

# INTERREG AURORA NEW NORTH PROJECT WP1 – REPORT 2



## BOTTLENECKS AND IMPROVEMENT OPTIONS



PHOTO: NILS PETTER RUSÅNES

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New North



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## **Aurora**

*"New North -Transport, Logistics, and Security of Supply"  
is an Interreg Aurora project-collaboration among the  
regions of Northern Norway, Northern Sweden and  
Northern Finland. The project is co-funded by the EU's  
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*Picture front page: Kløfta, E45 Norway (Photo: Nils Petter Rusånes)*

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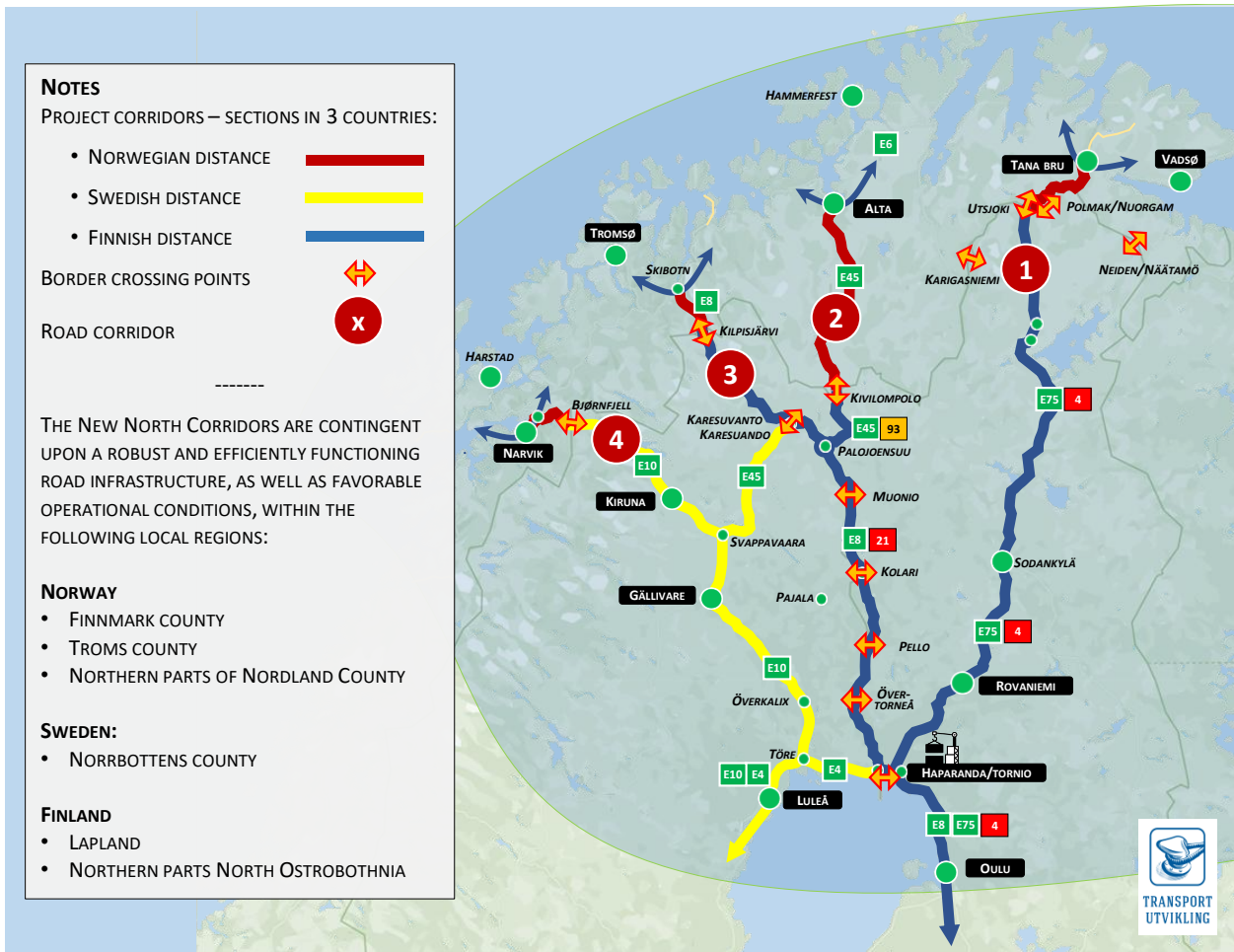
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## 1. HIGHLIGHTS FROM THE REPORT

This report, prepared under Work Package 1, “Seamless Freight Transport for the Future,” identifies key bottlenecks and operational challenges affecting freight mobility across selected corridors in Norway, Sweden, and Finland. The analysis is based on incident data provided by national road authorities, complemented by feedback from professional drivers and transport operators.

The analysis presented in this report concerns **four selected road corridors** that cross the border from Norway, north of the Vestfjord, into Finland and Sweden, extending southward to the Bay of Bothnia. The corridors are illustrated in the map below.



The information in this report is based on:

- **Incident statistics** October 2021-March 2025, from the 3 national road administrations
- Conducted a **driver survey** together with the Norwegian Truck Owners' Association
- Information obtained through **phase 1** (market analysis)
- Various **secondary sources** (statistics, reports etc.)

## 1.1 Issues to be worked with

### Addressing data gaps and improving comparability

Variations in received statistics, reporting standards, terminology, and data content makes a direct comparison between countries challenging. To strengthen the reliability of future analyses, -the final report and subsequent work should focus on closing data gaps and harmonizing methodologies as well as documenting any limitations and uncertainties.

Recommended actions include:

- Obtain feedback from relevant stakeholders
- Obtain Norwegian data accidents involving heavy vehicles.
- Clearly identify data gaps and comparability issues across Norway, Sweden, and Finland, and work toward harmonizing definitions and reporting practices for key terms such as "incident" and "accident."
- Engage with national road authorities (e.g., through Platform North) to ensure access to complete, verified datasets and establish consistent data-sharing protocols.

### Key findings and possible actions

The analysis highlights several critical issues that may reduce transport reliability, increase operational costs, and pose strategic risks for military mobility. The following areas require attention:

#### *Enhanced winter resilience*

Severe seasonal disruptions occur primarily along the E10 Bjørnfjell section, which accounts for 50% of the reported closures and 99% of reported convoy operations, during the period October 2021-March 2025. The E45 in Norway ranks second in the region in terms of the number of closures. During the observation period, 83 closures were recorded, 73% of which occurred during the winter months. Infrastructure improvements and winter maintenance should be prioritized at critical bottlenecks, particularly E10 Bjørnfjell.

Possible measures could include:

- Snow and avalanche protection systems
- Real-time weather and road condition monitoring
- Improved information systems and signage (Digital screens)
- Emergency parking and rest facilities near Bjørnfjell
- Enhanced cross-border coordination

#### *Expansion of rest area coverage*

Driver surveys indicate a shortage of rest areas, especially in northern Finland and along the E10 corridor.

Possible measures could include:

- Establish additional 24-hour rest areas along the E10 and in northern Finland
- Foster collaboration between national authorities, counties, municipalities and private operators to close service gaps on key international routes

#### *Extended border station hours*

Only two (Kivilompolo and Kilpisjärvi) of the eleven crossing stations between Northern Norway and Sweden/Finland are currently open 24/7. Feedback from the recent driver survey highlights a strong demand for extended operating hours at border stations, with many respondents requesting round-the-clock availability.

Possible measures could include:

- E10 Bjørnfjell customs station have the highest demand for extended hours, with a clear majority of respondents favouring round-the-clock operations.
- Assess the feasibility of longer opening hours at E75 Utsjok, Rv.92 Neiden, and Rv.92 Karigasniemi.

#### Wildlife accident mitigation

14% of all reported accidents involve wild animals, with Finland most affected.

Possible measures could include:

- Deploying wildlife fencing and warning systems along high-risk sections—based on the statistics, this is particularly important along the Finnish E75/4 corridor near Rovaniemi and Tervola

#### Reducing heavy vehicle accidents

Heavy vehicles participated in 17% of recorded accidents along the analysed corridors in Sweden/Norrbotten and Finland/Lapland (Norwegian/North Nordland data pending, likely similar).

Possible measures which may reduce human error, which probably is an important cause of accidents, could include:

- Driver training programs
- Increased control and enforcement activity
- Improved rest area availability to reduce fatigue-related incidents

## **1.2 Report 2 – data gaps and insecurities**

This document represents report 2 for Work Package 1, "*Seamless Freight Transport for the Future*." It has been distributed to relevant stakeholders for review, feedback, and corrections.

### **Current Status**

Incident data has been collected for the majority of sections along the selected corridors. The dataset is derived from information provided by the respective national road authorities, ensuring that the sources are official and verified. However, variations in reporting practices and definitions across countries may impact comparability and should be taken into account when interpreting the results.

### **Missing Data:**

- Norwegian statistics on accidents and incidents involving heavy vehicles.

### **Data Comparability**

There is a notable uncertainty regarding the comparability of incident registration practices across countries. In particular:

- The number of registered incidents in Finland is significantly lower than in other countries.
- This discrepancy may be due to differences in:
  - Definitions of "incident"
  - Reporting thresholds and practices
  - Data sources

**Possible actions regarding the content of this report**

- Get feedback from relevant stakeholders
- Obtain missing Norwegian data for heavy vehicle incidents
- Clarify definitions and reporting practices across countries to ensure comparability
- Document any limitations and uncertainties in the final report

**1.3 The study's objective and scope of assessment**

The purpose of this analysis is to **identify the key bottlenecks** that hinder seamless transportation along the selected road corridors. The assessment is grounded in the needs and experiences of road users—primarily professional drivers and transport operators. The findings are based on **two main sources**:

- User feedback (drivers and transport operators)
- Processed incident data provided by national road authorities

The following conditions have been examined as part of the bottleneck identification:

- **Winter-related operational challenges**, including accidents, road closures, convoy operations, and other weather-induced disruptions
- Availability, accessibility, and suitability of **rest areas for drivers**
- Opening hours and operational practices at **border and customs stations**

Accidents in this study refer to incidents on National and European roads. It should be noted, however, that a substantial share of accidents in Norway—and likely in neighbouring countries—occur on lower-standard county roads. These roads typically have narrower lanes, less robust maintenance and limited safety infrastructure, contributing to higher accident risk.

Future studies should include county roads to provide a fuller picture of accident patterns and enable comparison with national roads within a corridor-based framework.

**1.4 Winter-related challenges**

Most disruptions to transport and mobility occur during the winter season, a pattern seen across all major roads in the WP1 region. The E10 corridor between Norway and Sweden is particularly affected. Severe winter weather—such as heavy snowfall, icy surfaces and reduced visibility—is the main contributor.

The regional road network offers limited opportunities for rerouting. As a result, when a road is closed, transport operators typically face **only a few options**:

- wait for the road to reopen, which often results in extended idle time and delays.
- continue in organized convoys, a measure that ensures safety but significantly prolongs travel time.
- return to their point of departure
- undertake long detours.

Reduced winter accessibility therefore results in extended idle time and delays, - and for operators transporting perishable goods, considerable financial consequences.

***Critical Bottleneck***

Several corridors experience winter-related challenges.












- Among the assessed routes, **E10 Bjørnfjell** stands out as the most demanding section, particularly under severe winter conditions.

### 1.4.1 Findings from the incident statistics

Incident statistics provided by the national road authorities form a key basis for identifying challenges and bottlenecks in the regional road network. The dataset covers accidents, road closures, winter convoy operations, and other events affecting traffic flow and transport reliability.

- **Data compilation:**  
A dedicated incident database has been assembled from raw authority data. Between October 2021 and March 2025, 2,923 incidents were recorded across 2,163 km of road.
- **Geographical distribution:**  
Around 90% of all incidents occurred in Norway and Sweden.
- **Data considerations:**  
All figures should be interpreted with caution due to variations in national reporting practices and data completeness.

The road sections included in the dataset, along with their respective lengths, are presented in the table below.

Road/contry		Road section	Distance (km)
E45/93 (Finland)		Border Norway/Kivilompolo-Palejoensuu	63
E75/4 (Finland)		Border Norway/Utsjok-Keminmaa	557
E8/21 (Finland)		Border Norway/Kilpisjärvi-Tornio	467
E75/E6 (Norway)		Border Finland/Utsjok-Tana Bru	69
E10 (Norway)		Border Norway/Bjørnfjell-Stormyra	36
E45 (Norway)		Border Finland/Kivilompolo-Alta/E6	173
E8 (Norway)		Border Finland/Kilpisjärvi - Skibotn/E6x E8	38
E10 (Sweden)		Border Norway/Bjørnfjell-Svappavaara and Stenbron-Töre	355
E10/45 (Sweden)		Svappavaara-Stenbron	65
E4 (Sweden)		Border Finland/Haparanda-Västerbotten county	211
E45 (Sweden)		Karesuando-Svappavaara	129
			<b>2 163</b>

The analysis concentrates on accidents and other incidents that restrict mobility, including road closures and convoy operations triggered by adverse weather conditions.

### 1.4.2 Total number of accidents

#### *Scope of accident data*

The accidents reported in this study occurred on **National and European roads**. It should be noted, however, that in Norway—and likely in the other countries—a significant share of accidents occurs on **county roads** with lower standards. These roads often have narrower lanes, less robust maintenance, and limited safety infrastructure, which can contribute to higher accident risk.

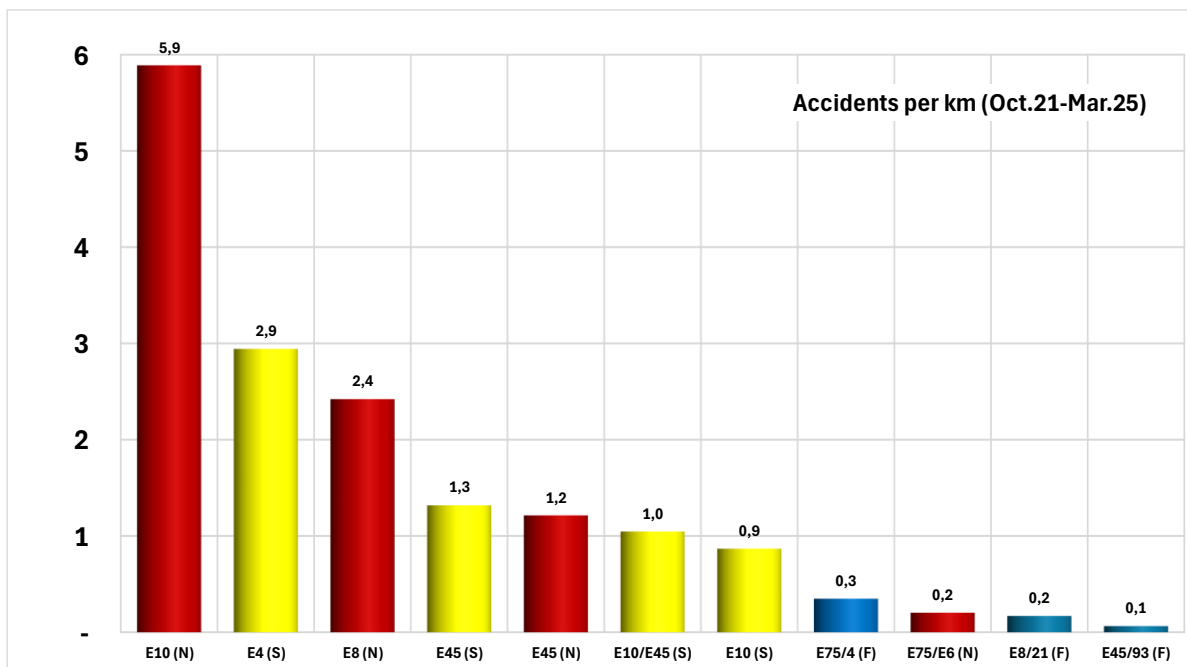
#### *Identified accidents*

During the period from **October 2021 to March 2025**, the database records a **total of 1.972 accidents**. Of these:

- 59% occurred in Sweden,
- 27% in Norway, and
- 14% in Finland.

This distribution should be **interpreted with caution**, as both the total road length and the Average Annual Daily Traffic (AADT) vary considerably between countries and individual road sections. It is noteworthy that more than half of the total monitored road distance is in Finland, which influences the proportional distribution of accidents.

- To enable a more consistent comparison, accident rates have been calculated per kilometre of road (see figure below). When adjusted for distance and based on reported data, **Finland shows a relatively low accident rate**, estimated at 0.1–0.3 accidents per km for the observed period.
- **The E10 in Norway stands out with the highest accident density**, at 5.9 accidents per km. This figure should be interpreted with caution: the Norwegian E10 segment included in the analysis is only 36 km long, meaning that even a moderate number of accidents results in a disproportionately high rate per kilometre.
- The **E4 in Sweden has the second-highest accident rate** per kilometre. However, this corridor carries significantly higher traffic volumes (AADT) than most other road sections in the WP1 region, particularly those located further north. The elevated traffic load is therefore likely a key factor contributing to the higher accident rate observed on the E4.

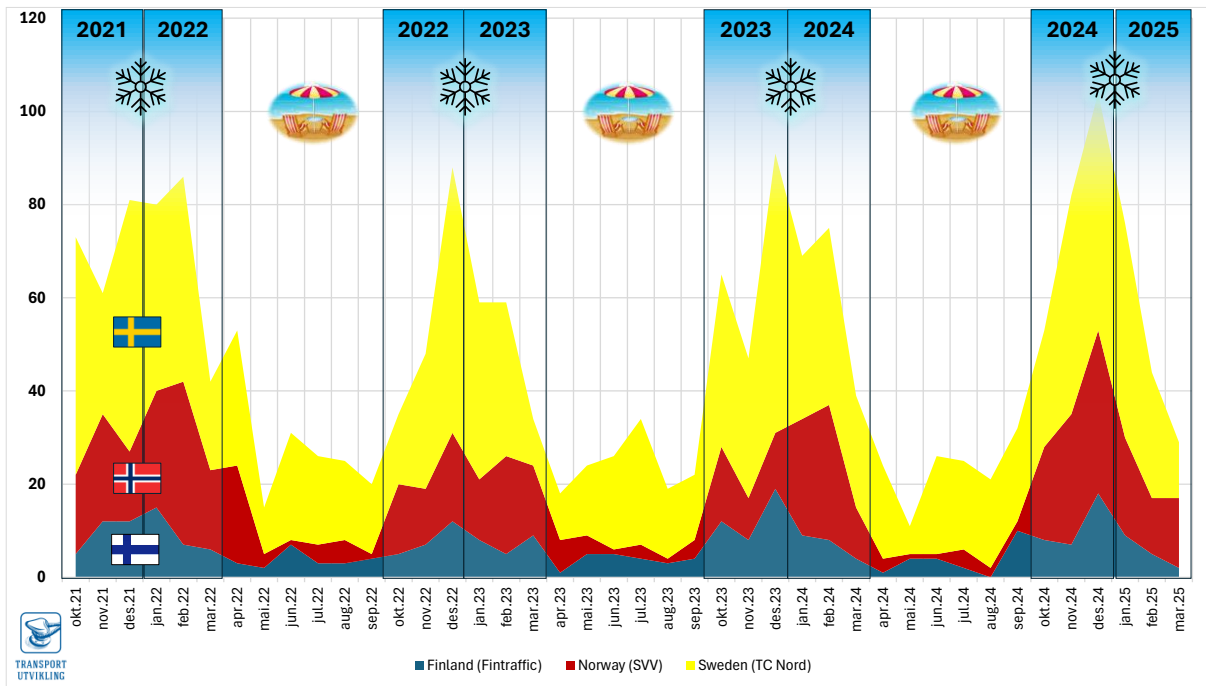


### 1.4.3 What time of year do accidents happen?

Most accidents occur during the winter months. Across all countries, a total of 1,972 accidents were recorded during the analysis period, of which **1,520 accidents (77%) took place in the winter season**.

- **The highest number of winter-related accidents is recorded along the E4 in Sweden.** However, despite having the largest absolute number of winter accidents, the E4 also exhibits one of the lowest proportions of winter accidents, at 71%.
- In contrast, the **E10, E8 and E75 in Norway exhibit the highest shares** of winter accidents, indicating a stronger seasonal influence on accident occurrence along these corridors.
- **The E45/93 corridor in Finland** also shows a relatively high proportion of winter accidents. However, this finding should be interpreted with caution, as the absolute number of accidents on this section is reported to be exceptionally low, which can exaggerate percentage-based comparisons.

The monthly distribution of accidents is presented in the figure below.

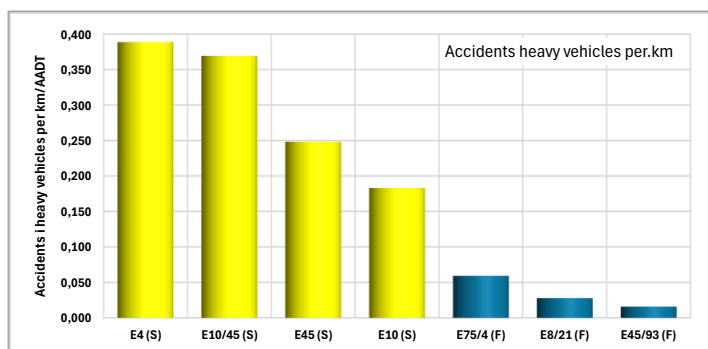


#### 1.4.4 Accidents involving heavy vehicles

For Sweden and Finland, data are available indicating whether heavy vehicles participated in reported accidents. Between **October 2021 and March 2025, a total of 250 accidents involving heavy vehicles** were registered on the analysed road sections in these two countries. **Norwegian data has not been received** at this time and is therefore not included in the current analysis.

- According to the statistics approximately 80% of these accidents occurred in Sweden.
- On average, 17% of all recorded accidents in Sweden and Finland involved heavy vehicles.

Most heavy-vehicle accidents occur on **road sections with the highest traffic volumes, particularly the E4 and E10 in Sweden.**



When taking **road length into account**, the highest accident rates involving heavy vehicles are **also found on Swedish corridors**, most notably along the E4 and the E10/45 routes.

Accidents per. km. road length is presented in the figure.

When Average Annual Daily Traffic (AADT) is considered, the Swedish network continues to exhibit the highest overall accident level involving heavy vehicles. However, the relative ranking of individual road sections changes once traffic volume is considered. The E45 shows the highest accident frequency per kilometre, whereas the E4 records the lowest accident frequency among the Swedish road sections.

