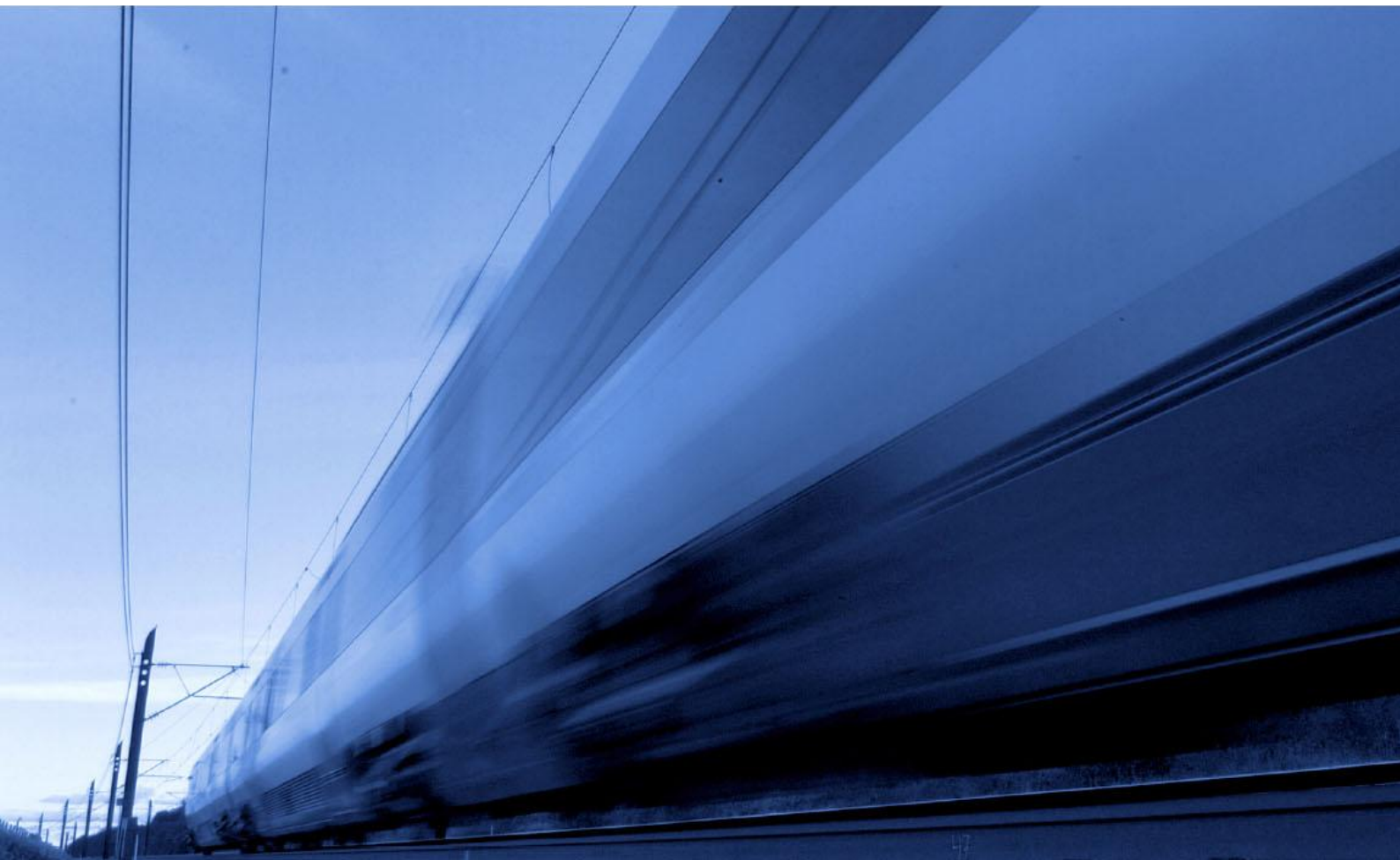
Capacity Strategy for TT 2029

Bane NOR

Final Version



Content

0 Introduction

This document is Bane NOR's Capacity Strategy for the R29 timetable period.

As infrastructure manager, Bane NOR is the owner and manager of the Capacity Management process.

Norwegian regulations do not require Bane NOR to publish Capacity Strategies. This Capacity Strategy is thus provided for information only, and is not binding for the upcoming capacity management process for TT 2029. Bane NOR's Network Statement describes the capacity management process in more detail, including information on regulatory requirements and priorities.

The European Commission's proposal for a new regulation on capacity management describes the Capacity Strategy as an annual iterative process that will take place in the period 60 months (X-60) to 36 months (X-36) before the start of the timetable period for which the strategy applies.

Railway infrastructure capacity is limited, costly, and time-consuming to expand. It is therefore essential to utilise the existing infrastructure in a way that best serves the needs of society. Early planning, stakeholder involvement, and transparency regarding intended use are crucial tools for achieving this. The Capacity Strategy process encompasses all these activities and helps ensure optimal utilisation of the available capacity.

During the Capacity Strategy process, Bane NOR engages with the Norwegian Railway Directorate (Jernbanedirektoratet), train operating companies, and service facility operators to obtain the best possible outlook on planned infrastructure, capacity, and market needs for the relevant timetable period. The process also aligns plans with Trafikverket (the Swedish Transport Administration), forming the basis for further planning of international traffic. The outcome of this work is a document entitled *Capacity Strategy*, which serves as Bane NOR's initial communication to the market regarding the intended overall use of its infrastructure capacity for a given timetable period.

Bane NOR's participation in RailNetEurope's multi-year project on renewing capacity management have led to development and publication of capacity strategies, so far limited to border crossings and associated sections of Bane NOR's network. In this Capacity Strategy for R29, the geographical scope has for the first time been expanded to include Bane NOR's entire network.

The purpose of the Capacity Strategy document is to communicate, three years in advance, what infrastructure capacity will be available in a given timetable period. Accordingly, the document provides information on both permanent and temporary capacity changes, as well as anticipated traffic flows. The strategy also sets out planning principles for Temporary Capacity Restrictions (TCRs) and for traffic, which are applied throughout the subsequent processes right up to the day of operation.

The content of this document has therefore been prepared in line with current requirements from RailNetEurope. In future versions, both content and meaning will change in line with the introduction of the new European regulation into Norwegian law.

0.1 Contact details

The final capacity strategy will be published on Bane NOR's and RNE's websites. The following table lists contact points that can be contacted if you have questions about the document.

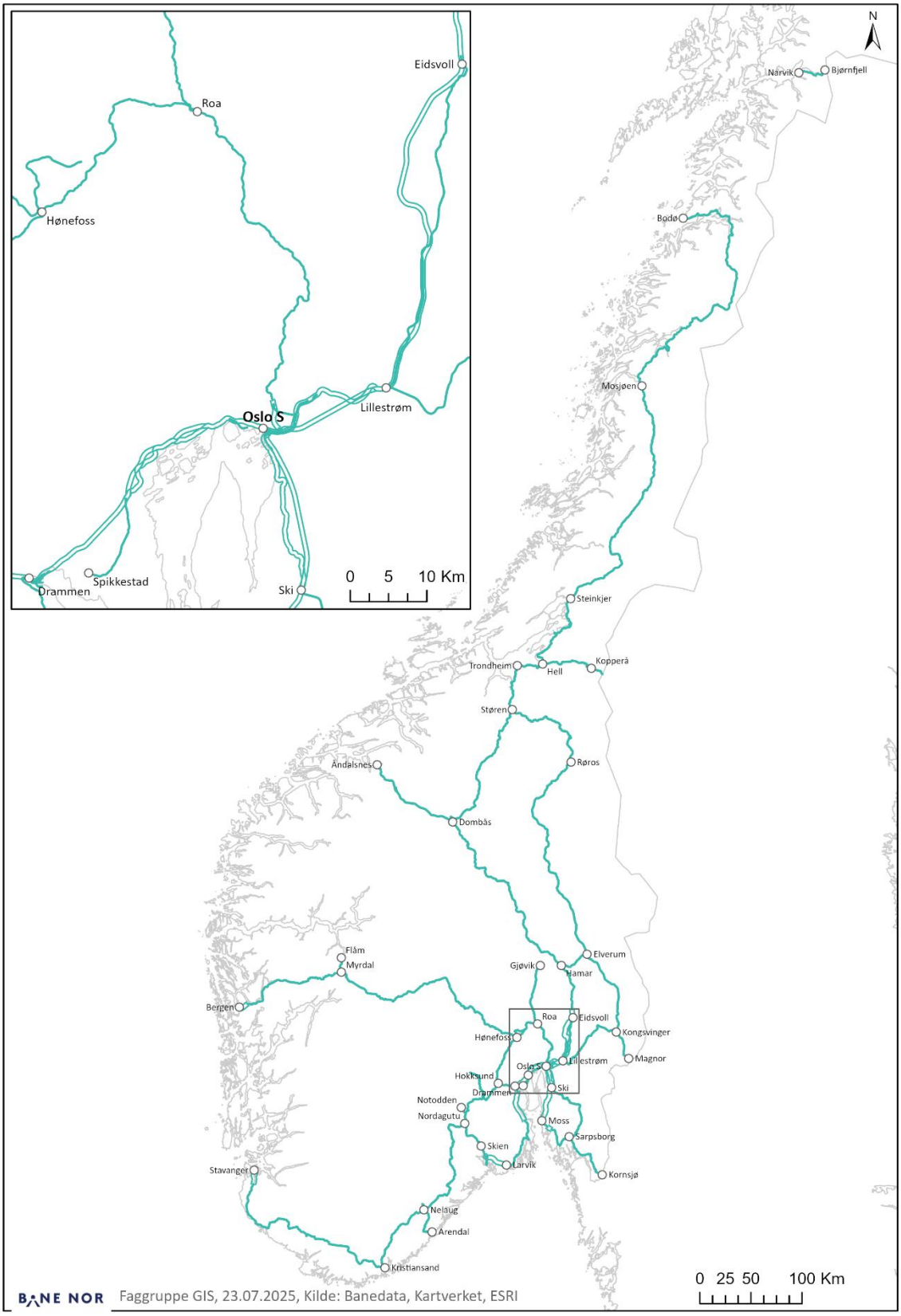
Table 1 List of contact information

Contact	Email	Website
Capacity management in Bane NOR	kapasitetsmiljoet@banenor.no	https://banenor.no/en/

Contact	Email	Website
RNE	mailbox@rne.eu	https://rne.eu/
RailNetEurope (RNE), contact details for international train path capacity	oss@banenor.no	https://rne.eu/organisation/oss-c-oss/
Contact for Network Statement Bane NOR	network.statement@banenor.no	https://oppslagsverk.banenor.no/en/network-statement/
ScanMed Corridor		https://www.scanmedfreight.eu/

0.2 Geographical Scope

This capacity strategy includes the entire Norwegian railway network that is planned to be used for TT 2029. Map 1 Shows an overview of all railway lines for this capacity strategy.



