

1 Non-technical summary

1.1 Introduction

This report constitutes a brief summary of the Environmental Impact Assessment Statement (EIAS) elaborated as a part of the Feasibility Study on the reconstruction of the Vão-Maardu section of the E20 Tallinn-Narva road in Estonia.

The Project Developer is Estonian National Road Administration (co-operation with Harju County Environmental Department, as the decision-maker). The Environmental Impact Assessment Statement was elaborated by AS Merin, Tallinn, Estonia, and COWI A/S, Copenhagen, Denmark.

The EIAS reports on the Environmental Impact Assessment (EIA) procedure, which has been conducted according to the Estonian EIA legislation, 'Environmental Impact Assessment and Environmental Monitoring Act' (June 2000).

The purpose of the Environmental Impact Assessment is to provide a description of the expected environmental effects of the project and to suggest solutions and mitigative measures for avoiding permanent negative impacts of the project on the environment.

The EIA has been based on a thorough assessment of existing data and documentation, as well as additional fieldwork in the project area.

1.2 Project description

The E20 Tallinn-Narva road is an important link between the Pan-European Transport Corridors I and IX. The traffic volume is expected to increase during the coming years up to 2.3 times in 2025. The Vão-Maardu road serves as an important collecting link of the Tallinn-Narva road, the Tallinn bypass, Tallinn Airport and Muuga Port, which gives rise to a significant traffic with heavy lorries. Tallinn Airport and Muuga Port are also members of TEN-T network.

The existing road is an old 4-lane (2x2 lanes) road. The western part has a worn-out pavement of concrete slabs while the eastern part is covered with asphalt. The project comprises a reconstruction of the 4-lane road and widening to 6 lanes on the section closer to Tallinn. This includes reconstruction of most

of the bridges and construction of new interchanges at the Tallinn ring road, the connection to Iru and Loo settlements, and the Maardu junction (with connections to Maardu and the Muuga Port).

In addition necessary service roads and walkways shall be constructed as well as street lighting, road markings, traffic signing and relocation of utilities.

1.3 The project area

The project area comprises a topographically flat area at the boundary between urban and rural areas just east of Tallinn city. To the north of the road section the project area is dominated the industrial areas, railroads and marshalling yards on areas of Maardu town. To the south is a predominantly arable land, with two small villages – Nehatu and Liivamäe of the Jõelähtme county. In the south-east lie the lake Maardu and a former phosphorite quarry. The existing Peterburi tee (road) intersects the river Pirita close to the border of Tallinn city. To the north of the road lies the forest on the left bank of the Pirita river and more west the Seli residential block houses of the Lasnamäe. To the south lie the dwellings of the Jõemäe and Tooma and Vão limestone quarry

1.4 Consultations

The public consultation of EIA programme was held 03.11.2003, and minutes were taken and approved by Harju County Environmental Department (letter 15.11.2003, No 30-12-1/3176). The draft EIAS was submitted to the Developer on 12.12.2003 for review. The complemented EIAS was submitted to the Developer, who announced the EIAS in public and announced a date for the public consultations of the statement. This public consultation was arranged on 18th May 2004 and official minutes were taken.

1.5 Environmental impact assessment

At this stage the EIA has provided the following overview of anticipated effects and impacts of an upgraded road section:

Physical conditions and soil: No environmentally negative impacts are foreseen, despite some earth works to be carried out.

Surface water: River Pirita and lake Maardu are sensitive surface water bodies, which needs considerations both during construction and operation. The construction of a new bridge and other structures at river Pirita phase may pose the most obvious risk, as the activities at and near the bridge may cause accidental spills to the river.

Surface water run-off and accidental spills must be controlled at the bridge over River Pirita and led to the ground next to the river, instead of directly into the river from the bridge. Water collected from the central strip between the lanes

should be lead through an oil separator, before it will be lead into the water recipients.

At the lake Maardu area run-offs from the road will filter down through the porous soil layers before reaching the lake itself.

Ground water: No impacts are foreseen.

Air quality: A higher traffic density inevitably means larger air pollution. Two factors count for a reduced air pollution, however: An improved traffic flow because of better road conditions will decrease emissions, and improved combustion systems on the cars to be expected on Estonian roads in the future will also contribute to lower emission rates per vehicle.