### 1.4.5 Wild animal accidents

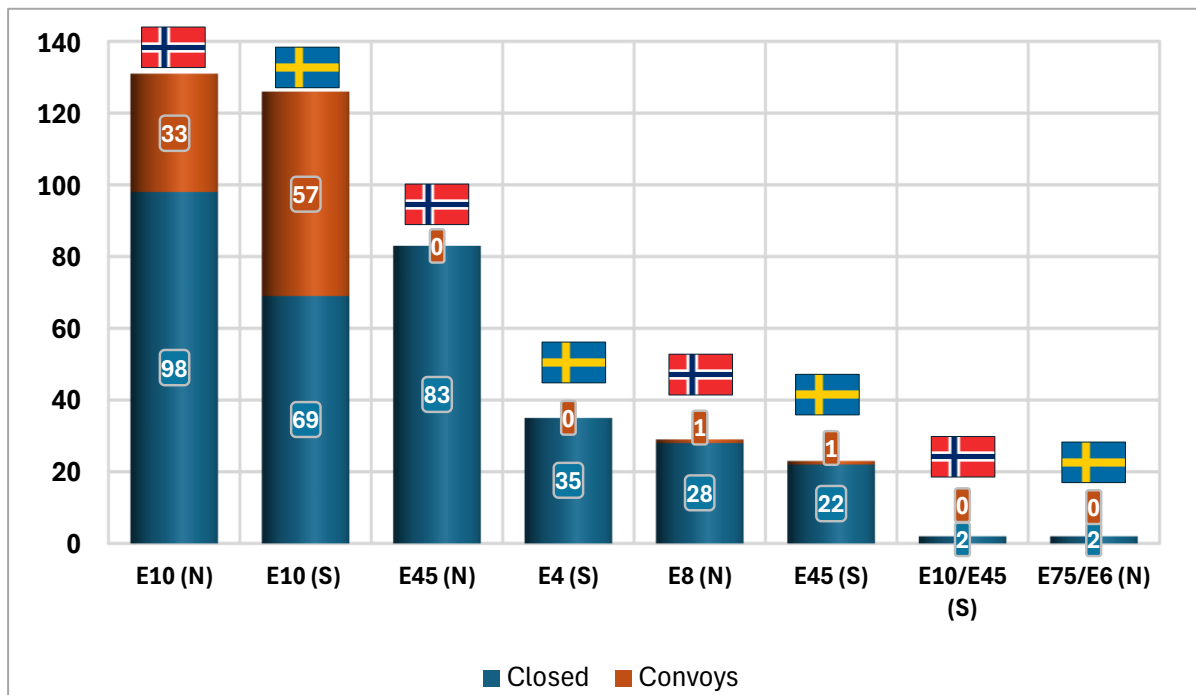
**All three countries report accidents involving wild animals.** Between October 2021 and March 2025, a total of 270 such accidents were recorded, representing **14% of all registered accidents** in the database.

- A significant majority (77%) of wild animal accidents occur during the winter months.
- **Finland accounts for 41% of the accidents involving wild animals**, with a particularly high concentration along the E75/4 corridor. The registered road distance in Finland is longer than in Sweden and substantially longer than in Norway, which partly explains the higher number of incidents.
- Along the Finnish E75/4 corridor, 73% of wild animal accidents occur in the **central and southern sections**, particularly around Rovaniemi and Tervola, where traffic volumes are comparatively high. This suggests that both wildlife density and traffic intensity contribute to the elevated accident frequency in these areas.

### 1.4.6 Closures and convoys

Norway and Sweden frequently report incidents involving road closures and/or organized convoys. **No corresponding data on closures or convoy operations were reported for Finland.**

The numbers of closures and convoy operations by road section, and for the period October 2021-March 2025, is illustrated in the figure below.



The affected road sections in this region lack suitable bypass routes, meaning that any closure has immediate and significant consequences for transport operations. These constraints lead to delays, increased costs, and reduced reliability in cross-border mobility.

When a closure occurs, the **primary options** are:

- **wait** until the road reopens
- continue in organised **convoys**
- **return** to their point of origin
- undertake long **detours**.

As a result, limited winter accessibility leads to substantial time losses and financial impacts, particularly for operators transporting perishable goods such as seafood.

Between October 2021 and March 2025 (a period of **42 months**), a total of **339 road closures and 92 convoy operations** were recorded across the roads in Norway and Sweden, included in the analysis.

- Most road closures and convoy operations (October 2021–March 2025) occurred along the E10 in Norway and Sweden.
  - The E10 accounts for close to 50% of all recorded closures across the road sections shown in the figure above.
  - It also represents 98% of all recorded convoy operations, underscoring its vulnerability to severe winter conditions.
- Most closures and convoy operations on the E10 were concentrated near the Norway–Sweden border, particularly in the Bjørnfjell area, which stands out as a critical bottleneck during winter.

#### E10 Norway/Sweden – Bjørnfjell Area: 148 closures

Between October 2021 and March 2025, a total of 148 road closures were recorded along the E10 corridor between Kiruna and Stormyra (E10/E6) in Norway. The cumulative closure time reached 1,765 hours, corresponding to an average duration of 12 hours per closure. Of all recorded closures:

- 71% lasted longer than one hour
- 30% exceeded 12 hours

66% of all closures and 82% of the total closure hours were recorded in the Norwegian statistics.

The E10 Bjørnfjell section is therefore **the most challenging road segment in the region with respect to winter closures and convoy operations**. This finding is strongly reinforced including feedback from drivers and transport companies participating in the survey, who consistently identify Bjørnfjell as a critical bottleneck.

The winter conditions at Bjørnfjell, if no mitigating actions are taken, should also be considered when strategic planning for future military mobility between Norway and new NATO member states. Severe weather and associated road closures in this corridor could significantly impact the reliability and timeliness of military transport operations, highlighting the need for robust contingency planning and infrastructure resilience.

#### E45 Norway: 83 Closures

The E45 in Norway ranks second in the region in terms of the number of closures. During the observation period, 83 closures were recorded, 73% of which occurred during the winter months. Available statistics indicate that these closures are not solely attributable to weather conditions. Instead, they are likely the result of **multiple contributing factors**, including:

- Adverse weather
- Vehicle recovery operations
- Breakdowns or other operational disruptions on the roadway

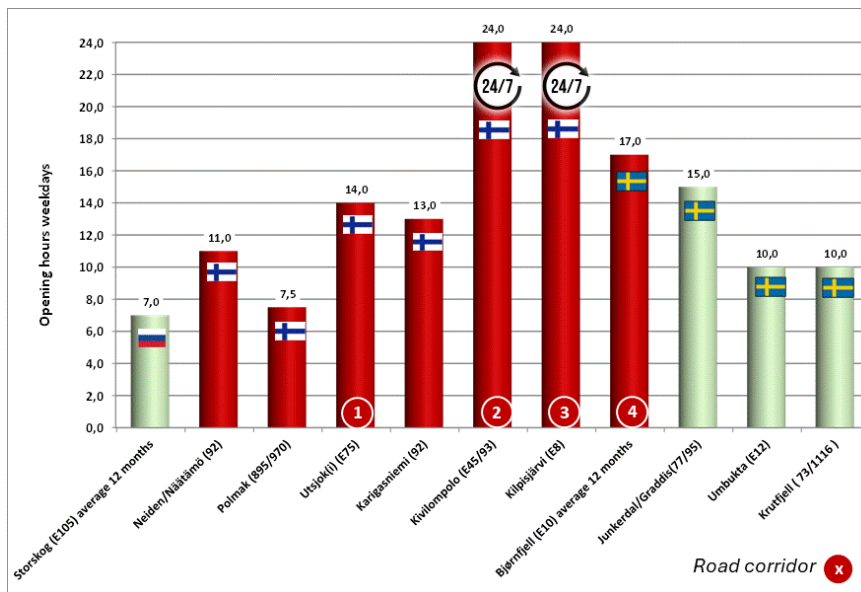
This suggests that while winter conditions play a significant role, operational challenges also contribute meaningfully to reduced accessibility along the E45.

### 1.5 Rest areas for drivers

- Rest areas—including designated 24-hour facilities—are **essential for road safety and for safeguarding the welfare of professional drivers**. Adequate rest infrastructure enables drivers to comply with regulations on driving hours and mandatory rest periods, while also supporting safe and efficient transport operations.
- **Feedback from drivers** highlights significant gaps in rest-area availability and functionality along several corridors. The E10 at Bjørnfjell is frequently cited due to the lack of nighttime access and the absence of toilet facilities when the customs station is closed. In northern Finland, drivers report that no suitable rest areas are available at all.
- **The most urgent needs** for improvement are found along the E10 in Norway and in the northern parts of Finland. Along the E10 corridor, two designated rest areas, both in Sweden (Bessejohka and Kiruna), are registered between Å in Nordland (Lofoten) and Svappavaara in Norrbotten (552 km), representing a gap in service coverage on a key international transport route. In Finland, north of Oulu, there are only 24h rest areas in Rovaniemi.

### 1.6 Opening hours at border stations

In Northern Norway, **11 border-crossing (customs) stations** support heavy industrial transport. The stations highlighted in red in the accompanying figure were included in the questionnaire survey, and the numbers 1–4 correspond to the WP1 corridors.



**Only two of the eleven stations operate 24/7.** The figure provides an overview of all stations and their respective opening hours.

Of the 11 stations:

- 6 connect to Finland
- 4 connect to Sweden
- 1 connects to Russia

Feedback from the driver survey indicates that the E10 Bjørnfjell has the **greatest need for extended opening hours**, and 24/7 availability. A smaller share of drivers expressed a desire for longer opening hours at Utsjok, Neiden and Karigasniemi,- while the perceived need for extended hours at Polmak was minimal.

## 1.7 Norwegian Goods in Transit (NVIT<sup>1</sup>)

In Northern Norway, Sweden and Finland are frequently used as transit routes for goods moving to and from Southern Norway, as well as between the northern counties. Typical flows include seafood, groceries and parcel shipments. From 21 January 2025, the EU introduced new requirements obliging the use of six-digit codes for all goods in transit. As industry actors were unable to meet the deadline, Norwegian authorities secured approval for a temporary simplified registration scheme.

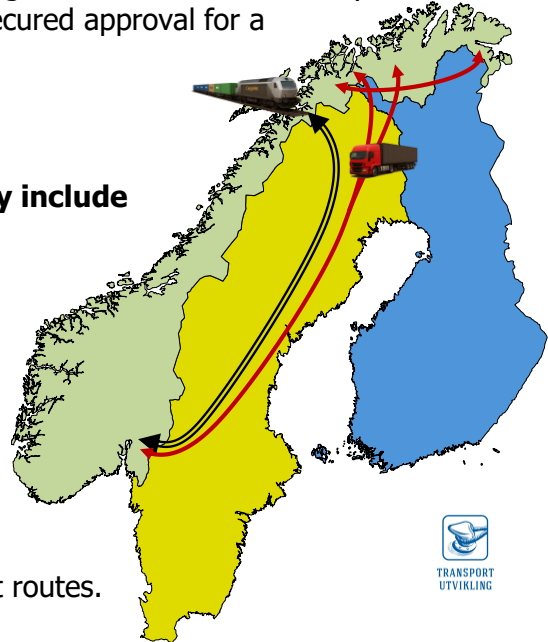
This arrangement expires on 31 March 2026.

### Key consequences of the new requirements may include

significant adaptations to IT systems, higher time and administrative burdens, shift of goods flows to the Norwegian side of the border, increased lead times, higher emissions and reduced ability to use Swedish and Finnish routes, with implications for both civil and military supply security.

At the time of reporting, the full extent of the consequences remains uncertain.

The figure (right) shows some commonly used transit routes.



<sup>1</sup> Norwegian: **Norske Varer I Transitt**

## 2. THE NEW NORTH PROJECT



*"New North – Transport, Logistics, and Security of Supply"* is a collaborative project involving the regions of Northern Norway, Northern Sweden, and Northern Finland. Historically, this area constituted the western part of the Barents Region. The project is co-funded by the EU's Interreg Aurora programme.

The primary objective of the New North project is to develop a sustainable transport system for the region. The initiative addresses the changing geopolitical context and builds on knowledge gained from the Barents Transport and Logistics Project (BRTL). It aims to strengthen cooperation among regional stakeholders and contribute to improved transport links across the northern areas.

The foundation of the New North project lies in the evolving geopolitical situation and the rapid industrial development in the northern regions, which increases the need for enhanced logistics and transport corridors. At the same time, the green transition and the climate commitments of the participating countries and the EU require sustainable, energy-efficient, and multimodal transport solutions.

The New North project consists of four work packages (WP):

- WP1: Future seamless freight transport (led by Finnmark and Norwegian partners)
- WP2: Transport safety (led by Lapland)
- WP3: Electric aviation (led by Västerbotten)
- WP4: Green rail transport (led by North Karelia)

### 2.1 Work package 1 (WP1)

Within the New North project, the Norwegian partners—Finnmark, Troms, and Nordland—are responsible for Work Package 1 (WP1). Finnmark County acts as the work package lead, and Transportutvikling AS has been commissioned to carry out the consultancy work.

In April 2025, WP1 delivered a market report on freight transport along selected corridors, with particular emphasis on border crossings between Northern Norway and Northern Finland/Sweden. This market report forms the analytical foundation for the subsequent phases of the project, including the current phase, which focuses on identifying key bottlenecks and potential improvement measures for freight transport along the selected corridors.

The overarching ambition is for the final project to serve as a robust **knowledge base supporting efforts to enhance cross-border transport in the North-Nordic region.**

## 2.2 The WP 1 road corridors

The selected road transport corridors (1-4) are:



- 1 Eastern-Finmark ↔ Utsjok**
  - a. Tornio ↔ North-Finland
  - b. Tornio ↔ Haparanda ↔ North-Sweden
- 2 Western-Finmark ↔ Kivilompolo**
  - a. Palojoensuu ↔ Karesuando ↔ North Sweden
  - b. Palojoensuu ↔ Tornio
    - i. Haparanda ↔ North-Sweden
    - ii. North-Finland
- 3 Troms ↔ Kilpisjärvi ↔ Karesuvanto**
  - a. Karesuando ↔ North-Sweden
  - b. Palojoensuu ↔ North-Finland
- 4 Nordland/Troms ↔ Bjørnfjell ↔ Töre**
  - a. North-Sweden
  - b. Haparanda/Tornio ↔ North-Finland

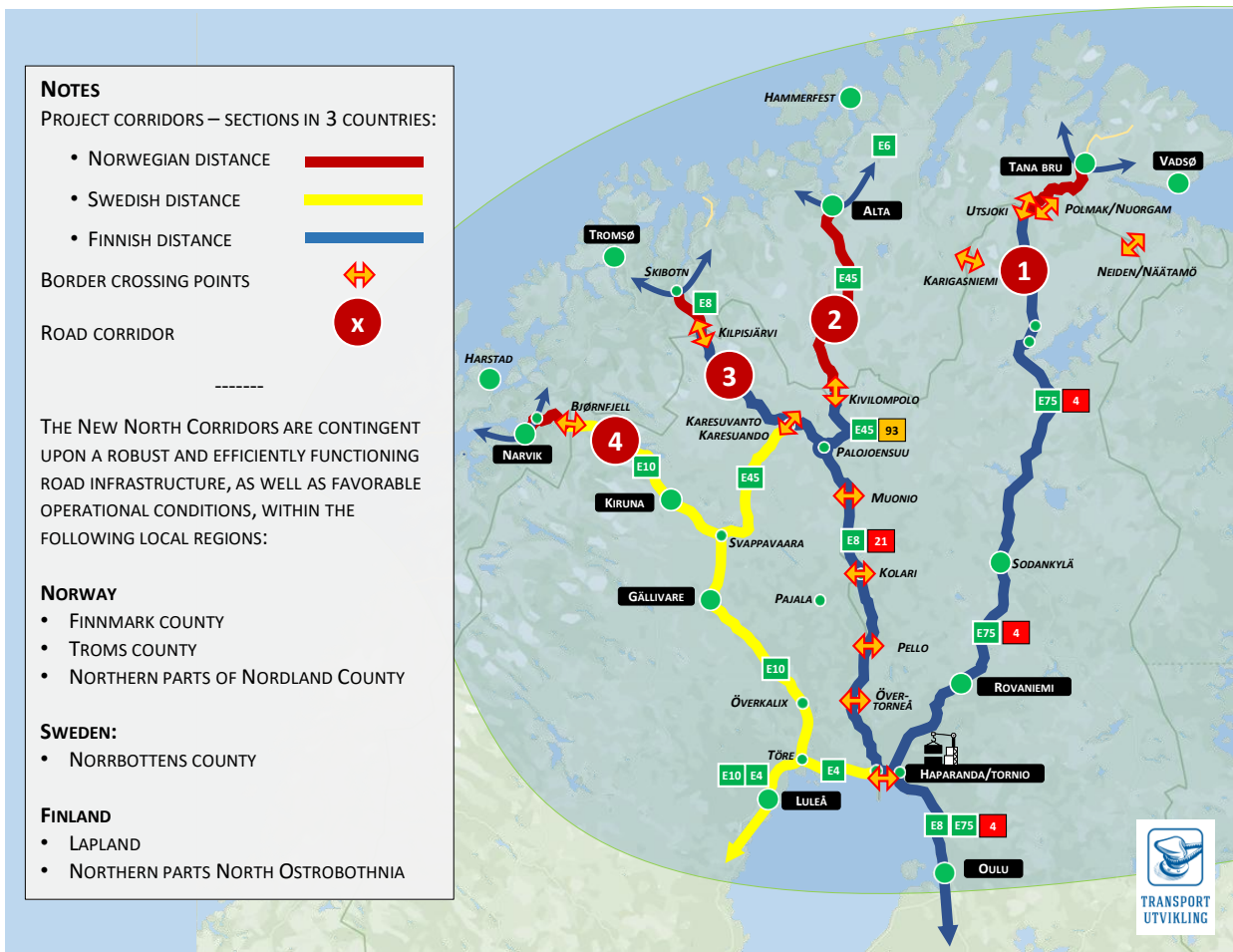


Figure 2-1: Selected corridors

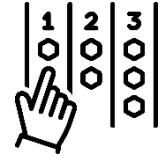
### 3. MAIN FINDINGS WP1 - PHASE 1 (MARKET REPORT – APRIL 2025)

The market report provided an overview of regional industries, infrastructure used by heavy vehicles, selected transport corridors, border crossings and freight flows along these corridors.

The main findings were as follows:

#### Different procedures for classification of traffic with heavy vehicles

As observed, the three countries apply different classification systems for identifying comparable figures for the heaviest vehicles. To verify whether these differences affect overall registrations, total AADT was compared for a selection of border crossing points. Regardless of classification, total AADT values should remain consistent. The observed deviations were minor, indicating that discrepancies are primarily due to differences in vehicle group classifications.



- Divergent classification systems create challenges when comparing cross-border traffic and international corridors. Further work should therefore examine the individual countries' registration procedures for transport statistics and propose measures for continued harmonization after project completion (exit strategy).

The following vehicle classification, covering all major vehicle categories, is used in public road-traffic statistics across the three countries:

Norway	Sweden	Finland
Published by: Lenght	Published by: Weight	Published by: Vehicle category
• <5,6 m	• Leight vehicles (lätta)	1. Passenger car or van
• >= 5,6 m	• Heavy (tung)	2. Truck without trailer
• 5,6 m – 7,6 m	- Medium heavy (medeltunga)	3. Buses and coaches
• 7,6 m – 12,5 m	- Very heavy (mycket tung)	4. Truck and semi-trailer
• 12,5 m – 16,0 m		5. Truck and trailer
• >= 16,0 m		6. Passenger car and trailer
• 16,0 m – 24,0 m		7. Passenger car and caravan
• >=24,0 m		8. MC
		9. High-Capacity Truck (>76 tons)
Detection system		
<i>Means of inductive loops/sensors in the road surface</i>	<i>Hose sensors in the road surface</i>	<i>Electromagnetic induction loops embedded in the roads</i>

When identifying freight flows with heavy vehicles, the analysis relies on AADT data from public statistics in each country. The following "heavy vehicle" categories have been used:

- Norway: Vehicles ≥ 16 meters
- Finland: Combined total of truck and semi-trailer (Group 4), truck and trailer (Group 5), and High-Capacity Trucks (Group 9)
- Sweden: Very heavy vehicles

Although these categories are intended to represent broadly comparable vehicle groups, there are notable differences in national classification systems. As a result, direct comparison of freight-related AADT figures between countries should be interpreted with caution.

### High Norwegian share in transport corridors

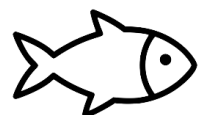
The proportion of Norwegian transport within the selected corridors is highest in the northern parts of the region. This share gradually decreases as road transport volumes increase toward the southern areas. The figure below shows the share of Norwegian transports along four sections of the selected corridors.



Figure 3-1: Norwegian share of the transports in sections of the various corridors

### Seafood dominates border crossings

All selected Norwegian border crossings are primarily dominated by seafood products, with the AADT share ranging from 44% to 58%. In 2023, the selected border crossings for seafood were as follows:



- Kivilompolo (seafood share 58%)
- Kilpisjärvi (seafood share 44%)
- Bjørnfjell (seafood share 51%)
- Utsjok (seafood share 44%)

The most important border stations are Kivilompolo, Kilpisjärvi, and Bjørnfjell, each with an AADT of approximately 30 for seafood transport. Seafood is a high-value product, with export values ranging between €800 million and €900 million for each of these three main crossings. The share of seafood in the total export value at these stations is between 79% and 95%. Except seafood, the largest industries which used the border were grocery- and waste business.

The figure below shows the share of the transports that the various industries represent at the border crossings.

