

# Are fast rail cross border links feasible? Case: Oslo – Stockholm

Central Scandinavia Borderland

Round Table, Oslo    March 13<sup>th</sup>, 2017

Jörg Westermann, CEO

# About Norsk Bane AS

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Corporation with 350 stockholders.  
73 % of share capital on public hands.  
Founded 2002. Located in Norway.

Developing concepts and alignments  
for modern railways in Scandinavia,  
in cooperation with local authorities.

Studies in Sweden since 2011, mainly  
on a new line Stockholm – Oslo.  
75% of alignment studies are finished.



**Høyhastighetsbane Stockholm–Oslo**  
Mulighetsstudie, utredningsfase 2

Konseptutvikling og traséutredning

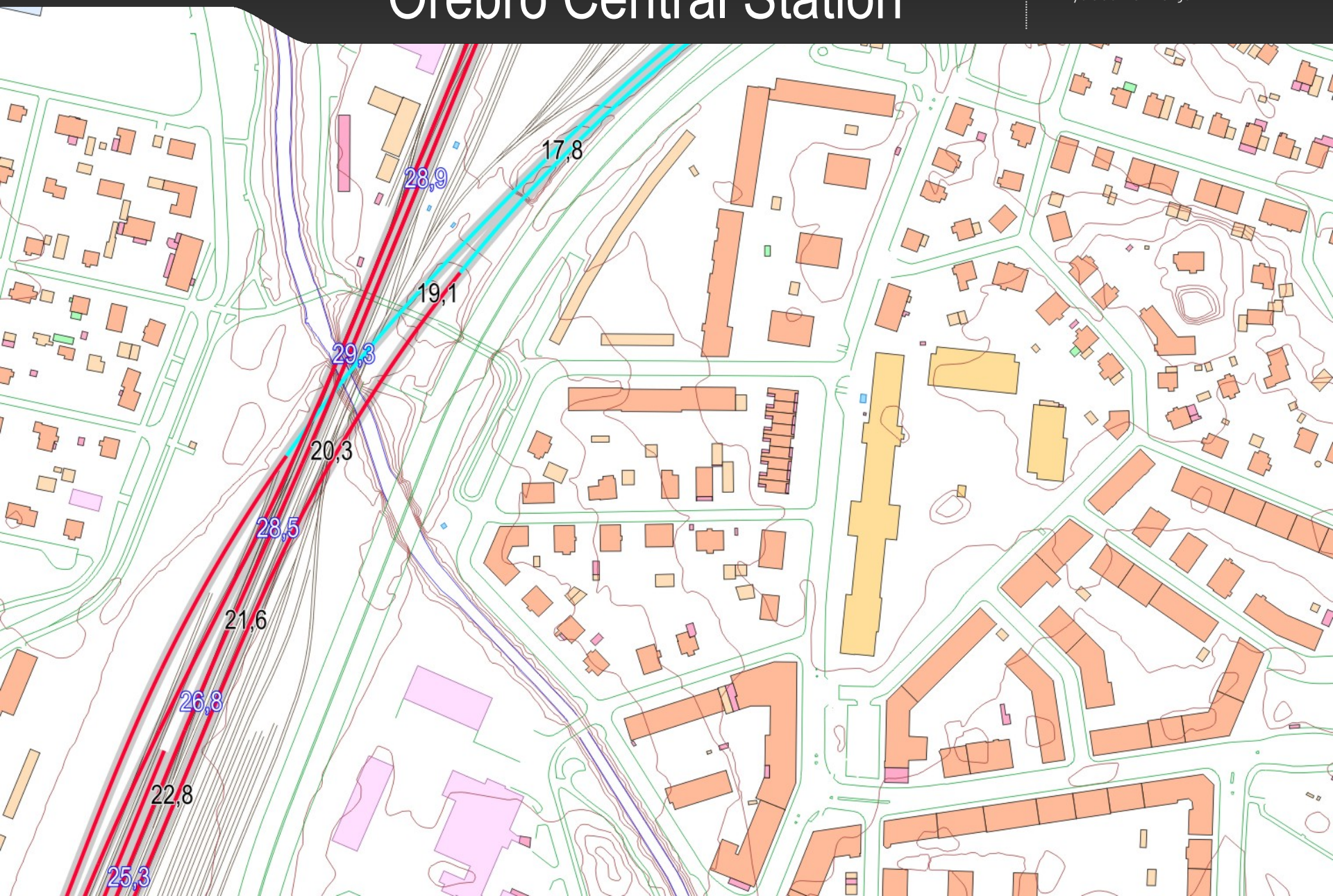
Alesund, 02.05.2016

The image displays a white high-speed train with a red stripe, moving across a green landscape. Below it is a map of the proposed high-speed rail route between Stockholm and Oslo, Norway. The map shows the coastline and various cities, with the route highlighted in yellow and green. A truck is visible on a road in the background of the map.

# Proposed alignment Örebro Central Station

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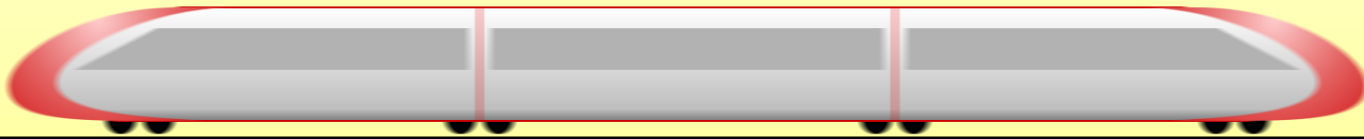
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# High speed for high demand and high productivity

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Travel time Oslo – Karlstad now: **3:05 h.**



Oslo – Karlstad on a new line: **1:05 h.**



Provide more services each day  
at about the same costs to staff and trains.  
And get more customers paying well.

