



Capacity Strategy 2026

TTR advanced planning

Corrections and changes

This document contains corrections and changes, as described in the following table. This document replaces the previous versions of Capacity Strategy 2026, listed in Table 0.1

Version	Date
0.1	Initial release
0.2	Corrections and information added
0.3	Corrections and information added
0.4	Corrections and information added
0.5	Corrections and information added, version send to stakeholders
1.0	Final version, integration of feedback from stakeholders

Table 0.1 – Document version history

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Document presentation

This is the first draft of Danish Capacity Strategy document, written according to RNE's Capacity Strategy Handbook, version 1.0 (RailNetEurope, 2021). The document is valid for the timetable year 2026 ("TT2026"). The geographical scope of this document is described in the Introduction. An overview of the planned available infrastructure capacity is provided on the line sections specified below, including expected improvements and major temporary restrictions.

The document has four main chapters: Introduction, Expected Capacity of infrastructure, Temporary Capacity Restrictions and Traffic planning principles, followed by Appendices focusing on specific topics. The Swedish-Danish cross-border section, managed by Øresundsbro Konsortiet, is included in the Danish chapters for simplicity.

The target groups for this document include railway undertakings, non-railway-undertaking capacity applicants, political decision makers and other stakeholders. Other Infrastructure Managers, service facility and terminal operators can use this document as a coordination tool for long term planning at international level.

Legal ground

A basic principle of directive 2012/34/EU establishing a single European railway area (SERA), and the national legislation implementing it, is to meet the market demand for rail capacity as far as possible. This shall be the aim of infrastructure managing and capacity allocation.

According to Article 83 of SERA, the infrastructure manager shall adopt a business plan designed to ensure optimal and efficient use, provision, and development of the infrastructure. The infrastructure managers are also obliged to assess the need for different types of transport services and to plan for meeting such needs.

This Capacity Strategy is connected to the TTR-project aiming at achieving a new allocation process. The purpose of this document is to roughly indicate potential future usage of the infrastructure concerned but is also considered as compliant with current railway legislation. This strategy is a mere assessment of possible future scenarios under evolving market demands and the real outcome of the planning and allocation process may therefore differ from this strategy.

Timeline

The work on this Capacity Strategy started with input collection in January 2022 to create a first draft document for September 2022, where input from all the stakeholders is collected continuously. The input collected will be integrated in the final document to be published and validated by December 2022, after harmonization of the different requests and needs from the neighboring IMs.

Parts of the Capacity Strategies 2026 from other IMs are collected into a joint document that covers the whole line from Maschen (Germany) to Alnabru (Norway) via Copenhagen (Denmark) and Gothenburg (Sweden)

- January 2022: Start of the Capacity Strategy phase for TT2026
- January 2022 – September 2022: Input collection and creation of draft Capacity Strategy 2026
- October 2022: Involvement of Transport Ministry and Terminal and Facility Operators
- First half of November 2022: Harmonization with neighboring IMs
- Mid November: Mature Draft Capacity Strategy 2026 made accessible for capacity applicants (possible feedback expected by the end of November 2022)
- December 2022: finalization of the Capacity Strategy 2026
- December 2022: Validation and publication of the Danish Capacity Strategy 2026
- January 2023: Publication of the joint Capacity Strategy 2026 Maschen - Alnabru

A Capacity Strategy document for TT2027 will be elaborated between January and October 2023. The elaboration times of the document for different years are not aligned due to the initial transitional period, which is expected to impact timetable years up to TT2028.

0 Introduction

0.1 Geographical scope

This Capacity Strategy document covers the Timetable Year 2026 ("TT2026") on a broader portion of the Danish rail network than the Capacity Strategy 2025. During 2023 and 2024, a Capacity Model for TT2026 will be created and presented in a separate dedicated document.

The following line sections are included for TT2026, in addition to the geographical scope for Capacity Strategy TT2025 (Banedanmark, Bane NOR, Trafikverket, 2022):

- Fredericia – Aarhus – Aalborg
- Lunderskov – Esbjerg
- Ringsted – Vordingborg – Nykøbing Falster
- Copenhagen – Elsinore

Further relevant lines from neighboring IMs are included in this document for the sake of completeness of information towards the stakeholders.

The pilot scope will be extended every year to eventually cover the whole national networks in the Capacity Strategy document for TT2028. The pilot document will be divided into single national documents when the TTR project is fully implemented in all the participating countries, expectedly for TT2027. Illustration 0.1 provides an overview of the pilot line extension for TT2026 across borders and IMs.

Compared to the 2025 Capacity strategy, the 2026 Strategy will feature additional sections. Which means now all the main corridors for both passenger and freight traffic are included. All the included lines are at least double tracked except Tinglev – Padborg.

