REPORT | JULY 2026

Military Mobility Northern Nordics - Summary

Strategic infrastructure needs for military mobility and security of supply in the northern Nordics

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Background and method explanation

This study assesses military mobility requirements across a Study Region situated in the Northern Nordics using scenario-based analysis and open-source data combined with stakeholder interviews. The purpose is not to replicate operational military planning, but to model realistic transport demands under crisis conditions. The methodology includes scenario construction to estimate force movements, infrastructure stress, and logistical requirements, while not forgetting civilian transport needs and competing demands.

This summary provides a concise overview of the findings presented in the full-length report.

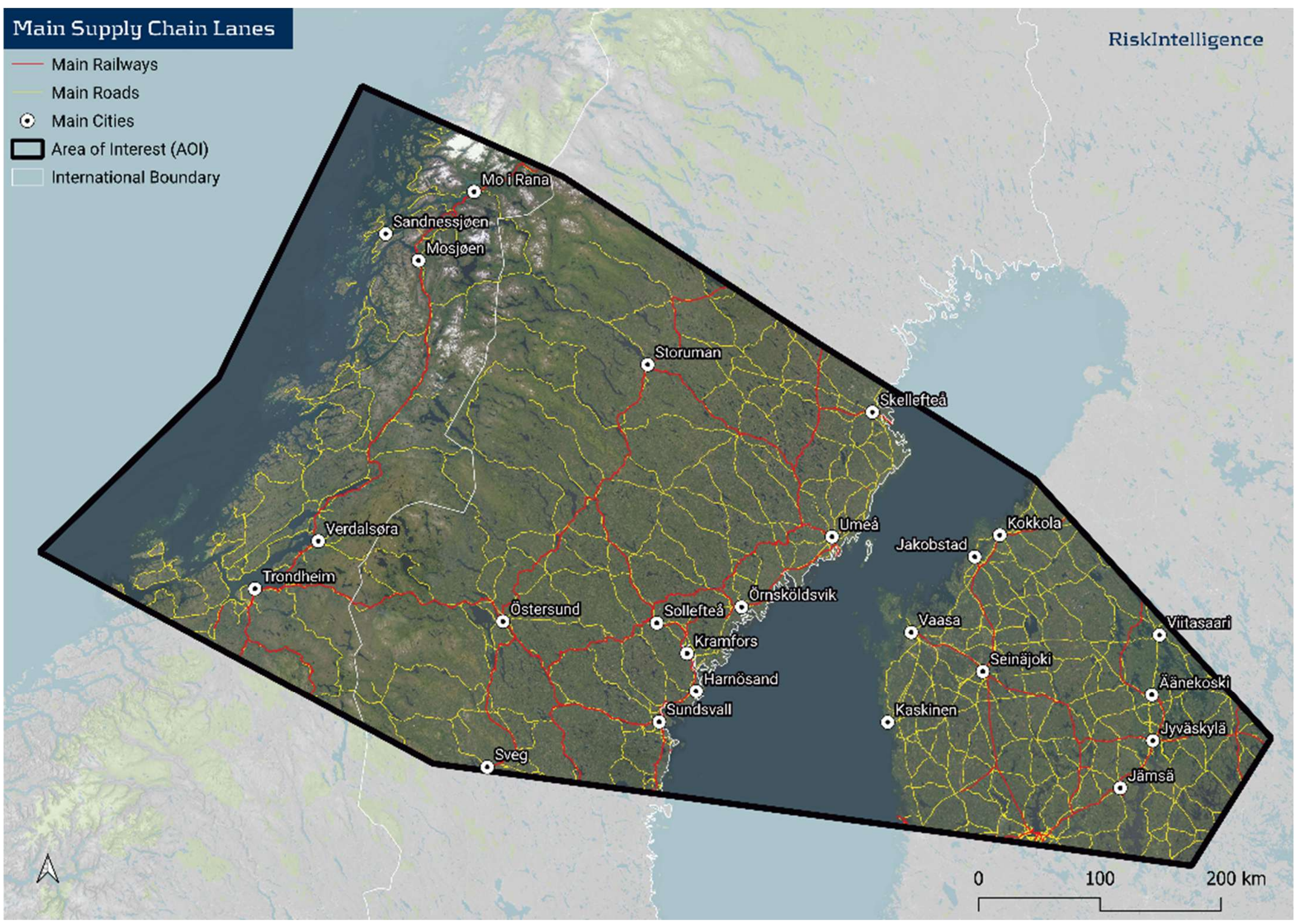

Figure 1. An overview of approximately where the Study Region is situated, and the major transport infrastructure arteries and nodes featured in it

Military Mobility in the Northern Nordics

Military mobility has shifted from national planning toward multinational NATO-linked movement across borders. Reinforcement flows would occur both north-south and east-west, requiring movement of large formations through Sweden, Norway, and Finland. The strategic location of the Study Region means it acts as a corridor for reinforcing both the High North and Finland's eastern border areas. The challenging geography and the constraints it create need to be acknowledged, including limited population density, long distances, natural bottlenecks and chokepoints, as well as seasonal variability. It is notable that weaknesses in the transport infrastructure often lie in transfer nodes rather than in the corridors themselves.

It needs to be emphasised that staging areas and logistics hubs are critical nodes where delays or congestion can occur. These areas must accommodate simultaneous flows of personnel, vehicles, and equipment, and constitute potential bottlenecks if coordination between civilian authorities and military planners is insufficient, or if local resources or transport infrastructure is found lacking.

Modes of Transport

Military mobility, like its civilian counterpart, is reliant on different modes of transport, all with their individual benefits and compromises.

