

Capacity Strategy 2026

December 2022

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Introduction

TTR expects each Infrastructure Manager (IM) to publish a Capacity Strategy until 3 years prior to timetable-change (X-36). General aim of the Capacity Strategy is to provide indication on key values of capacity planning, i.e., on changes in the availability of the infrastructure, Temporary Capacity Restrictions (TCRs or “negative capacity”) as well as on commercial capacity (“positive capacity”) for a given timetable.

For Timetable 2026, the Capacity Strategy will exceptionally be delivered at the end of December 2022, in compliance with the TTR general implementation plan agreed on international level among RNE & FTE.

The Capacity Strategy is the earliest TTR-planning instrument, based on which the subsequent Capacity Model (to be provided until June 2024 for Timetable 2026 in compliance with the TTR international implementation plan) will be developed.



Figure 1: Steps of the TTR process (Source: RNE)

The present document:

- Is strictly connected to the Common Document Capacity Strategy 2025 issued at June 2022 by Infrabel, ProRail, ACF, DB Netz, SBB Infrastruktur, BLS Netz, ÖBB Infrastruktur and RFI,
- Is strictly connected to the 2026 edition of the same document, currently under elaboration, to be published by December 2022,

- Meets the requirements of RNE's Capacity Strategy Handbook, version 1.0¹, approved by the General Assembly of RNE on 7 December 2021,
- Adds the further information on TCR requested by RNE's Capacity Strategy Handbook, version 1.2, expected to be approved by the General Assembly of RNE in December 2022,
- focuses for Timetable 2026 on lines of international relevance,
- encloses four main chapters:
 - Description of the geographical scope,
 - Expected permanent changes in infrastructure capacity,
 - Expected Temporary Capacity Restrictions (TCRs) with major impact,
 - Expected traffic flows, whereby the values displayed apply for Timetable 2026 to relevant border points within the geographical scope.

The Capacity Strategy targets applicants as well as their end customers, service facilities and terminals, policy decision makers as well as any other stakeholder of rail capacity planning and allocation.

¹ [hb_capacity_strategy_1.0_2021-12-07_0.pdf \(rne.eu\)](#)

0. Geographical scope

0.1 Relevant border points

The lines of international relevance were selected starting from border points where international harmonization has been agreed with neighboring IMs, because of high volume of international traffic, both passenger and freight. The relevant border points are listed in the following table:

SBB Infra	ÖBB Infra	SZ
Luino, Domodossola, Chiasso	Brennero, Tarvisio	Villa Opicina

Table 1: Selected border crossings for MVP 2025

Compared to Capacity Strategy 2025, the main international line to Slovenia has been added.

0.2 Geographical Scope

The above-mentioned border points are connected to important freight and passenger terminals as shown in the following schematic map:

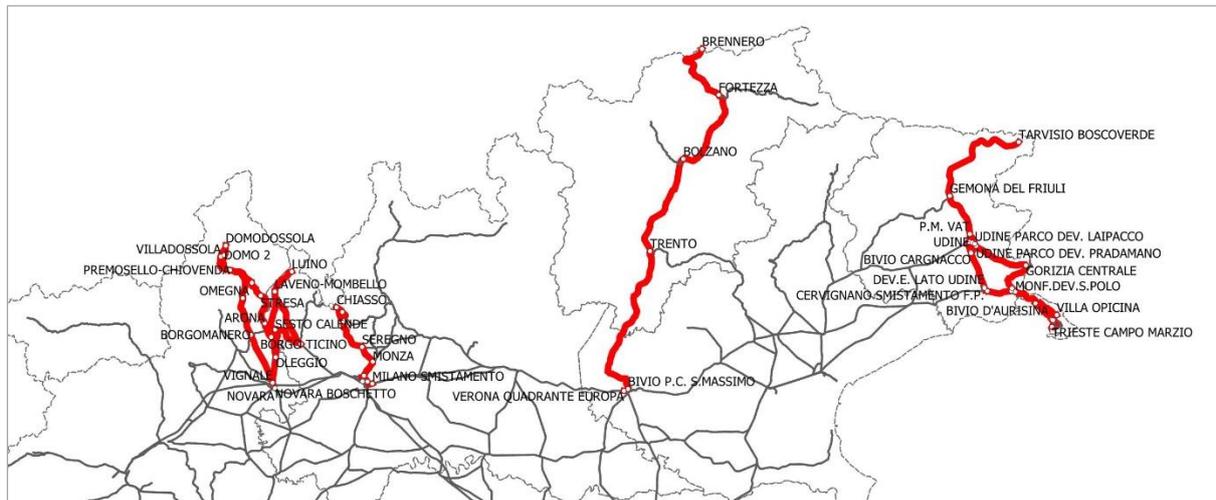


Figure 2: Geographical scope for Capacity Strategy 2026

1. Expected Capacity of the Infrastructure

1.1 General Principles

The present chapter provides an overview of significant positive or negative changes to the available capacity for Timetable 2026.