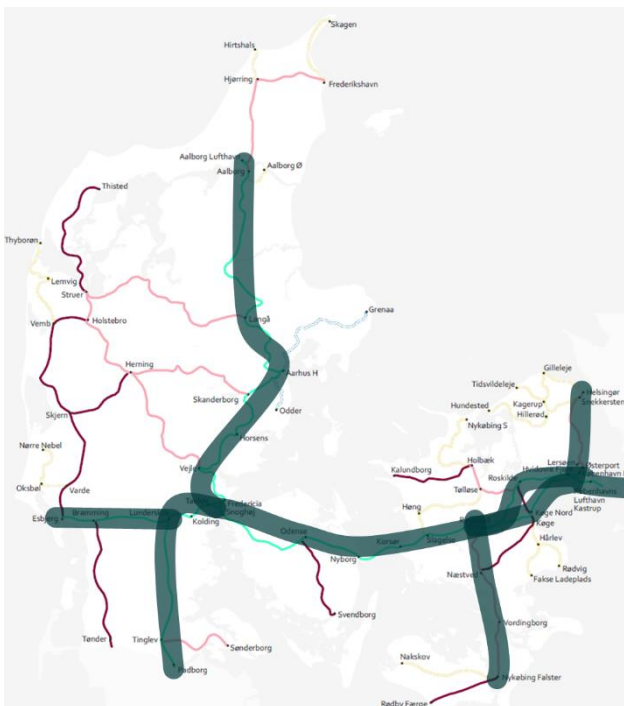


Illustration 0.1 – Overview of the geographical scope for TT2026

0.2 Railway Infrastructure Managers

The Danish network is managed by two IMs: Banedanmark and Sund & Belt Holding A/S. Both are owned 100% by the Danish state. Sund & Belt Holding A/S has the following subsidiaries to manage different railway infrastructures: A/S Øresund and A/S Storebælt. A/S Øresund manages the sections from Copenhagen Airport Kastrup to Copenhagen Central Station and Vigerslev. The Øresund Link itself from Copenhagen Airport Kastrup to Lernacken is managed by Øresundsbro Konsortiet I/S, owned by the Danish state and the Swedish state through A/S Øresund (50%) and SVEDAB AB (50%), respectively. A/S Storebælt owns the Great Belt Link. Both Korsør and Nyborg stations are included. Ownership covers infrastructure development and maintenance. The rest of the lines are managed by Banedanmark. Banedanmark is in charge of traffic planning and management throughout the whole geographical scope.

Neighboring IMs on major lines are DB Netze and Øresundsbro Konsortiet, sharing the borders at Padborg and Copenhagen Airport Kastrup stations, respectively. Due to the limited extension of the Øresund fixed link and the natural extension of the traffic beyond Lernacken, Trafikverket is also considered as a neighboring IM and is invited to provide input to this document.

Regional and local IMs are also sharing borders with Banedanmark within the geographical scope 2026:

- Lokaltog (Region H) at Elsinore and Snekkersten
- Lokaltog (Region S) at Nykøbing Falster and Slagelse

0.2.1 List of involved stakeholders

Stakeholder	Roles and involvement
Involved IMs	Trafikverket DB Netze Øresundsbro Konsortiet A/S Øresund A/S Storebælt Lokaltog
Terminals	Høje Taastrup Kombiterminal (Banedanmark) Taulov Kombiterminal (Banedanmark) Padborg Kombiterminal (TX Logistik) Esbjerg Havn (Port of Esbjerg) Fredericia Havn (Associated Danish Ports – ADP A/S) Aarhus Havn (APM Terminals) Aalborg Havn Terminal (Port of Aalborg) Hirtshals Havn Terminal (Municipality of Hjørring)
Service facilities	Depot tracks: Copenhagen Airport Kastrup, Copenhagen Central Station, Roskilde, Ringsted, Odense, Fredericia, Padborg, Esbjerg, Aarhus, Aalborg, Næstved, Nykøbing Falster

Table 0.1 – List over involved stakeholders

1 Expected Capacity of infrastructure

In this chapter, an overview of the different railway infrastructure projects affecting capacity is given. The list includes project expected completed by TT2026 which will increase/decrease the infrastructure capacity, compared to the current state (TT2022).

1.1 Additional available capacity

This section refers directly to information available in the documents "Banedanmarks Anlægsplan 2030 – Opdatering 2021" (Banedanmark, 2022), "Beslutningsgrundlag Øresundsperroner på Ny Ellebjerg Station" (Banedanmark, 2021), and "Forundersøgelse af Ny Kastrup Lufthavn Station" (Sund & Bælt, 2019)", published by the Danish Ministry of Transport.

The Danish railway network is undergoing major projects for capacity increase, which mainly consists of the Signaling Programme ("SP"), the Electrification Programme ("EP") and individual line upgrades towards 2026 and beyond.

The main principle for planning and coordinating these major programs is to rollout SP before EP on non-electrified lines, when possible, thereby reducing the need for immunization of the legacy signaling system against traction current and its interferences.

Project name	Project proposal defined	Project approved by the IM's management	Financing secured	Commissioning scheduled	Comments
New platforms and station layout at CPH airport	Yes	Yes	Yes	TT2026	Project manager: Sund&Bælt
New Platforms Ny Ellebjerg	Yes	Yes	Yes	TT2025	Project manager: Metroselskabet
SP (Vigerslev – Køge – Ringsted)	Yes	Yes	Yes	TT2023	
SP (Vigerslev - Peberholm)	Yes	Yes	Yes	TT2026	
SP Lunderskov – Esbjerg	Yes	Yes	Yes	TT2025	
SP (Fredericia) – Aarhus	Yes	Yes	Yes	TT2026	Commissioning during TT2026
SP Aarhus - Aalborg	Yes	Yes	Yes	TT2025	
Stilling Station – New platform	Yes	Yes	No	TT2025	Expected, not scheduled

Table 1.1 - Expected changes in infrastructure capacity for TT2026

As a general rule, the project commissioning for SP, EP and line upgrades are scheduled every year to take place either in December together with the

timetable change, or in June. Table 1.1 summarizes the projects for improving the railway capacity expectedly completed by TT2026. Illustration 1.1 provides a graphical representation of the same information.

