



## **Capacity Strategy 2028**

Swedish Transport Administration

Version 1.0 13/12/2024

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## 0 Introduction

In order to harmonise rail capacity allocation in Europe, RailNetEurope (RNE) and Forum Train Europe (FTE), with the support of the European Rail Freight Association (ERFA), are undertaking a project by the name of Timetable Redesign for Smart Capacity Management (TTR). The aim is to meet the needs of the market more accurately and achieve optimal use of existing capacity. For passenger services, it will mean earlier access to the final timetable, facilitating earlier and more reliable ticket purchases for passengers. For freight services, it will mean greater opportunities to apply for capacity for train paths and other services closer to the start of services, thus creating greater flexibility.

Further information about TTR can be found on the Swedish Transport Administration website <u>Timetabling and Capacity Redesign (TTR Sverige)</u> - <u>Bransch</u> (trafikverket.se) and the RNE website <u>Timetable Redesign of the International</u> <u>Timetabling Process</u>.

The first step in the TTR process is the Capacity Strategy. Work on the strategy begins at X-60 and the strategy is published annually at X-36 (December).

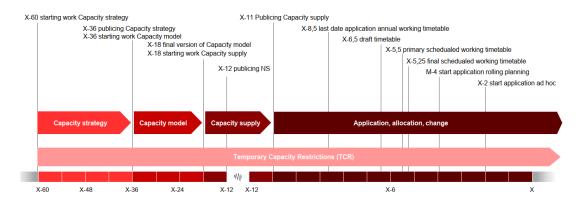


Figure 1. Proposed process according to TTR

The Capacity Strategy is intended to create a common forecast of expected conditions for the use of the railway during a specific working timetable year, based on planned and known capacity restrictions, completed investments and estimated traffic flows. The Capacity Strategy is also intended to define planning principles for capacity planning and allocation process going forward. The Capacity Strategy is not legally binding.

Preparations for TTR implementation continue on the other stages, including the development of a Capacity Model that describes in greater detail how capacity volumes are allocated. This will give an idea of how capacity on different routes will be allocated to freight trains and high-speed trains, for example. The Capacity Model is based on the Capacity Strategy. The Swedish Transport Administration will not publish a Capacity Model for Annual Timetable 2028, as legal support for this process is not yet in place.

Railway undertakings, contractors, policymakers and other stakeholders constitute the target group for this document. Infrastructure managers, terminals and service providers may use it to support coordination of long-term planning.

## 0.1 Contacts

The draft Capacity Strategy will be published on the Swedish Transport Administration website at x-38. Information concerning the publication will be provided via Info avtalskund (Information to track access agreement customers) and Leverantörsnytt (the Supplier newsletter).

The industry will be informed about the Capacity Strategy during the autumn via established forums such as industry collaborations and strategic dialogues.

Views on the Capacity Strategy can be submitted to <u>strakplanering@trafikverket.se</u> between x-38 to x-37.

Contacts	Email	Website
The Swedish Transport Administration's Capacity Strategy	strakplanering@trafikverket.se	Capacity Strategy TT2028 - Bransch (trafikverket.se)
		Capacity Strategies - RNE
Capacity Strategies prepared by other European infrastructure managers		Capacity Strategies - RNE
National One-Stop Shop	oss@trafikverket.se	
Godskorridor ScanMed and Corridor One-stop Shop (C- OSS)		www.scanmedfreight.eu
RailNetEurope (RNE), contact details for international train path capacity		<u>www.oss / c-oss RNE</u>

## Table 1 Contact

## 0.2 Geographical scope

The Swedish Transport Administration is responsible for the administration, allocation process and traffic management of those parts of the Swedish rail network that are included in the Capacity Strategy. Svedab AB owns the Swedish land connection for the Øresund Bridge on the Svågertorp–Lernacken route. Services on this section are also allocated and traffic managed by the Swedish Transport Administration.

The Capacity Strategy for the 2028 Working Timetable covers the parts of the rail network designated routes 1–9 on the map as well as other parts of the railway network which are either important diversion routes or need for other reasons to be coordinated with the nine designated routes.

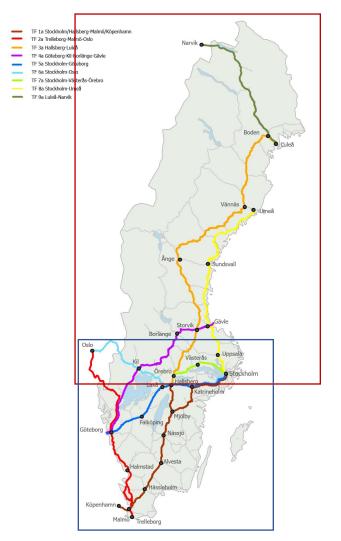


Figure 2. Routes 1-9. The boxes show how the sections are divided in this document

## 0.3 Neighbouring infrastructure manager

Route	Border point	Neighbouring infrastructure managers
1 Stockholm/Hallsberg- Malmö/Copenhagen	Lernacken	Banedanmark, (Öresundsbro Consortium for Öresundsbron) <sup>1</sup>
2 Trelleborg-Malmö-Oslo	Kornsjö	Bane NOR
6 Stockholm-Oslo	Charlottenberg	Bane NOR
9 Luleå-Narvik	Riksgränsen	Bane NOR
	Storlien	Bane NOR

Table 2 Neighbouring infrastructure managers

<sup>&</sup>lt;sup>1</sup> Øresund Fixed Link, west from Lernacken to Copenhagen Airport, is managed by Øresundsbro Konsortiet, which is jointly owned by the Danish and Swedish states through the companies A/S Øresund (50%) and Svedab AB (50%). A/S Øresund manages the section between Copenhagen Airport and Copenhagen Central Station.

The Swedish Transport Administration and Banedanmark consider themselves to be adjacent infrastructure managers with regards to the Øresund Fixed Link, even though their respective networks do not connect directly.

Route	Border point	Neighbouring infrastructure managers
	Haparanda	Väylävirasto (Finnish Transport Infrastructure Agency)

## 0.3.1 Connecting railway networks

Major connected infrastructure:

- Inlandsbanan (administered by Inlandsbanan AB)
- Arlandabanan (administered by A-Train AB)

## 0.4 Terminals and service providers

A list of service providers and terminals connected to Swedish routes can be found on the Swedish Transport Administration website at Providers of traffic related to <u>Providers of traffic related to</u> <u>railway transport in Sweden - Bransch</u> (trafikverket.se).

The Rail Facilities Portal (RFP) is a joint European portal in which service providers can publish descriptions of their facilities: <u>http://railfacilitiesportal.eu</u>. Information on terminals and service providers in Sweden is also available there.

## **1** Expected infrastructure capacity

This chapter describes the various infrastructure projects that will increase capacity and are expected to be completed during the period 2025-2028. It also contains information about permanent capacity reductions.

## Definitions

**X-36:** The X stands for the start of the annual timetable and the number stands for the number of months before the start of an annual timetable.

**Project approved:** For a named infrastructure project in the National Plan for the Transport Infrastructure, Yes means that the project has received a decision to start construction from the government. For other infrastructure project, Yes means that the project has been allocated funds in the Swedish Transport Administration's budget.

**Financing secured:** For a named infrastructure project in the National Plan for Transport Infrastructure, Yes means that the project is fully financed within the National Plan's timeframe. For other infrastructure project, Yes means that the project has been allocated funds in the Swedish Transport Administration's budget.

**Time of execution:** The years that construction is ongoing in the transport system. Indicated by start year and the year in which construction ends. How large the traffic impact is can vary in the years that production is in progress. ("Time of execution" in table 6)

**Opened to traffic:** Time when a new or rebuilt facility begins to be trafficked and used as part of the infrastructure according to the intended facility function.

**Permanent capacity reductions:** By permanent reduction of capacity is meant the removal of a railway facility, or that the Swedish Transport Administration has decided to close down a part of the railway network where a decision to cease maintenance has been made 3 years earlier, which the Swedish Transport Administration can do if traffic on a part of the network or the facility is of only insignificant extent.

