REPORT Capacity Strategy 2026



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Document description

The capacity strategy for the timtable year 2026 (T26) covers the parts of the railway network referred to as traffic flows 1, 2 and 3, i.e. Stockholm/Hallsberg – Malmö/Copenhagen, Malmö – Oslo and Hallsberg/Borlänge – Luleå/Narvik.

The purpose of the document is to provide a picture of the capacity-related conditions that the Swedish Transport Administration (Trafikverket) expects for the timetable in 2026.

In the coming years, the ambition is to gradually expand the geographical scope of the capacity strategy, so that it describes for T27 the capacity situation for the eight designated traffic flows and in the longer term for Trafikverket's entire railway network.

The target audience for this document is railway undertakings, contractors, policymakers and other stakeholders. Infrastructure managers, terminals and service providers can use it to support coordination in long-term planning.



Figure 1. Map of defined Swedish Traffic Flows

The implementation of TTR is at an early stage where the first capacity strategy for timetable 2025 was a pilot for the Oslo-Padborg route. The capacity strategy was developed jointly by Bane NOR, Trafikverket and Banedanmark. The part of the Swedish network covered consists of the line(s) along the west coast, from the Norwegian border in Kornsjö to Lernacken at the Öresund bridge abutment. The 2025 Capacity Strategy is written in English and has been published on the RNE website¹ (the cooperation organsitation of European infrastructure managers, Rail Net Europe). A Swedish version of the National Capacity Strategy will be published on Trafikverket's website. The ambition for the capacity strategy 2026 is for it to be published at X-36, which is in accordance with the timeline of TTR's capacity planning and allocation process.



Figure 2. Proposed process according to TTR

¹ https://rne.eu/wp-content/uploads/2022/10/Capacity-Strategy-T.pdf

Legal ground

A fundamental principle of Directive 2012/34/EU establishing a single European railway area (SERA), as well as of the national legislation implementing the directive, is to meet the market's need for railway capacity as far as possible. This shall be the objective of infrastructure management and capacity allocation.

Article 38 of the SERA requires the infrastructure manager to develop a business plan designed to ensure the optimal and efficient use, provision and development of the infrastructure. Infrastructure managers are also obliged to assess the need for different types of transport services and to plan to meet that need.

This capacity strategy is closely linked to the TTR project, which in turn aims to achieve a new capacity allocation process. However, the purpose of this document, to give an overall indication of the possible future use of the infrastructure in question, can thus also be seen as fully in line with current railway legislation. This document constitutes an assessment of possible future scenarios, created by an evolving market need, and the real outcome of the planning and allocation process may be different. Therefore, the word *strategy* may also sound a bit misleading, but it should be read as an emphasis on the fact that the document is not a decided plan, but rather a picture of a probable future, a thought basis for Trafikverket's planning of both measures and capacity.

Timeline

This document has been produced in 2022 with the following points of reference:

May – September: Information gathering and documentation within Trafikverket

October/November: Information/dialogue with external stakeholders and neighbouring infrastructure managers

December: Publication of capacity strategy 2026

Introduction

As mentioned in the document description above, the capacity strategy for timetable 2026 includes the parts of the railway network referred to as traffic flows 1, 2 and 3, i.e. Stockholm / Hallsberg - Malmö / Copenhagen , Malmö - Oslo, and Hallsberg / Borlänge - Luleå / Narvik.

According to the implementation plan for TTR, continued development is underway on the other steps, among other things in the form of a capacity model that describes in more detail into which segments the capacity is divided into for the capacity allocation. In other words, it should be possible to create a picture of what the distribution between, for example, freight trains and high-speed trains should look like on different routes. An analysis of the scope of the capacity model and how it can be used is currently underway. Like the process arrow on page 5 shows, the capacity strategy intends to form the basis of the capacity model. However, a major difference between the two documents is that the capacity model is proposed to be legally binding and to be an absolute prerequisite for capacity allocation, while the capacity strategy is rather intended to inform about the expected capacity conditions.

Affected infrastructure in Sweden

Infrastructure manager, railway

The parts of the Swedish railway network that are part of this capacity strategy are managed, planned and operated by the Swedish national infrastructure manager Trafikverket. However, Svedab AB owns the Öresund Bridge infrastructure for the Swedish land connection on the stretch Svågertorp-Lernacken. This part is also planned and managed by Trafikverket.

