

ASSESSMENT OF EXPERTISE AND SKILLS OF WINTER MAINTENANCE OPERATORS

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TRAFIKVERKET

0. CONTENT

- **Introduction of the competence project**
- **Comparison of winter maintenance in Sweden and Norway**
- **Critical winter tasks and competence requirements**
- **Verification of winter competence**
- **Implementation in Sweden and Norway**
- **Benefit of common requirements**

1. NORWAY AND SWEDEN



2. INTRODUCTION



Interregional cooperation project between Sweden and Norway named Scandinavian Infrastructure Competence:

to improve competence in the infrastructure sector and make it easier for contractors to work across the border

Sub Project Winter road maintenance:

to make common requirements for winter maintenance competence and common system for examination of winter maintenance personnel in Sweden and Norway

Project period: 2012 - 2014

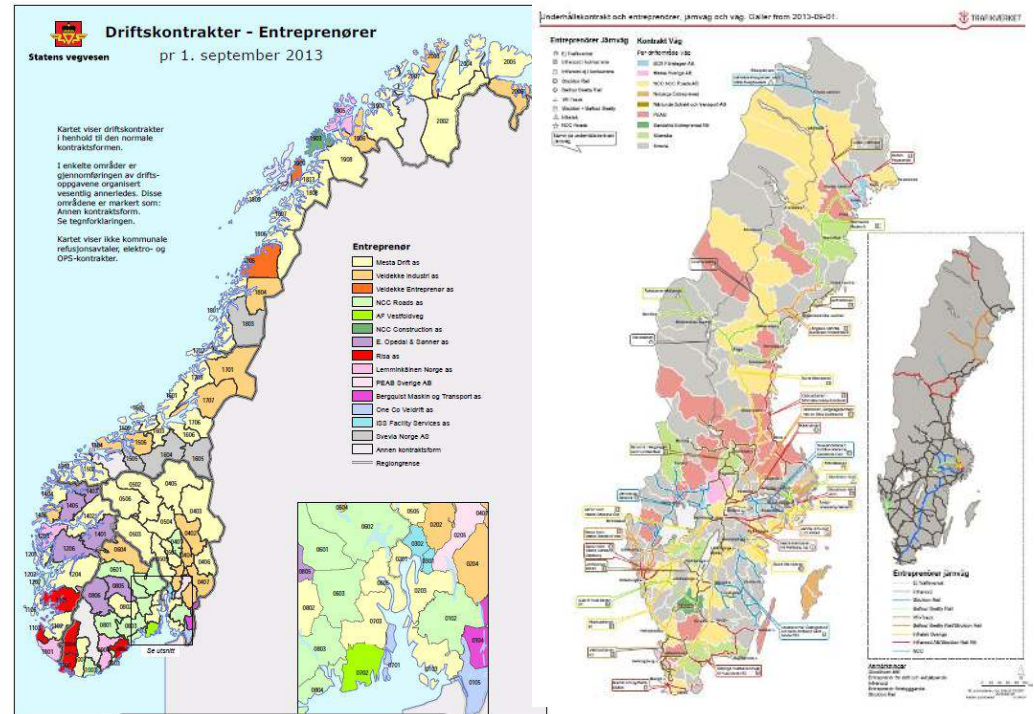
3. SCANDINAVIAN INFRASTRUCTURE COMPETENCE

Background and goals

- Project managed by the Swedish Transport Administration, the Norwegian Public Roads Administration and the Norwegian Rail Administration and supported by the European Union
- Aim to take a step towards a joint Scandinavian set of competence requirements based on European Qualification Framework (EQF) and a model for verification and management of the requirements
- In cooperation with industry actors, a number of full-scale tests of the requirement models shall be carried out
- Priority areas for testing of the requirement models are
 - safety work
 - **winter maintenance**

4. COMPARISON OF SWEDEN AND NORWAY

- Climate and nature
- Road and traffic
- Winter challenges
- Organization
- Maintenance Contracts
- Winter 50%
- Winter equipment
- Competence requirements



Need competent winter maintenance operators

5. CRITICAL WORK TASKS – WINTER OPERATION MANAGERS

- Planning of winter maintenance routes, re-allocating of resources due to traffic congestion or equipment breakdown
- Monitoring and interpretation of weather forecast, road weather information and road condition information
- Decision of snow and ice control actions and time for action
- Actions during extraordinary weather conditions (heavy prolonged snowstorms)
- Best practices during difficult weather conditions (rain freezing on the ground, extremely cold periods, etc)
- Traffic information
- Inspection and documentation

6. CRITICAL WORK TASKS – WINTER OPERATION STAFF

- Snow removal – snow plowing, snow and ice grading
- Friction improvement – use of sand (gritting) and salt (de-icing, anti-icing, anti-compacting)
- Operating winter maintenance equipment (connect, adjust, calibrate, daily maintenance)