# 1.1 Additional available capacity – Southern Sweden

The table below shows planned infrastructure projects according to current plans for Route 1 Stockholm/Hallsberg-Malmö/Copenhagen, Route 2 Trelleborg–Malmö-Oslo, Route 4 Gothenburg-Kil-Borlänge-Gävle, section Gothenburg-Nykroppa, Route 5 Stockholm–Gothenburg, Route 6 Stockholm–Oslo and diversionary lines and other lines in southern Sweden.

If a project has been included in the previous Capacity Strategy and has an updated time for opening to traffic, the modifications are shown in <u>blue colour</u>, to facilitate traceability.

Table 3. Projects to increase capacity 2	2025–2028 in Southern Sweden
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ld	Network segment	Description	Effect	Project approved	Financing secured	Opened to traffic		
	Route 1 Stockholm/Hallsberg-Malmö/Copenhagen							
1	Älvsjö-Huddinge	Allows more efficient traffic	Yes	Yes	Dec 2026			
2	Katrineholm	Two passing tracks	The passing tracks will allow freight services to pass during rush hours, as well as boosting capacity at other times of day, improve punctuality and increase recovery ability	No	Yes	Apr 2027		
3	East link, Norrköping	New freight yard (Åby)	Trains up to 750 meters in length, increased numbers of freight services from and to the Norrköping area	Yes	Yes	Dec 2024		
4	Jakobshyttan-Degerön	Double track	Increased number of trains, higher speed	Yes	Yes	Dec 2024		
5	Alvesta-Hässleholm	Signal trimming	Increased capacity and recovery ability	Yes	Yes	Jun 2026		
6	Malmö-Hallsberg	Measures to extend freight trains, braking percentage table	Trains with low braking performance can travel at higher speeds - shorten running times and reduce the number of overtakes	Yes	Yes	Jun 2025		
		Route 2 1	Frelleborg – Malmö -Oslo		·			
7	Trelleborg	Measures to increase speeds	Shortens running times, increase the robustness	Yes	Yes	Dec 2027		
8	Lockarp-West Ingelstad	Intermediate block signal	Possible to run trains at shorter intervals and maintaining good freight services even during peak passenger hours	Yes	Yes	Dec 2027		
9	Kävlinge-Arlöv	Lomma Line, Stage 2 incl station Alnarp and station Flädie	950 metres long passing tracks, new stations for passengers, half-hourly local train services, good capacity for an anticipated increase in freight services	Yes	Yes	Dec 2027		

ld	Network segment	Description	Effect	Project approved	Financing secured	Opened to traffic
10	Båstad	Turning track	Trains can turn in Båstad instead of Förslöv – increased capacity	Yes	Yes	Dec 2026
11	Varberg	Double track (tunnel) including intermodal transit facility	Two 780-metre passing tracks, four tracks for services on the West Coast Line and one track for services to and from the Viskadalen Line	Yes	Yes	Jul 2025
12	West Link, section Olskroken - Gothenburg Central station (Centralen)	Two new platforms	Reduces overcrowding at Gothenburg Central Station and allows longer trains to use the station	Yes	Yes	Dec 2026
13	Olskroken	Grade-separated tracks	Separates commuter and regional services from intercity services in Olskroken. reduces the load on Gothenburg Central Station, provides greater opportunities for freight services to run between the Norway/Vänern Line and the West Coast Line	Yes	Yes	Dec 2026
14	Gothenburg Lärje	Holding sidings	Increase stabling capacity for regional and local services	Yes	Yes	Dec 2026
15	Malmö-Gothenburg	Braking percentage table	Allowing trains with less braking ability to travel at higher speeds, shortens running times and reduce the number of overtakes	Yes	Yes	Jun 2025
		Route 4 Gothenburg-Kil-Bor	länge-Gävle, section Gothenburg-Nykroppa			
12	West Link, section Olskroken - Gothenburg Central station (Centralen)	Two new platforms	See route 2 Trelleborg-Malmö-Oslo above			
13	Olskroken	Grade-separated tracks	See route 2 Trelleborg-Malmö-Oslo above			
14	Gothenburg Lärje	Holding sidings	See route 2 Trelleborg-Malmö-Oslo above			
		Route 5 S	Stockholm – Gothenburg			
1	Älvsjö-Huddinge	Increase speeds ATC 2	See route 1 Stockholm/Hallsberg-Malmö/Copen	hagen above		

ld	Network segment	Description	Effect	Project approved	Financing secured	Opened to traffic
2	Katrineholm	Two passing tracks	See route 1 Stockholm/Hallsberg-Malmö/Copen	hagen above		
16	Välevattnet	Passing track down track	Increases capacity between Laxå and Skövde	Yes	Yes	Oct 2025
17	Falköping	Connection to the intermodal terminal (Marjarp)	A connection to the north and a new arrival/departure yard increases the capacity at the terminal, reduces congestion at Falköping Central	Yes	Yes	Autumn 2028
18	Lerum	Two turning tracks/passing tracks	Increases capacity between Gothenburg Central-Alingsås	Yes	Yes	Dec 2026
12	West Link, section Olskroken - Gothenburg Central station (Centralen)	Two new platforms	See route 2 Trelleborg-Malmö-Oslo above			
13	Olskroken	Grade-separated tracks	See route 2 Trelleborg-Malmö-Oslo above			
		Route	e 6 Stockholm – Oslo			
1	Älvsjö-Huddinge	Increase speeds ATC 2	See route 1 Stockholm/Hallsberg-Malmö/Copen	hagen above		
2	Katrineholm	Two passing tracks	See route 1 Stockholm/Hallsberg-Malmö/Copen	hagen above		
19	Karlstad Central	Renewal of tracks, platforms	Improves accessibility and provide additional platforms for passenger services, although with reduced utility for freight services.	Yes	Yes	Dec 2025
		Diversionary line	es/Other lines southern Sweden			
20	Blekinge Coast Line: Bredåkra	Passing track and increased speeds	Reduces travel times, increases the robustness. Allows half-hourly services with passenger trains	No	Yes	Autumn 2027
21	Råå Line: Billeberga- Teckomatorp	Intermediate block signal	Facilitates freight services.	Yes	Yes	Dec 2026
22	Skåne Line: Finja-Tyringe- Västra Torup-Perstorp	Intermediate block signal	Facilitates freight services, increases recovery ability	Yes	Yes	Dec 2027

ld	Network segment	Description	Effect	Project approved	Financing secured	Opened to traffic
23	Markaryd Line: Knäred	Passing track and platforms	Allows passenger services on the section between Halmstad and Markaryd	No	Yes	Dec 2027
24	Markaryd Line: Veinge	Platform	Allows passenger services on the section between Halmstad and Markaryd	Yes	Yes	Dec 2027
25	Markaryd Line: Skogaby, Majenfors	Intermediate block signal	Allows freight services simultaneously with the new passenger services	Yes	Yes	Dec 2027
26	Bocka Line: Nässjö-Eksjö	Electrification	Allows electric vehicles and continuous services	No	Yes	Dec 2027
27	Jönköping Line: Huskvarna, Tenhult	Platform extensions	Increased capacity for longer trains at the stations	Yes	Yes	Dec 2027
28	Viskadalen Line	Extension of platforms	Allows 81-metre-long trains	Yes	Yes	Dec 2027
29	Älvsborg Line: Vedum	Parallel movement	Shortens running times, increases capacity. increases recovery ability.	Yes	Yes	Dec 2027
30	Älvsborg Line: Håkantorp	New switch	Efficient train meet between Herrljunga and Lidköping which shortens running times	Yes	Yes	Dec 2027
31	Älvsborg Line: Vänersborg	Renewal	Three trains can meet at the same time, new turning track, 170 meters long platform	Yes	Yes	Dec 2027
32	Sala-Oxelösund: Oxelösund	Railway yard, stage 1 och 2	Increased capacity when the old Iron Ore Railway yard will connect to new signal interlocking, new tracks and switches	Yes	Yes	Dec 2027
33	East Link: Nyköping	Intermodal transit facility	Reconstruction of intermodal transit facility to adapt to East Link	No	Yes	Dec 2027