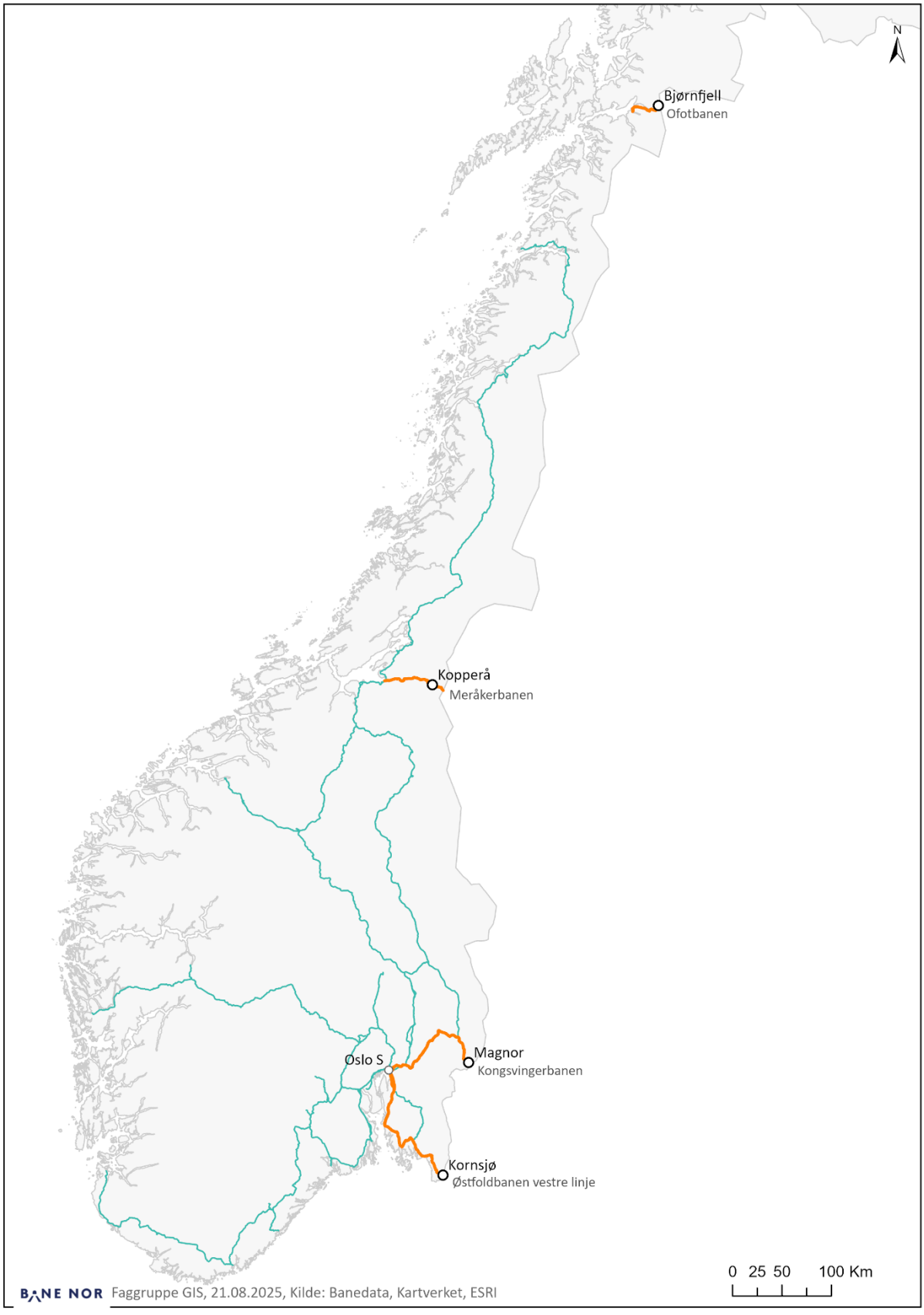
Map 1 The Norwegian railway network

0.3 List of involved infrastructure managers

Table 2 and Map 2 summarises the infrastructure managers (IM) and lines where Bane NOR's infrastructure connects with other infrastructure managers.

Table 2 List of infrastructure managers involved

Railway Line	Border point	Infrastructure managers
Kongsvinger Line (Kongsvingerbanen)	Charlottenberg border	Bane NOR / Swedish Transport Administration
Østfold Western Line (Østfoldbanen vestre linje)	Kornsjø border	Bane NOR / Swedish Transport Administration
Ofot Line (Ofotbanen)	Bjørnfjell border	Bane NOR / Swedish Transport Administration
Meråker Line (Meråkerbanen)	Storlien border	Bane NOR / Swedish Transport Administration



Map 2 Cross-border sections and border-near stations

0.4 List of service facilities

An overview of existing service facilities is provided in Appendix 7 of the Network Statement 2027 and on the Rail Facilities Portal. Planned changes to these service facilities are described in Chapter 1 and Appendix 2. Collectively, these sources provide information on planned capacity for service facilities in TT 2029.

1 Expected Capacity of Infrastructure in TT 2029

This chapter describes which permanent changes in infrastructure capacity are expected to be available for all or part of the TT 2029. This projected permanent infrastructure capacity is the sum of:

- Expected permanent capacity additions
- Expected permanent capacity reductions

The permanent capacity changes are summarised in a summary below.

1.1 Permanent capacity changes

Table 3 sets out the projects that will result in a permanent increase or reduction in infrastructure capacity, and which therefore affect traffic flow before or during TT 2029. The table describes the capacity changes expected from each infrastructure project with an estimated cost in excess of one billion NOK. The remaining projects are presented in Appendix 2.

Table 3 List of the major infrastructure measures with permanent capacity changes

Segment	Description	Effect	Rough quantifications of the effect	Project approved by Bane NORs management	Financing secured[1]
Oslo – Ski	Upgrade Project Name: L2: Kolbotn station Planned implemented by TT 2027	One of several projects which will allow for up to 220 metres local trains on the line	New double track loop north and south of Kolbotn. Platforms are raised and extended, with new access between tracks. **Capacity-reducing measures:** Remove track 2 and associated points	Yes	Yes
Oslo – Tønsberg	Upgrade Project Name: Nykirke-Barkåker Planned implemented by TT 2027[2]	One of several projects which will allow for faster and increased number of trains on the Vestfold Line	Double track Nykirke-Barkåker and new station at Skoppum	Yes	Yes
Oslo – Tønsberg	Upgrade Project Name: Barkåker-Tønsberg Planned implemented by TT 2027[2]		Completion of Barkåker-Tønsberg for a functional double track into Tønsberg station. 14 parking spaces north of Tønsberg station.	Yes	Yes

[1] Dependent on allocation in upcoming national budgets
[2] Bane NOR is currently revising the National Signalling Plan (NSP), which sets out the roll-out schedule for ERTMS and further influence the implementation of the infrastructure project

Stavne –(Lerkendal) Leangen; Trondheim – Stjørdal; and Hell – Storlien	Electrification Project Name: Partial electrification of the Trønder and Meråker Line Planned implemented by TT 2027	Electrification of the Stavne - Leangen Line, as well as the Trondheim - Stjørdal and Meråker Line	Electric power on the sections	Yes	Yes

1.1.1 ERTMS - national implementation

Bane NOR is currently revising the National Signalling Plan (NSP), which sets out the roll-out schedule for ERTMS and will influence the implementation of the infrastructure projects listed in Table 3. The updated plan will be published on Bane NOR's website once available.

2 Temporary Capacity Restrictions

Bane NOR plans and implements temporary capacity restrictions, hereinafter referred to as "TCR".

2.1 Planning principles for TCRs

Bane NOR's overall planning principle for TCRs:

TCRs should cause least possible impact on traffic

In addition, several planning principles are applied to support this overarching principle, and these are described in the following chapters.

2.1.1 Grouping of TCRs to reduce overall duration and impact on traffic

Principle:
Grouping TCRs reduces the overall duration and impact on traffic, and infrastructure manager's resources.

The principle is supported by the following clarifications:

- TCRs will be grouped to reduce their total duration and overall impact on traffic, while also ensuring more efficient use of professional resources and machinery
- Medium TCRs lasting more than 48 hours, as well as Large and Major TCRs, must be continuously coordinated with planned projects undertaken by the Norwegian Public Roads Administration, local and national authorities, and public transport operators, in order to ensure the best possible traffic flow.

Principle:
TCRs will be planned so that both passengers and freight customers cargo owners can use the railway to the greatest extent possible.

The principle is supported by the following clarifications:

- TCRs must be planned with efficient use of professional resources and machinery so that the project's duration and impact on traffic is minimized.
- For Medium, Large, and Major TCRs, Bane NOR shall assess the possibility of allowing trains to pass during the execution of the TCR.
- TCRs that involve track closures must be planned with regard to alternative transport arrangements for passenger and freight services.
- Bane NOR will coordinate closure plans with other infrastructure managers, such as county authorities, municipalities, Sporveien, the Norwegian Public Roads Administration, and other relevant actors, to ensure that passengers have suitable alternative transport options.
- Train operating companies must be notified of any new or amended TCRs involving total closure as early as possible.
- After Large and Major TCRs, Bane NOR will evaluate selected alternative transport solutions in order to further improve arrangements for train companies, freight customers, and passengers.

2.1.2 Description of sections where TCRs involving total closures are not to be planned at the same time

Principle:
Where alternative routes exist, at least one shall remain open for rail traffic

The principle is supported by the following clarifications:

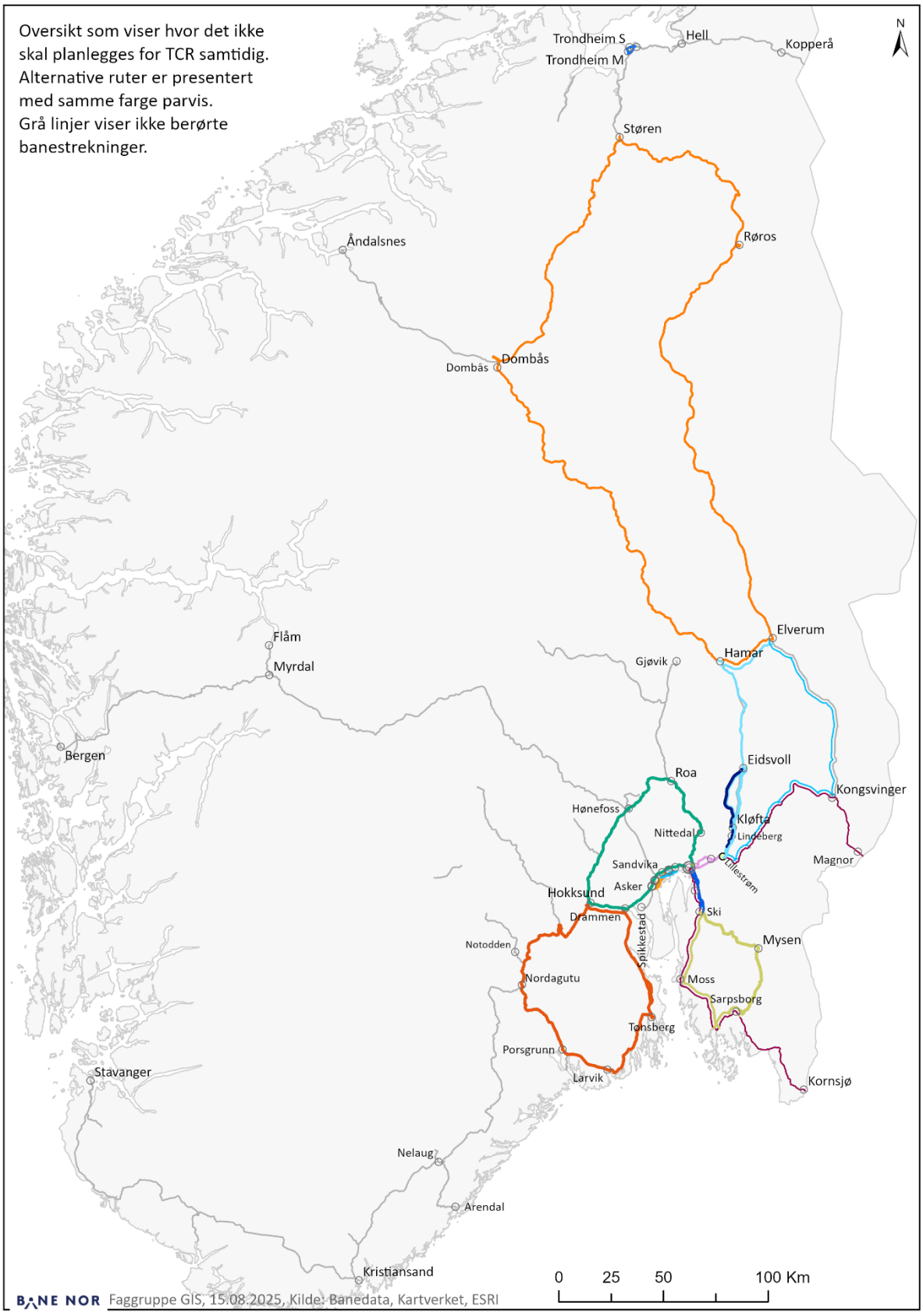
- Where alternative routes for trains exist, Bane NOR has predefined these as diversionary sections for TCRs involving total closures.