# Oslo – Stockholm State of alignment studies

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Expected distance Oslo – Stockholm: 500 kms. Current distance: 605 kms.  
Travel time nonstop 2:00 h. Travel time included 7 – 8 stops: about 2:35 h.  
3 - 5 trains per hour and direction, serving 16 – 20 stations. Alternating stops.  
Freight trains on new line at night, on some sections at day time as well.

# Air passenger traffic

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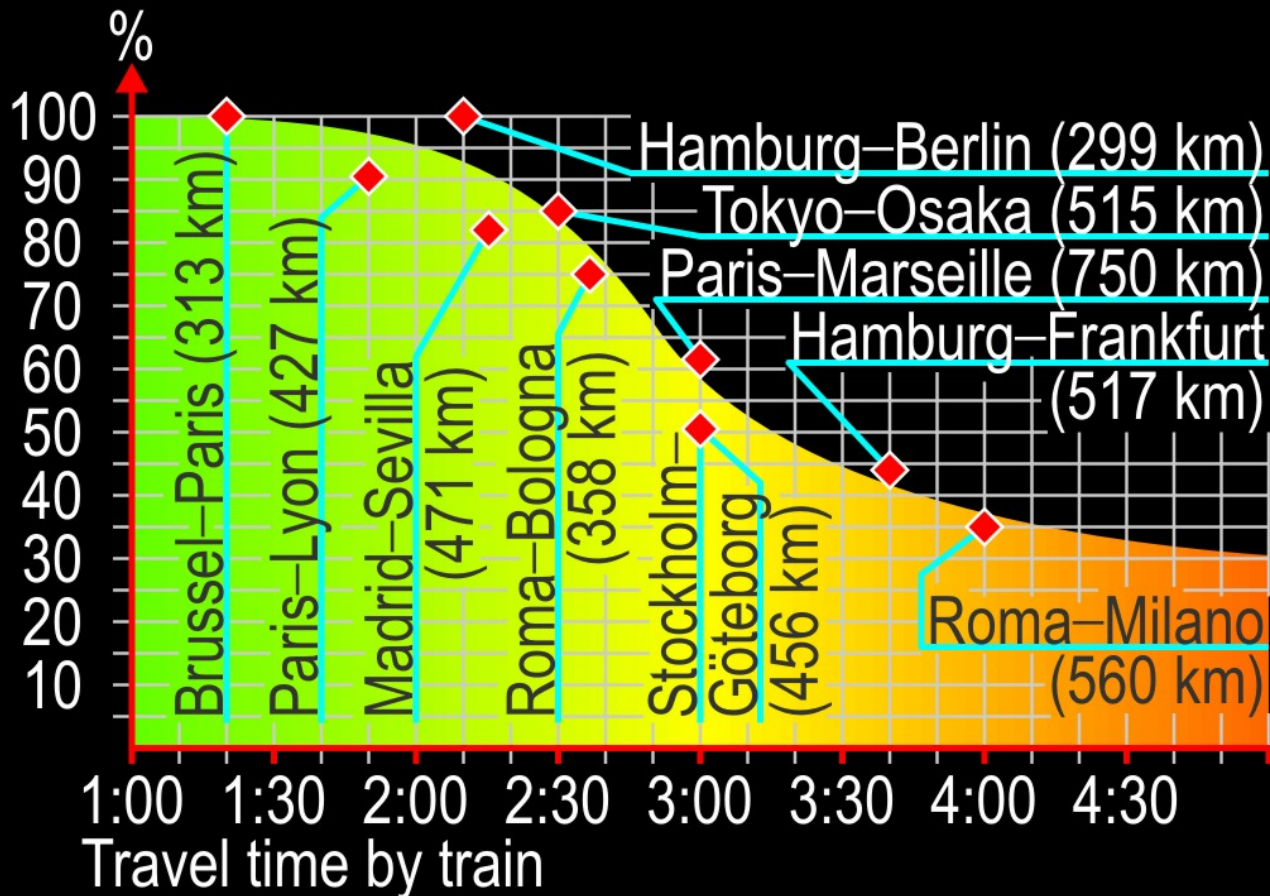
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Paris – Lyon, 1980: 940.000 passengers  
High speed rail inaugurated 23.09.1981.

Madrid – Sevilla, 1991: 730.000 passengers  
High speed rail inaugurated 20.04.1992.

Stockholm – Oslo, 2014: 1.356.000 passengers  
Almost 4.000 p/d. 3.000 p/d sufficient for hourly services.