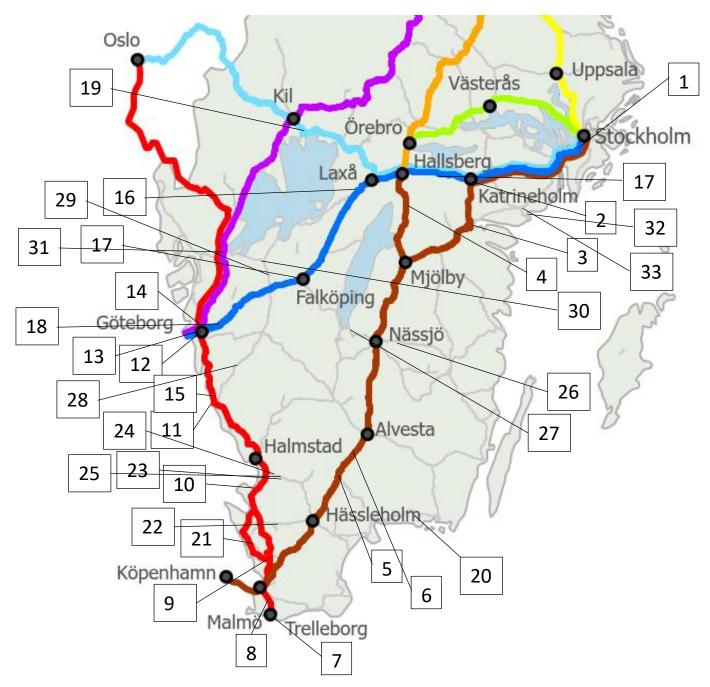


Figure 3. Map showing location of numbered projects in southern Sweden

## 1.2 Reduced available capacity - Southern Sweden

No planed permanent reductions on the railway network that the Swedish Transport Administration manages.

# 1.3 Additional available capacity – Northern Sweden

The table below shows planned infrastructure projects according to current plans for Route 3 Hallsberg–Luleå, Route 4 Gothenburg-Kil–Borlänge–Gävle section

Nykroppa–Gävle, Route 7 Stockholm–Västerås–Örebro, Route 8 Stockholm–Umeå, Route 9 Luleå–Narvik and diversionary lines and other lines in Northern Sweden.

If a project has been included in the previous Capacity Strategy and has an updated time for opening to traffic, the modifications are shown in <u>blue colour</u>, to facilitate traceability.

## Table 4. Projects to increase capacity 2025–2028 in Northern Sweden

ld	Network segment	Description	Effect	Project approved	Financing secured	Opens to traffic		
	Route 3 Hallsberg – Luleå							
1	Skinnskatteberg	Samtidig infart, höjd hastighet	Allows more efficient train meet	Yes	Yes	Autumn 2027		
2	Dagarn and Jularbo	Dagarn - parallel movement. Jularbo - increased speeds through switch and parallel movement	Allows more efficient train meet	No	Yes	Autumn 2027		
3	Morshyttan	Extension of passing track (measures to increase the length of freight trains)	Allows 750-metres-long trains, with parallel movement, increases speeds through switch (80 km/h)	Yes	Yes	Autumn 2025		
4	Ånge-Bräcke	Measures to increase speeds	Reduces travel times by approximately 5 minutes	Yes	Yes	Summer 2028		
5	Sävastnäs	Passing track	Allows 750-metre-long trains, with parallel movement.	No	Yes	Dec 2026		
6	Sävastklinten-Sävast	Partial double track	Allows 750-metre-long trains, with parallel movement	No	Yes	Dec 2026		
		Route 4 Gothenburg - Kil – Borläng	ge -Gävle, section Nykroppa-Gävle					
7	Grängesberg	Parallel movement; 130-metres-long medium high platform	Removal of temporary speed reduction, improves the loading and unloading of goods, increases loading gauge for exceptional transports	Yes	Yes	Dec 2027		
8	Ludvika	Parallel movement	Allows more efficient train meet	Yes	Yes	Summer 2026		
9	Borlänge-Falun	Measures to increase speeds and Ornäs, parallel movement	Increases capacity and robustness on the section, reduces of travel times	Yes	Yes	Autumn 2025		

ld	Network segment	Description	Effect	Project approved	Financing secured	Opens to traffic
10	Falun-Storvik	Measures to increase speeds, incl. road safety measures	Increases capacity and robustness on the section, reduces of travel times	Yes	Yes	Dec 2025
		Route 7 Stockholm	– Västerås - Örebro			
11	Barkarby Station	Upgrade to regional station	Extended by two platforms for regional services	Yes	Yes	Dec 2026
		Route 8 Stock	holm – Umeå			
12	Uppsala	New turning track at Österplan	Increases capacity for turning trains from Stockholm	Yes	Yes	Dec 2025
13	Tierp	Parallel movement	Increases capacity and robustness	Yes	Yes	Dec 2027
14	Uppsala-Gävle	Adaptation to new trains, stage 1 Storvreta, Vattholma, Örbyhus and stage 2 Skyttorp, Tobo	The platforms are being extended to accommodate a new type of vehicle	Yes	Yes	Dec 2027
15	North Bothnia Line, Umeå- Dåva	First stage of North Bothnia Line	New track to connect to industrial facilities in Dåva	Yes	Yes	Dec 2026
		Route 9 Lul	eå – Narvik			
5	Sävastnäs	Passing track	See route 3 Hallsberg-Luleå above			
6	Sävastklinten-Sävast	Partial double track	See route 3 Hallsberg-Luleå above			
16	Styrområde Gällivare, Linaälv, part of Kiruna	ERTMS (European Rail Traffic Management System)	New signalling system	Yes	Yes	Dec 2024
17	Styrområde part of Kiruna and part of Björkliden	ERTMS	New signalling system	Yes	Yes	Jun 2025
18	Styrområde part of Björkliden	ERTMS	New signalling system	Yes	Yes	2026
19	Nuortikon, Murjek, Nattavaara	Railway yard extension	Allows two 750-metre trains to pass in opposite directions, increases capacity, possible to run longer trains	No	Yes	Autumn 2028

ld	Network segment	Description	Effect	Project approved	Financing secured	Opens to traffic
20	Sikträsk	Railway yard extension	Allows two 750-metre trains to pass in opposite directions, increases capacity, possible to run longer trains	No	Yes	Dec 2026
21	Linaälv, Harrå, Fjällåsen	Railway yard extension	Allows two 750-metre trains to pass in opposite directions, increases capacity, possible to run longer trains	Yes	Yes	2025- 2026
22	Kiruna ore railway yard	New connection to LKAB	Direct access to the steelwork area	Yes	Yes	Dec 2027
		Diversionary lines/Other	r lines northern Sweden			
23	Dala Line: Hedemora- Borlänge	Measures to increase speeds	Allows increased frequency of services and reduces travel times	Yes	Yes	Dec 2027
24	Sala-Oxelösund: Ransta	Parallel movement	Allows more efficient train meet	Yes	Yes	Dec 2026

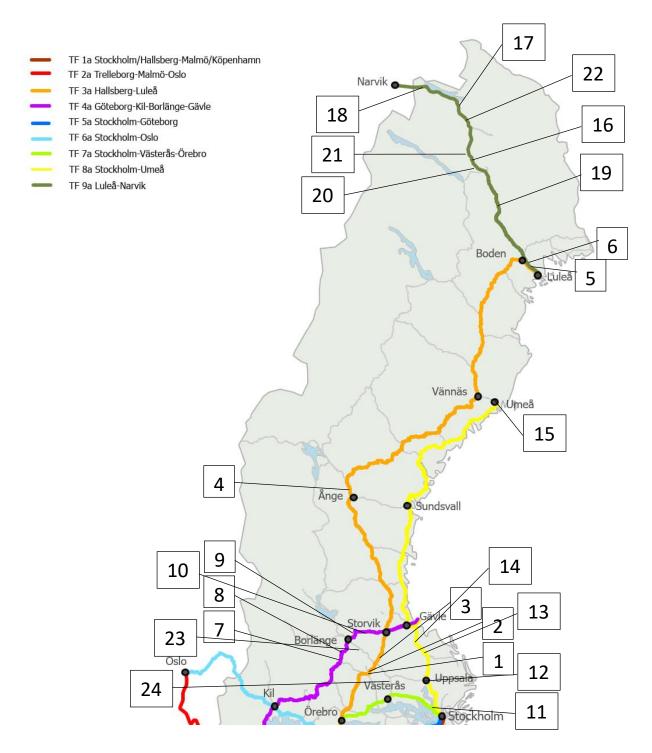


Figure 4. Map showing location of numbered projects in northern Sweden

## 1.4 Reduced available capacity

No planed permanent reductions on the railway network that the Swedish Transport Administration manages.