- Diversion options for international traffic must be coordinated with the Swedish Transport Administration.
- Border crossings that serve as alternative routes for trains must not be closed simultaneously.
- On lines where a bypass exists, TCRs involving track closures shall not be planned on both sections at the same time.
- Long-term and/or simultaneous TCRs affecting transport corridors in the Oslo area shall be avoided. Should Bane NOR nevertheless need to deviate from this requirement, the matter must be clarified with the affected applicants.
- Simultaneous TCRs that disrupt a single train service at multiple points must be avoided. Should Bane NOR nevertheless need to deviate from this requirement, the matter must be clarified with the affected applicants.
- For TCRs involving total closure, and where diversionary routes exist for passenger services, freight services, empty stock movements or locomotives, the capacity of the diversionary section(s) must be specified.
- For Major TCRs, the diversion of train services (passenger services, freight services, empty stock and locomotives) must be prepared in accordance with established criteria.
- For Major TCRs, trains must be diverted in line with these established criteria.

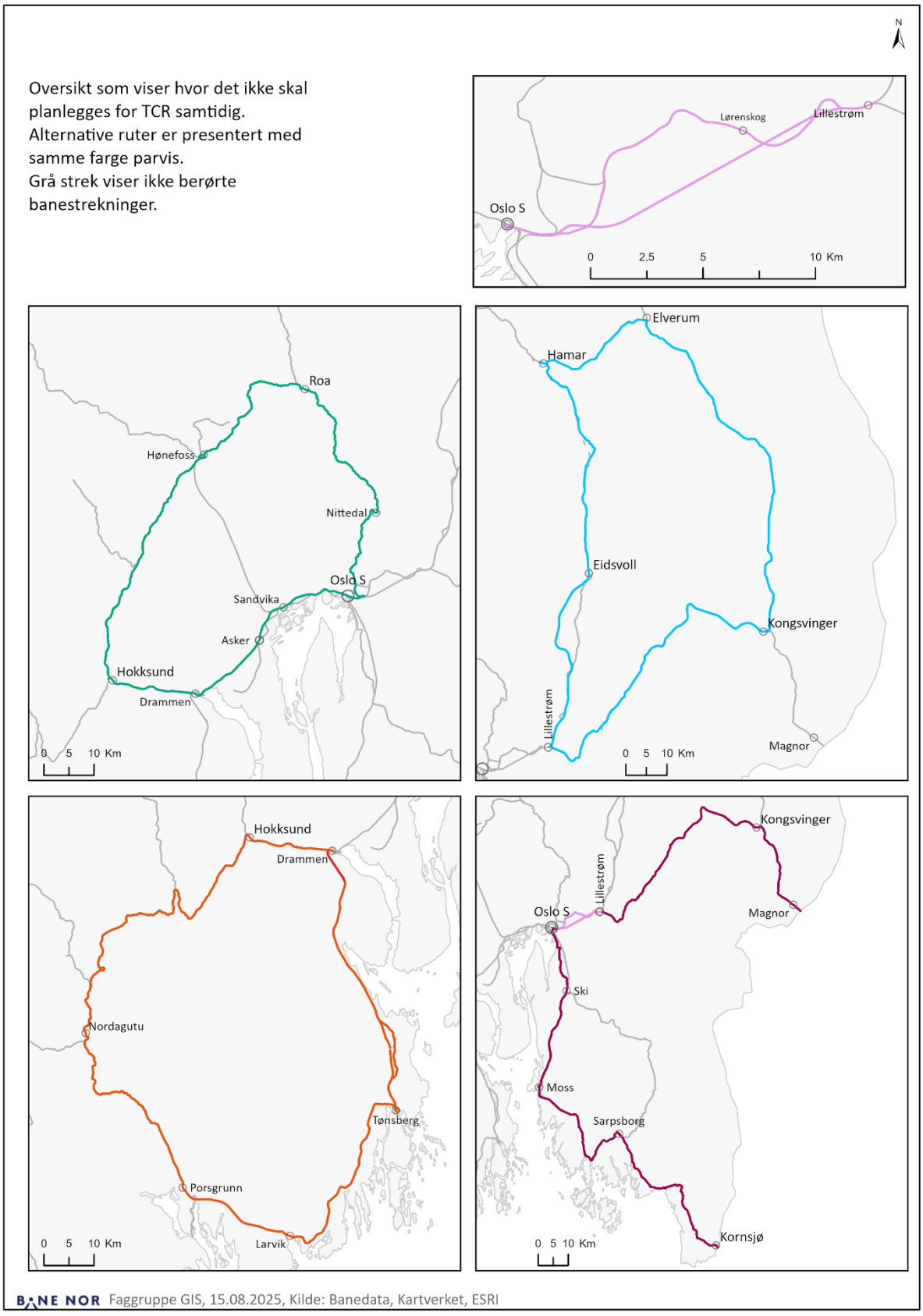
Maps 3a–c and Table 4 show the predefined groups of sections where total closures must not be planned simultaneously, in order to maintain alternative routes for trains.

Table 4 Predefined sections where total closures are not to be planned at the same time

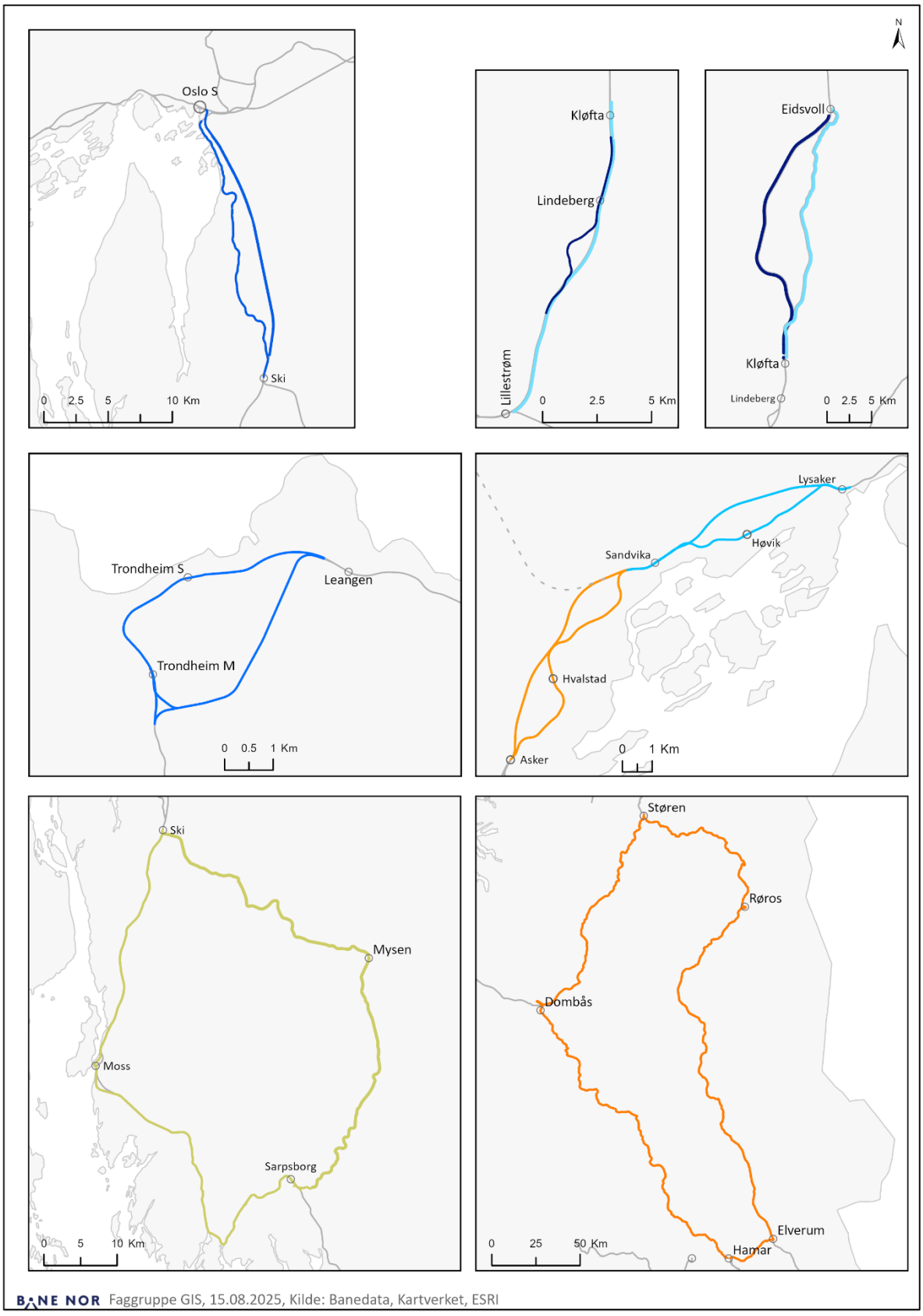
Line Section	Detour options
Oslo S – Ski	Oslo S - (Follobanen) - Ski
	Oslo S - Kolbotn - Ski
Skiing – Sarpsborg	Ski - Moss - Sarpsborg
	Skiing - Mysen - Sarpsborg
Lysaker – Sandvika	Lysaker - (Askerbanen) - Sandvika
	Lysaker - Høvik - Sandvika
Sandvika – Asker	Sandvika - (Askerbanen) - Asker
	Sandvika - Hvalstad - Asker
Oslo – Roa	Oslo - Nittedal - Røa
	Oslo - Hokksund - Hønefoss - Roa
Oslo S – Hønefoss	Oslo S - Roa - Hønefoss
	Oslo S - Drammen - Hokksund - Hønefoss
Drammen – Nordagutu	Drammen - Kongsberg - Nordagutu
	Drammen - Tønsberg - Nordagutu
Drammen – Porsgrunn	Drammen - Kongsberg - Nordagutu - Porsgrunn
	Drammen - Tønsberg - Porsgrunn
Oslo S – Lillestrøm	Oslo S - (Gardermobanen) - Lillestrøm
	Oslo S - Lørenskog - Lillestrøm
Lillestrøm – Kløfta	Lillestrøm - (Gardermobanen) - Kløfta
	Lillestrøm - Lindeberg - Kløfta
Kløfta – Eidsvoll	Kløfta - Jessheim- Eidsvoll
	Kløfta - Gardermoen - Eidsvoll
Lillestrøm – Hamar	Lillestrøm - Kongsvinger - Elverum - Hamar
	Lillestrøm - Eidsvoll - Hamar
Hamar – Støren	Hamar - Dombås - Støren
	Hamar - Røros - Støren
Trondheim M – Leangen	Trondheim M - Trondheim S - Leangen
	Trondheim M - (Stavne-Leangen) - Leangen
Oslo S – (Sweden)	Oslo S - Magnor - (Sweden)
	Oslo S - Kornsjø - (Sweden)



Map 3a Overview of all predefined sections where total closures are not to be planned at the same time



Map 3b Selected sections where total closures are not to be planned at the same time (1/2)



Map 3c Selected sections where total closures are not to be planned at the same time (2/2)

2.1.3 Recommended periods for TCRs

Principle:
The largest TCRs should be carried out during periods with the lowest traffic volumes.

