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# Transit freight traffic through the Alps in Switzerland: a shift from road to rail?

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Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation  
Federal Department of the Environment,  
Transport, Energy and Communications  
DETEC

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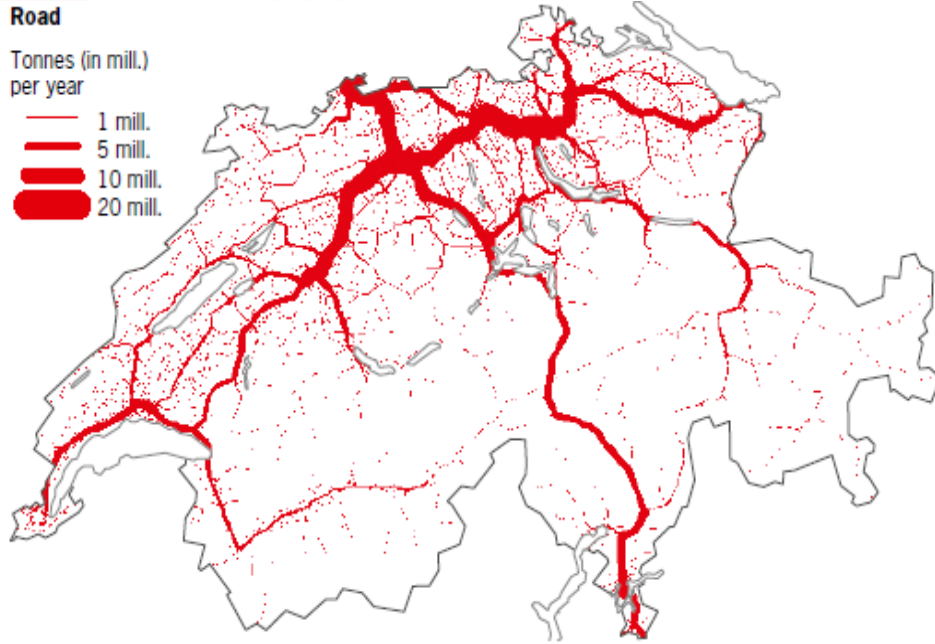
- 1. Facts and figures**
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- 3. Still a long way to go ... ..**



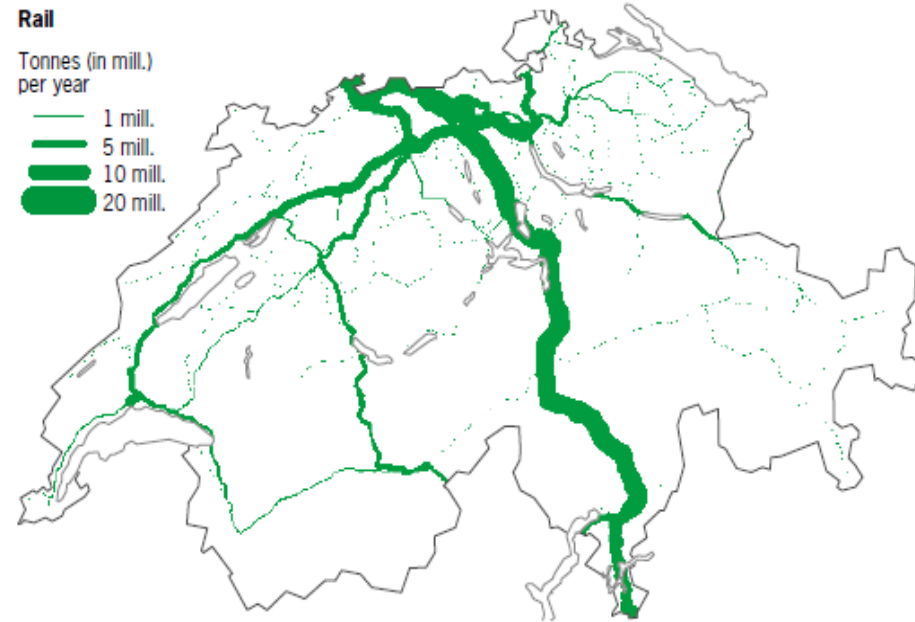
# 1. Facts and figures



# Overview of freight traffic in Switzerland



**Road**

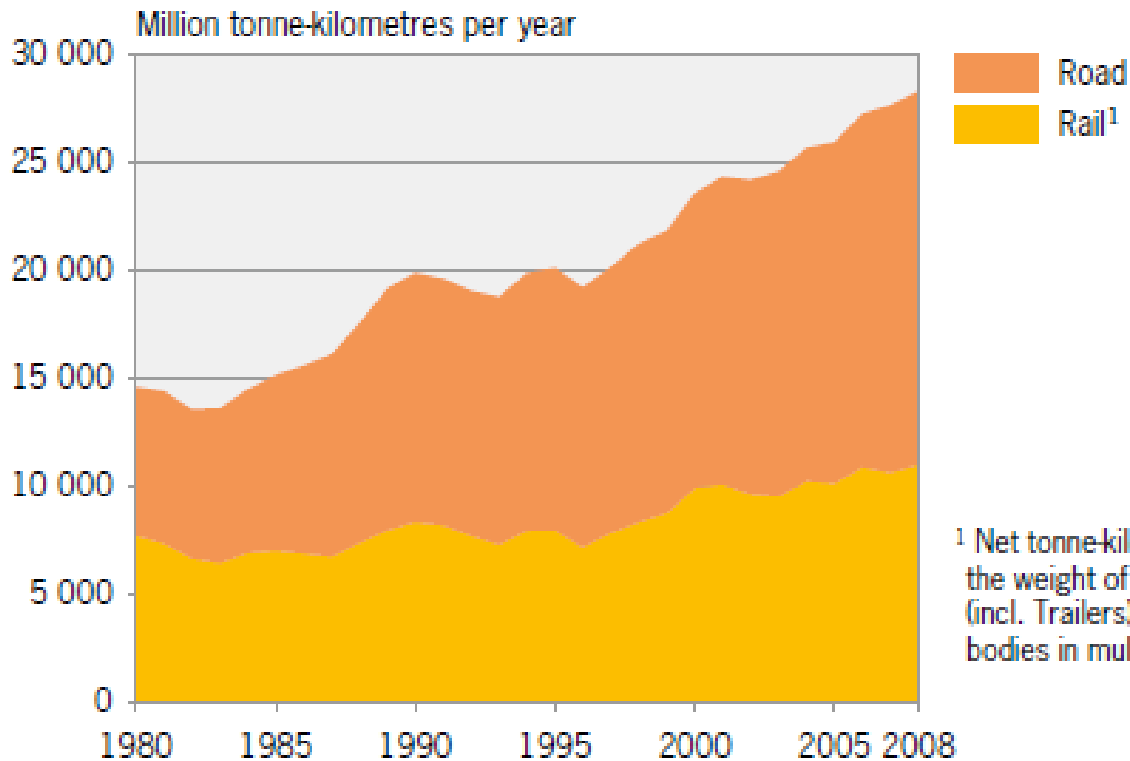


**Rail**



# Freight transport capacity in Switzerland

## Goods transport performance



<sup>1</sup> Net tonne-kilometres not including the weight of goods vehicles (incl. Trailers) containers and swap bodies in multmodal transport

