



VESTLANDSBANEN FEASIBILITY STUDY - DELIVERY 1

Deliverable 2.1: Current Demand for Passenger Transport

Rev 10

NOVEMBER 2024

CHANGES RECORD				
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REV04	24/04/2024	S.S.L	All	Comments received from Norsk Bane
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1 OBJECTIVE

The purpose of this report is to provide an overview of the current passenger demand within the influence area frame of the projected Vestlandsbanen railway network, as well as analyse various factors that impact this demand.

2 CURRENT RAILWAY TRANSPORT SITUATION

According to table 10484 of SSB (Statistics Norway), the Norwegian railway sector transported 80.4 million passengers and had a transport performance of 3.72 billion pkm (passenger-km, including international trips on Norwegian territory) with 41.3 million train-km and 11.8 billion seat-km in 2019. These figures indicate a high share of short distance trips. The average trip length was just 46 km, and the average occupancy of the trains 31.5 %, corresponding to 90 passengers per train in average.¹ However, many long-distance services had a much higher occupancy and number of passengers per train. For instance, the trains on Bergensbanen had 235 passengers in average, corresponding to 64 % occupancy.

The current situation for the railway system in Norway is concerning, with issues such as:

- Fragile operational stability leading to punctuality targets consistently not being met.
- The aging infrastructure, with 93 percent of the railway network built over 60 years ago, presents challenges in terms of technical and economic viability.
- Long journey times for all long-distance services
- Capacity restrictions due to single-track lines, and
- Restrictions on freight traffic due to steep gradients

While efforts to enhance the railway infrastructure are evident, substantial investments in new double-track lines are still required to meet the demands of a modern and efficient transportation system. These new lines should not necessarily adhere to the existing rail corridors, primarily due to the constraints posed by steep gradients. The current improvements appear insufficient to significantly increase capacity and provide a competitive advantage in transport times for both passenger and freight services.

3 CURRENT AIR TRAFFIC SITUATION

From table 08507 of SSB, total figures for domestic and international air traffic for 2019 and 2023 have been obtained.

Flight type	Passengers group	Year 2019	Year 2023
Domestic flights	Passengers on board at arrival	16,717,229	15,815,585
	Passengers on board at departure	16,708,455	15,807,880
	Passengers on board at departure changing flights (Transfer)	2,855,569	2,699,211
	Passengers on board at departure in transit	583,297	728,481
International flights	Passengers on board at arrival	12,303,060	10,860,294
	Passengers on board at departure	12,204,866	10,730,929
	Passengers on board at departure changing flights (Transfer)	1,813,932	1,404,295
	Passengers on board at departure in transit	2,088	166

¹ <https://www.ssb.no/en/statbank/table/10484 - 10484: Passenger transport by rail, by rail line 2012 - 2022, SSB>

From table 03982 of SSB, 2019 and 2022 domestic air transport main figures have been obtained.

	Passengers (million) 2019	Passenger kilometres (million) 2019	Passengers (million) 2022	Passenger kilometres (million) 2022
Domestic air transport	13	5,789	12	5,169
Domestic air transport as part of domestic journeys	10	4,197	10	4,158
Domestic air transport as part of international journeys	4	1,592	2	1,011

The data in the table indicates that domestic air transport as part of journeys within Norway has largely rebounded to pre-pandemic levels in 2022, with figures comparable to those of 2019. However, there is a significant decrease in the number of passengers on routes between national airports as part of international flights compared to 2019.

From 8510 table of SSB, 2019 figures for pure Origin-Destination (OD) and transit and transfer passenger have been obtained for the main relations into the Vestlandsbanen corridor area.

	Pure OD passengers	Transfer and transit passengers	TOTAL
Bergen – Oslo and Stord – Oslo	1,543,285	499,176	2,042,461
Bergen – Sandefjord	134,370	24,283	158,653
Haugesund – Oslo	270,428	202,723	473,151
Stavanger – Oslo / Sandefjord	1,224,893	536,254	1,761,147
Bergen – Stavanger	412,179	165,993	578,172
Bergen – Kristiansand	122,377	27,325	149,702
Oslo – Kristiansand	262,807	247,270	510,077
TOTAL	3,970,339	1,703,024	5,673,363