Sealift is the most efficient method for heavy equipment transport, particularly via Ro-Ro and Ro-Pax vessels. However, it is reliant on port infrastructure and is relatively slow. For civilian shipping, the threat of enemy action may also limit which waters can be traversed and which harbours may be used for loading or unloading.

Airlift provides unmatched speed but limited capacity, making it suitable primarily for personnel, light equipment, and high-value systems. Fixed-wing aircraft, including strategic airlifters, provide fast strategic mobility, while helicopters and lighter aircraft provide excellent mobility inside the theatre.

	Belgium	France	Germany	Luxembourg	United Kingdom	Heavy Airligt Wing (NATO)	Spain	Turkey	USA	**Total**
Airbus A400M	7	26	53	1	22	-	14	10	-	133
C-17 Globemaster III	-	-	-	-	8	3	-	-	222	233

Table 1: Strategic airlifters in service with NATO countries

Rail transport is the most efficient land-based heavy transport mode, but is highly dependent on available infrastructure, rolling stock, and suffer from cross-border technical incompatibilities. As such, while preferable for land transports over 200 km in range, it does suffer from being inflexible and from being relatively vulnerable to disruptions, both natural and man-made ones.

Road transport offers maximum flexibility but suffers from inefficiency and congestion risks, in particular when recognising the number of vehicles involved in a major military movement, and the need for supporting services.

Figure 2: Convoy operations on smaller roads in the Nordics will lead to disruptions and delays in the civilian usage of those routes, as is demonstrated by this convoy from a Combat Engineer Battalion of the US 2nd Marine Division photographed in Härjedalen. Credit: U.S. Marine Corps photo by Sgt. Christian M. Garcia

Brief overview of alternative routes outside the scope of this study

North of the study region we find Narvik, which historically is an important port of debarkation, and continues to be identified as such in official documents. However, Narvik, and in particular its connections, comes with limitations as well, having been described as "the largest bottleneck in Norway"[1], on account of limited availability of the single-

[1] Narvik Havn and Narvik Kommune. 'NATOs Generalsekretær Fikk Høre Og Se Norges Største Flaskehals'. Norges Største Flaskehals, Narvik, 25 March 2026. https://www.norgesflaskehals.no/post/natos-generalsekretaer-fikk-hore-og-se-norges-storste-flaskehals

track railway and the limited spare capacity of the port. Adding significant amount of new traffic on the railway would have an adverse effect on the supply of ore from the mines in northernmost Sweden, which at the current time supply 80% of the ore mined in the European Union[2]. In addition, the northernly location means that it has an increased threat profile compared to more southerly ports of debarkation. On the positive side, the road connections east and north in connection with the railway offer flexibility.

South of the study region a number of other possible ports of debarkation are found, such as port facilities in and around Oslofjord and Rogaland in southern Norway, as well as the port of Gothenburg in Sweden. However, these are located far away from the potential lines of defence, and feed largely into a transport system connecting several major population centres and industrial hubs, meaning the transport infrastructure is significantly more developed compared to most of the regions further north. At the same time, it needs to be recognised this also comes with a higher demand for that transport capacity, meaning higher total capacity does not directly translate into available spare capacity.

Crucially, these routes also provide the shortest route from the North Sea to the three Baltic States, with both Denmark and southern Sweden. As such, these provide the possibility for a relatively safe rear area for units headed towards the Baltic States, which can be used as a staging area during transits, for switching to vessels which may be more appropriate for crossing the Baltic Sea[3]. As such, the West-East corridors in Denmark and southern Sweden can be expected to handle the transit and supply of a number of formations heading to the Baltic States, meaning military transport needs related to Finland and northern Norway are likely to be better served by using the routes further north.

Similarly, in the Baltic Sea on the Finnish west coast ports such as Oulu, Kemi, and Tornio north of the study region offer alternative ports of debarkation, as does ports to south of it including Pori and Rauma[4], as well as ports in Southwest Finland and further east into the Gulf of Finland. All of these have their possible uses, though it is notable that the southernmost ports would feed traffic directly into the heavily trafficked parts of the Finnish rail- and road networks. Ports in the Gulf of Finland would also come with a significantly higher threat profile

[2] LKAB. 'Vad vi gör'. lkab.com, n.d. Accessed 5 June 2026. https://lkab.com/vad-vi-gor/

[3] Such as e.g. embarking on faster vessels, switching from civilian vessels to ones under military command, or vessels which otherwise due to some feature of their design fit the mission better (lower draught, ice reinforcements, …)

[4] The ports of Pori and Rauma were identified as being prioritised for flows from Trondheim via Sundsvall in the recent Joint Nordic Strategy for Transport System Preparedness. However, as noted in the report, it is not intended to be seen as a mark of exclusivity, and as discussed in detail later in the report there are questions regarding whether the Sundsvall-Pori/Rauma connection really is the optimal route from a military mobility or security of supply point of view. Joint Nordic Strategy for Transport System Preparedness. Nordic Transport Preparedness Cooperation, 2026.

compared to those in the Gulf of Bothnia. Ports to the north of study region are well-suited for transports heading to the northern half of the country, but increase the travel distance for military formations heading to southern half of the country, including Kymenlaakso, Karelia, and Savo. On the Swedish east coast, ports such as Gävle south of the study region and Luleå north of the study offer alternative ports of embarkation for a 'hop' over the Gulf of Bothnian, while ports opposite the Baltic states can be assumed to work as hubs for the movement to and the supply of these. For Gävle, the connections feeding into the port are largely directed towards the southwest, including the port of Gothenburg, or south towards Denmark.