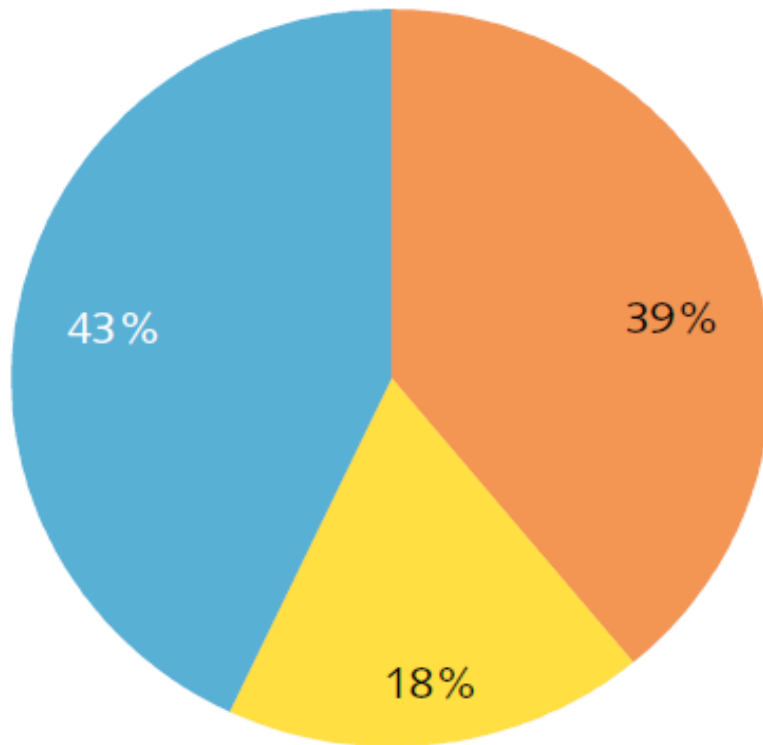


Source: FSO

© FSO



# Volume of freight traffic through the Alps in 2009



- Strasse
- Schiene, Wagenladung
- Schiene, Kombiniertes Verkehr

Total: 34,6 Mio. Nettotonnen



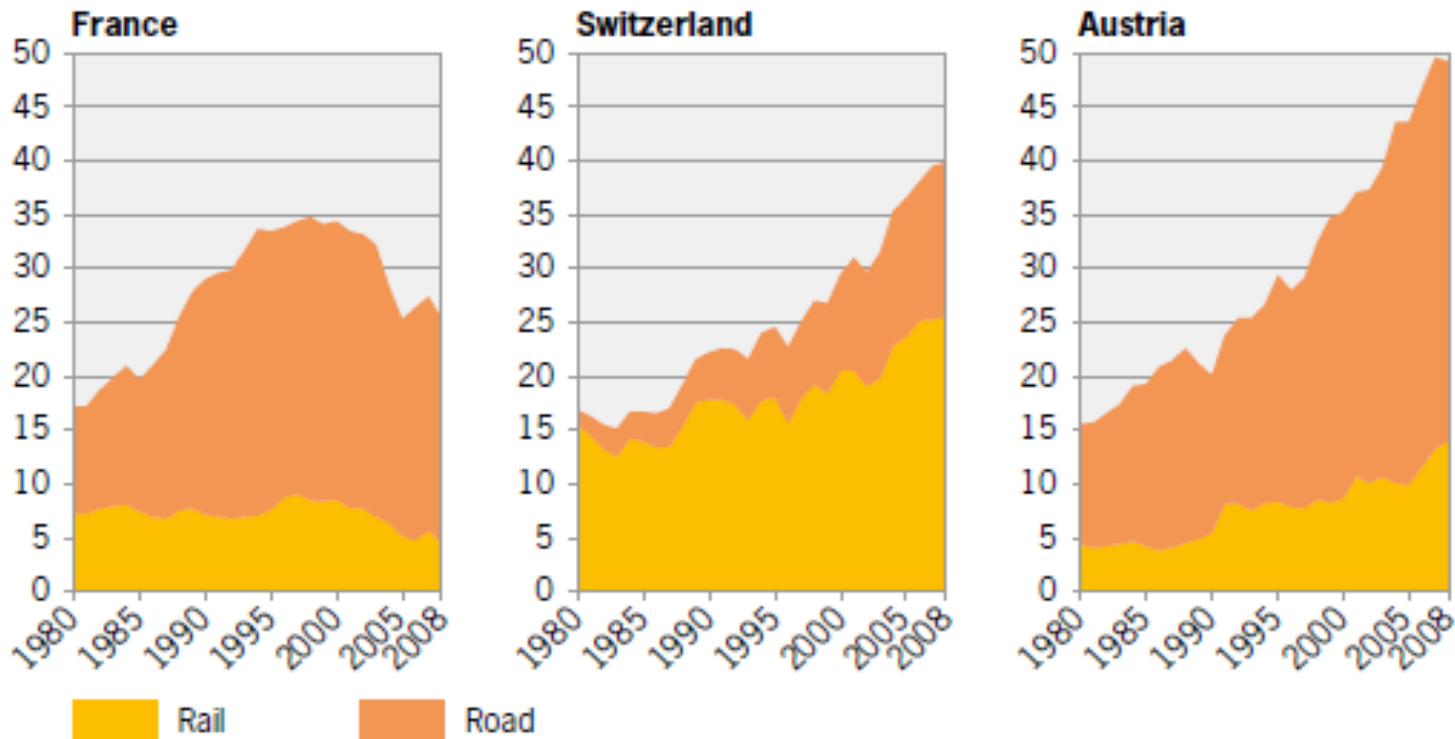


# Volume of freight traffic through the Alps



## Transalpine goods traffic volumes

(Millions of net tonnes per year)