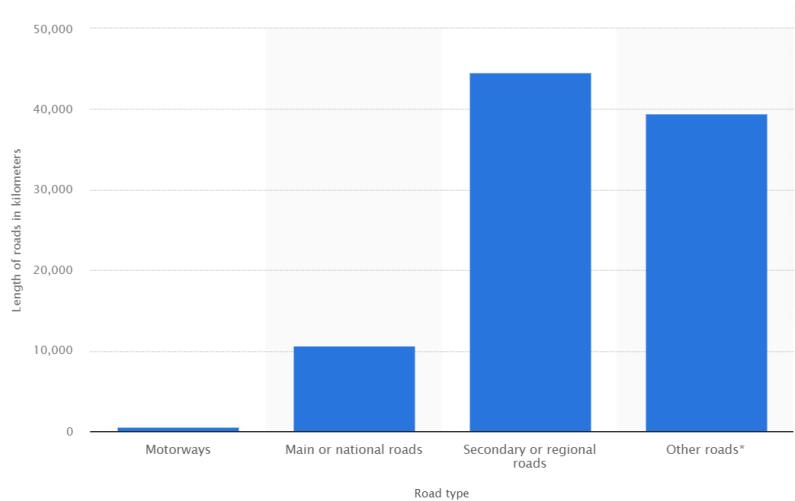
Based on table 08511 of SSB,² the number of flights per day in 2019 for the most relevant routes in the Vestlandsbanen study area were analysed. For the Oslo-Bergen route, considering each direction, about 2 flights per hour are offered, which is an indicator of the high mobility on long distance routes for Norwegian population. Oslo – Stavanger and Oslo – Haugesund have together almost about the same number of flights. In addition, there are flights to/from Sandefjord. All together this results in almost 5 flights an hour in each direction east-west (on workdays).

The four largest airports – Oslo, Bergen, Trondheim, and Stavanger – all experienced increases in passenger numbers in 2023 (mostly international passengers) compared to 2022. Oslo Airport saw the most significant growth, reaching 25 million passengers in 2023, marking a 12 percent increase. Bergen Airport recorded 6.4 million passengers in 2023, representing a 6 percent rise from 2022.

² <https://www.ssb.no/statbank/table/08511 - 08511: Air transport. Aircraft movements and available seats between Norwegian airports, by from airport, arrival airport, month and contents>.

4 CURRENT ROAD TRAFFIC SITUATION

Statistic below illustrates the length of the road network in Norway at the end of 2018, categorized by road type and published by Statista Research Department in February 2023. Europe roads and national roads had a total length of 10,713 km, county roads had a total length of 44,639 km and municipality roads, which may include roads without a hard surface had a total length of 39,543 km.



While Norway has made strides in developing and advancing its national road network, it is evident that there are still areas in need of improvement. Challenges such as poor road conditions, many roads with only one lane and safety hazards like floodings, landslides, stone falls, and avalanches causing detours and road closures highlight the need for continued investment and upgrades to ensure the safety and efficiency of the road infrastructure.

The figure on the next page provides a visual representation of road closures in the national road network of Southern Norway, with the red colour highlighting road sections that are closed for more than 1000 hours a year, equivalent to around 40 days of road closure. This data underscores the significant impact of winter problems and other nature dangers on road travel in the country.

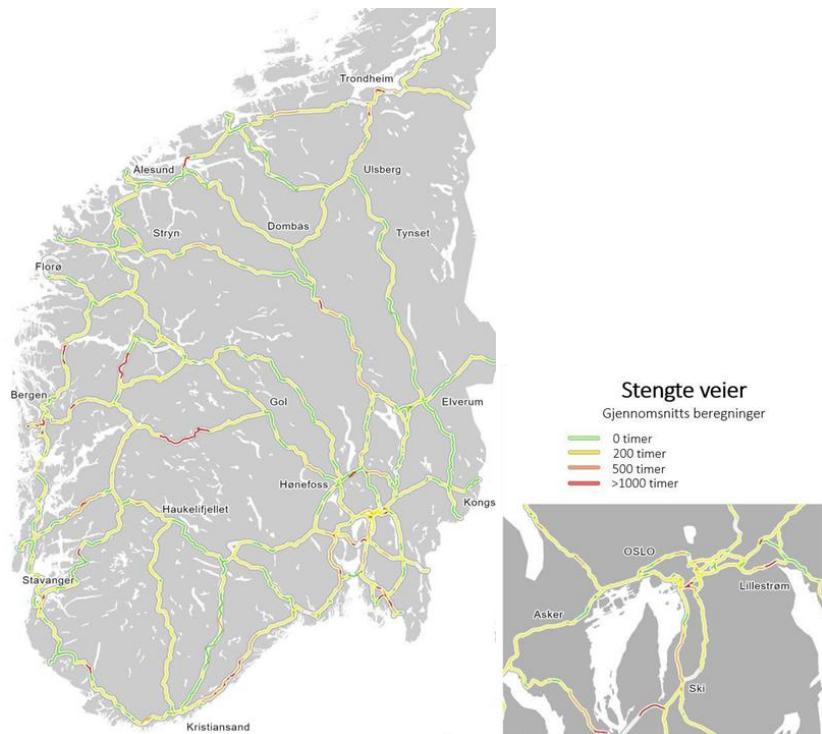


Figure 1: Map showing how long different road sections in Southern Norway were closed.

Source: <https://www.nyeveier.no/media/npafap2n/nyeveier-prioriteringsoppdrag-til-ntp.pdf> - page 21

The table provided by the Norwegian Road Authority offers insight into the 2019 and 2023 passenger car figures for long-distance road traffic in the Vestlandsbanen study area. The data reveals the significant traffic volume on roads located at high altitudes, with limited alternative routes for drivers traveling between Eastern and Western Norway.