## 2 Temporary capacity restrictions

Many rail projects will result in temporary capacity restrictions (TCRs) during the 2028 Working Timetable. More information about selected planned projects on the Swedish rail network can be found in the Swedish Transport Administration's Implementation Plan, which is available at <u>trafikverket.se</u>. The Capacity Strategy, presents the TCRs that will have a major impact on traffic.

## 2.1 Principles for TCR planning

The principles for planning TCRs on the Swedish rail network are based on previous experience of rerouting and dialogue with railway undertakings and other applicants. Dialogues regarding TCRs are also held with Bane NOR and Banedanmark.

Classification	Consecutive days	Impact on traffic	First publication deadline
Major impact TCR	More than 30 consecutive days	More than 50 percent of the estimated traffic volume on a railway line per day	X-24
High impact TCR	More than 7 consecutive days	More than 30 percent of the estimated traffic volume on a railway line per day	X-24
Medium impact TCR	7 consecutive days or less	More than 50 percent of the estimated traffic volume on a railway line per day	X-12
Minor impact TCR		More than 10 percent of the estimated traffic volume on a railway line per day	X-4

## Table 5. Classification of temporary capacity restrictions

# 2.1.1 Principles for planning TCRs, southern part of Sweden

## 2.1.1.1 Route 1 Stockholm/Hallsberg – Malmö/Copenhagen

The following principles have been applied to the planning of TCRs on Route 1 Stockholm/Hallsberg–Malmö/Copenhagen.

### General

Planning of engineering work should be coordinated with Banedanmark to minimize traffic impact for cross-border traffic.

### Long-distance passenger trains

A maximum of one interruption to services on the route at any one time to avoid multiple changes or diversions for passengers.

During weekend closures, it is important to ensure that trains are able to run until 22:00 on Fridays and from 14:00 on Sundays. Between Mjölby-Malmö, it is important to ensure that trains are able to run until 01:00 on Saturdays and from 17:00 on Sundays.

Two of three routes into Stockholm (Mälaren Line, Western Main Line, East Coast Line) should always be open to traffic.

In the Malmö area, one of the two routes into Malmö Central Station should be open (Southern Main Line or Lomma Line).

The Western Main Line between Flemingsberg–Tumba–Järna is the diversionary line for the Grödinge Line Flemingsberg–Södertälje Syd övre–Järna.

The Nyköping Line is the diversionary line for the Western Main Line and Southern Main Line Järna–Åby.

The Freight Line through Bergslagen between Mjölby-Hallsberg is the diversionary line for the Southern Main Line Mjölby–Åby–Katrineholm.

The Western Main Line/West Coast Line (via Gothenburg) and the Markaryd Line are the diversionary lines for the Southern Main Line Hässleholm–Nässjö.

The Skåne Line between Hässleholm–Helsingborg/Kattarp and the West Coast Line between Kattarp/Helsingborg–Malmö is the diversionary line for passenger services on the Southern Main Line between Lund–Hässleholm.

#### **Freight trains**

The line should not be closed on both sides of Kimstad at the same time (trains to and from Skärblacka/Finspång need to reach Kimstad from one direction or the other).

The line should not be closed on both sides of Älmhult at the same time (trains to and from Olofström need to reach Älmhult from one direction or the other).

The Western Main Line/Jönköping Line (via Falköping) is the diversionary line for freight services from Nässjö to Hallsberg, and in some cases for Mjölby–Hallsberg in order to enter Hallsberg from the right direction.

The Western Main Line/Southern Main Line (via Katrineholm) is the diversionary line for the Freight line through Bergslagen between Hallsberg–Mjölby.

The Skåne Line between Hässleholm–Åstorp and Freight Line through Skåne between Åstorp–Malmö is the diversionary line for freight services Lund– Hässleholm.

The Markaryd Line (Eldsberga-Hässleholm) is the diversionary line for the Southern Main Line north of Hässleholm. Malmö-Kävlinge-Åstorp-Ängelholm is also diversionary line for the Southern Main Line.

#### **Regional and local trains**

It is important that changes between regional services and long-distance services works satisfactorily.

Rerouting is not normally an alternative for regional and commuter services.

In the Stockholm and Malmö there should not be any interruptions to services on weekdays.

Critical sections of line with a large proportion of regional and commuter services include:

- Copenhagen-Malmö
- Malmö-Lund
- Lund-Hässleholm
- Hässleholm-Alvesta
- Tranås-Norrköping
- Stockholm City-Tumba-Södertälje Hamn.

### 2.1.1.2 Route 2 Trelleborg – Malmö - Oslo

The following principles have been applied to the planning of TCRs on Route 2 Trelleborg–Malmö–Oslo.

#### General

Planning of engineering work should be coordinated with Banedanmark to minimize traffic impact for cross-border traffic.

#### Long-distance passenger trains

A maximum of one interruption to services on the route at any one time to avoid multiple changes or diversions for passengers (simultaneous interruption to services north and south of Gothenburg may be acceptable under certain circumstances).

During weekend closures, it is important to ensure that trains run until 22:00 on Fridays and from 14:00 on Sundays.

In the Malmö area, one of the two routes into Malmö Central Station should be open (Southern Main Line or Lomma Line).

The Freight Line through Skåne via Åstorp–Hasslarp is the diversionary line for passenger services between Ängelholm and Kattarp.

#### **Freight trains**

The line should not be closed on both sides of Värö at the same time (trains to and from Värö Bruk need to reach Värö from one direction or the other).

The Kongsvinger Line and Värmland Line Oslo–Kil–Laxå–Falköping-Gothenburg is the diversionary line for Oslo–Skälebol–Gothenburg.

The Western Main Line/Älvsborg Line/Viskadalen Line Gothenburg–Herrljunga– Borås is the diversionary line for Gothenburg–Varberg.

The Markaryd Line and Southern Main Line Malmö–Hässleholm–Halmstad is the diversionary line for Malmö–Hässleholm–Halmstad.

The Southern Main Line and Råå Line Malmö–Eslöv–Teckomatorp is the diversionary line for freight traffic Arlöv–Kävlinge–Teckomatorp.

The Southern Main Line and Coast-to-Coast Line Malmö–Gothenburg is the diversionary line for the West Coast Line.

#### **Regional and local trains**

Contiguous closures are preferable.

It is important that changes between regional services and long-distance services works satisfactorily.

Rerouting is not normally an alternative for regional and commuter services.

In the Gothenburg and Malmö metropolitan area, interruptions to services on weekdays are not normally acceptable.

Critical sections of line with a large proportion of regional and commuter services include:

- Copenhagen-Malmö
- Malmö-Helsingborg
- Varberg-Kungsbacka-Gothenburg
- Gothenburg-Öxnered.

## 2.1.1.3 Route 4 Gothenburg-Kil-Borlänge-Gävle, section

#### Gothenburg-Nykroppa

The following principles have been applied to the planning of TCRs on Route 4 Gothenburg–Kil–Borlänge–Gävle section Gothenburg-Nykroppa.

#### Long-distance passenger trains

The Värmland Line and Freight Line Kil–Laxå–Hallsberg–Storvik is the diversionary line for the Bergslagen Line Kil–Storvik.

The Western Main Line and Freight Line (via Hallsberg) is the diversionary line for the Bergslagen Line Gothenburg–Storvik.

The Värmland Line Kil–Kristinehamn–Nykroppa is the diversionary line for Nykroppa-Kil.

If the Freight Line through Bergslagen and the Bergslagen Line need to split times simultaneously, the Freight Line through Bergslagen should be allocated days and the Bergslagen Line nights.

