Population: 4.6 million
Area: 324 000 km²
Public roads in total: 93.000 km
National roads: 27.000 km
County roads: 27.000 km
Municipal roads: 39.000 km
Bicycle tracks/footpaths: 3.150 km
Governmental Organization

- The Norwegian Parliament
- Ministry of Transport and Communications
- Norwegian Public Roads Administration
NPRA is divided into 5 regions
From Road Plan to Road Traffic Plan and Transport Plan
National Transport Plan 2010 - 2019
Organisation

Ministry of Transport and Communications

6 Administrative Agencies
- Accident Investigation Board/Norway
- Norwegian National Rail Administration
- Public Roads Administration
- Norwegian Railway Inspectorate
- Civil Aviation Authority
- Norwegian Post and Telecommunications Authority

5 State-owned companies
- Norwegian State Railways
- Flytoget AS
- Norway Post
- Avinor AS (Norwegian Air Traffic and Airport Management)

Ministry of Fisheries and Coastal Affairs

6 Administrative Agencies
- The Norwegian National Coastal Administration
Road tolling in Norway (1)

- Norway has 70 years of road tolling experience to finance expensive infrastructure
- More than 100 road toll projects are implemented
- 44 road toll projects are in operation today, including 6 urban toll rings
- Norway has been a pioneering country in developing cost efficient road tolling
Road tolling in Norway (2)

- Up to the middle of the 1980’s bridges (and tunnels) in rural areas dominated, and state funds constituted the main financing.

- From the middle of the 1980’s there has been a development of toll projects on the main road network as well as in urban areas.
Tolling Projects in Norway today

Pioneers:

• **Bergen** (1986), our first toll ring

• Ålesund* (1987), the first toll plaza with EFC in the world

• The toll rings in **Oslo** (1990) and **Trondheim** (1991) have been other important pioneering projects

*Pioneers:
The main purpose of road tolling in Norway is to raise funds for infrastructure, not to regulate traffic.

Road tolls revenues have been growing rapidly during the last 20 years:
- Since the end of the 1980’s road toll revenues have amounted to approximately 30% of the total funding for development of the national road network.
- In the action program for the period 2006-2009 road toll revenues is estimated to approximately 45%.
National Roads, Investments 2007

State funds: 6,6 bill. NOK
Toll financing: 4,8 bill. NOK (42 %)
Total: 11,4 bill. NOK
Road toll **revenues** have been growing rapidly during the last 20 years.

Million NOK (2005)

100 NOK = 900 ISK

- **Urban**
- **Rural**

<table>
<thead>
<tr>
<th>Year</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>0</td>
<td>205</td>
</tr>
<tr>
<td>1990</td>
<td>753</td>
<td>547</td>
</tr>
<tr>
<td>1995</td>
<td>1131</td>
<td>960</td>
</tr>
<tr>
<td>2000</td>
<td>1355</td>
<td>1195</td>
</tr>
<tr>
<td>2005</td>
<td>2149</td>
<td>2052</td>
</tr>
</tbody>
</table>
Road investments 1970-2006
– planned and actual appropriations + tolls

Statens vegvesen
Norwegian Public Roads Administration
Principles and national policies (1)

- All user charge projects are based on local initiative and local approval
  - All toll projects must be approved by The Parliament

- The benefit principle:
  - Those who pay shall benefit from the system (directly or indirectly)
  - Those who benefit shall pay

- Toll plazas on the parallel road network only in exceptional cases
Principles and national policies (2)

- The period of toll collection is normally limited to **15 years**, but may be increased to 20 years in particular cases.
- Normally at least **50 %** of construction costs are to be financed by tolls.
- Road toll projects must be viewed in connection with other projects when working out the **National Transport Plan** (must not jump the queue).
Principles and national policies (3)

• Collection of toll fees after the road is completed shall be the main rule
  – Parallel collection is acceptable in city packages
  – Advance collection current in ferry connection projects

• Approved zone plan for the project must be available
  – Exception for city areas/packages with several projects
Principles and national policies (4)

- Responsibility for cost increases
  - Single projects: The state has the responsibility for all cost increases above 10%
  - Packages: the contents of the package is adjusted to the financing programme

- Consequences of insufficient toll revenue
  - Increasing the toll period by up to 5 years
  - Increasing the toll fee by up to 20%
Norwegian Public Roads Administration

Rate and discount system

• The fees should not exceed the savings for the road users
  – For ferry connection projects a 40 % increase in the ferry fee is acceptable

• The rate and discount system shall be simple:
  – Two groups of fees (light and heavy vehicles)
  – Exemption for motor cycles, el-vehicles, passengers, public transport etc.
  – Discounts of 30-50 %, depending on number of passes

• Time differentiated fees in city areas (rush hour fee)

• As a main rule the fees are adjusted in accordance with the general price increase
The Collection company

- Normally the company is organised as a limited company where the majority is owned by local authorities. The enterprise is controlled through agreements between the company and the state.

- The company must raise the necessary funds to cover their obligations at the lowest possible cost (borrowing/toll collection).