	Counts 2019	Counts 2023
E16 Filefjelltunnelen	565	611
Rv52 Bjøberg	1,035	1,104
Fv50 Geiteryggtunnel	244	210
Rv7 Lappestein	1,089	1,187
E134 Vågslidtunnelen	1,358	1,601
E39 Teistedalstunnelen	4,706	5,498

The map below includes most relevant road counting points for long-distance road traffic between Eastern Norway and the Southern part of Western Norway:

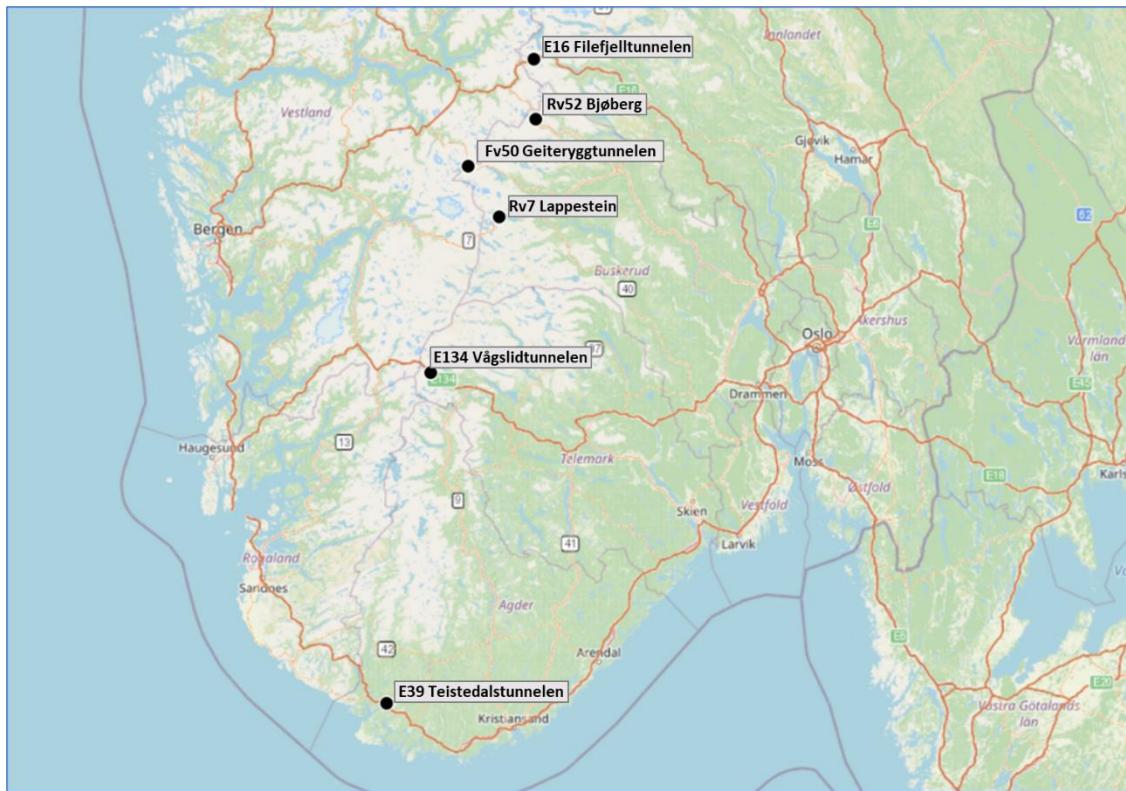


Figure 2: Road Counting Point location.

5 VESTLANDSBANEN STUDY AREA DESCRIPTION

The Vestlandsbanen over Haukeli is a planned high-speed railway infrastructure designed for both freight and passenger trains, aiming both long distance and regional traffic.

The project will enhance connectivity between Oslo, Skien, Bergen, Haugesund and Stavanger and the area in between. It will also improve connectivity for areas along railways connected to Vestlandsbanen, like Jærbansen, Vossabanen, Vestfoldbanen, Sørlandsbanen etc. It is expected to provide faster and more efficient transportation options, benefiting both commuters and businesses alike, including both passenger and freight trains.

The corridor will span across Oslo, Akershus, Buskerud, Telemark, Vestland, and Rogaland counties, improving connectivity also for Vestfold county and parts of Agder county, providing numerous benefits to the region.