Figure 3: An example of how the staging phase of movement may end up looking. Here a US Army Field Support Battalion has set up a staging area, after which it will spend a number of days going through the vehicles and inspect the vehicles themselves, their basic items, and support equipment, to ensure that everything is in order, before handing over the complete package to a battalion-sized unit of a US Army National Guard Cavalry Regiment. Credit: DoW photo by Cameron Porter

Scenarios

Four scenarios are used to model increasing levels of stress on the transport system: a baseline exercise, a rapid crisis, a simmering crisis, and a Baltic Sea disruption scenario. The baseline scenario is manageable within existing infrastructure. The rapid crisis stresses ports and staging areas due to compressed timelines. The simmering crisis involves large-scale mechanised force deployment and major logistical strain. The Baltic disruption scenario shows severe cascading effects, forcing a shift from maritime to land-based logistics and overwhelming road and rail systems.

Size	Number of personnel
Company[5]	60 - 200
Battalion[6]	400 - 1,000
Brigade[7]	4,000 – 4,700
Division	12,000 – 16,000
Corps	40,000 – 100,000

Table 2: Military unit sizes, US Army standard

Scenario 1: Baseline Exercise

This scenario describes a high-intensity peacetime exercise environment involving approximately 25,000 troops and supporting naval and air assets. It represents a stress test for existing infrastructure under controlled conditions.

The scenario assumes coordinated planning to minimize civilian disruption, though timing requirements for exercise effectiveness still create localised congestion at ports, rail hubs, and staging areas. The need for synchronised arrival of forces creates pressure on logistics nodes.

[5] Also troop (cavalry) or battery (artillery)

[6] Also squadron (cavalry)

[7] Including brigade combat teams, support brigades, regiments in the cavalry, and some support groups

Key movement corridors include Norwegian ports feeding into northern training areas and Swedish-Finnish inland routes supporting exercise distribution. While manageable, the system operates close to capacity in certain nodes during peak movement phases.

Notable is that this scenario closely align with certain large-scale exercises that have taken place in the region.

Scenario 2: Rapid Crisis

This scenario models a fast-developing security crisis requiring rapid deployment of forces. By their nature these would in most cases be light units with expeditionary capability. Initial deployments are characterized by urgency rather than optimal sequencing of logistics flows.

The result is significant strain on ports, staging areas, and inland transport systems, due to the sequencing of the arrival of personnel and equipment largely depending on the speed by which they can be moved. This creates inefficiencies in unit assembly, and increases demand for temporary storage and marshalling spaces.

Civilian transport flows become less predictable, with potential evacuation movements and industrial disruptions compounding military logistics challenges. Airlift usage increases but remains a compliment to other modes of transport.

The key characteristic of this scenario is compression of the timeline, where speed of deployment creates systemic inefficiencies that ripple across the entire logistics network.

	Light Infantry Brigade (Brigad Serval)	Armoured Brigade (ABCT)
Main Battle Tank		87
Wheeled armoured fighting vehicles	34	
Artillery (tracked)		18
Artillery (wheeled and towed)	12	
Infantry fighting vehicles/Armoured personnel carriers (tracked)		272
Infantry fighting vehicles/Armoured personnel carriers (wheeled)	252	
Support vehicles	8	71
Medium/heavy trucks	195	231
Light trucks	354	184
Utility vehicles	447	360
Trailers		352

Table 3: Difference in vehicles between light and heavy brigades, the examples being the French ad-hoc Brigad Serval and a US Army Armored Brigade Combat Team

Scenario 3: Simmering Crisis

This scenario represents a prolonged escalation allowing for large-scale mobilisation of heavy mechanised forces. It involves full corps-level deployments and sustained logistical throughput over extended periods.

Military requirements increase dramatically, with hundreds of thousands of personnel and extensive heavy equipment movements across the Study Region – including not only movement on the east-west axis but also on the north-south one. Rail and port systems become primary enablers, but are stretched to capacity and vulnerable to disruption.

Civilian supply chains remain active and compete directly with military logistics, particularly in energy, industrial goods, and other security of supply flows. This creates structural competition for transport resources.

The scenario highlights systemic fragility under sustained high-intensity operations, where redundancy gaps and infrastructure limitations become critical constraints on operational effectiveness.

Scenario 4: Disturbances in the Southern Baltic Sea

This scenario introduces maritime disruption in the Baltic Sea, significantly altering trade flows and forcing rerouting of civilian and military logistics onto land-based corridors. The reduction or cessation of safe maritime traffic creates massive pressure on Swedish and Finnish overland routes, as well as Norwegian Atlantic ports. The shift from sea to land transport increases demand for rail and road capacity beyond sustainable levels.

Escort requirements for maritime convoys further reduce naval availability for other tasks, while the limited number of suitable escort vessels creates systemic constraints on maritime logistics. Critical traffic such as tankers would require much of NATO’s available naval forces in the region for escort missions in order to be able to safely pass through the Baltic Sea.

The scenario demonstrates that maritime disruption has cascading effects far beyond naval operations, fundamentally reshaping logistics demand patterns.

Figure 4: Two containers being loaded onto a transporter for movement out from a prepositioned site as part of exercise DEFENDER 24, a stark visualisation aiding in the understanding of what 486,000 TEU would look like on another mode of transport. Credit: U.S. Army photo by Sandra Wilson, USAG Benelux Public Affair

The Military Mobility Needs

	Soldiers (numbers of)	Vehicles in the units (numbers of)	Length of road covered during movement (km, not including equipment)	Additional vehicles needed to move equipment (numbers of)	Trains needed to move the vehicles (numbers of)	Trains needed to move the vehicles and equipment (numbers of)	ConRo-vessels needed to move the vehicles (numbers of)	ConRo-vessels needed to move the vehicles and equipment (numbers of)
Scenario 1	25,000	6,500	975	12,500	108	110	11	20
Scenario 2	55,000	14,300	2,145	27,500	238	850	24	43
Scenario 3	150,000	39,000	5,850	75,000	650	2,300	65	120

Table 4: Scenarios as transport mode equivalents

This section quantifies infrastructure strain across scenarios, showing that Scenario 1 is manageable while Scenarios 2 and 3 progressively exceed system capacity. Scenario 3 in particular requires extensive coordination across the whole transport network to avoid systemic breakdown.