Terminals and service providers

A list of service providers and terminals in connection with current routes in Sweden can be found on the Swedish Transport Administration's website: <u>www.trafikverket.se</u>, under Providers of service to railway transport in Sweden.

The Rail Facilities Portal (RFP) is a common European web portal where service providers can publish their facility descriptions: <u>http://railfacilitiesportal.eu</u>. Information about terminals and service providers in Sweden can be found there too.

Stakeholders concerned with the content of the capacity strategy

The capacity strategy shall be developed in consultation with relevant stakeholders. It is therefore important that they pay attention to when the opportunity is given to comment on the content. The categories of stakeholders that Trafikverket has identified are as follows:

- Terminals and service providers
- Transport Authorities
- Regional authorities and municipalities
- Railway undertakings and other applicants

• Neighbouring infrastructure managers

For capacity strategy 2026, the industry will be informed in established forums (industry collaboration and strategic dialogue) in the autumn of 2022. Trafikverket also has continuous dialogue with Banedanmark, Bane NOR and DB Netze during the development of the capacity strategy.

Neighbouring infrastructure managers outside Sweden

Infrastructure manager, railway

For traffic flow 1 Stockholm/Hallsberg – Malmö/Copenhagen, the Öresund link, west from Lernacken to Copenhagen Airport, is managed by the Öresundsbro Konsortiet which is jointly owned by the Danish and Swedish governments through A/S Öresund (50%) and Svedab AB (50%) respectively. A/S Öresund manages the section between the airport and Copenhagen Central Station.

Banedanmark and Trafikverket count themselves as neighbouring infrastructure managers with regard to the Öresund link, even if their respective networks do not have physical contact with each other.

For traffic flow 2 Malmö – Oslo, the route Alnabru – Oslo – Kornsjö is managed, planned and operated by Bane NOR.

For traffic flow 3 Hallsberg/Borlänge – Luleå/Narvik, the route Riksgränsen – Narvik is managed, planned and operated by Bane NOR.

Terminals and service providers

For further information on service providers and terminals in connection to the routes covered by this capacity strategy, please refer to the Rail Facilities Portal (RFP) which is a common European web portal where service providers can publish their facility descriptions: <u>http://railfacilitiesportal.eu</u>.

1 Expected infrastructure capacity

This chapter provides an overview of the different infrastructure projects that are expected to affect the capacity of each traffic flow covered by the capacity strategy. The list includes projects that are expected to be ready for timetable 2026 and that will increase or decrease capacity, compared to the current timetable (2023).

1.1 Traffic flow 1 Stockholm/Hallsberg – Malmö/ Copenhagen

Project name	Project proposal defined	Project approved by the IM's management	Financing secured	Note
The Freight Line Dunsjö- Jakobshyttan, double track (1)	Yes	Yes	Yes	Ongoing-2023
The Freight Line Jakobshyttan- Degerön, double track (2)	Yes	Yes	Yes	Ongoing-2024
Kimstad-Skärblacka, electrification (3)	Yes	Yes	Yes	Ongoing-2023
Lund (Högevall)- Flackarp-Arlöv, multiple tracks (4)	Yes	Yes	Yes	Ongoing-2023
Longer and heavier trains, table of brake percentage, Malmö- Hallsberg (5)	Yes	Yes	Yes	Ongoing-2024

1.1.1 Increased capacity



Figure 3. Location of projects in a map with numbering. TCR, temporary capacity restriction, see chapter 2

The Freight Line Dunsjö-Jakobshyttan, double track (1)

The project is ongoing and is expected to be completed by the end of 2023. The measure is ready for timetable 2024.

The route between Dunsjö and Jakobshyttan is the fourth of a total of six stages in the double-track expansion. The work includes building a new double track with new tunnels and at some places a new line. The measure is part of the overall double-track construction Hallsberg-Degerön. With this project, the travel time on the route for passenger trains decreases slightly, but there is no major increase in capacity.

The Freight Line Jakobshyttan-Degerön, double track (2)

The project is ongoing and is expected to be completed by the end of 2024. The measure is ready for timetable 2025.

