ikla road were completed, while work continued on the Luige-Saku section of the Tallinn Ring Road, including along the route of Rail Baltic. In addition, construction work commenced on the Võõbu-Mäo section and, 17 years since first being mooted, the Väo intersection.

"Several major works were completed in 2020, and we made a start on others," says Tükk. "To dot the i's, the construction procurement for the Kanama-Valingu section was launched on the last day of the year. We also carried out a number of smaller reconstruction and surfacing jobs and eliminated accident blackspots throughout the year. All of which makes for a substantial workload."

**Estonian roads have nothing to be ashamed about**

Tükk says that the construction of the Kose-Võõbu section was very successful and that everyone should be happy with the results. The construction crews did an excellent job, with the section being opened earlier than planned. Work is also underway on the Võõbu-Mäo section, although the mass-stabilisation of peat soil originally planned will not be able to be implemented. An innovative method for building road bases in swampy soil was tested in autumn: the wet peat soil was filled with a concrete mixture to form monolithic concrete blocks beneath the road. It has since become clear that it is not possible to build a stable base in this way, because the flow of water into the peat soil is uneven. The soil is too wet in some places and adding concrete does not create an even base. Therefore, the peat soil must be removed along the entire length of the road. This is more labour-intensive, but comes with smaller risks.

**There is a 'hole' in investments in the Road Maintenance Plan in connection with the construction of viaducts for Rail Baltic in the northern region. On the other hand, work related to Rail Baltic fills this hole.**

"New technologies can be tested on sections of secondary roads," Tükk explains. "The construction of a main road of national significance is not the place for such tests or risks. For now, we aim to dig out and replace the soil with new material on the Võõbu-Mäo section."

In Tükk's assessment, Estonia's national roads are still in very good condition. "I got to drive on Latvian and Lithuanian roads in summer," he says. "The speed limit is 130 km/h on Lithuanian highways, but the road is in bad condition compared to our secondary roads."

**Viaducts increase the workload**

Cooperation in the construction of Rail Baltic was an important keyword in 2020. A contract has been entered into with the founders of Rail Baltic to build 17 crossings along the new railway. Most of them are regular viaducts, but some are full crossings.

The two-level crossings connected to Rail Baltic have to be built at more or less the same time, which requires accurate planning of resources. Tükk's department has thought through the order of procurements and work. It is a task with many nuances, because some roads have to be closed and traffic has to be reorganised due to construction work.

"Distributing resources between Rail Baltic and other road maintenance work is a challenge, but we're used to large volumes of work in the northern region," Tükk says.

# ***Hannes Vaidla:*** *Balanced development has given us proper roads*

**According to Hannes Vaidla, the head of the Western Road Maintenance Department, we have been very successful in developing a balanced road network in Estonia.**

**Expectations concerning road development always exceed financial possibilities.**

Vaidla celebrated his 30th anniversary with the company in 2020. After graduating from Tallinn College of Construction and Mechanics (now TalTech), he returned to his home island of Hiiumaa and started working as a roadmaster in Kärdla with the island's Road Repair and Construction Department. He went on to study road construction at TalTech to broaden his knowledge and skills.

There were 15 regional road offices at the time, each of which determined its own priorities in road development and investments using the funds allocated to it. Nowadays, a national ranking of sites is compiled for investments, monitoring road conditions all over Estonia and ensuring the uniform development of roads.

"It's fair to say that Estonia has pursued a stable policy in road development and maintenance," Vaidla says. "We've developed the entire road network – secondary as well as main roads. We faced difficult times when we left the Soviet 'family'. There was a shortage of funds: in some years there wasn't even enough money to seal a single kilometre of road. After Estonia regained its independence, the management made smart decisions, focusing on Western technology and the privatisation of road maintenance. We have a balanced policy that we can be proud of, but expectations always exceed financial possibilities. We've amassed debt from general repairs, but that's true of most countries."

Main roads are generally in good condition in all countries: it is driving on basic and secondary roads that gives you an idea of the actual level of the road network in your own country. "We don't have any reason to feel ashamed in front of the neighbours," says Vaidla. "The level of maintenance of our roads is better compared to roads with similar volumes of traffic."

He notes that Poland, a transit country where large roads are built with EU funds, is sometimes given as an example. Road construction volumes there are understandable and not comparable to Estonia's in scale, because plans for roads are based on their use.

"There's no point constructing oversized roads if they find little use," he says, satisfied on

the whole with our level of road construction. Estonia has made steady progress in road maintenance and construction over the last 30 years and kept up with developments. According to Vaidla, we have been able to make the most of the latest technology in doing so.

**Substantial changes in road machines**

Road equipment has changed so much over the years that it is virtually unrecognisable. For instance, when Vaidla started working in the field, grader operators had to carry water for their radiators. All procedures were carried out mechanically and depended on the experience and skill of the operator.

Today, road graders are controlled with a steering lever and equipped with electronic devices. By way of example, Vaidla points out that a 3D model can be made of designs. Machines are able to read the model and monitor elevation numbers when moving materials, measure the slopes and density of material based on the design and more. All of this contributes to better quality and a quicker and more economical construction process.

Considering the working conditions at the time, men had to be healthy and resilient, because the machines' cabins had no heating. "Today, workers have to be better acquainted with technology and able to see the bigger picture to achieve the best results," says Vaidla, who admits that he would not be able to handle modern technology.

He has tried every single road machine during his career: from bulldozers to road rollers. As a site manager, he had to substitute for operators who failed to show up after payday. Maintenance vehicle drivers have to clear snow, simultaneously using the front, side and occasionally also the underbody ploughs. They must spread the right amount of salt and monitor all of the road elements and other road users while driving on a slippery surface and in difficult weather conditions. "I take my hat off to those men," Vaidla says. "There's no room for mistakes."

**Drivers must be responsible for safe traffic**

In addition to skilled maintenance vehicle drivers, Estonia has around 70 road weather stations that are of great help in winter. There are roadmasters on duty in 17 maintenance areas who monitor weather and road conditions practically 24/7. Variable message signs have been installed in certain places, enabling speed limits to be adjusted according to road and weather conditions.

The expectations of road users are constantly increasing: they presume that road conditions will be the same in summer as they are in winter and do not pay enough attention while driving.

According to Vaidla, this problem started 10-15 years ago: drivers wanting to drive at the maximum permitted speed irrespective of the road or weather conditions. "Road users don't give any consideration to the fact that reaching their destination takes longer due to changeable conditions in winter," he says. "That gives rise to problems. If we took more time in winter conditions, there wouldn't be as many accidents."

Drivers must understand that they are responsible for traffic safety. Vaidla recalls that cars had the same tyres year-round 30 years ago. These were very inflexible in winter, with almost no adhesion to the road surface. You could not drive at more than 40 km/h without ending up in a ditch. Drivers had to decide on the appropriate driving speed for themselves to get where they were going.

Road maintainers are not solely responsible for safe traffic: road users also have to contribute to it by selecting a suitable speed, planning their journey, taking into account road conditions and keeping

**The expectations of road users are constantly increasing: they presume that road conditions will be the same in summer as they are in winter and do not pay enough attention while driving.**

calm. Despite best efforts, it is not always possible to prevent roads from getting icy. There may be no visible snow or ice on the road, but weather conditions may be tricky: there could be black ice or ice rain. Blanketing roads in a thick layer of salt throughout winter is no solution, because it leaves a considerable environmental footprint and leads to unreasonable costs.

**The leading expert on creating safe ice roads**

Vaidla has a keen interest in ice roads. He focused on this topic in his graduation thesis and is the leading expert in the field at the Road Administration. He has also had some frightening experiences: he fell through the ice in his car when creating an ice road in 1994. He says that you have to know all the signs when establishing ice roads: why and where cracks appear, why water gets on the ice, how the water moves in Väinameri and more. Such knowledge isn't found in manuals: it can only be gained from experience.

In cold winters with thick ice, up to seven official ice roads are opened in Estonia, with a total length of over 80 km. The approximate length of

these ice roads is as follows: 25 km between Hiiumaa and the mainland; 15 km between Hiiumaa and Saaremaa; 10 km between Muhu and the mainland; 12 km between Vormsi and the mainland; 15 km between Kihnu and the mainland; 3 km between Haapsalu and Noarootsi; and 8 km between Laaksaare and Piirissaar.

However, the creation of ice roads will become a dying art if climate change continues. Until the mid-1990s, ice roads were also referred to as 'life roads'. Winters were cold, the ice thick and ferries unable to sail. Goods and people were transported to the islands via ice roads.

Today, opening up ice roads leading to the larger islands no longer pays off. The state has invested in high-quality ferries that can sail throughout the year to maintain connections with the bigger islands. Vaidla hopes that ice roads remain in places that lack ferry connections or where they are not as good. He points out that the ice road shortens the journey from Noarootsi to Haapsalu by 40 km (i.e. almost 10 times) compared to travelling by road. Another example is Piirissaar, which has no ferry connections in winter. Vaidla says that Estonia has so much valuable experience in creating ice roads that it can be shared with other countries.

**Customers and contractors should switch places**

Vaidla has enjoyed a 30-year career with the Road Administration. He has been invited to work in the private sector many times, but for various reasons he has not done so.

He says that people should move around more in the field: customers and contractors should switch places. This would provide both sides with new knowledge and the ability to see the bigger picture. He doesn't know whether he will ever go into the private sector. He jokes that since he still has good eyesight and enough strength in his arms, he will continue working in his field.