Source: FOT

© FSO





**Schöllenen Gorge/Gotthard**



**Furka Pass**



**Susten Pass**





## **2. Road-to-rail policy**



# 3 x YES

- NRLA 1992
- Alpine Initiative 1994
- Railway Investment Fund 1998



## Road-to-rail mandate / Legal basis

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- Art. 84 “Alpine transit traffic” (added to the Federal Constitution in 1994) establishes a constitutional mandate to protect the Alpine region from the negative effects of transit traffic.
- Federal Road-to-Rail Act of 19 December 2008 (SR 740.1)



## Main instruments of road-to-rail policy

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- Performance-related heavy vehicle fee (HVF)
- Modernisation of railway infrastructure
- Railway reform
- Swiss-EU Bilateral Agreement on Overland Transport
- Accompanying measures
  - Limited-term funding of railway freight traffic
  - More frequent inspections of heavy goods vehicles





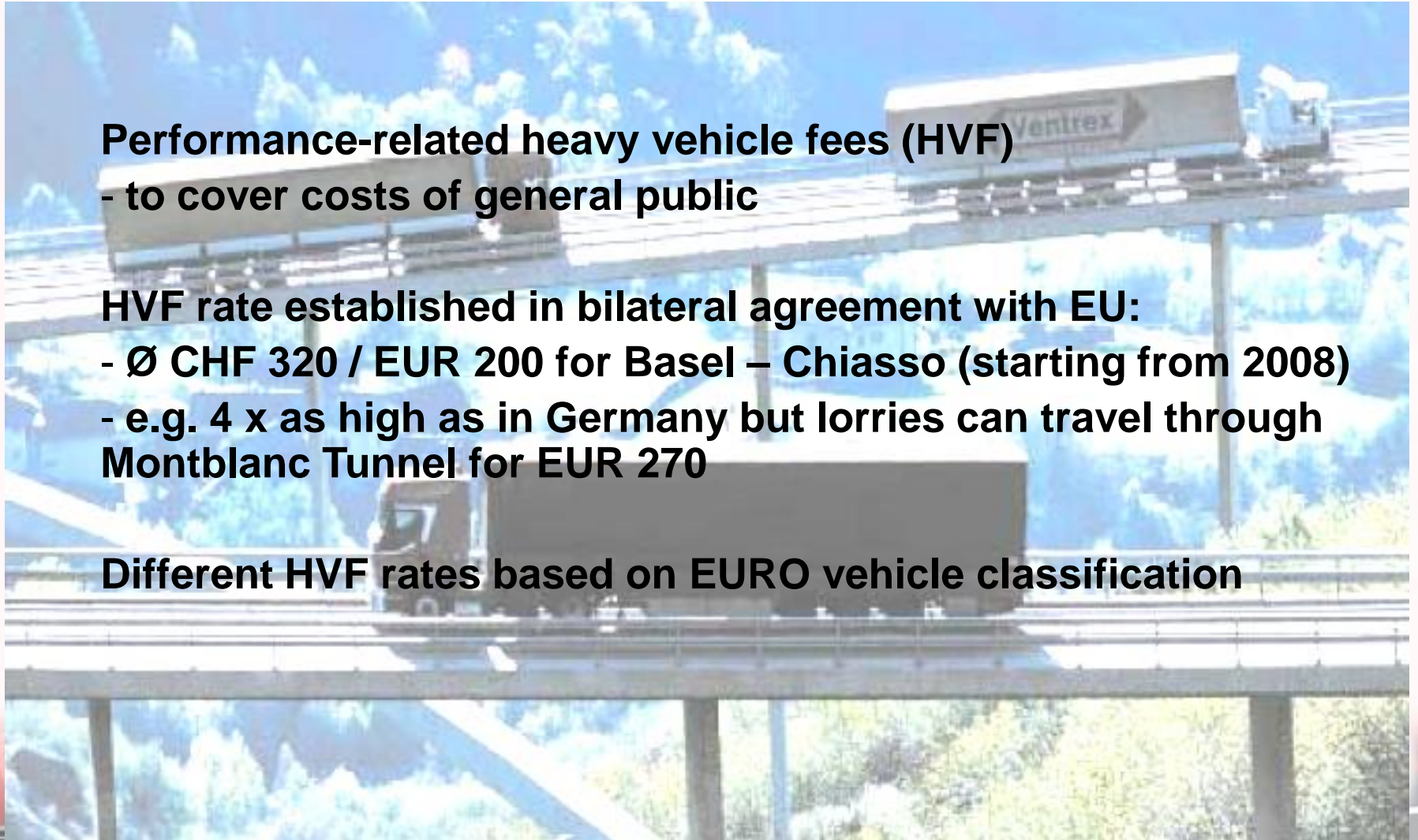
# Road-to-rail shift requires implementation of polluter-pays principle: heavy vehicle fee

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**Performance-related heavy vehicle fees (HVF)**  
- to cover costs of general public

**HVF rate established in bilateral agreement with EU:**  
- Ø CHF 320 / EUR 200 for Basel – Chiasso (starting from 2008)  
- e.g. 4 x as high as in Germany but lorries can travel through Montblanc Tunnel for EUR 270

**Different HVF rates based on EURO vehicle classification**



# **New infrastructure required for road-to-rail shift (1)**

**New Railway Link through the Alps (NRLA):  
Lötschberg Base Tunnel (LBT) opened in June 2007 (today  
around 75 freight trains per day)**

**Gotthard Base Tunnel: scheduled opening  
in 2017**

**ZEB projects: expansion of railway network and increase  
capacities**

**Objectives:**

- Increase capacity of railway infrastructure**
- Achieve greater productivity by neutralising effects of terrain on railway lines**





## New infrastructure required for road-to-rail shift (2)

### Objectives:

- Increase capacity of railway infrastructure
- Achieve greater productivity by neutralising effects of terrain on railway lines

... but passenger traffic volumes are increasing:

**30-minute headway for trains travelling between Valais or Ticino**

**Density of S-Bahn commuter train network has deteriorated quality of railway freight traffic**

**→ Investment for railway freight or passenger traffic**



# Historical milestones at Gotthard

**1. June 1882**

**Opening of Gotthard Rail  
Tunnel**

**5 September 1980**

**Opening of Gotthard  
Road Tunnel**

**15 October 2010**

**Breakthrough of Gotthard  
Tunnel for NRLA**





# Road-to-rail shift requires intensive competition on the railway market

Competition...  
allows freight carriers to choose  
between different providers

forces companies to improve  
(quality, unctuality, price)

