Estonian national road network and maintenance financing – needs, modelling and suggestions

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ESTONIAN NATIONAL ROAD NETWORK

- The length of national roads 16,443 kilometres.
- 28% of the total length of the Estonian road network, which is 58,487 kilometres.
- The length of E-roads in Estonia is 995 km.
ESTONIAN NATIONAL ROAD NETWORK

Density of national roads is the highest in the south-east corner of Estonia:

- Valga County (546 km per 1,000 km²)
- Võru County (544 km per 1,000 km²)
- Põlva County (538 km per 1,000 km²)
Population and Housing Census 2011

- 1,294,455 permanent residents
- Results indicate the continued concentration of the population around major cities
- 2000 vs. 2011 - the population of Estonia has decreased by 75,597 persons, i.e. by 5.5%
Road performance

- 1998–2007 the traffic volume steadily increased by about 6–10% per year on main and basic roads.
- 2008–2010 the traffic volume decreased and in 2011 slightly increased.
- Traffic volume on national roads has increased from 84.5% in 1995 to 89.4% in 2011.
- Traffic volume on main and basic roads was 66.8% of the total volume on all roads whereas said roads form only 7.6 % of the entire road network.
- Traffic volume on secondary roads formed 22.7%.
- Percentage of other roads of the entire road network is 69.1% whereas the traffic volume on these roads is only 10.6% of the entire traffic volume.
Density of national roads is the highest in the south-east corner of Estonia:

- Valga County (546 km per 1,000 km²)
- Võru County (544 km per 1,000 km²)
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MAINTENANCE FINANCING

- Ordinary maintenance gets financed from operating expenses.
- The goal is to secure the required status of the roads.
- In 2011, 38.6 million euros was used for road maintenance. 13 million euros of that was spent on winter service and 25.6 million euros on summer service.
- Maintenance costs of national roads per 1 kilometre were 2350 euros (in 2010 – 2300 euros, and in 2009 – 2380 euros).
- The setting up of ice roads is also part of the state road maintenance budget.
### Expenditure on road service operations in 2007-2011 (million euros)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
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<tr>
<td><strong>In total</strong></td>
<td>32.358</td>
<td>37.721</td>
<td>39.159</td>
<td>37.829</td>
<td>38.643</td>
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<td><strong>incl.</strong></td>
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<td><strong>Summer service</strong></td>
<td></td>
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<tr>
<td>%</td>
<td>68.4</td>
<td>69.1</td>
<td>67.6</td>
<td>66.7</td>
<td>66.4</td>
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<tr>
<td><strong>Winter service</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>31.6</td>
<td>30.9</td>
<td>32.4</td>
<td>33.3</td>
<td>33.6</td>
</tr>
</tbody>
</table>
STANDARD WINTER SERVICE LEVELS ON NATIONAL ROADS

- Service level 1
- Service level 2
- Service level 3
Stakeholders’ satisfaction

- Drivers are satisfied with the organization of summer maintenance (66%) and this indicator has remained stable over the years. Still, traffic management should be planned more wisely during summer road repairs.

- But the expectations of road users in terms of winter driving conditions are driven very high. Last couple of years we have had harsh snowy winters. High expectations require more work to be done with the same amount of funds.
Suggestions & conclusions

- The population has decreased (and continues to decrease) in counties where the density of national roads is the highest in the south-east corner of Estonia in Valga County, Võru County and Põlva County. National roads and their maintenance levels in this part of Estonia should be reviewed.

- Changes in the economy of Estonia are directly reflected in the results of the traffic count. The traffic volume in 2011 showed a slightly rising tendency again. This may increase the need for road maintenance financing. The roads where the traffic volume increased should be monitored more carefully.
Suggestions & conclusions

- The setting up of ice roads is also part of the state road maintenance budget. This money could be saved if passing fees were implemented.

- Maintenance levels should be reviewed. It is important to ensure that stakeholders do not have too high expectations regarding the result of the project. Also, it is important for projects to improve the situation of directly affected stakeholders.

- All new requirements and technologies implemented for road maintenance must ensure that solutions are found for the problems and that the maintenance of Estonian roads shall provide a long and quality lifetime for roads.
Thank you for listening!