

NYE VEIER

STATUS PROJECT E39 KRISTIANSAND - SANDNES

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*Anette Aanesland,  
Director of Technology and Development Strategy*



We construct  
**good** roads  
**quickly** and  
**smartly**



Renew  
Improve  
Assure



# Agenda

1. About Nye Veier AS
2. Status Project E39 Kristiansand - Sandnes

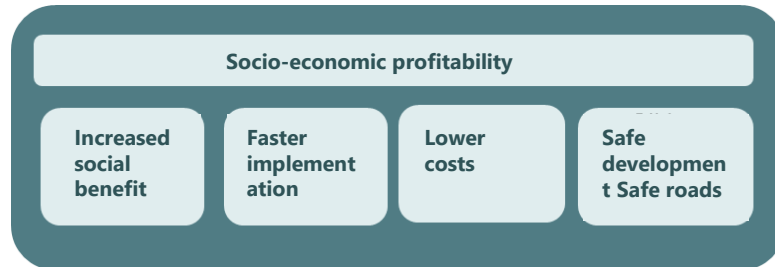
# Nye Veier AS

- Founded as an interim company spring 2015
- In regular operation since 1 January 2016
- Wholly owned by Ministry of Transport and Communications
- Headquarters in Kristiansand
- A streamlined and effective client organization
- 120 employees by August 2017
- Building 534 km of highways, mainly 4-lane
- Turnover 148 billion NOK over 20 years



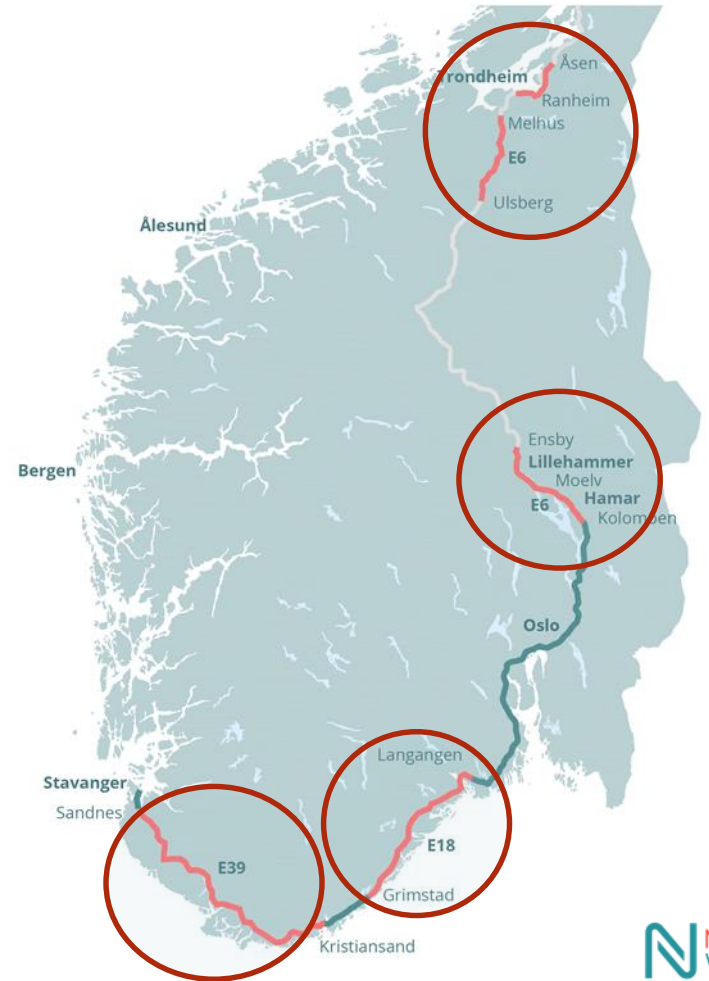
# Company mission

- Report to the Storting 25 (2014/2015) – På rett vei (On the right track)
- Plan, build, operate and maintain important main roads
- Comprehensive and cost efficient development and operation of safe main roads
- Strengthen the competitiveness of trade and industry
- More efficient, predictable and safer road transport
- More road for the money