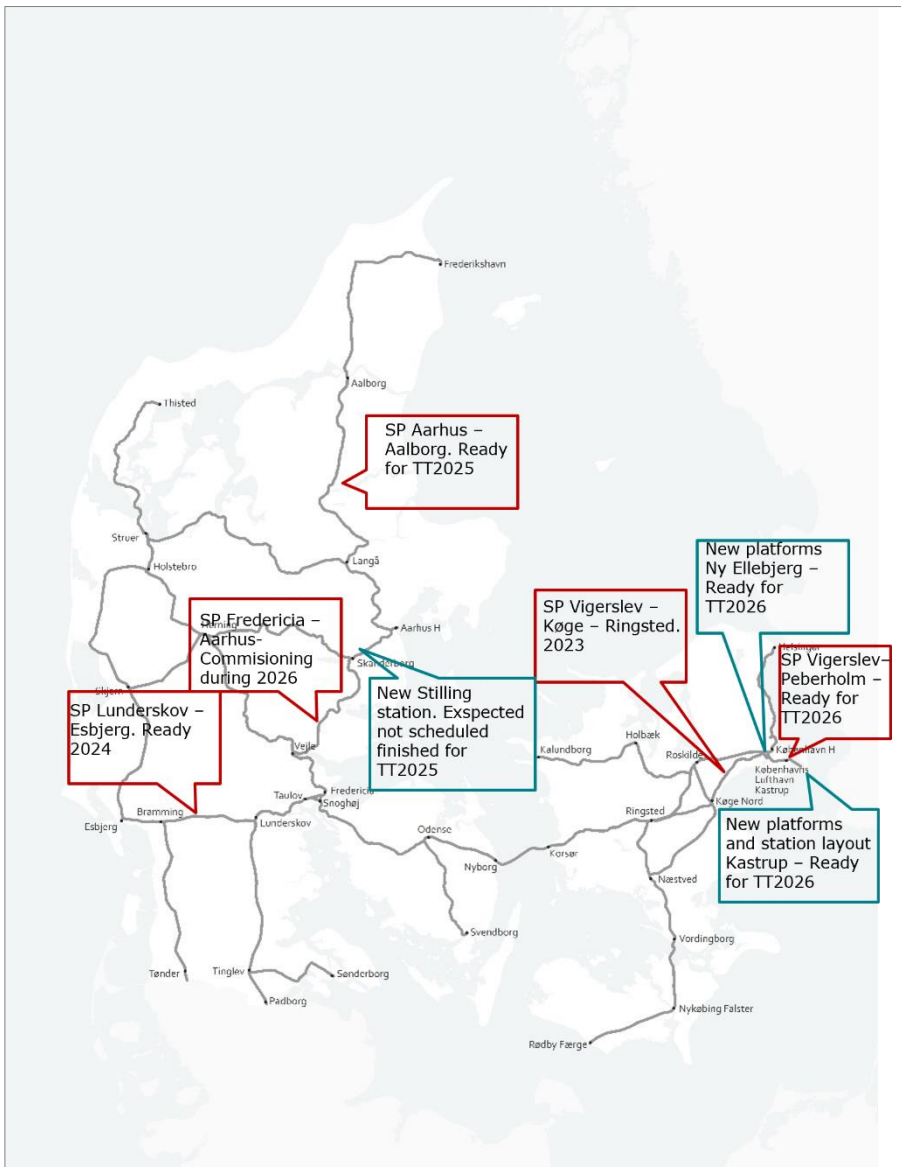


Illustration 1.1 - Expected changes in infrastructure capacity for TT2026

New station at CPH airport

Two new platform tracks at CPH airport for passenger service and new optimized track layout to reduce conflicts between passenger and freight traffic in opposite directions. The project is managed by third party Sund & Belt Holding A/S.

New Platforms Ny Ellebjerg

New platforms for passengers at Ny Ellebjerg station on the line towards CPH airport. This project is managed by third party Metroselskabet.

Signalling Programme (SP)

The switch from legacy signaling system ATC to ETCS/ERTMS is generally expected to increase line capacity. On individual lines, the new signaling system will also allow for speed increases, reducing the travel time.

Electrification Programme (EP)

The main lines on the Danish network are being electrified. On most of the lines, the electrification system commissioning is subject to the rollout of the new signaling system.

1.2 Reduced available capacity

No permanent capacity reductions are planned for TT2026.

1.3 Harmonization with neighboring IMs

No relevant permanent changes in infrastructure capacity are expected on the German side of the railway line from Padborg to Hamburg.

On the Swedish side of the Øresund fixed link, two additional tracks are expected in service between Malmö and Lund from TT2024, which will increase the capacity on the freight corridor from Denmark towards Norway via Gothenburg.

By mid-2025 Fredericia Harbor will open a kombi terminal directly connected to the harbor's container terminal. Expected traffic volumes are three trains to and from the kombi terminal per week.

2 Temporary Capacity Restrictions

2.1 Principles for TCR Planning

The information in this section refers directly to the documents "Sporspæringsprincipper: De generelle principper" (Banedanmark, 2021) and "Overblik over spæringsstrukturen" (Banedanmark, 2021).