# Market shares train and plane

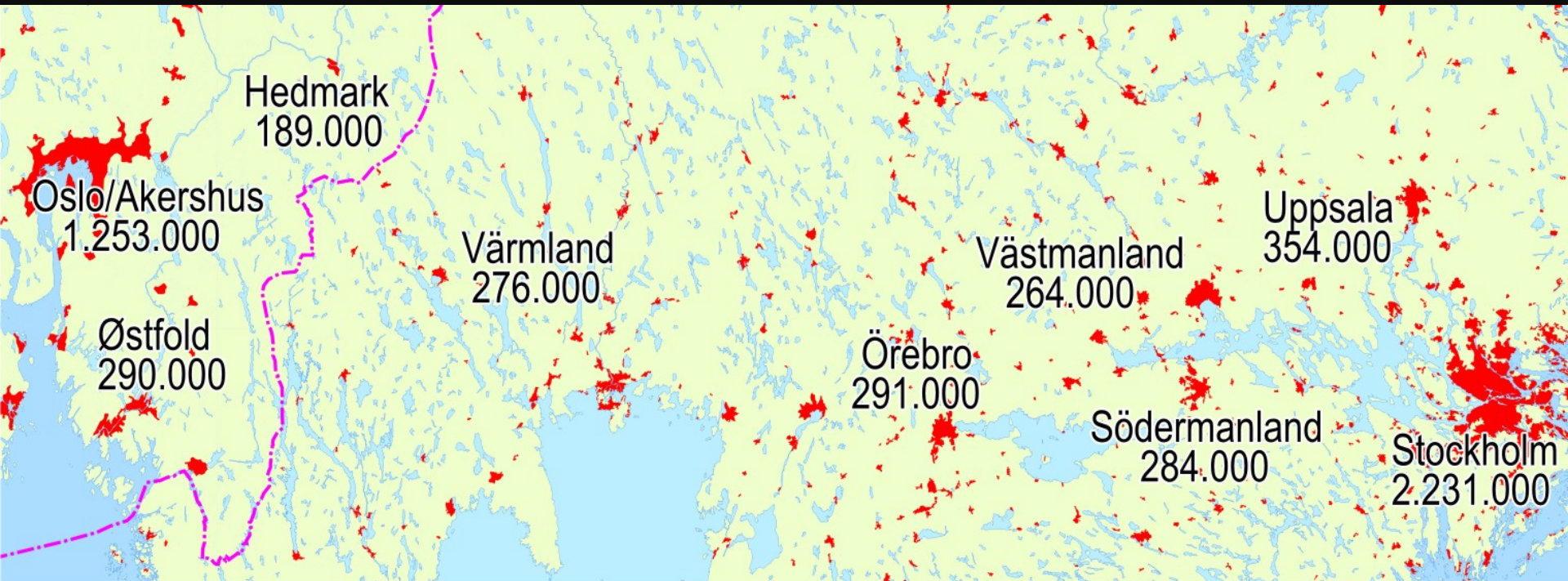


A travel time by train of about 2:30 hours is crucial for a high market share.

# Much more than end to end!

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Inhabitants in Norwegian and Swedish counties near a future Oslo – Stockholm line, 01.01.2016.



# Large passenger car traffic

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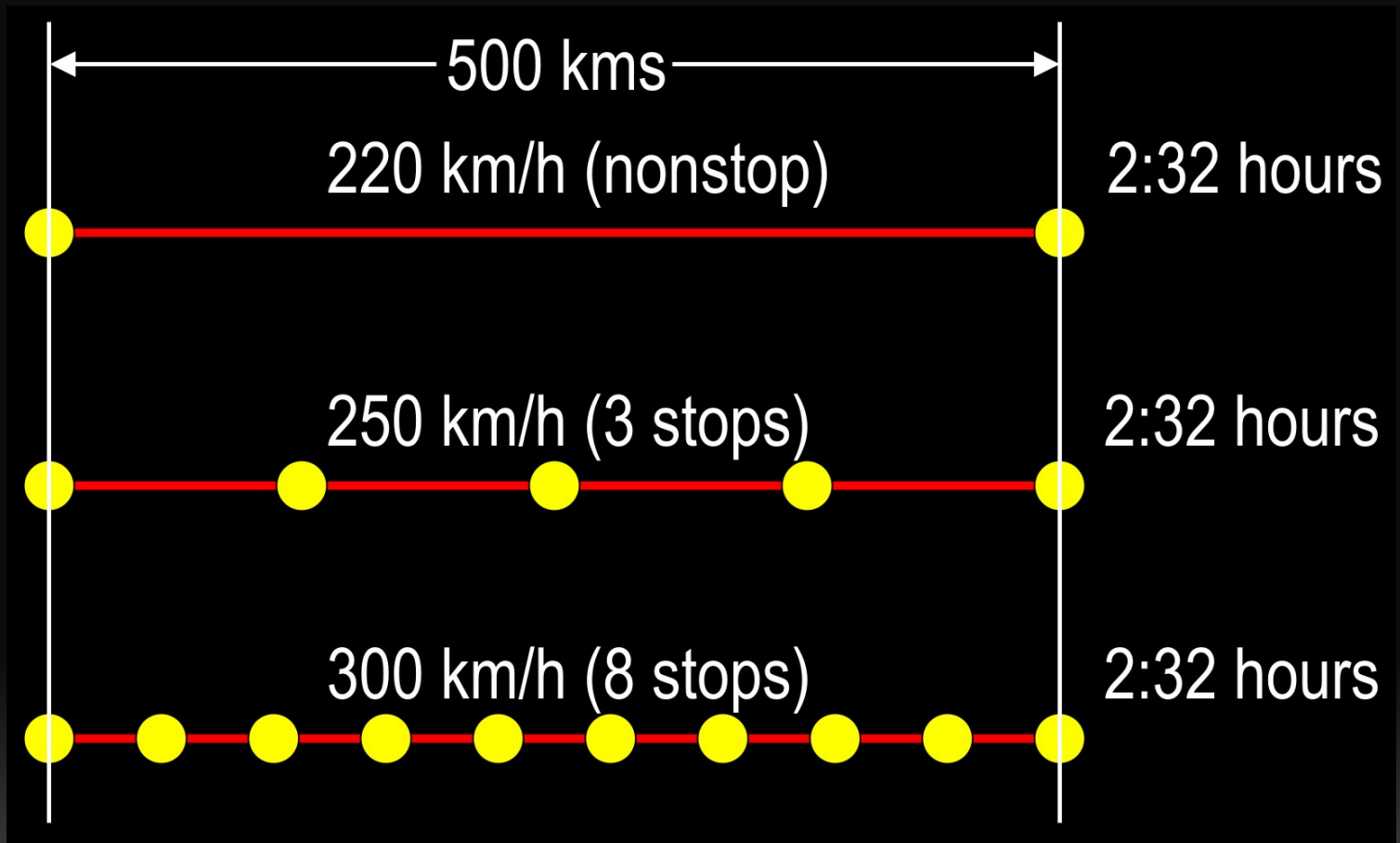
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Number of passenger cars per day in 2015, minimum figures between major nodes in road network.

