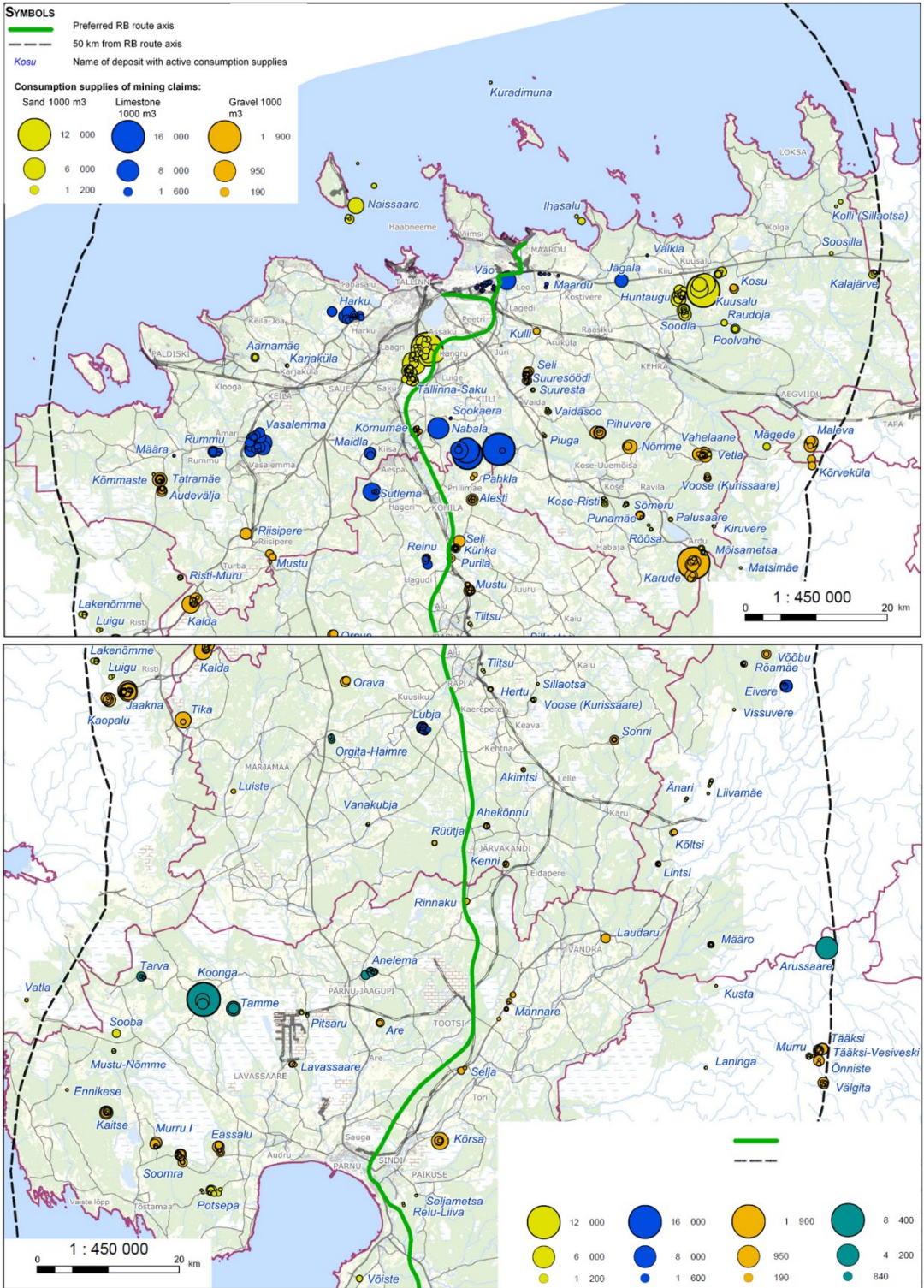
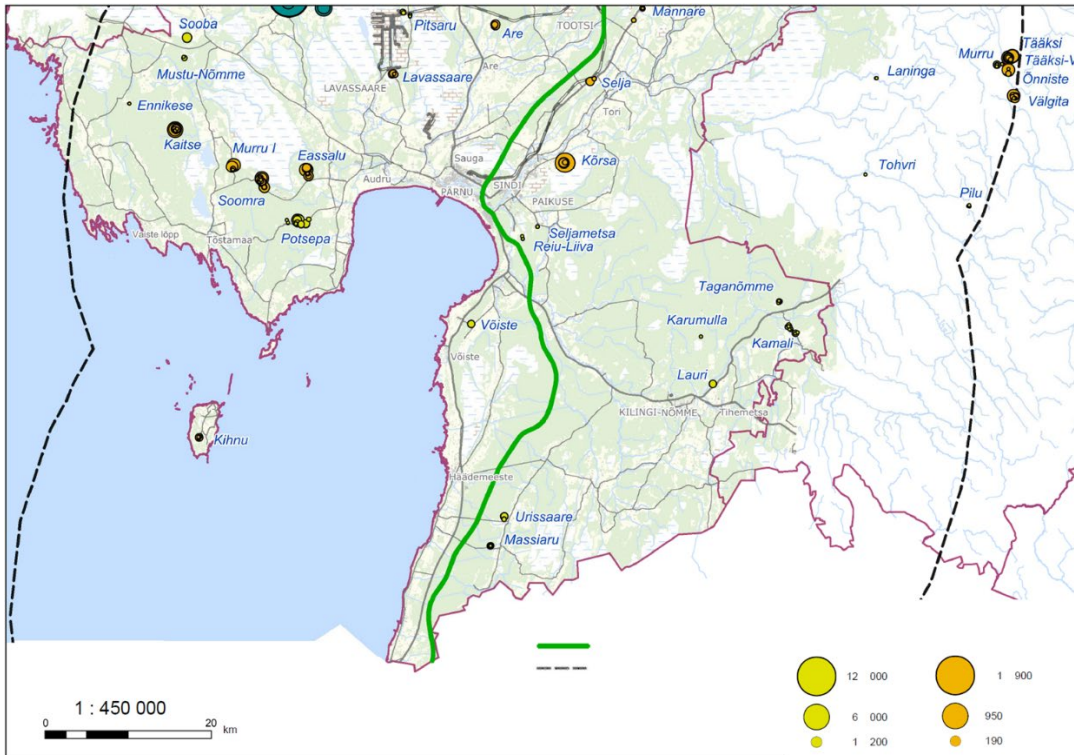