Scenario 1 sees relatively smooth movement of forces, thanks to the predictability and pre-planning of the movements. Even though military convoys increase traffic, they do not overwhelm infrastructure because movements are coordinated with civilian transport priorities.

Scenario 2 introduces more complexity due to faster deployment timelines. Bottlenecks appear at certain ports and staging areas because units, vehicles, and equipment do not always arrive in optimal sequence. Airlift helps, but is limited in capacity, meaning it is mainly useful for personnel or high-value assets, while the majority of vehicles and equipment will come by sea and road/rail. Civilian population movements (including refugee streams) also add unpredictability.

Figure 5: Although not on par with modern main battle tanks, self-propelled artillery such as this Norwegian K9 Thunder 155 mm tracked howitzer with a weight of 47 tons are some of the heaviest vehicles on the modern battlefield. Credit: U.S. Marine Corps photo by Sgt. Addysyn Tobar

Scenario 3 represents a major escalation with heavy mechanised forces (including armoured brigades and corps-level assets). These forces include modern main battle tanks, tracked vehicles, and large logistical elements, significantly increasing transport demands. It is worth emphasising that scaling from brigades to divisions creates exponential strain on infrastructure and coordination systems. Even in the best case where the longer timespan allows for greater efficiencies in the planning and scheduling process, the scenario would still see thousands of vehicles and extensive road transports across long distances, with bottlenecks at key nodes.

It is also notable that a crisis could see a **combined Scenario 2+3**, where rapid initial deployment is followed by heavier force buildup. This creates compounded inefficiencies because early-stage deployment already consumes infrastructure capacity and planning resources.

The scenarios also further underline the differences in transport modes:

Rail and Ro-Ro shipping are far more efficient than road movement for large-scale deployments,

A single armoured brigade could require dozens of trains or multiple large vessels,

At scale, strategic movement translates into enormous logistical equivalents (hundreds of trains, tens of thousands of trucks, or over a hundred cargo vessels).

Overall, modern large-force military deployment is fundamentally constrained not by combat capability alone, but also by **transport infrastructure capacity, sequencing, and logistical coordination across civilian and military systems**.

A key detail is that not all military units place similar demands on the transport system. Armoured formations are especially resource-intensive due to their heavier vehicles and larger proportion of tracked vehicles, requiring rail and heavy road transport for efficient strategic mobility.

Road convoy density and length area also major stress factors for road networks. Even moderate deployments generate hundreds of kilometres of convoy formations distributed across multiple corridors. Scenario 3 if relying purely on road transport would see over 10,000 km of road convoys, covering the full length of road from Trondheim to Rovaniemi ten times over (or three times the distance by road to Rovaniemi from the home of the French mountain infantry in Grenoble at the foot of the French Alps).

The Transport Infrastructure

Norwegian Atlantic Ports and their Infrastructure

The Norwegian coastal infrastructure allows high capacity in many cases, but is also geographically constrained. Fjords, coastal flats, mountains, and valleys channels transport flows into limited corridors, with in particular the E6 highway and Nordlandsbanen railway feature few parallel alternatives.

While ports such as Mo i Rana, Mosjøen, and a number of facilities in the Trondheim Fjord have significant capacity, their effectiveness depends heavily on inland connectivity. Bottlenecks often arise not in the ports themselves, but in road and rail links leading inland.

Environmental disruptions such as landslides and tunnel closures highlight the vulnerability of single-corridor systems. The E6 is a critical but fragile backbone for Norwegian logistics.

Rail infrastructure is similarly constrained, with long single-track segments and limited redundancy increasing vulnerability to disruptions.