Due to the typical traffic structure and the lack of rerouting possibilities, any track possession on the lines Padborg/Aarhus – Ringsted and Copenhagen/Vigerslev - Peberholm will have expectedly major impact on the traffic. Track possessions on the two sections Copenhagen – Ringsted, via Roskilde or via Køge Nord, respectively, are expected to have medium impact on the traffic mainly because of the rerouting possibility between these two lines. The remainder of the network provides rerouting possibilities, or is subject to lower traffic volumes, leaving more room to accommodate TCRs.

A description of the general principles valid for the individual lines is reported in Appendix A, whereas the complete network is covered in the original document "Overblik over spæringsstrukturen" (Banedanmark, 2021).

2.1.1 Total closures

The Geographical scope of Capacity Strategy 2026 covers the main lines on the Danish national rail network, with generally high traffic volumes. Total track closures will therefore be minimized, clustered, and scheduled during low-demand periods, such as holydays and school breaks. A limit of 8,33 days/year of total closure is defined for the corridor section Padborg – Ringsted.

2.1.2 Single-track closures

In case of a single-track closure on double track lines, the track remaining active is always operated at the maximum speed allowed by the type of works on the neighboring closed tracks. In general, the speed limit on the operational tracks should never be lower than 80 km/h in daytime, whereas a speed limit as low as 40 km/h can be introduced during evening and night hours, during the actual execution time of the works.

Table A.1 in Appendix A lists the specific principles for TCRs on the individual line sections.

Illustration 2.1 shows the capacity on the double-tracked network, under single-track closures.



Illustration 2.1 - Figure 5: Expected capacity under single-track closures. Number of trains per hour per direction. The line Høje Taastrup – Roskilde is a four-tracked. **NB:** 6 trains Sorø – Slagelse and Nyborg – Odense requires bundling of trains in the timetable.

2.2 Projects planned in 2026

Preparation works for SP are planned on the whole geographical scope of this document; exception made for the line Copenhagen – Ringsted via Køge Nord. Different rollout dates entail different phases of the project realization and different capacity restriction patterns. Furthermore, two line-sections will undergo track renewal in TT2026 between Copenhagen and Slagelse. The projects listed in Table 2.1 are scheduled and will expectedly cause major impact TCRs during TT2026. A graphical representation is provided in Illustration 2.2.

Project name	Project proposal defined	Project approved by the IM's management	Financing secured	Comments/Explanations
SP Padborg – Fredericia/(Middelfart)	Yes	Yes	Yes	Preparation for SP Rollout in summer 2027
SP Middelfart – Korsør	Yes	Yes	Yes	Preparation for SP Rollout in December 2027 (for TT2028)
Track renewal Høje Taastrup – Roskilde	Yes	Yes	Yes	
Track renewal and line speed upgrade Ringsted – Slagelse	Yes	Yes	Yes	
Station Upgrade Aarhus H	Yes	Yes	Yes	Station upgrade and electrification of the station. Construction works are planned during 2025 and 2026. Track closures are expected.
Electrification Fredericia – Aarhus	Yes	Yes	Yes	Construction in 2026. Temporary track closures are expected
Electrification Aarhus – Aalborg	Yes	Yes	Yes	Construction in 2026. Temporary track closures are expected
New Storstrøm Bridge	Yes	Yes	Yes	No effect on traffic

