

Audit of the synergies in the overall system Gotthard road tunnel

Federal Roads Office

Key facts

The Federal Roads Office (FEDRO) is currently planning extensive new construction and renovation measures on the motorway through the Gotthard. The existing Gotthard road tunnel, which is about 17km long, was opened in 1980 and operates as a two-way system. Due to its structural condition and the need for the operating and safety equipment to be renewed, extensive renovation of the structure will be necessary in just under ten years. This will cause the tunnel to be closed completely for several years.

In order to ensure that the most important road connection on Switzerland's north-south axis remains open during the renovation work, FEDRO is planning the construction of a second tunnel tube running parallel. After its completion, road traffic will be temporarily diverted into the new tunnel so that the existing tube can be upgraded. It is expected that both road tunnels will be open to single-lane traffic in about 14 years' time. The existing capacity restrictions on through traffic will remain in place.

CHF 2.084 billion has been committed for the construction of the new tunnel, which is at an advanced stage of planning. The financing for the renovation, which is behind schedule, has not yet been secured. FEDRO estimates that funding of around CHF 700 million will be required.

The audit by the Swiss Federal Audit Office (SFAO) focused on the identification and exploitation of synergies between the two tunnel projects, for the benefit of the project as a whole and third parties. Examples of this include installation locations, ventilation and the service duct for Swissgrid. Overall, the audit findings were positive. The SFAO identified a need for action in particular in the area of "critical infrastructure protection".

FEDRO makes timely decisions on overarching issues and exploits potential for synergies

Each tunnel project is assigned to a FEDRO branch as the project owner, based on the availability of human resources and the distribution of project risks. In terms of the overall Gotthard road tunnel system, the management of the two independent project organisations established in accordance with the FEDRO standard is complex and time-consuming. This results in an increased need for cross-branch coordination.

FEDRO dealt with certain technical issues integrally across both tunnel projects at an early stage so that uniform solutions could be created with regard to safety, availability and functionality. This resulted in the development of numerous optimised technical measures which are used as synergies during planning for the benefit of the overall project and the new tunnel construction. These create added value from a financial, scheduling and operational perspective, and third parties also benefit.

The project to bundle the motorway with the service duct for Swissgrid is on track but not yet confirmed

At an early stage in the planning for the complete renovation of the Gotthard road tunnel, FEDRO recognised the possibility of bundling the motorway with power transmission lines. The planned joint use of the new road tunnel as a future route for extra-high voltage cables offers the opportunity and synergy potential to replace Swissgrid's existing old 220 kV overhead line over the Gotthard Pass in the longer term. To achieve this, the new power cables will be laid in a separate, specially designed service duct.

At present, the bundling project has not been confirmed by Swissgrid due to an outstanding contractual agreement on financing. In addition, FEDRO has borne the risk of the project not being carried out up to now and has been solely responsible for the pre-financing of the planning work performed to date. Nevertheless, all those involved are endeavouring to ensure that the necessary decisions are taken in favour of this project in the near future. This will provide FEDRO with the necessary planning security and financial commitment, which is indispensable in view of the impending procurement and implementation stages.

FEDRO's regulations should be analysed with regard to the national critical infrastructure protection strategy

Both motorways and power transmission lines are critical infrastructures. Corresponding operating companies are obliged, even without an explicit legal basis, to pay due regard to this issue with respect to a safe and efficient infrastructure.

In the FEDRO planning process, the specific risk and vulnerability analyses in accordance with the national critical infrastructure protection strategy are not explicitly recognisable in order to be able to define appropriate protective measures on a case-by-case basis.

The SFAO recommends that FEDRO analyse its regulations with regard to the national critical infrastructure protection strategy and, based on this, issue supplementary binding provisions where necessary.

Original text in German