Brings new logistical concepts  
(Production from one source)  
and clear allocation of  
responsibilities



# Swiss-EU Bilateral Agreement on Overland Transport

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Bilateral Agreement of 21 June 1999 between the Swiss Confederation and the European Community on the Carriage of Goods and Passengers by Rail and Road (SR 0.740.72)



*The EU recognises Swiss objectives and instruments, particularly performance-related heavy vehicle fee (HVF).*



# Road-to-rail shift requires funding of railway freight transport (1)

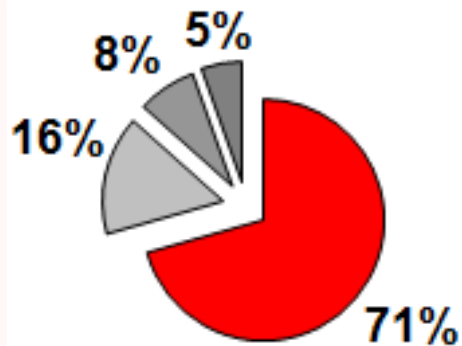
## Funding of intermodal logistics chains



- Operational payments for unaccompanied or accompanied combined transport across the Alps
- Public co-funding of construction/expansion of combined transport terminals
- ➔ Combined transport as road-to-rail market is appealing
- ➔ Competes well with road transport



# Road-to-rail shift requires funding of railway freight transport (2)



■ Abgeltung KV (UKV + Rola):  
195 Mio. Fr.

□ Terminalfinanzierung:  
44 Mio. Fr.

■ Anschlussgleisförderung:  
22 Mio. Fr.

■ Abgeltung EWL:  
15 Mio. Fr.





# Heavy goods vehicles inspection centres

HGV inspection centres help to further improve safety along major transit routes. Legal provisions for drivers, vehicle and load are applied to an even greater extent on the basis of the following principle: “If it does not comply with regulations, it is not permitted to travel”.

Additional inspections – both mobile and stationary – are funded by the Confederation by virtue of a public service agreement with the cantons. In 2010, the Confederation allocated CHF 40 million for this purpose. Federal funding is drawn from the performance-related heavy vehicle fee (HVF).



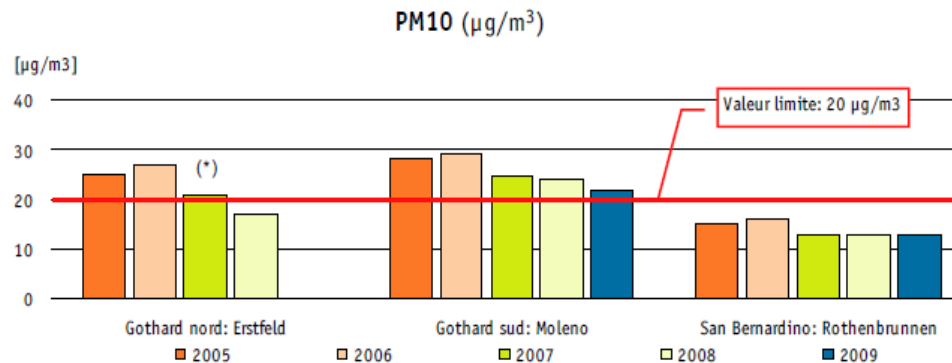
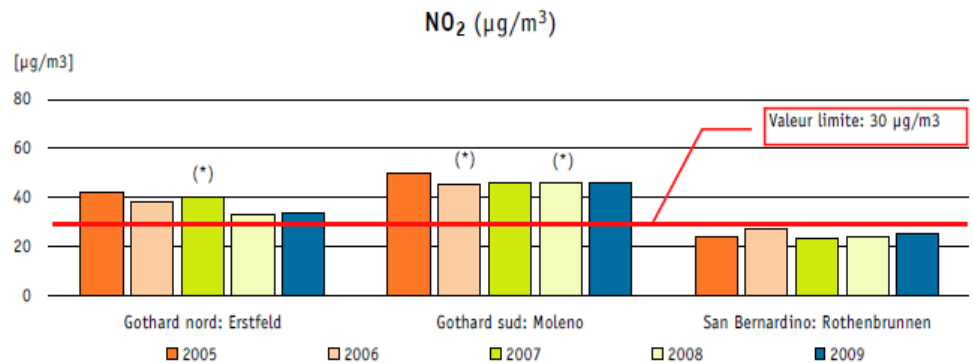
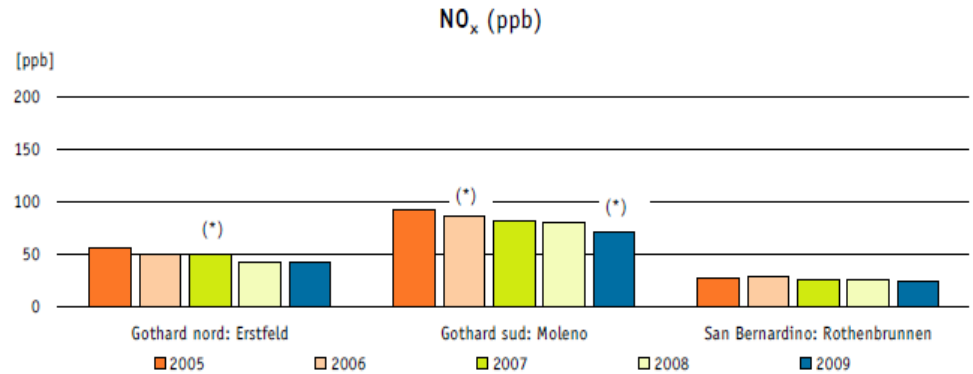
# Focus on environment

Overview of environmental Impact of two main North-south routes through Switzerland.