Land use and land tenure: The reconstructed road will have some impacts in the areas where new interchanges will be constructed. The Vão interchange and the Iru-Loo interchange will require new land to be taken in for the interchanges to have a sufficient size for smooth traffic operation. The Maardu interchange takes up less new land.

Habitats: The left side of the road coincide with the southern border of the protection zone around river Pirita from Vão to the high-tension lines. Measures must be specified in order to prevent run-off from the road to the river during construction and operation. The new interchanges will impact areas, which hold habitats of secondary origin, without significant nature values. Some tree stands at planned junctions will have to be removed. Planting of trees can mitigate negative effects.

Noise: The noise level is currently at the limit (60 dB), specified by Estonian authorities, at the 2 houses nearest to the road at the settlements (Jõemäe, Tooma) at the Tallinn city border. First of all, these houses should be offered a noise reduction either by improved noise reduction windows or a noise barrier should be constructed at the road to the north of these settlements. In addition noise screens are required near the Maardu Lake at the settlement Teemeistri at the northern bank of the Maardu lake to keep down noise level below 60 dB in the yard.

Hazards: More accidents must be expected with more traffic and queue driving in case no reconstruction is done. Improved road conditions and safe road crossings and junctions will decrease the risk for accidents, however. In all it is expected that the project will lead to a safer road section.

Recreation: A better separation of traffic types is likely to improve the conditions for recreational movements and 'soft traffic' within the project area after the construction.

Cultural and natural heritage: No impacts are foreseen.

Natura 2000: Although the project area partially overlaps with the Natura 2000 area near the Pirita River, no harm will be inflicted and therefore the National Environmental Authority has approved the EIA on July 1st, 2004.

The photo below shows the Pirita River valley.



Below the situation is illustrated by a photo of the model of the Vão interchange and the crossing of the Pirita River.



1.6 Comparison and ranking of alternatives

The project alternatives are all related to the different designs of the four intersections, Vão, Iru-Loo, Maardu, and Jõelähtme with in all more than 10 alternatives. The alternatives at the three interchanges have no mutual relations except for the connections between Vão and Iru-Loo.

In general, the environmental impacts expected by an execution of the planned project remain minor. At the planned new intersections new land will be required, but these areas hold no habitats of particular value, and the differences among the alternatives are minor.

The project alternative 4 of Vão interchange has been preferred, because alternative 5 as environmentally the best can not handle the amount of the vehicles forecast to 2025, improvement possibilities of the solution are very expensive and taking into account great number of the merging sections (diagonal ramps) the solution is more critical.

The project alternatives, which all relate to different designs of the interchanges, can be ranked as follows:

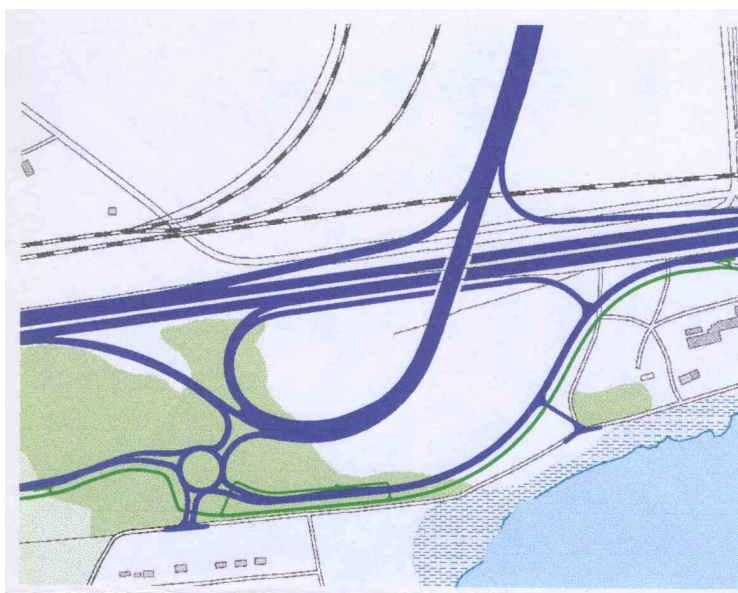
Väo: Ranking: 5, 4 (preferred) and 8.



