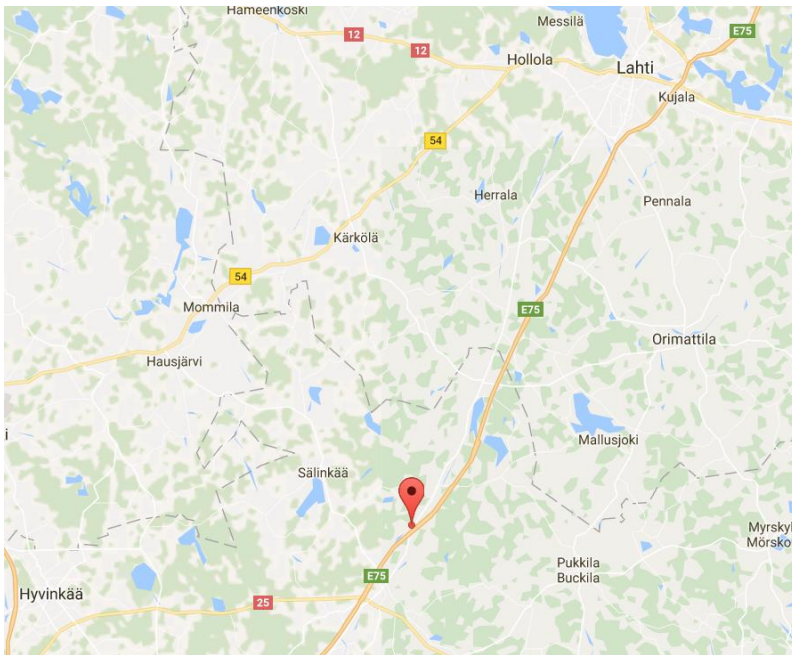


## CASE LUHDANOJA

**LUHDANOJA**  
Luhdanoja, Mäntsälä, Finland  
railway base construction

Key words:  
High speed railway, subgrade improvement for  
piling, mass stabilization

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| General information                        | The subgrade improvement of the high-speed railway tracks between Kerava-Lahti of were carried out with mass stabilization and pile slab in Luhdanoja. |
| Advantages of stabilization                | The bearing capacity of soft peat and clay area was increased on site for the heavy construction vehicles and the pile driving rig.                    |
| Project timetable                          | 2002-2006  |
| Volumes and dimensions                     | Stabilized volume 50 000 m <sup>3</sup>  |
| Geology and stabilized material            | Area 1: Soft peat down to 5m deep<br>Area 2: Clayey soil down to 1 m and soft peat down to 5 m deep  |
| Target strength of the stabilized material | Basic target was to establish by mass stabilisation, such a working layer, which can carry up to 40-50 tons pile driving rig.                          |
| Binder(s)                                  | Normal cement 200 kg/m <sup>3</sup>  |
| Laboratory and field tests                 | -  |
| Other                                      | The needed bearing capacity was easily achieved.   |
| Long-term follow-up and lessons learned    | -  |
| Sources                                    | Allu mass stabilization manual (2007)  |
| Stabilization contractor                   | -  |



## CASE LUHDANOJA

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Stabilized areas  
1 and 2



Mass stabilization  
ongoing at summer  
and winter conditions



Construction of the  
railway base on top of  
the mass stabilized  
and piled subsoil (left)  
and ready track (right)