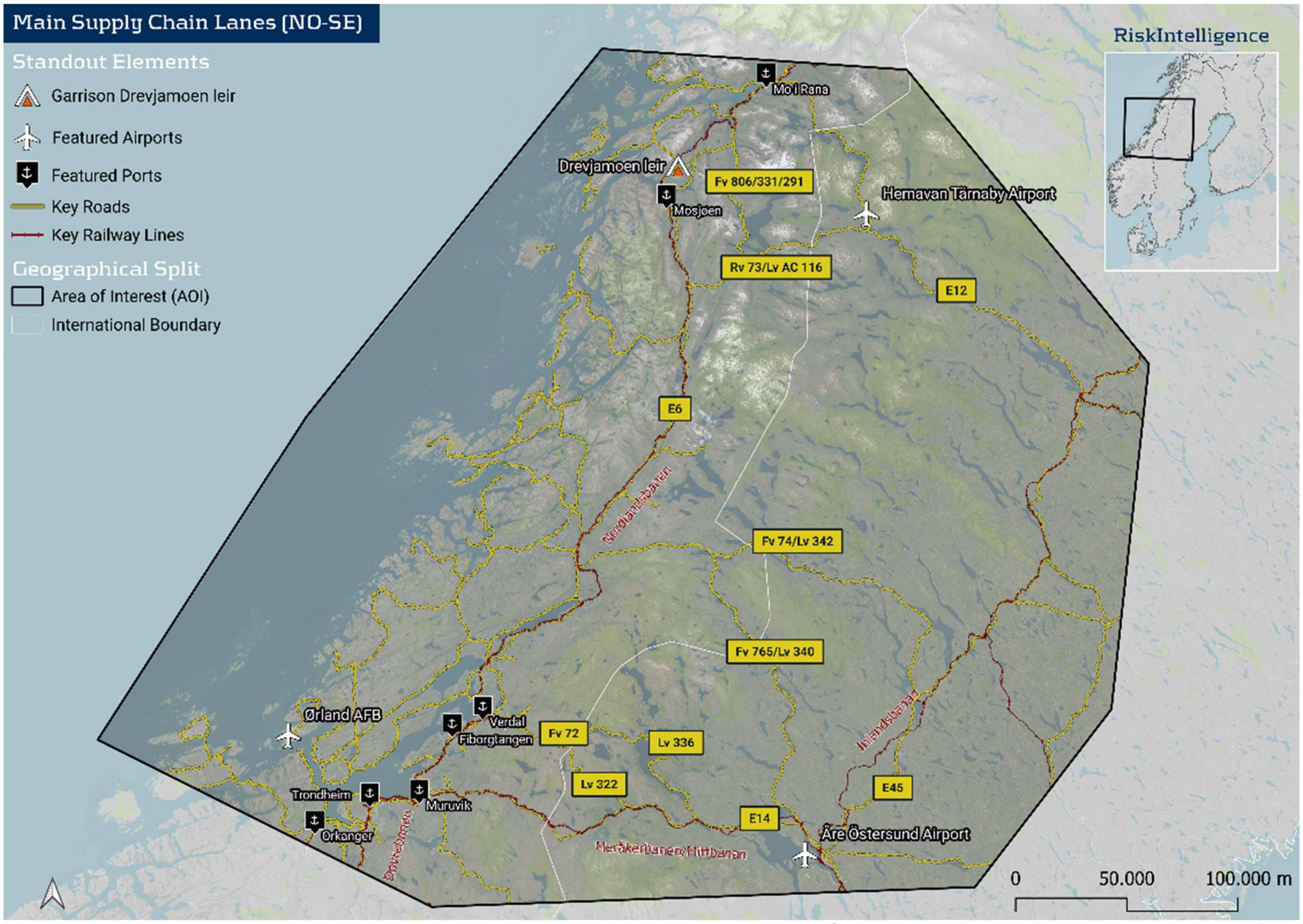

Figure 6. An overview of the main supply routes between Norway and Sweden

The Routes over the Norwegian-Swedish Border

When crossing into Sweden, the Scandinavian mountain range is a major barrier that channel transports into a limited number of crossing routes. E12 and E14 are the primary east-west corridors, supported by a number of smaller routes of varying quality.

Common for all routes is that they are heavily dependent on weather conditions and seasonal variability. Snow, landslides, and terrain constraints significantly affect reliability and throughput.

Rail connectivity is particularly limited, with the Meråkerbanen/Mittbanan the critical but fragile link between Norway and Sweden. Its single-track configuration creates a major capacity constraint, and it has proved to be vulnerable to disturbances.

Overall, the border region is one of the most vulnerable segments in the entire Study Region.