## Four development areas

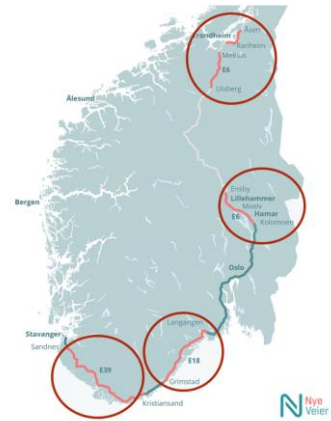
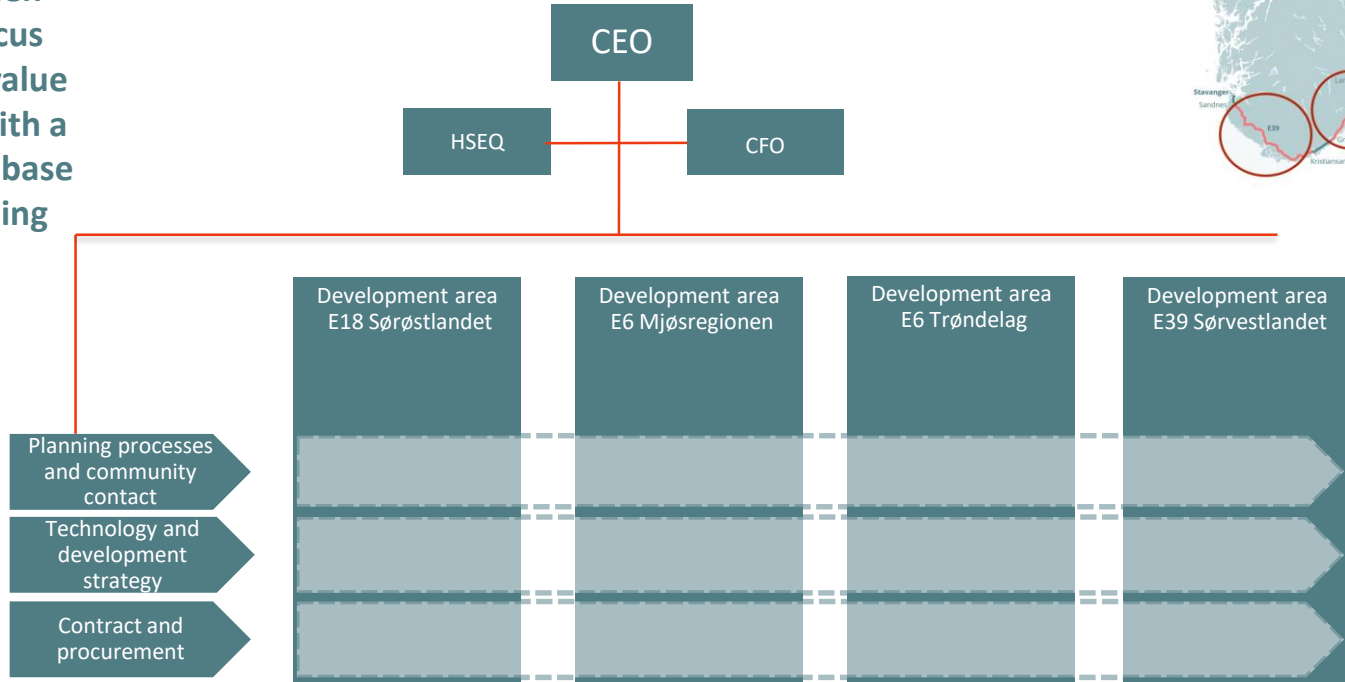
- E6 Trøndelag
- E6 Mjøsregionen
- E18 Langangen–Grimstad
- E39 Kristiansand–Sandnes



# Matrix organisation

Nye Veier AS has been organised with a focus on creating added value in these projects, with a strong professional base organisation operating across the projects