The projects listed in this chapter fulfill the following criteria:

- Unlike TCRs, the project has a permanent impact on the available capacity, (Chapter 2),
- The project unfolds its effect on capacity between Timetable 2023 and Timetable 2026. Subsequent Capacity Strategies will provide annual updates,
- The projects have a significant size and are located either on network segments included in the Geographical scope or in their next proximity, so that they can affect capacity usage on the lines and stations comprised in the Geographical scope.

1.2 Additional Available Capacity

The following projects fulfill the above listed criteria:

Country	Network Segment	Description	Effect	Impact on capacity as of	Remark (e.g., to indicate status)
2024					
IT	Ternate and Gallarate	750 module	Adaptation to STI; Increased transportation capacity without changes in available train volumes	2024	
IT	Verona – Bologna	Technological	Increase of capacity and regularity	2024	
2025					
IT	Cressa-Fontaneto	750 m module	Adaptation to STI; Increased transportation capacity without changes in available train volumes	2025	
IT	Chiasso – Como – Bivio Rosales	Technological	Increase of capacity and regularity	2025	
IT	Monza – Mi. Smist.	Technological and infrastructural	Increase of capacity and regularity	2025	
2026					
IT	Milano Porta Garibaldi	Technological	Increased station capacity	2026	

Table 2: List of MVP-relevant infrastructure projects with positive capacity effects expected active by TT2026

1.3 Reduced Available Capacity

Country	Network Segment	Description	Effect	Impact on capacity as of	Remark (e.g., to indicate status)
-	-	-	-	-	-

Table 3: List of MVP-relevant infrastructure projects with negative capacity effects expected active by TT2026

2. Expected Temporary Capacity Restrictions with major impact

2.1 General Principles

Infrastructure Managers are required to plan TCRs following “Annex VII”².

Annex VII sets the frame for TCR-planning, the aim of which is to promote early planning, international coordination among Infrastructure Managers, transparency towards Applicants and planning stability. Ultimately, it pursues the goal of increased performance and competitiveness of rail services.

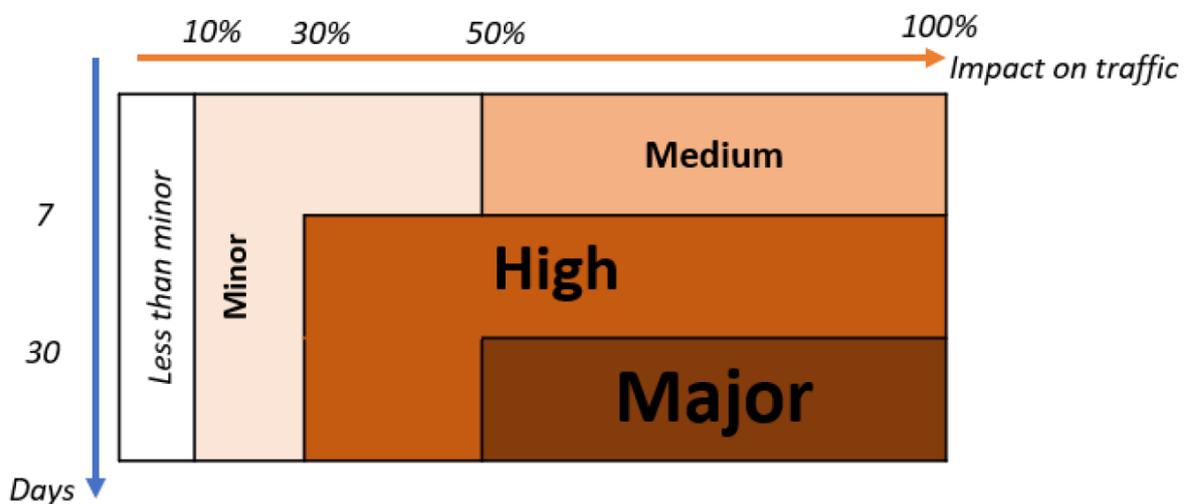


Figure 3: Overview of Annex VII-categories of TCRs (Source: RNE)

The TCRs listed in this Chapter fulfill the following criteria:

- The TCR falls in the category of major TCRs in Figure 3;
- Within this category, the TCR is expected to have a significant impact on international traffic due to its duration, its volume and/or location. Each Infrastructure Manager evaluates the fulfillment of this criteria on its own;
- The TCR will impact capacity of Timetable 2026, regardless of its start and completion date;
- The works that require the TCR are approved by IM management and financed.