# Speed and stops

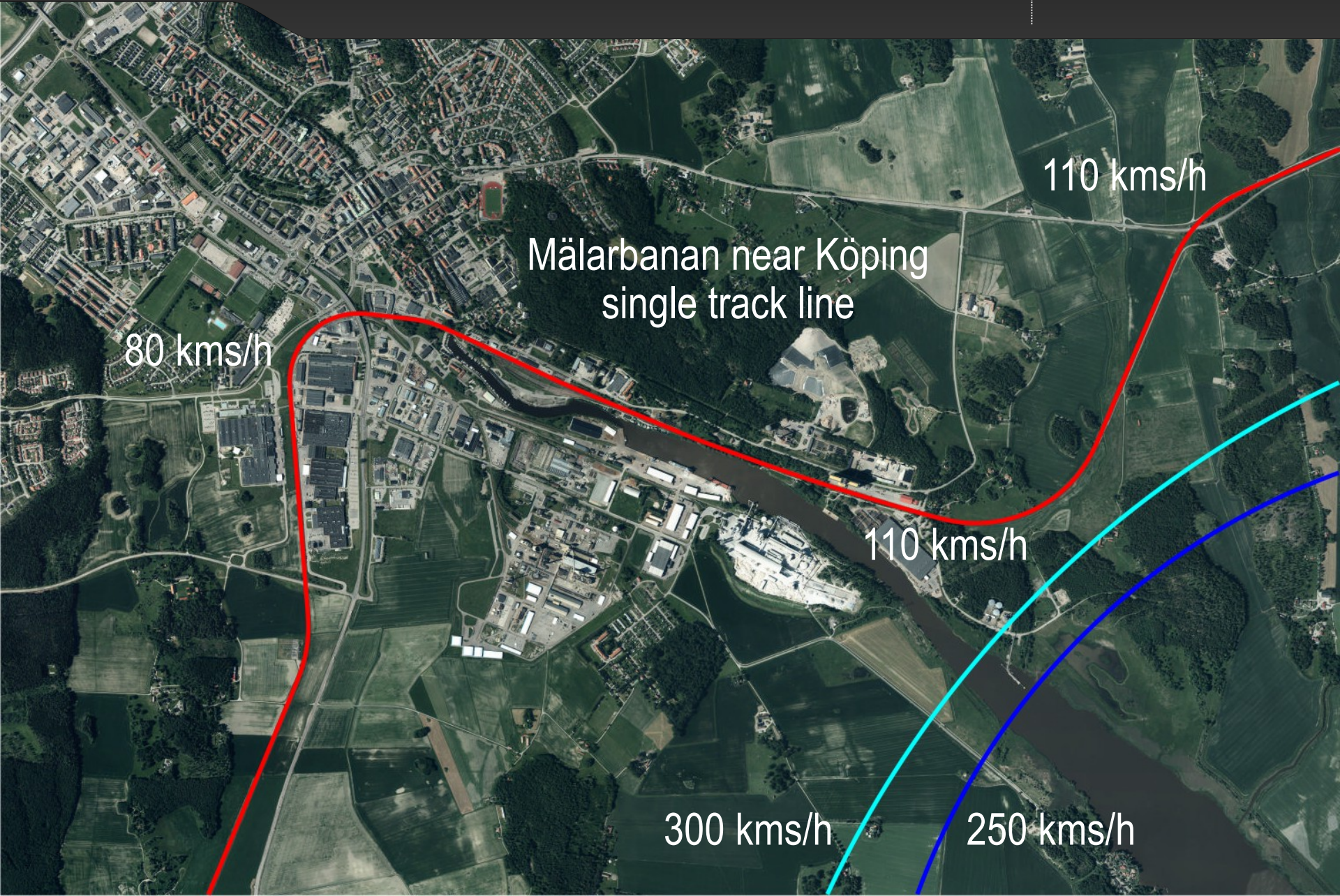
## Oslo – Stockholm



# Upgrading existing lines?

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80 kms/h

Mälarbanan near Köping  
single track line

110 kms/h

110 kms/h

300 kms/h

250 kms/h

# Expanding singel track lines to dobbel track lines?

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Dovrebanen near  
Strandlykkja in  
Stange, 2013

It will not be cheaper to built a new dobbel track line near an existing singel track line. Rather the contrary.