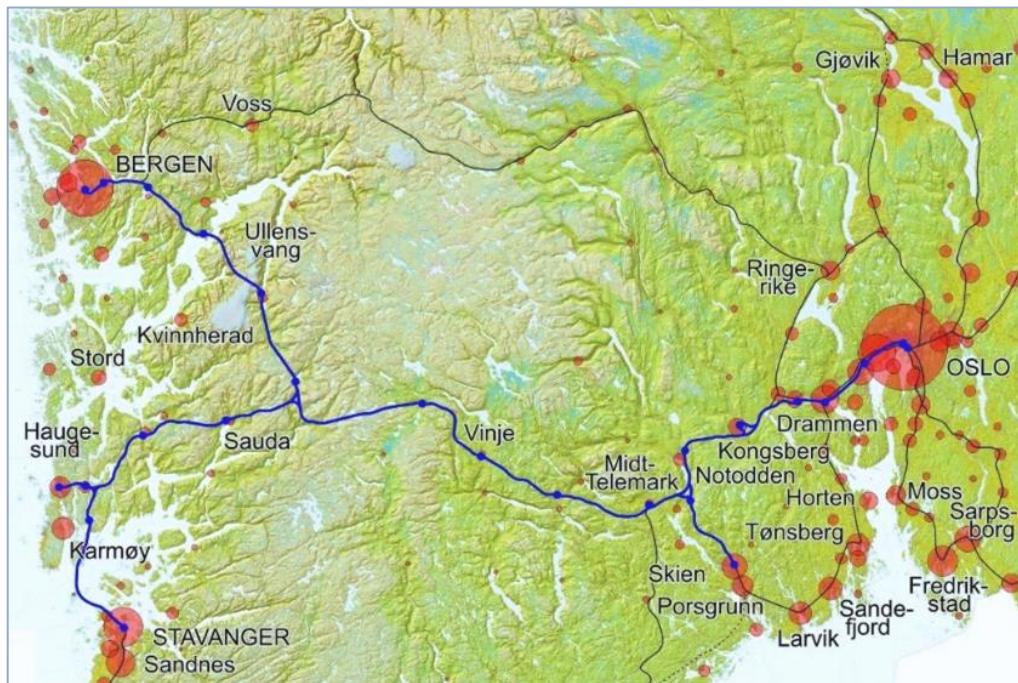


Figure 3: Vestlandsbanen Baseline Corridor, according to DBI Study (2008 - 2012)

The Vestlandsbanen project will represent a substantial investment that has the potential to directly benefit approximately 3 million people, covering nearly a third of Norway's total population. This initiative aims to link the three major cities, Oslo, Bergen, and Stavanger, and many regions in between, to each other and with the rest of the country through modern, safe, and environmentally sustainable transportation options.

By improving connectivity and accessibility, the project will significantly impact the lives of a significant portion of the population, while also promoting economic development, social cohesion, and environmental conservation.

The Vestlandsbanen will act as a catalyst for transforming Norway's future transportation landscape. By offering efficient and reliable travel options, it will significantly reduce travel times (Oslo-Bergen in 2.25 hours, Bergen-Stavanger in 1.35 hours), thereby enabling individuals, businesses, and industries to flourish. This improvement in connectivity will lead to increased economic opportunities, allowing businesses to expand their operations and attract investments. Additionally, the Vestlandsbanen project will enhance social cohesion by strengthening ties among Norway's various regions. It will facilitate greater interaction and cultural exchange.

Moreover, the initiative's focus on sustainable mobility sets it apart. The project will contribute to a cleaner and healthier environment by reducing reliance on private vehicles and encouraging public transportation.



The most relevant transport corridors in the Vestlandsbanen study area are listed below:

1**Bergen** (incl. greater Bergen area) – **Haukeli – Oslo** (incl. greater Oslo area) / **Skien** (incl. Vestfold / Agder)**2****Stavanger** (incl. greater Stavanger area) – **Haugesund – Oslo** (incl. Oslo area) / **Skien** (incl. Vestfold / Agder)**3****Bergen** (incl. greater Bergen area) – **Haugesund – Stavanger** (incl. greater Stavanger area)**4****Oslo** (incl. greater Oslo area) – **Bø** (incl. Agder) / **Skien** (incl. Agder / Vestfold) – **Oslo** (incl. greater Oslo area)

6 CORRIDORS CURRENT TRANSPORT

The purpose of this section is to provide an overview of the current transport situation within the relevant corridors for the Vestlandsbanen area. This includes an examination of the existing conditions and infrastructure for railway, road, air, and sea transport modes.

6.1 Greater Oslo area

The statistic shows that over 80 percent of all train passengers in Norway currently start or end their journeys in Oslo or Akershus. This is partially caused by non-existing or sparse railway services in many parts of the country, but also highlights the significant role that Oslo and Akershus play in the country's rail transport network. However, there are major operational stability challenges stemming from insufficient infrastructure renewal and high-capacity utilization, caused by centralization of jobs and settlements, persistent immigration and resulting local population growth.

