Trondheim, 20th of September 2016

Fjord Crossings
Teknologidagene 2016

Mathias Egeland Eidem, Project manager, Fjord Crossing Project
Fjord crossings along the E39 Route

<table>
<thead>
<tr>
<th>Location</th>
<th>Length</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halsafjorden</td>
<td>2 km</td>
<td>5–600 m</td>
</tr>
<tr>
<td>Julsundet</td>
<td>1.6 km</td>
<td>5–600 m</td>
</tr>
<tr>
<td>Romsdalsfjorden</td>
<td></td>
<td>Sub sea rock tunnel, 13 km, 330 MUH</td>
</tr>
<tr>
<td>Vartdalsfjorden</td>
<td>2.1 km</td>
<td>600 m</td>
</tr>
<tr>
<td>Sulafjorden</td>
<td>3.8 km</td>
<td>500 m</td>
</tr>
<tr>
<td>Nordfjorden</td>
<td>1.5 km</td>
<td>500 m</td>
</tr>
<tr>
<td>Sognefjorden</td>
<td>3.7 km</td>
<td>1250 m</td>
</tr>
<tr>
<td>Bjørnafjorden</td>
<td>6 km</td>
<td>5–600 m</td>
</tr>
<tr>
<td>Langenuen</td>
<td>1.3 km</td>
<td>500 m</td>
</tr>
<tr>
<td>Boknafjorden</td>
<td></td>
<td>Sub sea rock tunnel 27 km, 390 MUH</td>
</tr>
</tbody>
</table>
The Fjord Crossing Project

Who are involved in the work:

- 35 professionals in the NPRA, with focus on: structural design, aerodynamics, hydrodynamics, geology, geotechnics, metocean, risk, maintenance+++

- 21 PhDs/PostDoc’s at NTNU, UIS, Chalmers, DTU og SDU (incl. contributions from the industry)

- Over 20 consultant companies/other companies are/have been involved
Fjord crossings

Single-span Suspension bridge

Preferred solution on the following crossings:
- Julsundet
- Nordfjord
- Langenuen

Considered a viable option on the following crossings:
- Halsafjord
- Vartdalsfjord
- Sulafjord*
- Sognefjord*

*span of approx. 3 km or wider

Fjord crossings

Multi-span Suspension bridge with fixed towers

Considered a viable option on the following crossing:

- Sulafjorden
Multi-span Suspension bridge with floating towers

Considered a viable option on the following crossings:

- Halsafjord
- Vartdalsfjord
- Sulafjord
- Sognefjord
- Bjørnafjorden

Fjord crossings
Fjord crossings

Submerged Floating Tube Bridge

Considered a viable option on the following crossings:

- Halsafjorden
- Sulafjorden
- Sognefjorden
- Bjørnafjorden

Fjord crossings

End Anchored Floating bridge

Considered a viable option on the following crossings:

- Halsafjorden
- Vartdalsfjorden
- Bjørnafjorden
- Sognefjorden**

**Not really

Side Anchored Floating bridge

Considered a viable option on the following crossings:

- Halsafjorden
- Vartdalsfjorden
- Bjørnafjorden
Fjord crossings
Identification of design ships
Fjord crossings
Identification of Environmental actions
Fjord Crossings

Investigation of ground conditions
«I take the vision which come from dreams, and apply the magic of science and mathematics, adding the hairetage of my profession to create a design. I am an engineer. I serve mankind by making dreams come true.»

Unknown Indian Engineer on the Kankon Railway Project
These are the engineers that make your dreams come true!

Thank you for listening!