The principle is supported by the following clarifications:

- The largest TCRs should be undertaken during predefined recommended periods when traffic volumes are at their lowest

Table 5 Recommended periods for planning TCRs

TCR Category	Consecutive days	Impact on traffic (traffic volume that is cancelled, rerouted or replaced with other modes of transport per operating day)	Recommended periods (for the implementation of TCR)
Major TCR	>30 consecutive days	>50% of the estimated traffic volume on the railway line	Summer
Large TCR	>7 consecutive days	>30% of the estimated traffic volume on the railway line	Easter, summer
Medium TCR	≤7 consecutive days	>50% of the estimated traffic volume on the railway line	Medium TCR lasting > 48 hours: Easter, summer and/or other off-peak periods. Medium TCR lasting > 8 - 48 hours: Weekends Medium TCR lasting ≤ 8 hours: The duration and time of day are adapted and defined for each section.
Minor TCR	Unlimited	>10% of the estimated traffic volume on the railway line	Minor TCR lasting > 48 hours: Weekend or other off-peak periods. Minor TCR lasting > 8 - 48 hours: Weekends Minor TCR lasting ≤ 8 hours: The duration and time of day are adapted and defined for the individual section.
Less than minor TCR	Unlimited	≤10% of the estimated traffic volume on the railway line	The duration and time of day are adapted and defined for each stretch

2.1.4 Description of the periods for planned maintenance windows

Principle:
Maintenance windows must be scheduled during periods of low traffic.

The principle is supported by the following clarifications:

- Maintenance windows must be planned for periods that result in the least negative impact on traffic.
- Maintenance windows may last for a maximum of 10 hours and are primarily intended for works of low complexity.
- Each maintenance window must be planned with defined start and end times, specified days, specified hours per day, and a clear description of the part of the infrastructure affected.

2.1.5 Description of what the TCR planning process will look like, how the coordination and consultation will be ensured

Principle:
The level of detail in the TCR description should increase, and the uncertainty should decrease, as the TCR process progresses.

The principle is supported by the following clarifications:

- The level of detail in the TCR description should increase throughout the TCR process.
- When an infrastructure project plans a TCR, the temporary capacity restriction and any other changes to infrastructure data must be communicated to downstream systems and processes.
- Uncertainty regarding the TCR description should be reduced as the TCR process advances.

Principle:
The larger the TCR, the earlier it must be consulted on, coordinated, and published.

The principle is supported by the following clarifications:

- Large and Major TCRs must be reported no later than X-36, and Minor and Medium TCRs no later than X-19, so that less-than-minor activities and maintenance can be incorporated into these TCRs.
- The documented TCR process will form the basis for continuous improvement in how Bane NOR performs in relation to railway undertakings, other infrastructure managers, and its own internal processes. A simplified description is provided below:
  - The TCR planning process, including consultation for Large and Major TCRs, is described in Chapter 4.3 of the Network Statement and in Bane NOR's internal procedures Allocate Capacity to TCRs (STY-605251) and Operational Planning of TCRs (STY-605551).
  - The procedure governing how and when applicants may request two alternative implementations of Major TCRs is also described in Chapter 4.3 of the Network Statement and in Bane NOR's internal procedure Point 16 Assessment (STY-605707).

  - Periods and activities in the TCR process:
    - X-60 – X-4: Consultation of all known TCRs, regardless of category.
    - X-60 – X-4: Coordination of all known TCRs, regardless of category.
    - X-34 – X-32: Applicants can request two alternative implementations of Major TCRs.
    - X-24: First publication of known Major and Large TCRs.
    - X-18: End coordination of Major TCRs.
    - X-17 – X-13: Final consultation of Major, Large and well-known Medium TCRs.
    - X-13.5: End coordination of known Large and Medium TCRs.
    - X-13: Final consultation of known Large and Medium TCRs.
    - X-12: Publication of known Major, Large and Medium TCRs.
    - X-6 – X-5: Final consultation and coordination of Medium and Minor TCRs known at X-6.5 at the latest
    - X-4: Publishing Medium and Minor TCRs.
    - X-4 – X+12: Consultation of Medium and Minor TCRs.
    - T-4: Provide the applicants with path offers to Passenger Trains.
    - T-1: Provide the applicants with path offers to Freight Trains.

2.1.6 Description of escalation process in case of disagreement between the stakeholders involved

Principle:
The train companies will be able to escalate a complaint against the Infrastructure Manager's processes and decisions.

The principle is supported by the following clarifications:

- Applicants who believe they have been treated unfairly, subjected to discriminatory practices, or have had their interests otherwise infringed in the railway market may submit a complaint to the

Norwegian Railway Authority. Information and procedures for submitting such complaints are available on the Norwegian Railway Authority's website (in Norwegian): Klage på konkurransevilkår - Statens jernbanetilsyn.

- Bane NOR has no predefined TCR-related escalation process with other infrastructure managers.

2.2 Expected Major TCRs for TT 2029

Table 6 Planned Major TCRs for TT 2029

Segment	Description	Implementation period	Start (quarterly basis)	Type of impact	Impact on passenger and freight traffic	Project approved by Bane NOR	Financing Secured
(Sandbukta) – (Moss)	Renewal / Upgrade TCR ID ØB04216	Oct 2028 – Dec 2029	Q4/2026	Single-track operation	Reduced capacity	N/A	N/A
Lillestrøm – Lillestrøm	Renewal / Upgrade TCR ID HB03507	Jan 2029 – Dec 2029	Q1/2029	Total closure	The work closes one platform at a time, while work is carried out on the associated tracks. Reduced station capacity.	N/A	N/A
Kongsvinger – Kongsvinger	Renewal / Upgrade TCR ID KB04913	Jun 2029 – Aug 2029	Q2/2029	Total closure	Kongsvinger station closed, no activity at the timber terminal.	N/A	N/A
(Rakkestad) – (Ise)	Renewal / Upgrade TCR ID ØØL04835	Jun 2029 – Jul 2029	Q2/2029	Total closure	Closed (Rakkestad) – (Ise)	N/A	N/A
(Ski) – (Ås)	Renewal / Upgrade TCR ID ØB04221	Jun 2029 – Aug 2029	Q2/2029	Total closure	Closed (Ski) – (Ås)	N/A	N/A
(Moss) – Sarpsborg	Renewal / Upgrade TCR ID ØB04845	Jun 2029 – Jul 2029	Q2/2029	Total closure	Closed (Moss) - Sarpsborg	N/A	N/A
(Loenga) – (Alnabru)	Renewal / Upgrade TCR ID GS04423	Jun 2029 – Jul 2029	Q2/2029	Total closure	Entry and exit south of Alnabru, via the "freight track", is not possible. Shunting will be limited in the south end.	N/A	N/A
(Lillestrøm) – (Eidsvoll)	Renewal / Upgrade TCR ID HB04431	Jun 2029 – Jul 2029	Q2/2029	Total closure	Closed (Lillestrøm) – (Eidsvoll)	N/A	N/A
(Oslo S) – (Lillestrøm)	Renewal / Upgrade TCR ID HB04602	Jun 2029 – Jul 2029	Q2/2029	Total closure	Passenger trains are cancelled, some freight trains can be operated from the north via Alfaset	N/A	N/A
(Kongsberg) – (Neslandvatn)	Renewal / Upgrade TCR ID SB04339	Jul 2029 – Aug 2029	Q3/2029	Total closure	Closed (Kongsberg) – (Neslandsvatn)	N/A	N/A
Hamar – Hamar	Renewal / Upgrade TCR ID DOB04638	Jul 2029 – Aug 2029	Q3/2029	Total closure	Temporary signalling system, very limited capacity	N/A	N/A
(Eidsvoll) – (Lillehammer)	Renewal / Upgrade TCR ID DOB04700	Aug 2029 – Oct 2029	Q3/2029	Total closure	Passenger trains will be cancelled, freight trains may apply for alternative routes via the Røros, Solør and Kongsvinger lines	N/A	N/A

3 Traffic Planning Principles and Traffic Flows

This chapter describes traffic planning principles and expected traffic flows for TT 2029. For this Capacity Strategy, Bane NOR base this upon permanent and temporary capacity changes (described in chapter 1 and 2) and input from Jernbanedirektoratet for expected traffic volumes.

3.1 Traffic planning principles

3.1.1 Border crossings

Bane NOR and Trafikverket have agreed the following transfer points of capacity management responsibilities

- Bjørnfjell border, at km 41,943
- Storlien border, at km 105,23
- Charlottenberg border, at km 136,270
- Kornsjø border, at km 170,278

These points, together with the adjacent line sections on each side, are defined as border crossings. The transfer of responsibility at these points between the infrastructure managers applies to all phases of the capacity management process.

3.1.2 Basic parameter of passenger and freight trains

This chapter describes the parameters for the basic categories and parameters that will be used in the Capacity Model.

3.1.2.1 Passenger trains

The points below provide an overview of basic categories for passenger trains:

Train category	Transport function	Goal
Local trains (L)	High frequency Rolling stock with high transport capacity	Covers transport between the city and surrounding areas
Regional (R) and regional express trains (RE)	Not as high frequency as local trains. Regional express has different stopping patterns than regional trains	Covers transport within regions
Long-distance trains (F)	Provides train services to travellers that normally do not return to the starting point on the same day.	Covers transport between the major cities and regions in Norway and abroad. Where there are no other regional train services, long distance trains will also serve these transport needs

3.1.2.2 Freight trains

Basic categories for freight trains:

Train category	Transport function	Goal
System trains (GS)	Industrial goods, timber, wood chips and iron-ore. Large volumes that vary over time, but there is a long-term perspective of the transport need.	From consignor to consignee

Train category	Transport function	Goal
Wagon Cargo Trains (GVs)	Transport of individual wagons with different product groups between freight terminals and sidings, e.g. semi-finished and finished products	From wagon load terminal to wagon load terminal.
Combined trains (GK)	Consists of containers, semi-trailers or swap bodies that are transferred from a car or boat.	From combi terminal to combi terminal
Flex train (GF)	Transport of load carriers for intermodal transport in combination with wagon load traffic.	Between freight terminals for transshipment of both load carriers for intermodal transport and wagon loads.

Generally, freight trains run at 80km/h. Actual speed depends on length, weight and properties of each railway section.

More information about the line, axle load, speed that applies to the current Timetable can be found in appendix to the Network statement.

3.1.3 Stopping Patterns

Stopping patterns influence both the effective and total running time of trains. They indicate the set of stations at which different train services will call along a line.

For most train categories, stopping patterns remain largely consistent from one timetable period to the next, with exceptions arising where significant changes occur in either infrastructure or market needs. Bane NOR follows the concepts established by the Norwegian Railway Directorate for stopping patterns in general and adapts them to customer needs wherever possible.

Table 7 General Principles of Stop Pattern

Train category	Stop Pattern
Local trains	Stop at all stations
Regional trains	Stops at the hubs of the city center and suburbs. Stops at all stations in the surrounding area
Regional Express	Stops at the hubs of the city center, suburbs, and inner perimeter. Stops at all stations in the outer surroundings
Long-distance trains	Stops at the hubs in metropolitan areas, and otherwise all stations on sections only served by long-distance trains

3.1.4 General principles of planning

Bane NOR has chosen to implement the principles for capacity planning from Rail Net Europe (RNE).