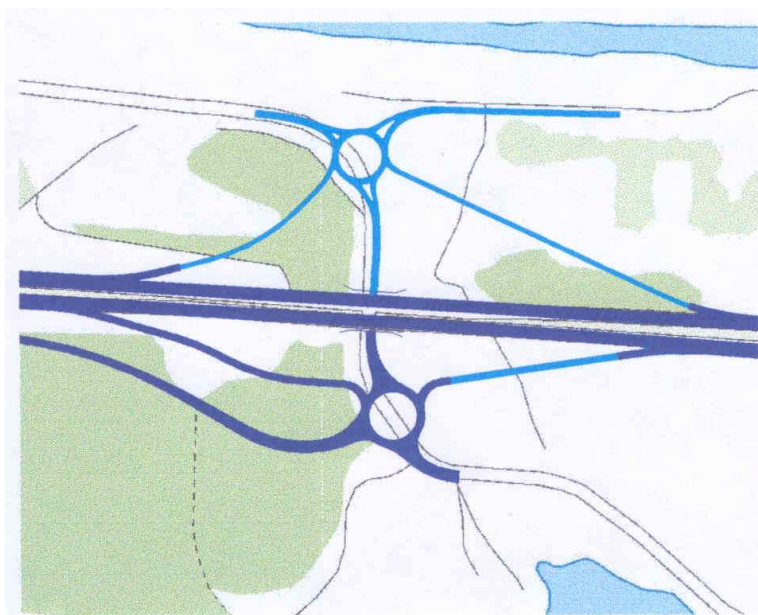
Iru-Loo: Ranking: 5 (preferred) 4, 2 and 3.



Maardu: Ranking: 1 (preferred) and 2.



Jõelähtme: Ranking 2 (preferred) and 1



Overall differences between the alternatives are not substantial and none have prohibitive environmental effects.

1.7 Mitigation measures

The following main environmental effects and their possible mitigation have been identified.

Physical conditions and soil: No environmentally negative impacts are foreseen, despite some earth works to be carried out.

Surface water: River Pirita and lake Maardu are sensitive surface water bodies, which needs considerations both during construction and operation. Surface water run-off and accidental spills must be controlled at the bridge over River Pirita by constructing a raised brink at the edges of the bridge.

Water collected from the central strip between the lanes should be lead through an oil separator, before it will be lead into the water recipients.

At the lake Maardu area run-offs from the road will filter down through the porous soil layers before reaching the lake itself in periods without frozen soil. It is important to maintain a dense vegetation cover between the lake and the road to filter any run-off from the road, before it reaches the lake water.

Ground water: No impacts are foreseen.

Air quality: An improved traffic flow because of better road conditions will decrease emissions, and improved combustion systems on the cars to be expected on Estonian roads in the future will also contribute to lower emission rates per vehicle.

Land use and land tenure: No significant changes are foreseen along the reconstruction main road. The new interchanges will require new land for their construction. The areas where the interchanges will take up new land do not hold specifically valuable habitats. A replanting of trees is recommended, as this improves the aesthetic values and the local biodiversity, and reduces noise impact.

Habitats: The road passes a protection zone around river Pirita. Measures must be specified in order to prevent run-off from the road to the river during construction and operation. Some tree stands at planned junctions will have to be removed. Replanting of trees can mitigate negative effects.

Noise: The noise level is currently at the limit specified by Estonian authorities near the settlements at the Tallinn city border. Noise protecting windows should be installed in the affected separate houses and small settlements (Tooma and Peterburi mnt. 118, 200). A noise barrier should be constructed to the north of Teemeistri settlement and Maardu lake recreation area in the near future.

Hazards: Due to improved road conditions and safe road crossings and junctions it is expected that the project will lead to a safer road section.

Recreation: A better separation of traffic types is likely to improve the conditions for recreational movements and 'soft traffic' within the project area after the construction. Care should be taken to ensure a satisfying environment for recreation at the Lake Maardu, which is located very close to the road. Noise barriers should be considered and mechanisms for preventing run-off of harmful substances to the lake.

Cultural and natural heritage: No impacts are foreseen.

In general, the environmental impacts expected by an execution of the planned project remain minor, as the upgraded main road will stay within the existing road corridors and the new land which is needed for the enlarged junctions and interchanges consists of secondary, man-made habitats of a rather robust character.

The EIA Report was approved by the Harju County Environmental office on 1st July 2004 with a few remarks to be taken into consideration during the next phases.