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The NRLA

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



The NRLA

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

Facts and figures	Lötschberg	Gotthard	Ceneri
Length	34.6km	57.1 km	15.4 km
North portal	Frutigen (BE)	Erstfeld (UR)	Camorino (TI)
South portal	Raron (VS)	Bodio (TI)	Vezia (TI)
Main tube excavation from	September 2000	November 2002	March 2010
Opened	2007	2016	2020
Construction costs 1998 prices ¹ /actual ²	CHF 4.3bn / 5.3bn	CHF 9.4bn / 12.2bn	CHF 2.8bn / 3.6bn
Tunnel capacity/day	80 freight trains 50 passenger trains	260 freight trains 65 passenger trains	170 freight trains 180 passenger trains
Highest elevation	828m a.s.l.	550m a.s.l.	329m a.s.l. (south portal Vezia)

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

¹1998 prices = not incl. inflation, VAT or interest / ² actual = incl. inflation, VAT and interest



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.

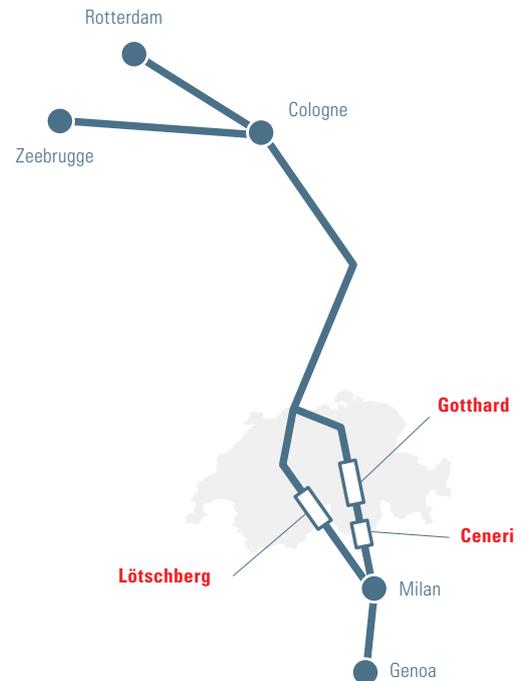
At the north portal at Camorino, several bridges and rail viaducts have been constructed as well as a new direct rail link between Locarno and Lugano, known as the 'Bretella'. The Ceneri Base Tunnel will start operating in December 2020, twelve years after construction began.



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

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www.ceneri2020.ch