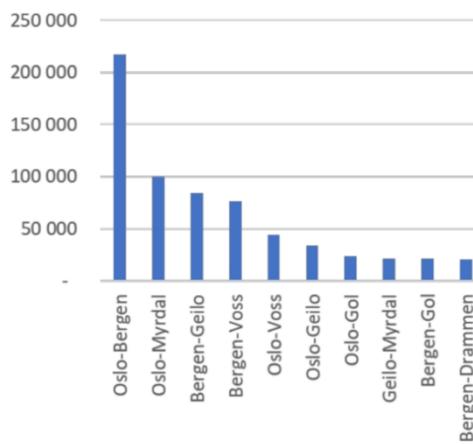
The congestion experienced in passenger train traffic, particularly in the Oslo S - Lysaker section during peak hours, underscores the challenges posed by limited capacity and high demand. Prioritizing passenger trains has led to restrictions on freight train operations through the Oslo tunnel at peak times. The lack of alternative routes between east and west, except for the single track Roa – Hønefoss connection via Gjøvikbanen, further emphasizes the vulnerability of the Oslo transport corridor to disruptions.

The anticipated population growth in Oslo and Akershus in the upcoming year is expected to drive a surge in passenger travel demand, particularly on local and regional trains with Oslo as the origin and destination. This expected increase underscores the pressing need for strategic planning and infrastructure investments to accommodate the growing number of passengers and ensure the continued efficiency and effectiveness of rail services within the region. This strategic planning should also include measures that can ensure a more evenly distributed development of economic activities in the country than it's currently the case.

6.2 Corridor 1: Bergen (incl. greater Bergen area) – Haukeli – Oslo (incl. greater Oslo area) / Skien (incl. Vestfold / Agder)

Railway

- There are currently no train services in the corridor, with the exception of the sections Bergen – Trengereid, Bø – Oslo S and Notodden – Skien. Otherwise, public transport services consist of 2 – 3 daily bus departures in each direction over Haukelifjellet, and many more closer to Bergen, Oslo and Skien. There are also boat connections between Bergen and parts of Hardanger. In addition, there is a train service between the greater Bergen area and the greater Oslo area on Bergensbanen via Hardangervidda and Hallingdalen.
- Bergenbanen serves both national and regional purposes, but currently faces challenges such as limited train services, single-track constraints, lengthy travel times, and long rail sections above the tree line, affecting its operational stability and efficiency. The steep gradients further restrict freight transportation and capacity, underscoring the limited benefits of infrastructure investments in the existing rail corridor.
- In terms of travel times, only one service per day can ensure connection between Bergen and Oslo in 6:35 hrs. The other services are taking around 7 hrs to connect both cities.
- Recently built infrastructure Bergen-Fløen-Arna and at Nygårdstangen has contributed to a higher frequency of local trains between Bergen and Arna, and increased the capacity of the freight terminal by 50 %.
- Bergensbanen is particularly impacted by landslides, flooding, avalanches, and stone falls. In fact, the section between Bergen and Finse has the highest number of recorded annual landslide incidents in the Norwegian rail network.
- Planned Arna – Stanghelle for 2035 will increase the capacity and reduce the travel time by approx. 15 minutes to Bergen, but this will have limited positive impact on long-distance services.
- Although more recent data is not available, the "Long-distance train strategy"³ document reported some interesting data for the corridor in 2016.
 - Tourist and leisure trips constitute the primary purpose of travel on the Bergen - Oslo route.
 - The majority of train journeys commence at one of the end points but the traffic between Oslo and Bergen represents less than 20% of all passengers on the line.
 - The 10 most significant single relationships in 2016 are depicted in the figure below:



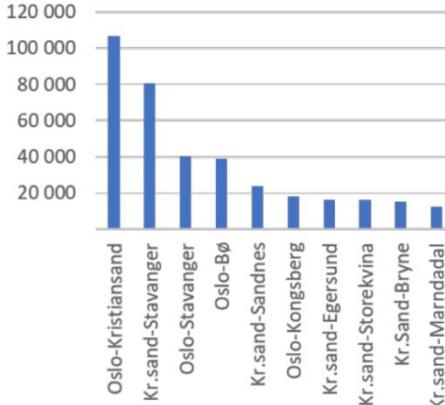
³ https://www.jernbanedirektoratet.no/content/uploads/2023/11/fjerntogstrategi_sluttrapport_20190426.pdf - Jernbanedirektoratet, 2019.
 Document no: 21007708.

Road	<ul style="list-style-type: none"> ▪ E16 via Lærdal is known for the best winter regularity of all roads between Vestland county and Eastern Norway. Rv 52 Hemsedalsfjellet is the preferred choice for heavy transport between the greater Bergen area and the greater Oslo area. Rv 7 over Hardangervidda offers the shortest distance, while E134 is frequently used as an alternative route, especially for trips and transports to/from areas southwest of Oslo. However, all these roads face significant challenges with adverse weather conditions, given their high-altitude locations of around 1000 m. ▪ The corridor experiences significant fluctuations in traffic volumes throughout the week and year, driven largely by weekend and holiday travel patterns. These variations lead to congestion and longer travel times between the Eastern valleys and central parts of Eastern Norway, notably near Oslo.
Air	Air plays an important role in transport between Eastern and Western Norway and is the preferred option between the end points in the corridor. In 2019, total number of passengers between Bergen and Oslo airport was 2.004 million with on average two departures an hour.
Sea	Sea transport between Oslo and Bergen has a distance disadvantage compared to land transport and is mainly used for large bulk transport.