² COMMISSION DELEGATED DECISION (EU) 2017/ 2075 - of 4 September 2017 - replacing Annex VII to Directive 2012/ 34/ EU of the European Parliament and of the Council establishing a single European railway area (europa.eu)

TCRs are listed in the ePIR RFI web-portal, explaining the section and the period of execution of the works, with an estimate of the effects on the capacity (possibility of route limitations, detours, timetable changes, etc.) including the volume of traffic cancelled / diverted, in full compliance with the Delegated Decision 2017/2075. The definitive detailed effects will be known with the delivery of the timetable. Any alternative route will also be explained, to allow RUs to proceed coherently as early as the path request phase.

TCRs and maintenance windows (IPO) are defined according on RFI technical needs; their planning is based on the principle to minimize waste of capacity and effects on railway traffic, therefore a proper clustering of works is carried out during a preliminary planning stage.

TCR windows

According to RFI Network Statement, maintenance windows that are not requested by maintenance are released for additional capacity to answer RU's ad hoc requests.

Generally, duration, number and location of maintenance windows have only minor adaptation in subsequent timetables.

Every line has periodical maintenance windows, on a weekly basis, either on daytime or night-time. The use of IPOs makes possible to avoid timetable adjustments, as they are integrated into the running timetable, guaranteeing the ordinary/extraordinary maintenance, and upgrading of the infrastructure. On double track lines, IPOs are planned with the aim to get relevant simultaneous closure intervals on sections where most relevant works are expected to be carried out.

Generally, no trains are planned during IPOs; in few cases related to PSO trains, special timetable arrangements are taken to manage them during one-track closures.

The (IPO) maintenance windows along all the entire network are published annually in the Network Statement and can be consulted by the RUs on the RFI ePIR portal.

In the event that a major TCR is planned, on the alternative lines can be considered a possible reduction in the duration of the IPOs taking into account also the inputs provided by the RUs.

The table below provides a summary of the IPOs that will be planned in TT26 on the infrastructure managed by RFI.

Line	Duration	Daytime/nighttime	N. per week
Maintenance windows (IPO)			
Milano – Domodossola	About 5 h	Daytime / simultaneous 2-track closure	5
Verona – Brennero	About 4 h	Nighttime / simultaneous 2-track closure	5
Venezia – Tarvisio Boscoverde	About 3 h	Daytime / simultaneous 2-track closure	5
Trieste – Villa Opicina	About 2 h	Daytime / simultaneous 2-track closure	5
Trieste – Villa Opicina	About 5 h	Nighttime / simultaneous 2-track closure	5

Table 4: Maintenance windows

Regular TCRs

Whenever maintenance needs exceed what available by maintenance windows, specific additional TCRs can be planned. The percentage of traffic diverted / cancelled is calculated considering the planned timetable, referring to the day with the greatest scheduled traffic volume within the duration of the temporary capacity restriction. If the TCR affects weekdays and holidays, the weekday with the highest scheduled traffic volume is selected; if the TCR affects only non-weekdays, the day with the highest volume of traffic is selected.

Consultation process

RFI carries out a consultation phase by sending to all Applicants/RUs and neighbouring IMs, at X-25 before the relevant annual timetable, the program of infrastructural unavailability; in case of request and if possible, an alternative hypothesis for the execution of the works is provided.

RFI considers the comments received during the publication phase at X-24, possibly organizing ad hoc meetings. Subsequently, before the entry into force of the timetable, the IM sends to all Applicants/RUs and neighbouring IMs possibly involved the updated TCRs program for a second consultation phase, by publishing the revised TCRs programs within 18 months after coordination with neighbouring infrastructure managers and considering the comments received in the second consultation with Applicants through the RFI ePIR portal.

2.2 International coordination and consultation

SBB Infrastruktur – RFI

Bilateral strategic coordination takes place at Steering Committee meetings (high-level representatives of RFI & SBB-I). Periodical bi-lateral meetings are held to detail TCR harmonization. In addition, there is a constant interface between the territorial TCRs managers from SBB-I & RFI.

DB Netz – ÖBB Infrastruktur – RFI

TCR-coordination and consultation on the Brenner corridor has been up and running for over ten years, and addresses TCRs two to three years ahead, depending on the TCRs at stake, as well as short term information matters whenever deemed appropriate. It is structured in two meetings, in June and November, during which a first part (“day 1”) dedicated to coordination with neighbouring IMs is followed by a second part (“day 2”) enlarged to applicants. The timeline of coordination and consultation might be slightly adapted as of Autumn 2022.

RFI – SZ

About the Villa Opicina – Sezana border, bilateral meetings (RFI – SŽ-Infrastruktura) are held usually every two-three months; in addition, other periodical meetings are organized by the Rail Freight Corridors n. 5 (Baltic – Adriatic) and n. 6 (Mediterranean) for IMs coordination and IMs/RUs consultation.