On the route between Jakobshyttan and Degerön, the fifth and southernmost of a total of six stages is being built in the double-track extension between Hallsberg and Degerön. When this stage is completed, we will have a double track in its entirety from Mjölby to Jakobshyttan, which greatly improves capacity. The number of trains on the route can increase at the same time as the travel time decreases as train meetings do not occur and the speed can increase.

Kimstad-Skärblacka, electrification (3)

The project is ongoing and is expected to be completed in early 2023. The measure is ready for timetable 2024.

The measure means that the previously unelectrified section Kimstad-Finspång will now be electrified to Skärblacka, which increases the capacity of this stretch. As the diesel-powered trains to and from Skärblacka have used parts of traffic flow 1, mainly Norrköping-Kimstad, the capacity is also improved on this section.

Lund (Högevall)-Flackarp-Arlöv, multiple tracks (4)

The project is ongoing and is expected to be completed by the end of 2023. The measure is fully ready for timetable 2024.

The multi-track section Lund (Högevall)-Flackarp-Arlöv will be connected in December 2023. On the route, there will be four tracks all the way from Arlöv to just south of Lund. Four passenger exchange stations are being built on the route, one of which is completely new. Fast and slow traffic is separated on the route and capacity increases, which allows more trains between Malmö and Lund.

Longer heavier trains, table of brake percentage, Malmö – Hallsberg (5)

Extended pre-signalling, which allows trains with lower braking performance to be driven at higher speeds. This is expected to result in a shorter run time both in terms of the actual driving time but also that the number of bypasses decreases.

1.1.2 Reduced capacity

No known permanent reductions.

1.2 Traffic flow 2 Malmö – Oslo

1.2.1 Increased capacity

Tat Project name	Project proposal defined	Project approved by the IM's management	Financing Secured	Note
Lund (Högevall)- Flackarp-Arlöv, multiple tracks (1)	Yes	Yes	Yes	Pågår-2023
Kävlinge-Arlöv, stage 2 (2)	No	No*	Yes	2025-2026 * The measure has not yet decided on the start of construction
Åstorp, passing track (3)	Yes	Yes	Yes	2025-2026
The West Coast Line, Ängelholm- Maria (4)	Yes	Yes	Yes	Ongoing-2023
Varberg, double track (tunnel) incl. travel center (5)	Yes	Yes	Yes	Ongoing-2024
Gothenburg Port Line, double track (6)	Yes	Yes	Yes	Ongoing-2024
Longer and heavier trains, table of brake percentage, Malmö- Göteborg (7)	Yes	Yes	Yes	Ongoing-2024



Figure 4. Location of projects in map with numbering. TCR, temporary capacity restriction, see chapter 2

Lund (Högevall)-Flackarp-Arlöv, multiple tracks (1)

The project is described under traffic flow 1, page 11.

Kävlinge-Arlöv, stage 2 (2)

The project is planned to be built in the years 2025 and 2026. The measure is fully ready for timetable 2027.

On the Lomma Line, between Kävlinge and Arlöv which is part of the Freight Line through Skåne, a new passing station is being built in Alnarp and the existing passing station in Flädie is being extended. Both passing tracks will be 950 meters long. New passenger stations are also being built in Alnarp and Flädie. Local train traffic is expected to increase to half-hourly traffic throughout the operating day while maintaining good capacity for an expected increase in freight traffic.

Åstorp, passing track (3)

The project is planned to be built in the years 2025 and 2026. The measure is fully ready for timetable 2027.

In Åstorp, an existing passing track is extended to allow train meetings between two 750-meter-long trains in Ängelholm-Åstorp-Teckomatorp (freight route through Skåne). This measure improves capacity and increases recovery capacity, as there will be greater possibility of moving train meetings operationally, even with long freight trains.

The West Coast Line, Ängelholm-Maria (4)

The project is ongoing and is expected to be completed by the end of 2023. The measure is fully ready for timetable 2024.

Double tracks are being built on the section Ängelholm-Maria and together with some track corrections, the speed is also increased to 200 km/h along the entire route. The travel time on the route is reduced relatively much (5-10 minutes depending on the type of train) as the trains on the route are currently planned with several train meetings. The measure entails a large increase in capacity as the line becomes double-track, which means that the number of trains that can run on the route increases.

Varberg, double track (tunnel) including travel center (5)

The project is ongoing and is expected to be completed by the end of 2024. The measure is fully ready for timetable 2025.

