

Ensuring the quality of construction work and repairs of local roads

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repairs of local roads well managed in local
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Summary

For your information

The main risks in road construction are the following:

- incomplete input data in the preparation of works and drawing up building design documentation;
- errors in the building design documentation;
- construction not in accordance with the project and quality requirements;
- failure to detect construction defects during the warranty period.

The National Audit Office analysed how the risks were managed in road construction in 2019–2021 in ten local authorities. Audited local authorities were Tallinn, Tartu city, Lääne-Harju, Rakvere city, Kohtla-Järve, Märjamaa, Luunja, Rõuge, Tori, Viimsi.

The total number of road construction works analysed was 18, the financial volume of which was between 0.07–1.5 million euros. The state supervision of local road construction by the Transport Administration was also analysed.

For your information

The works analysed in the audit included those where, due to insufficient preliminary studies, it had to be acknowledged during construction that the designed solution was not compatible with neighbouring immovables (e.g. large differences in elevation) or the volume of construction had to be increased because underground facilities were discovered that had not been determined properly in advance.

It also became evident that critical matters were not always set out in contracts for owner supervision or lacked specificity – for example, the presence of a supervisory engineer on site, the organisation of control sampling and analysis of materials.

There are local authorities in Estonia that have been passive in managing road construction risks. According to the National Audit Office, of the 18 construction works and repairs analysed, risks have been managed poorly in seven projects: requirements for the designer, builder or body carrying out owner supervision have been agreed upon in a superficial way or compliance with thereof has not been checked. The audit showed that due to poor risk management, construction may end up being more expensive for the local authority and elimination of defects more time consuming.

The supervision of the construction of local roads by the Transport Administration needs to be changed. The current supervision based on random selection where large objects are not included in the selection is not efficient in terms of resource use.

The most important observations of the National Audit Office on local authorities:

- The level of risk management in local authorities is uneven. In construction works and repairs of major roads, the problems causing additional costs to local authorities, loss of time or concessions in quality are often due to the lack of preliminary studies and expert assessment in the stage of planning construction works.
- Risks are reasonably managed in the preparatory stage of construction works and the design stage if the local authority:
 - provides detailed guidelines for preliminary studies to the designer in the case of larger and more thorough construction works;
 - ensures that all topical information on the location of utilities in the design area and up-to-date geodetic base plan is available, covering also neighbouring immovables and intersecting streets to the required extent;
 - assesses the quality of the project prepared, in the event of larger projects considers ordering an expert assessment or the inspection of construction volumes by another independent construction company;

- obligates the designer, pursuant to the contractual obligations imposed on them, to correct any defects in the project discovered during construction at their own expense.

- To mitigate quality risks related to the builder's activities, a good level of owner supervision is essential in the stage of carrying out construction works, which must provide the local authority with confidence that their interests are protected in the performance of the contract for works. Substantive owner supervision helps to prevent more serious issues.
- Poor documentation of construction works, including poor recording of construction working meetings continues to be a problem. Construction works must be documented so that it can be verified later whether the road has been built in accordance with the requirements and the design documentation. According to the general principles of public procurement, additional works can be ordered and changes can be made to the originally agreed works only in unforeseen circumstances. In this case, reasons for the changes should be clear from construction documentation, but for the majority of the audited construction works, minutes of working meetings had not been prepared, for example, or they did not include important information. It was unclear why a decision had been made to change the original solution or why additional work was required.
- In the stage of carrying out construction works, local authority has reasonably managed the risks if they:
 - require the body carrying out owner supervision, pursuant to all the contractual obligations imposed on them, to be present at all higher-risk works and sampling;
 - require the body carrying out owner supervision, pursuant to all the contractual obligations imposed on them, to continually document the process in a manner which can be verified;
 - intervene as soon as they see that the body carrying out owner supervision does not comply with the requirements imposed on them (incl. with regard to documentation);
 - in the event of major construction, require both the builder and the body carrying out owner supervision to document the process in an electronic environment that can be monitored continuously.
- Better risk management does not necessarily require additional costs, but rather guidelines given to the designer, builder and the body carrying out owner supervision in the technical specification and the contract and the verification of compliance with thereof.

The most important observations of the National Audit Office regarding the Transport Administration:

- The practice of national supervision of road construction is still relatively scarce. Supervision commenced in the second half of 2019 and 39 objects have been inspected since that time (10–15 inspections per year). All the complaints received have been inspected, but for the most part, objects subject to inspection have been chosen

For your information

As a positive practice, larger local authorities have increasingly started to use electronic solutions for documenting construction, which allows for better real-time monitoring of construction as well as owner supervision activities.

For your information

Although the majority of local roads are highways outside settlements (77%), the volume of traffic on those roads is mostly low – fewer than 500 vehicles per day in about 90% of the cases. On the other hand, on streets located in settlements, the volume of traffic is more than 2,000 vehicles per day in about 50% of the cases.

randomly in the public procurement register. 25 inspections were completed with identifying deficiencies, the most frequent of which has been insufficient thickness of pavement underlayers.

- The effectiveness of national supervision under the current arrangement is questionable. Random selection as a method of selecting inspection objects is not justified. The inspection has focused mainly on the construction of cycle and pedestrian tracks (68% of the objects), large construction objects in areas with heavier traffic have not been included in the inspection. The largest object under inspection in terms of volume only ranked 62nd among the road works of local authorities in 2019–2020 in terms of cost.

What do we recommend?

The National Audit Office finds that local authorities need to increase the level of risk management in road construction. In several of the construction works analysed, reasonable solutions were used to establish technical specifications or contractual obligations for partners, the wider spread of which should be encouraged. The National Audit Office made a recommendation to this effect to the Association of Estonian Cities and Rural Municipalities.

The National Audit Office recommends changing the methodology for selecting inspection objects used in supervision by the Transport Administration. More active communication in local authorities is also necessary to introduce the outcome of supervision. This would allow for better awareness of potential mistakes in advance and would support the objectives established for national supervision.

The Association of Estonian Cities and Rural Municipalities agreed, in principle, to contribute to raising awareness of risk management in local authorities, incl. contribute to preparing uniform guidelines and organising information days to improve the competence of their members on roads. **The Transport Administration** also promised to comply with the recommendations of the National Audit Office and to make the corresponding changes in the organisation of work of the Administration in 2022.