# Road construction equipment has taken a great leap forward

**To calculate the productivity of machines, the result of a poorly trained operator has to be multiplied by 0.6.**

## Opinion

**Raimo Unt,**
**winner of the Aadu Lass Lifetime Achievement Award**

When Estonia regained independence, new road construction technology and knowledge flowed into the country. We had to soak up as much knowledge as we could at the time. That was possible by being pro-active about talking to and listening to others. Our strongest connection was with the Finns, since people from Northern Estonia could talk to them thanks to watching Finnish TV. An open-ended cooperation agreement entered into by the Finnish and Estonian Road Administrations in 1991 was of great help. We had to teach our own instructors for the mass training of machine operators and bring experts in from abroad. There were cases where older, very experienced men said they just weren't physically capable of operating three ploughs and spreaders while driving. In professional competitions where 17 grader operators had to do practical tasks, just five men used additional devices. Today, it goes without saying that all grader, plough and spreader operators can do that. A bad operator undermines the innovation of machine builders as well as the working rhythm of others by fumbling about in the technological chain and can cause delays. It's great that current students of road engineering are motivated, diligent and inquisitive.

# **Tõnis Tagger:** *Road infrastructure has to be developed in a uniform way*

**The strategic planning of roads means constant manoeuvring between the needs befitting the era and the financial capacity of the state, whereby it still turns out in the end that the required investments exceed actual possibilities.**

Tõnis Tagger, a leading specialist with the Infrastructure Development Department who has been active in the field for more than 10 years, deals with the beginning of this chain in his work: the preparation of infrastructure development projects. This is the most time-consuming task, but also demands the greatest responsibility with regard to the quality of the end result. In fact, it is also a field in which there is quite a lot of paperwork, including everything from acquiring permits for proposed projects to negotiations with owners of the land plots on which the construction of roads is planned.

An important part of planning is so-called infrastructure asset management, which encompasses the asset management of the road lifecycle, the planning of repairs and finding comprehensive solutions to all problems.

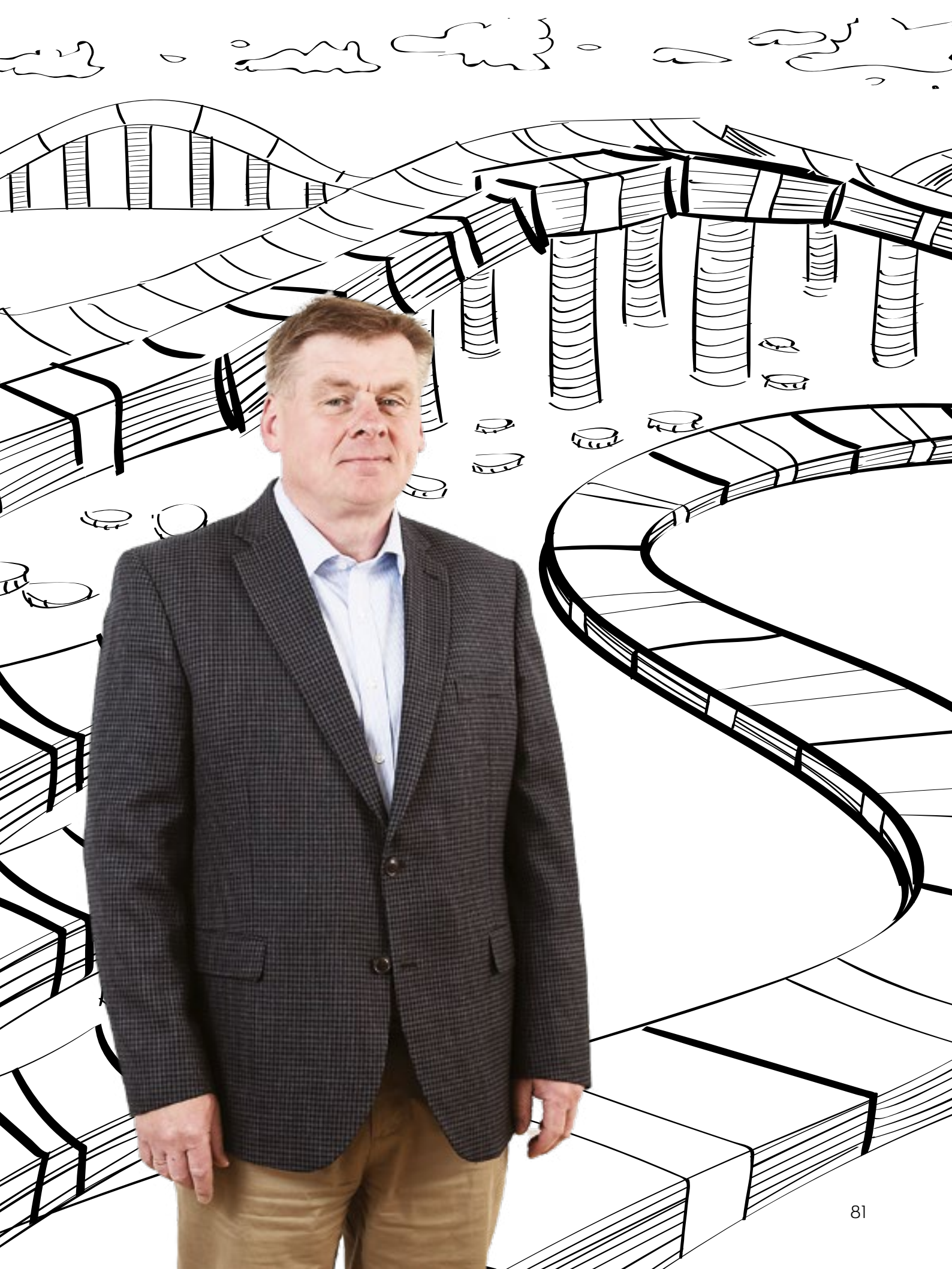
Restrictions on financing and the financial possibilities of the state are the keywords that must be taken into account in every activity. While the general principles (i.e. accounting) have remained largely the same for the past 30 years, significant progress has been made in the monitoring of road infrastructure, which has taken on a more digital dimension, relying on up-to-date IT solutions. These solutions help to 'translate' road infrastructure, models and surveys into the language of economics and give infrastructure developers new possibilities and tools for more effective management.

**New technology and materials should effectively solve problems related to increasing traffic volumes.**

**Everyone wins from efficiency**

A number of major road construction sites have been completed in the past few years, including new sections of the Tallinn-Tartu road. Tagger knows that preparations for these jobs have been underway for 10 years or more. The strategic planning of the road network and the infrastructure accompanying it is a long-term process.

As such, Tagger is currently dealing with plans for traffic junctions that may only reach the construction stage in a decade's time, if that, because the funding of



road construction is unstable and inconsistent: you never know what will get funding or how or which projects will be shelved indefinitely.

New roads were rapidly built in Hungary and the Czech Republic in the 1990s while things were quiet on that front in Estonia. When funds started pouring into road construction in the early 2000s, we were lagging behind our neighbours by 10-15 years. Now we are more or less keeping pace with them, allocating 1-1.5% of GDP to road construction every year, but disparity still accompanies our progress. "It may be the case that we've prepared a project and are able to launch a construction procurement, but for some reason it's brought to a halt," Tagger explains. "Sure, in 10 years' time we might be able to put the project back on the table, but by then the data will be outdated, the environmental conditions will have changed, there might be other needs and objectives and we'll have to start all over again. It would be more effective if a completed project could be implemented as quickly as possible. It would be advantageous for road users, residents in the area, business, the environment, the economy and the public purse."

**The long process of planning**

There has been talk of designing the Via Baltica for a long time, but only 20% of the Tallinn-Ikla road has been constructed to comply with EU road safety and environmental requirements. The final deadline is 2030, but only a few percentage points of the total are able to be constructed each year.

"We're invest in places with the most urgent needs," Tagger says. "But general economic development follows its own path, and we haven't been able to keep up with it in the development of road infrastructure. For instance, we've been planning the reconstruction of the Tallinn Ring Road since 1999. A couple of decades have come and gone since then, but it'll take another five years to complete the Kanama-Keila 2+2 section."

The process of preparing a large road construction project is time-consuming and a major part of it has to be carried out by the planners from the Road Administration. Work begins with the preparation of plans and designs, then continues with the transfer of land and the announcement of the construction procurement, which takes from three to five years. Surveys and environmental impact assessment alone take two to three years. How the materials required for building a road section are obtained and how exploration for mineral resources and the application process for mining permits is progressing have to be clarified.

**New technology provides support**

Unfortunately, not all of these activities can be included in the four-year cycle of the state budget strategy (SBS), and if there is no funding for the planned site in the next SBS, it has to be 'put on hold'. "Planning and starting work on large sites requires the security of funding for at least 10-12 years," says Tagger. "Some projects we prepare never get put into practice, or only after significant delays. Põhjaväil in Tallinn as the starting point of Via Baltica is a perfect example, and the construction of the Väo traffic junction was delayed for 15 years." In addition, the Road Administration adopts environmentally friendly technology in road construction that can save non-renewable resources, e.g. stabilisation using oil shale ash, the use of waste-crushed aggregate on lower-class roads and the mass stabilisation of weak soils. This requires constant work and cooperation with higher education institutions and countries that are doing well for themselves in the field of road construction. New technology and materials should effectively solve problems related to increasing traffic volumes as well as larger maximum masses in the future.