In timetable 2025, there will be a new freight yard, as well as two 780-meter-long track for overtaking in Varberg. The Varberg-Hamra section will have been expanded to double track and Varberg will have four tracks for the West Coast Line's traffic and one track for trains to and from the Viskdalen Line. This means a major improvement in the capacity of Varberg.

Together with the four-track expansion Malmö-Lund and the double-track expansion Ängelholm-Maria, the double-track expansion Varberg-Hamra creates space for a probable increase in traffic and shortened travel time of up to 15 minutes Gothenburg-Malmö, for passenger trains. The increased average speed between Gothenburg and Halmstad can have negative consequences for slower trains, in the form of longer running times.

The Gothenburg Port Line, double track (6)

The project is ongoing and is expected to be completed by the end of 2024. The measure is fully ready for timetable 2025.

In timetable 2025, the Gothenburg Port Line will have been expanded to double track on the route Sannegården-Pölsebo. The capacity is then increased by one train per hour per direction. The biggest capacity shortage will after that be at the arrival tracks in Skandiahamnen.

Longer heavier trains, table of brake percentage, Malmö – Gothenburg (7)

Extended pre-signalling, which allows trains with lower braking performance to be driven at higher speeds. This is expected to result in a shorter run time both in terms of the actual travel time but also that the number of overtakes decreases.

1.2.2 Reduced capacity

No known permanent reductions.

1.3 Traffic flow 3 Hallsberg/Borlänge – Luleå/Narvik

1.3.1 Increased capacity

		Project		
Project name	Project proposal defined	approved by the IM's management	Financing secured	Note
The Freight Line, Storvik- Avesta Krylbo-Frövi capacity- enhancing measures, Jularbo, Dagarn, Skinnskatteberg (1)	Yes	Yes	Yes	2025-2026
Fagersta station, platform and level crossing measures (2)	Yes	Yes	Yes	2025-2026
Morshyttan, extension of passing track (Longer heavier trains) (3)	No	Yes	Yes	2025
Långsele-Västeraspby, speed increasing measures (4)	Yes	Yes	Yes	Ongoing-2024
Gammelstad, Näsberg, Sikträsk, yard extension (5)	No	No*	Yes	Gammelstad 2024-2025 Näsberg 2026 Sikträsk 2025- 2026 *The projects have not yet decided on the start of construction.
Linaälv, Harrå, Fjällåsen, yard extension (6)	No	Yes	Yes	2025-2026
ERTMS SO Gällivare, Linaälv, Kiruna, Björkliden, Polcirkeln (7)	Yes	Yes	Yes	2023-2025

Table 3. Measures to improve capacity in 2023-2026



Figure 5. Location of projects in map with numbering TCR, temporary capacity restriction, see chapter 2

The freight route, capacity-enhancing measures (1)

On the Freight Line through Bergslagen, a number of measures will be implemented in 2025-2026, including increased speed over switches and simultaneous entry into Jularbo. In Dagarn and Skinnskatteberg, reconstruction is taking place to enable simultaneous train movements in and out from the station. All in all, the measures mean that traffic on the highly congested Freight Line will have a smoother traffic flow with train meetings and bypasses.

Fagersta sation, platform and level crossing measures (2)

In Fagersta, there has been a speed reduction to 40 km/h for several years after previous incidents at a platform crossing. The project will be carried out during 2025-2026 and aims to restore the speed to 80 km/h and rebuild the platforms with a separate connection to a new center located platform. The effect is that safety for passengers increases and that freight trains have shorter run times.

Morshyttan, extension of passing track (Longer heavier trains) (3)

Extended platform with smother train meeting and bypasses for the station in Morshyttan in 2025 to enable train passings for 750 meter long trains with simultaneous train movements in and out from the station.

Långsele-Västeraspby, speed increase measures (4)

Until 2024, the track and the electric catenary will be replaced on Ådalen Line, which greatly improves the standard of the line and enables efficient diversions of freight trains.

Gammelstad, Näsberg, Sikträsk, yard extension (5)

The project is planned to be implemented during the years 2024-2026. The extension means that two 750-meter-long trains can meet, which increases capacity and the ability to run long trains.

Linaälv, Harrå, Fjällåsen, yard extension (6)

The project is planned to be carried out during the years 2025-2026. The extension means that two 750-meter-long trains can meet, which increases capacity and the ability to run long trains.

