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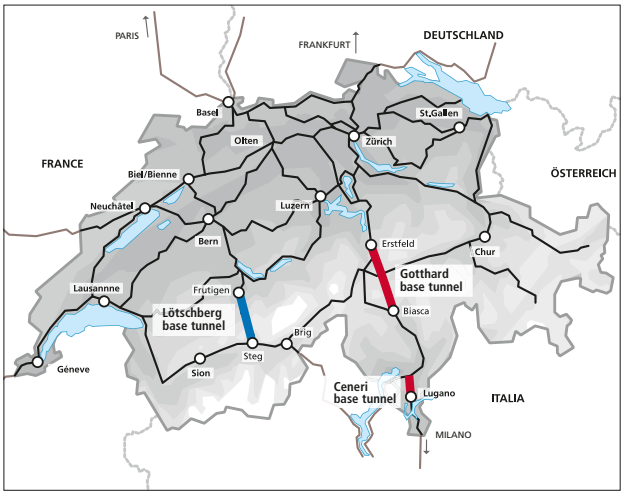
**Federal Office of Transport**

New routes through Europe

# The New Rail Link through the Alps (NRLA)

The Alps form a topographic barrier to European transport. In order to provide more efficient transit routes between northern and southern Europe, Switzerland is investing a great deal of money in building new rail lines. At the heart of its efforts are the three new base tunnels through the Alps.

The New Rail Link through the Alps (NRLA) is the largest construction project in Switzerland's history. It involves expanding two north-south rail routes. The inclines and curve radiuses of these new routes are comparable with railway lines in the lowlands. The resulting routes will be shorter and will enable trains to travel at higher maximum speeds. In addition, the train configurations will no longer need to be changed. The key elements of the NRLA are the three new tunnels: the Lötschberg, Gotthard and Ceneri base tunnels.




The three new base tunnels in the Swiss Alps.

## The Lötschberg base tunnel

The Lötschberg base tunnel, which is 34.6 km in length, came into operation on 9 December 2007. The tunnel took only eight years to build and this short construction period was made possible by starting work simultaneously at five different sites. Sometimes as many as 2500 people were working at the same time on the project, which cost 5.3 billion Swiss francs (around 5 billion euros; current prices, including interest and VAT). The Lötschberg base tunnel

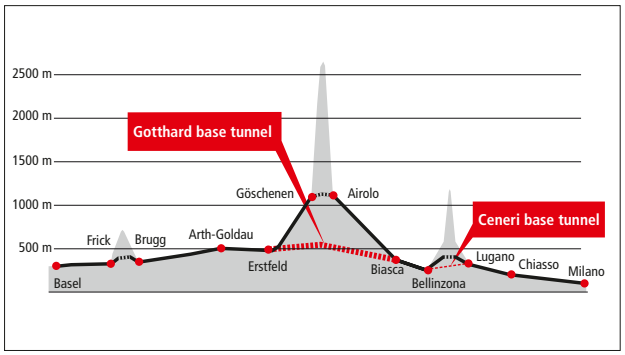
The Lötschberg base tunnel shortens journey times between northern and southern Europe.

has two tubes. In order to reduce costs, both tubes can currently only be used for rail traffic for a third of the tunnel's length. The remainder of the second tube functions as a rescue tunnel and may be developed further at a later stage. The Lötschberg base tunnel brings major benefits for freight and passenger traffic. Its capacity is very often fully utilised, which requires careful traffic management. Passenger trains can travel at speeds of up to 200 km/h. Journey times between major cities in German-speaking Switzerland and destinations in the tourist regions of the Canton of Valais and northern Italy have been reduced by up to an hour.

## The Gotthard and Ceneri base tunnels

At 57 km, the Gotthard base tunnel is the longest rail tunnel in the world. The highest point of the level route on the second branch of the NRLA is 550 m above sea level. As a result of the improvement to the rail infrastructure, more freight trains can travel through the Alps in a

shorter time. Passenger trains can reach speeds of up to 250 km/h. The cost of the Gotthard base tunnel is 12.5 billion Swiss francs (around 11.9 billion euros; current prices, including interest and VAT). The tunnel opening is planned for June 2016 and it will come into scheduled operation in December 2016.




The highest point of the new Gotthard route is 500 m above sea level.

The 15.4 km long Ceneri base tunnel in the Canton of Ticino completes the Gotthard route. It is likely to cost 3.5 billion Swiss francs (around 3.3 billion euros; current prices, including interest and VAT) and is planned to come into operation in 2020. The Gotthard and Ceneri base tunnels will reduce the journey time from Zurich to Milan by around 45 minutes to just over three hours. In addition, the Ceneri base tunnel will make the regional rail network in Ticino more attractive as a result of shorter journey times and better connections.

The Gotthard base tunnel is the longest rail tunnel in the world.

## Expanding the approach routes

In order to prepare the approach routes to the base tunnels to meet the growing requirements, Switzerland is investing a further 2.2 billion Swiss francs (around 2.1 billion euros; current prices, including interest and VAT) primarily in new signalling systems which will allow the time between trains to be reduced.

In addition, work is underway to remove a variety of obstacles. The base tunnels and the Lötschberg route are already designed to accommodate trains transporting semi-trailers with a 4-metre corner height, but this is not possible on the approach routes to the Gotthard tunnel. Therefore, the Swiss Confederation has awarded contracts for the modification of a number of tunnels, platform roofs and catenaries. As a result, by 2020, it will be possible to transport vehicles with a 4-metre corner height along the entire length of the Swiss north-south route. This is important because combined transport involving trucks with a 4-metre corner height is a rapidly growing segment. Switzerland is also financing the necessary modifications to the clearance on the Italian Luino line to allow the main intermodal terminals to be accessed by trains transporting 4-metre semi-trailers. The overall cost of creating a continuous 4-metre corridor is almost 1 billion Swiss francs (around 950 million euros).

In a separate move, Switzerland had already concluded international treaties at an earlier stage with its neighbours Germany and Italy to ensure that the approach routes in those countries were expanded. This work is underway and is being regularly monitored by bilateral committees.

## Further information

- On Swiss transport policy:
  http://www.bav.admin.ch

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