**Planning and starting work on large sites requires security of funding for at least 10-12 years.**

Different types of transport supplement one another in Estonia. Car traffic is not likely to decline, considering our relatively sparse population: economic growth, the automation of traffic in the future and commuting needs will instead increase traffic volumes. Replacing road transport with rail transport would require the substantial reorganisation of logistics chains and increased stock reserves. It would be more time-consuming and costly for multimodal terminals and both suppliers and recipients. In order to achieve environmental goals in the area of transport, road infrastructure must be developed comprehensively (grade-separated intersections, public transport lanes, 'Park and Ride' car parks, alternative fuel stations, etc.). This would give public transport a real advantage and facilitate the widespread use of vehicles with new technology (electricity, gas and other alternative fuels).

Systems for assessing the costs and benefits of the lifecycle of projects need to be developed on the basis of BIM models. Alternative construction options can be compared according to their $CO_2$ footprint.

Tagger is pleased when new roads are completed that divert intensive traffic from the homes of local residents and resolve the concerns of pedestrians and cyclists years of waiting, making traffic smoother and safer.

## LARGE-SCALE PROJECTS LIE AHEAD

Successful projects, i.e. new roads that are completed despite difficulties, always bring a smile to the faces of those who contributed to them. "Every such road section is a relief to people and boosts the economy," says Tagger.

Planning for Rail Baltic and the infrastructure connected to it presents Tagger with new challenges. This planning will be done by the Road Administration as part of the Transport Administration. Railways are likely to take on a central role in the near future, with the reconstruction of the existing internal network and the construction of the new Rail Baltic and local stations.

Tagger regards the linking of supporting fields (administration, law and IT) as common ground between his work and the merging administrations. This will increase efficiency, but specialist knowledge will remain within the competence of each administration. For example, cooperation in planning access roads to ports and freight transport at ports and the general organisation of transport in connection with the islands and ports, etc. could be more efficient.

A fixed link to Saaremaa would make it possible to use ferries to improve connections with Hiiumaa. As a fixed link would allow for quick crossings throughout the day, there would be no need for additional air transport between Kuressaare and Tallinn and new opportunities for business development would arise on Saaremaa (incl. a deep port and logistics park on the island).

The construction of Tallinn's so-called small ring road is another major infrastructure project, for which a tunnel has to be built under the airport. General traffic management and parking solutions in the Ülemiste area are also connected to this, as it will be a hub of air, rail and bus traffic in the future.

There are plenty of challenges ahead, as roads are never complete.

# Statistics

## Estonian transport infrastructure

- As at early 2020

**Total length of national roads 16,609 km, including:**

- main roads: 1609 km
- basic roads: 2406 km
- secondary roads: 12,479 km
- connecting roads: 116 km

**Length of public railway: 922 km, with 138 km of electrified railway, including:**

- with two or more pairs of rails: 102 km
- number of railway stations: 82, with 62 open to passenger transport
- passenger train stopping points: 66
- railway crossings: 322
- regulated crossings: 168

**Length of shipping lanes: 449 km.**

**Length of flight routes: 13,036 km.**

Source: Statistics Estonia

# Comment

**Martin Lengi**
**Director of Strategic Planning at the Road Administration**

The Road Maintenance Plan adopted at the end of 2020 still follows the principle of 'first preserve, then develop', but is exceptional on the whole. State budget funds are usually known about in advance – as early as spring. Both the strategy process and the preparation of the state budget and budget strategy were postponed until autumn this time. The Road Maintenance Plan was renewed at the same time. As such, the work was quite fast-paced, but we managed to obtain the government's approval for the plan, so we can go into the projects for the next few years with certainty.

The projects approved under the plan in force until 2030 are in accordance with those made for the coming years. The division of time changed in connection with some sites, but the list of sites throughout the period remained basically the same. It's gratifying to see that additional resources were found for 2021 and 2022. This additional funding is primarily to do with two priority fields of the government's action programme: the dust-free surfacing of gravel roads; and the preparation and construction of 2+2 projects.

Next year we're hoping to launch the construction of additional 2+2 sections and intersections. The biggest additional projects are mostly to do with the Tartu road: the funding of the Kärevere-Kardla section, which was initially planned for 2024/2025, and launching the construction of a grade-separated intersection on Riia Street in Tartu.

# ***Andrus Prükk:*** *Road users must also retain personal liability*

**The Road Administration believes that less is more when it comes to traffic signs and markings and that they should guide and help road users rather than prohibiting them from and ordering them to do things. At times, of course, stricter restrictions are necessary.**

> **There are situations in which road users should assume greater responsibility to decide how best to behave, but there are also instances that require fixed rules, because this is safer.**

Andrus Prükk, the Implementation Coordinator of Permanent Traffic Management with the Road Maintenance Organisation Department, has to ensure that our traffic environment is comprehensible to and able to be logically perceived by all road users, irrespective of whether they are vehicle drivers, cyclists or pedestrians.

Traffic control devices include, first and foremost, vertical and horizontal markings, i.e. traffic signs erected alongside roads, barriers and markings on the road surface that direct and manage traffic. The Road Administration erects them on national roads, while the streets and roads of towns and villages are the responsibility of local governments.

**All traffic signs must be unambiguous**

Prükk confirms that the Road Administration follows the principle

that traffic signs or markings of all types must be installed in the same way all over Estonia and be unambiguous to all road users. For example, signs indicate when a certain restriction ends so that drivers don't have to monitor their odometer to know when the restricted area ends.

"My main duty is to look at the big picture, so to speak," Prükk explains. "Our motto is to ensure a uniform approach to the installation of traffic signs. We strive to create a logical traffic environment so that users don't have to think too hard and are given clear instructions on what to do by means of traffic signs.

At the same time, overregulation has to be opposed: the abundance of signs and markings with occasional meaningless duplication, attempts to repeat everything, as if to reduce drivers' own liability." He says that there is a need to look for balance – there are situations in which road users should assume greater responsibility to decide how best to behave, but there are also instances that require fixed rules, because this is safer.

**Traffic signs are required to constantly limit speed**

Prükk agrees that it largely depends on traffic culture whether road users need to have their every movement prescribed or whether they can be trusted to choose the most suitable driving speed, taking into consideration other road users.

Such dependence on the awareness of drivers may apply to gravel roads, on which driving at 90 km/h is allowed according to the Traffic Act, but drivers must keep in mind their own safety and that of others, think about local residents (not burying them in a thick cloud of dust) and keep their speed under 70 km/h.

Driving speed is the main area in which drivers still require constant restrictions imposed by signs. For some reason, people naturally tend to drive at the maximum permitted speed, even though it is not obligatory to do so. The Traffic Act stipulates that the speed limit be adapted to road conditions, but this remains merely something on paper to most and is not observed in traffic. Therefore, the speed limit still has to be reduced in hazardous places, as drivers may not grasp the need for it at first glance.

"The task of the Road Administration is to shape a safe and unambiguous traffic environment with smooth movement along logical paths," Prükk explains. "The use of variable message signs (VMS), which make it possible to adjust speed limits according to the road conditions, contributes to this. For instance, the system automatically displays the speed limit on the Kose-Võõbu section that opened in 2020 if a wild animal approaches the road, and on the Tallinn-Pärnu road there's an intersection where traffic signs reduce the speed limit on the main road if a vehicle is approaching from a secondary road. The feedback from road users has been positive so far, and I think these sorts of signs will prove their value in the course of time."

Prükk also points out so-called modular thresholds as a new traffic control device, which can be installed on the road surface quickly and removed as necessary. The most recent of these was installed next to a school building in Urvaste in Võru County to make it safer for children going to and coming home from school. The device can be removed for the holidays.

Instead of metal road barriers, barriers made of soft material are now being used which prevent pedestrians from rushing onto the road but do not cause as much damage if you run or drive into them.

**Larger volume of traffic as a precondition for a digitally controlled system**

Technology would allow us to 'automate' a large proportion of our traffic and make it digitally controllable on the basis of certain typical situations or probability. However, since building a system of cameras, sensors and transmitters is rather expensive, time-consuming and difficult to manage, such systems are installed in places considered the most practical.

**The task of the Road Administration is to shape a safe and unambiguous traffic environment with smooth and safe movement along logical paths. The use of variable message signs also contributes to this.**

"Road users naturally expect traffic control to become smoother and to meet the needs of specific circumstances effectively," Prükk says. "For instance, instead of a metal traffic sign on a road going through a residential area, there could be a sign with changing information that displays one speed limit on working days and another at night when there are no pedestrians or cyclists around."

"Nevertheless, people need to understand that systems like that are too expensive to implement everywhere. You need a certain volume of traffic for it to pay off. Similarly, we don't install elk warning systems every-

where in forested areas even though there's a risk of animals appearing on the road. Drivers still need to maintain a certain sense of potential danger and a certain level of caution."

On the other hand, there are places where traffic needs to be 'calmed' or physically restricted. Thresholds, safety islands installed in the middle of a road which sometimes narrow the lane, the construction of artificial bends to limit the speed, roundabouts for smoother traffic and other similar measures fulfil this objective.

Limiting speed is one of the aims of these methods. In addition, they try to make drivers concentrate on driving. For example, they come in handy when drivers enter a built-up area after a routine drive between fields and have to take into consideration pedestrians, cyclists, pets that could rush out onto the road and other similar risks. "The Road Administration tries to guide and warn road users of dangers, rather than directly prohibiting them from doing things or ordering them about," Prükk notes.

