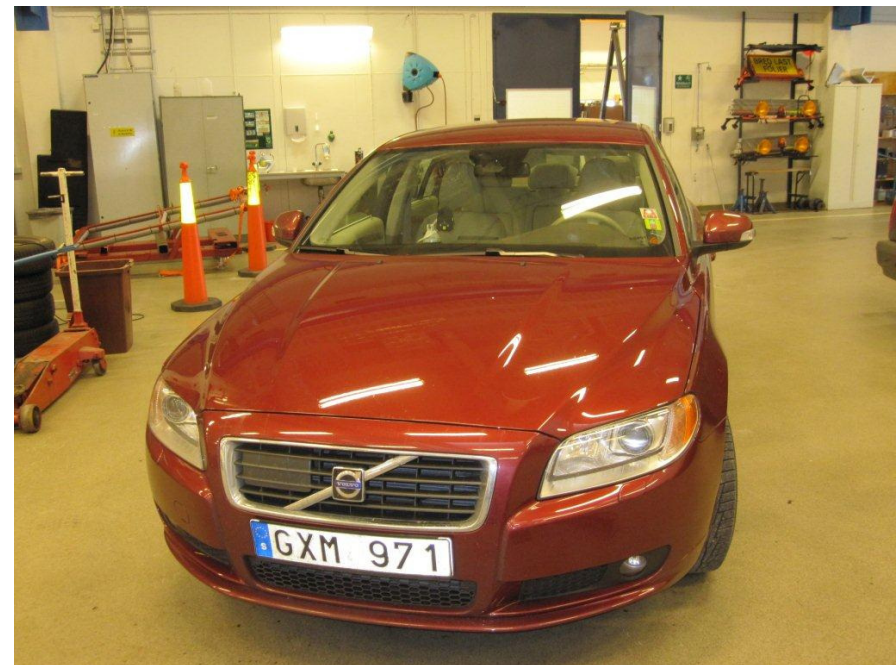
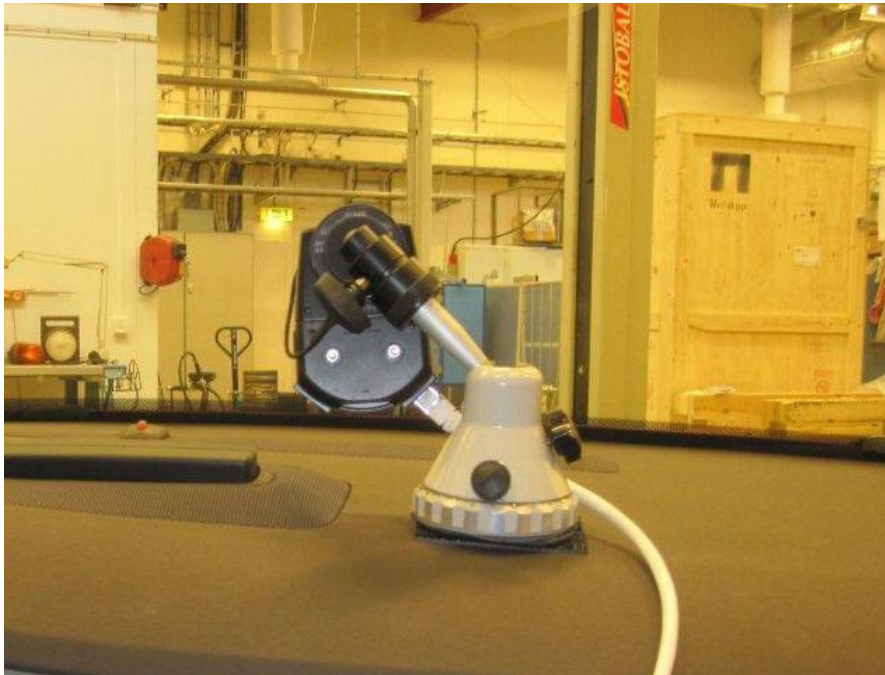