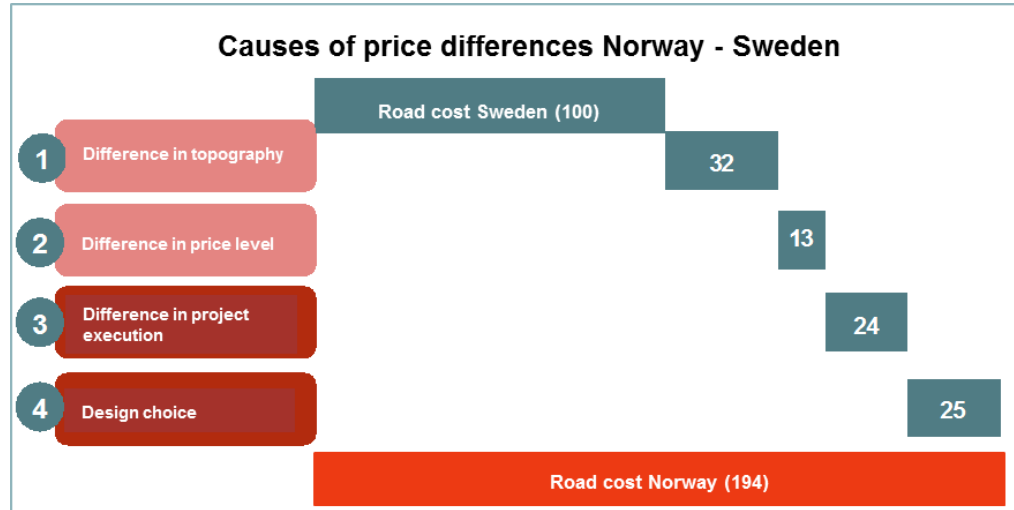
Specialist resources working across the projects – placed geographically out in the field and in Kristiansand



## True description of the problem – Swedes are far more efficient

We cannot solve everything – so focus on:

- Project implementation/  
The execution model
- Design choices



## “Normalveien” – Nye Veiers Standard Road

- Standardised design of the road network
- We demand
  - up-to-date standards
  - guidelines
  - norms and
  - established practice in the industry
- “Normalveien” (Nye Veiers standard road) will be an important contribution in the work to define how NV shall build their roads **faster**, more **uniformly**, more **cost effectively** and of **good quality**.



## “Normalveien” – Nye Veiers Standard Road

Standardised design and construction – assessed with regard to:

- Traffic safety
- Accessibility
- Environment
- Society's wishes/requirements as to how Nye Veier AS shall construct roads
- Lifetime standard
- Opinion
- Other conditions, including landscape/aesthetics

Will lead to an increase in deviations - NPRA Manuals

# Our execution model



Nye Veier is the developer

**Early involvement** of contractors and consultants provide more **innovation and smarter solutions**. The industry gets to apply its competence, new technologies, and industrial solutions, thereby boosting growth in **productivity in the industry**.

The contract (the **turnkey**) is entered into with a contractor that will **design, build, operate, and maintain** the road.

Operation and maintenance is carried out by the contractor, giving the contractor an **overall operational responsibility for a 20 year period**.

This process results in **cheaper and more efficient road construction** compared to other ways of constructing roads.

gængs kontrakter. Nye Veier tilføjer:

« Dette ser vi på med stor glede og yndelykhet. Vi er utrolig glad for at Nye Veier vil sette oss denne tilfellen. Vårt anliggende har gjort en fantastisk innats med anbudssvaret, sier Grungstøl.

men generelt er det et godt utgangspunkt for vi historisk har fått til på anbudsmøder.

AF Gruppen er også prequalifisert i de to kommende store veiprosjektene Nye Veier skal de kontrakter i neste år.