Split times can be advantageously allocated during the day (to leave space for Norway–Norway services at night), unless the Freight Line through Bergslagen is closed during the day.

### 2.1.1.4 Route 5 Stockholm – Gothenburg

The following principles have been applied to the planning of TCRs on Route 5 Stockholm–Gothenburg.

### General

In the event of interruptions to services, at least one diversionary line must be open to traffic.

To manage the passenger volume at Stockholm Central Station, West Main Line and East Coast Line should not be closed at simultaneously because the capacity for the replacement traffic to and from City Terminal is not sufficient.

#### Long-distance passenger trains

Two of three routes into Stockholm (Mälaren Line, Western Main Line, East Coast Line) must always be open to traffic.

During weekend closures, it is important to ensure that trains run until 22:00 on Fridays and from 14:00 on Sundays.

Älvsborg Line Herrljunga–Öxnered is the diversionary line for the Western Main Line Gothenburg–Herrljunga.

The Coast-to-Coast Line and Älvsborg Line Gothenburg–Borås–Herrljunga is the diversionary line for the Western Main Line Gothenburg–Herrljunga.

Norway/Vänern Line and the Värmland Line Gothenburg–Kil–Laxå is the diversionary line for the Western Main Line Gothenburg–Laxå. Falköping– Nässjö– Hallsberg is also a diversionary line for the Western Main Line Falköping–Laxå– Hallsberg

The Mälar Line Hallsberg–Västerås–Stockholm is the diversionary line for the Western Main Line section Hallsberg–Stockholm.

Hallsberg–Mjölby–Nässjö–Falköping is the diversionary line for the Western Main Line Hallsberg–Laxå.

Hallsberg – Ställdalen – Kristinehamn/Kil is the diversionary line for section Hallsberg – Laxå to Värmland/Norge.

The Western Main Line section Flemingsberg–Tumba–Järna is the diversionary line for the Grödinge Line Flemingsberg–Södertälje Syd– Järna.

The Svealand Line Södertälje Syd övre–Eskilstuna-Hallsberg is the diversionary line for the Western Main Line section Södertälje Syd övre– Hallsberg.

The Southern Main Line section Katrineholm–Alvesta is the diversionary line for the Western Main Line section Katrineholm-Gothenburg.

#### **Freight trains**

When rerouting via the Älvsborg Line and Coast-to-Coast Line, there is a trainlength limit of 630 metres due to shortage of long tracks in Herrljunga. Longer trains must be rerouted via Laxå–Kil–Öxnered.

#### **Regional and local trains**

It is important that changes between regional services and long-distance services works satisfactorily.

In the Stockholm and Gothenburg metropolitan areas, interruptions to services should be avoided on weekdays, with the exception of the summer period.

Rerouting is not normally an alternative for regional and commuter services. Critical sections of line with a large proportion of regional and commuter services include:

- Stockholm City-Tumba-Södertälje Hamn
- Gothenburg-Alingsås.

### 2.1.1.5 Route 6 Stockholm – Oslo

The following principles have been applied to the planning of TCRs on Route 6 Stockholm–Oslo.

#### General

Planning of engineering work should be coordinated with Bane Nor to minimize traffic impact for cross-border traffic.

#### Long-distance passenger trains

A maximum of one interruption to services on the route at any one time to avoid multiple changes or diversions for passengers.

Two of three routes into Stockholm (Mälaren Line, Western Main Line, East Coast Line) must always be open to traffic.

The line must not be closed on both sides of Karlstad at the same time.

There are no acceptable diversionary lines for Hallsberg–Laxå, meaning that TCRs impact on traffic must be limited to the greatest possible extent.

The Mälaren Line Stockholm–Västerås–Hallsberg is the diversionary line for the Western Main Line Hallsberg–Stockholm.

The Bergslagen Line and Norway/Väner Line Kil–Skälebol–Kornsjö is the diversionary line for the Värmland Line Kil–Charlottenberg.

Järdesbruk–Frövi–Ställdalen–Nykroppa–Kristinehamn/Kil is the diversionary line for the Värmland Line Laxå–Kristinehamn/Karlstad.

### **Regional and local trains**

It is important that changes between regional services and long-distance services works satisfactorily.

In the Stockholm metropolitan area, interruptions to services on weekdays are not normally acceptable.

Rerouting is not normally an alternative for regional and commuter services. Critical sections of line with a large proportion of regional and commuter services include:

- Stockholm-Västerås.

## 2.1.2 Principles for planning TCRs, northern part of Sweden

### 2.1.2.1 Route 3 Hallsberg - Luleå

The following principles have been applied to the planning of TCRs on Route 3 Hallsberg–Luleå.

### General

In the event of long interruptions to services, at least one diversionary line must be open to traffic.

Hallsberg-Flen-Eskilstuna-Kolbäck-Snyten is the diversionary line for Hallsberg-Hovsta.

Hovsta-Jädersbruk-Kolbäck-Snyten/Västerås-Sala-Avesta Krylbo is the diversionary line for Hovsta-Frövi.

Frövi–Ludvika–Borlänge–Storvik and Hovsta/Frövi–Jädersbruk–Västerås–Avesta Krylbo-Storvik is the diversionary line for Frövi–Avesta Krylbo. In the event of interruptions to services between Frövi and Avesta Krylbo both diversionary lines need to be open to traffic to ensure accessibility.

Frövi–Ludvika–Borlänge–Storvik and Frövi–Avesta Krylbo–Borlänge-Storvik is diversionary line for Avesta Krylbo – Storvik. In the event of interruptions to services between Avesta Krylbo and Storvik both diversionary lines need to be open to traffic to ensure accessibility.

Storvik–Gävle–Sundsvall–Umeå–Vännäs is the diversionary line for Storvik–Vännäs.

- If Storvik-Ånge is closed to traffic, Ånge-Sundsvall should be open.
  - If Storvik–Ockelbo–Kilafors is closed to traffic, section Ånge-Sundsvall should be open.
  - If Kilafors–Ånge is closed to traffic, Kilafors–Söderhamn and Ånge-Sundsvall should be open.
- If Ånge-Vännäs is closed to traffic, Långsele-Västeraspby, Ånge-Sundsvall and Kilafors-Söderhamn should be open.
  - If Ånge-Långsele is closed to traffic, Långsele-Västeraspby, Ånge-Sundsvall and Kilafors-Söderhamn should be open.
  - If Långsele-Vännäs is closed to traffic, Långsele-Västeraspby, Ånge-Sundsvall and Kilafors-Söderhamn should be open.

There are no diversionary lines for Vännäs-Luleå.

### Long-distance passenger trains

A maximum of one interruption to services on section Vännäs-Boden at any one time to avoid multiple changes or diversions for passengers.

#### **Freight trains**

It should be taken into account when planning engineering works there are rail transports on the route that cannot be replaced by another type of traffic.

Closures between Storvik and Frövi should be split into either north of or south of Avesta Krylbo.

If Frövi–Avesta Krylbo–Storvik section and Frövi–Ludvika–Borlänge–Storvik section need to split times simultaneously, Frövi–Avesta Krylbo–Storvik section should be allocated days and Frövi–Ludvika–Borlänge–Storvik section nights.

In the event of long interruptions to services between Hallsberg and Frövi, Gothenburg-Kil-Ställdalen-Borlänge-Storvik section need to be open to traffic.

Closures between Storvik and Vännäs should be split into either north of or south of Ånge.

## 2.1.2.2 Route 4 Gothenburg - Kil – Borlänge -Gävle section Nykroppa-Gävle

The following principles have been applied to the planning of TCRs on Route 4 Gothenburg–Kil–Borlänge–Gävle section Nykroppa-Gävle.

### Long-distance passenger trains

The Värmland Line and Freight Line Kil–Laxå–Hallsberg–Storvik is the diversionary line for the Bergslagen Line Kil–Storvik.

The Western Main Line and Freight Line (via Hallsberg) is the diversionary line for the Bergslagen Line Gothenburg–Storvik.

Frövi–Avesta Krylbo–Storvik is the diversionary line for Ställdalen–Ludvika–Borlänge.