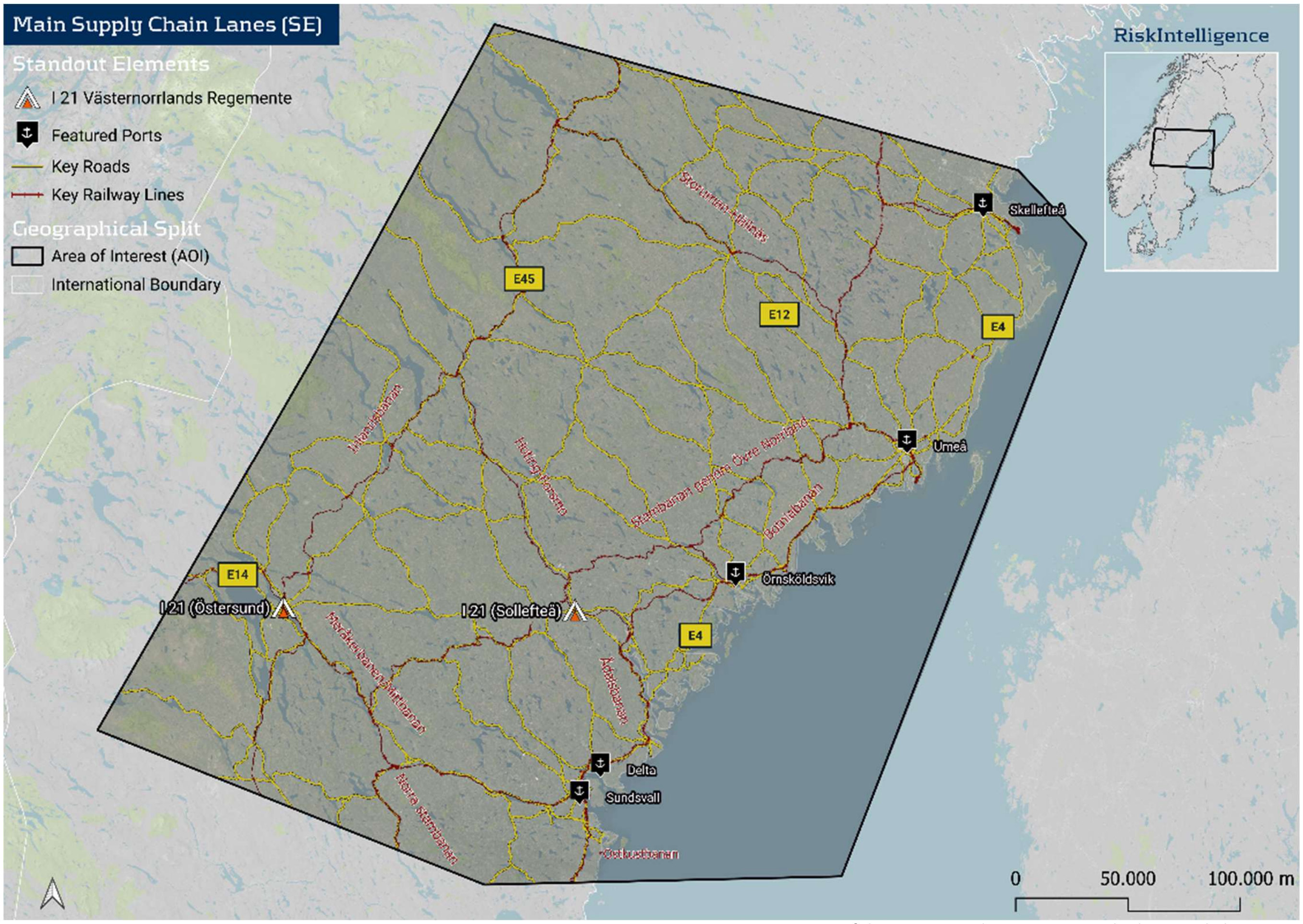

Figure 7. An overview of the main supply routes towards the Swedish coast

Central Sweden and the Coastal Region

Central Sweden constitute a sparsely populated but strategically important transit zone in this study. The region's transport system is characterized by parallel north-south corridors and key east-west connectors.

Rail redundancy is stronger along the coast, but remains vulnerable to simultaneous disruptions from weather events or hostile activity. The inland rail network around Inlandsbanan provides partial redundancy but with lower capacity.

Road infrastructure is generally robust but includes bottlenecks in urban areas such as around Östersund. A number of nodes are found where several critical corridors intersect, creating strategically important locations as well as potential bottlenecks.

Ports and industrial hubs along the coast provide significant logistical capacity but depend heavily on rail and road integration to function effectively in crisis conditions.

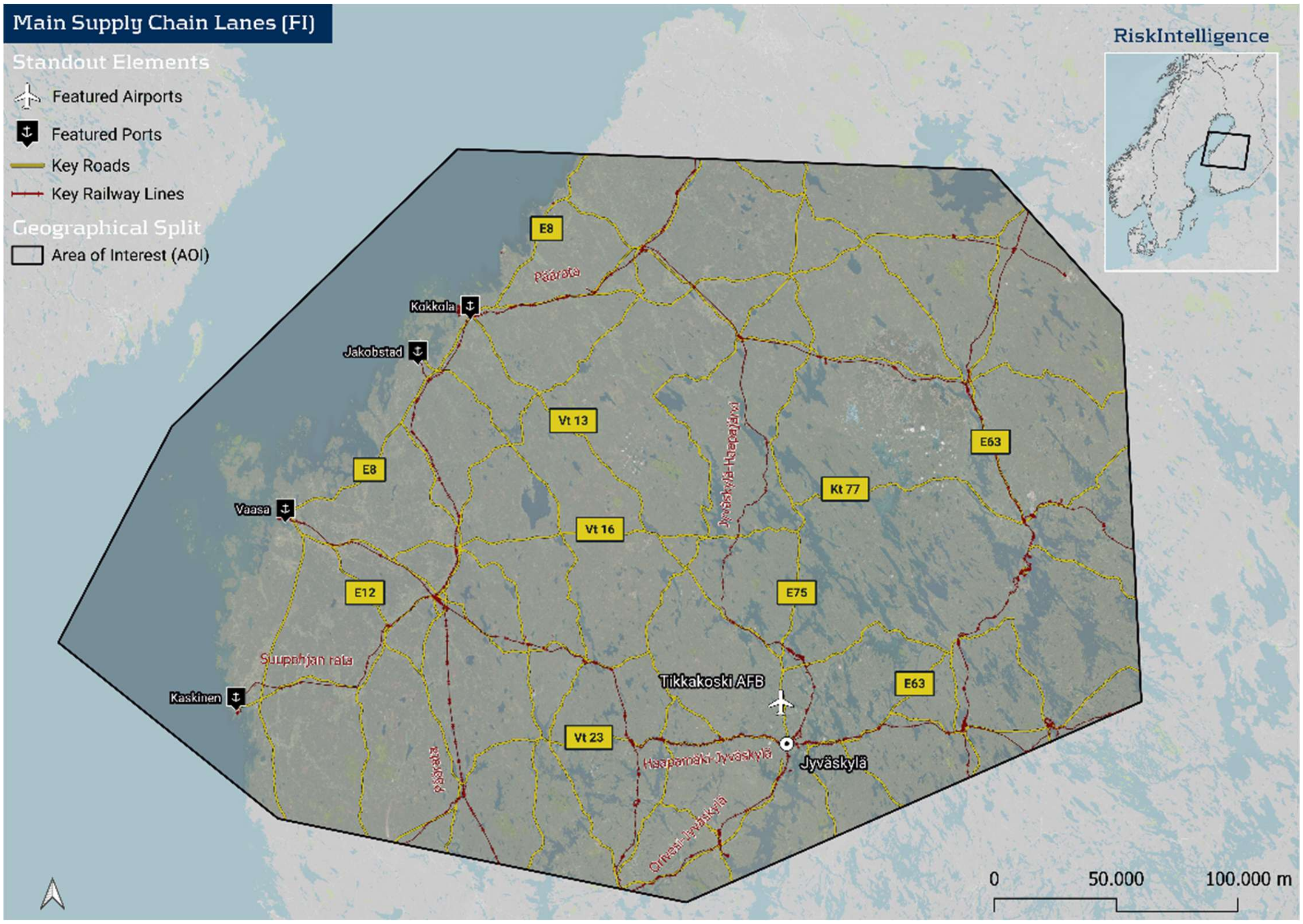

Figure 8. An overview of the main supply routes in the Finnish part of the Study Region

Finnish Coastal Region

The Finnish coastal region is characterized by shallow waters, fragmented archipelagos, and strong seasonal constraints due to ice. Despite these limitations, it hosts several key ports and industrial hubs.