# Härad – Strängnäs

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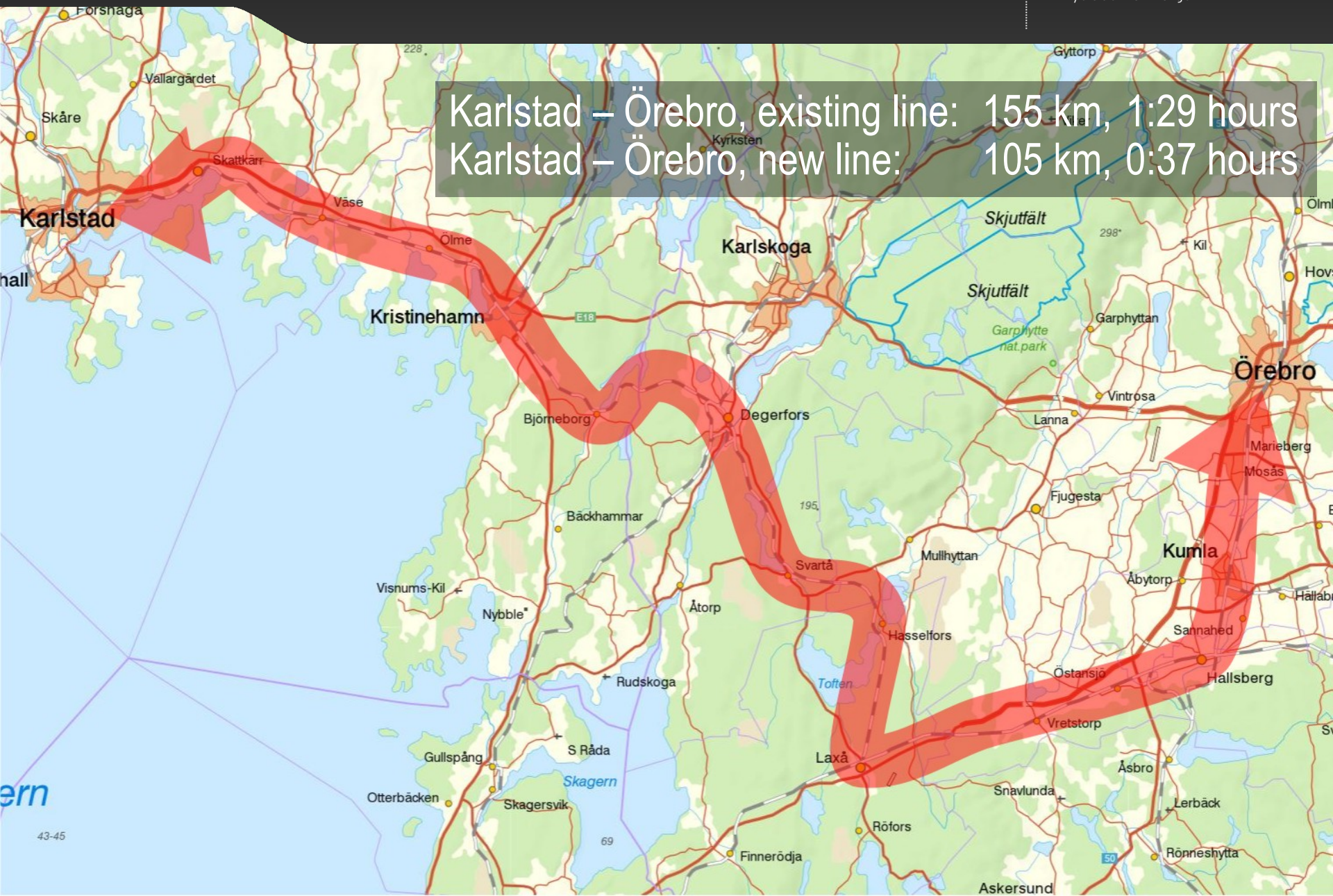
Large distance between existing and new track.

# Shortening of running distances

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Karlstad – Örebro, existing line: 155 km, 1:29 hours  
Karlstad – Örebro, new line: 105 km, 0:37 hours