Borlänge–Avesta Krylbo–Storvik is the diversionary line for Borlänge–Falun–Storvik.

Storvik-Gävle has rerouting options via Ockelbo or Ockelbo-Kilafors-Söderhamn.

If the Freight Line through Bergslagen and the Bergslagen Line need to split times simultaneously, the Freight Line through Bergslagen should be allocated days and the Bergslagen Line nights.

Closures around Borlänge should be split into either north of or south of Borlänge.

While the Hörken Line, Grängesberg–Ställdalen, is the diversionary line for the Silverhöjden Line, the opposite does not apply as the Silverhöjden Line has severe limitations.

Split times can be advantageously allocated during the day (to leave space for Norway–Norway services at night), unless the Freight Line through Bergslagen is closed during the day.

## 2.1.2.3 Route 7 Stockholm – Västerås – Örebro

The following principles have been applied to the planning of TCRs on Route 7 Stockholm–Västerås–Örebro.

Two of three routes into Stockholm (Mälaren Line, Western Main Line, East Coast Line) should always be open to traffic.

In the event of interruptions to services, at least one diversionary line must be open to traffic:

- The Western Main Line is the diversionary line for the Mälaren Line and the Freight Line north of Hallsberg.

- The Svealand Line is the diversionary line for the Valskog–Stockholm section of the Mälaren Line.
- Avesta Krylbo–Fagersta–Frövi is the diversionary line for Västerås– Kolbäck–Frövi.
- The section Jädersbruk–Ökna–Hovsta is the diversionary line for Jädersbruk–Frövi–Hovsta.
- The section Kolbäck–Rekarne–Eskilstuna–Flen-Hallsberg is the diversionary line for Kolbäck–Valskog–Örebro–Hallsberg.

## 2.1.2.4 Route 8 Stockholm – Umeå

The following principles have been applied to the planning of TCRs on Route 8 Stockholm–Umeå.

#### General

In the event of long interruptions to services, at least one diversionary line must be open to traffic.

Stockholm Central-Västerås-Kolbäck-Snyten-Avesta Krylbo-Storvik-Gävle is diversionary line for Stockholm-Uppsala. Alternative diversionary line is Stockholm Central-Västerås-Sala-Avesta Krylbo-Storvik-Gävle.<sup>2</sup>

Stockholm C-Uppsala-Avesta Krylbo-Storvik-Gävle and Stockholm C-Västerås-Sala-Avesta Krylbo-Storvik-Gävle<sup>2</sup> are diversionary lines for Uppsala-Gävle. Alternative diversionary line is Stockholm C-Västerås-Kolbäck-Snyten-Avesta Krylbo-Storvik-Gävle<sup>2</sup>.

Gävle–Ockelbo–Vännäs-Umeå is diversionary line for Gävle–Umeå.

- If Gävle-Sundsvall is closed to traffic, Ånge-Sundsvall should be open.
  - If Gävle-Söderhamn is closed to traffic, Söderhamn–Kilafors and Ånge-Sundsvall should be open.
  - If Söderhamn-Sundsvall is closed to traffic, Sundsvall-Ånge should be open.
- If Sundsvall-Umeå is closed to traffic, section Ånge-Sundsvall should be open.

### Long-distance passenger trains

A maximum of one interruption to services on the route at any one time to avoid multiple changes or diversions for passengers.

During weekend closures on section Stockholm-Gävle, it is important to ensure that trains run until 22:00 on Fridays and from 14:00 on Sundays.

<sup>&</sup>lt;sup>2</sup> When the Mälaren Line is to be used as diversionary line for Route 8, it is important to ensure that traffic volumes from Hallsberg-Stockholm are not intended to be diverted on the Mälaren Line at the same time.

#### **Freight trains**

The line should not be closed north and south of Rosersberg/Brista at the same time, as it must be possible to reach the terminals in Rosersberg/Brista from one direction or the other.

It may be closed for a maximum of 5 days on both tracks between Gävle-Brista due to the fuel transport to Arlanda.

Interruptions to services exceeding 48 hours should not be planned north and south of Birsta at the same time to ensure that services can reach the process industry in Tunadal and the Port of Sundsvall.

Stockvik should be reachable either from Sundsvall or Gävle. Stockvik can handle a maximum traffic interruption of 110 hours if Stockvik-Sundsvall and Stockvik-Gävle are closed at the same time.

#### **Regional and local trains**

Interruptions to services should be avoided on weekdays, with the exception of the summer period.

## 2.1.2.5 Route 9 Luleå – Narvik

The following principles have been applied to the planning of TCRs on Route 9 Luleå–Narvik.

#### General

There are no diversionary lines for Route 9.

Limited period to carry out engineering works.

Planning of engineering work should be coordinated with Bane Nor to minimize traffic impact for cross-border traffic.

### Long-distance passenger trains

Easter, Christmas and the period July to August are peak seasons for passenger services at the section between Luleå and Narvik, therefore major traffic interruptions should not be planned during these periods.

### **Freight trains**

It should be taken into account when planning engineering works there are rail transports on the route that cannot be replaced by another type of traffic.

Traffic should not be interrupted between Gällivare–Luleå and Kiruna–Narvik at the same time, due to the needs of the ore traffic.

## 2.1.3 Maintenance windows

The Swedish Transport Administration's basic maintenance is planned in maintenance windows, creating the conditions for the efficient implementation of track maintenance work. Maintenance windows may be regular recurring periods adapted in the construction of the annual working timetable or track work weeks or weekends planned for the year in question. On double track sections it is common for maintenance windows to be planned as single track operation at night. On single track sections, maintenance windows are generally planned as a concentrated weeks or weekends of track work.

## 2.1.4 The TCR allocation process

The Swedish Transport Administration begins the co-planning and coordination of temporary capacity restrictions (TCR) at X-72. At this stage, begins the mapping of the dimensioning projects and a compilation is made of projects that are assessed to have a major impact on traffic.

The Swedish Transport Administration has a dialogue with potential applicants for railway capacity and other stakeholders regarding TCRs in the Strategic Dialogue forum. Within Strategic Dialogue, discussions are also held on Point 16 investigations.

At Strategic Dialogue in the autumn, the Swedish Transport Administration presents the projects that are assessed to have a major traffic impact during the production period or a large traffic benefit after they have been implemented.

At X-36, the Capacity Strategy is published, where projects assessed to have a major impact on traffic are presented. Now the applicant for capacity on railways has the opportunity to request that the infrastructure manager provide a comparison of the conditions that applies to for at least two alternative capacity restrictions, Point 16 investigations, according to 2012/34/EU Annex VII. The Swedish Transport Administration leads the investigations with the participation of railway companies and any other stakeholders.

At X-24, the Swedish Transport Administration publishes TCRs that are assessed to have a major impact on traffic or a large impact on traffic. The industry has the opportunity to give their views, which are taken into account and answered by the Swedish Transport Administration.

In connection with the X-24 publication, a Strategic Dialogue is held where the Swedish Transport Administration presents planned project with impact on traffic for the timetable in year 2 and to some extent also in year 3. Within this Strategic Dialogue, discussions are also held about ongoing Point 16 investigations.

The planning and coordination continue and at about X-21 the next Strategic Dialogue is held to present the results and changes that have been made in the coordination since X-24.

At X-18, the above-described TCR coordination for year 2 ends and the coordination of projects with impact on traffic continues in the capacity allocation process.

## 2.2 Pre-Announcement of Major Impact TCRs

This section presents, according to current plans, TCRs in the 2028 Working Timetable that are expected to have a major impact on services on each route. Major impact is defined as capacity restrictions of a duration of at least 30 consecutive days and affecting more than 50% of the estimated traffic volume on a railway line. If a project has been included in the previous Capacity Strategy and has an updated time for execution, the modifications are shown in blue colour, to facilitate traceability.