Here are some key points of how Bane NOR will handle the capacity strategy and forecasts for a given timetable period:

- **Expected service flow and volume**: Bane NOR describes the expected service flow and volume for the timetable period for the sections covered by the capacity strategy. For Capacity Strategy TT 2029, we also provide an overview of routes that have been declared congested, in accordance with the regulatory definition (Jernbaneforskriften), as per TT 2026.
- **Harmonisation of cross-border traffic**: In order to identify any differences in anticipated or planned traffic on each side of the national border, Bane NOR will harmonize traffic flows with the Swedish Transport Administration.

- **Optimisation of infrastructure capacity**: Where information is identified that may contribute to better capacity utilization, Bane NOR will communicate this to the relevant stakeholders.
- **Capacity utilization**: The capacity of a line depends on several parameters, including infrastructure design, rolling stock characteristics and mix of train services.

  Planning according to practical capacity reduces the risk of minor delays spreading through the system. This increases flexibility and allows trains to recover time in the event of small disruptions. Practical capacity therefore reflects capacity adapted to real operating conditions, taking into account factors such as punctuality and regularity.

- **Forecasts for expected traffic flow**: The forecasts are calculated using average historical traffic data for train categories such as passenger and freight trains, combined with permanent capacity changes and planned measures (TCRs).
- **Analyses for conflict areas**: If conflicts arise in the capacity allocation process, Bane NOR prioritises conducting socioeconomic cost–benefit analyses. The assessment criteria and cost–benefit methodology are described in Chapter 4.6.3 of the Network Statement.
- **Publication of timetables and TCR plans**: Each year, Bane NOR publishes timetables for passenger and freight trains, as well as plans for capacity-affecting track works (TCRs).
- **Pre-planned freight corridors**: Bane NOR publishes pre-planned routes for both the annual timetable and the operational timetable for cross-border freight transport on Rail Freight Corridor 3 (Scandinavian–Mediterranean Corridor, C03). Applications for these routes are submitted via the Path Coordination System (PCS). Further details can be found on the ScanMed Rail Freight Corridor website.

By implementing these measures, Bane NOR aims to increase capacity, promote cross-border cooperation and ensure robust route planning.

3.1.5 Principles for railway lines

Table 8 summarises Bane NOR's line sections with a description of the current situation and planning principles. It also identifies the line sections that have been declared congested.

Table 8 Planning principles for railway lines

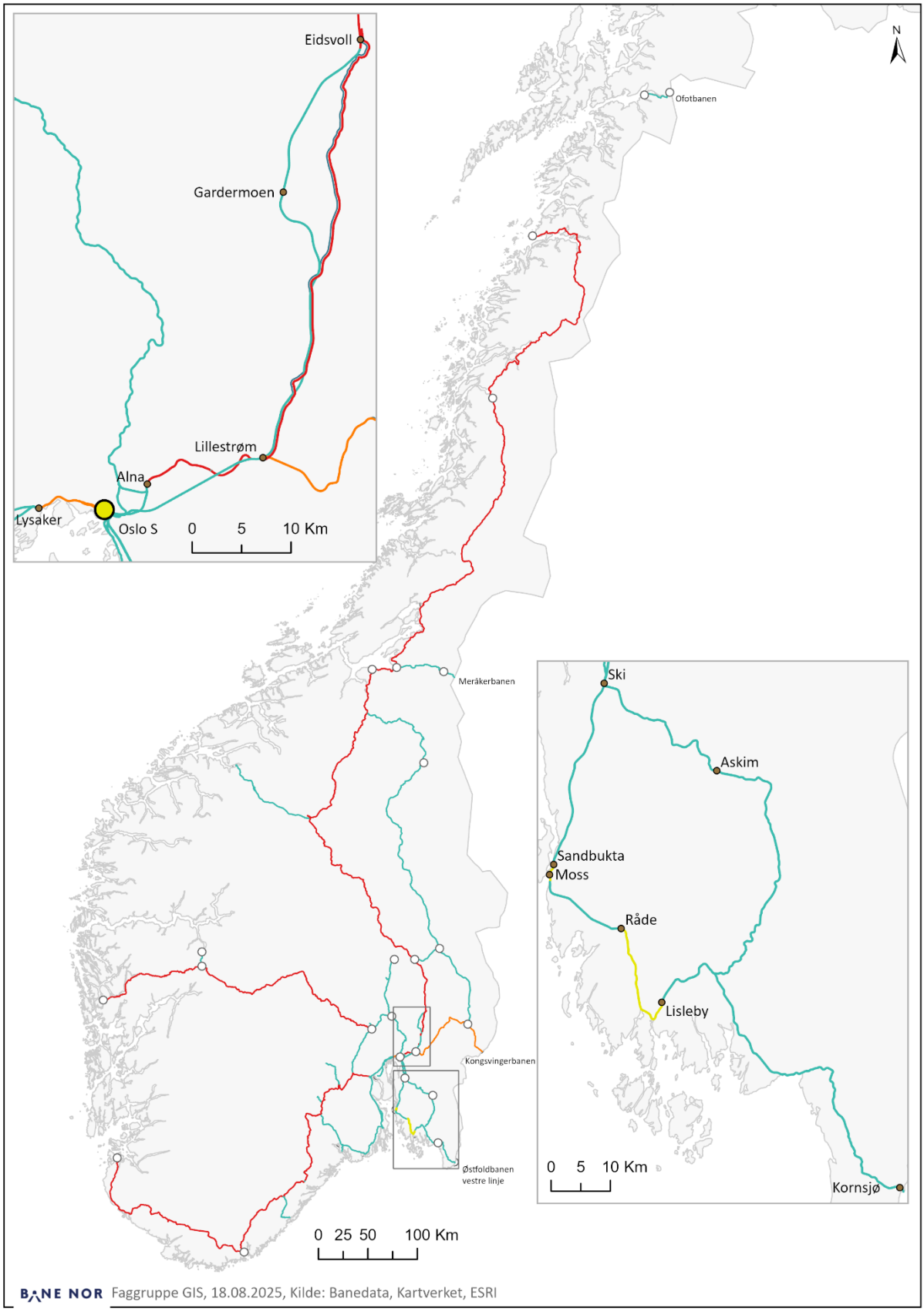
Railway section	Planning principles and elements
Alnabanen **(Grefsen – Alnabru)**	Freight train route.
The Arendal Railway **(Nelaug - Arendal)**	Regional train route.
The Asker Line **(Asker-Lysaker)**	Route with local- (only for exceptions), regional-, long-distance and freight trains.
The Bergen Railway **(Hønefoss – Bergen)**	Route with local, regional, long-distance and freight trains. The stretch has been declared congested.
The Bratsberg Line **(Nordagutu – Porsgrunn)**	Regional train route. Regional trains run between Porsgrunn and Notodden
The Brevik Line **(Myrane – Ørvik)**	Freight train route
The Dovre Line **(Eidsvoll – Trondheim)**	Route with regional, long-distance and freight trains. The stretch has been declared congested.
The Drammen Line **(Oslo S – Drammen)**	Highly utilized. Route with local, regional and freight trains. The section Oslo S – Lysaker has been declared congested.

Railway section	Planning principles and elements
Flåm Railway **(Myrdal – Flåm)**	Regional train route.
The Follo Line **(Oslo S – Ski / Blix tunnel)**	Regional train route. Freight trains are only allowed to run in the Blix tunnel in deviation situations. .
The Gardermo Line **(Oslo S – Eidsvoll)**	Regional and long-distance train routes. Freight trains with aviation fuel run between Langeland and Gardermoen. Other freight trains only operate on the railway section in exceptional cases.
The Gjøvik Line **(Oslo S – Gjøvik)**	Regional and freight train routes. Some sections on the line serves as alternative route for Oslo S – Bergen.
The main line **(Oslo S – Eidvoll)**	Route with local, regional, long-distance and freight trains. The stretch from Alnabru to Eidsvoll has been declared congested.
The Kongsvinger Line **(Lillestrøm - Magnor)**	Cross-border line with regional, long-distance and freight trains. The Kongsvinger Line is highly utilized and declared overloaded.
The Meråker Line **(Hell – Storlien)**	Cross-border regional train route.
The Nordland Line **(Trondheim – Bodø)**	Route with region, long-distance and freight trains. The stretch has been declared congested.
Numdalsbanen **(Kongsberg – Flesberg)**	Freight train route
Ofotbanen **(Narvik – Bjørnfjell)**	Cross-border section with regional, long-distance and freight trains.
The Randsfjord Line **(Hokksund – Hønefoss)**	Route with long-distance and freight trains.
The Rauma Railway **(Dombås – Åndalsnes)**	Route with regional and freight trains.
Roa – Hønefoss Line **(Roa – Hønefoss)**	Route with regional, long-distance and freight trains. The freight trains between Oslo S – Bergen often run this route via the Gjøvik Line.
The Røros Railway **(Hamar – Støren)**	Regional train route. Some freight trains will run in the event of deviations.
The Solør Line **(Kongsvinger - Elverum)**	Freight train route.
The Spikkestad Line **(Asker – Spikkestad)**	Local train route.
Stavne – The Leangen Line **(Stavne – Leangen)**	Regional train route and bypass track past Trondheim station
The Sørland Line **(Drammen – Stavanger)**	Route with local, regional, long-distance and freight trains. The stretch has been declared congested.

Railway section	Planning principles and elements
The Tinnos Railway **(Hjuksebø – Notodden)**	Regional train route.
The Vestfold Line **(Drammen - Porsgrunn)**	Regional train route. There are few freight trains running on the line as of today.
The Østfold Line Vestre linje **(Oslo S – Kornsjø)**	Cross-border line with local, regional and freight trains. Parts of the stretch have been declared congested
Østfold Line Eastern Line **(Ski – Sarpsborg)**	Regional train route.

3.1.5.1 Congested sections

Pursuant to Section 9-3 of the Jernbaneforskriften, the infrastructure manager shall immediately declare a line section to be congested if, after coordination of the applications for route paths and after consultation with the applicants, it is not possible to accommodate all applications for infrastructure capacity to a sufficient extent.



Map 4 Congested sections; all-day (red), all-day weekdays only (orange), alternate combination of day and time (yellow)

For sections without significantly changed infrastructure capacity, the current congested sections may also indicate the result for expected applications in R29.