Table 2.1 – Projects with major TCRs expected for TT2026

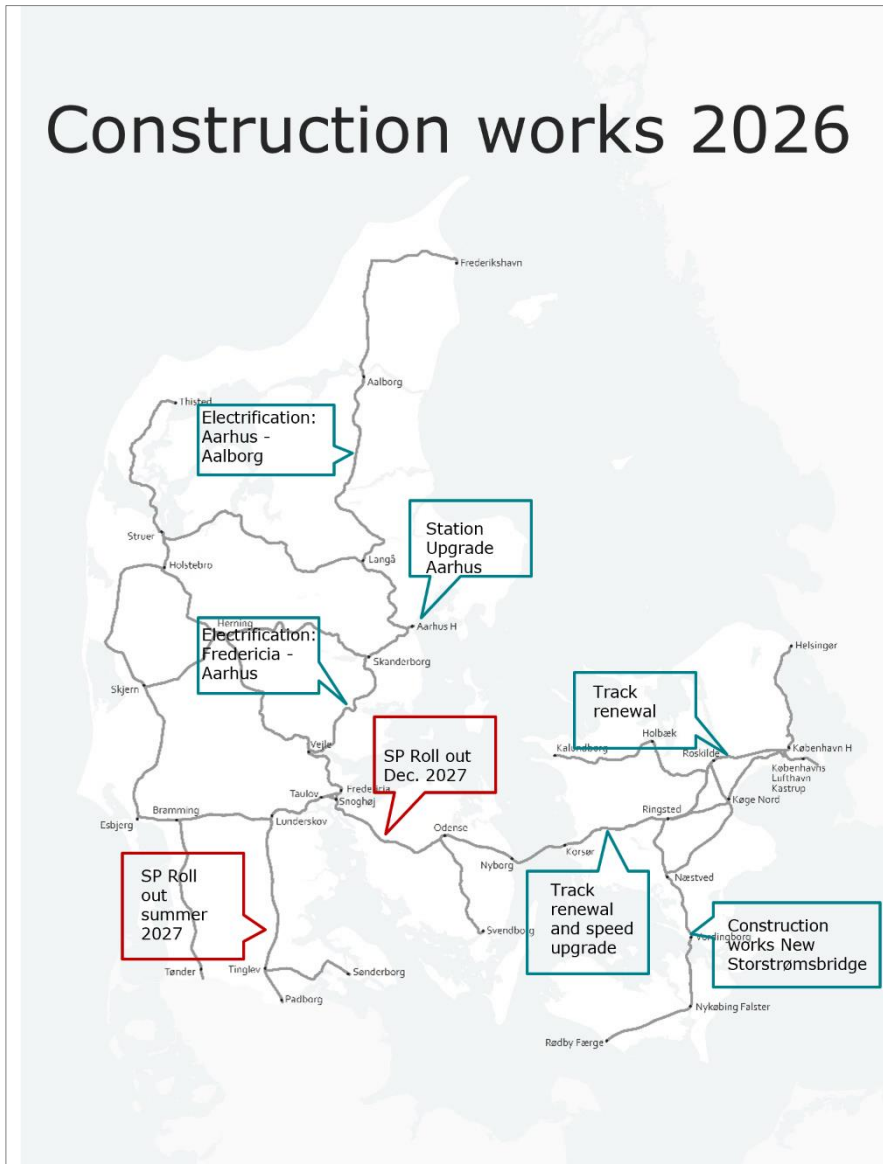


Illustration 2.2 - Location of projects that will require major TCRs during TT2026

2.3 Harmonization with neighboring IMs

On the Oresund Link the following total closures are scheduled in TT2026:

- Week 12, 24 hours, during the weekend (Saturday-Sunday 13:00-13:00)
 - Week 14, 24 hours, during the weekend (Saturday-Sunday 13:00-13:00)
- (These two closures can be combined to one closure of 48 hours)
- Week 44, 24 hours, during the weekend (Saturday-Sunday 13:00-13:00)

More details about projects planned by neighboring IMs are given in the common Capacity Strategy 2026 Maschen – Alnabru, to be published in January 2023.

3 Traffic planning principles

3.0 Expected capacity requests

Illustration 3.1 shows a map of the expected traffic capacity demand on the line sections included in this Capacity Strategy. The line sections depicted in red can be characterized as bottlenecks, whereas green sections are expected to accommodate all or most of the capacity requests without changes. On the yellow sections, some changes in the paths applied for might be necessary to accommodate all requests. TCRs are not yet scheduled in detail and are therefore not shown in the figure.

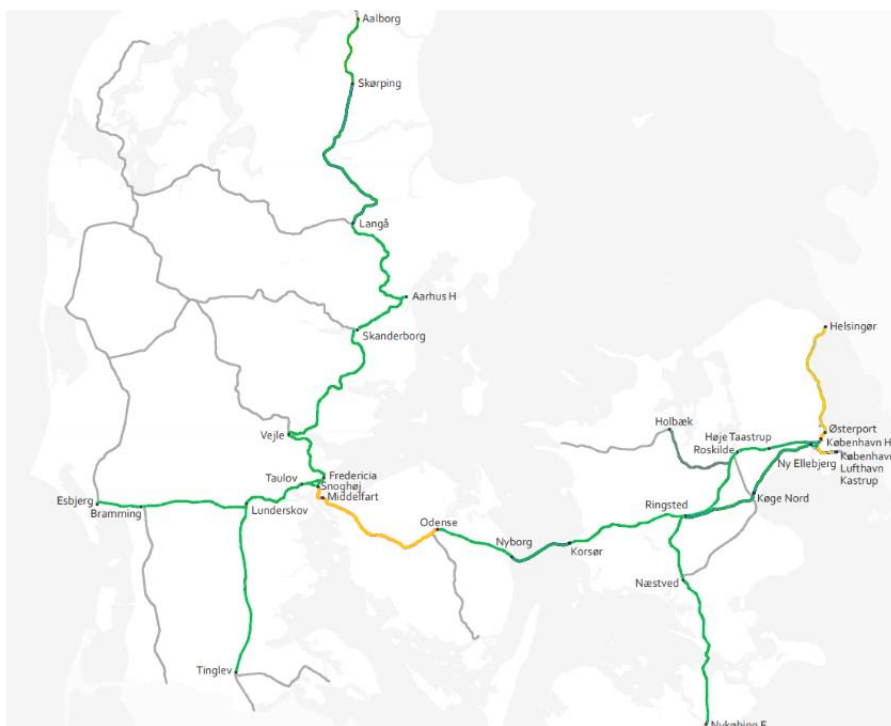


Illustration 3.1 - Expected capacity requests.

Green – All requests might be met, Yellow – changes might be necessary and Red – High demand expected: possible rejections.

In Denmark, the expected capacity demand for TT2026 is generally low. In the sections Peberholm – Kastrup – Kalvebod – Vigerslev – Høje Taastrup (the Copenhagen area) and Odense - Snoghøj (Western Funen) the capacity utilization is higher but still in balance.

3.1 Traffic planning principles

The following types of traffic can be expected on the different railway sections based on Banedanmark's work on future timetables. This information is used to construct the first drafts of the capacity model. In future Capacity strategies, this section will include prognosis for ad-hoc and rolling planning capacity segments as well.