- The company can not engage in other lines of business.

- Separate toll collection companies for each project/scheme.
# Urban toll rings in Norway

<table>
<thead>
<tr>
<th>City</th>
<th>Plazas</th>
<th>Start</th>
<th>End</th>
<th>Pop. in ar.</th>
<th>In op.*</th>
<th>AADT **</th>
<th>EFC %</th>
<th>Tags</th>
<th>NOK/ Pcu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bergen 1</td>
<td>8</td>
<td>1986</td>
<td>2004</td>
<td>300’</td>
<td>16/5</td>
<td>60’</td>
<td>-</td>
<td>-</td>
<td>5-10</td>
</tr>
<tr>
<td>Oslo</td>
<td>19</td>
<td>1990</td>
<td>2012</td>
<td>900’</td>
<td>24/7</td>
<td>250’</td>
<td>83</td>
<td>400’</td>
<td>10-20</td>
</tr>
<tr>
<td>Trondheim</td>
<td>12</td>
<td>1991</td>
<td>2005</td>
<td>250’</td>
<td>11/5</td>
<td>100’</td>
<td>95</td>
<td>150’</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>1998</td>
<td></td>
<td></td>
<td>12/5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kristiansand</td>
<td>5</td>
<td>1997</td>
<td>2007</td>
<td>100’</td>
<td>24/7</td>
<td>55’</td>
<td>84</td>
<td>30’</td>
<td>10</td>
</tr>
<tr>
<td>Stavanger</td>
<td>21</td>
<td>2001</td>
<td>2011</td>
<td>230’</td>
<td>12/5</td>
<td>150’</td>
<td>91</td>
<td>110’</td>
<td>5/10</td>
</tr>
<tr>
<td>Namsos</td>
<td>3</td>
<td>2003</td>
<td>2017</td>
<td>15’</td>
<td>12/5</td>
<td>7’</td>
<td>89</td>
<td>10’</td>
<td>13</td>
</tr>
<tr>
<td>Tønsberg</td>
<td>6</td>
<td>2004</td>
<td>2019</td>
<td>50’</td>
<td>24/7</td>
<td>50’</td>
<td>86</td>
<td>35’</td>
<td>15</td>
</tr>
<tr>
<td>Bergen 2</td>
<td>8</td>
<td>2004</td>
<td>2014</td>
<td>300’</td>
<td>24/6</td>
<td>100’</td>
<td>87</td>
<td>105’</td>
<td>15</td>
</tr>
</tbody>
</table>

* ' figure in thousands
** Hours a day and days a week
*** During hours of operation

Norwegian Public Roads Administration
Oslo Toll Ring

- Why?: To build 50 pre-defined projects in 10 instead of 35 years with state funds only
- Users contribute with 55% of funding
- The toll ring covers all roads in three corridors
- 50% of Oslos population live outside the toll ring
What do we get?

The major projects in the Oslo Package 1 are urban road tunnels

The most important of those is Festnings-tunnellen (The Castle Tunnel) below City Hall Square: 6 lanes, 1.6 km long, cost 2 billion NOK

It was important for the acceptance of the toll scheme that the Castle Tunnel opened 2 weeks before the toll collection started.
The City Hall Square before opening The Castle Tunnel

Photo: Mari Kollandsrud, Riksantikvaren
The City Hall Square after opening The Castle Tunnel

- The AADT was reduced from 90 000 to 0 vehicles
- New tram line opened
- A new plaza for walking, festivals and exhibitions

Photo: Mari Kollandsrud, Riksantikvaren
The City Hall Street before opening The Castle Tunnel
The City Hall Street after opening The Castle Tunnel
The traffic goes here (down to -45 m)

This traffic control centre for Oslo employs advanced systems for managing vehicle movement in the Oslo Tunnel and large parts of the main highway system around the capital.

Statens vegvesen
Norwegian Public Roads Administration
Oslo Toll Ring Experiences

- **Reduced delay** due to removal of bottlenecks
- **Reduced overall traffic** 3-5 %
- **Increased public transport** 6-9 %
- **Road space** above ground available for other uses
- **Removed barrier effects** from the surface street network
- **Reduced noise** from above ground traffic
- **Less pollution** (high chimneys, filtering)
- Improved traffic **safety**
AutoPASS

- A technical specification for electronic tags (EFC) owned by NPRA
- Independent of industry and open to all from 1999
- In full compliance with CEN and ETSI standards for DSRC
- 1,3 million tags in use
- National interoperability from Febr. 2004 and presently used in 25 toll projects
- Nordic interoperability from Febr. 2007
NorITs (Nordic Interoperability for Tolling Systems)
“No stop toll plazas” – the newest concept

- Drivers without AutoPASS will be videoed and billed monthly for the exact fee
- In Bergen and Tønsberg since February 2004
- The picture shows pilot station in Tønsberg
Future toll financing on the trunk road network