The declared congested sections can be defined for the entire section where an application could not be granted, which means that it may still be possible to accommodate shorter routes on parts of the congested section

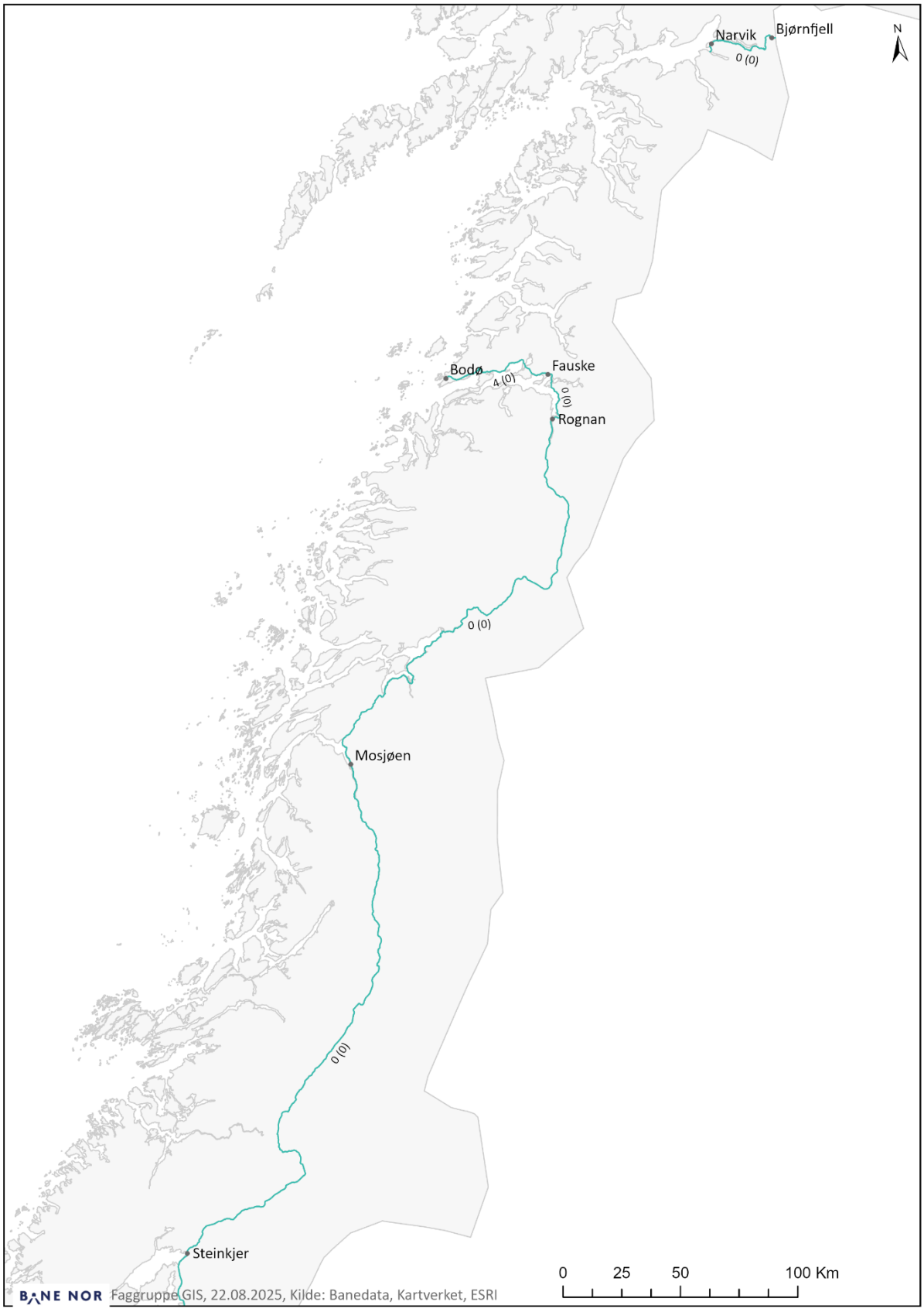
Stretches that have been declared congested are illustrated in Map 4. Declared congestions may vary over the course of an operating day and over the course of a week. For more information on congested infrastructure, see Network Statement chapter 4.6.

3.2 Traffic Flows

The expected traffic flow for TT 2029 is based on input from the Norwegian Railway Directorate, anticipated public service obligations for passenger services, and the expected volume of freight traffic. Taken together, this provides an early assessment of infrastructure capacity in relation to the desired train service offer.

3.2.1 Passenger traffic

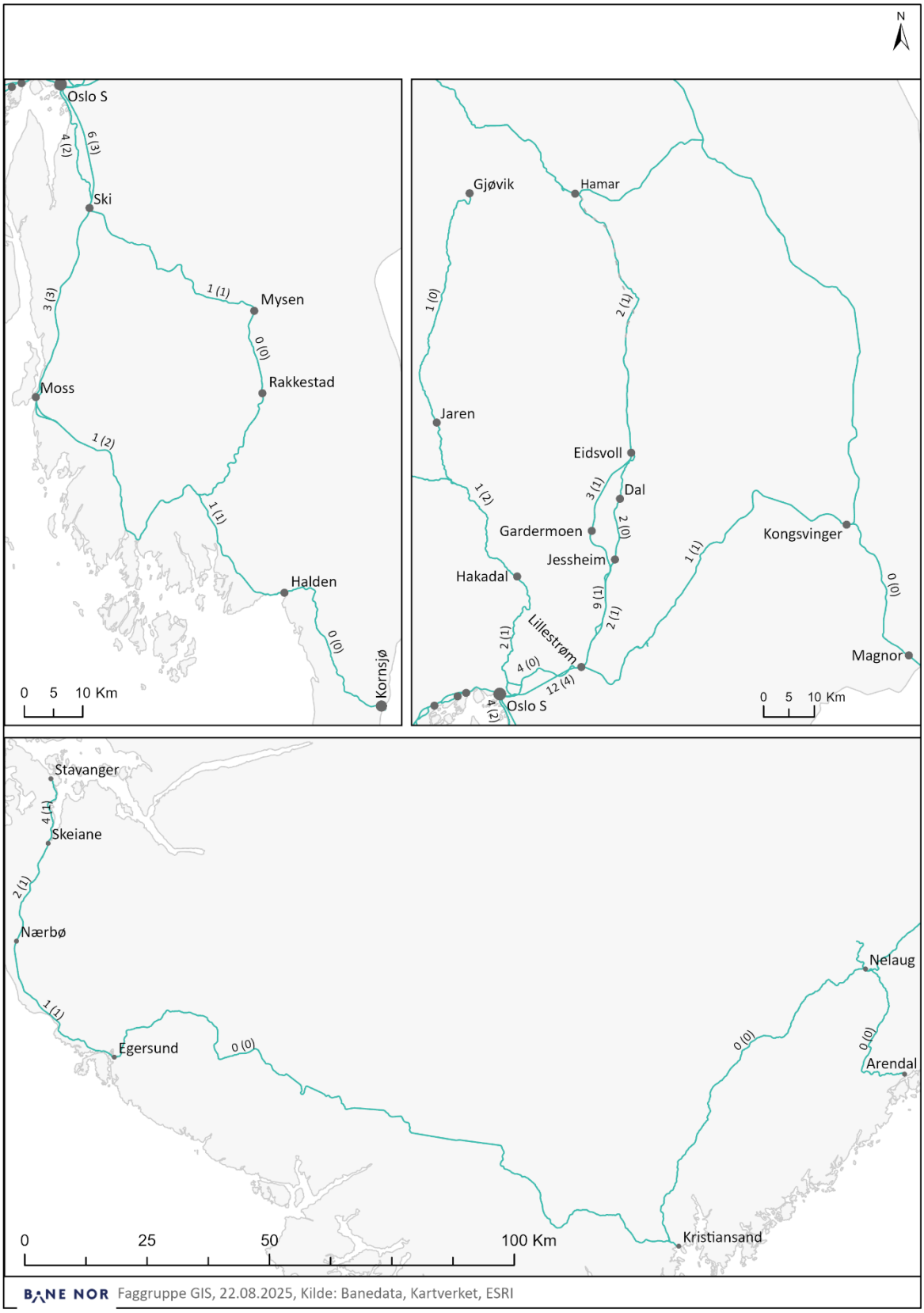
The expected traffic flow for passenger traffic is presented here in several maps, with a group for local and regional trains (Map 5(a) to (e) and a different group for long-distance trains (Map 6a-e). Underlying data for the maps can be found in Appendix 3.



Map 5a Traffic flow on local and regional trains; Number of trains per hour per direction (additions during peak hours)

Map 5b Traffic flow on local and regional trains; Number of trains per hour per direction (additions during peak hours)

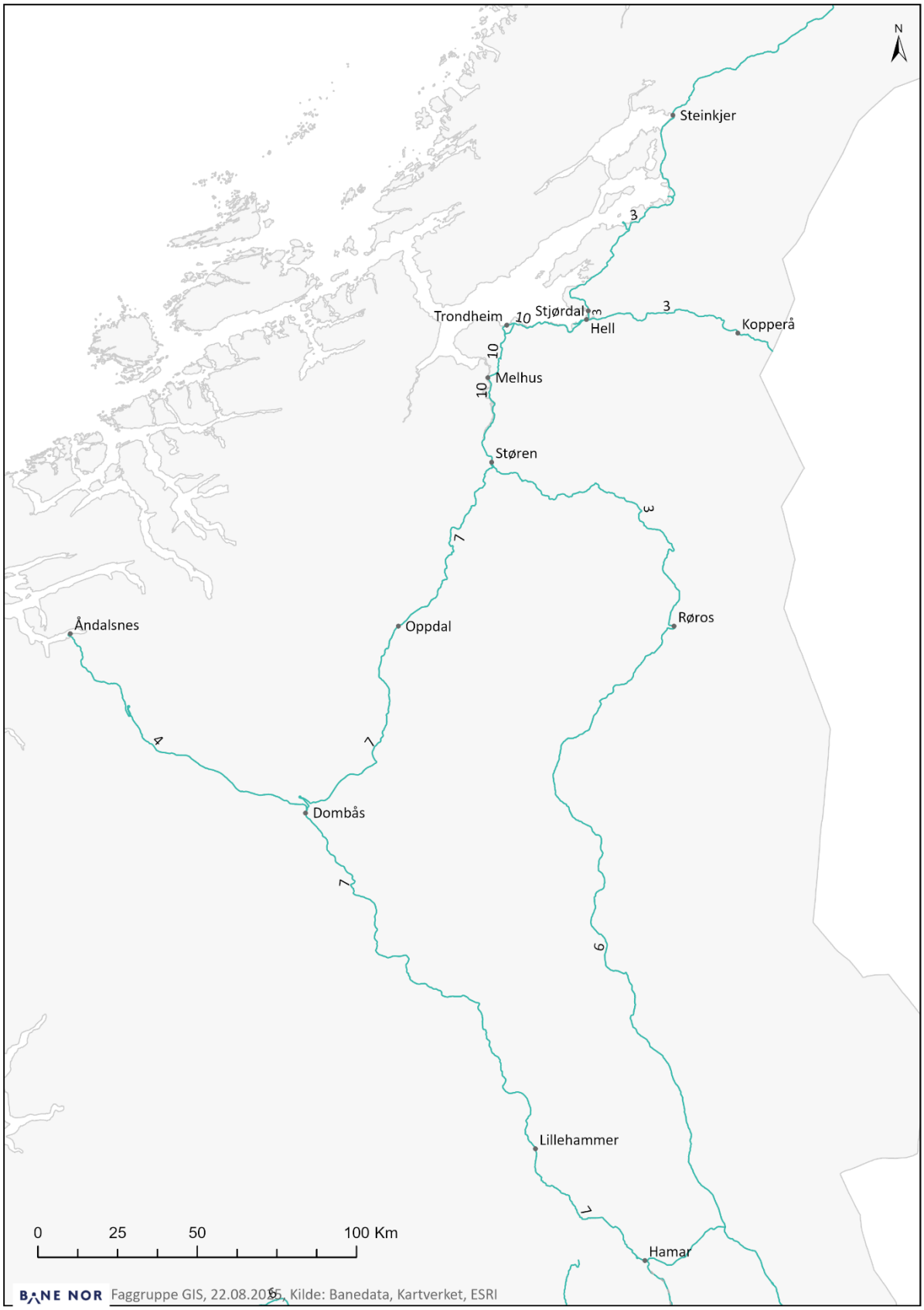
Map 5c Traffic flow on local and regional trains; Number of trains per hour per direction (additions during peak hours)