ERTMS Implementation (7)

The old signalling system has achieved its technical lifespan and needs to be replaced with a newer and more modern system. ERTMS does not imply a general increase in capacity, but there are several functions in the signalling system that operationally improve the conditions for running trains. On the Iron Ore Line, ERTMS is planned to be introduced in the control areas of Gällivare and Linaälv in 2023, Kiruna and Björkliden in 2024 and the Arctic Circle in 2025.

1.3.2 Reduced capacity

In conjunction with the expansion of the Gammelstad and Sikträsk railway yards, the meeting opportunity at these two stations disappears, which reduces capacity somewhat, but it is considered to be possible to handle it within the framework of the regular timetable and planning process.

2 Temporary Capacity Restrictions

Many railway projects will have an impact and affect traffic during 2026 due to temporary capacity restrictions (TCR).

A selection of planned TCRs projects on the Swedish railway network can be found and read about in the Swedish Transport Administration's Implementation Plan, which can be found on <u>www.trafikverket.se</u>.

For each of the three Traffic Flow below, the principles that apply to the planning of TCRs and the TCRs planned for 2026 that are expected to have a major impact on traffic (i.e. last more than 30 days and affect more than 50% of the expected traffic) are described.

2.1 Traffic Flow 1 Stockholm/Hallsberg – Malmö/ Copenhagen

2.1.1 Principles for TCR planning

The principles for planning TCR on the Swedish railway network are based on previous experience of diversions as well as on dialogue with railway undertakings and other applicants.

Long-distance trains/High speed passenger trains

Maximum of one traffic interruption on the Traffic Flow Stockholm/Hallsberg – Malmö/ Copenhagen at the same time to avoid multiple interchanges or diversions for the passengers.

For planned traffic interuptions with total closure over weekends the guiding principle is to ensure traffic operations until 22:00 on Fridays and Sundays after 14:00.

Most critical line sections is Mjölby-Hässleholm followed by second most critical line section Åby-Mjölby.

Diversion line for Järna-Åby is Nyköpingsbanan.

Diversion line for the Åby-Mjölby line section is Mjölby-Hallsberg-Katrineholm.

Diversion line for Hässleholm-Nässjö is Western Main Line/West Coast Line (via Gothenburg)

Primary diversion lines for passenger traffic Lund-Hässleholm is Skåne Line/Freight Line through Skåne. Skåne Line/West Coast Line (via Helsingborg) can also be used as a diversion line for passenger traffic Lund-Hässleholm.

Two out of three main lines (Mälar Line, Western Main Line, East Coast Line) into Stockholm should always be open to traffic.

Freight trains

Avoid simultaneous closure of both train path line sections around Kimstad (Mjölby-Kimstad and Kimstad-Åby).

Avoid simultaneous closure of both train path line sections around Älmhult (Alvesta-Älmhult and Älmhult-Hässleholm).

Operational access route to Älmhult is required for trains from and to Olofström.

Diversion line for Hallsberg-Mjölby is Katrineholm-Åby-Mjölby and vice versa.

Diversion line for Katrineholm-Åby is Nyköpingsbanan.

Diversion line for Hallsberg-Nässjö is Western Main Line/Jönköping Line (via Falköping), and in some cases for Hallsberg-Mjölby to acces Hallsberg from the correct direction.

The West Coast Line and the Western Main Line via Gothenburg are the diversion routes for Nässjö-Hässleholm.

Diversion line for Lund-Hässleholm is Skåne Line/Freight Line through Skåne.

Regional and local trains

Coherent and time-coordinated traffic interruptions are preferable, provided they can be used for advanced planning.

Associations between train paths and the relation between regional train services and long-distance train path planning is of high importance to ensure continues and functional train changes for passengers the greatest extent possible along the entire route.

On routes with local traffic, traffic interruptions on weekdays are normally not acceptable. The geographical location of a planned TCR from a project measure is furthermore to be acknowledge as the impact on traffic capacity increases closer to Stockholm.

The most critical train path line sections for regional services and local trains are: Copenhagen-Malmö, Malmö-Lund, Lund-Hässleholm, Norrköping-Mjölby and Stockholm City-Tumba.