6.3 CORRIDOR 2: Stavanger (incl. greater Stavanger area) – Haugesund – Oslo (incl. Oslo area) / Skien (incl. Vestfold / Agder)

Railway	<ul style="list-style-type: none"> ▪ Haugalandet is one of the nine most populated areas in Europe without any railway infrastructure at all. There are also no train services elsewhere in the corridor, with the exception of the sections Bø – Oslo S and Nordagutu – Skien. Otherwise, public transport services consist of 2 – 3 daily bus departures in each direction over Haukelifjellet, and many more closer to Stavanger, Haugesund, Oslo and Skien. There are also boat connections between Stavanger and Ryfylke. In addition, there is a train service between the greater Stavanger area and the greater Oslo area on Sørlandsbanen via Kristiansand. ▪ The connection between Stavanger and Oslo via Sørlandsbanen is a long trip (588km) and it takes a minimum of 7,5 hour with a 2 hours service frequency. ▪ Sørlandsbanen is mainly located inland, in areas with a smaller population than along the coast. ▪ Single track with frequent service failures resulting in reduced operational stability and difficulties for long-distance train routes. ▪ Although more recent data is not available, the "Long-distance train strategy"⁴ document reported some interesting data for the corridor in 2016. <ul style="list-style-type: none"> ○ Travel between the major cities are the most frequent trips. ○ There are also many travellers between Oslo and stations west of Kristiansand. ○ The 10 most significant single relationships in 2016 are depicted in the figure below:
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⁴ https://www.jernbanedirektoratet.no/content/uploads/2023/11/fjerntogstrategi_sluttrapport_20190426.pdf - Jernbanedirektoratet, 2019.
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	 <table border="1"> <thead> <tr> <th>Location</th> <th>Passenger Traffic (2019)</th> </tr> </thead> <tbody> <tr><td>Oslo-Kristiansand</td><td>105,000</td></tr> <tr><td>Kr.sand-Stavanger</td><td>80,000</td></tr> <tr><td>Oslo-Stavanger</td><td>40,000</td></tr> <tr><td>Oslo-Bø</td><td>40,000</td></tr> <tr><td>Kr.sand-Sandnes</td><td>25,000</td></tr> <tr><td>Oslo-Kongsberg</td><td>20,000</td></tr> <tr><td>Kr.sand-Egersund</td><td>20,000</td></tr> <tr><td>Kr.sand-Storekvina</td><td>20,000</td></tr> <tr><td>Kr.Sand-Bryne</td><td>20,000</td></tr> <tr><td>Kr.sand-Marnndadal</td><td>15,000</td></tr> </tbody> </table>	Location	Passenger Traffic (2019)	Oslo-Kristiansand	105,000	Kr.sand-Stavanger	80,000	Oslo-Stavanger	40,000	Oslo-Bø	40,000	Kr.sand-Sandnes	25,000	Oslo-Kongsberg	20,000	Kr.sand-Egersund	20,000	Kr.sand-Storekvina	20,000	Kr.Sand-Bryne	20,000	Kr.sand-Marnndadal	15,000
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Road	<p>The E18/E39 route between Oslo and Stavanger boasts a higher standard compared to the E134, featuring four lanes and a speed limit of 110 km/hr for most of its stretch. Recent developments, such as the opening of the segment from Kristiansand to Mandal in November 2022 and ongoing construction past Lyngdal, highlight efforts to enhance connectivity on road infrastructure along this route. However, the distance from Oslo to Stavanger via E134 is shorter.</p>																						
Air	<p>Air transport serves as a vital mode of transportation between Rogaland and Eastern Norway, being the preferred choice for travel between the endpoints in the corridor. In 2019, the total number of passengers on Stavanger - Oslo and Haugesund – Oslo routes was 2.155 million.</p>																						
Sea	<p>The harbours in Drammen, Sandefjord, Larvik, Kristiansand and Stavanger are important for international passenger and freight transport.</p>																						

6.4 CORRIDOR 3: Bergen (incl. greater Bergen area) – Haugesund – Stavanger (incl. greater Stavanger area)

Railway	No railway infrastructure is available between Bergen, Haugesund and Stavanger – only frequent bus services.
Road	<ul style="list-style-type: none"> The E39 is the main road in this corridor with some varying standards and different speed limitations along the route. There are two ferry links, and one of them will be removed when Rogfast is opened (expected in 2033). Major parts of Rv 13 have no traffic centre line, and poor detour options in the event of closure. Rv. 13 is particularly susceptible to frequent avalanches and rockfalls, posing significant hazards to road users. Additionally, the limited detour options in place when the road is closed further exacerbate the challenges of ensuring continuous accessibility and safety along this route.
Air	<p>Despite the close proximity of just 160 km in air distance between Bergen and Stavanger airports, the substantial passenger traffic of 578,000 in 2019 underscores the demand for air travel between these two cities.</p>