*«Hvordan kommer til å bli de*

## A boost for the industry and road construction

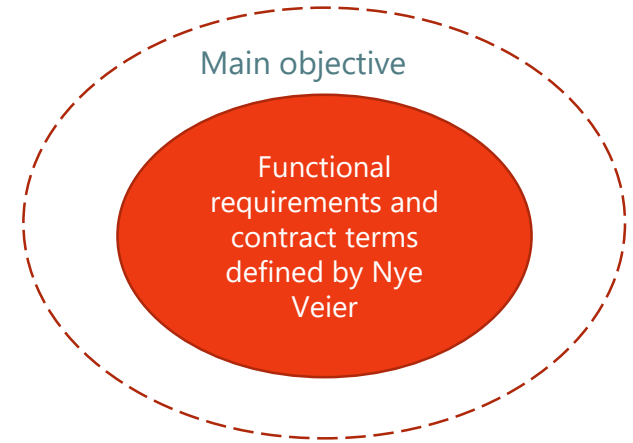
- **Technology and innovation** in projects results in a more competitive Norwegian industry
- Requiring **50% certified workers** in projects
- **Digitalization** through the whole process gives technology an advantage
- **More standardization** – prefabrication of for example bridges



# Best Value Procurement (BVP)

Tender documents - 6 pages containing:

- **Performance** (2 pages) - 25%
- **Project risk** (2 pages) - 15%
- **Added value** (2 pages) - 10%
- **Tender amount** – less than the Target price - 25%
- **Interview** (qualification and experience) - 25%



## HSE Charter – from vision to target

All accidents have a reason and can be prevented.

Our only acceptable target is:

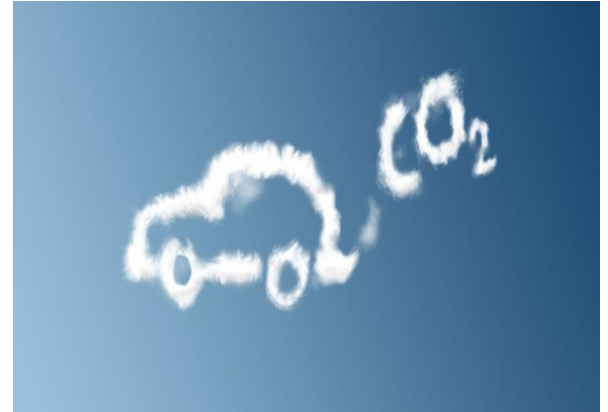
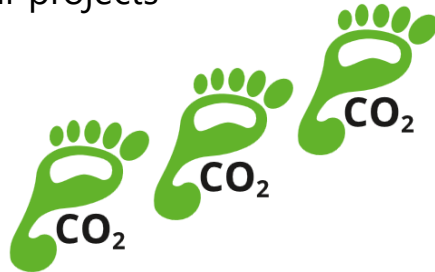
- **Zero** work related personal injuries (TRI)
- **Zero** third party injuries
- **Zero** environmental accidents



# Contributing to lower CO<sub>2</sub>-emissions and reaching 2030 targets

Nye Veier is proactive in order to reach emission targets in the Norwegian National Transport Plan (NTP):

- Contribute with zero emissions technology
- Stimulate the use of alternative fuels
- Make conscious choices of which material to use in our projects



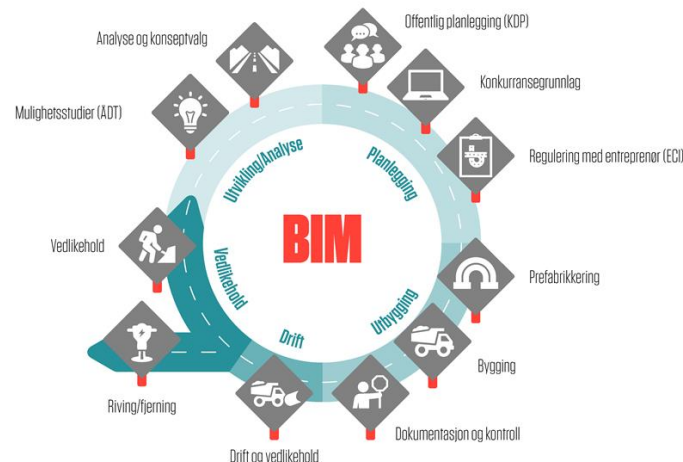
# Digitisation

## Desired use of BIM models in transportation

- Model-based planning, utilising "no drawings"
- Machine control in production
- Control of geometry and function
- CO<sub>2</sub> accounting
- Quality control
- Approval
- Monthly reporting
- Progress reporting
- MOM documentation from the model
- Updating in the operational phase
- All documentation in one location
- Transfer of experience to the plan