Maintenance windows

The Swedish Transport Administration's basic maintenance is planned in maintenance windows that create the conditions for efficient execution of maintenance work on tracks. Maintenance windows consist of both regular times that are adapted in the construction of the annual train plan including timetable and planned maintenance windows for track engineering work weeks and track engineering work weekends. On double-track routes, it is common for maintenance windows to be scheduled as single-track operations at night. On single-track routes, the maintenance windows are in general aligned with the engineering work plan and to be concentrated to weeks or weekends of planned track engineering work.

2.1.2 Expected Major impact TCRs

This section describes an assessment of planned projects that are expected to have Major impact TCR's (i.e. last more than 30 consecutive days and affect more than 50 % of the expected traffic) on traffic in 2026 on Traffic Flow 1 Stockholm/Hallsberg–Malmö/Copenhagen (See *Table 4*). The project measure is highlighted in *Figure 6* (i.e. Swedish map) on the page 10.

Project name	Project proposal defined	Project approves by the IM's management	Financing secured	Comments
Double tracks Hallsberg-Degerön, Freight line section Hallsberg- Stenkumla	Yes	Yes	Yes	Ongoing -2030

Table 4. Overview of planned Swedish projects with major TCRs on Traffic Flow 1Stockholm/Hallsberg – Malmö/ Copenhagen during year 2026.

2.2 Traffic Flow 2 Malmö – Oslo

2.2.1 Principles for TCR planning

The principles for planning TCR on the Swedish railway network are based on previous experience of diversions as well as on dialogue with railway undertakings and other applicants.

Long-distance trains/High speed passenger trains

Maximum of one traffic interruption on the Traffic Flow Malmö-Oslo at the same time to avoid several interchanges or diversions for travelers (In some cases, it may be acceptable to have traffic interruptions north and south of Gothenburg at the same time).

For planned traffic interuptions with total closure over weekends the guiding principle is to ensure traffic operations until 22:00 on Fridays and Sundays after 14:00.

Freight Line through Skåne (via Åstorp) is diversion line for passenger traffic between Ängelholm-Helsingborg.

Freight trains

Kongsvinge Line/Värmland Line/Jönköping Line (via Laxå-Falköping) is the diversion line for Oslo-Skälebol.

Western Main Line/Älvsborg Line/Viskadalen Line (via Herrljunga-Borås) is the diversion line for Gothenburg-Varberg.

Markaryd Line/ Southern Main Line (via Hässleholm) is the diversion line for Åstorp-Teckomatorp.

Southern Main Line/Råå Line (via Eslöv-Teckomatorp) is the diversion line for freight traffic Arlöv-Kävlinge.

For traffic interruptions in Almedal, the diversion route is via the Western Main Line, Älvsborg Line and Coast to Coast Line towards Alvesta.

Regional and local trains

Coherent and time-coordinated traffic interruptions are preferable, provided they can be used for advanced planning.

On routes with local traffic, traffic interruptions on weekdays are normally not acceptable.

Maintenance windows

The Swedish Transport Administration's basic maintenance is planned in maintenance windows that create the conditions for efficient execution of maintenance work on tracks. Maintenance windows consist of both regular times that are adapted in the construction of the annual train plan including timetable and planned maintenance windows for track engineering work weeks and track engineering work weekends. On double-track routes, it is common for maintenance windows to be scheduled as single-track operations at night. On single-track routes, the maintenance windows are in general aligned with the engineering work plan and to be concentrated to weeks or weekends of planned track engineering work.

2.2.2 Expected Major impact TCRs

This section describes an assessment of planned projects that are expected to have Major impact TCR's (i.e. last more than 30 consecutive days and affect more than 50 % of the expected traffic) on traffic in 2026 on Traffic Flow 2 Malmö–Oslo (See *Table 5*). The project measure is highlighted in *Figure 7* (i.e. map) on the page 13.

Project name	Project proposal defined	Project approves by the IM's management	Financing secured	Comments
Kävlinge-Arlöv (Lomma Line), Stage 2	Yes	No*	Yes	2026 *The projects have not yet decided on the start of construction.
Lomma Line Flädie, new station	Yes	No*	Yes	2026 *The projects have not yet decided on the start of construction.
Lv 913, Bjärred- Flädie	Yes	No*	Yes	2026 *The projects have not yet decided on the start of construction.

Table 5. Overview of planned Swedish projects with major TCRs on Traffic Flow 2 Malmö– Oslo during year 2026.