As such, the principle which is currently followed is that there is a so-called maximum speed in place and it is limited where necessary. "This also means that drivers assume more personal responsibility for driving at a speed that's adjusted to their experience and driving skills and is safe for themselves and other road users," Prükk says. "In the Nordic system, on the other hand, the general limit is lower (80 km/h) but is raised in places where it's safe to do so."

**More trust can be placed in road users if traffic culture improves**

As mentioned above, greater trust in road users depends on general traffic culture, which the Road Administration promotes by teaching children about traffic and setting up traffic control devices on streets and roads.

It takes time for habits that ensure safety to take root, and shaping these habits is a never-ending task.

# Information is collected about accident blackspots

**Final approval for the reconstruction of accident blackspots is granted by the investment committee of the Road Administration.**

## Opinion

**Janno Vilberg**
**Accident Blackspot Coordinator with the Road Administration**

How hazardous a section of road or an intersection is can't be assessed solely on the basis of the accidents that have occurred there – the potential risk of accidents must be taken into account as well. Information on accident blackspots and dangerous intersections is collected from three sources.

1. Accident blackspots determined 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 section or intersection as well as the accidents that have occurred in similar places. Accident blackspots are ranked in order of significance according to the results of the forecast.

2. Accident blackspots determined on the basis of the qualitative assessment of county traffic committees: 20% of the annual budget for the reconstruction of accident blackspots is allocated for this.

3. Accident blackspots determined on the basis of other qualitative assessments. Information on accident blackspots which is primarily based on accidents that have occurred is also sent to the Road Administration by third parties such as the Police and Border Guard Board, the Committee for the Investigation of Serious Traffic Accidents and local governments.

# ***Rain Hallimäe:*** *The safety of road users depends on the decision of the foreman*

**Rain Hallimäe, the lead engineer with the Road Maintenance Organisation Department, is happy with the results of 2020: roads were maintained without disturbances despite the pandemic, and maintenance and supervision contracts functioned as required.**

Eight contractual partners maintained roads in 2020: OÜ Üle, AS Tariston, AS Eesti Teed, OÜ Leonard Weiss Viater, AS TREV-2 Grupp, OÜ Warren Safety, OÜ Sakala Teed and AS Eesti Keskkonnateenused. Road conditions and quite often the safety of road users depend on the decisions and actions of these partners. Road maintainers need to be constantly prepared to act. IT systems, constant patrolling on roads and the experience of roadmasters contribute to the planning of operating activities.

Nevertheless, despite the best forecasts, information systems and experience, it is not always possible to avoid difficult road conditions arising because of the weather. Road users have to take into account that roads get icy and snowy in winter. It is perfectly normal and indeed necessary to reduce driving speed and use studded and all-season tyres.

"If the Road Administration announces that the roads are icy or that there is a risk of slipperiness, road users have to take that into account," says Hallimäe. "We're not justifying any failure to act or ineptitude on our part. We're just telling things as they are. History has shown that there's no competing with nature. You have to adjust to it. Road maintainers are not required to be superior to nature

**History has shown that there is no competing with nature. You have to adjust to it. Road maintainers are not required to be superior to nature either.**

either. Lower requirements apply to complex and exceptional circumstances."

Most drivers adjust their driving style according to the road conditions and warnings, and take such warnings seriously. The Road Administration has advised against using roads in exceptional circumstances: otherwise you might end up in a ditch or snowdrift and help may be slow in coming due to the poor road conditions.

"Recently, more attention has been paid to preventive de-icing," Hallimäe explains. "Therefore, volume-based payment for preventive de-icing was introduced in the most recent contracts for roads at the highest condition level, which is 3+."

**General satisfaction with driving conditions**

Variable weather conditions and the spring thaw period pose the greatest challenge in road maintenance, mostly on gravel roads that have not been fully constructed.

"Looking at the complaints received by the road information helpline 1247, most were about snow and iciness (23.9%), followed by trees that had fallen on the road (18.2%), small dead animals (12.8%) and the condition of gravel roads (11.3%)," lists Hallimäe. "The free helpline has been a valuable source of feedback. In 2020, a total of 10,165 events were reported."

Contractual maintenance partners ensure the required road conditions. Road maintainers decide on the specific maintenance work that needs to be done. The Road Administration monitors them and assesses their activities. "Surveys carried out among drivers revealed that the majority are satisfied with driving conditions," Hallimäe reveals. "Last year, road maintenance was rated as good or very good by 65% of drivers in winter and 70% in summer. Those are high percentages, but of course that doesn't mean we should rest on our laurels."

In terms of major achievements, Hallimäe points out that they coped with the emergency situation while ensuring the passability of roads. "For the state, that's one of the 14 vital services," he says.

There was a significant change in procurement terms: in addition to prices, the variety of technology used and the experience of roadmasters are also taken into account when selecting the best companies. "We've continued along this path and feel that it's an initiative with good prospects," he says. There is still a need to look for reserves with regard to the organisation of maintenance, requirements and supervision. A good example is the initiative for the preparation of a development concept for maintenance.

**IT systems contribute to weather forecasts**

Instructions and guidelines are provided to road maintainers and drivers based on weather and road weather forecasts. The Road Administration uses the online environment of the Road Information Centre (Teedeinfokeskus, TIK) developed by Teede Tehnokeskus which is largely based on the Road Administration's road weather station information system. In addition, TIK uses data from the road weather stations in neighbouring countries and the automated stations of the Environment Agency. It also forwards images from the Harku and Sürgavere and European precipitation radars. "Various layers can be added to the TIK map, like cloudiness and precipitation forecasts, maintenance work done in the last four hours and the extent of the work, Waze information from road users and adhesion coefficients," Hallimäe explains.

TIK provides 48-hour road weather forecasts every hour. These include the surface condition, air and road surface temperature, dew-point temperature, type and amount of precipitation, wind speed and direction, humidity and the thickness of the water layer. The Road Administration supervises road conditions and road maintainers plan winter maintenance work based on the forecasts. "Thanks to the development of the Road Information Centre's web service, we've been able to include the volume-based payment for preventive de-icing on roads with the highest condition level in our contracts," says Hallimäe. "The use, interpretation and implementation of web service data is where there's most room for improvement." In conclusion, Hallimäe says that the Road Information Centre's information system provides a lot of information, but is user-friendly and helps specialists forecast the road and weather conditions for the coming hours.

The road equipment development plan should be highlighted as one of the biggest achievements of 2020. "The plan serves as a basis for upgrading and improving road weather stations, cameras and other devices, which in turn contributes to safer traffic," Hallimäe says.

**The majority of drivers adjust their driving style according to the road conditions and warnings, and take such warnings seriously.**

## PARTNERS AND PRINCIPLES OF MAINTENANCE WORK IN SUMMER AND WINTER

- Contractual road maintenance partners are responsible for maintenance work in summer and winter.
- Summer maintenance includes patching surfaces and cracks, strip coating, mowing the areas alongside roads, maintaining water drainage systems such as culverts and ditches, cleaning and maintenance work, grading gravel roads and dust control.
- Maintenance work in winter involves snow control with front and side ploughs and base blades, de-icing with a spreader and mechanical roughening with tenon or net blades. Whereas summer maintenance work can be planned well in advance, this is more difficult in winter as the content and volume of work depends on the weather.
- Adhesion coefficients are determined for the purposes of de-icing. Their numerical value ranges from zero to one and in reality fluctuates between 0.10 and 0.60-0.80. Road conditions are very difficult if the coefficient is 0.10-0.15: for instance, if there is a layer of water or snow on an icy road, black ice, ice rain, etc. and it is recommended not to use the roads.
- There are 17 county-based maintenance contracts, with Harju County being the exception, which is divided into three regions: Keila, Kose and Kuusalu.
- Road maintenance contracts are entered into for five years. New procurements are launched periodically. Contracts are entered into and performed in different years to balance the workload.

# Statistics

**7.2** Average assessment of road maintenance in summer

## Drivers' assessment of road maintenance

**WINTER 2020**

- The majority are satisfied with road maintenance: two thirds of drivers rated it from 7-10. The average rating is 7.0.
- With regard to road maintenance in winter, 84% agreed that maintenance machines allow others to use the roads safely and 72% agreed that snow is cleared quickly enough. The proportion of those who agreed with other statements regarding maintenance (46-64%) was also significantly higher than of those who disagreed.
- The counties that set the best example with significantly higher than average assessments are Tartu, Harju, Saare, Põlva and Lääne counties.
- Problematic counties with significantly lower than average assessments are Hiiu, Ida-Viru, Lääne-Viru and Rapla counties.

**SUMMER 2020**

- People are mostly satisfied with road maintenance: 70% of drivers rated it from 7-10. The average rating is 7.2.
- With regard to road maintenance, 82% agreed that road shoulders and green areas are mown sufficiently and at least 75% said that winter damage, rubbish on roads, loose crushed stone, etc. are removed quickly enough. 43% of respondents felt that gravel roads are maintained effectively.
- The counties that set the best example with significantly higher than average assessments are Saare, Hiiu and Järva counties.
- Problematic counties with significantly lower than average assessments are Valga, Põlva and Jõgeva counties.