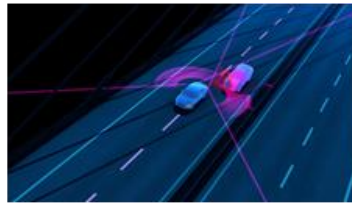


Foto: Volvo



## A paradigm shift in the making

- The “smart highways” are coming.
- Wireless charging technology is already being used in public transport in countries such as South Korea, the United States, Germany, and Belgium.
- Autonomous cars underway.
- Highway infrastructure is the key.



*Foto: Volvo Car Group og Mercedes-Benz*

# Agenda

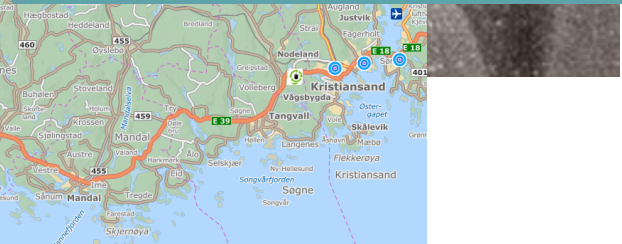
## 1. About Nye Veier AS

## 2. Status Project E39 Kristiansand - Sandnes

Using simulation and detailed planning for all operations increases safety during construction

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## E39 Kristiansand – Sandnes

- Very poor standard
- High level of HGV use
- Big winter operating problems



Politiet advarer mot svært glatte veier flere steder på Agder tirsdag.  
FOTO: ANNE WIRSCHING / NRK



Flere vogntog sto fast i Vatnebakkken på E 39 mellom Mandal og Søgne, og skapte ke i begge retninger.  
FOTO: Jon Anders Skau

TRAFIKK

### Vogntog sperret E 39

Flere vogntog sperrer E 39 mellom Mandal og Søgne torsdag ettermiddag.

KJETIL NYGAARD

+ FØLG

OPPDATERT: 24.JAN. 2014 14:36 | PUBLISERT: 23.JAN. 2014 15:31

## Project division

- E18/E39 Vige-Kristiansand west (Outer ring road) 10 km
- E39 Kristiansand west – Lyngdal west 62 km
- E39 Lyngdal west- Flekkefjord east 17 km
- E39 Flekkefjord east– Sandnes (Aalgaard): 80 km





## E39 Kristiansand-Sandnes

Total: 169 km

- 19 km: Already zoned
- 60 km: Agreed partial municipal master plan
- 90 km: Partial municipal master plan ongoing