# Sustainable investments – no quick fixes, please

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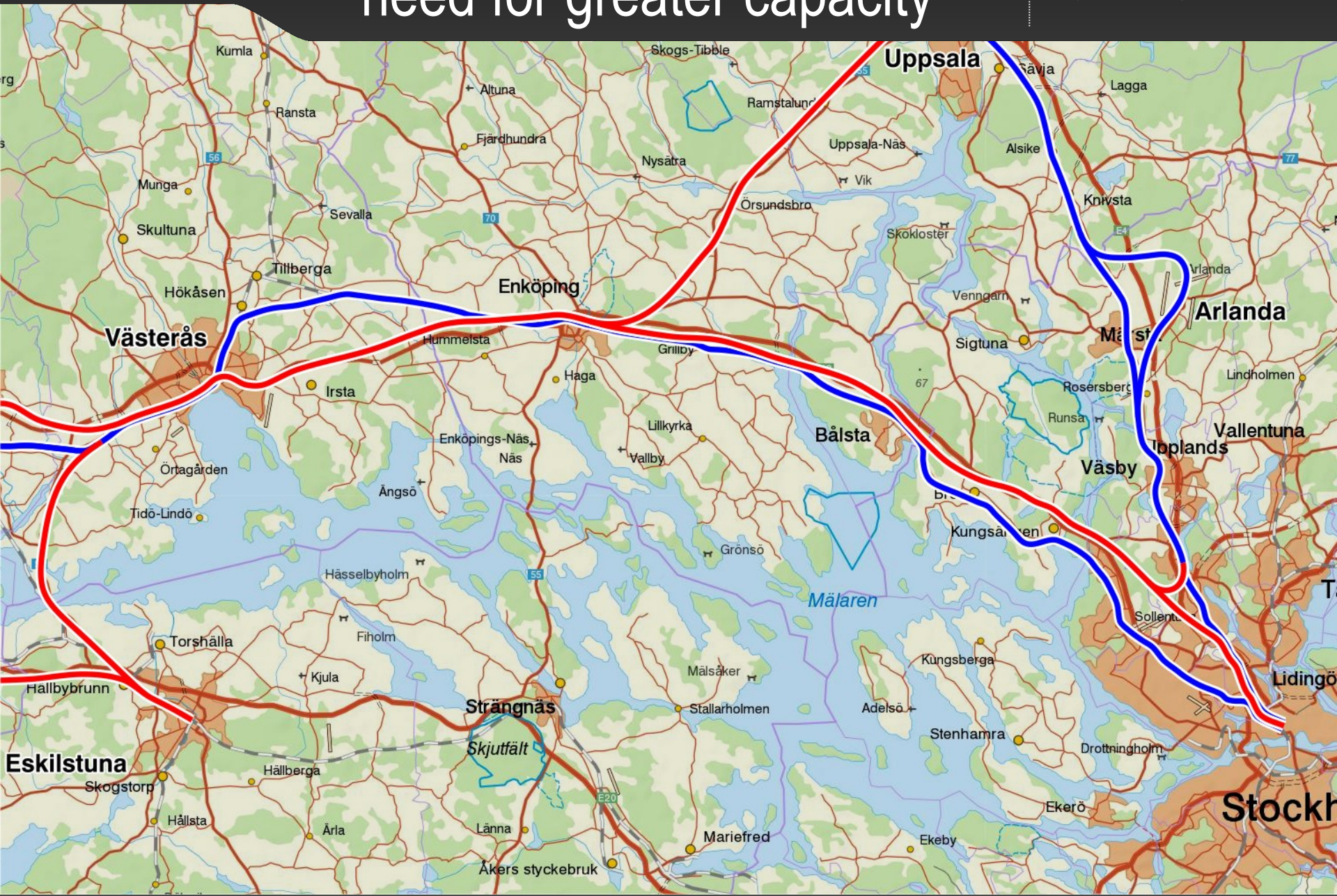
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# A growing network, more traffic, need for greater capacity

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# Wide range of benefits

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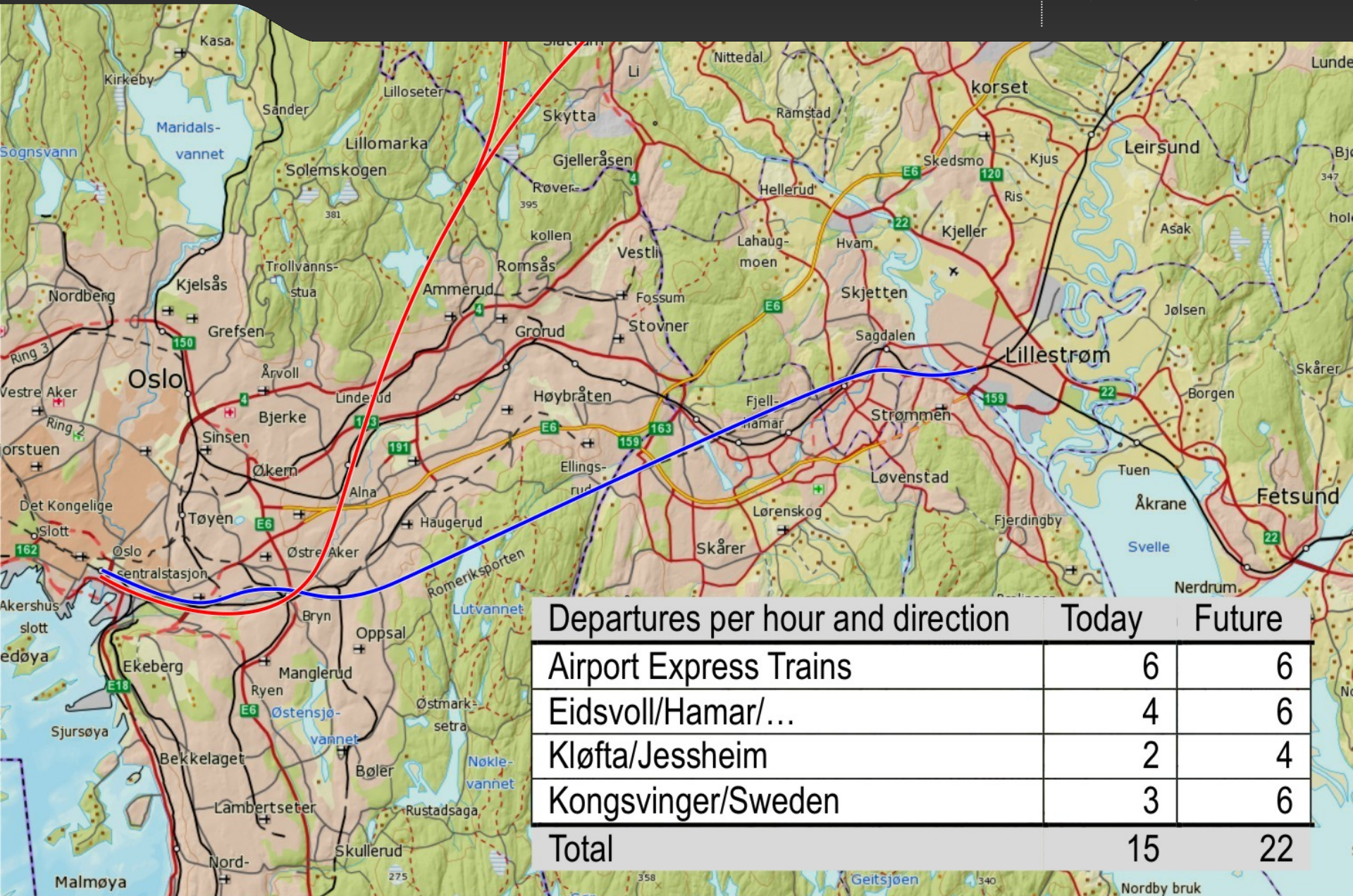


Oslo – Gothenburg in 2:30 h., existing line south of Säffle.  
Preferred route for both long-distance and freight trains?