• Development of the trunk road network to be viewed as a whole, and implemented more efficiently
  – Continuous development of the network over a longer distance
  – Automatic toll plazas on each road section – collection of toll for max 15 years in each plaza after the section is completed
  – To a larger extent payment according to the length of road distance driven
Rush hour fee/road pricing (1)

- We have legal authority to introduce road pricing for the purpose of traffic control
  - The objective is traffic control to reduce queue problems and improve local environmental conditions
  - As a main rule local political support is needed – the Parliament makes a binding resolution
  - The revenue is to be used for transportation purposes in the area
  - The funds are to be shared between the state and local authorities
  - It is not considered natural to give the arrangement a limited duration
Rush hour fee/road pricing (2)

- Regulations regarding establishing the size of fees, distribution of net revenue etc, have not been worked out.
- No cities have taken the initiative to introduce the system, but
- Locally there is a proposition of an Oslo package 3 where part of the revenue is presumed to be used for public transport operation.
Rush hour fee/road pricing (3)

- We have toll rings around most of the largest Norwegian cities (Oslo, Bergen, Stavanger)
- A considerable part of the revenue from the toll rings is used to finance infrastructure measures for public transport
- It is possible to introduce time differentiated toll fees
Public Private Partnership (PPP)

- In 2001 Stortinget approved the National Transport Plan 2002-2011 including **three** road projects as pilot projects to test the PPP–model.
- Stortinget wanted to **test** whether the PPP-model is a more efficient way of developing road service than through traditional development.
- Stortinget also wanted to test whether PPP allows political influence and public control.
E39 Klett – Bårdshaug

- **Size:**
  30 km (22 km new built road section, including 10 km tunnels)

- **Contract signed with Orkdalsvegen A/S**
  (Skanska BOT and Laing Roads Ltd)
  [www.orkdalsvegen.no](http://www.orkdalsvegen.no)

- **Status:**
  Operating
  Opened 30 June 2005 - two months ahead schedule
E39 Klett - Bårdshaug
E39 Lyngdal - Flekkefjord

- **Size:**
  30 km (18 km new road, including 9 km tunnel and Feda suspension bridge 570 m)

- **Contract signed with Allfarveg AS**
  (Veidekke AS and Sundt AS)
  [www.allfarveg.no](http://www.allfarveg.no)

- **Status:**
  Operating
  Opened 30 August 2006 - on schedule
E18 Grimstad – Kristiansand

- **Size:**
  
  38 km of new build four lane motorway
  
  Investment element about 3.0 billion NOK

- **Contract signed with Agder OPS Vegselskap**
  
  BilfingerBerger, Sundt AS and Pihl & Son

- **Status:**
  
  Under Construction
  
  Will open in 2008 and 2009
E18 Grimstad – Kristiansand
The selected PPP Company is given the full responsibility for designing, constructing, building, financing and operating a road section on behalf of the NPRA for 20-30 years.
PPP Model

- **Payments**
  - No payments before the road is open
  - A base annual payment linked to delivery of service. The Payment mechanism defines the actual payment

- **Risk transfer**
  - Delivery of service to agreed specifications
  - No transfer of traffic income risk

- **Hand back**
  - Hand back to the operation of NPRA after 25 years of operation at defined technical specification
Payment mechanism

Linking payment to delivery:

- **Availability** Payment
  - Linked to the road being open and available
- **Maintenance Monitoring** Payment
  - Linked to the output specification of road delivery: friction, visibility of signposts, air quality in tunnels, winter maintenance etc.
- **Safety bonus** linked to the number and seriousness of accidents
- **Compensation for unexpected traffic volumes**
General Payment profile

Payments to the PPP Company

Norwegian Public Roads Administration
Final approval by Stortinget

- **White Paper to Stortinget based on:**
  - Approved development plan and EIA
  - Calculation of investments costs
  - Calculation of operation and maintenance costs
  - Estimates of annual payment to the PPP Company
  - Financing plan based on toll income and state budget funding
## Procurement process

<table>
<thead>
<tr>
<th>Event</th>
<th>Months from OJEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertisement OJEC</td>
<td>0</td>
</tr>
<tr>
<td>Open Day</td>
<td>1</td>
</tr>
<tr>
<td>Pre-qualification deadline</td>
<td>3</td>
</tr>
<tr>
<td>Appointment of pre-qualified bidders (short list)</td>
<td>4</td>
</tr>
<tr>
<td>Invitation to tender</td>
<td>4</td>
</tr>
<tr>
<td>Tender submission deadline</td>
<td>10</td>
</tr>
<tr>
<td>Appointment of bidders for BAFO</td>
<td>11 ½</td>
</tr>
<tr>
<td>BAFO tender documents</td>
<td>12 ½</td>
</tr>
<tr>
<td>BAFO submission deadline</td>
<td>14</td>
</tr>
<tr>
<td>Appointment of preferred bidder</td>
<td>15</td>
</tr>
<tr>
<td>Financial close</td>
<td>18</td>
</tr>
</tbody>
</table>
Thank you for your attention!

Astrid Fortun,
Norwegian Public Roads Administration

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Mobile: +47 909 32 053
Fax: +47 22 07 36 73