# *Lane Departure Warning System*

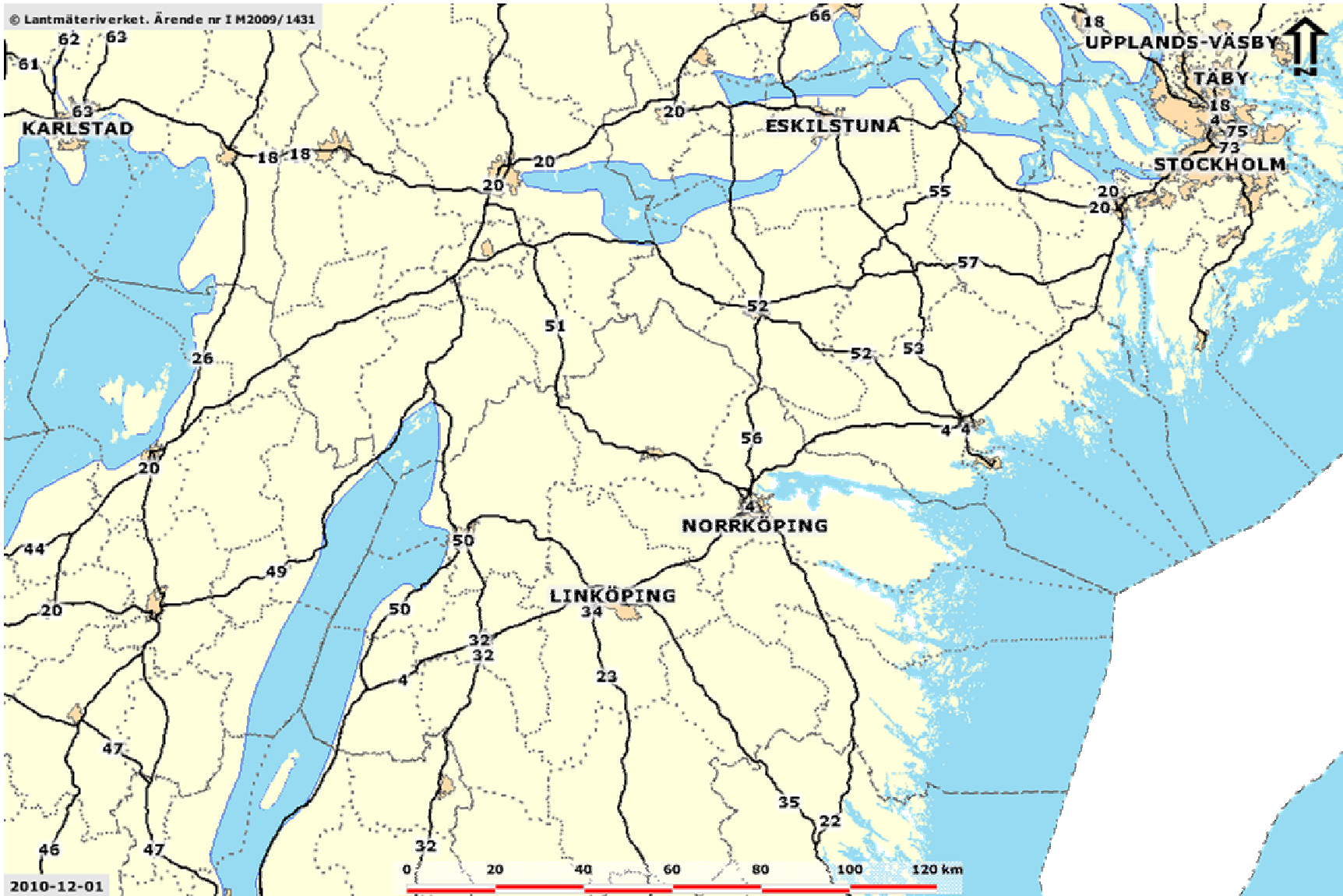
***System which warns for  
unintentional passing of a  
longitudinal road marking***