# Oslo – Lillestrøm

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Departures per hour and direction	Today	Future
Airport Express Trains	6	6
Eidsvoll/Hamar/...	4	6
Kløfta/Jessheim	2	4
Kongsvinger/Sweden	3	6
<b>Total</b>	<b>15</b>	<b>22</b>

# Follobanen under construction

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A new, 23 kms long, high speed line for passenger trains only (in red).

Freight and lokal trains will use the existing line (Østfoldbanen, in blue).

Additional tracks to connect „Østre linje“ (in magenta). Not decided yet.

Problem1: more freight trains, less passenger trains, due to 1 track only.

Problem2: 4+4 pass. trains per hour Ski-Moss (peak times). Diff. speeds.

# Proposal to adjustments

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Ski-Moss blocked for freight trains (and any other trains) at peak times.

How to solve the problem? Build a new line for freight trains?

New line Ski – Moss for passenger trains. Short link to „Østre linje“.

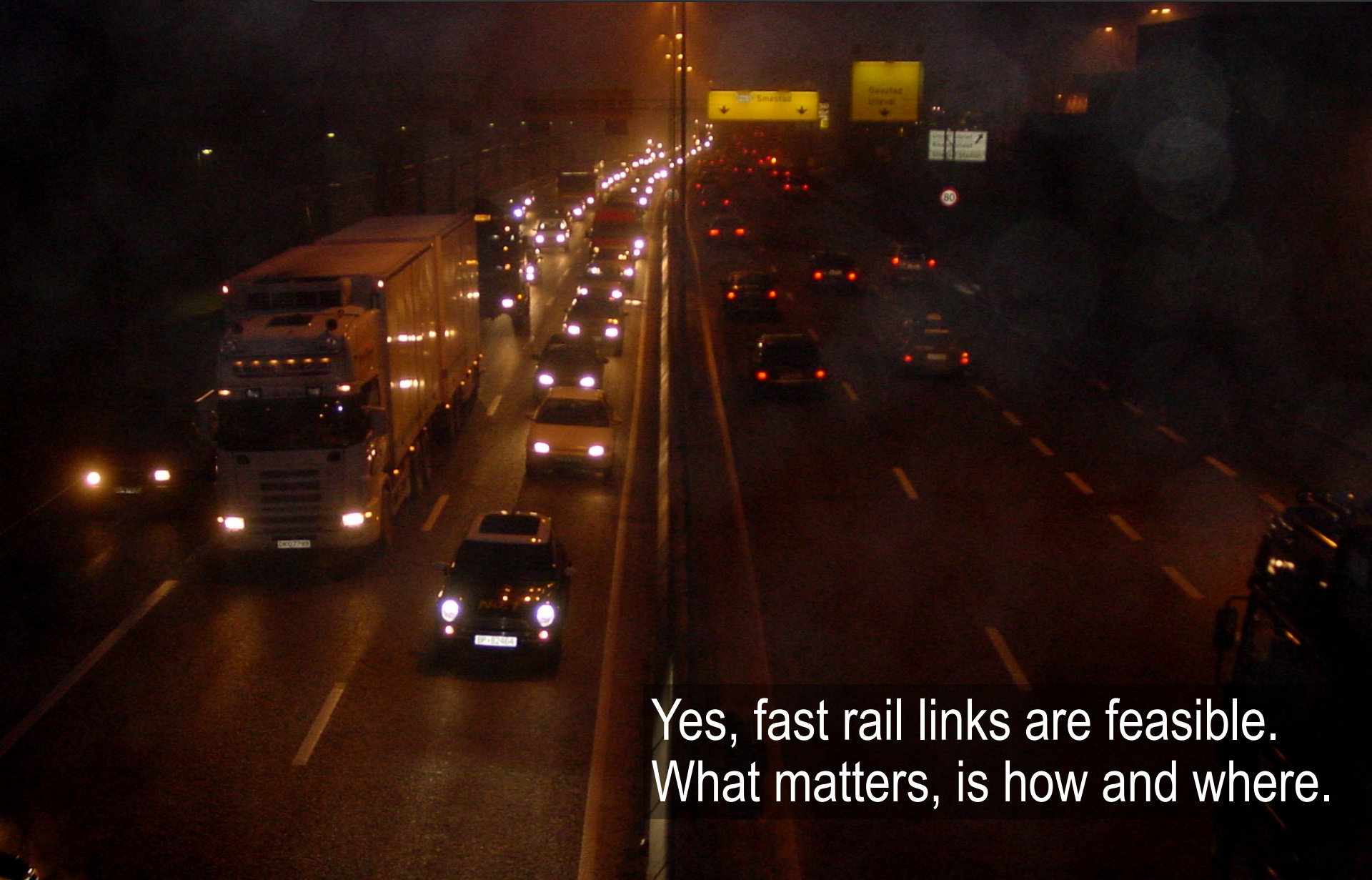
High speed and capacity for Oslo – Stockholm, both passenger & freight.