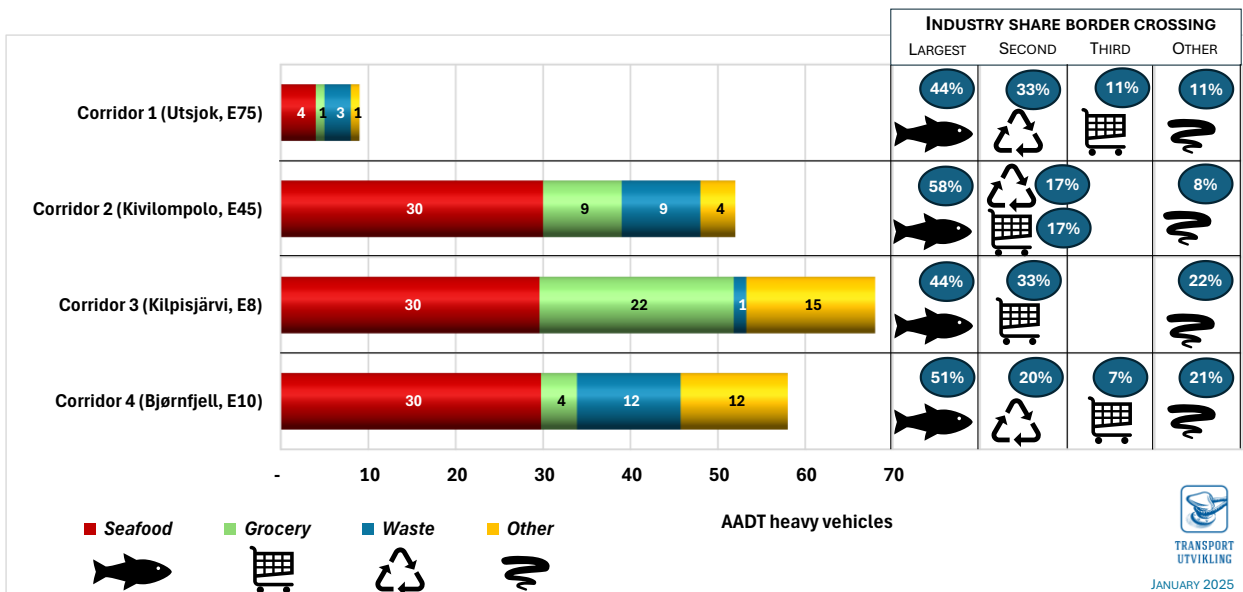


Figure 3-2: Industry share at the border crossings



Picture 3-1: Utsjok border (Photo: Markus Karlsen)

## 4. AMBITIONS WP1 PHASE 2 - BOTTLENECKS AND IMPROVEMENT OPTIONS

The purpose of the analysis is to identify key bottlenecks that hinder seamless transportation along the selected road corridors, with particular emphasis on user needs. The assessment of bottlenecks and potential improvement measures is primarily informed by insights from drivers and transport operators, supplemented by processed incident data provided by the national road authorities.

The analysis does not aim to address every possible challenge. Instead, it concentrates on a defined set of critical issues for which comparable data are available across all three countries.

The following conditions have been examined and evaluated:

- **Winter-related challenges**, including accidents, road closures, convoy operations, and other disruptions
- **Driver rest areas**, with a focus on availability, accessibility, and suitability
- **Opening hours at border and customs stations**, and their implications for transport efficiency

## 5. METHOD FOR DATA COLLECTION

The main data sources for this report are:

- **Incident statistics 2021-2025**, from the 3 national road administrations
- **Conducted a driver survey** together with the Norwegian Truck Owners' Association
- **Information obtained through phase 1** (market analysis)
- **Various secondary sources** (statistics, reports etc.)

Comments on sources (a) through (d) are provided in the following sections.



### **Incident statistics from the national transport authorities**

During the project period, incident data (such as accidents, convoys, etc.) was collected from national authorities in all three countries. The collected statistics were organized in a database and processed into structured information for analysis and reporting.

### **The base for processed information**

The database covers the period from October 2021 to March 2025 (42 months) and includes 3,679 recorded incidents. For each incident, we have information on 10–15 distinct variables, enabling an assessment of the events' impact on seamless transport. Examples of these variables include the time of occurrence, type of incident, and its underlying cause.

Since data from the three countries were provided in different formats, a dataset has been processed to harmonize the structure. The most relevant information was extracted and standardized to ensure comparability across countries. The overall purpose was to transform raw national data into consistent, comparable information suitable for analysis.



Picture 5-1: Truck accident Skibotndalen, E8 Norway

The data presented in table 5-1. provides the basis for this analysis.

1	2	3			6				10			
Country	Road no.	TOTAL INCIDENTS (ACCIDENTS+OTHER INCIDENTS)			ACCIDENTS				OTHER INCIDENTS THAN ACCIDENTS			
		Total incidents (Oct.21-Mar.25)	Incidents not included in the analysis	Relevant incidents (Oct.21-Mar.25)	Accidents Oct.21-Mar.25				Other incidents Oct.21-Mar.25			
					Total	Classified per month/day	Involving heavy vehicles	Involving wild animals	Total	Closed roads	Convoys	Other
Norway	E10	656	113	543	212	Yes	No info	Yes	331	Yes	Yes	Yes
	E8	251	57	194	92	Yes	No info	Yes	102	Yes	Yes	Yes
	E45	1042	492	550	210	Yes	No info	Yes	340	Yes	Yes	Yes
	E75/E6	127	94	33	14	Yes	No info	Yes	19	-	-	-
Sweden	E10	463	0	463	308	Yes	Yes	Yes	155	Yes	Yes	Yes
	E10/E45	69	0	69	68	Yes	Yes	Yes	1	Yes	Yes	Yes
	E45	172	0	172	170	Yes	Yes	Yes	2	Yes	Yes	Yes
	E4	622	0	622	621	Yes	Yes	Yes	1	Yes	Yes	Yes
Finland	E8/21	79	0	79	79	Yes	Yes	Yes	0	-	-	-
	E45/93	4	0	4	4	Yes	Yes	Yes	0	-	-	-
	E75/4	194	0	194	194	Yes	Yes	Yes	0	-	-	-
Total all roads		3679	756	2923	1972				951			

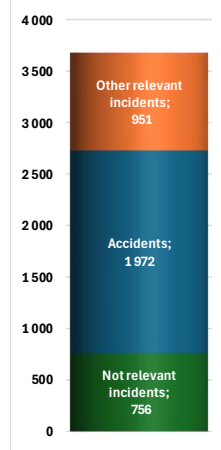
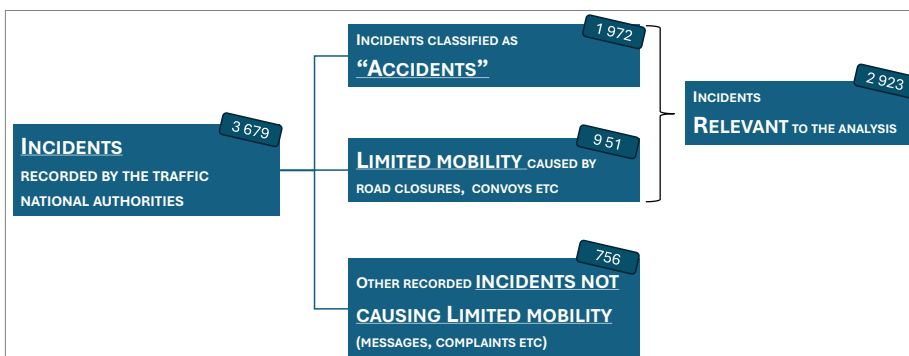


Table 5-1: Incident data

- **Column 1** identifies the country, while **column 2** specifies the road number where the incident occurred.
- **Columns 3–5** present the total number of incidents for the period from October 2021 to March 2025. In total, 3,629 incidents have been recorded, of which 1,972 are classified as relevant. Relevant incidents are those which is believed have impact on mobility along the roads, - like accidents, closures, convoys etc.
- **Columns 6–9** provide key data on incidents categorized as accidents. Accidents are a subset of the total incidents. Specifically, Column 7 indicates whether the data is reported monthly, while Columns 8 and 9 detail whether the reported accidents involved heavy vehicles and/or wild animals.
- **Columns 10–13** present data on other relevant (as they have impact on mobility) incidents, that are not classified as accidents. These include closed roads (Column 11), winter convoys (Column 12), and additional factors such as roadworks (Column 13).



The figure illustrates how “incidents” are grouped and processed in this report. The number shown in the upper right corner of each box indicates the number of incidents per group for the period October 2021 to March 2025.

Figure 5-1: Incidents and subcategories

*It should be noted that **the term "accidents" does not differentiate between levels of severity.** The classification is based solely on what each national road authority records as an accident, and these classification practices may differ between countries. Consequently, the term may encompass both severe accidents and minor incidents occurring on the road network.*

### Data from Norway

For Norwegian data, details regarding accidents involving heavy vehicles are not provided. Additionally, 756 incidents have been excluded from the Norwegian statistics, as they are considered unrelated to accidents or events causing limited mobility. These excluded cases are either unspecified or categorized as various messages, complaints, inspections, and similar non-incident reports.

### Data from Sweden

Sweden has provided valuable data for the purposes of this report. Minor adjustments have been made to the raw database to correct the road associated with certain incidents. These corrections primarily concern the E10, which includes a parallel section with the E45 between Svappavaara and Stenbron (Gällivare).

### Data from Finland

All Finnish data is classified as accidents, with each case described in detail. There is no information available regarding road closures or winter convoys. According to Finnish authorities (Fintraffic and ELY), road closures during winter are generally not an issue on main roads in Northern Finland. Consequently, Finland does not maintain comparable statistics to those of Norway and Sweden. Road closures in Lapland for reasons other than accidents are extremely rare.

*"According to Finnish law, road closures are not possible, for example, due to bad weather or driving conditions. The situation is different in Sweden and Norway, where, for example, much more snow can fall at once than in Lapland and of course legislation is different. Traffic jams also practically do not occur in Lapland other than because of accidents (and not necessarily even then, since traffic volumes are relatively small)."* (Fintraffic)

### Incidents analysed

Because each country applies different statistical methods and classification systems, some degree of error in the analysis is unavoidable. Nevertheless, based on the available and verified information, incidents on the relevant road corridors have been analysed within the following categories:

- Total accidents (all countries)
- Accidents involving heavy vehicles (Sweden and Finland)
- Road closures and winter convoys (Norway and Sweden)
- Accidents caused by wild animals (all countries)

Chapter 7 presents the results of the incident statistics review.

### **Driver survey**

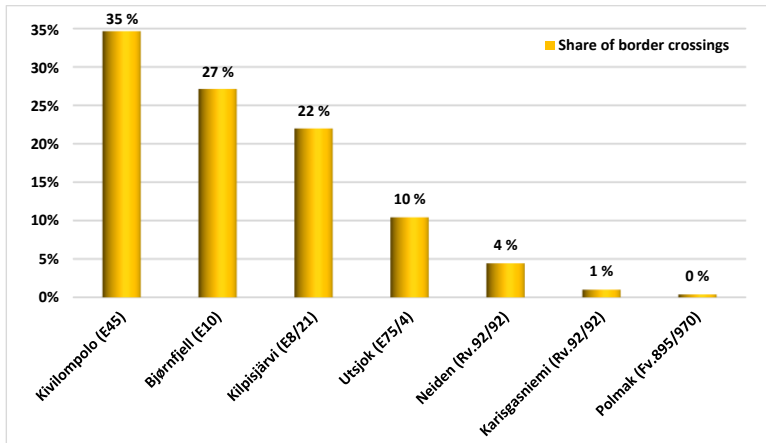
A key objective of the project approach is to emphasize users' perceptions and assessments of bottlenecks within the transport system.



In collaboration with the Norwegian Truck Owners' Association (NLF), we conducted a survey involving 366 trucking companies. The respondents collectively perform several thousand border crossings annually, with individual company crossings ranging from fewer than 10 to more than 700 per year.

The project focuses on border crossings where customs formalities occur—specifically between Norway and Sweden or Finland. There are no customs formalities between Sweden and Finland.

The participating companies have experience with all relevant border crossing stations. Figure 5-2 illustrates respondents' experience based on the number of annual crossings per company.



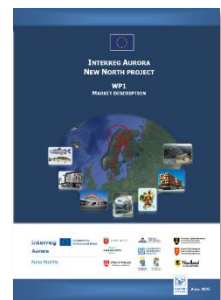
The figure shows that the four<sup>2</sup> selected border crossings analysed in WP1 dominate the respondents' experience. In addition, in-depth interviews were conducted with a subset of companies.

Figure 5-2: The respondents experience from border crossings

Chapter 8 shows the results of the review of the driver survey.

**Information obtained through phase 1**

During the project period, we also utilized information obtained in Phase 1 (market analyses, April 2025) and conducted dedicated interviews with primary sources, including drivers, transport companies, and the trucking association.



**Other secondary sources**

A wide range of additional sources has been utilized, including traffic and other statistical data from national authorities in each country, previous reports and reputable online resources.



<sup>2</sup> Kivilompolo, Bjørnfjell, Kilpisjärvi and Utsjok.

## 6. BOTTLENECKS IN GENERAL

Bottlenecks for commercial transport involving heavy vehicles refer to conditions that hinder seamless operations. These may include physical factors such as poor road quality or inadequate snow clearance, as well as administrative issues such as regulatory constraints and closed border stations.

Methodologically, we have classified bottlenecks as follows:

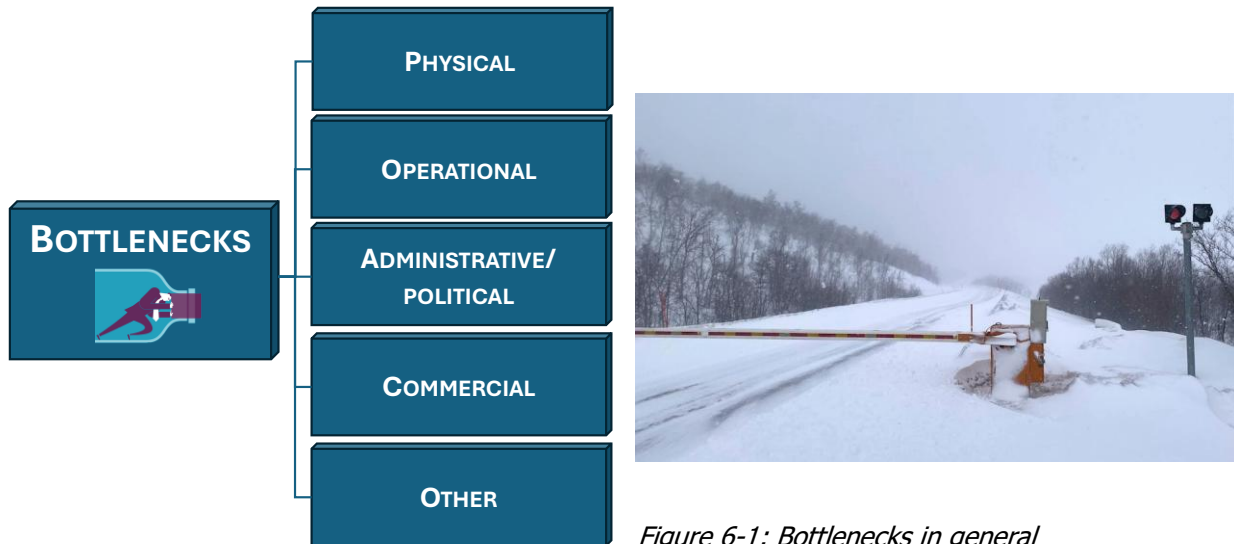


Figure 6-1: Bottlenecks in general

- **Physical or technical bottlenecks** include factors such as road standards, transshipment options, intermodal connections, equipment shortages, access to environmentally friendly fuels, charging stations and power supply, daily rest areas, and parking facilities.
- **Operational bottlenecks** may involve winter-related challenges, avalanche risks, inadequate transport solutions, driver information systems, and transport safety issues.
- **Administrative and political bottlenecks** are typically linked to regulatory requirements, political decisions, and customs station operating hours.
- **Commercial bottlenecks** encompass pricing and taxation issues, as well as market-related constraints such as lack of directional balance.

Given the geographical location of the selected transport corridors, this report focuses on challenges that arise during the winter months, as well as issues identified by primary sources (such as drivers and transport companies) as obstacles to seamless transport.

## 7. FINDING FROM THE INCIDENT STATISTICS

Incident statistics from the respective road authorities form the basis for identifying challenges and bottlenecks within the road network. Incidents include accidents, road closures, and winter convoys, as well as other events that may affect traffic flow.

Using raw data obtained from national road authorities, we have developed a comprehensive traffic incident database. In total, **3,679 incidents** have been recorded across a combined distance of 2,163 km. All incidents are documented for the period in which comparable data is available across all countries (**October 2021–March 2025, 42 months**).

The database includes **2,923 relevant<sup>3</sup> incidents**. The road sections for which data is available, along with their respective distances, are shown in the table below:

Road/contry	Road section	Distance (km)
E45/93 (Finland)	Border Norway/Kivilompolo-Palejoensuu	63
E75/4 (Finland)	Border Norway/Utsjok-Keminmaa	557
E8/21 (Finland)	Border Norway/Kilpisjärvi-Tornio	467
E75/E6 (Norway)	Border Finland/Utsjok-Tana Bru	69
E10 (Norway)	Border Norway/Bjørnfjell-Stormyra	36
E45 (Norway)	Border Finland/Kivilompolo-Alta/E6	173
E8 (Norway)	Border Finland/Kilpisjärvi - Skibotn/E6x E8	38
E10 (Sweden)	Border Norway/Bjørnfjell-Svappavaara and Stenbron-Töre	355
E10/45 (Sweden)	Svappavaara-Stenbron	65
E4 (Sweden)	Border Finland/Haparanda-Västerbotten county	211
E45 (Sweden)	Karesuando-Svappavaara	129
		<b>2 163</b>

Table 7-1: Road sections and distance

The road sections are illustrated in the map below.

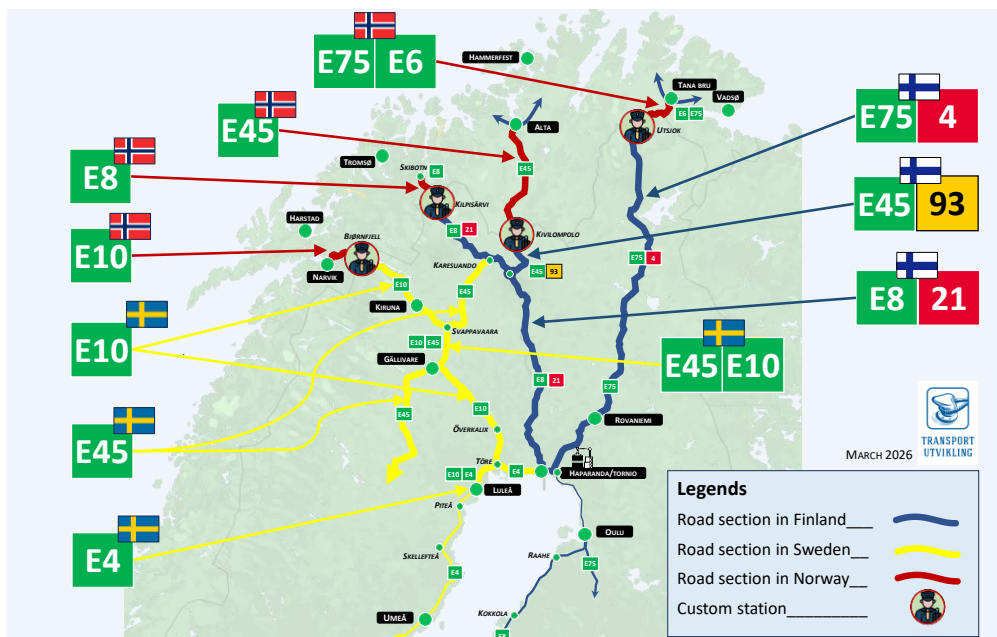


Figure 7-1: Road sections where information is available

<sup>3</sup> See Chapter 5 for a definition of «relevant»

**Not all incidents are relevant to the objectives of this project**, as some relate to general messages, planned roadworks, or other events that do not significantly impact traffic flow.

For the comparable period from October 2021 to March 2025, the number of **relevant incidents is 2.923**, as shown in the table below:

Main group of incidents	Finland (Fintraffi)	Norway (SVV)	Sweden (TC Nord)	Total	
				Number	Share (%)
Accidents	277	528	1 167	<b>1 972</b>	<b>67 %</b>
Incidents causing limited mobility	0	792	159	<b>951</b>	<b>33 %</b>
<b>Total relevant incidents (number)</b>	<b>277</b>	<b>1 320</b>	<b>1 326</b>	<b>2 923</b>	<b>100 %</b>
<b>Total (share of relevant incidents, %)</b>	<b>9 %</b>	<b>45 %</b>	<b>45 %</b>	<b>100 %</b>	

*Table 7-2; Main groups of incidents*

### Main categories of incidents

The incidents have been categorized into two primary groups:

- Accidents
- Incidents resulting in limited mobility

It should be noted that accidents may also lead to limited mobility. Consequently, the actual number of incidents causing restricted traffic flow is higher than indicated in the table. This aspect has been considered in the evaluation.

## 7.1 Accidents in total

### Scope of accident data

The accidents reported in this study concern incidents occurring on National and European roads. It should be noted, however, that in Norway, and likely in the other countries, a significant share of accidents occurs on county roads with lower standards. These roads often have narrower lanes, less robust maintenance, and limited safety infrastructure, which can contribute to higher accident risk.

Future studies should include county roads to provide a more comprehensive understanding of accident patterns and analyse them in relation to national roads within a corridor-based framework.

### Total number of accidents per country

During the period from October 2021 to March 2025, the database records a **total of 1.972 accidents**. Of these:

- 59% occurred in Sweden,
- 27% in Norway, and
- 14% in Finland.

### Accidents in relation to distance (km)

The distribution of accidents presented above is a **simplified representation of the actual situation**, as both distance and Average Annual Daily Traffic (AADT) vary across countries and road sections. Notably, more than **50% of the total distance where accidents were recorded, is in Finland**.

- When distance is considered, it is possible to indicate the accident rate relative to the length of each road section (see table 7-1 on page 27).
  - Figure 7-2 illustrates the number of accidents per km for the respective road sections. The figures represent the **total number of accidents registered during the period from October 2021 to March 2025**.
  - Based on this approach, the accident rate per kilometre in **Finland is relatively low**, ranging from 0.1 to 0.3 accidents per kilometre during the measurement period. In contrast, the **E10 in Norway shows the highest accident rate**, at 5.9 accidents per kilometre. It should be noted that the Norwegian section of the E10 is the **shortest** among all road segments included in this report, with a total length of only 36 kilometres.