Source: Turu-uuringute AS surveys of driver satisfaction with road maintenance

# ***Kirke Williamson:*** *A unified ticketing system in Estonian transport would bring contentment*

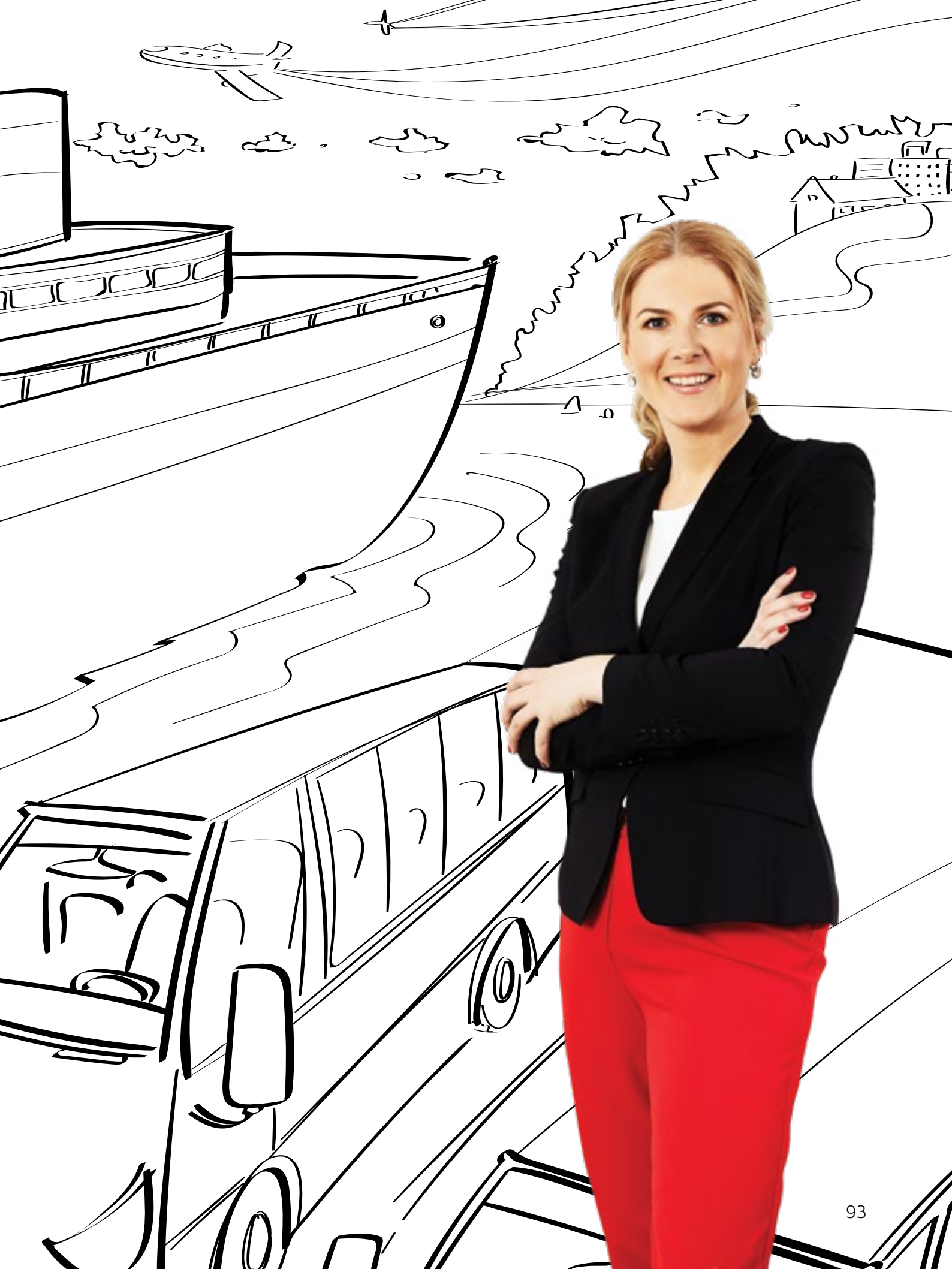
**In addition to organising public transport on roads, the Road Administration has now been managing domestic air traffic and ferry connections between the mainland and largest islands for two years. With the merger of various administrations, the joint coordination of transportation is likely to increase further.**

> **The Road Administration treats all of the participants on the public transport market as equal partners, but officials must make sure that no one hurts others, that there is fair competition and that equal procurement conditions apply to all.**

Kirke Williamson, who has been the head of the Public Transport Department under the Traffic Service for the last five years, keeps records of all this. She organises the issuing of domestic long-distance bus permits. Since 2018, she has also managed contracts for the air and ferry routes between the mainland and Saaremaa and Hiiumaa and has organised county bus traffic.

The organisation of bus routes in counties has been delegated to regional public transport centres and the local governments of the two largest islands. Around 70 million euros a year is allocated as support for carriers operating routes in the three fields of transportation.

As such, the merger of three administrations, which was the focal point in 2020, will not lead to a fundamental reorganisation of public transport – work on it is underway and will continue. The Ministry of Economic Affairs and Communications has coordinated and subsidised passenger transport on railways since



the Railway Administration was dissolved in 2004.

Williamson says that the Road Administration treats all of the participants on the public transport market as equal partners, but officials must make sure that no one hurts others, that there is fair competition and that equal procurement conditions apply to all.

**Free public transport shakes things up**

"County bus traffic underwent substantial innovation in July 2018 when the opportunity arose to provide free transport on county routes," says Williamson. "Some local governments thought that public transport should be free for everyone, while others decided to apply it to specific groups of residents."

The fact that public transport has been free in Tallinn since 2013 is not connected to the activities of the Road Administration, as this was the decision of Tallinn City Government.

Williamson says that the transfer to free bus transport affects the administration inasmuch as there is no need to collect ticket money in counties where it really is free for everyone and there is less paperwork. At the same time, they still have to organise public transport in the broadest sense: launching procurements, checking compliance with contracts, etc.

Nevertheless, maintaining control over state-wide free public transport is something of a struggle. Regional public transport centres (PTCs) established between 2015 and 2017 are responsible for organising this in the counties. Local governments are members of regional PTCs, while the state participates via the Road Administration. The PTCs in various regions organise passenger transport differently: in some areas it is free for everyone, while in others it is only partially free. "Local governments had the right to decide who could use their bus transport for free," says Williamson, describing the reasons underlying the current situation.

> **As a passenger, I shouldn't even notice that I'm moving from one region to another or have to buy a different ticket when using public transport.**

On the one hand, the Road Administration plays the role of financier – funds are allocated from the state budget to subsidise carriers and ensure the provision of land, air and ferry traffic services. On the other hand, the administration coordinates the development of public transport at the county and state level and advises its partners.

40 million euros per year is allocated to county bus traffic, and if a need for additional departures arises in some regions, they have to justify their application for extra funds.

**Changes on the long-distance bus market and in movement habits**

The employees in Williamson's department sit on the procurement committees operating county bus routes. In addition, the Road Administration has prepared sample documents and standard terms that must be taken as a basis when organising procurements, but can be supplemented by regional PTCs according to their needs.

Free public transport has given rise to a number of changes which the Road Administration keeps an eye on via surveys.

It is understandable that free transport on county routes has changed the long-distance bus market, but it is more surprising that people are cycling and walking less frequently in the countryside since the introduction of free bus transport.

Williamson is of the opinion that PTCs should not be limited to organising public transport in just one county. For instance, a joint Southeastern Estonian PTC has been established in Võru and Põlva counties, while the Northern PTC takes in four counties.

"Passengers shouldn't even notice county borders, since they just want a smooth commute to work," she says. "PTCs should offer borderless public transport so that it doesn't even register with passengers that they're moving from one county to another. When the county government reforms were launched, the Road Administration proposed the establishment of four regional PTCs. However, it was decided that the foundation of local PTCs made more sense. As such, when leaving a county, rules and pricing may change. Centres can merge even now, but it is up to local governments to decide on that."

Williamson feels that there could be closer cooperation in coordinating departures and arrivals and making them more customer-friendly. Efforts are being made to establish an ideal public transport system, but there is plenty of room for improvement.

**Striving for a standardised ticket system**

Williamson says that she would be happy if Estonians could use a single card or ticket for transport throughout the country, without having to acquaint themselves with the system in every town and city.

She feels that Estonia is small enough for a standardised ticket sales system.

"As a passenger, I shouldn't even notice that I'm moving from one region to another or have to buy a different ticket when using public transport," she says. "Thankfully, we're moving in that direction. It's easier with means of transport funded by the state, but people also use commercial long-distance routes or those financed by local governments. That raises the question of how to allocate funds. Reaching agreement on funding issues is the most difficult aspect of all."

## Organisation of public transport

- Administrative reforms granted PTCs the right to decide which public transport solution was the best for them, taking into account local peculiarities.
- The Road Administration monitors whether
PTCs, as representatives of the state, are fulfilling their duties as required.
- Public transport is largely funded by the state, and the Road Administration's task is to supervise the use of state budget resources.
- This includes inspection, observation and analysis so that funds are allocated to the right places according to need.
- Among other things, the occupancy of routes is monitored: if very few people make use of certain departures, alternative solutions have to be found. Public transport is like a living organism that is constantly evolving. As such, what would help make public transport better and more needs-based must be considered.

# The Estonian ticket system needs standardising

**We have to strive to establish common principles as the basis of public transport in every region of Estonia.**

# Opinion

**Ahto Pahk,**
**Head of the Public Transport Control Service**

Our objective is to get people using public transport and for it to meet their needs. We want to encourage people to use buses instead of cars to save the environment, reduce congestion and more.

