1 SUMMARY

1.1 Project description

This road project is part of the T 2 Tallinn – Tartu – Võru – Luhamaa road. The road is classified as a main public road, and it crosses Estonian territory diagonally ending at Latvian and Russian borders. The project section lies halfway from Tallinn to Tartu (Figure 1). The project area is located in Järva County, in the territory of Paide and Roosna-Alliku parishes. The main road T 5 from Pärnu to Rakvere crosses the project road at Mäo.

Road Administration under The Ministry of Economic Affairs and Communication of the Republic of Estonia (MEAC) has contracted Finnish Road Enterprise together with Hendrikson & Ko to carry out Preliminary Design and EIA for the above mentioned road section.

In terms of the EIA and Environmental Auditing Act, Maanteeamet is the developer, i.e. "the person who proposes an activity and intends to carry it out". Consequently, the developer shall organise environmental impact assessment and cover the expenses related thereto.

An environmental authority shall approve the Environmental Impact Assessment Programme as well as the Environmental Impact Assessment Statement (this document).

The 4 km long section around Mäo Village (between Tarbja and Mäo) is one of the most dangerous sections of the whole Tallinn-Tartu road.

The overall objectives of the assignment are:

- to improve the traffic safety and assure smooth traffic on this road section taking into account the transit and the local traffic.
- the best results in increasing traffic safety are achieved separating local traffic and long distance traffic.
- to ensure high quality of project preparation for the reconstruction of Mäo section of the T 2 Tallinn – Tartu – Võru – Luhamaa

The aim of this Environmental Impact Assessment (EIA), which is carried out in parallel with the Preliminary Design process, is to describe and assess the impacts (both positive and negative) of the project under consideration. Furthermore, the possibilities of mitigation measures (avoiding or minimizing negative impacts) of the planned project are planned and recommended in this report.

The current EIA report is a summary of the environmental impact assessment process and its results. Besides the assessments, it also covers summaries of all the public meetings and opinions given by the public.

During the preliminary design process a great variety of different alternatives for the reconstruction of the road(s) were considered.

Concerning the alternatives for location of the route three main, new alternatives (to the east of the present road) were discussed.

Alternative 0 would practically mean that the existing road would remain as the main road, and also the junction of roads T2 and T5 would remain as a level crossing. Only minor actions would take place to improve traffic safety.

Alternative 1 (Map 1, Red) would be the route closest to Mäo village, and still be acceptable for standards given for motorway traffic. This alternative would mean that approximately 5,5 km of new road would be constructed to the west of the present road. A grade separated junction would be constructed at the crossing of the two main roads, T2 and T5. The mainroad T5 would have a new alignment of about 2 kilometres in length south of the present alignment. There is a smaller grade separated junction at southern end of the new alignment.

Alternative 2 (Map 1, Blue) would reach further in the southern end than the Alternative 1, but yet being similar from the north as far as to the grade separated junction of the two main roads. After the junction this alternative turns more to south-east and meets the present main road at about km 91,0. This alternative would mean that approximately 5,5 km of new road would be constructed to the east of the present road. A grade separated junction would be constructed at the crossing of the two main roads, T2 and T5. There is also a smaller grade separated junction at southern end of the new alignment.

Alternative 3 (Map 1, Yellow) would reach still further away from the present road both at northern and southern ends. This alternative would mean that approximately 6,5 km of new road would be constructed to the east of the present road. A grade separated junction would be constructed at the crossing of the two main roads, T2 and T5. The crossing would be further to the east than in the two other alternatives. There is also a smaller grade separated junction at southern end of the new alignment.

It is planned to reconstruct the approximately 4-6 km long section around Mäo Village in Paide Municipality. The aimed solution for the mainroad T2 is a class I road with 4 lanes of 3,75 m each, paved shoulders of 2,5 m on each side and a central reserve between the two carriageways.

1.2 Scope of the Environmental Studies

The research work for the EIA was carried out over a period of six months. It was conducted by a team of both Finnish and Estonian specialists working closely with a counterpart from the Estonian Road Administration and Regional Environmental Office. The Regional Environmental Office also provided valuable and necessary assistance for collecting of data and for identifying environmental impacts and targets in the area.
The following methodology was employed:

- Existing baseline data (including all available environmental legislation and guidelines) and relevant reports from previous projects were collected, reviewed and analyzed.
- Discussions were held with local experts from the Ministry of Environment, the Estonian Road Administration and the local environmental counterpart.
- Informal interviews and participatory discussions were held with people living, having business, owning land and working along the project roads.
- Interviews were held with representatives from the Municipality, County and business life (agriculture, trade and small industries.

- All engineering data, designs, field notes and the like produced for the studies were reviewed and discussed to identify the various environmental issues involved (e.g. previous Feasibility Study for Upgrading of Tallinn – Tartu Road, ERA 1999)
- Field trips were undertaken to examine the existing environmental conditions along the roads and along the routs of the proposed alternative alignments.
- The possible environmental impacts and planning mitigation measures for each step of the planning, design, construction and operation of the roads were assessed.
- Monitoring program was prepared.

1.3 Consultations with relevant parties

During the preliminary design process the public was informed about the ongoing work from the very beginning. People were notified by letters, e-mails, through local newspapers and Internet pages. Interest groups were roughly divided into the following groups:

- landowners, who live on the property;
- landowners with other interests (agriculture, industry);
- Mäo industrial centre;
- local governments and planners

Several meetings were arranged with all the relevant interest groups. In the meetings the basic agenda was presenting the actual results of Environmental Impact Assessment and Preliminary design, and open discussions about environmental and technical issues. Also written comments were received (and handled in project meetings).