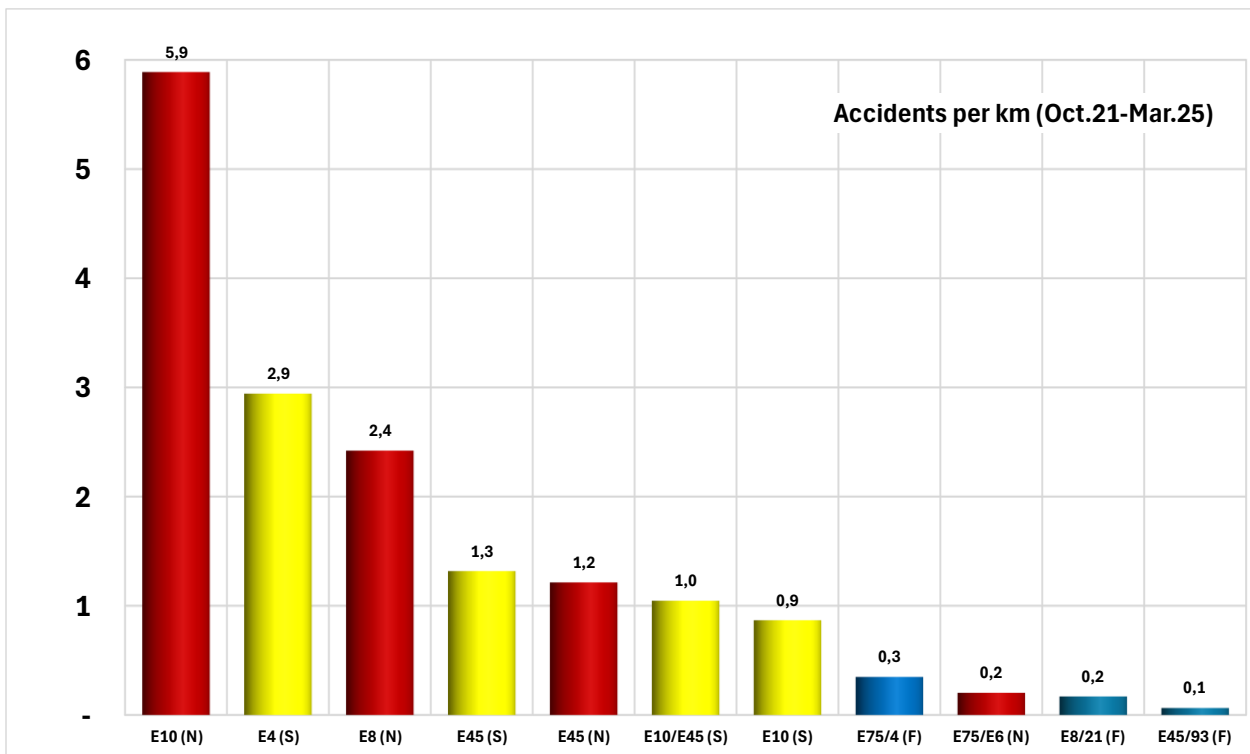


Figure 7-2: Accidents total (Oct.21-Mar.25) per km and road section

The E4 in Sweden ranks second in terms of accidents per km. However, the traffic volume (Average Annual Daily Traffic, AADT) along the E4 is significantly higher compared to other road sections, particularly those located further north within the WP1 region.

It is reasonable to assume that traffic volume (AADT) is a contributing factor influencing the accident rate.

## 7.2 Seasonal distribution of accidents

It is widely assumed that a significant number of accidents occur during the winter months due to conditions such as slippery roads, snow, and reduced visibility.

Statistical analysis enables us to verify and quantify this perception. The accumulated seasonal distribution of accidents is presented in the figure below.

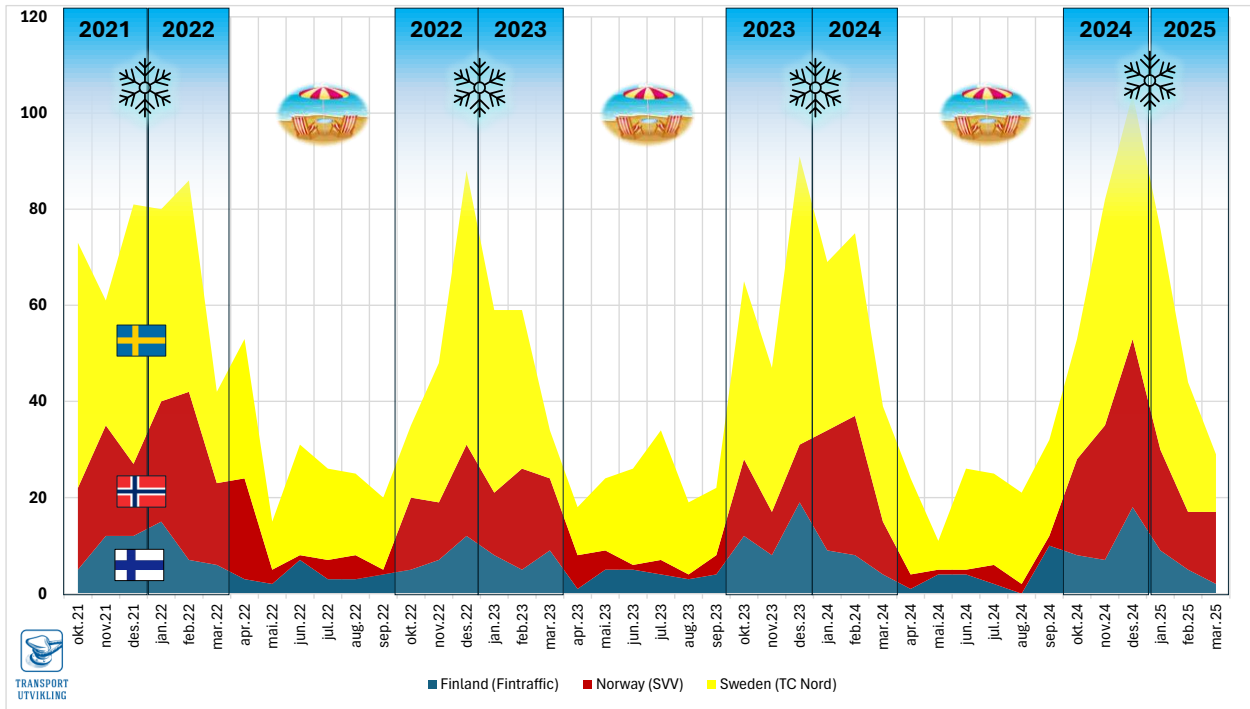


Figure 7-3: Seasonal distribution of accidents (all roads)



Picture 7-1: Winter accident Skibotndalen, Norway

Seasonal distribution of accidents

Figure 7-4 presents all registered accidents for each **country and road section** where data were available.

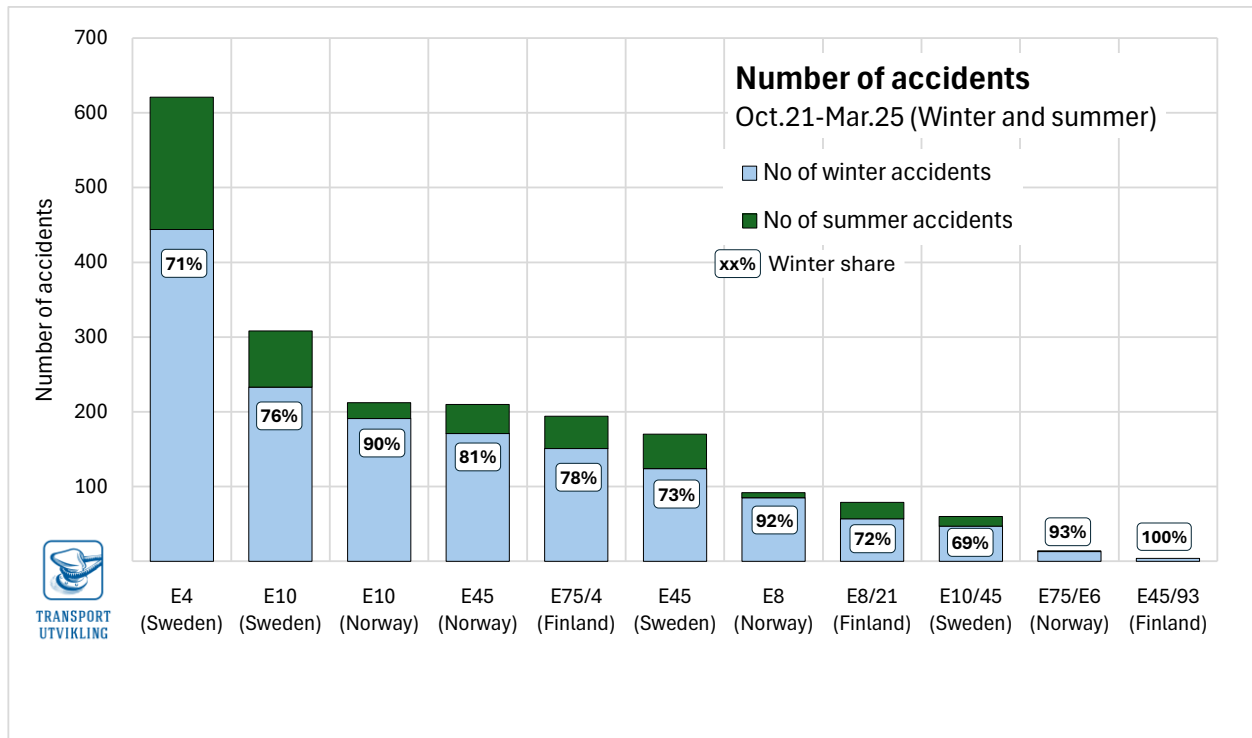


Figure 7-4: Winter and summer accidents per road section

The X-axis represents the total number of accidents per month across all countries. The data cover the period from October 2021 to March 2025.

- Based on the total number of accidents, irrespective of severity, the highest concentrations occurred along E4 in Sweden and E10 in Norway/Sweden.
- In total, 1,992 accidents were recorded across all countries, of which 1,520 accidents (77%) occurred during the winter season.
- Figure 7-4 illustrates the distribution of accidents between winter and summer for each road section. The blue segments of the bars represent the number of accidents occurring during the winter period, while the green segments indicate accidents during the summer months.

The percentage symbol denotes the proportion of accidents that occurred in the winter season.

Winter accident comments

The highest absolute number of winter accidents is recorded along E4 in Sweden. However, E4 also exhibits the lowest proportion of winter accidents, at 71%.

The largest share of winter accidents is observed along the Norwegian section E10, E8 and E75/E6.

Although E45/93 in Finland ranks relatively high in terms of winter accident share, the absolute number of reported accidents is extremely low.

### 7.3 Accidents involving heavy vehicles

This section provides an overview of accidents involving heavy vehicles across the analysed road network in Sweden and Finland. No corresponding data were available for Norway. The dataset includes all registered incidents during the period from October 2021 to March 2025, regardless of severity. The objective is to identify patterns and assess whether the involvement of heavy vehicles represents a significant risk factor compared to other traffic types.



The picture shows a tow truck rescuing a heavy vehicle that went off the road, approximately 4 km south of Pättikkä (Enontekiö, Lapland) along E8/21.

The photo was taken by the tow truck company Skibotn Bilbergning on December 9, 2024.

Picture 7-2: Truck accident on E8/21 in Enontekiö

Data from Sweden and Finland specify whether heavy vehicles participated in the accidents. During the analysed period, a total of 250 accidents involving heavy vehicles were recorded on the relevant road sections in these two countries.

- According to the available statistics, approximately 80% of these accidents occurred in Sweden.

The monthly and yearly distribution of accidents involving heavy vehicles in Finland and Sweden is presented in figure 7-5.

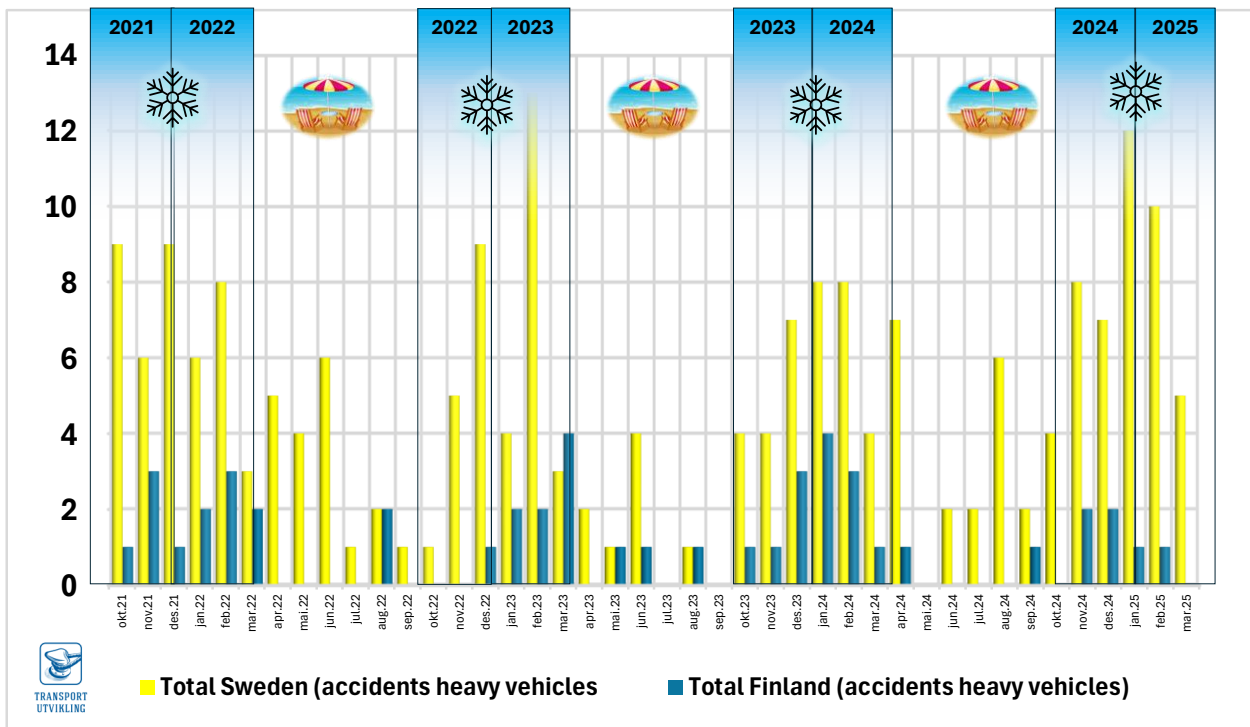


Figure 7-5: Distribution per month/year of accidents involving heavy vehicles (Finland and Sweden).

Most accidents involving heavy vehicles occur on road sections with the highest traffic volumes, notably E4 and E10 in Sweden.

On average, 17% of all recorded accidents involved heavy vehicles.

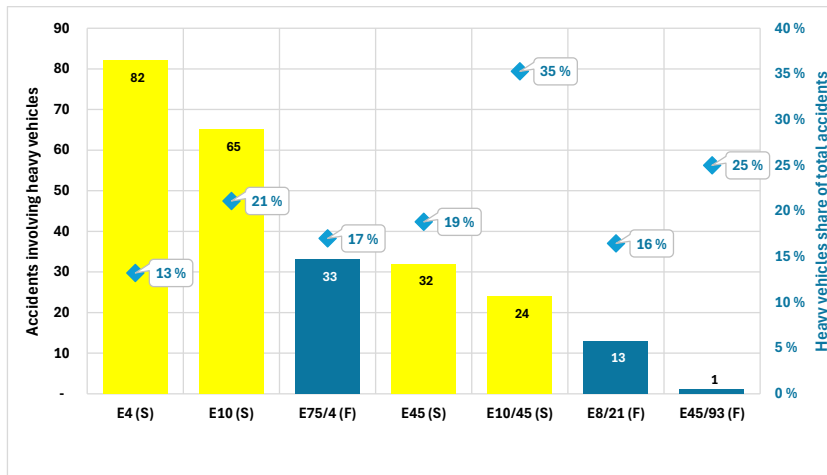


Figure 7-6 illustrates the total number of accidents involving heavy vehicles during the period **October 2021 – March 2025**.

The figure also displays, on the secondary (right) axis, the proportion of accidents involving heavy vehicles compared to the overall number of accidents.

Figure 7-6: Accidents involving heavy vehicles, per road in Finland and Sweden (Oct.21-Mar.25)

Accident rate in relation to road length

When the number of accidents per road section is **related to the length of the section (km)**, the highest accident rates are observed on the Swedish road sections, particularly along the E4 and E10/E45.

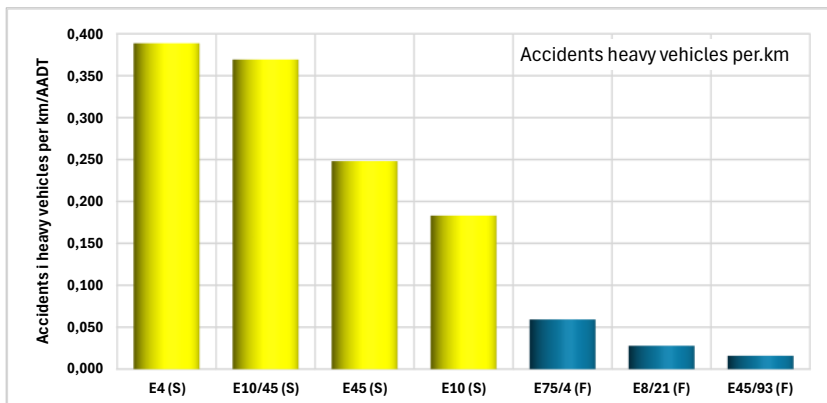


Figure 7-7: Accidents involving heavy vehicles, per road and road-km in Finland and Sweden (Oct.21-Mar.25)

Accident frequency adjusted for AADT

When Average Annual Daily Traffic (AADT) is taken into consideration, the Swedish network still exhibits the highest overall accident level. However, the ranking of individual road sections changes:

- E45 shows the highest accident frequency per km,
- while E4 ranks lowest among the Swedish road sections.

**All three countries report accidents** involving wild animals. During the period from October 2021 to March 2025, a total of 264 such accidents were registered, representing 14% of all recorded accidents. It should be noted that **potential sources of error** may exist due to differences in how national authorities classify accidents.

### 7.4 Wild animal accidents

This section addresses accidents involving wild animals across the analysed road network. The purpose is to assess the **frequency and distribution of such incidents** and evaluate whether they represent a significant safety concern compared to other accident types. The data cover the period from **October 2021 to March 2025** and include all registered accidents where wild animals were identified as a contributing factor.

**All countries have registrations** of accidents involving wild animals. During the period October 2021-March 2025, **270 such accidents** were registered in all three countries. This corresponds to 14% of all registered accidents.

#### Seasonal pattern of wild animal accidents

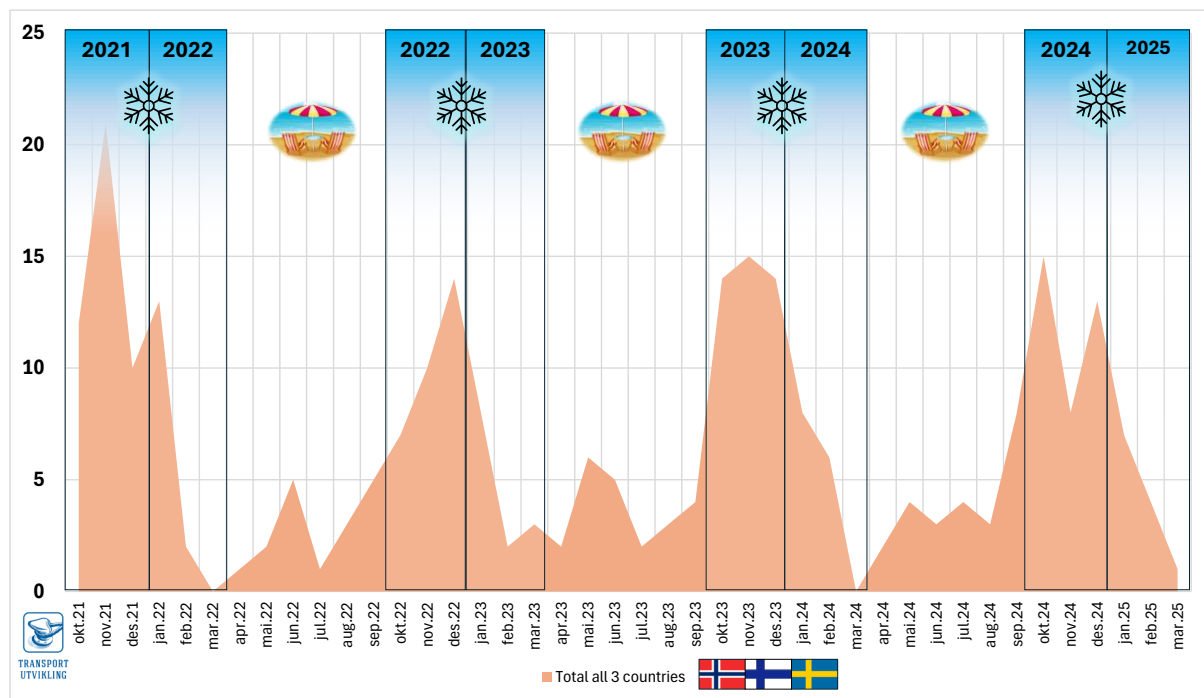


Figure 7-8: Total accidents (all countries) involving wild animals, seasonal distribution.

Across all countries, **77% of the accidents involving wild animals occurred during the winter season**, indicating a strong seasonal concentration linked to animal movement patterns and reduced visibility during winter months.

The distribution per country was as follows:

- Finland:**  
 40.7% of all wildlife-related accidents (110 incidents) were recorded in Finland, primarily along the E75/E4 corridor.
- Sweden:**  
 33.0% of incidents (89 accidents) occurred in Sweden, with the majority concentrated along the E10.
- Norway:**  
 26.3% of wildlife-related accidents (71 incidents) took place in Norway, mainly on the E10.

Wild animal accidents in relation to road length

The road distance where accidents have been registered is considerably longer in Finland than in Sweden, and the combined distance in Finland and Sweden is significantly greater than in Norway.