AADT in opening year: 6200-23000





# E39 Kristiansand-Sandnes

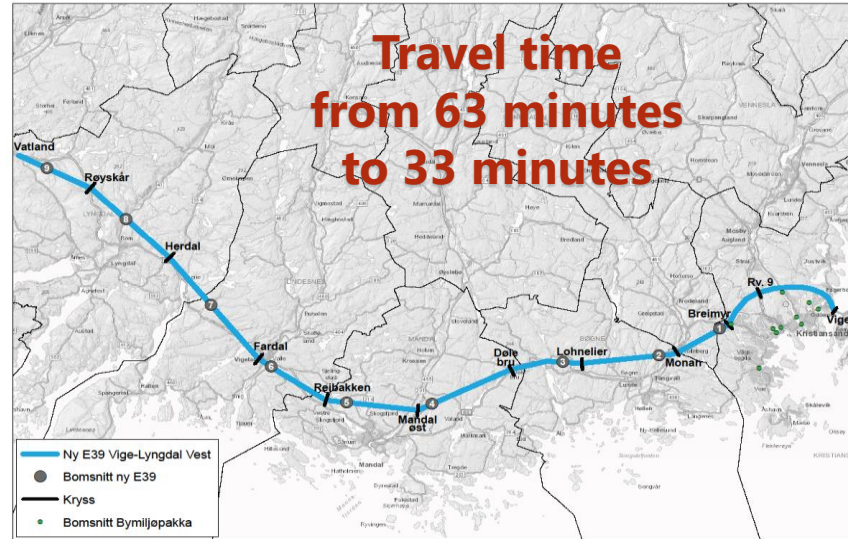


Road works	Plan status	Length	ADT (in opening year)	Number of tunnels	Number of bridges	Number of two-level interchanges
<b>E18/E39 Vigje-Kristiansand west (Outer ring road)</b>	Decision of the Ministry of Local Government and Regional Development	10 km	15000 - 20000	3 (8 km total)	4	2
<b>E39 Kristiansand west – Mandal east (Breimyr-Døle bridge)</b>	Zoning plan in progress Expected to be agreed in June 2017	19 km	15000-23000:	5 (6.7 km total)	7	3
<b>Mandal east – Vigeland (Døle Bridge – Fardal)</b>	Agreed partial municipal master plan	25 km	11000	4 (4 km total)	16	3
<b>E39 Vigeland-Lyngdal west (Fardal-Handeland)</b>	Agreed partial municipal master plan	26 km	6200-10100:	4 (10 km total)	7	2
<b>E39 Lyngdal west - Sandnes</b>	Partial municipal master plan ongoing	97 km	8600-11200:	12 (36 km total)	33	8
<b>TOTAL</b>		<b>169 km</b>	<b>6200-23000</b>	<b>28 (63 km)</b>	<b>67</b>	<b>18</b>



## The first prioritised stretch in the development area

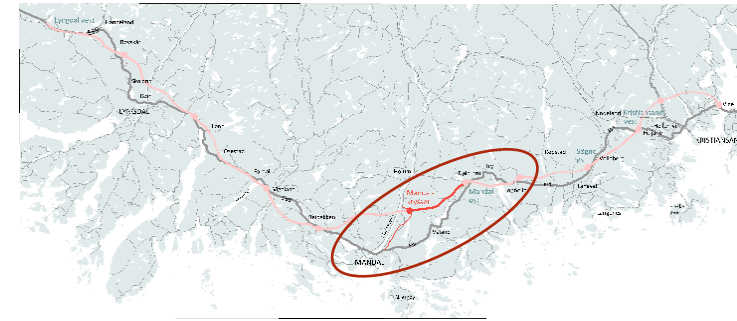
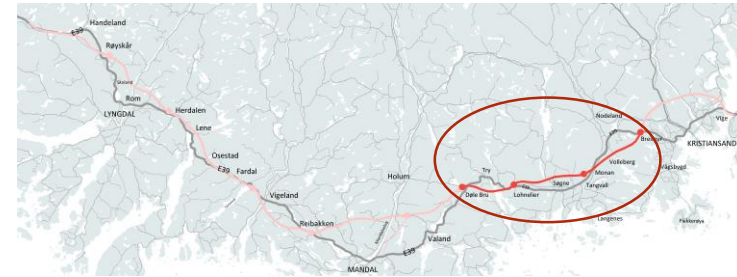
- Kristiansand west – Lyngdal west
- 62 km road
  - 21 km of tunnel (13 pcs.)
  - 33 bridges
  - 39 km of open road



# E39 Kristiansand west - Lyngdal west (62 km)

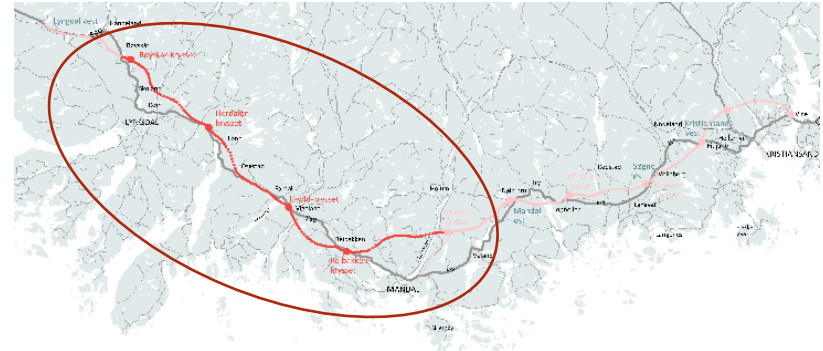
## Preparation of contract strategy

- **First contract**
  - Already zoned stretch (19km)
  - 6.7 km of tunnel
  - 7 double bridges, including a 520m cantilever bridge
  - Construction start 2018
- **Second contract**
  - Preparation of the zoning plan will be included in the task (approximately 11 km)
  - 0,5 km of tunnel
  - Construction start 2020