 Tabell 6. Planned TCRs expected to have a major impact on traffic

ld	Network segment	Purpose	Time of execution	Impact (total closure/single track operation/speed restriction)	Project approved	Financing secured		
		Route 2 Trelleb	org – Malmö -Oslo	)	1			
1	Sävenäs Marshalling yard	Renewal and adjustments to accommodate longer trains	2028-2029	Total closure (time of execution not available)	Yes	Yes		
		Route 4 Gothenbu	rg-Kil-Borlänge-Gä	ävle				
1	Sävenäs Marshalling yard	Renewal and adjustments to accommodate longer trains						
		Route 5 Stock	olm – Gothenburg					
1	Sävenäs Marshalling yard	Renewal and adjustments to accommodate longer trains	See Route 2 Trelleborg-Malmö-Oslo above					
2	Laxå	Renewal of railway yard	2028-2029	Single track operation 10 weeks	No	Yes		
3	Baggetorp-Pålsboda	Track renewal, up track and down track	2028-2029	Total closure in summer, 60 days	Yes	Yes		
4	Hallsberg-Sköldinge	Catenary renewal	2027-2030 Single track operation at night, recurring total closure on weekends, total closure in summer 60 days		Yes	Yes		
		Route 6 Sto	ockholm – Oslo					
3	Baggetorp-Pålsboda	Track renewal, up track and down track	See Route 5 Stockholm-Gothenburg above					
4	Hallsberg-Sköldinge	Catenary renewal	See Route 5 Stockholm-Gothenburg above					

	Route 8 Stockholm – Umeå										
5	Sundsvall	Intermodal transit facility etc	2026–2030	Total closure 5.5 weeks	No	Yes					
	Diversionary lines/Other lines										
6	Skåne Line: Hässleholm- Kristianstad	Track renewal, switches renewal	2028	Total closure 10 weeks	Yes	Yes					
7	Nässjö-Värnamo: stage 1 Nässjö- Vaggeryd	Electrification	2028	Total closure 6 months	No	Yes					
8	Tjust Line: Bjärka Säby-Västervik	Radio block system renewal	2028	Total closure 2028	Yes	Yes					
9	Coast to coast Line:Borås- Almedal	Catenary renewal	2028-2029	Total closure 10 months	Yes	Yes					
10	South Bohus Line: Brunnsbro station	New commuter train station	2028-2029	Total closure 3 months	Yes	Yes					
11	Sala-Oxelösund: Nyköping south– Flens upper	Track renewal	2027-2028	Total closure 10 weeks	Yes	Yes					
12	Gläntan track: Södertälje Hamn- Södertälje Syd Undre	Track renewal	2028	Total closure 6 weeks	Yes	Yes					
13	Dala Line: Uppsala-Morgongåva	Catenary renewal, track renewal and switches renewal	2028	Total closure 10 weeks	No	Yes					
14	Dala Line: Leksandsnoret	Repainting and repair of bridge	2028	Total closure 7 weeks	Yes	Yes					
15	Mora-Älvdalen/Vika: Oxberg	New bridge	2027-2028	Total closure 9 months	Yes	Yes					

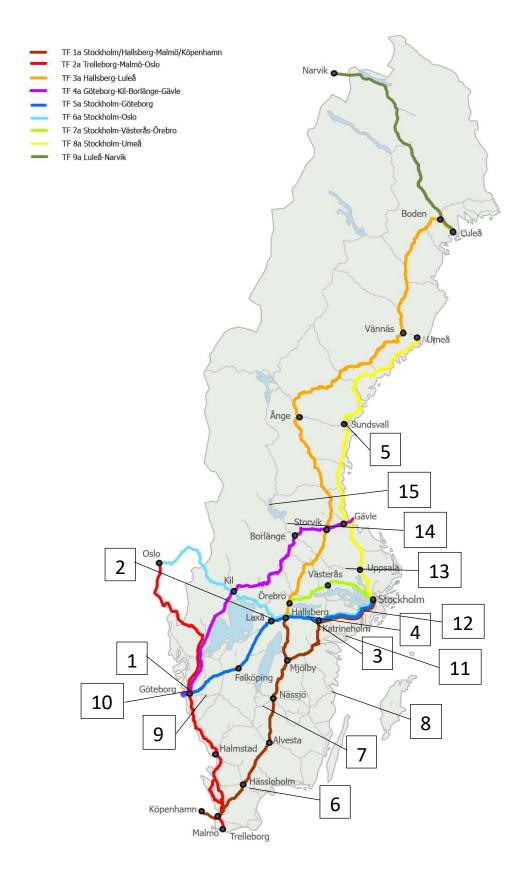


Figure 5. Map showing location of numbered TCRs

## 3 Traffic Planning Principles and Traffic Flows

## 3.1 Traffic planning principles

Pursuant to applicable legislation, the main principle for the Swedish Transport Administration's capacity allocation is to grant all applications to the greatest possible extent.

For further information on capacity allocation principles, please visit the Swedish Transport Administration's website: <u>Network Statement - Bransch (trafikverket.se)</u> chapter 4 Capacity Allocation and Annexes 4 A – 4 F.

## 3.2 Routes and anticipated utilisation of capacity

The tables below show the anticipated utilisation of capacity for 2028. The assessment is based on current capacity utilization as well as known traffic increases in combination with the anticipated impacts of the changes in the infrastructure. The tables for each route show the types of trains expected to run on each section between two nodes. Capacity utilisation at stations is not included in the assessment.

TCRs have not been planned in detail as yet and are therefore not included. The red sections should be considered bottlenecks, while the green ones are suitable to additional services. For each section, capacity utilisation is reported in intervals:

Colour	Capacity utilisation	Comments
	≤ 60 %	There is free capacity and more trains can be run even at peak hours
	61 – 80 %	Services do not utilise all capacity, problems with meeting requests for train paths the various stakeholders.
	81 – 100 %	There is heavy traffic throughout the day and there is no free capacity at certain times of day. Compromises must be made in work on the working timetable regarding both travel times and departure times for all train types, as well as a compromise between track works and train paths.



Figure 6 Expected capacity utilization

## 3.2.1 Route 1 Stockholm/Hallsberg – Malmö/Copenhagen

Table 8. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 1	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Stockholm-Flemingsberg		Х	Х	Х	Х	Х
Flemingsberg-Södertälje		Х	Х	Х	Х	Х
Södertälje-Gnesta		Х	Х	Х	Х	Х

Route 1	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Gnesta-Katrineholm		Х	Х	Х	Х	
Katrineholm-Norrköping		Х	Х	Х	Х	
Norrköping-Linköping		Х	Х	Х	Х	Х
Linköping-Mjölby		Х	Х	Х		Х
Hallsberg-Motala		Х			Х	
Motala-Mjölby		Х			Х	Х
Mjölby-Nässjö		Х	Х	Х	Х	
Nässjö-Alvesta		Х	Х	Х	Х	
Alvesta-Hässleholm		Х	Х	Х	Х	Х
Hässleholm-Lund		Х	Х	Х	Х	Х
Lund-Malmö		Х	Х	Х	Х	Х
Malmö-Hyllie-Lernacken			Х		Х	Х
Peberholm-Lernacken		Х	Х	Х	Х	
Malmö-Svågertorp- Lernacken		х	х	х		х

## 3.2.2 Route 2 Trelleborg – Malmö – Oslo

Table 9. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 2	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Trelleborg-Östervärn- Lockarp		х				х
Lockarp-Malmö		Х	Х	Х		Х
Malmö-Lund		Х	Х	Х	Х	Х
Lund-Helsingborg			Х	Х	Х	Х
Helsingborg-Ängelholm		Х	Х		Х	Х
Malmö-Teckomatorp- Ängelholm		х				х
Ängelholm-Halmstad		Х	Х		Х	Х
Halmstad-Varberg		Х	Х		Х	
Varberg-Kungsbacka		Х	Х		Х	
Kungsbacka-Gothenburg		Х	Х		Х	Х
Gothenburg-Älvängen		Х	Х		Х	Х
Älvängen-Öxnered		Х	Х		Х	

Route 2	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Öxnered-Skälebol		Х	Х		Х	
Skälebol-Kornsjö		Х	Х		Х	