Figure 7-9 presents the different road sections and the number of wild animal accidents per road kilometer for the period **October 2021 – March 2025**. Based on this approach, **the highest accident rate per km is observed along the short road sections of E10 and E8 in Norway.**

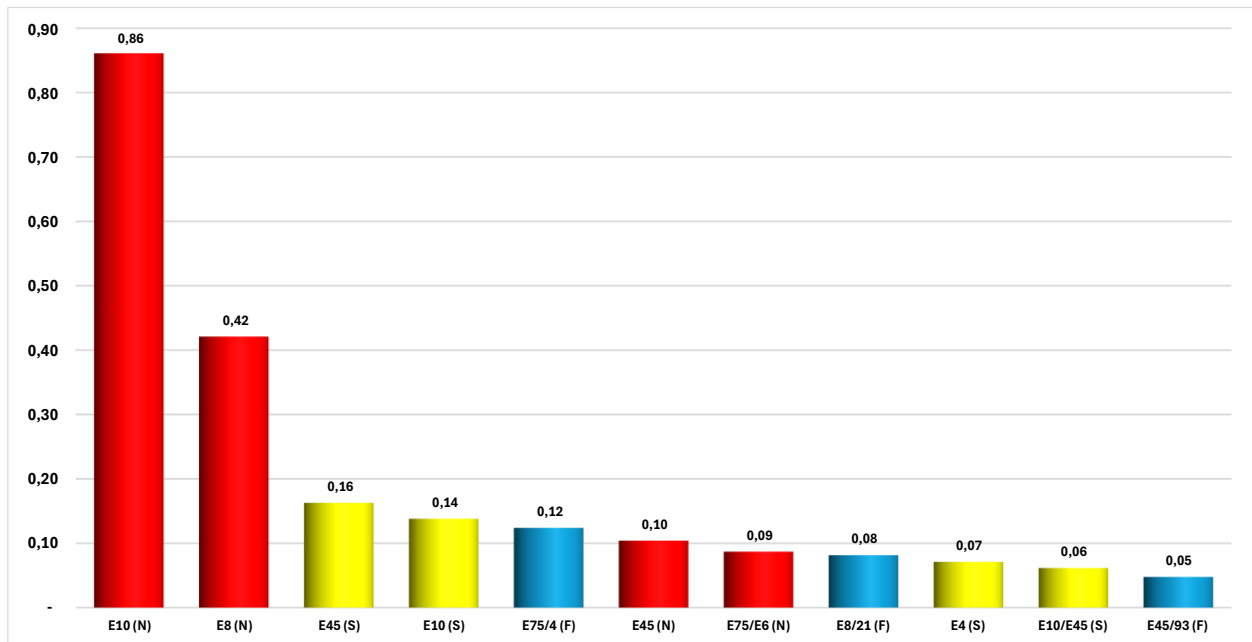
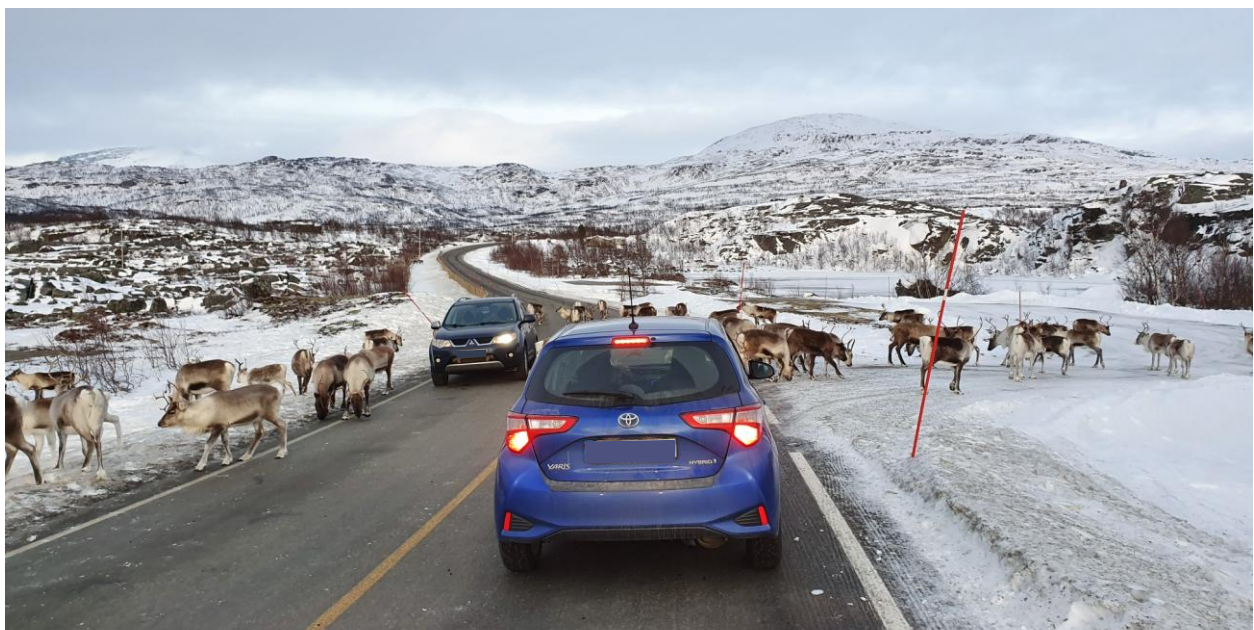


Figure 7-9: Wild animal accidents per road and road-km (Oct.21-Mar.25)



Picture 7-3: E10 Bjørnfjell (Photo: Transportutvikling AS)

Example E75/4 (Finland)

Approximately 26% of all recorded accidents occurred along E75/E4 in Finland. The monthly distribution of accidents on this road section during the period October 2021 to March 2025 is presented in the figure below.

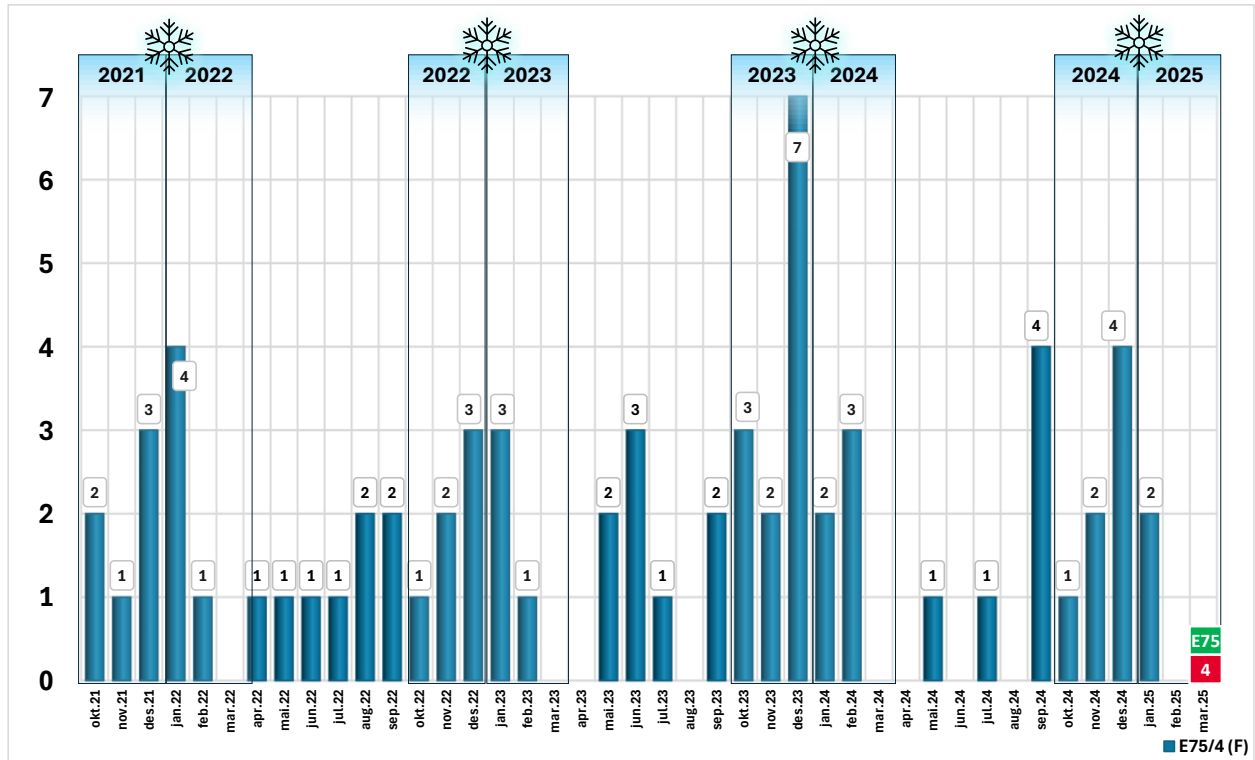


Figure 7-10: Accidents involving wild animals (E75/4 in Finland)

Accident Characteristics on E75/4 (Finland)

Close to **70% of accidents on E75/4 occur during the winter months**. In December 2023, 7 accidents involving wild animals were reported on this road section.

Most accidents are concentrated in the central and southern parts of the corridor, particularly **near Rovaniemi and Tervola**, where traffic volumes are high.

The total length of the E75/4 road section is significantly longer than other sections included in the analysis. When the number of accidents is **normalized by road length, E75/4 ranks considerably lower** (see figure 7-9).

**7.5 Closures and convoys**

This section examines road closures and convoy operations across the analysed network in **Sweden and Norway**. No corresponding data were available for Finland. These events typically occur due to adverse weather conditions or other extraordinary circumstances. The purpose is to assess the frequency, duration, and potential impact of such disruptions on traffic flow and mobility. Data cover the period from **October 2021 to March 2025** and include all registered incidents classified as closures or convoy operations in Norway and Sweden.

Impact of road closures and convoys

Roads in the region **lack relevant bypass alternatives** and the main consequence is therefore that when the road is closed, you wait until the road opens, or that you lose time when driving convoys. In the case of long-term closures, the truck may return to the point of origin or choose a long detour. In any case, lack of winter accessibility leads to loss of time and financial losses, particularly for fresh products like seafood.

Closures and convoys – data overview

During the period October 2021 to March 2025 (**42 months**), a total of **339 road closures and 92 convoy operations** were registered across all roads in Norway and Sweden. No corresponding data were reported for Finland.

On E10 (Norway), the Norwegian Public Roads Administration (SVV) recorded 98 closures, of which 27 were also classified as convoys. This ambiguous classification likely indicates that the road was not fully closed but remained accessible through convoy operations.

The figure below is based on SVV’s classification of “closed roads,” even though some reported closures may in fact represent convoy operations. In either case, both classifications result in limited mobility. The distribution of closures and convoys, per road, is shown in figure 7-11.

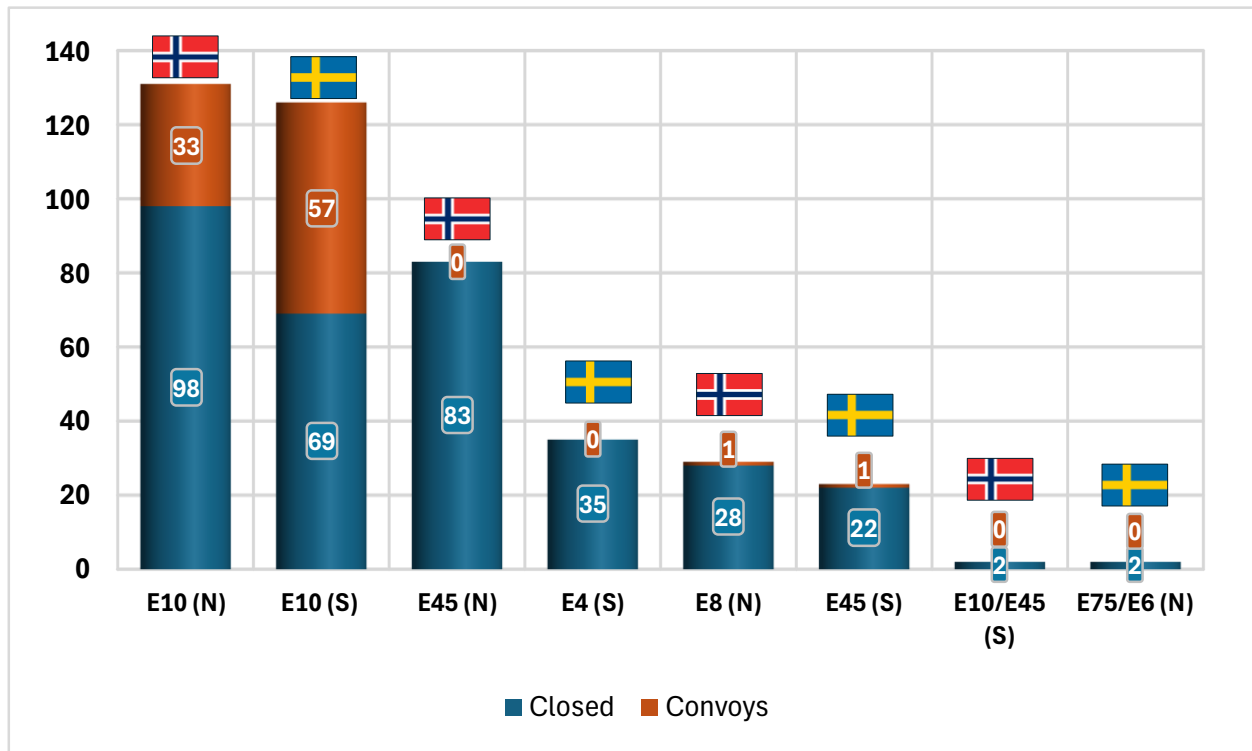


Figure 7-11: Number of closures and convoys (Oct. 2021-Mar. 2025), road sections in Norway and Sweden

E10 dominates closures/convoys

- The E10 (Norway and Sweden) corridor clearly dominates both closures and convoys during the study period. It accounts for 50 percent of all reported closures across the examined road network (see figure 7-11) and an overwhelming 98 percent of all convoys.
- Geographically, most closures and convoys were concentrated in the Bjørnfjell border area, underscoring the strategic importance and vulnerability of this section of the E10.
- E45, particularly in Norway, do also have a notable number of closings, but no convoys

Correction of cross-border incident records

Due to the cross-border characteristics of the Bjørnfjell section of the E10, **certain incidents were documented in both Norway and Sweden**. Because closures on the Norwegian side automatically trigger corresponding closures on the Swedish side, duplication within the datasets was unavoidable. To ensure data accuracy and avoid double-counting, **18 incidents and 41 convoys have been removed** from the Swedish dataset, as these events were directly attributable to the Norwegian-reported closures and convoy operations.

**7.5.1 Example E10 Sweden/Norway**

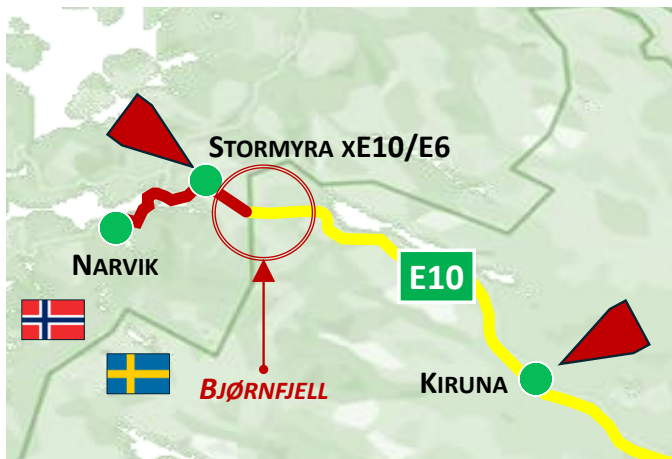


Figure 7-12: E10 Kiruna-Stormyra (Norway)

Figure 7-13 illustrates the monthly distribution of closures and convoys along the E10 section from Kiruna to the country border and onward to Stormyra (XE10/E6). The measurement period covers October 2021 to March 2025.

The majority of reported incidents occurred in the Bjørnfjell border area, reflecting the vulnerability of this cross-border section.

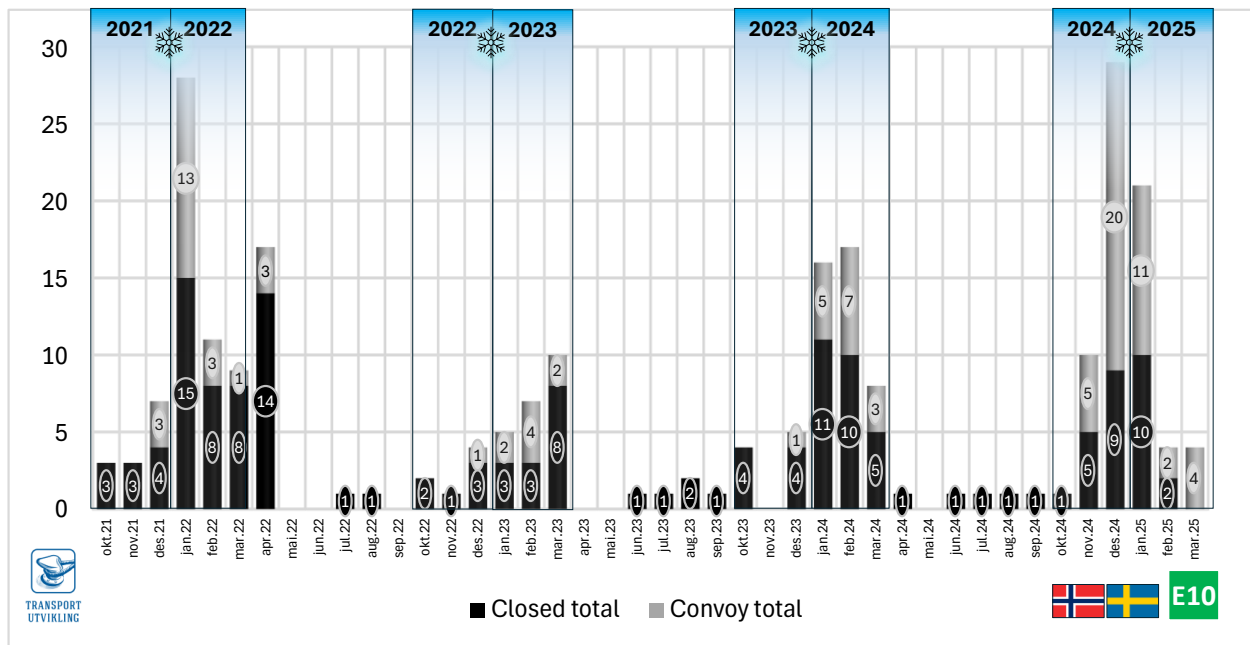


Figure 7-13: Number of closures and convoys, E10 Norway/Sweden

The figure demonstrates that closures, and particularly convoys, are predominantly winter incidents. While closures may also occur during the summer months, these are typically linked to accidents, landslides, or other isolated events rather than seasonal conditions.

The peak period of disruption is observed in December and January, which consistently record the highest number of incidents. In December 2024 alone, a total of 29 closures and convoys were registered, underscoring the severity of winter impacts on traffic along the E10 corridor.

Duration of the individual closures

Between **October 2021 and March 2025**, a total of 148 closures and 90 convoys were registered along the E10 corridor between Kiruna and Stormyra (XE10/E6) in Norway. The figure of 148 represents the combined registrations from both Norway and Sweden. Despite corrections applied to the dataset, some of these registrations may still relate to the same incident due to the cross-border nature of the Bjørnfjell section.

**The cumulative closing time during this period amounted to 1,765 hours<sup>4</sup>**, with an average closure duration of 12 hours. Of the total closures, 71 percent lasted longer than one hour, while 30 percent exceeded 12 hours.

**Norwegian statistics account for most of the disruptions:** 66 percent of the closures and 82 percent of the total closure time originated from the Norwegian statistics.

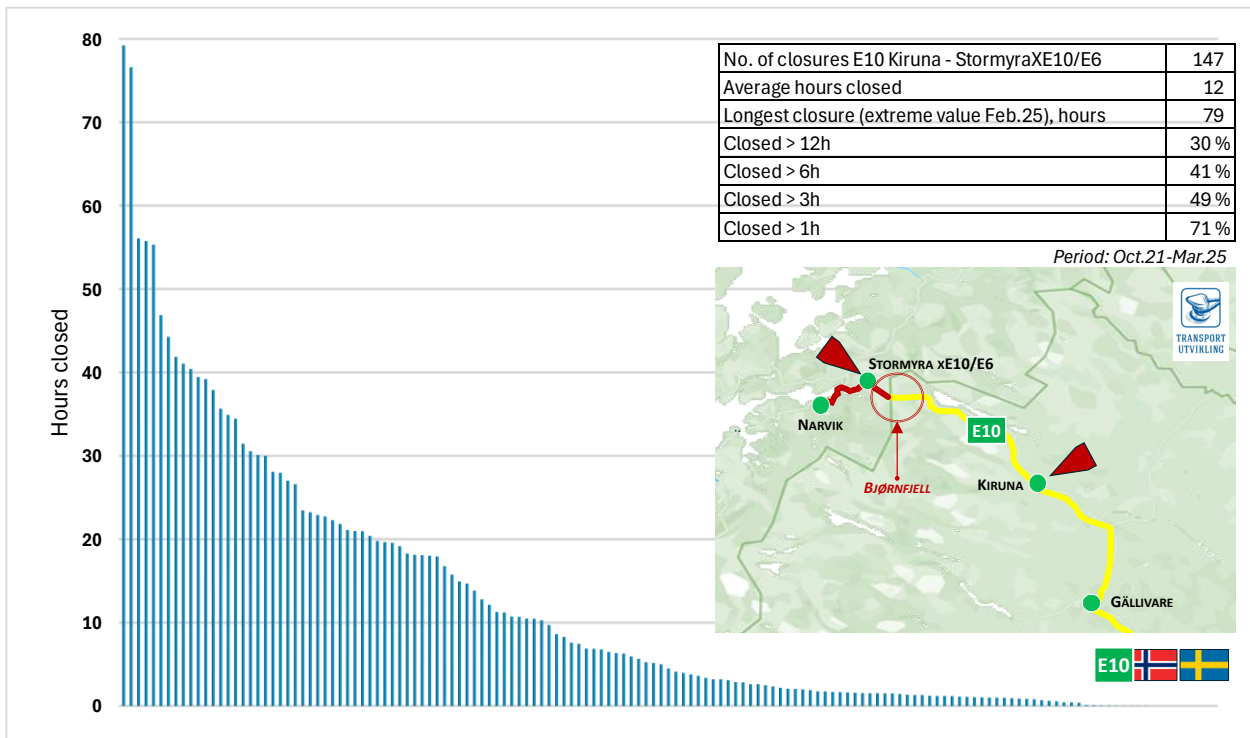


Figure 7-14: 147 closures, E10 Norway/Sweden (Oct.21-Mar.25)

E10-Bjørnfjell- the most challenging road section

Even though the reported statistics may be debatable, the E10 Bjørnfjell is considered the most challenging road section in the region with respect to winter closures and convoy operations.