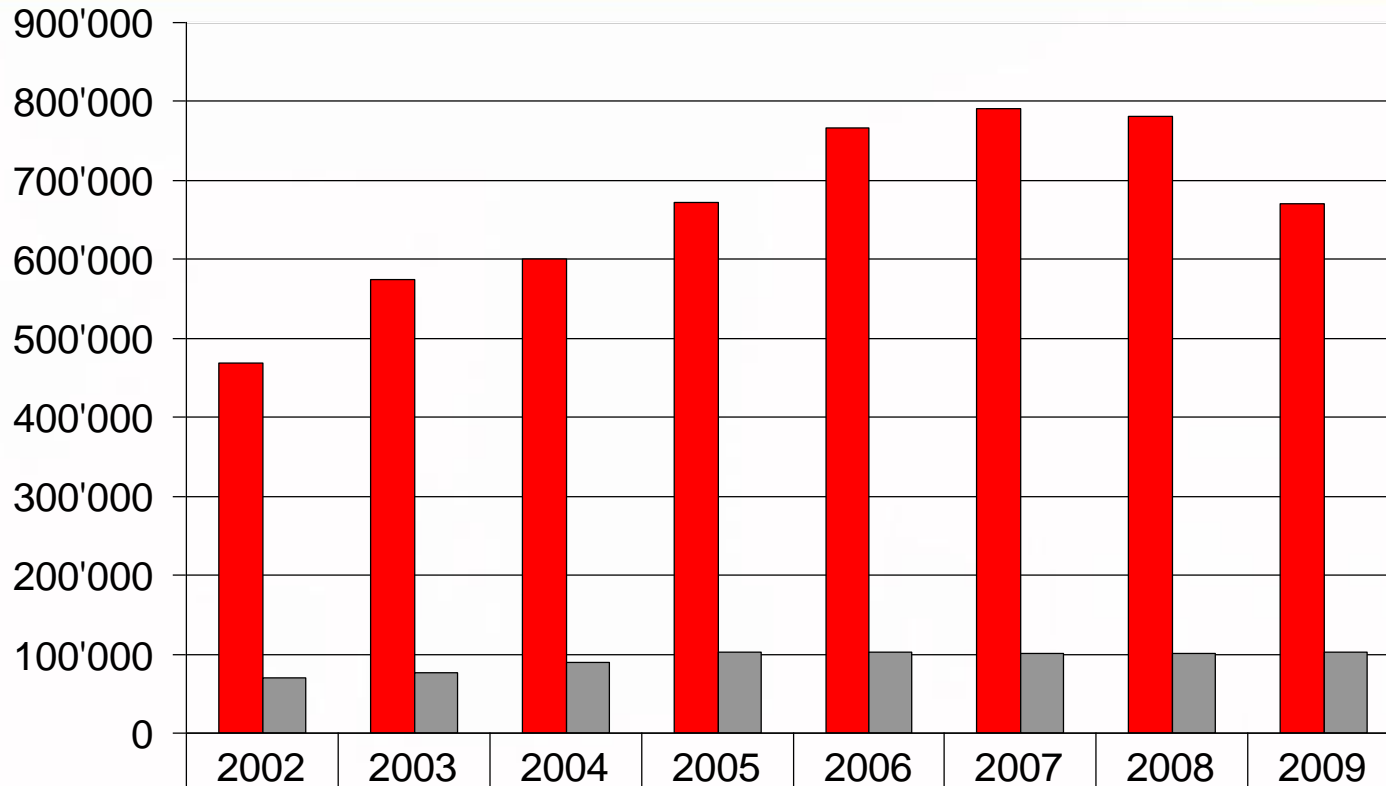
There has been a certain improvement in relation to  $\text{NO}_x$ ,  $\text{NO}_2$  and  $\text{PM}_{10}$  pollution along the San Bernardino and Gotthard routes, the two main north-south crossings through Switzerland.

The improvements are primarily attributable to the use of low-emission vehicles.

CONCENTRATION EN  $\text{NO}_x$ ,  $\text{NO}_2$  ET  $\text{PM}_{10}$  AUX ABORDS DES AXES AUTOROUTIERS SUISSES  
MOYENNES ANNUELLES



# Combined transport across the Alps



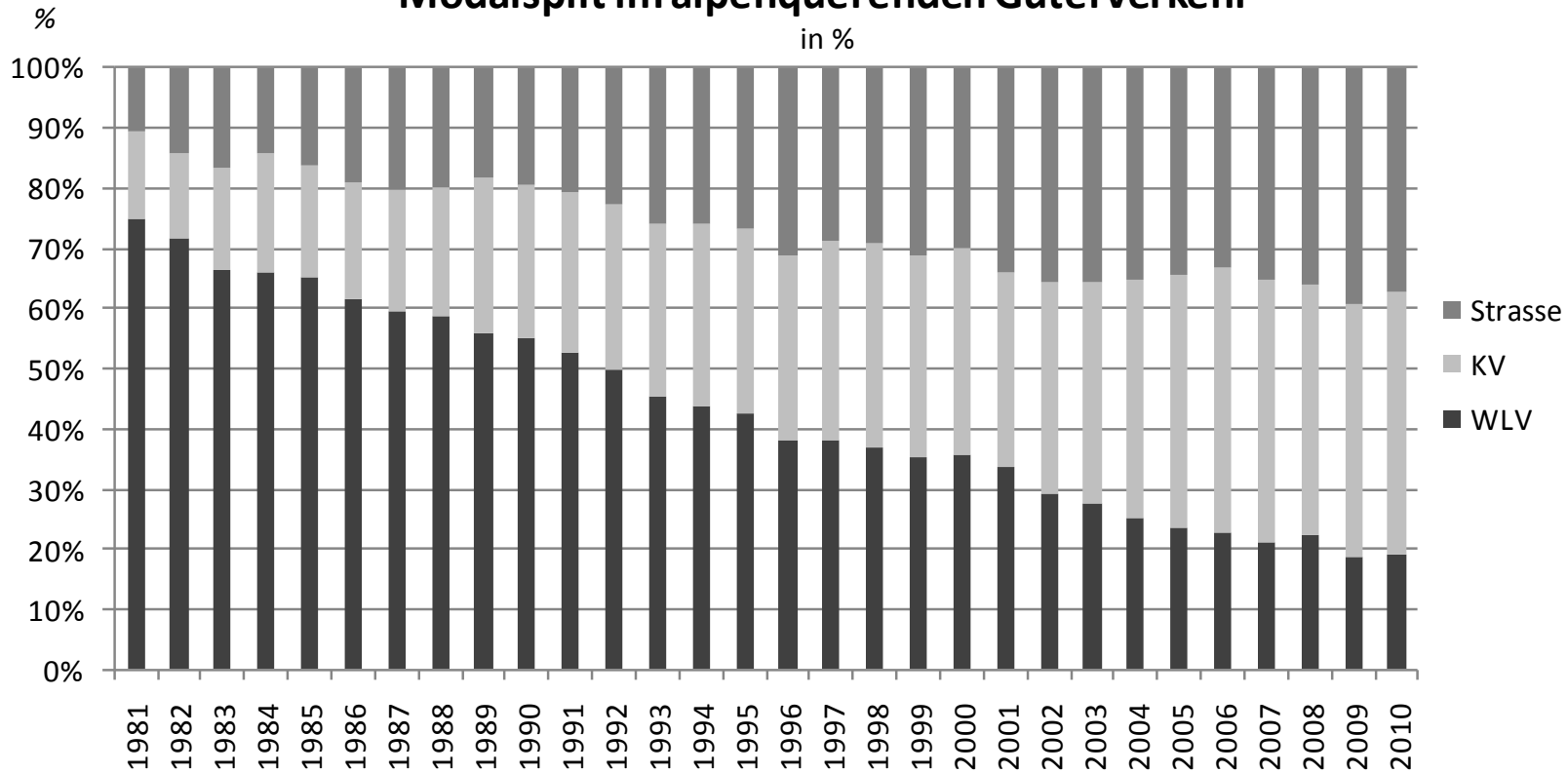
■ Sendungen UKV	468'700	575'000	601'026	672'107	766'133	790'300	780'514	670'183
■ Sendungen Rola	69'289	77'035	89'970	102'749	101'955	101'072	101'634	102'463