Planned project measures are likely to be realised during a 10-week traffic suspension of the Lomma Line.

2.3 Traffic Flow 3 Hallsberg/Borlänge – Luleå/Narvik

2.3.1 Principles for TCR planning

The principles for planning TCR on the Swedish railway network are based on previous experience of diversions as well as on dialogue with railway undertakings and other applicants.

Long-distance passenger, high speed and freight trains

Traffic interruptions between Gällivare-Luleå and Kiruna-Narvik at the same time should be avoided.

North of Vännäs there are no diversion possibilities, which means that traffic capacity reduction must be limited as much as possible.

If there is a traffic interruption between Vännäs-Mellansel, the Botnia Line and Västeraspby-Långsele or the Mittbanan/Ådalsbanan must be operational.

If there is a traffic interruption between Mellansel-Långsele, the Bothnia Line and Central Lines train path line section Ånge-Sundsvall must be operational.

East Coast Line/Botnia Line is the diversion line for Storvik-Vännäs. If there is a traffic interruption between Kilafors-Ånge, the train path line section Kilafors-Söderhamn and East Coast Line must be operational.

If there are traffic interruption between Kilafors-Ockelbo-Storvik, the BJ line Storvik-Gävle, Ostkustbanan and Söderhamn-Kilafors must be operational.

For Hallsberg-Frövi-Storvik, the train path line section of the Freight line through Bergslagen, the diversion line is the Bergslagen Line (via Ställdalen).

Maintenance windows

The Swedish Transport Administration's basic maintenance is planned in maintenance windows that create the conditions for efficient execution of maintenance work on tracks. Maintenance windows consist of both regular times that are adapted in the construction of the annual train plan including timetable and maintenance windows for track engineering work weeks and track engineering work weekends planned for the current year.

On double-track routes, it is common for maintenance windows to be scheduled as single-track operations at night. On single-track routes, the maintenance windows are in general aligned with the engineering work plan and to be concentrated to weeks or weekends of planned track engineering work.

2.3.2 Expected Major impact TCRs

This section describes an assessment of planned projects that are expected to have Major impact TCR's (i.e. last more than 30 consecutive days and affect more than 50 % of the expected traffic) on traffic in 2026 on Traffic Flow 3 Hallsberg/Borlänge–Luleå/Narvik (See *Table 6*). The project measure is highlighted in *Figure 8* (i.e. map) on the page 16.

Table 6. Overview of planned Swedish projects with major TCRs on Traffic Flow 3
Hallsberg/Borlänge – Luleå/Narvik during year 2026.

Project name	Project proposal defined	Project approves by the IM's management	Financing secured	Comments
Replacement of overhead line, Bräcke-Vännäs	No	Yes	Yes	Start 2026

3 Principles for traffic planning

3.1 Traffic planning principles

The main principle of the Swedish Transport Administration's capacity allocation is, in accordance with current law, to base it on the applications made.

For each Traffic Flow described, the tables below presents the train types that, based on the Swedish Transport Administration's forecasts, are expected to operate each route between two nodes. Capacity utilisation at stations is not included in the assessment. For each route, capacity utilisation is reported in intervals according to *Table 7* below.

 Table 7. Capacity utilization intervals

81-100 %	High capacity utilisation
<mark>61-80 %</mark>	Medium capacity utilisation
≤60 %	Low capacity utilisation

When the capacity utilization (for a single route) exceeds 80 percent, the route's sensitivity to interference is high and traffic is extensive throughout the operational day in relation to the available capacity of the track. This means that a single-track with few passing points, junction station and/or meeting stations can have a high capacity utilization with a relatively low number of trains per day, while a double-track line or route must have extensive traffic throughout the day to get the same outcome. A high capacity utilization also means that it might be challenging to allocate capacity for maintenance of the track.

Capacity utilization in the range of 61–80 percent means that traffic does not use the entire available capacity that the infrastructure allows, but there may nevertheless be challenging to meet meeting demands from different actors, requesting capacity for traffic and/or capacity allocation for maintenance of the line. When the capacity used is equal to, or below, 60 percent, there is available capacity for additional traffic or time for maintenance of the track.