The severity of the conditions in this area is consistently reflected in the traffic statistics and is further reinforced by the experiences of drivers and transport companies. Feedback from participants in the driver survey (see chapter 8) strongly emphasizes the difficulties associated

<sup>4</sup> One extreme value of 156 hours has been removed from the database (Norway), as we believe it is incorrect. The reported reason for the road closure is "slippery road," and no corresponding data is found in the Swedish statistics.

with this section, underscoring its reputation as **the most critical bottleneck for winter operations in the region**.

The winter conditions at Bjørnfjell, if no mitigating actions are taken, should also be considered when strategic planning for future military mobility between Norway and new NATO member states. Severe weather and associated road closures in this corridor **could significantly impact the reliability and timeliness of military transport operations**, highlighting the need for robust contingency planning and infrastructure resilience.

Cross-border data overlap and impact on closure statistics

Despite corrections applied to the dataset, some registrations may still refer to the same incident due to the cross-border nature of the Bjørnfjell section. This overlap occurs because closures are often reported by both Norwegian and Swedish authorities for the same event.

As part of the data-cleaning process, 18 duplicate closures were removed from the Swedish dataset to minimise the risk of double counting. Despite these corrections, some residual duplication may still be present, which could lead to a **slight overestimation** of both the total number of closures and the cumulative closure duration

Even accounting for double reporting, the closure periods remain high

- If we consider only the closure hours reported by Norwegian authorities:
  - ✓ Total closure time decreases from 1,765 hours to 1,455 hours (a reduction of approximately 18%).
  - ✓ Average monthly closure time (12 months/whole year) changes from 42 hours to 35 hours.
  - ✓ Average monthly closure time (6 months/winter) changes from 84 hours to 69 hours.

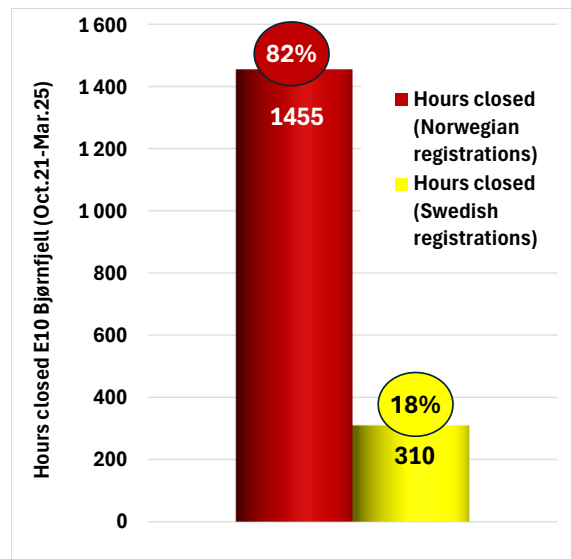


Figure 7-15: Hours closed, E10 Bjørnfjell (Oct.2021-Mar.2025)

**7.5.2 Example E45 Norway**

The E45 in Norway ranks second in terms of road closures during the measurement period. Between **October 2021 and March 2025, a total of 83 closures** were registered along this corridor. Of these, 73 percent occurred during the winter months, highlighting the strong **seasonal influence** on traffic disruptions.

As illustrated in figure 7-16, the monthly distribution of closures along the Norwegian section of E45 reflects this winter dominance, with peaks in the colder months and fewer incidents during summer, when closures are typically linked to accidents or isolated events.

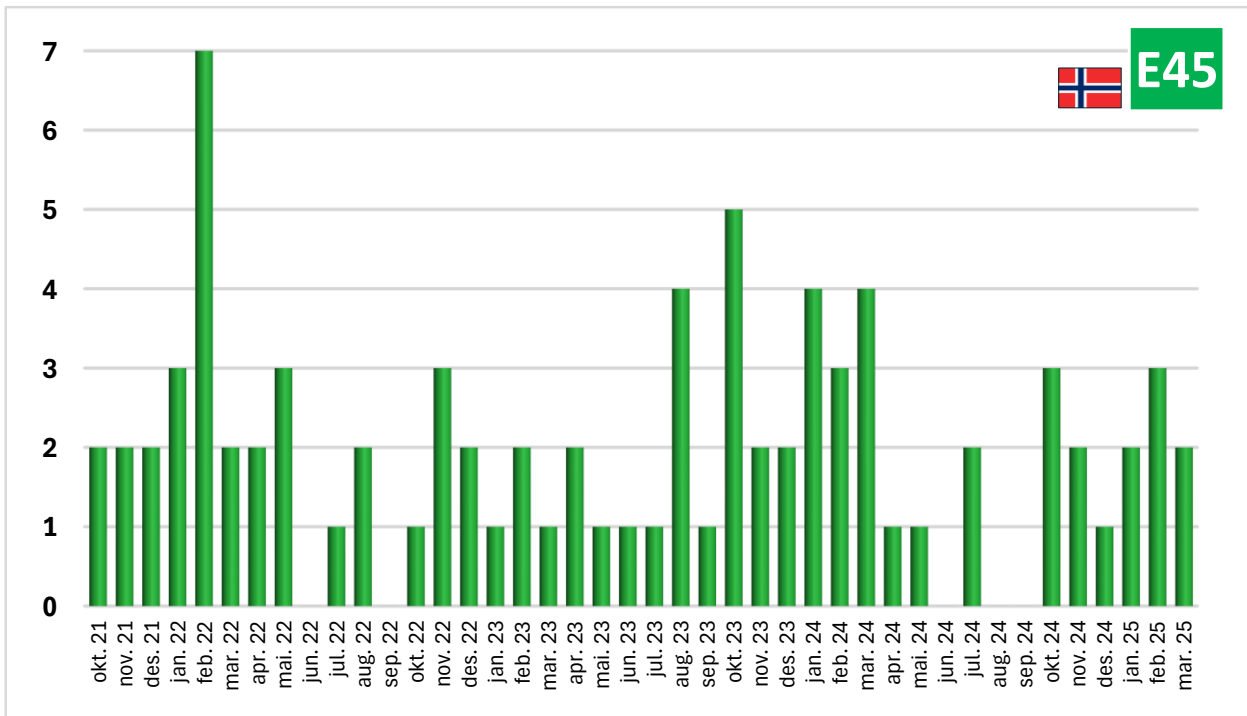
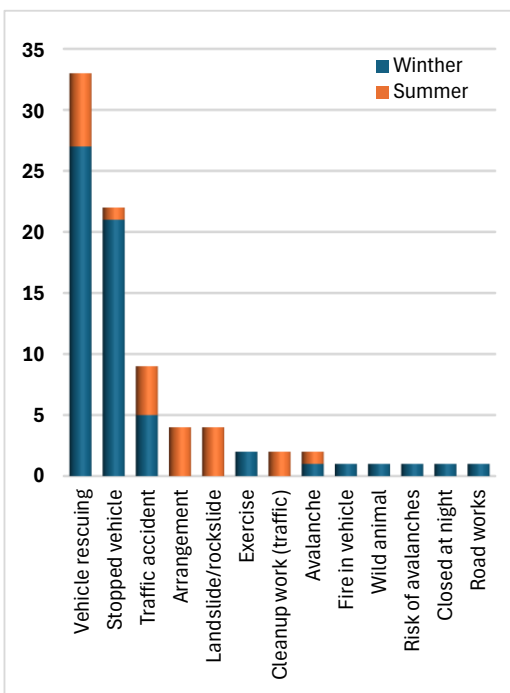


Figure 7-16: 83 road closures, E45 Norway (Oct.2021-Mar.2025)



Causes of road closures on E45 (Norway)

Based on the statistics, the closures along the E45 in Norway are not primarily caused by weather alone but are more likely the result of a **combination of weather conditions and other contributing factors**.

The figure illustrates the reasons behind 83 road closures registered during the period October 2021 to March 2025 (42 months). The analysis shows that the **main causes of closures were related to rescuing vehicles and to vehicles that had stopped on the road**, rather than direct weather impacts.

Figure 7-17: Causes of Road Closures on E45 (Norway)

## 8. DRIVER SURVEY

The driver survey provides important insights into the practical challenges encountered during winter operations. Respondents highlighted several operational needs, including the demand for additional rest areas, concerns regarding the opening hours of border stations, and a range of other issues affecting daily transport activities. These perspectives offer a valuable complement to the quantitative analysis of closures and convoys by capturing the lived experiences of those directly involved in cross-border transport.

The survey **focuses on seven (not all) border-crossing stations**, and their associated road networks, as illustrated in the map below. Feedback from transport companies and professional drivers underscores several critical themes:

- **Infrastructure gaps**, particularly the limited availability of suitable rest areas.
- **Operational constraints**, such as border-station opening hours that do not always align with transport needs.
- **Practical challenges during winter conditions**, including delays, reduced predictability, and safety concerns.

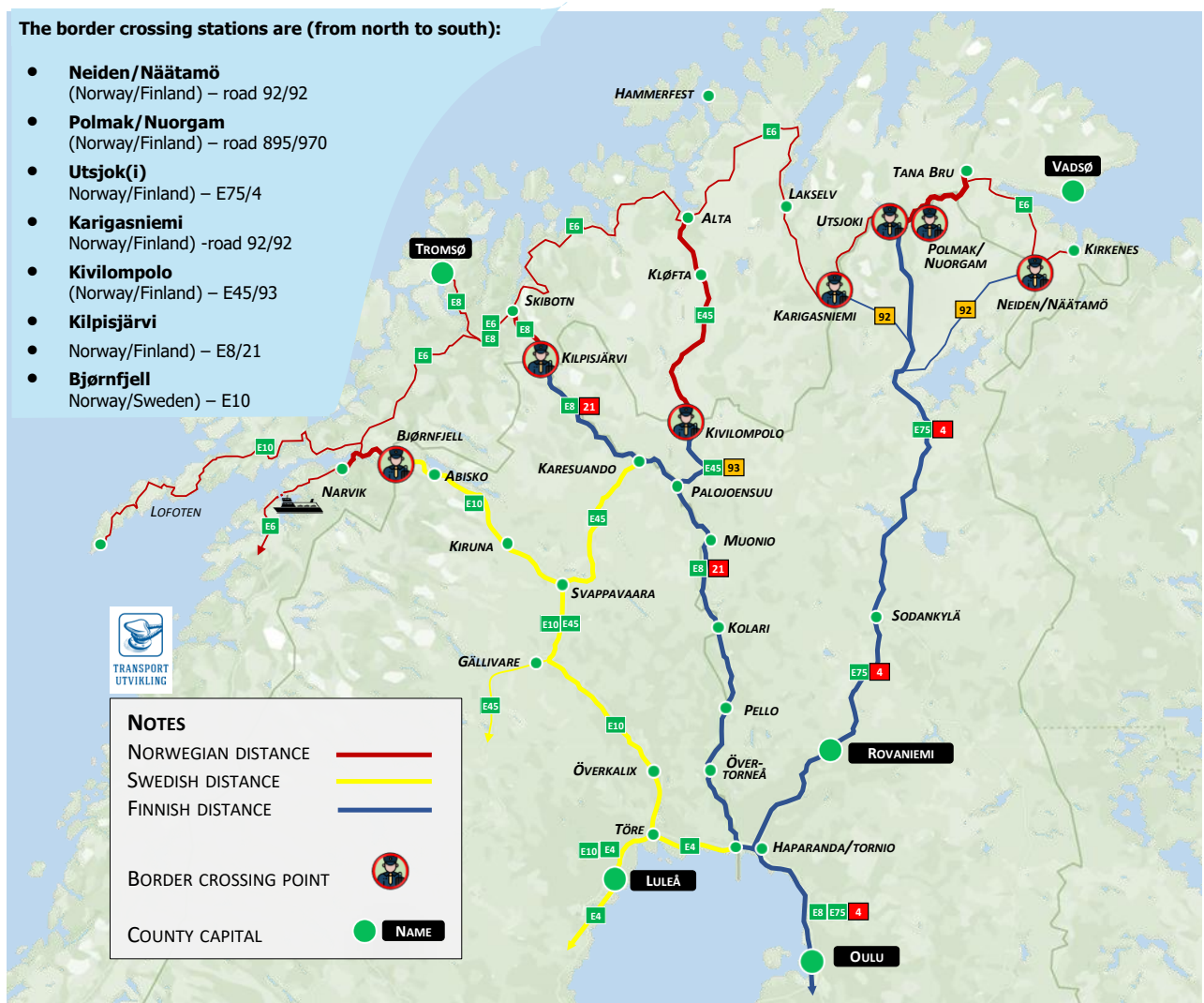


Figure 8-1: Driver survey - roads and border crossings

### 8.1 Winter conditions

Challenges associated with winter accessibility is **primarily linked to severe weather conditions** during the winter months combined with a lack of adequate winter maintenance and waiting areas. The **consequences** of these factors include accidents, convoys, closed roads and prolonged waiting times, -all of which **significantly affect transport reliability**.

According to the driver survey, **60 percent of the companies reported experiencing challenges related to winter accessibility**. The locations where these challenges are perceived to be most severe are illustrated in the figure below, highlighting critical areas of concern for cross-border transport and regional logistics.

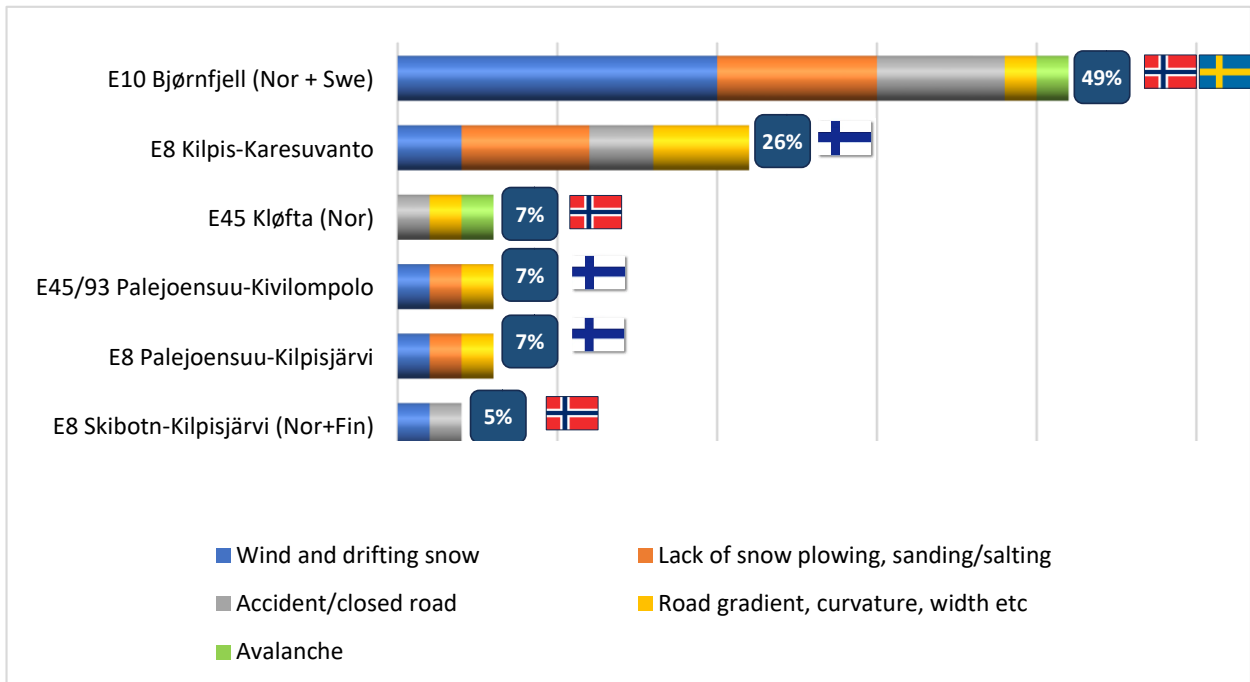


Figure 8-2: Most challenging places



#### E10 Bjørnfjell – A challenging road section

The border crossing between Norway and Sweden at Bjørnfjell represents **the most challenging road section** in the region. Winter conditions frequently result in reduced mobility, closures, and convoy driving, making this corridor particularly vulnerable.

Accidents have been reported along the stretch between the E6 in Norway and Abisko in Sweden, with drivers and transport companies highlighting lack of ploughing and sanding as specific areas requiring improvement.

Picture 8-1: E10 Bjørnfjell, Swedish side 11.2.25 (Photo: Transportutvikling AS)

*“Lack of interaction between snow ploughing crews on either side of the border.”*

(Truck drivers' description of E10 Bjørnfjell)



Winter maintenance challenges in northern Finland

Respondents also pointed to significant winter challenges on the Finnish side of the E8 (**Kilpisjärvi–Palojoensuu**) and on the E45 between Palojoensuu and Kivilompolo. These issues are not primarily related to road closures, but rather to **inadequate ploughing during nighttime** hours. Drivers reported difficulties both on the roads and in parking areas where they must wait until snow ploughs arrive, underscoring the need for more consistent winter maintenance.

Drivers emphasized that **lack of winter maintenance** remains a significant challenge in Northern Finland, particularly during the nighttime hours when ploughing and sanding operations are less frequent. This results in hazardous driving conditions and long waiting times before maintenance crews arrive.

*“From Palojoensuu to Kilpisjärvi it is 150 km. There are not enough snow ploughs to take care of such distances. In Finland, they only react when a collision occurs or when the snowy weather is over, so that they do not have to drive back and forth several times. There can quickly be 20-30 centimeters of snow on the road before they react.”*

(Truck drivers' description of Kilpisjärvi-Palojoensuu)



*“Should be easier to get in contact with people for winter maintenance if needed. For instance, when ploughing, sanding etc. is required.”*

(Truck drivers' description of access to winter maintenance)



A further general complication is that the **distance from road maintenance stations to the locations where action is required is often considerable**. This results in slow response times and prolonged exposure to unsafe conditions for road users. The geographical remoteness of certain sections amplifies these challenges, particularly during severe weather events when rapid intervention is critical.



In December 2024, a heavy truck veered off the roadway on Road 21 (E8) between Kilpisjärvi and Palojoensuu. The vehicle left the road surface and came to rest off the roadside. Weather and road conditions in the area are known to be challenging during winter months, which may have contributed to the incident.

*Picture 8-2: Heavy transport off the roadside (Photo: Skibotn Tungberging AS)*

Traffic safety concerns on E8 in Norway

On the E8 in Norway, traffic safety is further complicated by the presence of large numbers of **foreign tourists visiting to experience the Northern Lights**. The tourist activity appears to be insufficiently regulated, with vehicles frequently parking or stopping in the middle of the roadway. This behaviour creates **hazardous traffic situations** and adds to the operational challenges faced by professional drivers.

The picture illustrates Northern Light tourists on the E8 roadway, highlighting a recurring traffic safety challenge. The photo was taken by a heavy truck driver and published in Newspaper Nordlys. According to the driver, such incidents are not isolated but occur along the entire stretch between Skibotn in Norway and Karesuvanto in Finland.



This situation underscores the risks associated with **unregulated tourist activity**, where vehicles frequently stop or park directly on the roadway to observe the Northern Lights.

Such behaviour creates hazardous conditions for professional drivers and other road users, adding to the operational challenges of winter traffic management in the region.

*Picture 8-3: Northern Lights tourists on the E8 roadway in Norway (Source: Nordlys)*

## 8.2 Rest areas

Rest areas, including 24-hour facilities, play a critical role in ensuring both traffic safety and the welfare of professional drivers. **Adequate rest areas are essential** for drivers to comply with regulations governing driving times and mandatory rest periods, thereby **reducing the risk of fatigue-related accidents**. The availability of suitable rest areas also supports driver well-being by providing safe and accessible locations for breaks, contributing to more sustainable and efficient transport operations. Insufficient rest facilities can compromise compliance, increase stress levels, and negatively impact overall road safety.

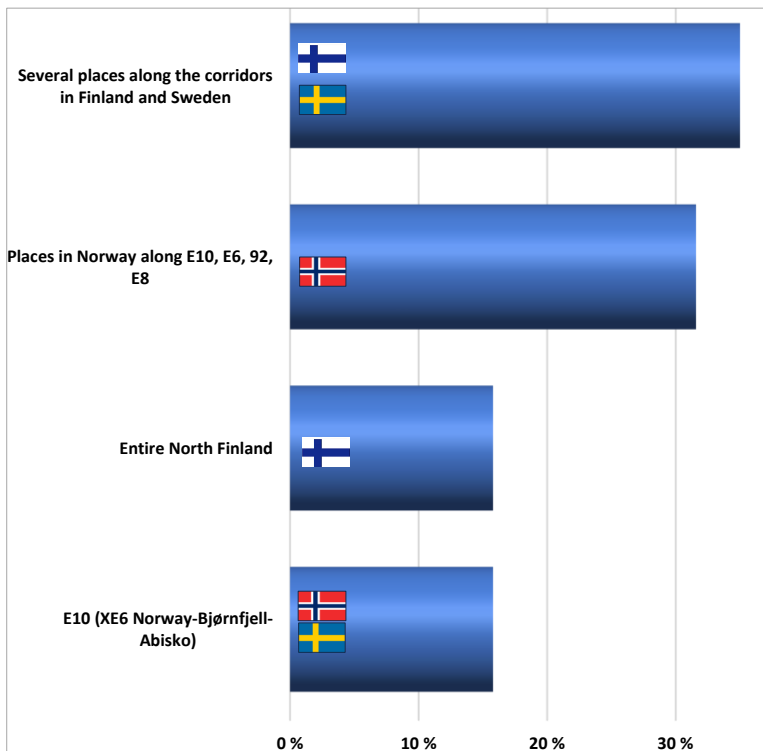
*The analysis focuses on drivers' experiences and their perceptions of the need for rest areas. However, it should be noted that, in addition to national plans and strategies, there are also requirements set out in the TEN-T regulations.*

*TEN-T regulations include specific requirements for rest areas for heavy-goods vehicle drivers. According to Regulation (EU) No 1315/2013, Member States must ensure that the TEN-T road network is equipped with adequate parking and rest facilities at appropriate intervals, enabling drivers to comply with EU rules on driving and resting times and to benefit from safe and secure parking conditions.*

*The key requirements can be summarised as follows:*

- *By 2040: The TEN-T core network must provide sufficient rest areas at intervals not exceeding 60 km.*
- *By 2050: The TEN-T comprehensive network must provide sufficient rest areas at intervals not exceeding 100 km.*
- *By 2040: The TEN-T core and extended core networks must be equipped with Safe and Secure Parking Areas (SSPAs) suitable for heavy goods vehicles, with a maximum spacing of 150 km.*

The lack of suitable rest spaces for drivers is perceived as **a general problem across all three countries**. In the survey, Sweden and Finland were mentioned in broad terms, reflecting widespread concerns rather than isolated locations.