## 3.2.3 Route 3 Hallsberg – Luleå

Table 10. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 3	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Hallsberg-Örebro		Х			Х	
Örebro-Frövi		Х			Х	
Frövi-Fagersta		Х			Х	
Fagersta-Storvik		Х			Х	
Storvik-Bollnäs		Х	Х	Х	Х	
Bollnäs-Ljusdal		Х	Х	Х	Х	
Ljusdal-Ånge		Х	Х	Х		
Ånge-Bräcke		Х	Х	Х	Х	
Bräcke-Vännäs		Х		Х		
Vännäs-Boden		Х		Х	Х	
Boden-Luleå		Х		Х	Х	Х

## 3.2.4 Route 4 Gothenburg – Kil – Borlänge – Gävle

Table 11. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 4	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Gothenburg-Älvängen		х	Х		Х	Х
Älvängen-Öxnered		Х	Х		Х	Х
Öxnered-Skälebol		Х	Х		Х	
Skälebol-Grums		Х			Х	
Grums-Kil		Х			Х	
Kil-Nykroppa		Х				

Route 4	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Nykroppa-Hällefors		Х				
Hällefors-Ställdalen		Х				
Ställdalen-Ludvika		Х			Х	
Ludvika-Borlänge		Х			Х	
Borlänge-Falun		Х	Х	Х	Х	
Falun-Storvik		Х			Х	
Storvik-Gävle		Х	Х		Х	

## 3.2.5 Route 5 Stockholm – Gothenburg

Table 12. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 5	Capacity utilisation	Freight trains	High- speed trains	Long distance Night trains	Regional trains	Commuter trains
Stockholm-Flemingsberg		Х	Х	Х	Х	Х
Flemingsberg-Södertälje		Х	Х	Х	Х	Х
Södertälje-Gnesta		Х	Х	Х	Х	Х
Gnesta-Katrineholm		Х	Х	Х	Х	
Katrineholm-Hallsberg		Х	Х	Х	Х	
Hallsberg-Laxå		Х	Х	Х	Х	
Laxå-Gårdsjö		Х	Х	Х	Х	
Gårdsjö-Skövde		Х	Х	Х	Х	
Skövde-Falköping		Х	Х	Х	Х	
Falköping-Alingsås		Х	Х	Х	Х	
Alingsås-Gothenburg		Х	Х	Х	Х	Х

## 3.2.6 Route 6 Stockholm – Oslo

Table 13. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 6	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Stockholm-Flemingsberg		Х	Х	Х	Х	Х
Flemingsberg-Södertälje		Х	Х	Х	Х	Х
Södertälje-Gnesta		Х	Х	Х	Х	Х
Gnesta-Katrineholm		Х	Х	Х	Х	
Katrineholm-Hallsberg		Х	Х	Х	Х	
Hallsberg-Laxå		Х	Х	Х	Х	
Laxå-Kristinehamn		Х	Х		Х	
Kristinehamn-Karlstad		Х	Х		Х	
Karlstad-Kil		Х	Х		Х	
Kil-Arvika		Х	Х		Х	
Arvika-Charlottenberg		Х	Х		Х	

## 3.2.7 Route 7 Stockholm – Västerås – Örebro

Table 14. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 7	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Stockholm-Tomteboda		х	Х	Х	Х	Х
Tomteboda-Spånga		Х		Х	Х	Х
Spånga-Kallhäll (inre)		Х				Х
Spånga-Kallhäll (yttre)				Х	Х	
Kallhäll-Kungsängen		Х		Х	Х	Х
Kungsängen-Bålsta		Х		Х	Х	Х
Bålsta-Västerås North		Х		Х	Х	
Västerås North-Västerås C		Х		Х	Х	
Västerås C-Kolbäck		Х		Х	Х	
Kolbäck-Valskog		Х		Х	Х	
Valskog-Arboga		х		Х	Х	
Arboga-Hovsta		Х		Х	Х	
Jädersbruk-Frövi		х			Х	

Route 7	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Frövi-Hovsta		Х		Х	Х	
Hovsta-Örebro		Х		Х	Х	

## 3.2.8 Route 8 Stockholm – Umeå

Table 15. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 8	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Stockholm C - Tomteboda		Х	Х	Х	Х	Х
Tomteboda – Upplands Väsby		х	Х	X	Х	Х
Upplands Väsby – Skavstaby		х	Х	X	Х	Х
Skavstaby - Arlanda			Х	Х	Х	Х
Arlanda – Myrbacken			Х	Х	Х	Х
Myrbacken – Uppsala		Х	Х	Х	Х	Х
Uppsala – Tierp		Х	Х	Х	Х	
Tierp – Gävle		Х	Х	Х	Х	
Gävle – Söderhamn		Х	Х	Х	Х	
Söderhamn – Hudiksvall		Х	Х	Х	Х	
Hudiksvall – Sundsvall		Х	Х	Х	Х	
Sundsvall – Timrå		Х	Х	Х	Х	
Timrå - Härnösand		Х	Х	Х	Х	
Härnösand – Västeraspby		Х	Х	Х	Х	
Västeraspby – Örnsköldsvik		Х	Х	Х	Х	
Örnsköldsvik – Umeå		Х	Х	Х	Х	

## 3.2.9 Route 9 Luleå – Narvik

## Table 16. Anticipated capacity utilisation around the clock and anticipated distribution of traffic for 2028.

Route 9	Capacity utilisation	Freight trains	High- speed trains	Long distance/ Night trains	Regional trains	Commuter trains
Boden-Luleå		Х		Х	Х	Х
Boden – Murjek		Х		Х	Х	
Murjek – Gällivare		Х		Х	Х	
Gällivare – Kiruna		Х		Х	Х	
Kiruna - Riksgränsen		Х		Х		

## 3.2.10 Number of trains at border crossings

During the work of originating the capacity strategy for the working timetable 2028 reconciliations have been made on an ongoing basis with Bane Nor and Banedanmark.

The Swedish Transport Administration	Bane NOR				
Ed/Kornsjø					
8 high speed trains per day in both directions (continues as regional trains when crossing the border to Norway) 7 freight trains per day in both directions	<ul> <li>7 (8*) high speed trains per day in both directions)</li> <li>7 freight trains per day in both directions</li> <li>*the number of trains from the Norwegian side of the border corresponds to the number of trains coming from the Swedish side of the border</li> </ul>				
Charlottenberg	/Kongsvinger				
2 regional trains per day in both directions 5 high speed trains per day in both directions 12 freight trains per day in both directions	<ul> <li>2 regional trains per day in both directions (Charlottenberg - Kongsvinger)</li> <li>5 long distance trains per day in both directions (Charlottenberg – Oslo)</li> <li>6 freight trains (container trains) per day in both directions</li> <li>6 freight trains (timber trains) per day in both directions</li> </ul>				
Storlie	n/Hell				
<ul><li>3 regional trains per day in both directions</li><li>1 long distance train/night train per day in both directions</li><li>1 freight train per day in both directions</li></ul>	2 (3*) regional trains per day in both directions 1 long distance trains per day in both directions (Stockholm – Trondheim)				

#### Table 17 Expected number of trains at border crossings.

	1 freight train per day in both directions
	The electrification will make it possible to run more types of passenger trains. This will also provide the opportunity to run freight trains
	*the number of trains from the Norwegian side of the border corresponds to the number of trains coming from the Swedish side of the border
Vassijaure	e/Bjørnfjell
2 night trains per day in both directions	4 long distance trains per day in both
2 regional trains per day in both directions	directions (2 Stockholm-Narvik and 2 Narvik- Luleå)
1-2 charter trains per day in both directions part of the year	4 regional trains per day in both directions (charter trains)
15 ore trains per day in both directions	15 ore train per day in both directions
8 freight trains per day in both directions	8 freight train per day in both directions
The Swedish Transport Administration	Banedanmark
Lernacken/	Peberholm
6 regional trains per hour	6 regional trains per hour
2 high speed trains per hour	2 high speed trains per hour
2 freight trains per hour	2 freight trains per hour
1 long distans train per hour	1 long distans train per hour

## 4 Validation

The document is electronically signed by:

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On behalf of the Swedish Transport Administration

Jan Harald Dammen, Director of Capacity Allocation

On behalf of Bane NOR

Peter Svendsen, Director of Traffic Division

On behalf of Banedanmark