# Stand road-to-rail shift

## Modal split 2010

### Modalsplit im alpenquerenden Güterverkehr

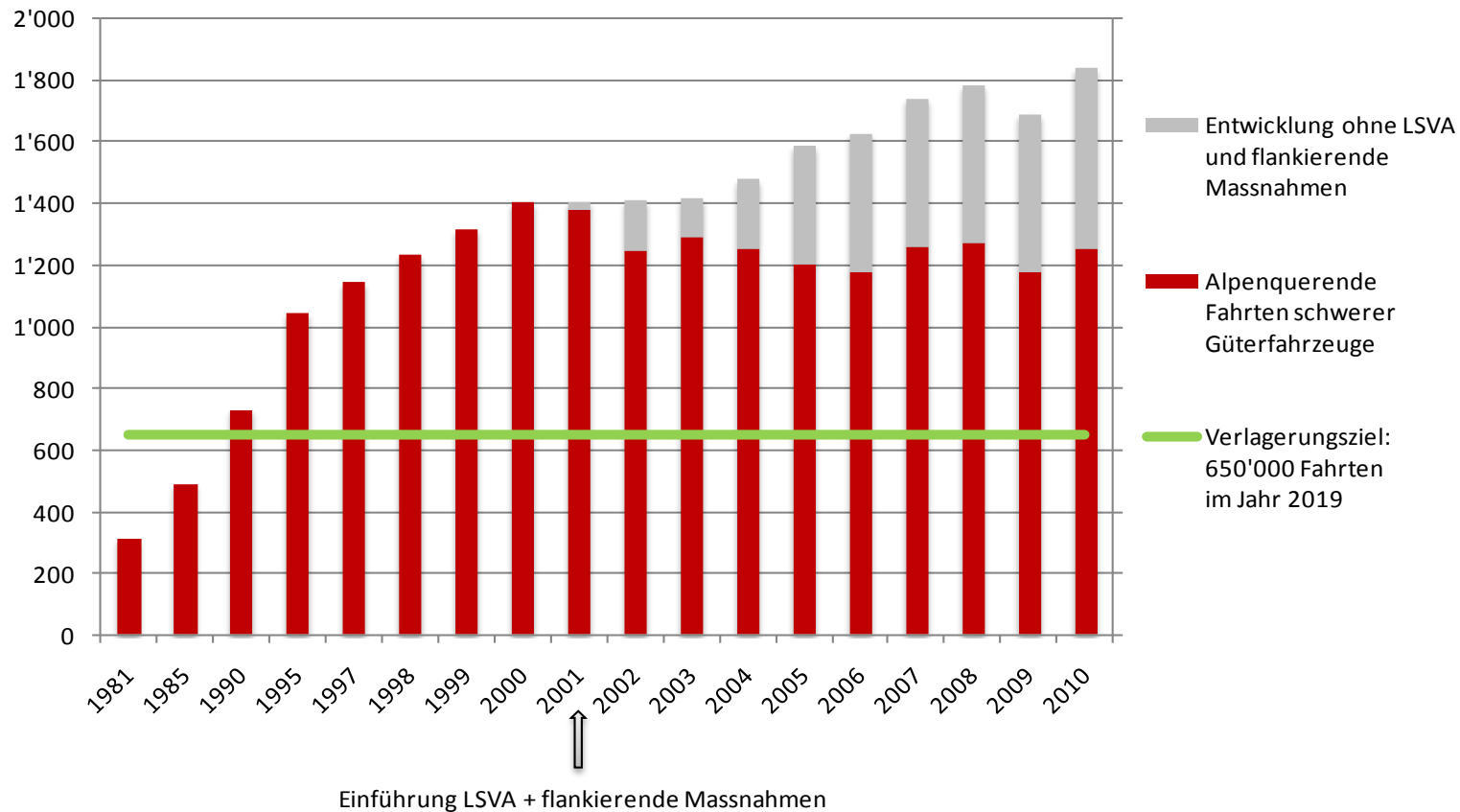


Erläuterungen: KV: Kombiniertes Verkehr (Container, Sattelaufleger, Rollende Landstrasse), WLV: Wagenladungsverkehr



