The NRLA

Via Lötschberg, Gotthard and Ceneri, the New Rail Link through the Alps

The New Rail Link through the Alps (NRLA) is the centrepiece of Swiss transport policy. Switzerland has constructed a series of high-performance rail links through the Alps, comprising three base tunnels and several auxiliary structures. Thanks to the NRLA, more trains can run through the Alps and with much shorter travel times. The high quality of passenger and freight travel is assured.

The NRLA provides the basis for transferring traffic from road to rail, with the aim of protecting the Alpine environment. Close international cooperation is required in order to achieve the best possible availability, punctuality and quality in rail transport through Europe.
Passenger transport

The new north-south axis creates shorter travel times and more connections for passengers. Once finished, the NRLA will shorten travel time on the Gotthard route to just over two hours between Zurich and Lugano and around three hours between Zurich and Milan. On the Simplon route, which includes the Lötschberg Base Tunnel, the NRLA has reduced travel times by up to one hour.

The Ceneri Base Tunnel will transform public transport connections in the canton of Ticino, with much shorter travel times in the Bellinzona–Locarno–Lugano triangle. There will be a direct connection between Lugano and Locarno, cutting up to 30 minutes off the journey.

Freight transport

The Ceneri Base Tunnel completes the NRLA project, a flat, faster rail link through the Alps that brings the north and south closer together. Freight transport capacity is increased, and gentler gradients on the Gotthard axis mean that trains no longer require additional traction. This saves time and money. Longer trains with greater weight can also now be operated, and the rail corridor profile has been enlarged to allow the transport of container trucks with a corner height of up to four metres.

The NRLA and the four-metre corridor create additional capacity and greater efficiency and reliability for freight transport by rail between Rotterdam and Genoa. This makes it more competitive compared to road transport.
# The 3 NRLA base tunnels

<table>
<thead>
<tr>
<th>Facts and figures</th>
<th>Lötschberg</th>
<th>Gotthard</th>
<th>Ceneri</th>
<th>Overall project NRLA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td>34.6 km</td>
<td>57.1 km</td>
<td>15.4 km</td>
<td></td>
</tr>
<tr>
<td><strong>North portal</strong></td>
<td>Frutigen (BE)</td>
<td>Erstfeld (UR)</td>
<td>Camorino (TI)</td>
<td></td>
</tr>
<tr>
<td><strong>South portal</strong></td>
<td>Raron (VS)</td>
<td>Bodio (TI)</td>
<td>Vezia (TI)</td>
<td></td>
</tr>
<tr>
<td><strong>Main tube excavation from</strong></td>
<td>September 2000</td>
<td>November 2002</td>
<td>March 2010</td>
<td></td>
</tr>
<tr>
<td><strong>Opened</strong></td>
<td>2007</td>
<td>2016</td>
<td>2020</td>
<td></td>
</tr>
<tr>
<td><strong>Construction costs</strong></td>
<td>CHF 4.3bn / 5.3bn</td>
<td>CHF 9.4bn / 12.2bn</td>
<td>CHF 2.8bn / 3.6bn</td>
<td>CHF 17.7bn actual: CHF 22.8bn</td>
</tr>
<tr>
<td><strong>Tunnel capacity/day</strong></td>
<td>80 freight trains / 50 passenger trains</td>
<td>260 freight trains / 65 passenger trains</td>
<td>170 freight trains / 180 passenger trains</td>
<td></td>
</tr>
<tr>
<td><strong>Highest elevation</strong></td>
<td>828 m a.s.l.</td>
<td>550 m a.s.l.</td>
<td>329 m a.s.l. (south portal Vezia)</td>
<td></td>
</tr>
</tbody>
</table>

1 1998 prices = not incl. inflation, VAT or interest / 2 actual = incl. inflation, VAT and interest

### Overall project NRLA

- **Costs**
  - 1998 prices: CHF 17.7bn
  - actual: approx. CHF 22.8bn

- **Number of structures / projects**
  - Three base tunnels with 11 underground points
  - Improvements in 9 cantons (BE, VS, SG, AR, ZH, SZ, UR, GR, TI)
  - Around 70 separate construction sites

- **Tunnel speed: Timetable**
  - freight / passenger trains
    - 100 / 200 km/h

- **Max. speed in base tunnel**
  - freight / passenger trains
    - 160 / 250 km/h
Ceneri Base Tunnel

At 15.4km long, the Ceneri Base Tunnel is the third biggest construction project in the NRLA, after the Lötschberg and Gotthard base tunnels. The north portal is situated at Camorino (Bellinzona), and the tunnel breaks through the mountains in the south at Vezia near Lugano. It comprises two single-track running tubes 40 metres apart and connected by 48 crosscuts.

At the north portal at Camorino, several bridges and rail viaducts have been constructed as well as a new direct rail link between Locarno and Lugano, known as the ‘Bretella’. The Ceneri Base Tunnel will start operating in December 2020, twelve years after construction began.

Transport policy

Switzerland lies mid-way along Europe’s main north-south transport axis. The NRLA creates a major alternative to road for freight and passenger transport through the Alps.

The Swiss electorate has on several occasions voted in favour of shifting freight transport through the Alps from road to rail. This is efficient, saves space and protects the environment. The NRLA cost CHF 23 billion, paid for from a special fund fed in part by revenue from the heavy goods vehicle charge.
History

1963  A commission examines various projects for a railway tunnel through the Alps

1989  The Federal Council selects the project involving base tunnels through the Lötschberg and Gotthard/Ceneri

1992  The Swiss vote in favour of the New Rail Link through the Alps (NRLA)

1995–1998 Political debate on redimensioning the NRLA and new financing options

1998  The Swiss vote in favour of introducing a heavy goods vehicle charge and of modernising the railways (FinöV): NRLA funding is secured

2007  Lötschberg Base Tunnel opened

2016  Gotthard Base Tunnel opened

2020  Ceneri Base Tunnel to be opened

Expansion step 2035
Capacity extension in Lötschberg Base Tunnel and studies into extending NRLA southwards towards Chiasso

Archive

The documents relating to the NRLA are stored in the Federal Archives. Text, sound recordings and images can be found in the Alptransit Portal: a century of railway history from the first Gotthard tunnel to the Ceneri Base Tunnel.

www.alptransit-portal.ch

Commissioned by:
Swiss Confederation

Tunnel constructed by:
AlpTransit Gotthard AG (ATG)

Tunnel operated by:
Swiss Federal Railways SBB

info@ceneri2020.ch

www.ceneri2020.ch

09/2019  Photos: ATG, FOT, SBB, TILO