Road and rail networks are well-developed, with E8, E12, Vt 13, Vt 16, and Vt 23 forming key corridors. The Päärata railway provides national integration, although branch lines and secondary connections vary in quality and availability.

Ports such as Vaasa, Kokkola, and Jakobstad are strategically important but vary in infrastructure maturity and multimodal integration. Some ports, such as Kaskinen, lack robust rail connections or face infrastructure limitations.

The region is also a major industrial and agricultural production zone, increasing the importance of maintaining civilian supply chain continuity under crisis conditions.

Central Finland

Central Finland is a major logistical hub, with Jyväskylä functioning as a central node connecting multiple national road and rail corridors. It serves as a key distribution point for both north-south and east-west flows.

Rail infrastructure is varied and includes a mix of electrified and non-electrified segments, creating operational complexity. Jyväskylä's rail junction status makes it a critical bottleneck and distribution point.

Air transport capacity is anchored by Jyväskylä-Tikkakoski and Halli, both of which have significant military relevance in addition to civilian roles.

The region's geography and infrastructure make it a key region for both civilian logistics and military mobilisation movements.

Identified issues

Summary

At a high level, while the region's transport infrastructure is generally functional and allow the Study Region to play a key role as a strategic enabler for military mobility in all of our scenarios, it is not without issue. There are critical structural weaknesses in resilience, redundancy, and civilian-military coordination, both when it comes to individual modes of transport but also for the transitions from one mode of transport to another.

In general, it is notable that the infrastructure network is often maintenance-heavy and unevenly funded, with investments frequently driven by specific industrial or local needs rather than broader societal or strategic benefit. This can lead to corridors that are optimised to work for individual flows, but show flaws when looked on as part of the larger network.

A major concern is the lack of redundancy, especially in Norway and parts of Sweden, where geography forces reliance on single corridors like the E6 road and key rail lines. These become bottlenecks as well as being vulnerable to disruptions, both from natural disasters as well as from hostile action.

It needs to be recognised that multi-modal logistics (road, rail, sea, air) is not seamless, and as such bottlenecks often occur at transition points such as ports, railheads, and convoy staging areas. The need for staging areas and marshalling yards which require significant space and supporting infrastructure should not be underestimated.

A recurring issue is the tension between civilian planning and military requirements. Stakeholders often mentioned a lack of clarity with regards to potential military use of infrastructure, making it difficult to ensure that upgrades properly support dual-use needs. This can result in missed opportunities or misaligned investments.

There are also specific infrastructure risks that deserve to be highlighted, including:

Single-track railways and limited alternative routes.

Vulnerability of railway signalling modernisation (ERTMS/ETCS) without fallback systems.

Seasonal and terrain-related disruptions (snow, landslides, mountainous geography).

Port congestion and limited flexibility in cargo transfer points.

The Gulf of Bothnia as both an opportunity and a challenge: it offers flexible maritime routing between Finnish and Swedish ports, but is constrained by port facilities of varying capabilities, shallow and narrow waterways, and the lack of fixed connections.

The understanding of the requirements for convoy support centres (CSCs), and crucially their reliance on civilian supporting infrastructure, varies significantly among stakeholders. There is a worry that planning assumptions may be overly optimistic when it comes to civilian capacity and resource availability (e.g., sanitation, water, lodging services).

An important planning factor is the rapid increase in vehicle and equipment weight, especially for main battle tanks (the Leopard 2 has increased in weight from 55 tons to approximately 70 tons between the Leopard 2A4 and the current Leopard 2A8), increasing strain in particular on roads and rail infrastructure not originally designed for such loads.

Finally, transport infrastructure is inherently multi-purpose, and a key unresolved challenge is how to fund and coordinate transport infrastructure that is strategically important at national or alliance level, but not prioritized locally or commercially.

Envisioned solutions

The study wishes to highlight a combination of targeted infrastructure upgrades and systemic improvements in coordination and planning processes. No single intervention is sufficient to resolve mobility constraints, but there are a number of actions that can be taken at different levels of budget and effort which would improve the situation.

Key measures include improving port-road-rail integration, increasing rail capacity on existing lines, and enhancing redundancy in critical corridors such as E6, E12, and E14.

Major strategic projects include reopening closed railway lines, construction of bypass roads, and potentially constructing new cross-border connections such as a Mo i Rana–Storuman railway connection and the Kvarken fixed link.

The importance of improved institutional coordination between military and civilian stakeholders to ensure infrastructure investments align with dual-use requirements also needs to be stressed.

Case Study: Suupohjan rata

The rail connection from the Päärata railway to the port of Kaskinen is a critical example of underutilized infrastructure, with the railway as of the writing of the report being closed due to lack of maintenance. Its reopening would significantly enhance port utility and regional resilience.

Cost estimates vary widely depending on scope, ranging from basic repairs to full electrification and modernisation. The economic case depends heavily on future freight demand assumptions. However, from a military mobility point of view, the port of Kaskinen has several promising features, which a reopening of the railway would unlock.

Case Study: Mo i Rana to Storuman railway

All rail traffic from the Norwegian railway network north of Oslo across the border to Sweden is dependent on the single-track railway connection between Trondheim and Östersund, which has proven vulnerable to weather and external action. This means that traffic eastwards from Helgeland by rail requires a detour towards Trondheim, and disturbances north of the junction between Nordlandsbanen and

Meråkerbanen/Mittbanan would make rail transport from Helgeland and the northern ports of the Trondheim fjord towards either Sweden or southern Norway impossible.