The figure illustrates where drivers would like to see improved rest area facilities. Apart from Bjørnfjell (E10), few specific sites were identified; instead, respondents pointed to stretches or broader areas where rest areas are either insufficient or of poor standard.

The need for improvement is considered most urgent along parts of the E10 in Norway and in Northern Finland, where the lack of adequate facilities poses challenges for both compliance with rest regulations and overall traffic safety.

Figure 8-3: Demand for rest areas

The **E10 Bjørnfjell border station** is highlighted as a particular challenge because **it is not open at night**, and there are no toilet facilities available when the customs station is closed. In Northern Finland, drivers reported that there are no suitable rest areas, further complicating compliance with rest regulations and safe winter operations.

The report “24-hour Rest Areas in the Barents Region” (2021), prepared as a follow-up to the Joint Barents Transport Plan, presented an overview of both existing and planned 24-hour rest areas. The report also defined the minimum requirements for such facilities, which include (reproduced from the report):

- “Toilet facilities
- Waste container
- Washing and supervision when needed
- Open all year around
- Parking spaces for heavy vehicles”

The map below (figure 8-4) , reproduced from 24-hour Rest Areas in the Barents Region (2021), provides an overview of existing and planned 24-hour rest areas as of 2021.

It illustrates **the geographic distribution of facilities across the western part of the Barents Region**.



Figure 8-4: Existing 24h -rest areas (2021)

The map indicates that there are **few rest areas in the northern parts of the western Barents Region**, including the corridors most frequently mentioned by drivers, such as the E10 and the northernmost sections of Finland. **A 24h rest area in Kiruna is added to the original map. A 24-hour rest area located in Kiruna has been incorporated into the original map.**

The survey revealed a substantial lack of rest-area coverage along many of the road sections used by drivers, highlighting the need for improved facilities to enhance both traffic safety and driver welfare.

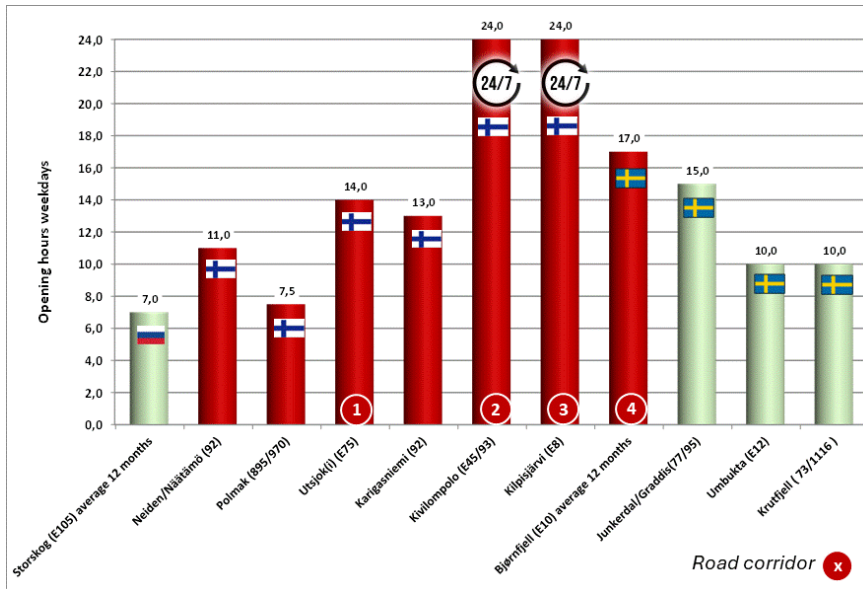
### 8.3 Border crossings

In Northern Norway, there are **11 border crossing stations (customs stations) that serve as key gateways for heavy industrial transport**. These stations play a critical role in facilitating cross-border logistics and ensuring compliance with customs regulations.

In figure 8-5, the border crossing stations marked in red indicate those that were included in the questionnaire survey conducted among drivers and transport companies. The numbers 1–4 shown in the figure correspond to the WP1 corridors, which represent the main transport routes analysed in the study.

Out of the 11 border crossing stations in Northern Norway, **only two are open 24/7**. The figure below provides an overview of all stations and their respective opening hours.

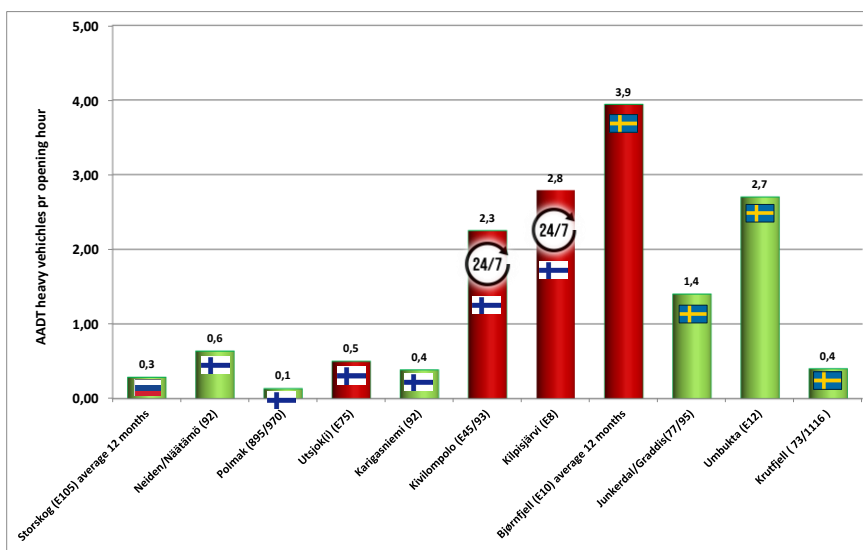
- 6 stations connect Norway with Finland
- 4 stations connect Norway with Sweden
- 1 station connects Norway with Russia



This distribution highlights the limited availability of round-the-clock facilities, which poses potential challenges for heavy industrial transport and cross-border logistics.

Figure 8-5: Border crossing stations between Norway and neighbouring countries

Heavy vehicle traffic at border crossing stations



Among the 11 border crossing stations in Northern Norway, four stations handle more than two heavy vehicles per opening hour. The highest concentration of heavy vehicle traffic occurs at the E10 Bjørnfjell station, which serves as an important corridor for industrial transport.

Figure 8-6: AADT heavy vehicles per opening hour

Despite its significance, the Bjørnfjell station is not open 24/7, creating operational challenges for transport companies. Limited opening hours restrict flexibility, increase waiting times, and complicate compliance with driving and rest regulations, particularly during winter when convoy driving and closures are frequent.

Demand for extended opening hours at border stations

In the driver survey, respondents were asked to identify where extended opening hours were required—either full 24-hour availability or a more limited extension of current schedules. Since

the **E45 Kivilompolo** and **E8 Kilpisjärvi** stations are already open 24/7, they were not relevant to this question.

The survey results show that:

- the greatest demand was at the **E10 Bjørnfjell station**, where respondents ranked 24/7 opening time as their number one priority.
- Additional requests for extended hours were noted at **Utsjok, Neiden and Karigasniemi**
- **Polmak** was given the lowest priority.

Figure 8-7 summarizes these responses. The blue segments of the columns represent companies that prefer 24/7 opening hours, while the green segments indicate those who consider it sufficient to extend opening times by a few hours.

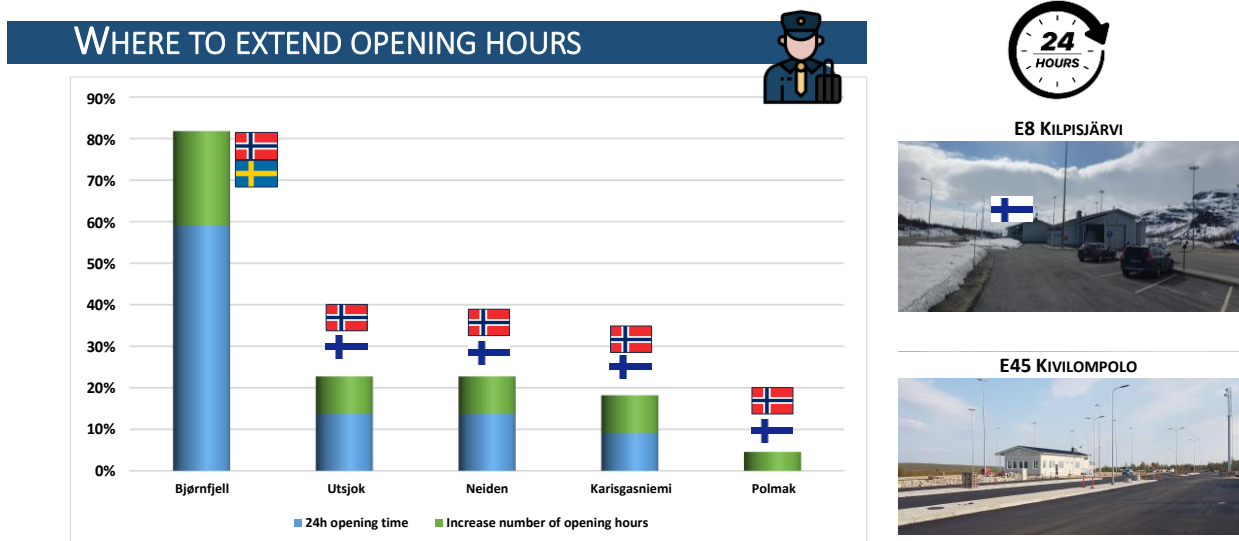


Figure 8-7: Where to extend opening hours

### 8.4 Other challenges identified by drivers

- **Mobile connection, Northern Finland** 
- **Roadside assistance** 
- **Road standard** 
- **Winter maintenance** 
- **Information** 

In addition to winter accessibility, rest areas, and border crossing operations, respondents were asked whether other issues should be considered.

The survey results, summarized in figure 8-8, highlight several additional challenges mentioned by drivers.

Figure 8-8: Other challenges identified by drivers

**Mobile connection Northern Finland**

Drivers highlighted the lack of mobile connection, particularly in **Northern Finland**, as a challenge. In the event of accidents or other emergencies, poor connectivity can have serious consequences, limiting the ability to call for assistance or coordinate rescue operations.

At the same time, respondents noted that the situation has improved compared to a few years ago, probably reflecting ongoing investments in mobile infrastructure. Nevertheless, coverage gaps remain along critical transport corridors, underscoring the need for further development to ensure safety and reliability for professional drivers.



*“Mobile data coverage is a challenge in several rural areas, and there are clearly some blind spots that should have been improved. Perhaps there could also be a system along the road with emergency telephones, similar to the ones you find in tunnels?”*  
 (Truck drivers' description of mobile connection)

**Roadside assistance**

Drivers identified roadside assistance as a general challenge, particularly when problems occur on remote roads far from urban areas. The issue is most acute in **Northern Finland**, where long distances, sparse infrastructure, and harsh winter conditions make it difficult to access timely support.

Respondents emphasized that the challenge is especially critical during night hours, when assistance services are limited and response times are longer. This situation increases risks for professional drivers, who may be stranded without adequate support in severe weather or hazardous traffic conditions.



*“Assistance is available, but tow trucks are often located far from where accidents occur.”* (Truck drivers' description of roadside assistance)

**Road standards along the corridors**

According to the drivers, the general road standard along the corridors is considered acceptable. However, specific sections were identified as particularly problematic. **The E8/21 between Kilpisjärvi and Palojoensuu** was mentioned as the worst stretch, with drivers reporting significant challenges related to maintenance and driving conditions.

In addition, **parts of the E45 between Palojoensuu and Kivilompolo** were also highlighted as problematic. These findings suggest that while most corridors meet acceptable standards, targeted improvements are needed in Northern Finland, especially along the Kilpisjärvi–Palojoensuu section, to ensure safe and reliable transport operations.



*“This road gets worse every year. I don’t think anyone cares. It’s in terrible condition even during summer. There are so many bumps that you fear the car might jump off the road.”*  
 (Truck drivers' description of Kilpisjärvi-Palojoensuu)

According to the drivers, heavy vehicles going off the roadside is a common occurrence along the E8/21 between Kilpisjärvi and Palojoensuu. This stretch of road is highlighted as one of the most challenging sections in terms of winter maintenance and driving conditions.

### Road improvements on E8/21

The northern section of the E8/21 has been the subject of considerable criticism in recent years, particularly due to frequent roadside incidents and inadequate winter maintenance. Drivers consistently identify this stretch between Kilpisjärvi and Palojoensuu as one of the most problematic corridors in the region.

In response, the Finnish authorities are currently **in the process of improving the road**, with measures aimed at enhancing safety, reliability, and overall driving conditions. These upgrades are expected to reduce accident risks, improve accessibility during winter, and strengthen the corridor's role as a key cross-border transport route.

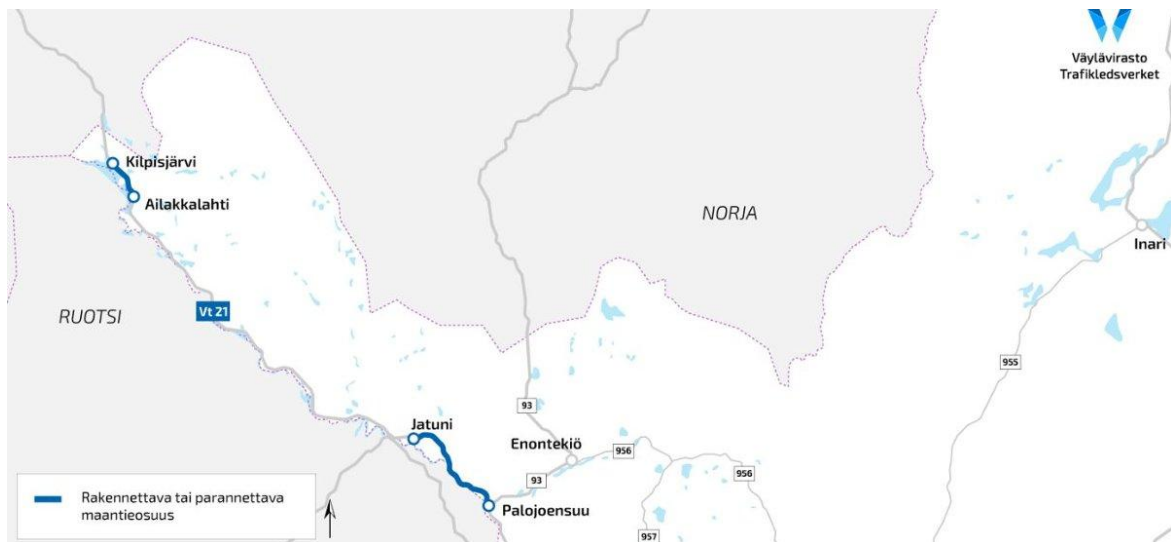


Figure 8-9: Improving the road section Kilpisjärvi-Palojoensuu

### Ailakkalahti-Kilpisjärvi – completed in October 2025

The Ailakkalahti-Kilpisjärvi project (4,2 km) on highway 21 was completed in October 2025. According to Vayla; *"The project improved the safety and flow of traffic. The road section between Ailakkalahti and Kilpisjärvi is part of the national main road network and an important international connection to Northern Norway and the Arctic Ocean. The road section did not meet the service level targets set for the main roads. The road was narrow, geometry and condition poor, and traffic safety was below the national average."* (<https://vayla.fi/vt-21-palojoensuu-jatuni>)

### Palojoensuu-Jatuni to be completed in 2028

According to Vayla, *"The road section of Highway 21 between Palojoensuu and Jatuni is part of the national main road network and an important international connection to Northern Norway and the Arctic Ocean. At present, the road section does not meet the service level targets set for the main roads. The road is narrow, geometry and condition poor, and traffic safety is below the national average. The aim of the project is to improve traffic safety and the flow of traffic."*

The distance between Palojoensuu and Jatuni is approximately 30 km, and according to Vayla the construction will be completed autumn 2028.

**Winther maintenance challenges**

This challenge is discussed in which addresses winter conditions in general.

This issue is examined in Chapter 8.1, which provides a broader discussion of winter conditions and their operational implications.

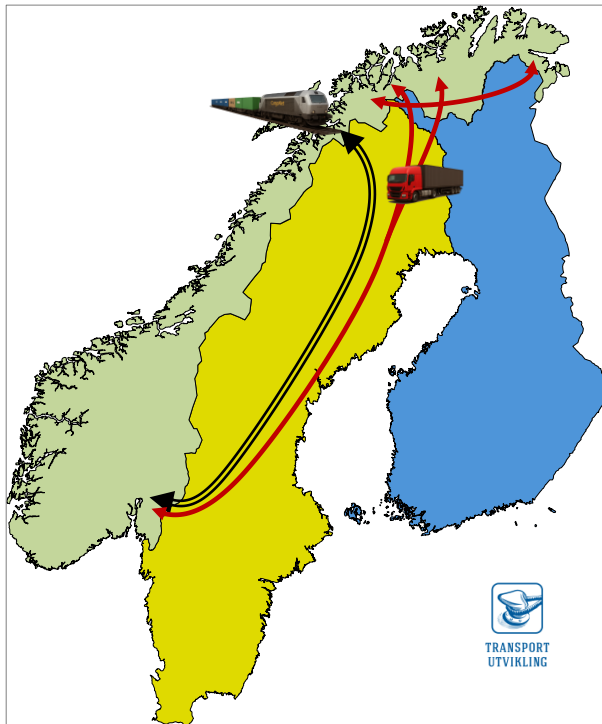
**Information challenges**

Truck drivers highlighted the lack of information when the E10 Bjørnfjell is closed as a recurring challenge. They also noted that information provided at rest areas is limited, making it difficult to plan routes and respond to unexpected closures.

The image contains two callout boxes, each with a quote from a truck driver and an icon of a driver in a hard hat next to a truck. The top callout box has a quote: "There should be some information at 24-hour rest areas, but there is rarely information of any kind." followed by the text "(Truck drivers' description of information at rest areas)". The bottom callout box has a quote: "Poor signage/information, e.g. Bjerkvik/Bjerkviklia. There should have been signage in Bjerkvik when Bjørnfjell is closed, then you can deviate over Kilpis or Graddis." followed by the text "(Truck drivers' description of information needs when Bjørnfjell is closed)".

According to the report "24-hour Rest Areas in the Barents Region" (March 2021), one of the minimum requirements for a 24-hour rest area in Sweden is the provision of "National information and traffic information."

## 8.5 Norwegian goods in transit



In Northern Norway, Sweden and Finland are frequently used as transit routes for goods moving to and from Southern Norway, as well as between the northern counties. Typical flows include seafood, groceries and parcel shipments.

From 21 January 2025, the EU introduced new requirements obliging the use of six-digit HS<sup>5</sup> codes for all goods in transit<sup>6</sup>. A shipment that previously could be declared using a single goods line may now require several thousand. Customs authorities had previously accepted aggregated descriptions such as "foodstuffs."

Figure 8-10: Commonly used transit routes

As industry actors were unable to meet the deadline, Norwegian authorities secured approval for a temporary simplified registration scheme. This arrangement expires on 31 March 2026.

### Key consequences of the new requirements may include:

- Significant adaptations to IT systems and routines for both transport operators and cargo owners, leading to substantial costs.
- Considerably higher time and administrative burdens for preparing declarations, particularly for actors without tailored systems.
- A shift of goods flows to the Norwegian side of the border, primarily by road or rail (e.g., from Fauske).
- Increased lead times, higher emissions, and greater strain on an already pressured road network in Northern Norway.
- Reduced ability to use Swedish and Finnish routes, with implications for both civil and military supply security.

Large transport operators (like DSV, Bring, PostNord and others) report that required system changes to support NCTS-5 and the associated data requirements have been implemented and are operational. Adaptation among cargo owners varies by company size; while a substantial share of larger enterprises has implemented the necessary changes, a lower proportion of SMEs have done so. Challenges persist, particularly in relation to the availability and quality of item-level (line-item) product data.

At the time of reporting, the full extent of the consequences remains uncertain.

<sup>5</sup> Harmonized system

<sup>6</sup> As part of the implementation of NCTS (New Computerised Transit System) Phase 5, a requirement applicable to all parties to the Common Transit Convention

## 9. CORRIDOR 1: TANA BRU-UTSJOK-TORNIO (E75)

Corridor 1 connects Tana Bru in Norway to Tornio at the Gulf of Bothnia in Finland, following the E75/4 highway. From Tana Bru to Roavvegieddi, located approximately 800 metres from the Finnish border, the E75 coincides with the E6. The total length of the corridor is approximately 656 kilometres, of which 557 kilometres (about 85%) are in Finland and 99 kilometres (around 15%) in Norway.