***(edge line, lane line, centre line)***



**Question:**

**What road marking performance is required for the LDW to work?**

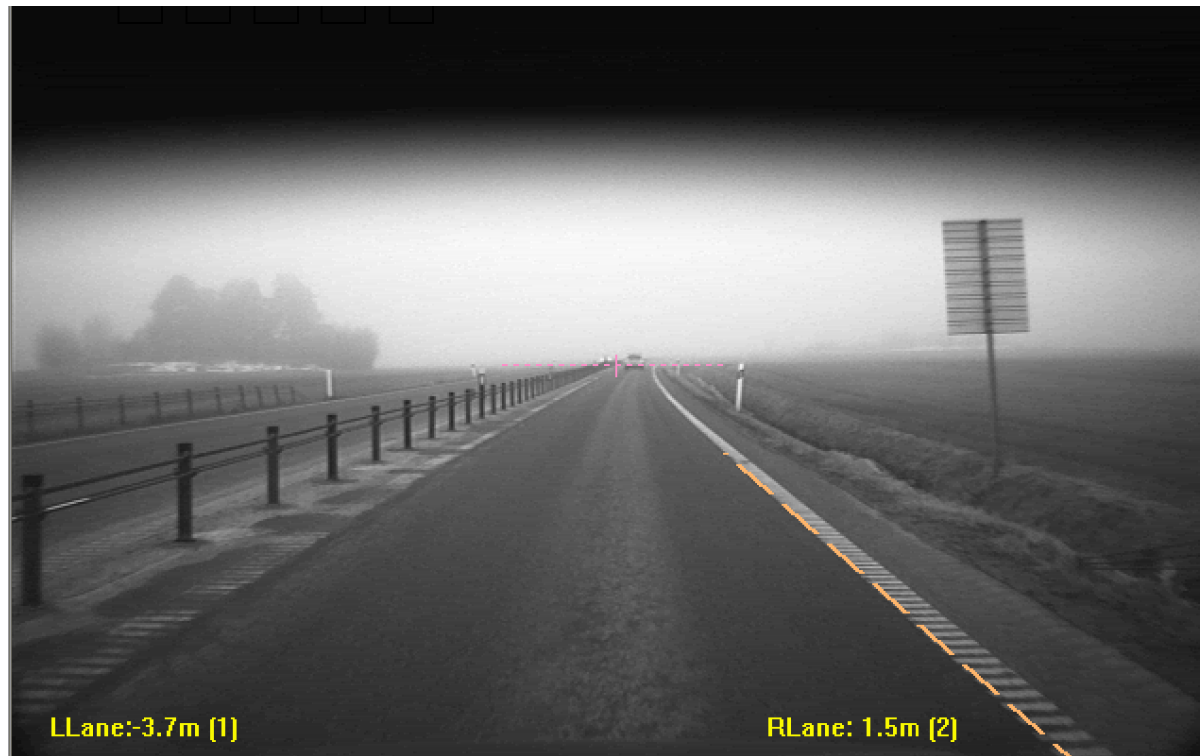




**2010-03-31 Accessibility 70 %**

**Daylight, dry but dirty**

***Not accessible on stretches with one lane due to dirt on the left edge line.***





# 2010-04-09 Accessibility 94 %

Daylight, wet, but not so dirty

*LDW missed 6 % on stretches with one lane due to dirty left edge line.*



# 2010-04-12 Accessibility 50 %

Daylight, dry, low opposing sun

*LDW missed 50 % due to glare.*

*Critical illumination at the eye was 30 000 lx.*





# 2010-04-12 Accessibility 98 %

Headlight illumination, dry

*LDW had very good accessibility*



# 2010-04-21 Accessibility 74 %

Headlight illumination, wet

*LDW sometime missed the flat lane line, which had poor visibility in wet condition.*