Increasing importance with Oslofjord-link to West-/Southwest Norway.

# We have a choice!

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Yes, fast rail links are feasible.  
What matters, is how and where.

Thank you for your attention!

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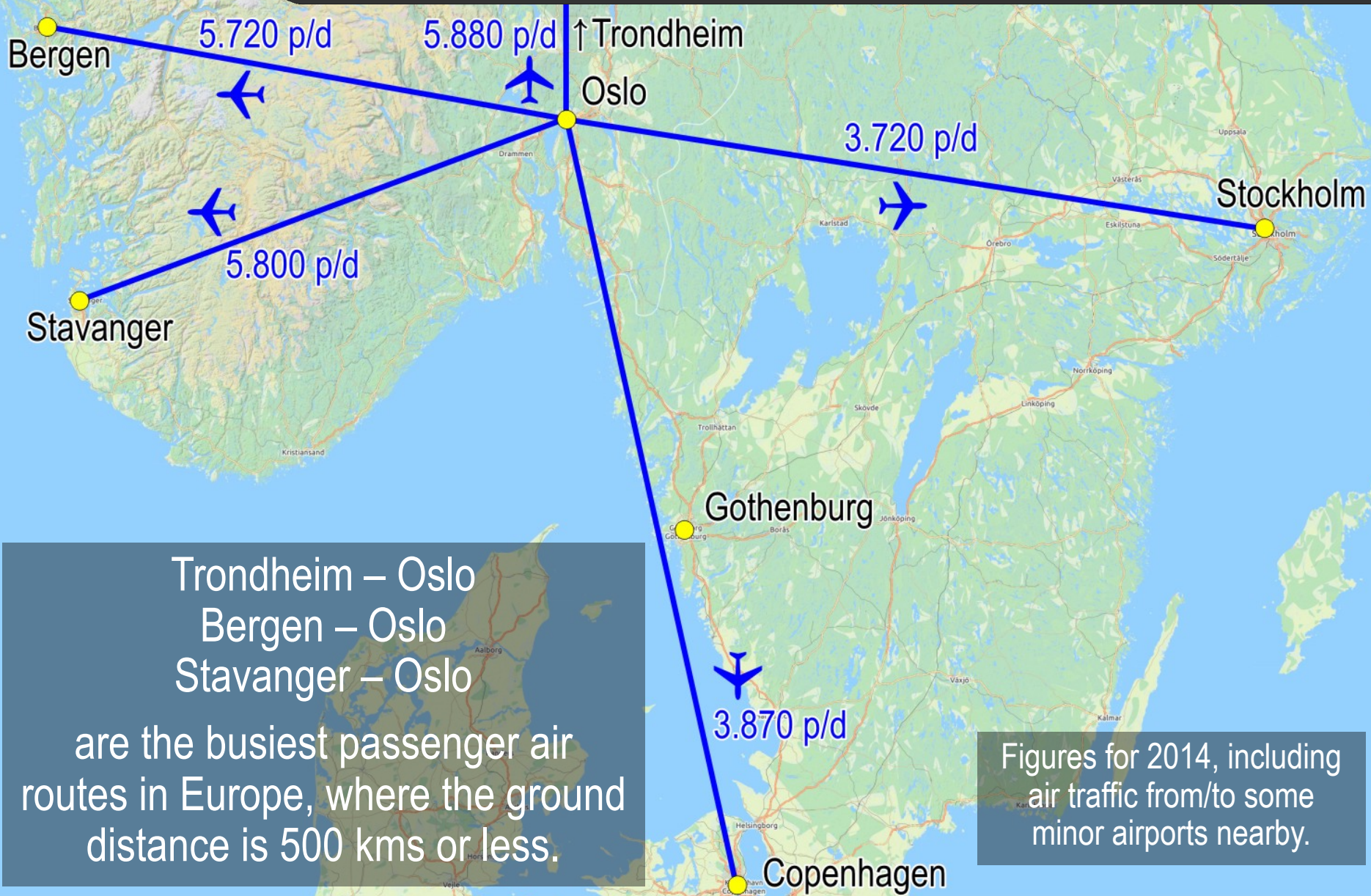
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# New railway lines in sparsely populated areas?

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Trondheim – Oslo  
Bergen – Oslo  
Stavanger – Oslo

are the busiest passenger air routes in Europe, where the ground distance is 500 kms or less.

Figures for 2014, including air traffic from/to some minor airports nearby.

# Quick clay slide Sørum municip., 10.11.2016

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# Risk for quick clay slides

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Existing line Oslo - Stockholm  
near Årnes, 60 kms from Oslo

Bruk knappen for å veksle mellom tegnforklaringene.

(Topografi) >>>

### TEGNFORKLARING

Kvikkleire - faregrad  
Innbyrdes rangering av  
vurderte områder

- Øy
- Middels
- Lav

Les om opphavsrett under knappen "Om dataene".

# Proposed new line "Vestlandsbanen"

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Bergen

Oslo

Stavanger

Bergen – Oslo: 2:10 h. – 2:25 h. (1:46 h. nonstop)

Stavanger – Oslo: 2:10 h. – 2:25 h. (1:48 h. nonstop)

Bergen – Stavanger: 1:25 h. – 1:35 h. (1:11 h. nonstop)

Sufficient time for many intermediate stops.

Kristiansand

Trollhättan