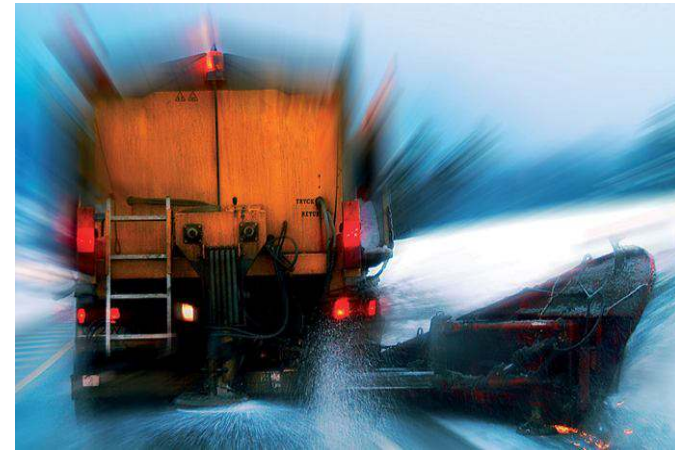


Photo: Knut Opeide, NPRA

- Winter operation staff making own decisions for operations:
- Monitoring and interpretation of weather forecast, road weather information and road condition information
 - Decision of snow and ice control actions and time for action

7. DESCRIPTION OF COMPETENCE REQUIREMENTS

Level of competence for most task should be experienced:

- able to make plans for his own field
- execute and identify resources for specialized tasks
- able to solve complex problems within his field

Competence requirements will be described in contracts

Examples:

- to know the effect of salting and gritting on road conditions and on traffic flow, traffic safety and the environment*

Most common competence requirements, some national

8. VERIFICATION OF REQUIRED COMPETENCE

Questions should cover the different disciplines:

decision making, meteorology, snow removal, salting, gritting, safety

Proposal:

- 40-50 questions with multiple choice answers
- 3-4 alternatives, all should seem reasonable, only one correct
- 70-80 % right answers to pass the test
- Oral examination if needed

A database with questions will be prepared

Example: *What is dew point temperature?*



Most common questions, some national

9. COMPETENCE = KNOWLEDGE + SKILLS + ATTITUDE/BEHAVIOR

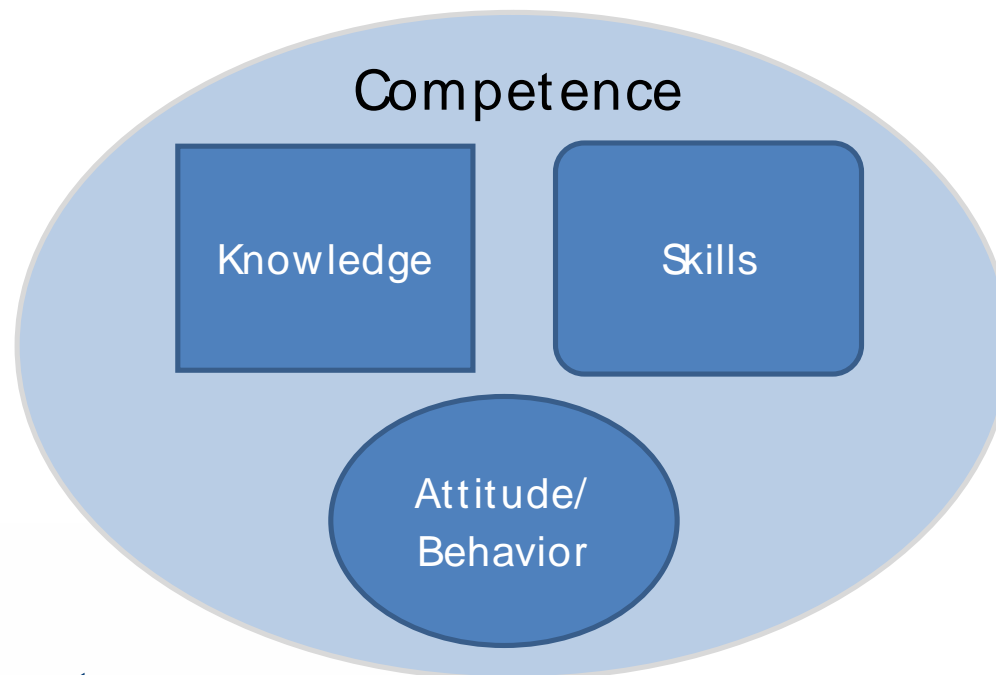
Focus in the first phase of the project:

- Theoretical knowledge

The next step should be to describe and verify:

- Practical skills
- Attitude and behavior
 - difficult to verify
 - depend on contract/payment

Main focus: safety and access



10. IMPLEMENTATION



Sweden: some competence requirements are included in the maintenance contracts in 2014 and questions for examination will be prepared before new contracts start in autumn 2014.

From 2015 the new system may be included in all new contracts.



Norway: existing requirements for winter personnel participating in winter course organized by the road authorities including a practical demonstration and test will continue till the sector have established their own training system.

New and improved competence requirements and questions for verification will be included in future contracts.

11. BENEFIT OF COMMON COMPETENCE REQUIREMENTS

- Easier for contractors to compete and work across the border
- Easier to document required competence
- Easier for road authorities to control that personnel has the required level of competence
- Improved competence in the sector
- More value for money invested
- Safer and better work conditions and improved status for maintenance staff

**Safe winter roads with
good traffic flow**



A wide-angle photograph of a snowy landscape. In the foreground, a snowmobile is moving across a snow-covered slope, leaving a trail of snow behind it. The middle ground shows a vast, flat expanse of snow. In the background, there are rugged, snow-covered mountains under a clear sky. The overall scene is bright and cold.

Thank you for your attention

Photo: NRK