2.3 Selected Major Impact TCRs

Country	Network Segment	Purpose	Duration	Start (at quarterly level)	Impact (total closure/ single track closure/ speed restrictions)
2025					
IT	Stresa - Verbania (Domodossola line)	Gauge enhancement	40 days	Q3 2025	Total continuous closure. RUs are asked to request paths in annual timetabling via the other lines.
2026					
IT	Verbania - Premosello (Domodossola line)	Gauge enhancement	60 days	Q3 2026 (overlapping the following TCR)	Total continuous closure. RUs are asked to request paths in annual timetabling via other lines.
IT	Iselle - Domodossola (Domodossola line)	Gauge enhancement	40 - 50 days	Q3 2026 (overlapping the previous TCR)	Total continuous closure. RUs are asked to request paths in annual timetabling via other lines.

Table 5: List of MVP-relevant selected Major Impact TCRs with temporary capacity impacts during TT2026

3. Expected Traffic Flows and Traffic Planning

3.1 General Principles

Traffic flows are quantified in the present document at border points. Figures derive from IM's estimates. The figures are harmonized and correspond to average values per traffic type per hour, without a differentiation between peak and off-peak hours.

Though non-binding, they provide an average bookable capacity per hour for respectively long-distance passenger, regional passenger (wherever relevant highlighting capacity for regional express traffic) and freight trains for Timetable 2026. Further assessment and more detailed differentiation will occur with the Capacity Model for Timetable 2026.

As a general statement, on single-track corridor lines, which have a high degree of capacity saturation, a rigid path catalogue is in force, as path timetable and available channels are defined by a clock-face model that considers pre-determined dwelling times at the cross-border stations.

On other lines, for which there is a lower level of capacity saturation, the available paths are published in pre-planned mode. A certain level of flexibility in the construction of the Timetable is admitted, to take into account all market needs.

In compliance with the Network Statement of RFI, the general approach is to manage the freight timetable construction phase through a pre-planned path offer (Paths catalogue). The possible offer of Rolling Planning capacity, starting from the predefined and pre-built capacity catalogue, will depend on the regulatory developments currently being studied at European level as well as on the decisions taken in the RNE area regarding the implementation of the steps of the TTR project for timetable 2026.

Passenger trains timetabling is based mainly upon Framework Agreements; further market demands are considered as well, according to the criteria stated in RFI Network Statement.

The table below lists the reference parameters for passenger and freight trainsets that will be used in the Capacity Model:

Line	Passenger trains				Freight trains	
	High-speed	Long-distance	Express regional	Regional	D4 P/C 80 750 m	D4 P/C 50 < 750 m
Maximum trainset speed**	300 km/h	200 km/h	160 km/h	160 km/h	100 km/h	100 km/h
Maximum trainset length*	400 m	400 m	250 m	250 m	750 m	< 750 m

* Maximum length allowed at each stop to be checked on Network Statement

** Maximum trainset speed, not necessarily attainable on the specific lines

Table 6: Main parameters for passenger and freight trains

The harmonization with neighboring IMs, for each border section here dealt with, has been reached on daytime system paths per hour per direction. Further paths, not systematic, could be considered in timetabling construction phase. According to the approach used in this document, the numbers provided relate to cross-network trains, i.e., to train paths that run on line sections managed by each of the bordering IMs.

3.2 Traffic flows

Border point	passenger train paths per hour per direction		freight train paths per hour
	long distance	regional	
Brig (CH) – Domodossola (IT)	0,5	0	3,5
Bellinzona (CH) – Luino (IT)	-	0,5	2
Chiasso (CH) – Como (IT)	1	2 R + 1 RE	4
Border point	passenger train paths per hour per direction		freight train paths per hour
	long distance	regional	
Steinach/Tirol (AT) – Brennero/Brenner (IT)	0,5	0	3
Thörl-Maglern (AT) – Tarvisio (IT)	Non systematic	Non systematic	2
Border point	passenger train paths per hour per direction		freight train paths per hour
	long distance	regional	
Villa Opicina (IT) - Sezana (SL)	Non systematic	Non systematic	3

Table 7: Cross-network harmonized systematic trains per daytime hour per direction

4. Validation and Publication

The final draft of this Capacity Strategy has been put into formal consultation to all Stakeholders. The final version, according to All. A Del. 173/21 of the Italian Regulatory Body, has been published on the RFI website in the TTR section.

The content of this document is also handed over to compile the Common MVP Capacity Strategy, written with several European IMs and available on the RNE website (linked to from the TTR section of RFI website).

On 20th December 2022 the Commercial Department of RFI approves this document and publishes it on RFI website, in the dedicated section focused on TTR project.

The Head of Commercial Department
Christian Colaneri