Sea	Sea transport plays a crucial role in transporting bulk commodities such as stones, sand, gravels, and similar materials due to its cost-effectiveness and efficiency for handling large volumes of goods. However, there is no longer a passenger boat route between Bergen and Stavanger.
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6.5 CORRIDOR 4: Oslo (incl. greater Oslo area) – Bø (incl. Agder) / Skien (incl. Agder / Vestfold) – Oslo (incl. greater Oslo area)

Railway	<ul style="list-style-type: none"> ▪ The connection between Oslo and Kristiansand via Bø is part of Sørlandsbanen and the connection between Oslo and Skien is part of Vestfoldbanen. Major parts of Vestfoldbanen are under construction as a double track railway with long sections designed for speeds of up to 250 km/h, or already in service. ▪ Vestfoldbanen is an important railway for commuting in the area and into Oslo. ▪ The section between Oslo and Skien on the Vestlandsbanen will provide about 30 minutes shorter travel time compared to Vestfoldbanen (when construction is completed) and will allow better cities connection in the area, covering both Vestfold, Telemark and Buskerud. ▪ Once the Vestlandsbanen is built, the Sørlandsbanen section between Oslo and Bø will become a high-speed section.
Road	The E18/E39 serves as the main road between Oslo and Stavanger via Kristiansand, offering high-quality infrastructure with good standards and four lanes along the majority of its route.
Air	Despite the relatively short air distance of just 280 km between Oslo and Kristiansand airports, the significant passenger traffic of 510,000 in 2019 highlights the demand for air travel between these two cities.
Sea	The harbours in Drammen, Sandefjord, Larvik, and Kristiansand serve as vital gateways for international passenger and freight transport, facilitating the movement of goods and people across borders.

7 KEY FIGURES FOR EXISTING MOBILITY

7.1 Modal split of passenger transport

Based on the estimated matrices for 2019 from the national and regional model (NTM6 and RTM), the modal split of passenger transport (considering door-to-door distances and transport work) in the influence area of Vestlandsbanen has been determined. It should be noted that, in addition to the access and egress distances to and from airports, only the airline distance between the airports is included in the calculation of transport work for air trips. In most cases, this distance is considerably shorter than the distance travelled by road, for example. Therefore, if there are an equal number of air and road trips between two locations, the figure for the share of road traffic, measured in passenger-km, is usually higher than the figure for the share of air traffic.

Mode	Long Distance	Medium and Regional Distance
Air	27.1%	-
Car	63.6%	82.0%
Public Transport	9.3%	18.0%

Figure 4: Modal share of passenger transport (pkm) extracted from NTM6 and RTM Matrices.
 Source: NTM6 and RTM - Matrices, 2019.

Regarding the corridors defined previously, the modal share obtained for 2019 directly from the national and regional model (NTM6 and RTM matrices), differentiating between long, medium and regional trips, is shown in the table.

Corridor	Long Distance			Medium and Regional Distance	
	Air	Car	Public Transport	Car	Public Transport
Corridor 1	49%	26%	25%		
Corridor 2	62%	30%	8%		
Corridor 3	48%	48%	4%	88%	12%
Corridor 4	24%	55%	21%	95%	5%

Figure 5: Modal share of passenger transport (pkm) by type of trip and Corridor.
 Source: NTM6 and RTM - Matrices, 2019.

It can be observed that air mode dominates in Corridor 1 and 2, while in Corridor 3, the distribution between car and air is more balanced.

Aggregate, the modal shares for the four corridors are as follows:

Corridor	Air	Car	Public Transport
Corridor 1	49%	26%	25%
Corridor 2	62%	30%	8%
Corridor 3	8%	82%	10%
Corridor 4	13%	73%	14%

Figure 6: Modal share of passenger transport (pkm) by Mode of Transportation and Corridor.
 Source: NTM6 and RTM - Matrices 2019.

7.1 Transport volumes in Norway 1946-2021

From the document Transport volumes in Norway 1946-2021, several indicators related to the characterization of passenger mobility have been obtained.

- Domestic passenger transport by mode of transport. Million passengers

Year	Water transport				Railway transport etc.				Road transport				By Air				Total
	Ferry	Other	Total	State	Other	Suburb.	Total	Buses	Taxis			Motor-	Total	Dom-	Domestic	Total	Total
	trans-	reg.		rail-	rail-	rail-		and		Car	Private	cycles,		estic	incl. intn.		
	port	services		ways	ways	ways		coaches		hire	cars	Mopeds			transfer		
2019	43	12	55		80	192	272	434	50	178	4,718	170	5,552	10	4	14	5,893

- Domestic passenger transport work by mode of transport in Million passenger-kilometres