## E39 Kristiansand west - Lyngdal west (62 km)

- **Third (and fourth) contract**
  - Preparation of the zoning plan will be included in the task (approximately 37,1 km)
- Construction start 2022



# 1 MOST OF THE E39 KAN BE COMPLETED IN 2026

- Master plan
- Zoning plan
- contract signing
- Rigging
- Construction

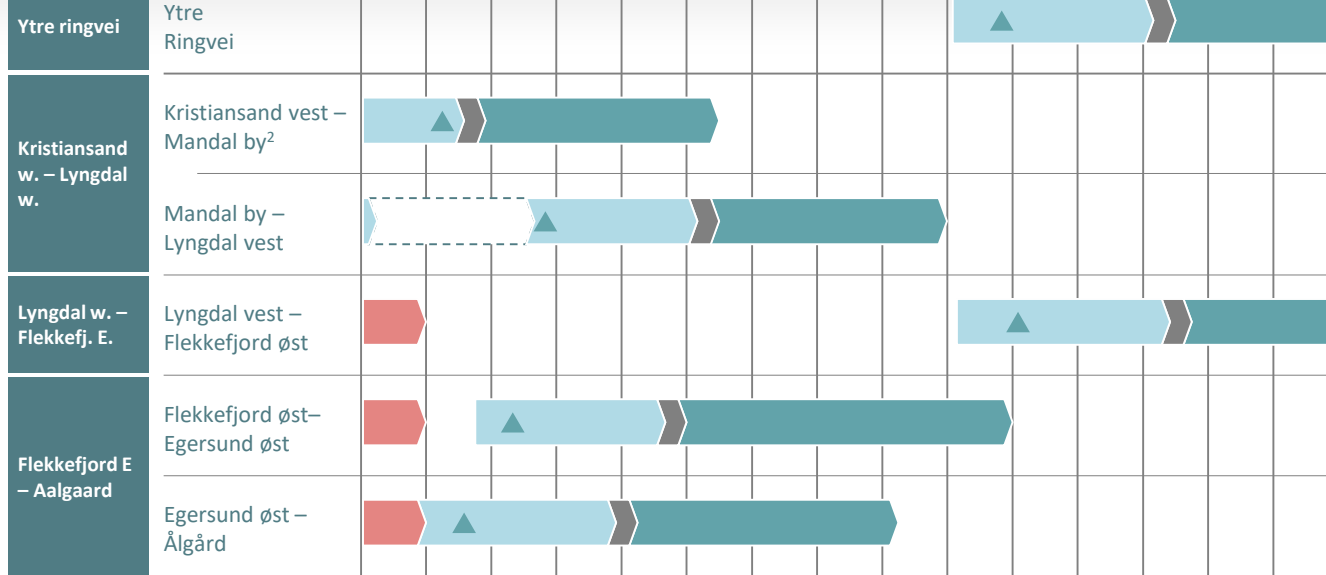
## assumptions



### Project

### Contract

År 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031



- First contract from the east: Kristiansand-Mandal

- Our first contract from the west will, be out in the market as soon as possible, and as soon as funds are available

## E39 Kristiansand – Sandnes

- Very poor standard
- High level of HGV use
- Big winter operating pr



Politiet advarer mot svært glatte veier flere steder på Agder tirsdag.  
FOTO: ANNE WIRSCHING / NRK



skapte ke i begge retninger.

39

og Søgne torsdag ettermiddag.

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[www.nyeveier.no](http://www.nyeveier.no)



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