The issue of free public transport is a political choice, but it will be very costly in the long term. But we will adhere to it, since the decision has been made. Satisfaction surveys have been conducted among users of public transport for years, revealing that people would make use of public transport, but the departure times and destinations are not in line with their needs. As such, we're cooperating with PTCs to make public transport more attractive. We try to bring things to a level where people who travel from Tallinn to Pärnu, then to Võru and Tartu, then back to Tallinn via Narva don't realise that they're crossing county borders or moving from the area of influence of one PTC to another. The standardisation of the ticket system is an important aspect of our department's work – we'd like to establish one ticket that can be used on various types of transport. We have to strive to establish common principles as the basis of public transport in every region of Estonia, from procurements to the ticket system.

There is a lack of will to make the system better. Public transport could be considerably improved if all parties focused on it, saw the bigger picture, contributed to finding common ground and understood that the system needs to be changed.

# ***Tarmo Vanamõisa:*** *Our driving test results have to become the best in Europe*

**"We're at the average level in Europe with regard to the proportion of driving tests that are passed, which isn't bad, but we want to be better," says Tarmo Vanamõisa, the head of the Examination Department, who is striving to improve the level of examiners, driving schools and students alike.**

Vanamõisa says that Estonia wants to rank no lower than behind Norway, Sweden and Germany, i.e. with a percentage of passed tests of around 70% for category B. He admits that these countries have been working to achieve these results for much longer than Estonia. Systematic work of this nature commenced here four years ago when a uniform testing centre was established.

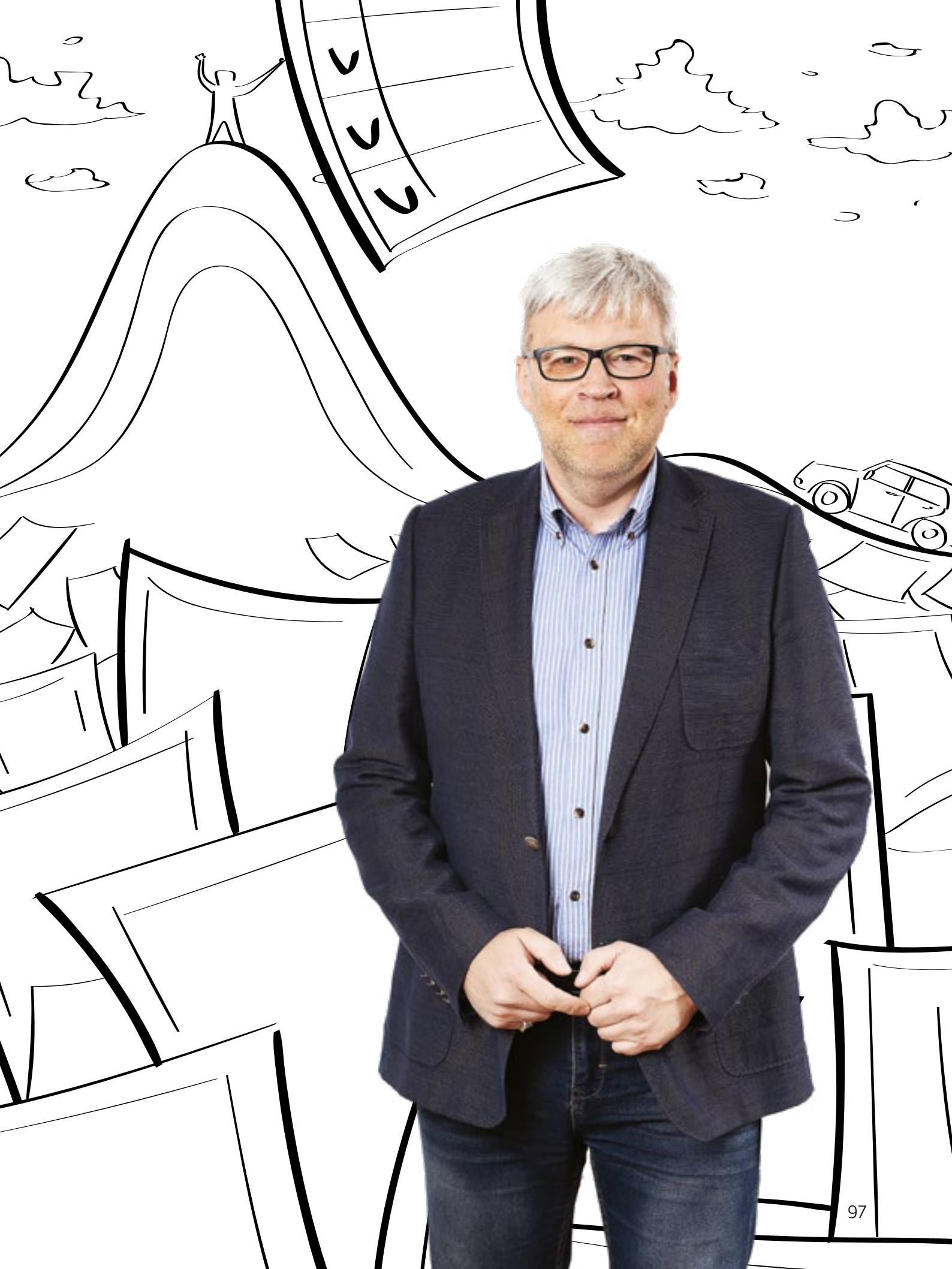
At first, the passing percentage was less than 30% in some areas. Now, the proportion of those passing their test exceeds 40% even in the most complicated regions. Tallinn is an exception, marked as it is by greater traffic intensity, but passing percentages have also risen in the capital. "The passing percentages have converged all over Estonia," says Vanamõisa. This was one of the aims in establishing the testing centre, in addition to reducing the risk of corruption and ensuring transparent evaluation.

**Examiners focused on tests**

The testing centre started operating in 2017. Previously, the 17 bureaus of the Road Administration handled driving tests in 17 ways. Heads of bureaus, car inspectors and others also carried out tests – a total of 56 people all over Estonia. "There were a lot of different people dealing with a lot of different things all in their own way," Vanamõisa recalls.

> **People being tested can be sure that they will be assessed in the same way everywhere and that driving schools now know more about tests and requirements.**

This changed with the opening of the testing centre. Since then, examiners have only handled driving tests and have been brought under joint management. "They know



what to assess and how to carry out tests," Vanamõisa explains. "The people being tested can be sure that they'll be assessed in the same way everywhere and that driving schools now know more about tests and requirements." Satisfaction surveys have also shown that the new testing system is appreciated. As there are fewer examiners than before, they rotate between regions. The passing percentages in regions have not changed because of this. This demonstrates that tests are being carried out on a uniform basis.

**Assessment of competence instead of focussing on mistakes**

Changes in the assessment of tests and driving education constitute another key part of the reform. Not all of the more than 200 driving schools in Estonia welcomed these changes. "They were quite cross with me to begin with!" Vanamõisa recalls. "2016 and 2017 were largely dedicated to PR work. Trench warfare had been going on for years, with one side accusing the other of incorrect assessments."

Vanamõisa arranged meetings with driving schools in every town and city to smooth things over and discuss the changes. A total of 70 meetings and round tables took place while preparing for the reforms, with all driving schools attending at least one. "If any driving school says they weren't involved, that's not the case," Vanamõisa says.

The assessment of competence rather than mistakes was introduced and proved quite difficult at first: training the examiners took a lot of time. "It's very easy to assess people based on their mistakes: make one and the test is over. It's much more difficult to assess overall competence – whether those one or two mistakes were accidental or indicate a lack of skill." Now examiners are able to decide whether examinees can be permitted to drive even if they do not demonstrate full competence.

"We're very forgiving these days," says Vanamõisa, but adds that dangerous mistakes that could hurt others are not forgiven and forgotten. It must be taken into account that a dangerous driver will be on the roads for decades to come.

**Those who fail repeatedly are sent back to school**

Despite the uniform system and competence-based assessment where a single mistake does not lead to an automatic fail, there are still many who have to repeat tests. "It's fair enough if something goes wrong the first time, but on the third, fourth, fifth attempt?" Vanamõisa says. "Not acceptable. Repeating a test more than three times just isn't normal."

More than 4000 people repeated their driving test four times or more in 2019. "It just doesn't seem reasonable to me that we give 36,000 tests a year and 18,000 of them are repeated." Such a large number is the reason behind waiting lists. The aim is to guarantee that everyone can take their first test within one-and-a-half months. Vanamõisa confirms that a test time can be obtained within 46 days at the latest. Queues would disappear if the passing percentage on the first attempt was 15-20% higher and everyone took their test. In 2020, a total of 745 people failed to appear at the agreed time. Figuratively speaking, one examiner thus spent 124 days with no work.

On 1 February 2020 a new procedure was introduced: after failing to pass the test three times, examinees have to take additional lessons at a driving school. This must be done after every three failed attempts. Today, there are 1200 people in additional training, but the passing percentage of subsequent tests has improved.

**Coronavirus facilitates innovation in testing**

1 February 2020 can be considered a milestone in testing reforms: legislation pertaining to a number of the changes introduced as part of the reforms entered into force.

**We're very forgiving these days, but dangerous mistakes that could hurt others are not forgiven and forgotten.**

"The entire system kicked in at the start of the year and we managed two months before the virus broke out," says Vanamõisa. The situation caused by the virus brought with it new changes.

Around 4000 driving tests had to be cancelled during the state of emergency. A mobile theory classroom in which examinees could take the test using tablets was of great help in resolving the situation.

This project had been launched in 2019 for the Defence Forces, but was adopted overall during the viral outbreak in spring. In April, when all driving schools were closed, theory tests were carried out in a mobile classroom. The project has proved itself worthy, as more than 1500 tests were taken in the classroom.