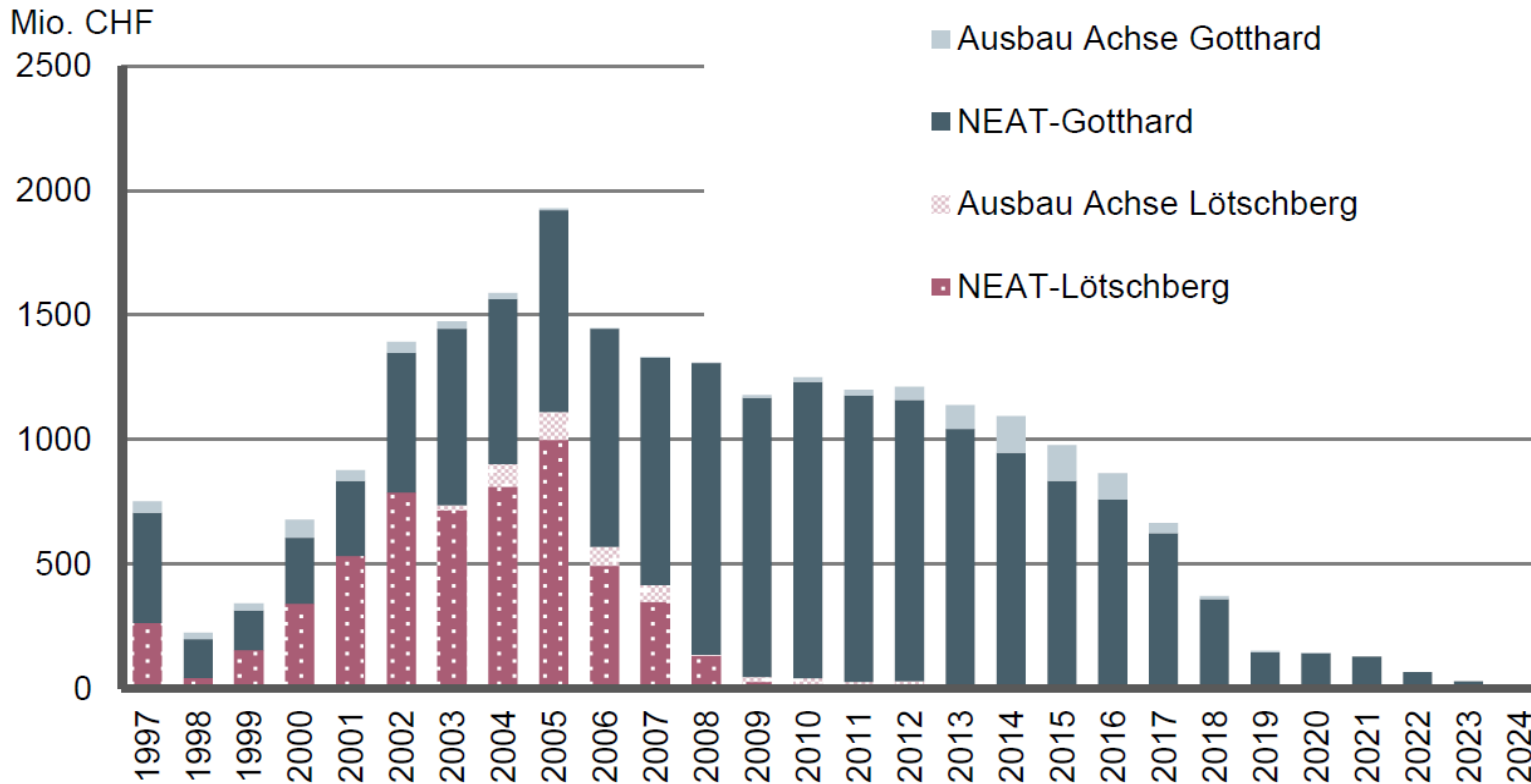
# Stabilisation of road freight traffic achieved

Anzahl alpenquerende  
Fahrten schwerer  
Güterfahrzeuge  
in 1'000





# Costs of NRLA



**Estimated costs (2010): CHF 23.8 billion**

**Funding from other sources:**

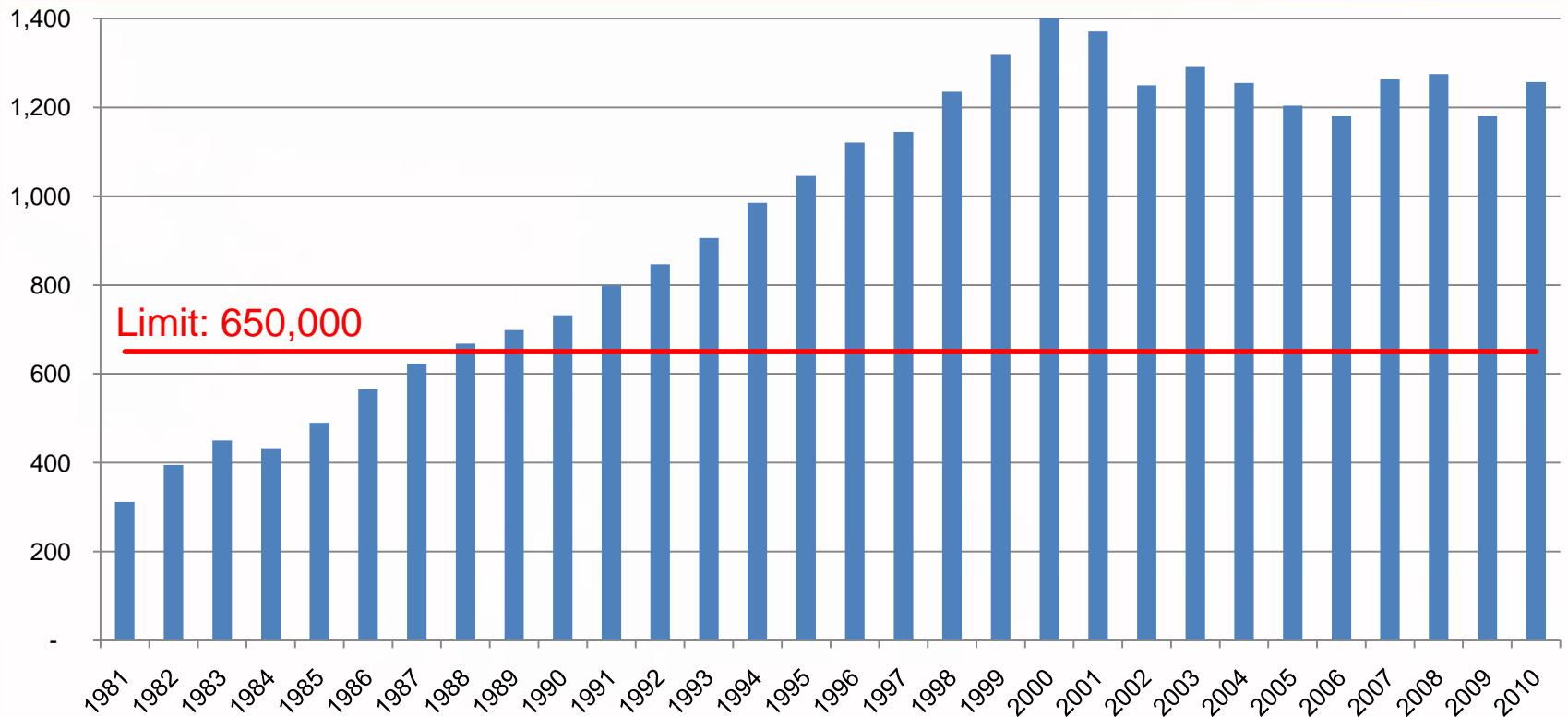
- Performance-related heavy vehicle fee (HVF)
- Fuel tax revenues from road traffic
- VAT



**3. Still a long way to go... ..**



# Still a long way to go



**Freight traffic and transport crossing the Swiss Alps**  
**Annual traffic measured in increments of 1,000 vehicles**



# First experience: only moderate impact on railway freight transport capacity

<b>Available train paths through the Lötschberg Base Tunnel</b>			
	<b>Scheduled business plan 2005</b>	<b>Actually available train paths 2008</b>	<b>Actually available train paths 2009</b>
<b>Freight trains</b>	72	around 64	Around 61
<b>Passenger trains</b>	42	46	49
<b>Total / Total capacity</b>	114	108 - 110	108 - 110

- In train path schedule, railway freight traffic had to be decreased in to accommodate increasing railway passenger traffic.
- Capacities along feed lines (Switzerland/Italy) is limited.  
⇒ Capacities along entire Lötschberg/Simplon route have not increased.