### Scope of incident statistics

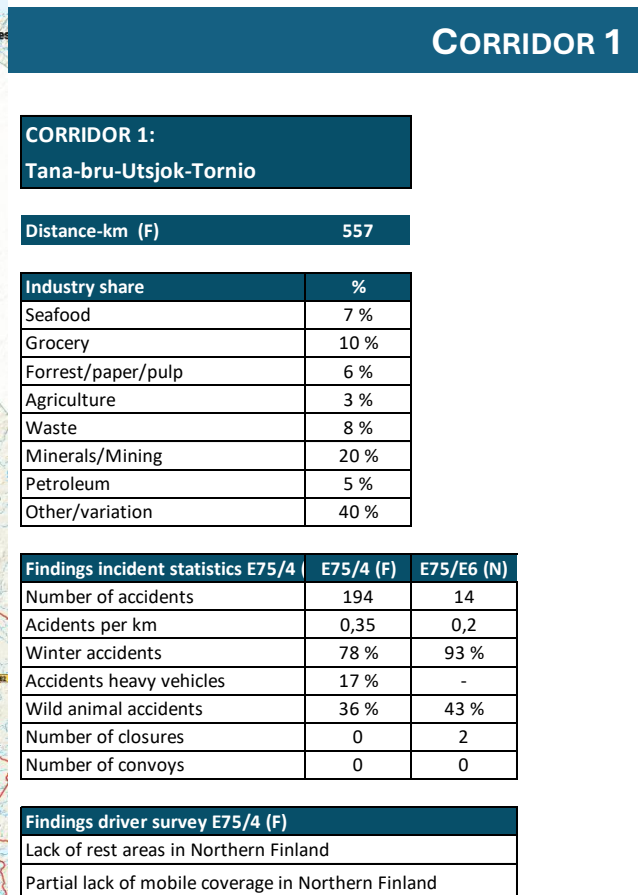
The incident statistics shown in spans 557 kilometres between Utsjok and Keminmaa (approximately 15 km from Tornio). These figures represent the total number of reported incidents during the monitoring period from October 2021 to March 2025, covering 42 months in total.

### The industry share

The industry share table presented in figure 9-1 reflects the average distribution of industrial transport activity across the entire Corridor 1 (Norway and Finland) for the year 2023. The figures were compiled and published in the project’s market report of April 2025, ensuring that the analysis is based on the most recent and validated dataset available at the time of reporting.



Figure 9-1: Corridor 1



### Industries utilizing the corridor

Corridor 1 serves a diverse range of industries, though there is considerable variation in usage patterns. Mineral transport is the dominant activity, particularly in the southern sections.

### Findings from incident statistics

Over the 42-month period from October 2021 to March 2025, a total of 208 accidents were recorded along the corridor, with approximately 93% occurring on the Finnish section. The incident data reveal several key patterns:

#### Finnish Section (E75/4): 194 accidents

- Seasonality: 78% of accidents occurred during the winter period.
- Vehicle type: Heavy vehicles were involved in 17% of cases.
- Wildlife collisions: 36% of accidents involved wild animals.
- Accident density: The accident rate per kilometre was low based on the available data.

#### Norwegian Section (E75/E6): 14 accidents

- Seasonality: 93% of accidents occurred in winter, reflecting the influence of severe weather.
- Wildlife collisions: 43% of incidents involved wild animals, suggesting potential benefits from mitigation measures such as fencing or wildlife-warning systems.
- Accident density: The accident rate per kilometre was low based on the available data.

### Findings from the driver survey

A survey of transport companies and drivers identified several operational challenges:

- Mobile coverage: Connectivity is inconsistent in the northern part of the corridor, creating challenges for communication and logistics management.
- Rest areas: A shortage of designated rest areas was highlighted as a significant concern for driver safety and working conditions.
- Border operations: Approximately 15% of the respondents expressed interest in extended opening hours or 24/7 availability at the Utsjok(i) border station.



Picture 9-1: Utsjok border, direction Norway (Photo: Markus Karlsen)

## 10. CORRIDOR 2: ALTA-KIVILOMPOLO-GULF OF BOTHNIA (E45)

Corridor 2 connects Alta in Norway to Tornio at the Gulf of Bothnia in Finland, following the E45/93 and E8/21 highways. The total corridor length is approximately 554 kilometres, of which 378 kilometres (68%) lie within Finland and 176 kilometres (32%) within Norway.

### Scope of incident statistics

The incident statistics presented in figure 10-1 cover:

- The Norwegian section from Alta to Kivilompolo.
- The Finnish section from Kivilompolo to Palojoensuu.

Data for the remaining section from Palojoensuu to Tornio, as well as for the alternative route via Karesuando through Sweden (E45), are addressed separately under Corridor 3. These incident data encompass the total number of reported incidents during the period October 2021 to March 2025, corresponding to 42 months of monitoring.

### The industry share

The industry share table presented in figure 10-1 reflects the average distribution of industrial transport activity across a section of Corridor 2 (from Alta to Palojoensuu) for the year 2023. The figures were compiled and published in the project's market report of April 2025, ensuring that the analysis is based on the most recent and validated dataset available at the time of reporting.

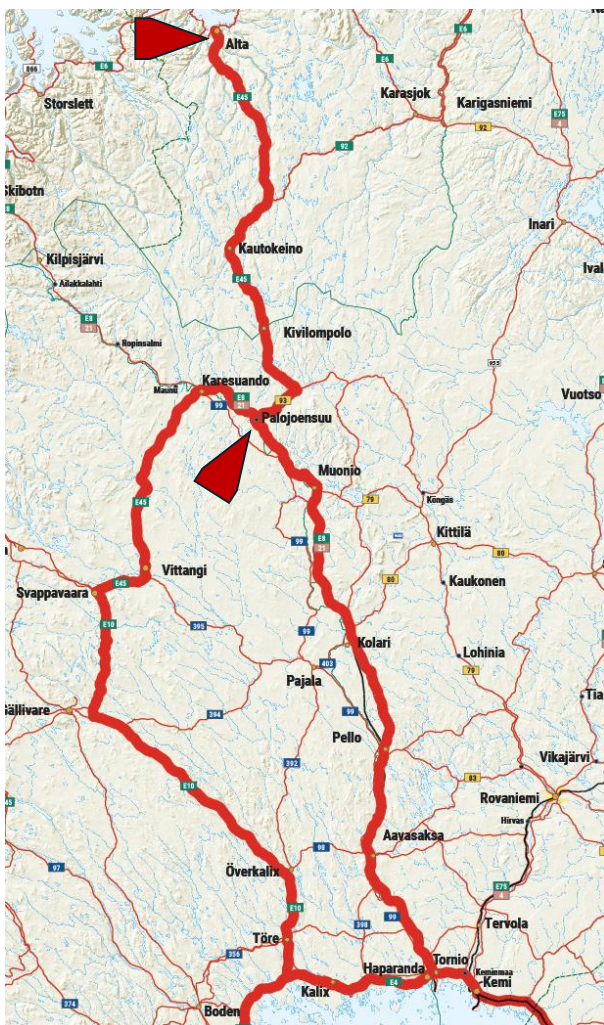


Figure 10-1: Corridor 2

## CORRIDOR 2

**CORRIDOR 2:**  
Alta-Kivilompolo-Palojoensuu  
(Tornio)

Distance (km) Norway: 176 E45  
Distance (km) Finland: 65 E45/93

Industry share (total)	%
Seafood	40 %
Grocery	7 %
Forrest/paper/pulp	11 %
Agriculture	3 %
Waste	8 %
Minerals/Mining	8 %
Petroleum	2 %
Other/variation	19 %

### Findings incident statistics E45/93 (N+F)

	Norway	Finland
Number of accidents	210	4
Accidents per km	1,2	0,1
Winter accidents	81 %	100 %
Accidents heavy vehicles	nn	25 %
Wild animal accidents	9 %	75 %
Number of closures	83	0
Number of convoys	0	0

### Findings driver survey E8 (N+F)

Lack of rest areas in Northern Finland
Partial lack of mobile coverage in Northern Finland

### **Industries utilizing the corridor**

Corridor 2 supports a diverse range of industrial transport activities. Seafood transport accounts for a significant share, particularly in the northern sections, reflecting the corridor's role in linking Norwegian coastal production areas to broader markets. In the southern sections, forest products and minerals make up a substantial proportion of traffic, underscoring the corridor's importance for resource-based industries.

### **Findings from incident statistics**

Between October 2021 and March 2025 (42 months), a total of 213 accidents were recorded along Corridor 2:

#### Norwegian Section (E45): 209 accidents

- 81% occurred during the winter season, highlighting the impact of severe weather conditions.
- 7% of accidents involved wild animals, indicating that mitigation measures such as fencing or wildlife warning systems could help reduce the accident rate.
- The accident rate per kilometre was relatively high compared to Finland.

#### Finnish Section (E45/93): 4 accidents

- 100% occurred in winter.
- Heavy vehicles were involved in 25% of the cases (only one).
- Wild animals were implicated in 75% of accidents (only three).
- The accident rate per kilometre was extremely low, based on the available data.

### **Findings from the driver survey**

Feedback from transport companies and drivers revealed several operational challenges:

- **Mobile Coverage:** Connectivity is variable in the northern part of the corridor, complicating communication and logistics management.
- **Rest Areas:** A shortage of designated rest areas was consistently highlighted, raising concerns about driver safety and working conditions.



*Picture 10-1: Kivilompolo border (Photo: Transportutvikling AS)*

## 11. CORRIDOR 3: SKIBOTN-KILPISJÄRVI-GULF OF BOTHNIA/TÖRE (E8/E45)

Corridor 3 connects Skibotn (E6/E8) in Norway to either Tornio at the Gulf of Bothnia or Töre in Sweden, following the E8/21, E45, and E10 highways.

- Distance from Skibotn to Tornio: approximately 507 kilometres.
- Distance from Skibotn to Töre: approximately 534 kilometres.

### Scope of incident statistics

As a result of the categorisation of the data received, the incident statistics presented in in figure 9-1 are divided into 3 main road sections:

- Norwegian section: From Skibotn (XE6/E8) to the Finnish border.
- Finnish section: From the Norwegian border to Tornio.
- Swedish E45 sections:
  - From Karesuando to Svappavaara (XE45/E10).
  - Swedish E10/E45 Section: From Svappavaara (E45/E10) to Gällivare (E45/E10).
  - From Gällivare (XE45/E10) to the Västerbotten border.

These incident data represent the total number of reported incidents during the monitoring period from October 2021 to March 2025, covering 42 months in total.

### The industry share

The industry share table presented in figure 11-1 reflects the average distribution of industrial transport activity across the entire Corridor 3 for the year 2023.

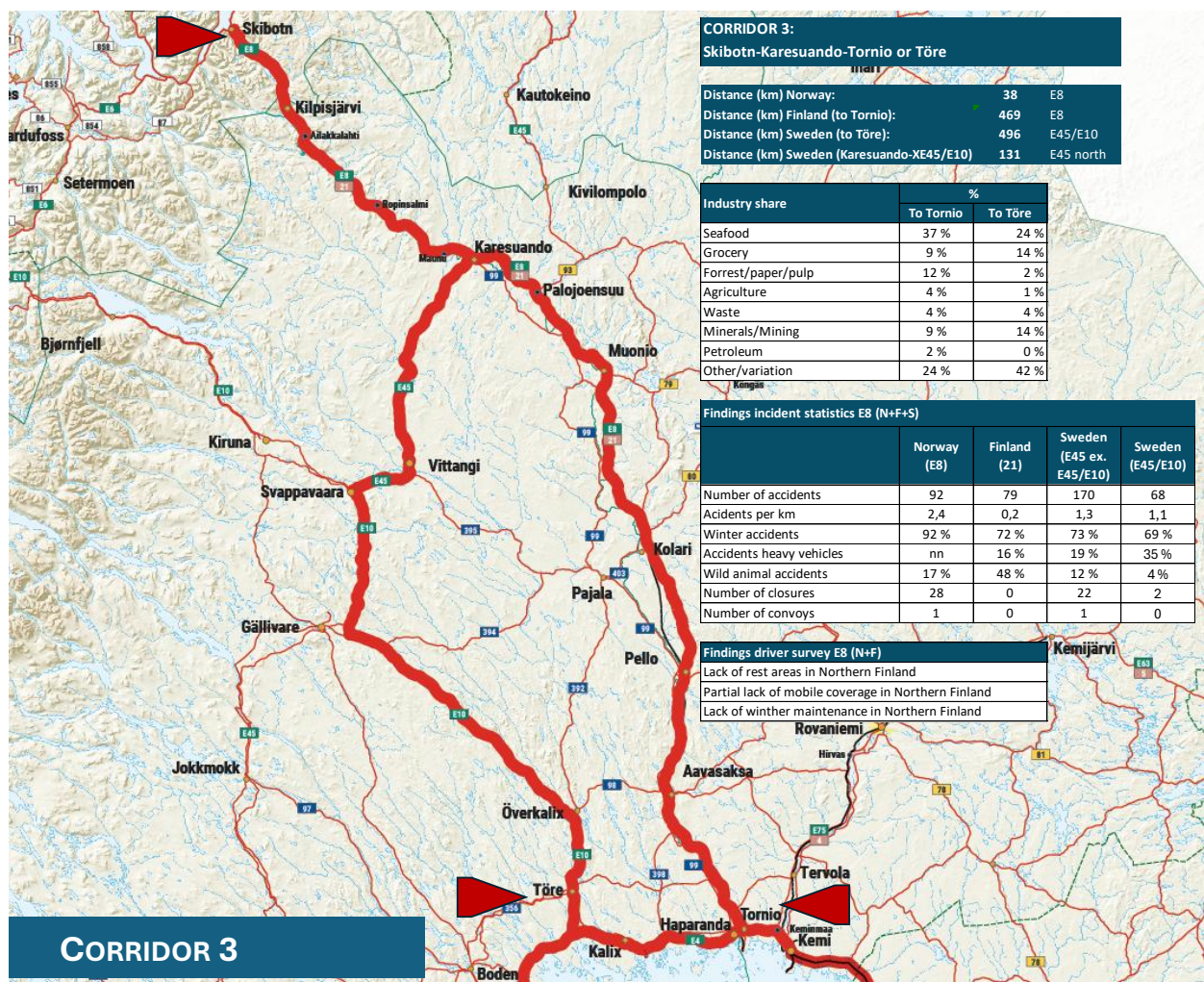


Figure 11-1: Corridor 3

The figures were compiled and published in the project’s market report of April 2025, ensuring that the analysis was based on the most recent and validated dataset available at the time of reporting.

### Industries utilizing the corridor

Corridor 3 supports a diverse mix of industrial transport.

- Seafood transport represents a considerable share, particularly in the northern sections, with flows directed both towards Tornio and Töre.
- In the Finnish section, forest products and minerals account for a substantial proportion of traffic.
- In Sweden, minerals and grocery products make up a significant part of the transport activity, reflecting the corridor’s role in connecting resource industries and consumer markets.

### Findings from incident statistics

Between October 2021 and March 2025 (42 months), the following accidents were recorded:

- Norwegian section: 92 accidents
- Finnish section: 79 accidents
- Swedish E45 section (Karesuando – Västerbotten border, excluding Svappavaara–Gällivare): 170 accidents
- Swedish E45/E10 section (Svappavaara – Gällivare): 48 accidents

### Key observations:

- **Accident rate:** Except for the E8 in Norway, the accident rate per kilometre was low in both Finland and Sweden.
- **Seasonal distribution:** 92% of accidents in Norway occurred in winter, compared with 72–73% in Finland and Sweden.
- **Wildlife collisions:** Finland recorded the highest share of accidents involving wild animals (14%), compared with 4–8% in Norway and Sweden.
- **Heavy vehicles:** Involvement ranged from 16–35% of accidents, with the highest share along the E45/E10 section in Sweden (Svappavaara–Gällivare).

### Findings from the driver Survey

Feedback from transport companies and drivers highlighted the following operational challenges:

- **Mobile coverage:** Connectivity remains variable in the northern part of the corridor, though conditions have improved in recent years.
- **Rest areas:** A shortage of designated rest areas continues to be a concern for driver safety and working conditions.
- **Winter maintenance:** In northern Finland, inadequate ploughing of roads and parking areas at night was reported, creating additional risks during the winter season.



Picture 11-1: Kilpisjärvi border (Photo: Transportutvikling AS)

## 12. CORRIDOR 4: STORMYRA (NARVIK)-TÖRE (E10)

Corridor 4 connects Narvik/Stormyra (E6/E10) in Norway to Töre in Sweden, following the E10 (E10/E45) highways.

- The total distance between Stormyra (Norway) and Töre is approximately 449 kilometres, including the 68 km E10/E45 section between Svappavaara and Gällivare.

### Scope of incident statistics

As a result of the categorisation of the statistics received, the incident data presented in Figure 9.1 has been divided into two principal road sections:

#### Norwegian Section

- From Stormyra (Narvik) to the Swedish border at Bjørnfjell.

#### Swedish E10 Sections

- From the Norwegian border at Bjørnfjell to Svappavaara (E45/E10).
- From Gällivare (E45/E10) to Töre – Luleå.

These incident data encompass the total number of reported incidents during the period October 2021 to March 2025, corresponding to 42 months of monitoring.

### The industry share

The industry share table presented in figure 12-1 reflects the average distribution of industrial transport activity across the entire Corridor 4 for the year 2023.

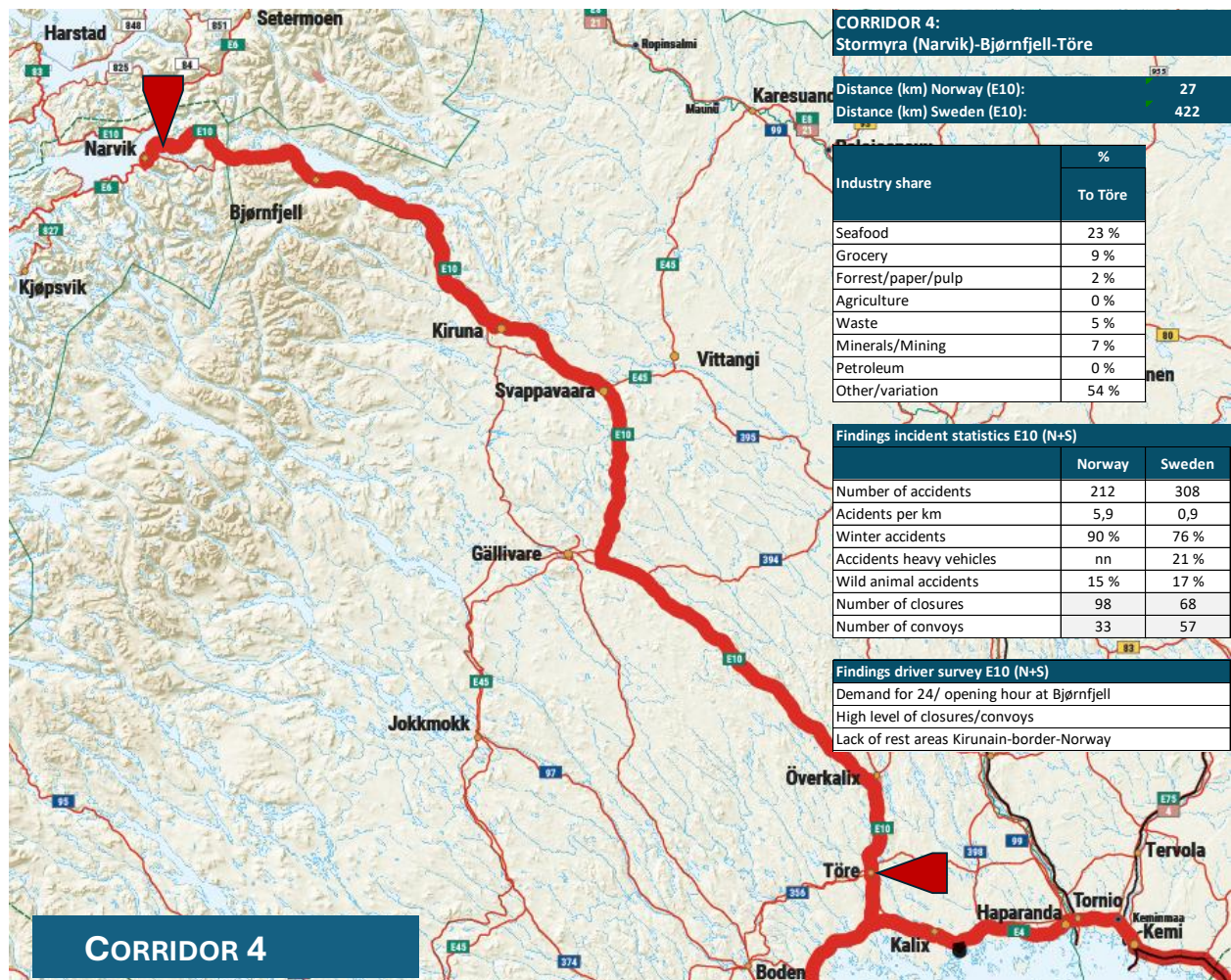


Figure 12-1: Corridor 4

Figure 12-1 were compiled and published in the project’s market report of April 2025, ensuring that the analysis is based on the most recent and validated dataset available at the time of reporting.

### Industries utilizing the corridor

Corridor 4 carries a significant share of seafood transport, particularly from the Troms region. The seafood share decreases until the E10 meets the E45 in Svappavaara, where it rises again due to additional flows from Troms. In addition to seafood, minerals and mining products represent a relatively sizeable proportion of the identified transports, reflecting the corridor’s importance for both resource-based and export-oriented industries.

### Findings from incident statistics

Between October 2021 and March 2025 (42 months), a total of 520 accidents were recorded along Corridor 4:

- Norwegian section (E10 Stormyra – Bjørnfjell): 212 accidents
- Swedish section (E10): 308 accidents

#### Key observations:

- Accident rate: The Swedish E10 section is long, and the accident rate per kilometre was low. In contrast, the short Norwegian E10 section recorded an accident rate of 5.9 per kilometre, the highest of all roads in the region.
- Seasonal distribution: 90% of accidents in Norway occurred during winter, compared with 76% in Sweden.
- Wildlife collisions: 15–17% of accidents involved wild animals.
- Heavy Vehicles: In Sweden, heavy vehicles participated in approximately 21% of accidents.
- Bjørnfjell area: This section is particularly challenging, with an average of 80 road closures and a similar number of convoys during the reporting period, highlighting its vulnerability to winter conditions.

### Findings from the driver Survey

Feedback from transport companies and drivers emphasized several operational challenges:

- Winter conditions at Bjørnfjell: Drivers described this area as extremely difficult during winter, with frequent closures and convoy operations.
- Border station operations: Respondents suggested that the border station should be open 24/7 to reduce delays caused by weather and customs procedures.
- Rest areas: A lack of rest facilities was noted, particularly at the border station, where long waiting times exacerbate driver fatigue and safety concerns.



Picture 12-1: Bjørnfjell border  
(Photo: Transportutvikling AS)