There was no rest for examiners in summer: tests started an hour earlier, and the duration of the driving part of the test was shortened from 45 to 35 minutes for the first time. The waiting lists for tests had largely been eliminated by August. "That was thanks to the examiners and to my two logistics specialists, who managed to sort out the mess between them," Vanamõisa admits.

## THE CONDUCTING OF OFFICIAL THEORY AND DRIVING TESTS CHANGED ON 1 FEBRUARY 2020

- The changes take everyday traffic into account to a greater extent.
- The duration of the first stage of initial category B training must be at least four weeks. Students need to attend at least 30 hours of practical driving lessons and 28 hours of theory studies.
- 10 questions concerning traffic safety are being added to the theory test. These describe traffic situations involving potential injuries or fatalities. A total of five mistakes are allowed in the category B theory test, but only one mistake may be made among the traffic safety questions. The student does not pass if they make more mistakes.
- Registration for the theory test is possible after completing the theory part at the driving school. It is no longer necessary to wait until all driving lessons have been completed. It must be kept in mind that the results of a successful theory test taken at the Road Administration are valid for 12 months and that the practical driving test must be taken during this period.
- There is no longer a manoeuvre-by-manoeuvre description of how tasks should be completed in driving tests. The examinee must decide for themselves how best to deal with the situation presented to them.
- There is no longer a predetermined number of attempts allowed for completing tasks. The three required tasks must be completed within 10 minutes. The person taking the test fails if they do not complete a task within the allotted time or makes a significant mistake.
- No list of mistakes is compiled during driving tests. The examiner decides if the examinee has passed their test based on whether the examinee follows the traffic rules and drives safely.
- If the examinee does not pass the practical driving test on their third attempt, they are sent to a driving school for additional training – a minimum of two driving lessons. Registration for another practical driving test is only possible after completing said additional training.

# Testing centre boosts the quality of examiners' work

**Competence-based assessment is more logical than the previous system, but still needed to be learnt.**

# Opinion

**Toomas Meiel,**
**Examiner with the Road Administration**

For me, the establishment of the testing centre was a very positive development. Conducting driving tests was not my main job previously: I also registered vehicles, replaced driving licences, carried out pre-registration checks and more, so it was difficult to concentrate on one thing. The quality of my work as an examiner has certainly improved since the establishment of the testing centre.

The adoption of competence-based assessment also contributed to an increase in quality. It's more logical than the old assessment system, but still needed to be learnt. The new system has brought with it some changes: we no longer assess consequences, but causes. We have to be able to work out whether the driver made the mistake because of a lack of skills and needs to continue learning or whether it happened by accident.

Understanding that required learning, which is good, because every challenge helps you move forward and find the best solutions.

# ***Tatjana Portnova:*** *E-services develop rapidly in Estonia*

**New e-services are introduced in the Road Administration every year. There are plenty of new ideas. Area manager Tatjana Portnova is already thinking about cross-authority services that could be provided to customers in just a few minutes.**

> **E-services have helped the Road Administration avoid situations in which its service bureaus would find it difficult to cope with masses of customers.**

Tatjana Portnova, Head of Customer Service at the Road Administration, has been involved in creating new e-services since 2013.

The Road Administration's e-service is regarded as a good example in Estonia and abroad. Today, services are mostly only tweaked and improved, but this has also given rise to new e-solutions. The notification of transfers and a number of services for driving schools have been added to the e-channel in recent years. Digital signatures are no longer required when the owner of a vehicle changes, and this change can now also be registered as a logged-in user.

The long-awaited mobile views of the e-service were ready for use by spring 2020. This means that the Road Administration's e-service environment adjusts to users' devices.

"There's still work to be done in the development of our e-services over the next three to four years," says Portnova. "We plan to create event-based services. These are provided by the state to people if an event has oc-

curred in their lives that means they need the services."

The most obvious example is changing your name when getting married. When submitting a marriage application, all of the issued documents are displayed to the person who is changing their name. They can express their wish to obtain new documents and upload their photo and new signature.

"As soon as the couple says 'I do' at the altar or in the vital statistics office, the wheels are set in motion to issue documents bearing the new name," Portnova explains. "We've established a vision for such services in cooperation with other authorities and ministries and we'll be starting to create new services."

The next step involves technical solutions that make people's lives easier. Portnova has faith in solutions like Bürokratt, in which a virtual assistant communicates with the state instead of people.

This means we can forget about having to visit service bureaus or use the e-service of an authority, wait in line and waste valuable time obtaining a document. This way, in order to apply for a document, all we have to tell Bürokratt is, "Get me a driver's licence." It will then arrange everything for you.

**E-services have helped in difficult situations**

E-services have helped the Road Administration avoid situations in which its service bureaus would find it difficult to cope with masses of customers. The first such period was 2015-2017, when a large number of driver's licences had to be replaced.

This would probably have caused long queues in service bureaus. However, the majority of licences were replaced using the e-service, and the peak season passed almost unnoticed in the service bureaus.

Of course, the e-service was able to operate at full speed during the peak periods of the coronavirus pandemic. Customer service staff were prepared: all bureaus have people who can answer customers' calls and e-mails. The employees at the bureaus had previously helped out with the administration's helpline. "During the emergency situation caused by coronavirus in spring 2020, the number of calls and e-mails that customer service was receiving doubled," Portnova recalls. "Luckily, customer service had its 'reserve forces' to call up. The employees at the bureaus helped them during the state of emergency." The emergency also brought with it unexpected new e-services that no one had even thought of. Due to circumstances, certain things had to be transferred e-channels quickly and in a somewhat haphazard manner. One example is the pre-registration inspection of vehicles. Normally you have to present used vehicles brought from abroad to a bureau in order to register them, but during the emergency situation photos were used instead.

When the bureaus were reopened, this option was withdrawn for private customers, but sellers of used vehicles who had been recognised by the Road Administration could continue to use it.

A number of solutions were created during the state of emergency. They may not have had the best service design, but they ensured service continuity at the time.

**Special cases are handled in service bureaus**

Not all services will be made electronic. "We do have services that will never be able to be provided online," says Portnova. "Online theory tests may even be an option if it can be guaranteed that no outside help is being used, but driving tests will definitely take place offline in the future as well. At least as long as we have cars that need drivers on our roads." 'Difficult' cases are also handled at bureaus. These are not developed as e-services, or if they are, then as a last resort. "These are exceptional cases where there are very few users and development would be very expensive," Portnova says. "For example, if a vehicle has changed owners several times or it's inherited and employees' skills are needed to assess legal documents."

**The four main channels of customer service – bureaus, the e-service, the helpline and e-mail – are interconnected. If a problem arises in one place, it immediately affects the others. If you find a good solution to something, it has an impact on other areas. Everything is connected.**

There is also a lot of work involving foreigners who move to Estonia and want to apply for a driver's licence or professional certificate. "They make an interesting group of people, whose documents may not be quite right," says Portnova.

An actual person is needed who is able to assess whether a document

is valid. They often prove to be fake, which is why the police are common visitors to service bureaus.

**Merging customer services of the new administration**

Portnova is faced with the challenge of merging the Road Administration, the Maritime Administration and the Civil Aviation Administration. The new Transport Administration will have one helpline serving customers and a joint e-mail address administered by the team from the information centre.

It was natural that the leading role in customer service was entrusted to the Road Administration, as it had a well-developed information centre.

Not much will change for Portnova's team. Previously, they had to redirect calls to specialists from the Road Administration, and now they also redirect them to the Maritime Administration and the Civil Aviation Administration.

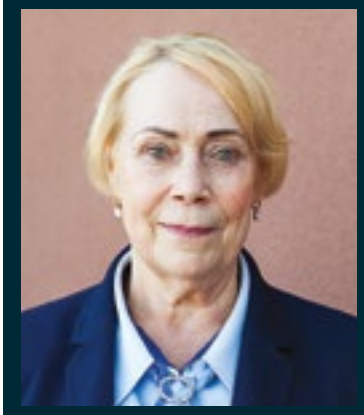
Merging three e-services in a uniform e-channel for customers is a greater challenge in preparing for the merger, and work has already started to this end. Before the merger, different aspects of each administration's everyday work were closely examined to determine the best solutions.

**Finding common ground will help save money in the future**

The three administrations have many services based on similar logic. For instance, the application process for drone permits chimes with the Maritime Administration's desire to make the registration of small boats as simple as possible: you have to upload documents and photos and fill in the technical data.

Herein lies the greatest potential for cutting costs: instead of separate systems and e-services, uniform solutions are adopted in order to answer customers' questions.

# People struggling with authentication tools



**Misunderstandings occur in the use of the e-service if people don't know how it functions.**

## Opinion

**Saima Sepp, Senior Customer Service Specialist at the Road Administration**

In the e-service, customers' concerns are mostly connected to ID cards: they don't have one or don't know its codes, not to mention having Mobile ID or Smart ID. We're here to help.

I usually direct customers with ID card issues to the Police and Border Guard Board so that they can get a properly functioning card and are able to give the required signatures in the e-service.

Misunderstandings arise primarily because people don't read our website or watch the video to see how the e-service works. First, you have to find out how e-services can be used.

I've offered the e-service to customers at the bureau when we've had longer queues. Their initial reaction is to say that they're already at the bureau. I convince them that they really can do what they need to in the e-service, where state fees are 20% lower.

They're very glad afterwards and thank me for the solution, since it helps them get what they need to get done very quickly.


1.