Infrastructure Manager	Relevance	Capacity saturation	I F	N F	HS P	LD P	RP S	Infrastructure Manager
Kastrup Airport - Kalvebod - Vigerslev	A/S Øresund	I	H	•		•	•	•
Kalvebod - Copenhagen Central - Vigerslev/Hvidovre Fjern	A/S Øresund	I	H			•	•	•
Vigerslev - Hvidovre Fjern - Høje Taastrup	Banedan mark	I	H	•			•	•
Vigerslev - Køge Nord	Banedan mark	I	M	•		•	•	•
Lernacken – Peberholm – Kastrup Airport	Øresunds bro Konsortiet	I	H	•		•	•	•
Høje Taastrup - Roskilde	Banedan mark	I	L	•	•		•	•
Roskilde - Ringsted	Banedan mark	I	M	•	•		•	•
Køge Nord - Ringsted	Banedan mark	I	M	•		•	•	•
Ringsted - Korsør	Banedan mark	I	M	•	•	•	•	•
Korsør - Nyborg	A/S Storebælt	I	H	•	•	•	•	•
Nyborg - Odense	Banedan mark	I	M	•	•	•	•	•
Odense - Snoghøj	Banedan mark	I	H	•	•	•	•	•
Snoghøj – Fredericia/Taulov	Banedan mark	I	M		•	•	•	•
Snoghøj – Taulov	Banedan mark	I	L	•	•	•	•	
Taulov - Tinglev	Banedan mark	I	L	•	•	•	•	•
Tinglev - Padborg	Banedan mark	I	M	•	•	•	•	•
Fredericia - Aarhus	Banedan mark	I	H	•	•		•	•
Aarhus - Aalborg	Banedan mark	I	H	•	•		•	•
Lunderskov - Esbjerg	Banedan mark	N	L	•	•		•	•
Copenhagen - Elsinore	Banedan mark	N	M					•
Ringsted - Nykøbing F	Banedan mark	N	M			•	•	•

Table 3.1 - Traffic planning principles for TT026 in Denmark

Relevance: I = International, N = National.
Capacity Saturation: H = High, M = Medium, L = Low.

The Danish railway timetable is typically planned as a clock-faced symmetric timetable with an hourly pattern. The pattern differs between rush, daytime, evening, and night hours.

In general, two transit freight train paths per direction per hour are planned between Peberholm (Swedish-Danish border) and Padborg (Danish-German border). During rush hours in the Copenhagen area only one freight train path per direction per hour is available. The freight train paths are planned according to the longest and heaviest model train allowed on the Danish rail network (worst case), allowing any rolling stock to run, and providing punctuality margins in case of better actual performance than planned.

Freight traffic is normally planned to run via Høje Taastrup between Copenhagen and Ringsted. However, the new line via Køge Nord can also be used. Although this requires the trains to be able to run under ETCS. Fast passenger trains (InterCity Express and InterCity) are mainly scheduled to run via Køge Nord between Copenhagen and Ringsted, separating them from slower freight and regional trains on the line via Høje Taastrup. Roskilde is expected to be served by one fast passenger train per hour. Passenger trains are not bundled according to their travelling speed but are planned to provide a regular service frequency e.g., half hourly. This gives a traffic mix of fast and slow trains on the mainlines. Fast passenger trains can be planned to overtake slower passenger trains at traffic hubs e.g., Odense station. Overtaking of freight trains is planned to take place regularly at given stations due to the traffic mix of trains. The volume and structure of future railway traffic in Denmark is discussed within the "Trafikplan"-working group chaired by the Danish Ministry of Transport. Members are the major stakeholders within the Danish railway sector. Illustration 3.2 shows the expected volume of passenger trains in TT2026. The plan entails two freight trains per hour per direction outside rush hours.

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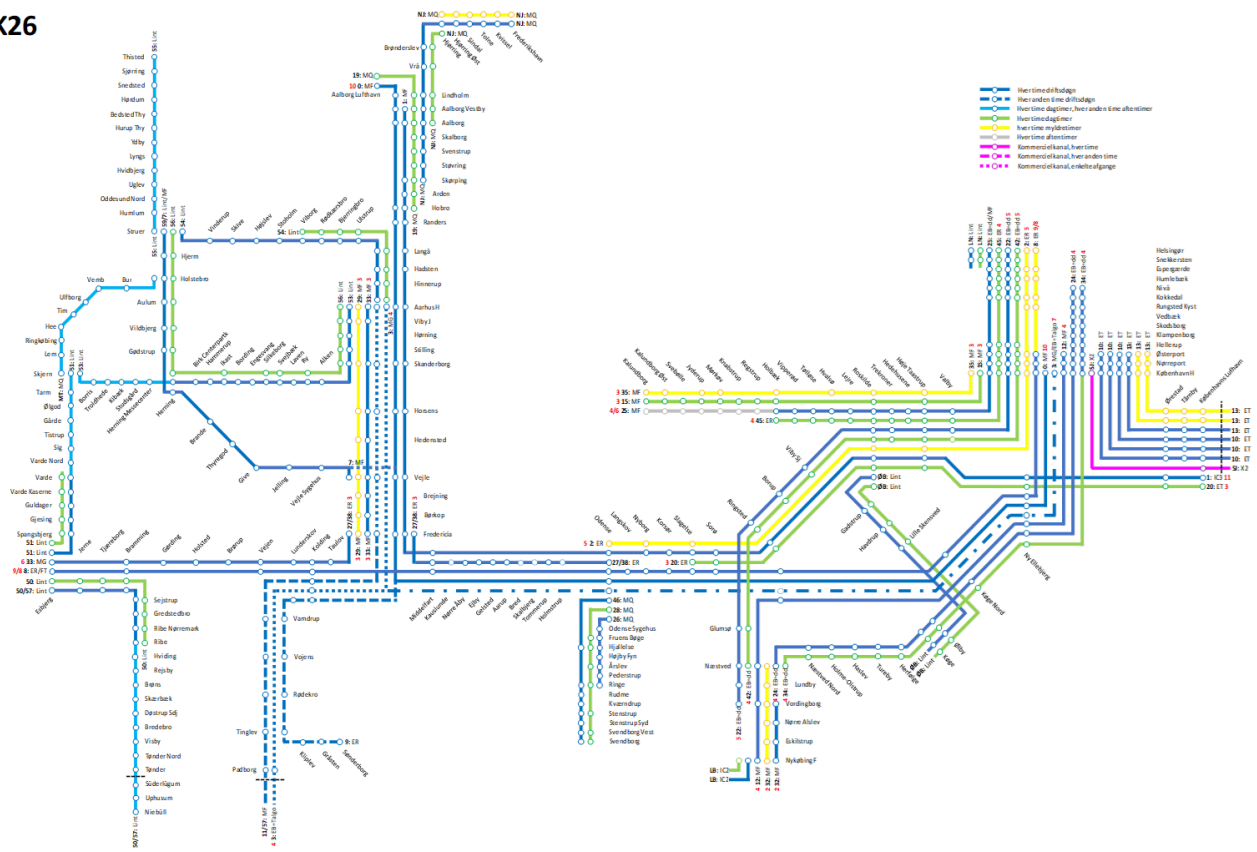