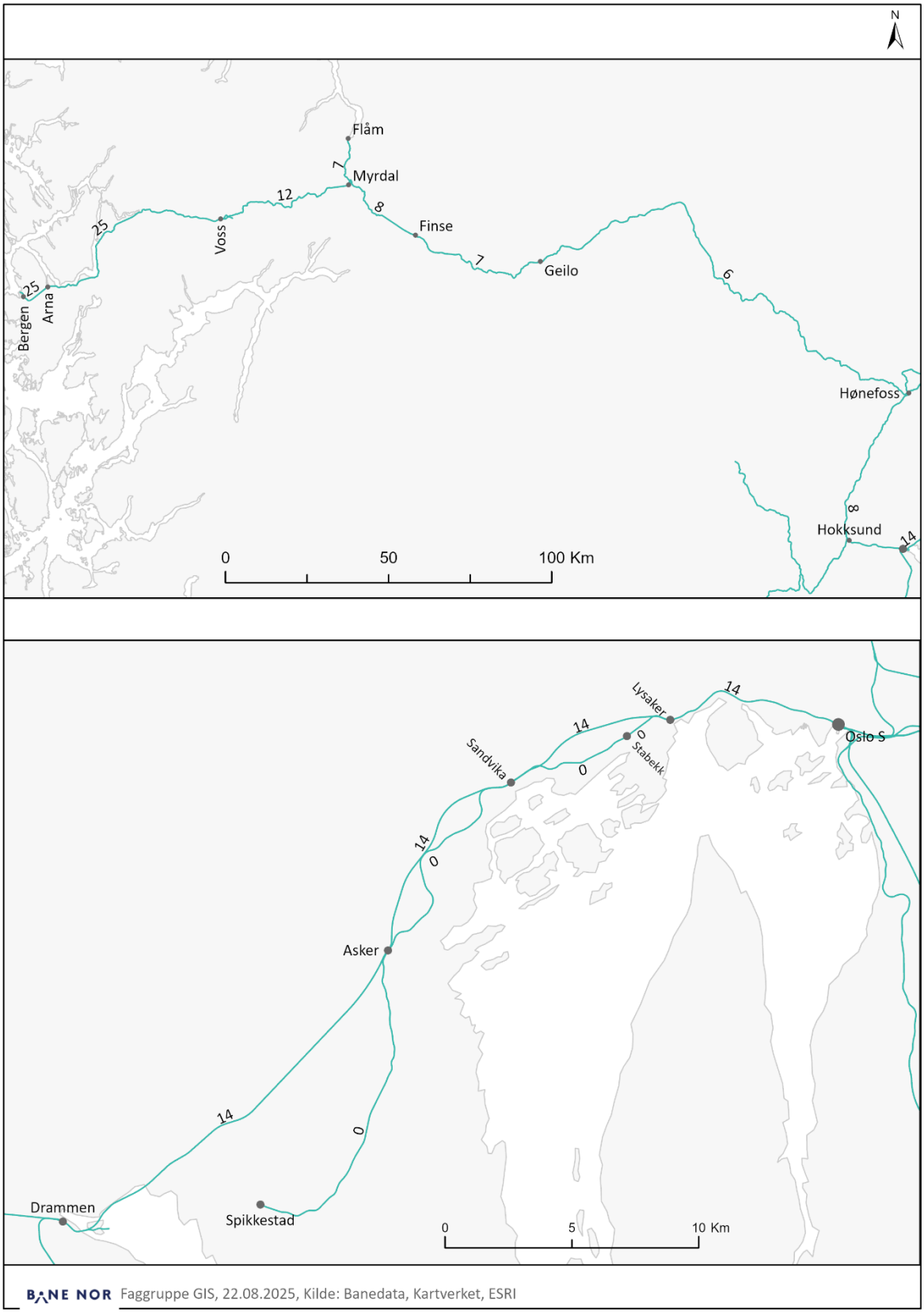
Map 5d Traffic flow on local and regional trains; Number of trains per hour per direction (additions during peak hours)

Map 5e Traffic flow for local and regional trains; Number of trains per hour per direction (additions during peak hours)

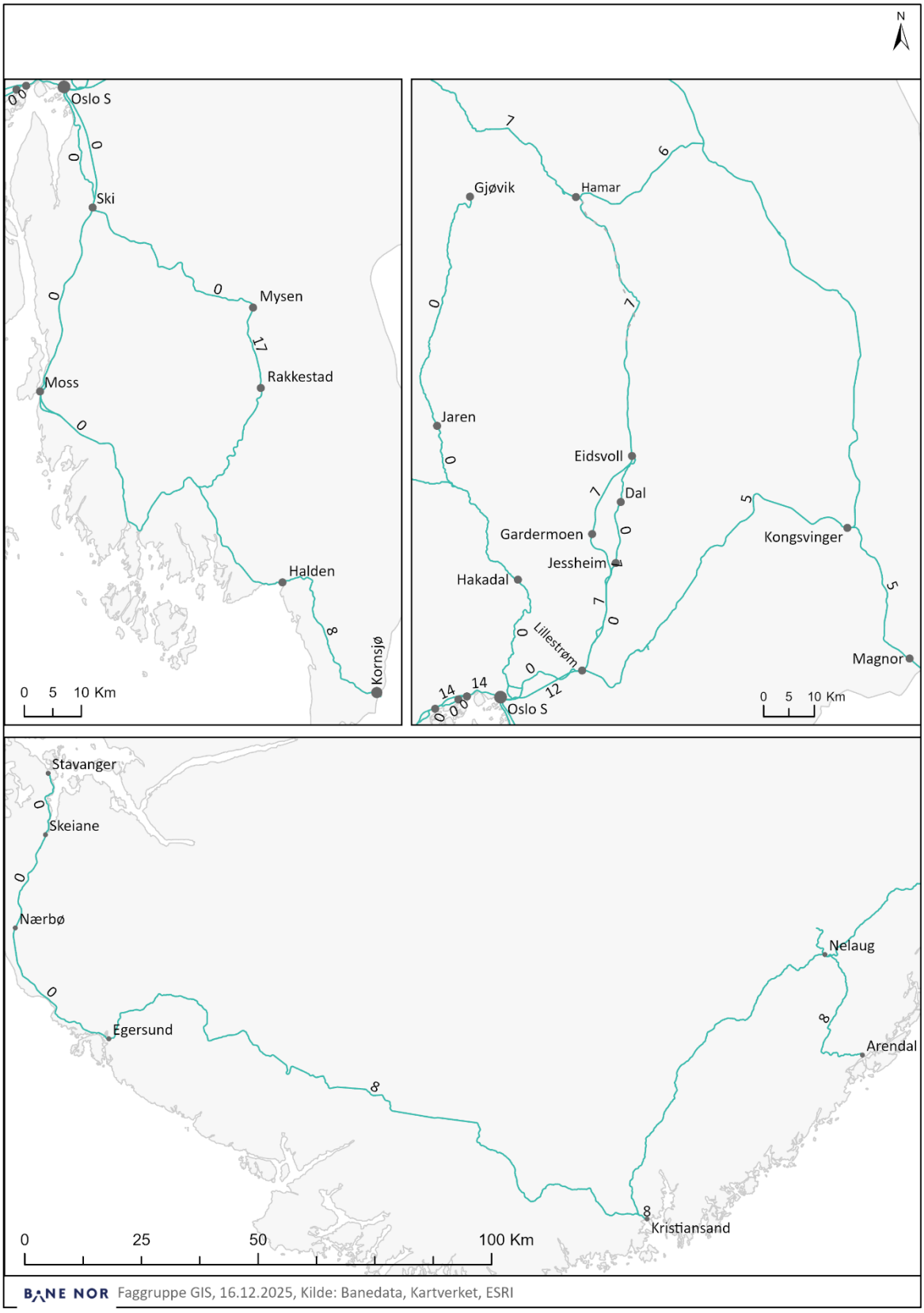
Map 6a Traffic flow long-distance trains, and additional passenger trains with frequency less than 1/hour; Number of trains per day per direction



Map 6b Traffic flow long-distance trains, and additional passenger trains with frequency less than 1/hour; Number of trains per day per direction



Map 6c Traffic flow long-distance trains, and additional passenger trains with frequency less than 1/hour; Number of trains per day per direction



Map 6d Traffic flow long-distance trains, and additional passenger trains with frequency less than 1/hour; Number of trains per day per direction

Map 6e Traffic flow long-distance trains, and additional passenger trains with frequency less than 1/hour; Number of trains per day per direction

3.2.2 Freight traffic

The table presents the expected freight traffic flow for TT 2029. The information is a summary of the “T2029” analysis prepared by the Norwegian Railway Directorate. Freight traffic is distributed unevenly across days and weeks, and the table therefore shows the maximum number of trains per freight relation per day, along with the total number per week.

For dimensioning purposes, the gross train length and loaded tonnage are provided. Certain relations have alternative arrival or departure locations along the same corridor, in which case two sets of length and tonnage values are shown.

Table 9 Traffic Flow of freight per freight relations (in Norwegian)

Kombilast-Relasjoner, Biltog og Fuel	Strekning	Tog/retning/døgn	Tog/retning/uke	Dim. Lengde [m]	Dim. Ton [T]
(Follobanen) **Østfoldbanen VL**	**ALB-KOG**	3	17	611	1295
(Hovedbanen) **Kongsvingerbanen**	**ALB-CG**	2	12	613	1310
(Hovedbanen) **Kongsvingerbanen**	**ALB-CG**	1	5	630	1000
(Askerbanen) **Sørlandsbanen**	**ALB-GAN**	5	28	540	1027
(Askerbanen) **Vestfoldbanen**	**ALB-BRE**	1	2	450	810
(via Roa)**Bergensbanen**	**ALB-BRG**	7	35	537	1105
(Randsfjordbanen) **Bergensbanen**	**SUD-BRG**	1	5	537	1105
(Hovedbanen) **Dovrebanen**	**ALB-TND**	9	46	506	1086
(Hovedbanen) Dovrebanen, **Raumabanen**	**ALB-ÅND**	1	5	459	867
Nordlandsbanen	**TND-BO**	5	25	600	1200
(Hovedbanen) Kongsvingerbanen, **Ofotbanen**	**ALB-CG-NK**	3	19	532	1205
Hovedbanen, (Gardemobanen) Fuel	**LOE-GAR**	2	14	360/380	480/1430
Drammen-/Askerbanen, Hovedbanen (Biltog)	**SUD-ALB**	1	5	650	1400
Drammen-/Askerbanen, Hovedbanen, **Dovrebanen** (Biltog)	**SUD-TND**	1	5	500	750
Drammen (Bilfrakt fra havn)	**SUD-HMS**	7	35	500	600
Systemtog-Relasjon Østfoldbanen					
Østfoldbanen	**KVG-HLD**	1	2	540	2400
Østfoldbanen	**KVG-SBO**	1	2	475	1440
Vestfoldbanen,Drammen-/Askerbanen, Østfoldbanen	**LVK-HLD**	1	1	550	2400
Kongsvingerbanen, Hovedbanen	**HVE-SBO**	1	1	470	1440
Dovrebanen, Hovedbanen, Østfoldbanen	**HVE-HLD**	1	1	566	1980
Hovedbanen, Østfoldbanen	**HSR-SBO/HLD**	1	3	470/540	1440/2400
Dovrebanen, Hovedbanen, Østfoldbanen	**SRI-SBO**	1	2	470	1440
Rørosbanen, Kongsvingerbanen, Hovedbanen, Østfoldbanen	**HIS-HLD**	1	1	355	1620
Randsfjordbanen, Drammen-/Askerbanen, Østfoldbanen	**HFS-HLD**	1	1	480	1690
Systemtog-Relasjon Kongsvinger- Solør- og Rørosbanen					
(Bergensbanen)Drammen-/Askerbanen, Hovedbanen, Kongsvingerbanen	**SOK/HFS-CG**	2	11	579/630	2300/2400
(Numedalsbanen)Sørlandsbanen, Drammen-/Askerbanen, Hovedbanen, Kongsvingerbanen	**KBG-CG**	1	1	630	2400
Kongsvingerbanen	**GGS-CG**	1	2	350	1400
Kongsvingerbanen	**KVG-CG**	1	7	600	2556
Dovrebanen, Hovedbanen, Kongsvingerbanen	**HVE-CG**	1	2	520	2296
Dovrebanen,Hovedbanen, Kongsvingerbanen	**SRI-CG**	2	7	579	2296
Dovrebanen,Rørosbanen, Solørbanen	**SRI-ELV-CG**	1	2	500	1900
Solørbanen, Kongsvingerbanen	**ELV-CG**	3	17	600/630	2160/2400
Rørosbanen, Solørbanen, Kongsvingerbanen	**HIS/KOP-CG**	2	4	380/577	1500/2300
Dovrebanen, Rørosbanen, Solørbanen, Kongsvingerbanen	**KVA-CG**	1	1	577	2300
Systemtog-Relasjon Sørlandsbanen, Vestfoldbanen					
Sørlandsbanen	**OGV-KRS**	1	5	400	1990
Østfoldbanen, Asker/Drammenbanen, Sørlandsbanen	**SBO-KRS**	1	1	250	1070
Brekvikbanen, Vestfoldbanen	**BRE-MNE**	5	20	150	800
Systemtog-Relasjon Nordlandsbanen					
Dovrebanen, Nordlandsbanen	**SRI-SGN**	1	2	304	1286
Dovrebanen, Nordlandsbanen	**HVE-SGN**	1	4	304	1286
Rørosbanen, Nordlandsbanen	**KOP-SGN**	1	1	500	1750
Nordlandsbanen Malm	**ØFJ-MO**	6	42	460	3650
Ofotbanen Malm, annet					
Ofotbanen Malm	**NK-BFG**	18	126	527/746	900/8160
Ofotbanen Annet	**NK-BFG**	1	5	200	350