The logical answer is a railway that roughly follows the E12 between Storuman and Mo i Rana, ensuring that not only would transports eastwards from Helgeland become more efficient, but it would also create an alternative for the ports in Trøndelag in the event of disruptions on the Nordland Line or the Meråkerbanen/Mittbanan. The cost for such a project could realistically be in the 40-100 Bn NOK span (3.7-9.2 Bn EUR).

Case Study: Meråkerbanen/Mittbanan

There are only four railway lines that cross the Swedish-Norwegian border, and the other three – two south of Oslo and Ofotbanen/Malmbanan – suffer from limited spare capacity and/or lack of relevance for transports from Trøndelag, Helgeland, Møre og Romsdal, and the southern parts of Nordland.

The problem with the line is a combination of lack of maintenance as well as limited repair capacity in the event of interruptions, a combination that has led to repeated and long disruptions in traffic on the Östersund-Trondheim route.

Increased investment in the railway line is one of the most effective single measures for improved military mobility in the Nordic region that does not require the construction of completely new infrastructure.

Case Study: Inlandsbanan

The Inlandsbanan is a key redundancy corridor running through sparsely populated inland Sweden. It provides a parallel alternative to coastal rail routes and has high strategic resilience, in part thanks to its geographic separation from the coastal railway lines.

However, it suffers from limited capacity, ageing infrastructure, and operational constraints due to non-electrified operations and signalling systems. These factors limit scalability under surge conditions, while at the same time paradoxically increasing its robustness and flexibility when facing disturbances. Increased investment in the railway line, and in the connecting lines, could increase capacity significantly.

Case Study: Nordic Connector (Kvarken Fixed Link)

A potential fixed link between Finland and Sweden would be a transformative infrastructure project. It would significantly reduce dependence on maritime crossings and improve east-west mobility for both civilian and military needs.

The main advantages include a more than tenfold increase in capacity (from ~300 vehicles per day to ~4,160 vehicles per day), reduced transfer complexity due to removing the loading and unloading processes in the ports, and enhanced resilience compared to ferry-based systems. It would also in case of a dedicated standard gauge rail freight terminal enable direct rail transport to Vaasa from not only the rest of the Nordics, but from the allied nations on the continent as well.

It should also be recognised that somewhat counterintuitively, historical experience from World War II and on to today's war in Ukraine shows that bridges are rather resilient to hostile activities, and that the proliferation of drones has not significantly increased the threat to fixed transport infrastructure.

The cost estimates for the Nordic Connector varies between 4.9 Bn EUR and 30 Bn EUR (53.4-347 Bn SEK), the significant span depending on whether a bridge or tunnel is chosen as the best solution, the exact route, and whether it is solely a road connection or a combined road and railway solution.

Summary

	Cost[8]	Impact on Scenario 2	Impact on Scenario 4a	Impact on Scenario 3	Impact on Scenario 4b	Impact on security of supply	Comment
Improved port connections	€€	+	++	++++	++++	++++	Per port
Case study: Suupohjan rata	€€[9]	+++	++	+++	++	+	
Increased railroad capacity on the current lines	€€ – €€€	+	++	+++	+++	+++	Depending on how significant an increase is targeted
Case study: Inlandsbanan	€€€	+	++	++++	+++++	++++	Partly funded
Railroad ramps and platforms	€	+	+	++	++	-	Per ramp
Railway line Mo i Rana-Storuman	€€€€	+	++	++++	++++	++++	
More Ro-Ro/Ro-Pax capacity in the Study Region	€€€	+	++	-	++++	+++	Note continuous operating costs
Ensuring availability of equipment	€[10]	+	+	+	+	+	
Case study: Trøndelag-Jämtland crossings - E14, Meråkerbanen/Mittbanan, minor routes	€€€	+	++	+++	++++	+++	
Airport facilities and connections	€[11]	+	+	+	+	-	Training and preparations (connections similar to ports)
Case study: Nordic Connector (Kvarken Fixed Link)	€€€€€	++	++++	++	+++++	++++	See earlier discussion

Table 5: Impact of envisioned solutions

8 Given roughly as an increase in the order of magnitude. €€€€€ denotes a project with a price tag likely in excess of 10 Bn EUR, €€€€ indicate a project costing in the 1-10 Bn EUR range, €€€ a project costing hundreds of millions, €€ a project in the up to a 100 million EUR range, while € denotes a project achievable for less than 10 million EUR

9 To simply reopen the track the cost would be in the 40-150 million Euro range (435 million SEK to 1.6 Bn SEK). In addition more ambitious projects have been looked into, which would come with a price tag in the 1-1.5 Bn EUR price range (10.9-16.3 Bn SEK)

10 Highly dependent on scale and readiness. As is common when it comes to preparedness, basic improvements are possible at low costs but would yield significant advantages in a crisis

11 Increased exercises and stored equipment and raw materials

Sources

Summary

The report is based on extensive open-source material, including official government documents, NATO doctrine, transport statistics, academic literature, and industry reports, combined with 37 stakeholder interviews across Finland, Sweden, and Norway. Sources cover military doctrine, infrastructure data, transport economics, and crisis scenario modelling. The methodology emphasizes transparency while maintaining operational security considerations, and integrates both civilian and military perspectives.

Interviews

Total persons interviewed: 37

Format:

- In-person: 20
- Teams/phone: 17

Per country:

- Finland: 11
- Sweden: 18
- Norway: 8

Per field/role:

- Academia/researchers: 5
- Authorities: 7
- Local development organisations: 6
- Military: 4
- Transport: 15

Knowing Risk

RISK INTELLIGENCE 25 YEARS OF KNOWING RISK

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