Illustration 3.2 - Expected line diagram for passenger trains for timetable year 2026

Dark blue: Every hour during operational day. Dark blue dotted: Every second hour during operational day. Light blue: Every hour during daytime hours, every second hour during evening hours. Green: Every hour during daytime hours. Yellow: Every hour during rush hours. Grey: Every hour during evening hours. Purple: Commercial train every hour. Pink dotted: Commercial train every second hour. Pink spaced dotted: Few daily trains.

3.2 Harmonization with neighboring IMs

There are two railway border crossings between Denmark and Germany: Padborg and Tønder. The border crossing traffic volumes are expected to be:

- Padborg: 1½ passenger train per hour, 2 freight trains per hour
- Tønder: 1 regional passenger train per hour

Between Denmark and Sweden there is one railway border crossing: Peberholm. The traffic volumes are expected to be:

- ½ fast passenger train per hour per direction
- 4 regional trains per hour per direction
(+2 regional trains in rushhours)
- 2 freight train per hour per direction

Reference documents

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Validation

Banedanmark

Name: Peter Svendsen

Title: Director Traffic Division

Date: 13.01.2023

Appendices

Appendix A: Planning Principles for Temporary Capacity Restrictions

Line section	Total closure	Single track operation	Train path per hour	Temporary Speed Restriction on neighboring track	Rerouting	Notes	Impact on traffic
Copenhagen - Høje Taastrup (Høje Taastrup - Roskilde).	Max 4 weeks during general industrial holydays or max 56 hours during weekends. Only weekend total closure between Roskilde and Høje Taastrup, or in shade of other closures.	Can be planned during general industrial holydays in June-August, other holydays, or in shade of other closures. Only one track can be closed at a time between two locations with crossovers. Between Høje Taastrup and Roskilde it is two tracks since the line section has four tracks.	6-8 (14 if two out of four tracks are available between Roskilde – Høje Taastrup)	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	Trains can alternatively run via Vigerslev-Køge Nord-Ringsted. This requires ETCS-capable rolling stock.	Passengers can be rerouted on suburban trains between Copenhagen and Høje Taastrup. Total closures will be avoided between Høje Taastrup and Roskilde. In case of closure, some traffic might be rerouted via Vigerslev-Køge Nord-Ringsted, where closures cannot be planned at the same time. Large events as e.g., Roskilde Festival (end of June) are taken into consideration.	Medium
Roskilde - Ringsted	Max 4 weeks during general industrial holydays or max 56 hours during weekends. Alternatively, in shade of other closures.	Can be planned during general industrial holydays in June-August, other holydays, or in shade of other closures. Only one track can be closed at a time between two locations with crossovers.	6-8	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	Trains can alternatively run via Vigerslev-Køge Nord-Ringsted. This requires ETCS-capable rolling stock.	In case of closure, passengers to Viby and Borup are rerouted via bus. Freight traffic rerouted via Køge Nord Large events as e.g., Roskilde Festival (end of June) are taken into consideration.	
Ringsted - Korsør - Nyborg	8 days and 8 hours during general industrial holydays or max 30 hours during weekends.	Can be planned during general industrial holydays in June-August, other holydays, or in shade of other closures. Only one track can be closed at a time between two locations with crossovers.	6-8 (5 on the line section Sorø-Slagelse)	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during	No rerouting possibility	In case of closure, freight traffic is canceled. Bus replacement should be dimensioned according to the particularly high ridership on the line section.	High