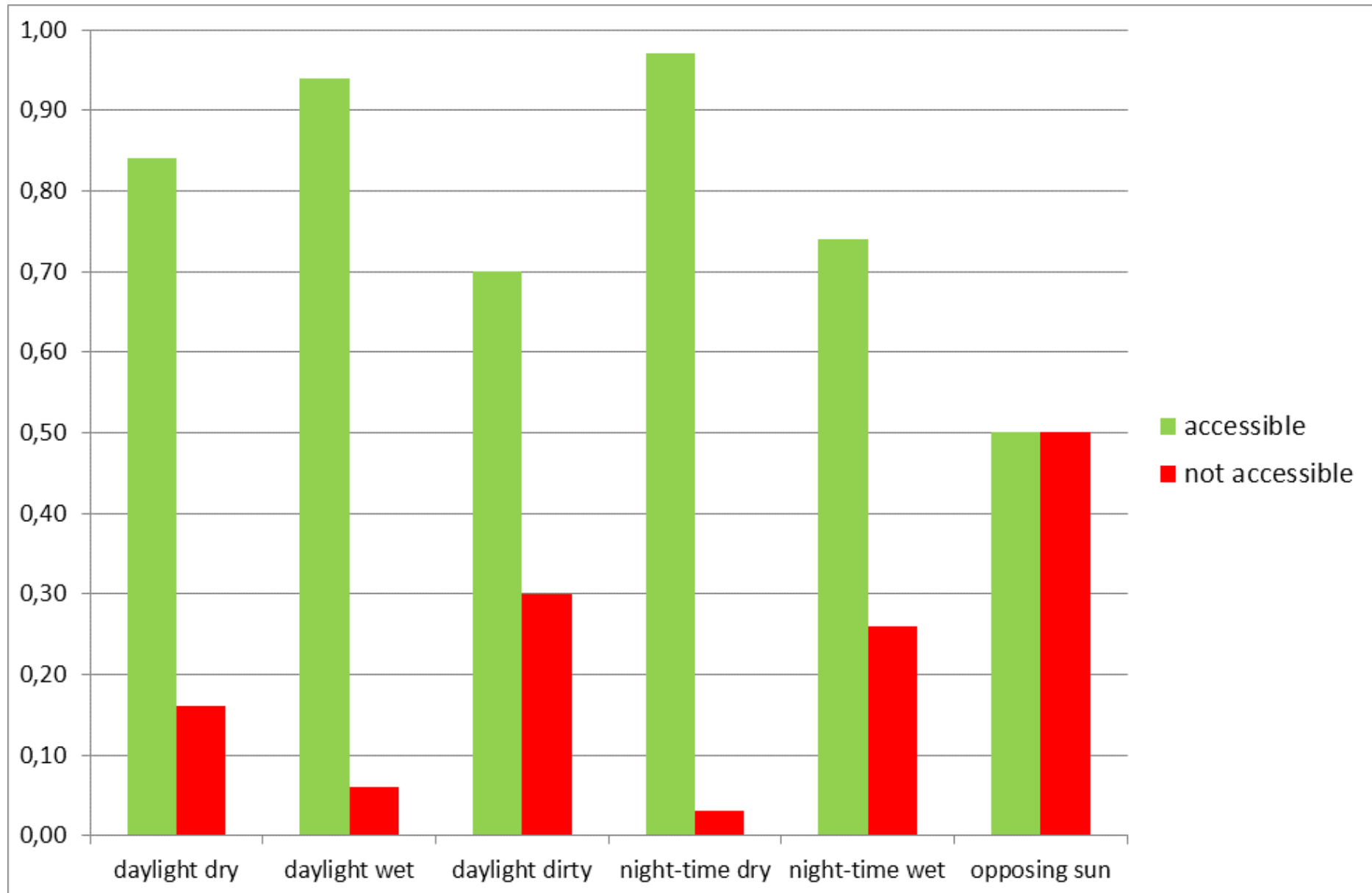
# 2010-04-21 Accessibility 84 %

Daylight, sunny

*Dirt on the left edge on stretches with two lanes.  
LDW missed when overtaking.*