3.2.3 Cross-border traffic

The expected traffic flow at the joint border crossings between Bane NOR and Trafikverket is presented in Table 10.

Table 10 Expected traffic flow at border crossings with the Trafikverket

BaneNOR	Trafikverket
Kornsjø/Ed	
Passenger train	
• Regional trains (Oslo S – Göteborg C) - 8 Depatures Per Day / Direction	• High-speed train (Oslo S – Göteborg C) - 8 Depatures Per Day / Direction

Freight train	
• 7 trains per day/direction - 7 departures from combined trains per day/direction	• 7 trains per day direction - 7 departures from combined trains per day/direction
Kongsvinger/Charlottenberg	
Passenger train	
• Regional train (Kongsvinger – Karlstad C) - 2 depatures per day/direction Saturday and Sunday only • Long-distance trains - 5 depatures per day/direction	• Regional train (Kongsvinger – Karlstad C) - 2 depatures per day/direction, Saturday and Sunday only • High-speed trains - 5 depatures per day/direction
Freight train	
• 12 trains per day/direction - 6 departures per day/direction combined train - 6 departures per day/direction system train	• 12 trains per day/direction - 6 departures per day/direction combinedtrain - 6 departures per day/direction Systemtog
Hell/Storlien	
Passenger train	
• Long-distance trains (Trondheim S – Stockholm C) - 3 departures per day/direction, one of which is a night train	• Long-distance trains (Trondheim S – Stockholm C) - 3 departures per day/direction, one of which is a night train
Freight train	
• 1 train per day/direction	• 1 train day/direction
Bjørnfjell/Vassijaure	
Passenger train	
• 1 charter train in season • Long-distance train (Narvik – Stockholm C / Luleå C) - 2 departures per day/direction	• 1-2 charter trains • 1 night train per day/direction • 1 long-distance train per day/direction
Freight train	
• 23 trains per day/direction -15 ore trains per day/direction -8 combi trains per day/direction	• 23 trains per day direction -15 ore trains per day/direction -8 combi trains per day/direction

4 Validation

This Capacity Strategy for TT 2029 is harmonized with Trafikverket as shown in the table

	Date	Extent	Result
Harmonization Trafikverket	20250901	Planned Major TCRs that may affect international traffic	Trafikverket has accepted the content of Bane NOR's strategy
	20250929	Traffic flows on cross-border sections	Trafikverket has accepted the content of Bane NOR's strategy
Validation	20251215	The capacity strategy for TT 2029 is approved by Bane NOR.	

Appendix 1: Information on market involvement and advocacy

During the preparation of the capacity strategy for TT 2029, Bane NOR has involved railway undertakings (RU) for input on what information they would like to find in the capacity strategy, and provides value for their planning. During this process, input received have been taken into account in preparation of the capacity strategy for TT 2029.

Timeline for the involvement of train companies in the capacity strategy for TT 2029:

- **April 2025**: Open invitation to all current RUs in the Norwegian market to comment on an early draft of Capacity Strategy TT 2029.
- **May-June 2025**:. The draft was shared with RUs that expressed interest, and individual meetings were held to gather feedback.
- **September 2025**: Publication of the mature draft for Capacity Strategy TT 2029 on Bane NOR and RNE's website, by an open invitation to all train companies in the Norwegian and European markets to comment on its content.
- **September-November 2025**: Collect feedback on the mature draft.

Appendix 2: Capacity improvements for TT 2029

This appendix presents all minor infrastructure measures that are planned for completion before TT 2029. For some projects, it is likely that part of the additional capacity will be utilised for Public Service Obligation (PSO) train services.

Railway line	Project	Description	Effect	Entry into service by the end of	Maturity
Oslo - Ski	Station measure L2: Langhus, Nordstrand, Ljan		One of several projects which will allow for up to 220 metres local trains on the line	2026	Construction in progress
Oslo - Tønsberg	Capacity-seeking measures Tønsberg station	Includes the construction of the section into Tønsberg station from the north and the conversion of Tønsberg station to 4 tracks towards the platform, and adapted for through trains using the current loop, as well as for the turning of up to 3 trains per hour.	One of several projects which will allow for faster and increased number of trains on the Vestfold Line	2026	Construction in progress
Oslo - Tønsberg	Train parking Tønsberg	14 pcs, north of Tønsberg		2026	Construction in progress
Eastern Norway	Rail power supply in the Eastern Norway area	Package of measures for increased rail flow		2028	Construction in progress, some parts completed
The Trønder Line	Melhus	New crossing track, new platform, turning track and closure of level crossing	One of several projects which will more passenger trains on the Trønder Line	2028	Construction in progress
The Trønder Line	Sparbu	New crossing track passenger trains. Platform and level-free access with bridge, stairway/lift house		2028	Construction in progress
The Trønder Line	Ler	Platform slot 2 and plan-free access		2028	Construction in progress
The Trønder Line	Verdal	Demolish old intermediate platform and build new side platform, move track 3		2028	Construction in progress
The Trønder Line	Alstad	New crossing track		2028	Construction in progress
The Trønder Line	Nesvatnet	New crossing track		2028	Construction in progress

Railway line	Project	Description	Effect	Entry into service by the end of	Maturity
The Trønder Line	Østborg	New crossing track		2028	Construction in progress
Østfold Line Eastern Line	Station improvements	Platform improvements Slitu, Eidsberg, Heia, Rakkestad	Facilitate new train sets on the Østfold Line's eastern line	2026	Completed
Østfold Line Eastern Line	Train parking Eastern line (4) (Mysen-Rakkestad)	4 spots		2029	
Oslo – Narvik Kombitransport (Via Sweden)	Narvik station	Removal of a level crossing resulting in an increased effective length of the crossing track	One of several projects which will enables 740-metre-long freight trains Oslo-Narvik[3]	2026	Construction in progress
Oslo – Narvik Kombitransport (Via Sweden)	Crossing tracks - Galterud	Crossing track extension		2027	Construction in progress
Oslo – Narvik Kombitransport (Via Sweden)	Rånåsfoss station	Crossing track extension		2028	Under planning
Oslo – Narvik Kombitransport (Via Sweden)	Sæterstøa, PLO and crossing tracks	Crossing track extension and remediation of level crossing		2027	Construction in progress
Oslo – Trondheim (Combined transport)	Hauerseter crossing track extension	Crossing track extension	One of several projects which will enables 650-metre-long freight trains Oslo-Trondheim[3]	2028	Awaits financing
Oslo – Trondheim (Combined transport)	Crossing track - Jessheim	Crossing track extension and platform measures		2028	Awaits financing
Oslo hub	Measures 21 and 22 Oslo S (in connection with the Brynsbakken)	Measure 21 replaces the current fixed track junction 843 with a new double track loop and thus full separation of tracks 8 and 9 between Oslo S and Brynsbakken. Measure 22 is a new track loop between tracks 8 and 9 to separate outbound and inbound traffic for turning trains	One of several projects which will allow for more passenger trains in the Oslo hub[3]	Assumed before 2029	Awaits financing

[3] Part of the capacity depends on other measures completed after R29.

Appendix 3: Expected traffic flow per route for passenger traffic

	Number of trains per hour per direction (surcharge during rush hour)	Number of long-distance trains per day per direction, and other passenger traffic with a frequency of less than 1 train per hour
Oslo S - Lysaker	19 (3)	14
Lysaker - Stabekk (Drammen Line)	10 (2)	
Stabekk - Sandvika (Drammen Line)	4	
Lysaker - Sandvika (Askerbanen)	9 (1)	14
Sandvika - Asker (Drammen Line)	4	
Sandvika - Asker (Askerbanen)	9 (1)	14
Asker - Spikkestad	2	
Asker - Drammen	9 (1)	14
Drammen - Tønsberg	4	
Tønsberg - Porsgrunn	1 (1)	
Porsgrunn - Skien	1 (1)	8
Skien - Nordagutu		8
Nordagutu - Notodden		8
Drammen - Hokksund	1 (1)	14
Hokksund - Kongsberg	1 (1)	8
Hokksund - Bergen		6
Bergen - Arna	4	6
Arna - Voss		6
Voss - Myrdal		6
Myrdal - Flåm		5
Kongsberg - Kristiansand	1	8
Kristiansand - Stavanger	1	8
Stavanger - Skeiane	4 (1)	
Skeiane - Nærbø	2 (1)	
Nærbø - Egersund	1 (1)	
Nelaug - Arendal		8
Oslo S - Hakadal	2 (1)	
Hakadal - Jaren	1 (2)	
Jaren - Gjøvik	1	

Oslo S - Lillestrøm (main line)	4	
Oslo S - Lillestrøm (Gardermobanen)	12 (4)	12
Lillestrøm - Oslo Airport	9 (1)	7
Oslo Airport - Eidsvoll	3 (1)	7
Eidsvoll - Hamar	2 (1)	7
Hamar - Lillehammer	1	7
Hamar - Røros		6
Røros - Støren		3
Lillehammer - Dombås		7
Dombås - Åndalsnes		4
Dombås - Oppdal		7
Oppdal - Støren	0 (1)	7
Støren - Melhus	1	10
Melhus – Trondheim S	2	10
Trondheim S - Hell	2	10
Hell - Stjørdal	2	3
Hell - Kopperå		3
Stjørdal - Steinkjer	1 (1)	3
Steinkjer - Mosjøen		3
Mosjøen - Rognan		5
Rognan - Fauske		4
Fauske - Bodø	4	4
Lillestrøm - Jessheim	2 (1)	
Jessheim - Valley	2	
Lillestrøm - Kongsvinger	1 (1)	5
Kongsvinger - Charlottenberg		5
Oslo S - Ski	4 (2)	
Oslo S - Ski (Follo Line)	6 (3)	
Ski - Mysen	1 (1)	
Mysen - Rakkestad		17
Ski - Moss	3 (3)	
Moss - Fredrikstad	1 (2)	
Fredrikstad - Halden	1 (1)	
Halden - Kornsjø		8
Narvik - Bjørnfjell		2