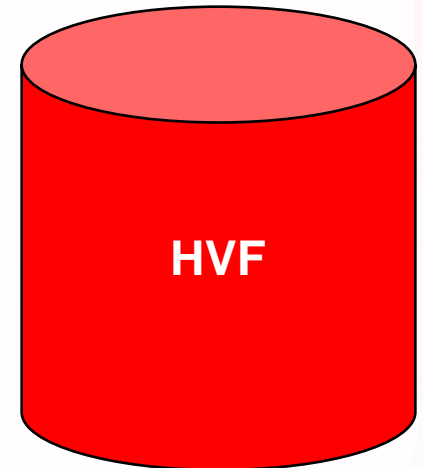
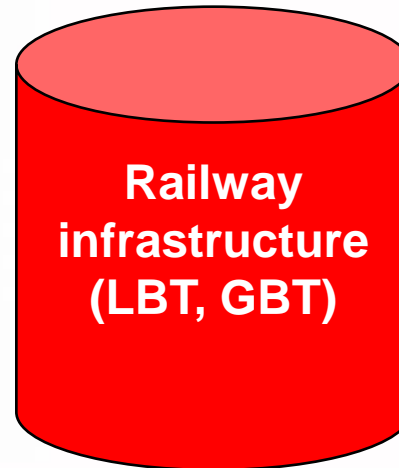
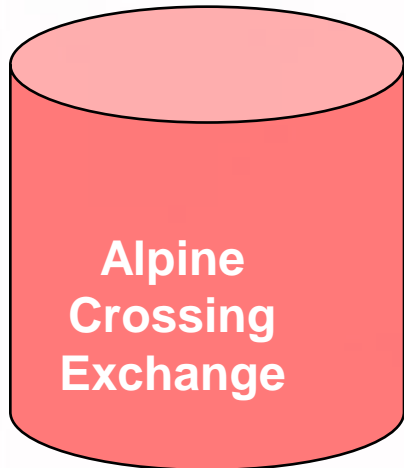




# Future of road-to-rail policy

Constitutional mandate to shift freight traffic from road-to-rail  
(Art. 84 of Federal Constitution)

Federal Road-to-Rail Act (SR 740.1):  
Reduction of Alpine road traffic to 650,000 lorries by 2019,  
i.e. 2 years after opening of Gotthard Based Tunnel (GBT)



Continuation of accompanying measures  
(mainly funding of combined transport)



# Alpine Crossing Exchange as solution?

## Cap-and-trade principle



- Number of trips
- Emission levels

## Slot management

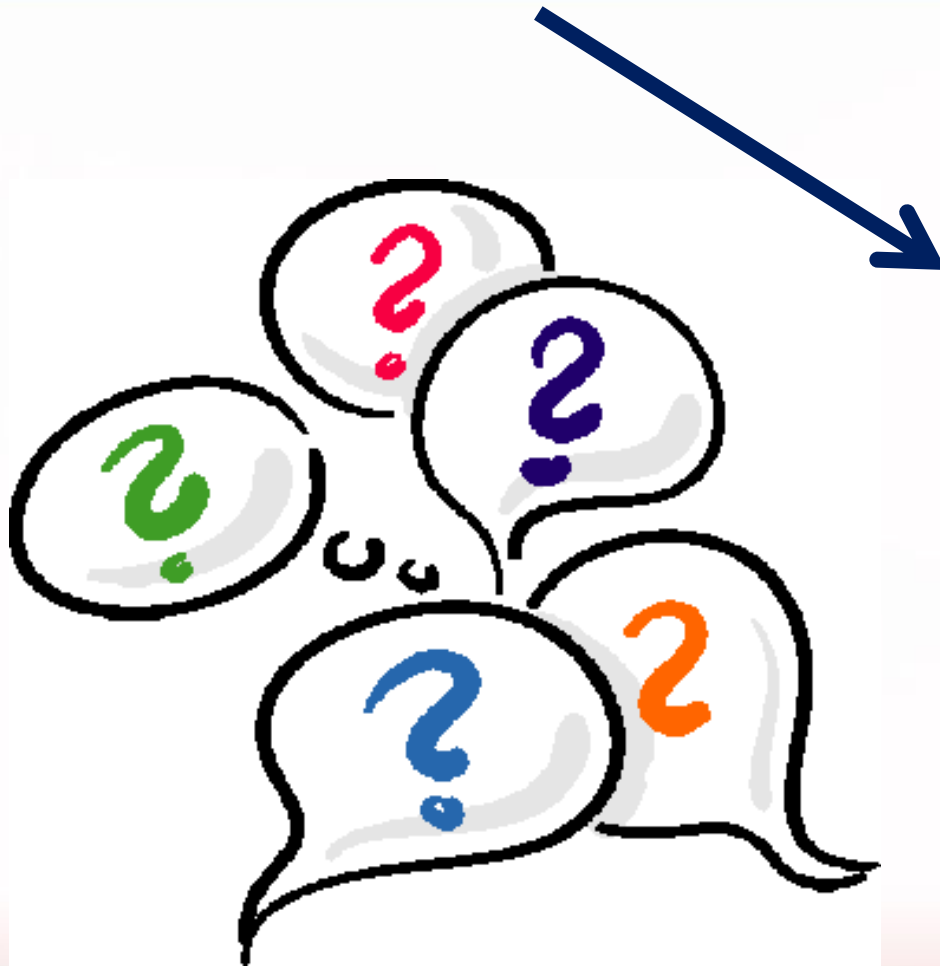


- Tradable reservations rights
- Better use of transport capacities



**2010:  
1,2 million lorries**

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**2019:  
650,000  
lorries**