This will also form the basis of the first drafts of the capacity model. In future capacity strategy documents, this section will also include forecasts for the Ad-hoc and Rolling planning segments. For more information about principles and criteria for capacity allocation, see the Swedish Transport Administration's website: <u>Network Statement - (trafikverket.se)</u>

3.2 Traffic Flow 1 Stockholm/Hallsberg – Malmö/ Copenhagen

3.2.1 Traffic flows and expected traffic capacity utilisation

In the table below (*Table 8*), the expected capacity utilisation and expected distribution of traffic for train plan 2026 is presented. The assessment is based on a forecast of traffic in 2025 with an adjustment for the expected effect of major TCR measures. The red-marked routes are considered bottlenecks, while the green ones are well suited for more traffic. Temporary capacity restrictions are not yet planned in detail, and are therefore not included in the table below.

- FTFreight trainHSHigh-speed trainLDLong-distance train and night train
- RT Regional service/Regional train
- CT Commuter train

Capacity utilisation demand per day of operation:

Yellow Medium capacity utilisation

Red High capacity utilisation

Table 8. Expected capacity utilization per day and expected distribution of traffic for
2026. Abbreviations and color coding are described above.

Traffic Flow 2	Capacity utilisation	FT	HS	LD	RT	СТ
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-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	

Traffic Flow 2	Capacity utilisation	FT	HS	LD	RT	СТ
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

3.3 Traffic Flow 2 Malmö – Oslo

3.3.1 Traffic flows and expected traffic capacity utilisation

In the table below (*Table 9*), the expected capacity utilisation and expected distribution of traffic for train plan 2026 is presented. The assessment is based on a forecast of traffic in 2025 with an adjustment for the expected effect of major TCR measures. The red-marked routes are considered bottlenecks, while the green ones are well suited for more traffic. Temporary capacity restrictions are not yet planned in detail, and are therefore not included in the table below.

FT	Freight train			
HS	High-speed train			
LD	Long-distance train and night train			
RT	Regional service/Regional train			
СТ	Commuter train			
Capacity utilisation demand per day of operation:				
Green	Low capacity utilisation			
Yellow	Medium capacity utilisation			

Red High capacity utilisation

Traffic Flow 2	Capacity utilisation	FT	HS	LD	RT	ст
Kornsjö-Skälebol		х	х		х	
Skälebol-Öxnered		х	х		х	
Öxnered-Älvängen		х	х		х	
Älvängen-Göteborg		х	х		х	х
Göteborg-Kungsbacka		х	х		х	х
Kungsbacka-Varberg		х	х		х	
Varberg-Halmstad		х	х		х	
Halmstad-Ängelholm		х	х		х	х
Ängelholm- Teckomatorp- Malmö		х				х
Ängelholm-Helsingborg		х	х		х	х
Helsingborg-Lund			х	х	х	х
Lund-Malmö		Х	х	х	х	х

Table 9. Expected capacity utilization per day and expected distribution of traffic for2026. Explanation of abbreviations and colour coding are described above.

3.4 Traffic Flow 3 Hallsberg/Borlänge – Luleå/Narvik

3.4.1 Traffic flows and expected traffic capacity utilisation

In the table below (*Table 10*), the expected capacity utilisation and expected distribution of traffic for train plan 2026 is presented. The assessment is based on a forecast of traffic in 2025 with an adjustment for the expected effect of major TCR measures. The red-marked routes are considered bottlenecks, while the green ones are well suited for more traffic. Temporary capacity restrictions are not yet planned in detail, and are therefore not included in the table below.

FT	Freight train				
HS	High-speed train				
LD	Long-distance train and night train				
RT	Regional service/Regional train				
СТ	Commuter train				
Capacity utilisation demand per day of operation:					
Green	Low capacity utilisation				
Yellow	Medium capacity utilisation				

Red High capacity utilisation

Table 10. Expected capacity utilization per day and expected distribution of traffic for2026. Explanation of abbreviations and colour coding are described above.

Traffic Flow 3	Capacity utilisation	FT	HS	LD	RT	СТ
Hallsberg-Örebro		Х			Х	
Örebro-Frövi		Х			Х	
Frövi-Fagersta		Х			Х	
Fagersta-Storvik		Х			Х	
Borlänge-Storvik		Х	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
Boden-Kiruna		Х		Х	Х	
Kiruna-Riksgränsen		Х		Х		

4 Reference documents

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