1.4 Existing environmental situation in the project area

The investigated road is situated on the southwestern part of the Pandivere highland, on Middle Estonian lowland. The relief is comparatively plain, sloping towards southwest. The elevation falls from 73,5 m at northern end of the section and on Mäo hill to 65,0 m at Vodja River and at southern end of the road section.

Soft top soil with organic matter forms generally 0,6 m thick surface layer on the investigated area. Under the top soil and peat there is varying sandy clay and till composed of clayey and silty sands. The surface of bedrock occurs 0,9...7,1 m deep from the ground surface. It is composed of limestone. The groundwater level is in depth of 0,0 ....0,6 m.

The existing as well as the planned road section is situated in the drainage area of Pärnu river. All new road section alternatives start after the existing road crosses the Pärnu river, they cross over its tributary, Vodja river and end before Esna river.

Together with the rest of Estonia the Paide parish belongs to subregion of boreonemoral subregion of Atlantic- continental climatic region. The amount of sunny hours per year averages 1700 (on Pandivere elevated plateau). Annual average of air temperature is 4O C, precipitation 600-650 mm, snow cover duration is 120-130 days, prevailing winds are from south and south-west (40%).

In present situation of the design area, 16 houses are exposed to noise levels exceeding 55 dB, and 50 % of those even exceeding 60 dB. Of the households, 13 are located along the main road T2 and 4 along the main road T5.

The Järva County is just on the marginal region between boreal forest zone and boreo-nemoral forest zone. The area is mostly agriculturally managed leaving larger forested areas only in southern regions (dominated by alders, birches) and in northern areas. The river valleys are also covered with lower stands of alders and willows. There are no recorded habitats of endangered species or communities on the Mäo bypass area. As there are different habitat types represented in Mäo bypass area- fields, forest, riversides, field-forest margins, parks, meadows- there are also numerous animals including mammals, reptiles and birds represented typical to those habitats in Central Estonia. According to databases there are no habitats connected to endangered or rare species (with exception of Salmon habitats) in Mäo bypass area.

The investigation area lies in Paide and Roosna-Alliku parishes. The planned activity directly impacts 3 villages – Mäo, Tarbja and Valgma.

The area of Järva county is 2622,8 km^2. According to population register, the population of Järva County is 39 028 inhabitants, as of 01.01.2005. This is 529 less inhabitants than one year before. In comparison with 01.01.2003 the population has decreased by 1117 inhabitants.

The size of Paide parish is approximately 300 km^2. The population in directly impacted villages of Paide parish is (02.01.2004): Mäo 93, Tarbja 380 and Valgma 50.

There are several noteworthy objects of cultural heritage situated in vicinity:

- The Põhjaka manor house
- The Mäo manor
- The Kükita stone bridge
- The Mäo Monument
- Tarbja stone mounds
- Monument for the perished policemen

1.5 Environmental impacts

In order to facilitate and structure the evaluation of the ecological effects of the project the environmental effects are treated in three stages:

- Effects caused by construction activities
- Effects caused by the technical structures and buildings
- Effects caused by the operation of the traffic project

In principle, the following kinds of effects are taken into consideration:

- land use, loss of area
- separation effects
- emissions (noise, dust, exhaust fumes)
- waste, rubble, waste water
- changes of the landscape
- socioeconomic aspects/effects (such as change of the way of life, changes in occupation, changes in the moving habits, different fears, etc.)

1.6 Comparison of alternatives

The three alternatives compared in the report represent the result of extensive participation, experts' assessments and continuous improving of the technical solutions in consequence. Quite many of the impacts appear rather similar in the alternatives, but then in some issues the differences may be significant. Furthermore, to a certain extent and in some environmental issues the alternatives themselves may not be differentiated. In addition, many impacts are strongly value bound and even controversial.

In general, the impacts of different alternatives depend on the location of the alignment and the target group or environmental issue involved there. On average, it is seen that the further the alignment goes from Mäo the smaller get the negative impacts. At the same time, some new impacts or target groups appear. In addition, many of the socio-economic benefits seem to fade away with the longer distance.

Comparison of alternatives is presented in separate Chapter in the text and also illustrative tables are produced to show the differences between each Alternative. In the tables the evaluation base of comparison and the ranking of Alternatives is described issue by issue.

1.7 Mitigation measures

Although this project is considered to have no significant potential impacts, there is still a need to avoid or decrease those impacts of a smaller scale which may cause inconvenience, unnecessary loss or damage or avoidable risks. Mitigation should not be a separate action in planning, design, construction and maintenance. To ensure a successful outcome, it is essential that mitigation measures are integrated with all stages of the project.

The required mitigation measures are presented separately concerning design, construction and operation phases. The issues dealt with are:

- design standards
- road alignment
- erosion and flooding prevention
- traffic safety
- natural environment
- health, social and landscape

1.8 Monitoring and follow-up

An environmental management and monitoring programme for the upgrading of the T2 Project in question (Mäo Bypass) is outlined in order to address the environmental impacts before, during and after the project implementation. A specification of this plan must be elaborated in close cooperation with the local authorities and is desirable only when a decision about the final technical design has been made.

1.9 Conclusions and recommendations

In conclusion, the current EIA points out that planned activity does not have any significant (unaccepted) negative impacts, provided that recommended mitigation measures are implemented.

From environmental point of view the planned activity can implicate positive impacts, especially concerning traffic safety, air quality and noise pollution. Furthermore, constructing the planned bypass at Mäo would give positive impulse to further develop the land use in the region as well as more pleasant and peaceful living environment to the residents of the area.

Recommendations which are presented concern particular mitigation measures at each stage of the project preparation and implementation.