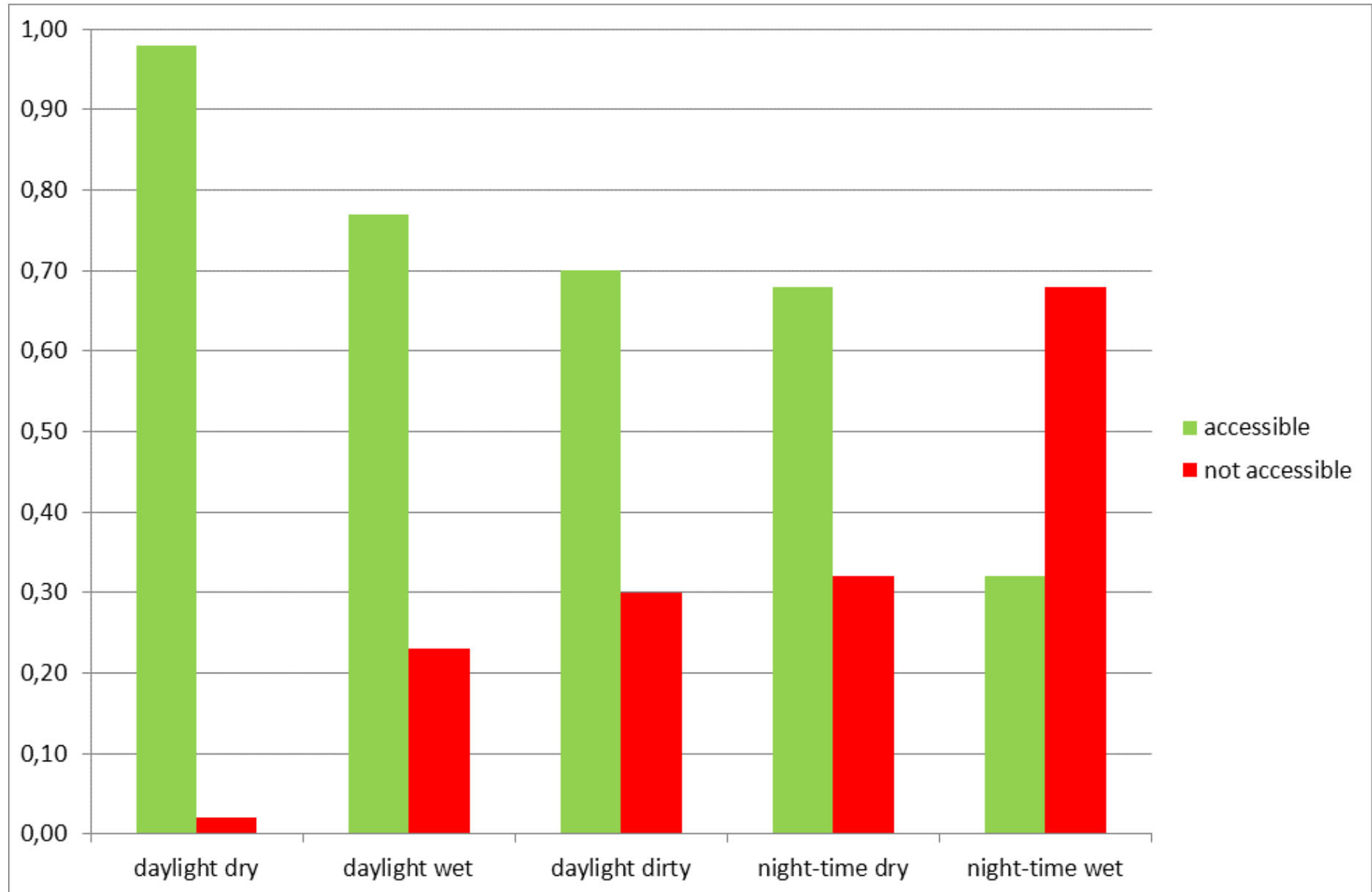
# Three-lane road



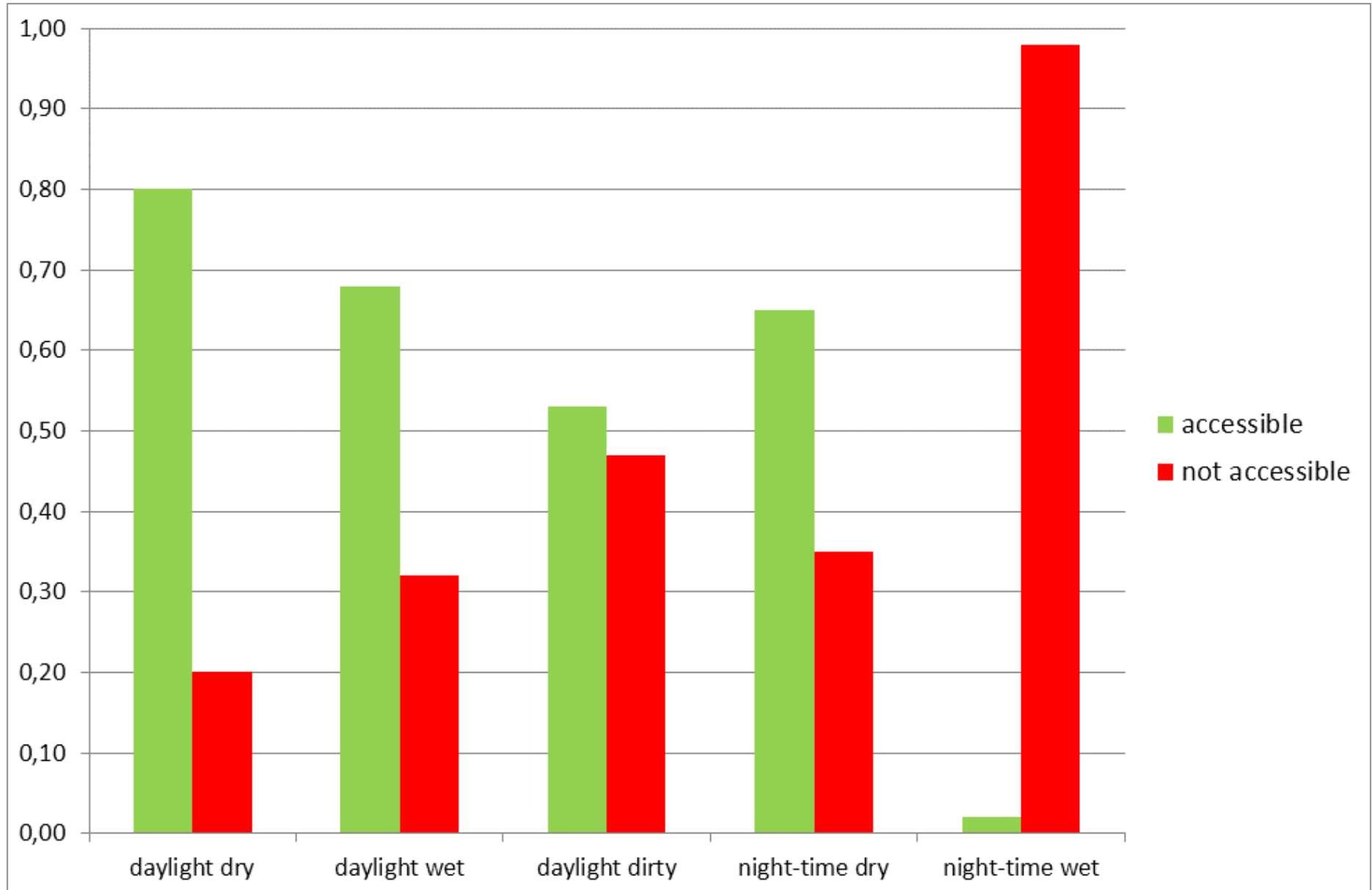