				week 27-32 or during other holidays.		Large events as e.g., Roskilde Festival (end of June) are taken into consideration	
Vigerslev-Køge Nord-Ringsted	Only in the evening or at night.	Only in the evening or at night.	6-8	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	Trains can alternatively run via Høje Taastrup - Roskilde	The line was opened recently, and only evening/night maintenance possessions are expected. However, track possessions cannot be planned at the same time as possessions on the line via Roskilde.	Medium
Peberholm - Copenhagen /Vigerslev	8 days and 8 hours during general industrial holydays or max 30 hours during weekends.	Can be planned during general industrial holydays in June-August or in shade of other closures. Only one track can be closed at a time between two locations with crossovers.	6-8	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route. Total closure of this section closes the ScanMed corridor. No passenger traffic.	In case of closure, freight traffic is canceled. Passengers can be rerouted via Metro between Copenhagen city and airport. Max 8,33 days of closure per year. Large events as e.g., Roskilde Festival (end of June) are taken into consideration	High
Snoghøj - (Fredericia)	8 days and 8 hours during general industrial holydays or max 30-56 hours during weekends.	Single-track operation in the period May-September, or in shade of other closures.	4	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	Trains can be rerouted in the triangle-area Snoghøj-Taulov-Fredericia.	If Fredericia-Snoghøj is closed, trains can run via Taulov after inversion. If Taulov-Snoghøj is closed, trains can run via Fredericia after inversion	High
Nyborg - (Snoghøj) - Lunderskov	8 days and 8 hours during general industrial holydays or max 30 hours during weekends.	Can be planned during general industrial holydays in June-August or in shade of other closures.	6	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line	No alternative route between Nyborg and Snoghøj and	In case of closure, freight traffic is canceled. Bus replacement should be dimensioned according to the particularly high ridership on the line section.	High

		Only one track can be closed at a time between two locations with crossovers.		closure, or during week 27-32 or during other holidays.	between Taulov and Lunderskov	Large events as e.g., Roskilde Festival (end of June) are taken into consideration.	
Lunderskov - (Tinglev) - Padborg	8 days and 8 hours during general industrial holydays or max 30 hours during weekends.	Single-track operation in the period June-August, or in other holyday periods.	Minimum 4	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route via Padborg. Train can be rerouted via Esbjerg to Tønder/Niebüll.	Rerouting of freight traffic via Tønder/Niebüll is considerably more costly and cannot guarantee the same amount of traffic as Lunderskov-Padborg.	High
Lunderskov - Bramming	Closures of the line can be planned all year (See notes)	Single-track operation in the period June-August, or in other holyday periods.	Minimum 4	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route	This stretch must not be closed at the same time as TIB 26. (Lk-Pa). Total closures should be as short as possible. Likewise, plans are made around summer holidays, as IC trains and freight trains are run. Total closures must be short and be sheltered by other works. There are IC trains and freight.	Low
Bramming - Esbjerg	During general industrial holydays or max 30 - 56 hours during weekends	Single-track operation in the period June-August, or in other holyday periods.	Minimum 4	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route	There are many travelers and several train systems between Bramming and Esbjerg including an Intercity system. There are freight transports.	Medium
Snoghøj - (Fredericia) - Skanderborg	8 days and 8 hours during general industrial holydays or max 30-56 hours during weekends.	Single-track operation in the period May-September, or in other holyday periods.	4	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned	Rerouting possible only when Fa-Sno is closed.	Trains must be turned in Taulov when Fredericia-Snoghøj is blocked. Trains must be turned in Fa when there is a block between Taulov-Snoghøj. There must be at least 6 train channels between Fredericia and Vejle.	High

				as a complete line closure, or during week 27-32 or during other holidays.			
Skanderborg-Aarhus	8 days and 8 hours during general industrial holydays or max 30-56 hours during weekends.	Single-track operation in the period June-August, or in other holyday periods.	4-6	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route	There must be 4-6 train channels per hour between Sd-Ar. Due to several railway companies on this stretch.	High
Aarhus - Aalborg	8 days and 8 hours during general industrial holydays or max 30-56 hours during weekends.	Single-track operation in the period May-September, or in other holyday periods.	Minimum 4	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route	There is the possibility of a long detour from Langå - Struer - Skanderborg. From a Traffic point of view, this is not an option.	Medium
Ringsted - Næstved	8 days and 8 hours during general industrial holydays or max 30 hours during weekends.	Can be planned during general industrial holydays in June-August or in shade of other closures. Only one track can be closed at a time between two locations with crossovers	6	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	There are limited options for detours via Roskilde-Køge due to ERTMS. However, the possibility will increase as the DSB equipment is equipped with ERTMS.	Freight must be able to run between Rg-Næ until their locomotives are equipped with ERTMS so they can run via Roskilde-Køge-Næstved. DSB must have access to Næstved with their Electric locomotives. Longer single-track operations can be provided, as well as total blocking in case of detours.	Medium

Næstved – Nykøbing F	Total closures are given to the RFB project until 2022 (K23), which has already been agreed.	Single track operation is given to the RFB project until 2022 (K23), which has already been agreed.	Minimum 6	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route	RFB coordinates the work on TIB 2 also including the work on EP and SP. Local trains must be able to come to Nykøbing F. with their customers outside the holiday periods. There is a lack of clarification regarding driving before SP.	High
Elsinore - Copenhagen	Maximum 6 weeks during general industrial holydays	Can be planned during general industrial holydays week 27-32. Between Østerport-Nivå, as well as Snekkersten-Elsinore. Between Nivå-Snekkersten there may be closures at other times of the year. Single-track operation can also be carried out in connection with public holiday periods.	Minimum 6 (On the line section Nivå-Snekkersten there are less than 6)	Always at least 80 km/h on neighboring track. In case of a speed restriction of 40km/h this must be planned as a complete line closure, or during week 27-32 or during other holidays.	No alternative route	Trains are reversed in Nivå between Østerport-Nivå. Lokalbanen and DSB run between Snekkersten-Elsinore. Freight runs 2-3 times a week between Østerport-Elsinore-Snekkersten and on to the tracks managed by Lokalbanen.	Medium

Table A.1 - TCRs principles for individual line sections in Denmark

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