# A maintainer of roads with multiple names

**The new Transport Administration, which started operating on 1 January 2021, combines 'roadworks' in the air, on land and at sea, but it is not the first time that various types of transport have been handled by a single organisation.**

**Kadri Valner,**
Director of the Estonian Road Museum

In the last 100 years, the authorities administering road construction and maintenance in Estonia have undergone quite frequent reforms. The 102-year-old Road Administration has had quite a few different names and owners. As the Estonian proverb goes, a good child has several names. Another has it that it doesn't matter what colour the cat is, as long as it catches mice. The following is not a list of actions, but rather of the names under which roads have been constructed in Estonia. No judgements of the need for or consequences of the changes are given here.

**1918: Road and Internal Waterways Administration**

Before the founding of the republic, it was up to manors to construct and maintain roads. According to the rules of knighthoods, the actual work was done by peasants.

Road conditions after World War I were very poor. Although the adoption of the Roads Act took nearly 10 years (with disputes lasting from 1919-1928), the Road and Internal Waterways Administration started operating under the Ministry of Roads on 26 November 1918. This is regarded as the birth of the Road Administration. Its first task was to make road sections passable and to build urgently needed bridges.

The administration was dissolved on 1 May 1923. Internal waterways were made the responsibility of the Maritime Affairs Headquarters, while county governments were tasked with maintaining roads and bridges. The Department of Construction Equipment of the Ministry of Roads took care of inspection and the distribution of funds.

**From administration to division**

The 1929 Roads Act established a clear framework for a road sector organisation and a solid foundation for further activities and legislation. The Department of Roads and Construction was founded as a division of the Ministry of Roads, with the Road Administration (Maanteede Amet)

**1.** In order to build good roads, it was necessary to observe what was taking place elsewhere in Europe. The Department of Roads and Construction of the Ministry of Roads ordered a machine for building cement concrete roads from the Dingler factory in Germany in 1930 for testing.

**2.** In 1980, Estonian road construction expanded to Western Siberia, where its farthest-flung department was established – the Surgut Road Construction Trust. Photo taken in 1985.

**3.** Employees of the Road Administration. This photo dates back to the years 1933-1940.

operating as its structural unit. Its inspectors were largely responsible for the construction and repair of roads and bridges. A new Road Administration (Maanteede Valitsus) was established in 1934 and replaced by the Road Division in 1938. Its tasks were to organise the maintenance of roads and bridges, to promote air and road travel and, from 1934, to organise coach services.

**Back to administration**

When Estonia was occupied by Soviet powers on 21 July 1940, the Road and Road Transport Division was established.

Within a month it was operating under the People's Commissariat of the Communal Economy of the Estonian SSR. However, the Road Administration (Maanteede Valitsus) was established under the People's Commissariat of Internal Affairs on 25 September 1940, dealing solely with road construction. The General Administration for Transport was founded in order to manage car transport. In total, 10 road departments were set up under the Executive Committee of the Council of People's Deputies. In addition to changing the name, the employees were replaced and people with Slavic names started filling leadership positions. Estonia was under German occupation from 1941-1944, initially forming part of the Reichskommissariat Ostland. The person with the highest rank here at the time was the Commissary General, under whose command the laws of the Republic of Estonia were partially re-enacted as of 1940. The Estonian Self-Administration and the Directorate for Technology under it were established for the purposes of direct civil administration. The Estonian Road Administration (Eesti Maanteede Valitsus) organised road construction, and county road departments were placed under its control once again. As a result, they became independent of county governments. Road construction equipment remained in the possession of local departments, since larger roads had to be kept open for heavy vehicles throughout the year during the war.

**A period of change: 1944-1953**

After World War II, the first task was to deal with the damage. There was a shortage of people, machinery and materials. The Road Administration (Maanteede Valitsus) of the People's Commissariat of Internal Affairs of the Estonian SSR (latterly the Ministry of the Interior) began operating on 22 September 1944. It supervised 13 road departments by 1949. It is surprising that apart from building and maintaining roads, it also owned grocery stores and auxiliary farms that engaged in crop and animal production to supply the organisation's canteens.

In 1951 it was decided that the Road Administration should maintain 6600 km of roads of national and union-wide importance. 13,000 km of local roads were brought under the administration of the Council of Ministers of the Estonian SSR, with local road departments being set up under the executive committees of the 39 regions of the Estonian SSR. These were given the task of maintaining the local roads in collaboration with local residents. The management of roads was the responsibility of the Ministry of the Interior for nine years. Thereafter it was entrusted to civil authorities. The Ministry of Roads and Transport Economics of the Estonian SSR was established on 1 January 1953, but only operated for a few months. This rapid change would not be worth mentioning if the organisation of water transport had not been added to the duties of the ministry. That June it was restructured as the Ministry of Road Transport and Roads, which managed road construction in Estonia for the next 35 years before being replaced by the National Transport Committee of the Estonian SSR in 1988. From 1953-1955, roadwork was organised by the General Administra-

tion for Roads and the National and Local Road Administration, which was again renamed as the Road Administration (Maanteede Valitsus) in 1956.

The Administration of Roads of Union-Wide Importance continued to operate until 1956, maintaining major roads connecting Tallinn with Narva and Riga and passing through Tartu and Võru. To improve the quality of roadwork, the Design and Research Office (established in 1956; later the Estonian Road Design Institute), the Technical Road Inspectorate (est. 1959) and the Central Laboratory of Road Construction (est. 1964; the predecessor of the state-run Teede Tehnokeskus) were established.

The first of these collected and processed data for road construction and designed modern roads. The inspectorate supervised road design quality, and the central laboratory experimented to create better road construction materials, including asphalt concrete.

From 1966, the General Administration for Roads organised the construction of roads for four years. The name change did not lead to any substantial changes.

**1970 – Trust was established**

On 1 September 1970 the General Administration for Roads was reorganised yet again, becoming the Road Repair and Construction Trust (RRCT). Local road offices were turned into 14 Road Repair and Construction Administrations (RRCAs) and a separate department on Hiiumaa. Estonian road construction expanded to Siberia in 1980, where the Surgut Road Construction Trust was founded, which constructed roads in Western Siberia up until 1997. By the 1970s, the Estonian SSR had one of the highest levels of motorisation in the USSR. The volume of traffic had increased four-fold in just 10 years. This required better construction and maintenance of roads and more attention to traffic safety.

| DATE/ PERIOD | NAME |
|---|---|
| 1918 | Road and Internal Waterways Administration (Maanteede ja Sisemiste Veeteede Valitsus) |
| 1923 | Work carried out by county governments |
| 1929 | Road Administration (Maanteede Amet) |
| 1934 | Road Administration (Maanteede Valitsus) |
| 1938 | Road Division (Maanteede Talitus) |
| 22.07.1940 | Road and Road Transport Division (Maanteede ja Autotranspordi Talitus) |
| 25.09.1940 | Road Administration (Maanteede Valitsus) |
| 1941 | Estonian Road Administration (Eesti Maanteede Valitsus) |
| 1944 | Road Administration (Maanteede Valitsus) |
| 1. 01.1953 | National and Local Road Administration (Vabariikliku ja Kohaliku Tähtsusega Teede Valitsus) |
| 1.07.1953 | General Administration for Roads (Teede Peavalitsus) |
| 1956 | Road Administration (Maanteede Valitsus) |
| 1966 | General Administration for Roads (Maanteede Peavalitsus) |
| 1970 | Road Repair and Construction Trust (Teede Remondi ja Ehituse Trust) |
| 1988 | Republican Production Trust for Estonian Roads (Vabariiklik Tootmiskoondis Eesti Maanteed) |
| 1990-present | Road Administration |

**1988 – changes in names**

By 1988, a total of 15 RRCA regions as well as RRCA-1, RRCA-2, RRCA-3, the Bridge Construction Administration, the Central Laboratory of Road Construction, the Estonian Road Design Institute, the Production and Technological Assembly Administration, the Surgut Road Construction Trust in Tyumen Oblast and asphalt concrete factories in the Harju region and Tartu were subordinate to the RRCT. The number of employees in the road system had grown enormously: from little more than 2400 people just after World War II to double that 10 years later and as many as 5400 people by 1990. To introduce a new management system, the RRCT was dissolved with a regulation of the Council of Ministers of the Estonian SSR on 1 November 1988 and replaced by the Republican Production Trust of Estonian Roads.

**1990 – The Road Administration**

In subsequent years, management of the system as a whole was transformed. The conglomerate of 26 companies was dissolved and the Estonian Road Administration was established with a directive of the Ministry of Transport on 1 November 1990. The new authority was tasked with modernising road management and separating the functions of contracting authority, builder and supervisor. Subdivisions directly linked to production were thus sold off at the start of the privatisation process. AS TREV-2, which remains active to this day, was founded. Two significant companies grew out of the Harju regional road office: Üle and Aspi. By 1995, more than half of the employees of the Road Administration had left to join mostly private companies.

The State Road Safety Agency was dissolved in 1994, its main functions being transferred to the Road Administration. The five regional road offices of the Road Administration were restructured in 2009. The Road Administration and the Estonian Motor Vehicle Registration Centre, the latter of which had operated for 15 years, were merged in mid-summer that year.

Up to the end of 2012, the four regions of the Road Administration acted as operating regions and structural units with the same name but with a separate budget, led by regional managers. From 2013, regions were construed as operating regions and managed as a joint organisation. IThe organisation of public transport and transport between the mainland and the islands by sea and air was added to its duties following administrative reforms.