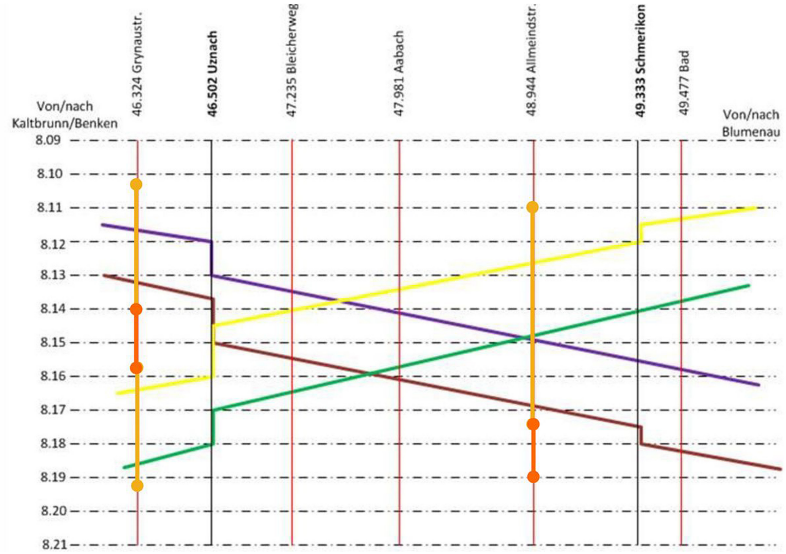
Project

Railroad Crossings in Schmerikon and Uznach: Traffic survey and simulation

The railroad crossings in Schmerikon and Uznach cause considerable delays for motorists. As part of a larger effort to resolve the situation, EBP carried out a traffic survey and used a traffic simulation to predict future delays.

Current Traffic Delays

Owing to crossing closing times, the railroad crossings at Allmeindstrasse in Schmerikon and Grynaustrasse in Uznach already cause traffic to back up for considerable distances. The closing times are now expected to double in the wake of a planned track expansion and additional train services along the railroad from Uznach to Schmerikon. This will lead to additional traffic delays that can be expected to have an impact on the broader road network and encourage motorists to take unwanted detours.
EBP examined the traffic congestion at the two railroad crossings and assessed the expected impact of longer closing on traffic flow. The scope of the study also included an evaluation of the impact that the planned regional connecting road (A53 – Gaster) will likely have on traffic flow.



Legend: Distance-time graph accounting for additional train services (source: SBB, 2016) with closing time estimates for both crossings (orange)

Traffic Models and Simulation Tools

We measured the current queue lengths at the locations in question. This this allowed us to develop and calibrate a simulation-based model. In order to assess future queue lengths. We estimated the respective traffic volumes with the help of traffic models and ran various calculations to account for a number of different scenarios, including a scenario with the planned regional connecting road (A53 – Gaster) a "normal

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scenario" and a "delay scenario" to account for the main contingency factors. The "delay scenario" shows how closing time changes that result from railroad operation variances can be expected to have an unfavorable impact on closing times.

Legend: Queue lengths in Uznach during peak evening hours for traffic heading to Tuggen (delay scenario)

Problematic Locations and Mitigating Measures

Our simulations have enabled us to identify the railroad crossings that can be expected to cause excessive delays in the future. The introduction of smart traffic management measures can, however, help to minimize the additional traffic delays.