Year	Water transport				Railway transport etc.				Road transport				By Air				Total
	Ferry	Other	Total	State	Other	Suburb.	Total	Buses	Taxis			Motor-	Total	Dom-	Domestic	Total	Total
	trans-	reg.		rail-	rail-	rail-		and		Car	Private	cycles,		estic	incl. intn.		
	port	services		ways	ways	ways		coaches		hire	cars	Mopeds			transfer		
2019	343	755	1,098		3,676	1,001	4,677	4,550	451	2,586	64,171	1,634	73,392	4,197	1,592	5,776	84,964

- Domestic passenger transport. Average transport distance by mode of transport. Kilometres

Year	Water transport				Railway transport etc.				Road transport				By Air				Total
	Ferry	Other	Total	State	Other	Suburb.	Total	Buses	Taxis			Motor-	Total	Dom-	Domestic	Total	Total
	trans-	reg.		rail-	rail-	rail-		and		Car	Private	cycles,		estic	incl. intn.		
	port	services		ways	ways	ways		coaches		hire	cars	Mopeds			transfer		
2019	8	63	20		46	5	17	10	9	15	14	10	13	436	14		

7.2 Commuting Flows Examples

Using information from the Bureau of Statistics regarding “Employment, register-based”⁵ specifically, employed persons (aged 15-74) by municipality of work and residence, we can estimate the commuting flows – the number of work trips or trips crossing RTM region borders.

- Oslo

Where do employed people work in...

Oslo municipality 2019

Number of employed persons with residential address in Oslo: 375,593

Workplace:



Where do employed people live in...

Oslo municipality 2019

Number of employed persons with workplace address in Oslo: 491,196

Residence:



⁵ Table 03321: Employed persons (aged 15-74) per 4th quarter, by municipality of work, municipality of residence, year and contents, <https://www.ssb.no/statbank/table/03321>

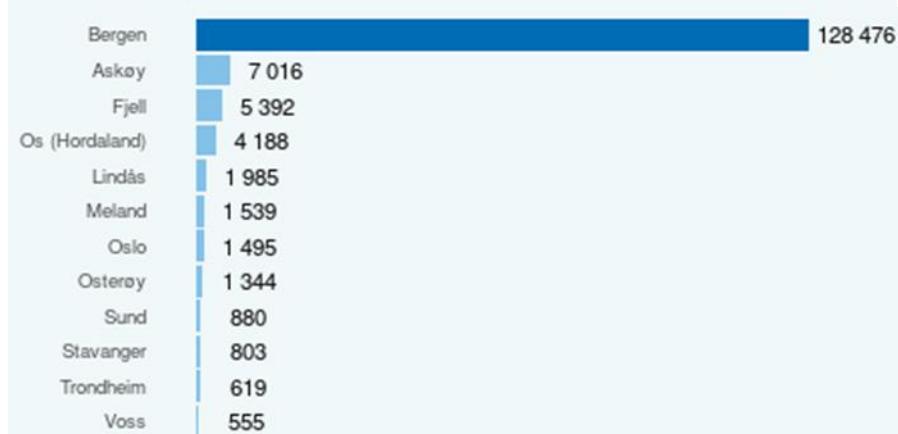
- **Bergen**

Where do employed people work in...

Bergen municipality. 2019
 Number of employed persons with residential address in Bergen: 146,891
 Workplace:


Where do employed people live in...

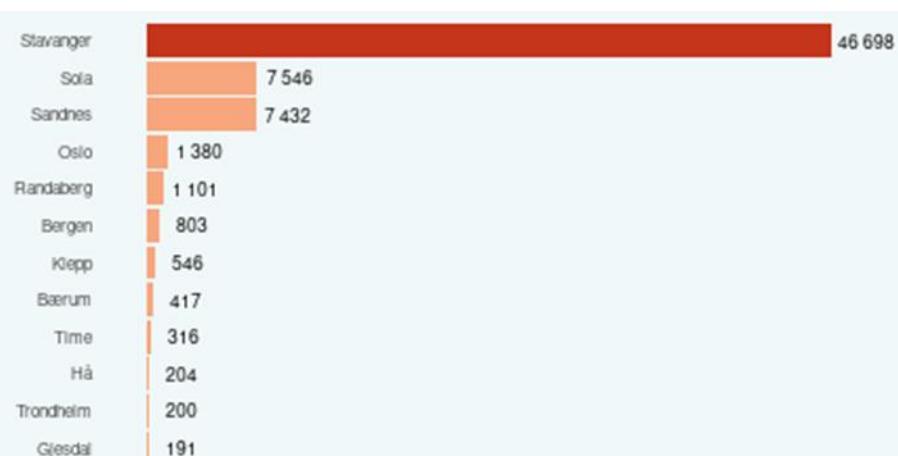
Bergen municipality. 2019
 Number of employed persons with workplace address in Bergen: 168,260
 Residence:



- **Stavanger**

Where do employed people work in...

Stavanger municipality. 2019
 Number of employed persons with residential address in Stavanger: 68,987
 Workplace:



Where do employed people live in...

Stavanger municipality. 2019
Number of employed persons

with workplace address in
Stavanger: 84,030

Residence