Table 4. Overall demand and locally available mineral materials for construction of railway and road infrastructure per sections of the Rail Baltica railway route

Type of aggregate	Rail Baltica railway route sections in the territory of Estonia			
	Pärnu, 1000 m ³	Rapla, 1000 m ³	Harju, 1000 m ³	Total, 1000 m ³
Crushed stone for track ballast	564	282	277	1123
KG1 crushed stone	557	277	271	1105
Crushed stone for road subbases and railway maintenance roads	241	93	92	426
Aggregates for railway embankment	3945	1828	3844	9617
Other aggregates for embankments for roads and railway maintenance roads	1787	1391	1777	4955
Available reserves of carbonary stone, m ³	Satisfactory capacity	Good capacity	Satisfactory capacity with (LA35), not sufficient	Satisfactory capacity
Available reserves of sand, sand-gravel, m ³	4BUXGBDUPSDBQBDX	No quarries with sufficient capacity	Satisfactory capacity	4BUXGBDUPSDBQBDX

Figure 4. Consumption supplies of mining claims by mineral resources in the service area of the Rail Baltica route in Estonia.





As assumed the demand for materials to be used for the construction will be higher during the first three to four years when substructures, bridges, viaducts, access roads and road crossings will be built. Based on very general assumptions the following annual demand of locally available resources could be forecasted:

- First year: 15% of the overall demand;
- Second year: 30% of the overall demand;
- Third year: 30% of the overall demand;
- Fourth year: 15% of the overall demand;
- Fifth year: 5% of the overall demand;
- Sixth year: 5% of the overall demand.

Main findings and conclusions of the studies

1. What kind of mineral materials are currently locally available and are there enough re-serves?

Yes, there are enough reserves, except ballast layer which shall be imported. Locally available mineral resources are sand, sand-gravel, limestone and dolomite. Supply of crushed hard stone is not considered as locally available in the required amount and quality.

2. What are the quality requirements for the mineral materials?

The quality requirements of the mineral materials are largely based on design guidelines for Rail Baltica railway line. International and national standards were used for identification and classification of mineral materials according to the granulometric composition as well as for the analysis of quality requirements.

3. Is there currently sufficient information available on the quality parameters of the quarry mineral materials?

Acquired register data on the quality of locally available mineral materials are very fragmented and does not provide a completely clear picture on their compliance with the requirements set out in the design guidelines. Thus, further studies will be carried out in the near future.

4. Does material supply logistics impose any significant constraints and what distance is considered to be sufficiently feasible from the Rail Baltica Railway corridor?

Material supply logistics does not impose any significant constraints in transportation of materials from them most feasible deposits. The quantity and availability of materials in the most feasible deposits within the primary investigation area of 60km-130km is fully sufficient for entire route of the Rail Baltica railway line.

5. Would local producers be able to provide mineral materials in the required quality for the construction of Rail Baltica Railway?

The aim is to use as much as possible local materials and do it in the most efficient way. To assess the quality of the available mineral materials further investigation will be done during the Mineral Material Quality Assessment study. The procurement for it was announced in September 2018. Similar procurement in Estonia named Samples of Rail Baltica Mineral Resources and Laboratory Analysis was launched in October.

6. Would it be required to consider opening new quarries?

It is considered that mineral material reserves are sufficient however Rail Baltica project would not be the only construction project, so it shall be taken into account if local producers would be able to provide mineral materials with the current capacity.

Further steps and actions to be taken

Consequently, the owner/operator or producer should apply for additional laboratory testing in order to clarify the existing or additional quality parameters of extracted mineral materials. Unfortunately, the existing legislation does not impose requirements for a stage of geological exploration in the active deposits that are under exploitation. Thus, if there is necessary to re-estimate stocks or specify certain quality parameters of mineral resources, all the stages of geological exploration should be implemented according to the national legislation.