## 13 m wide road with wide shoulders



# 13 m wide road with wide shoulders

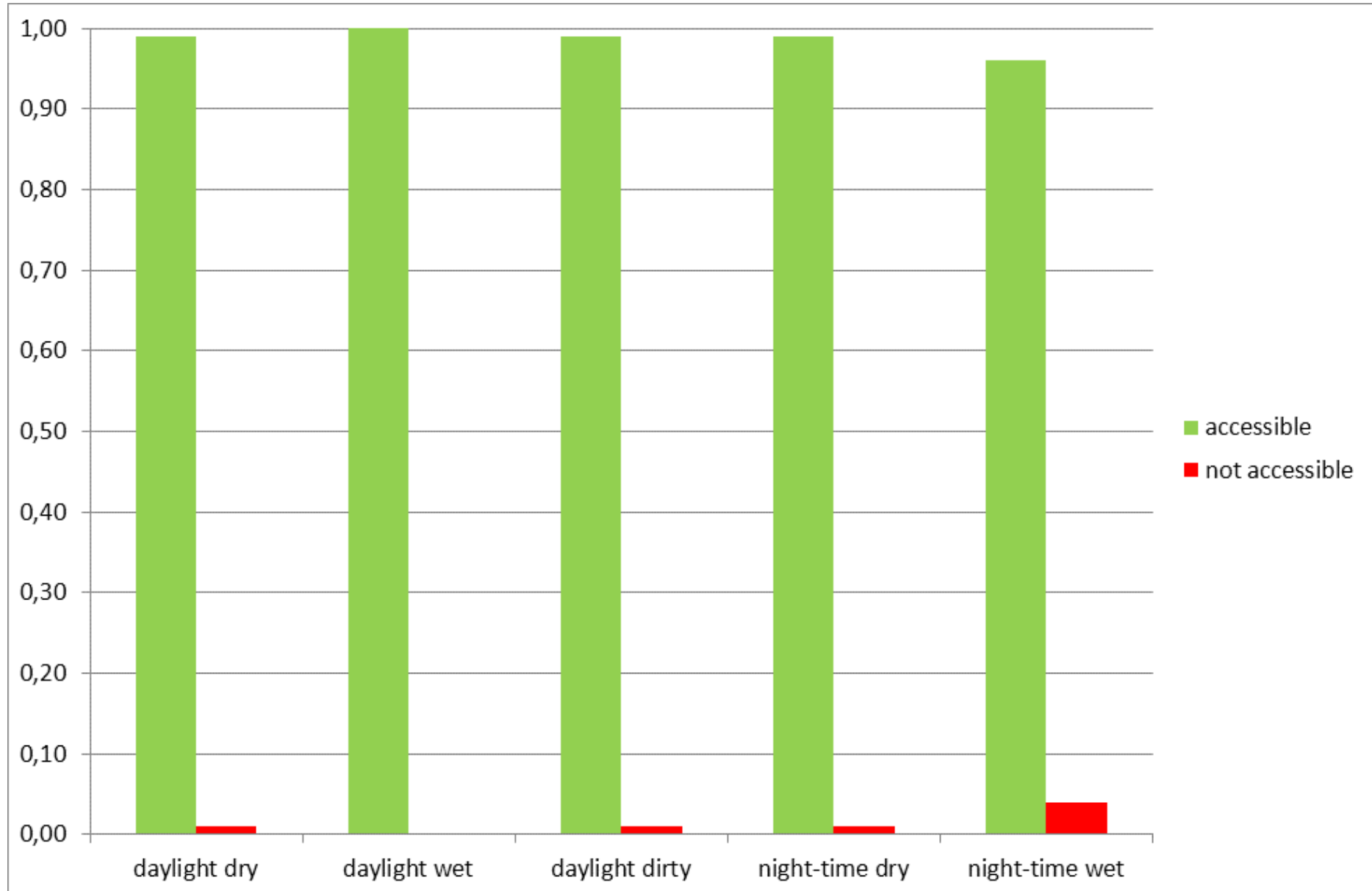


# 5 - 6 m wide road with no centre line

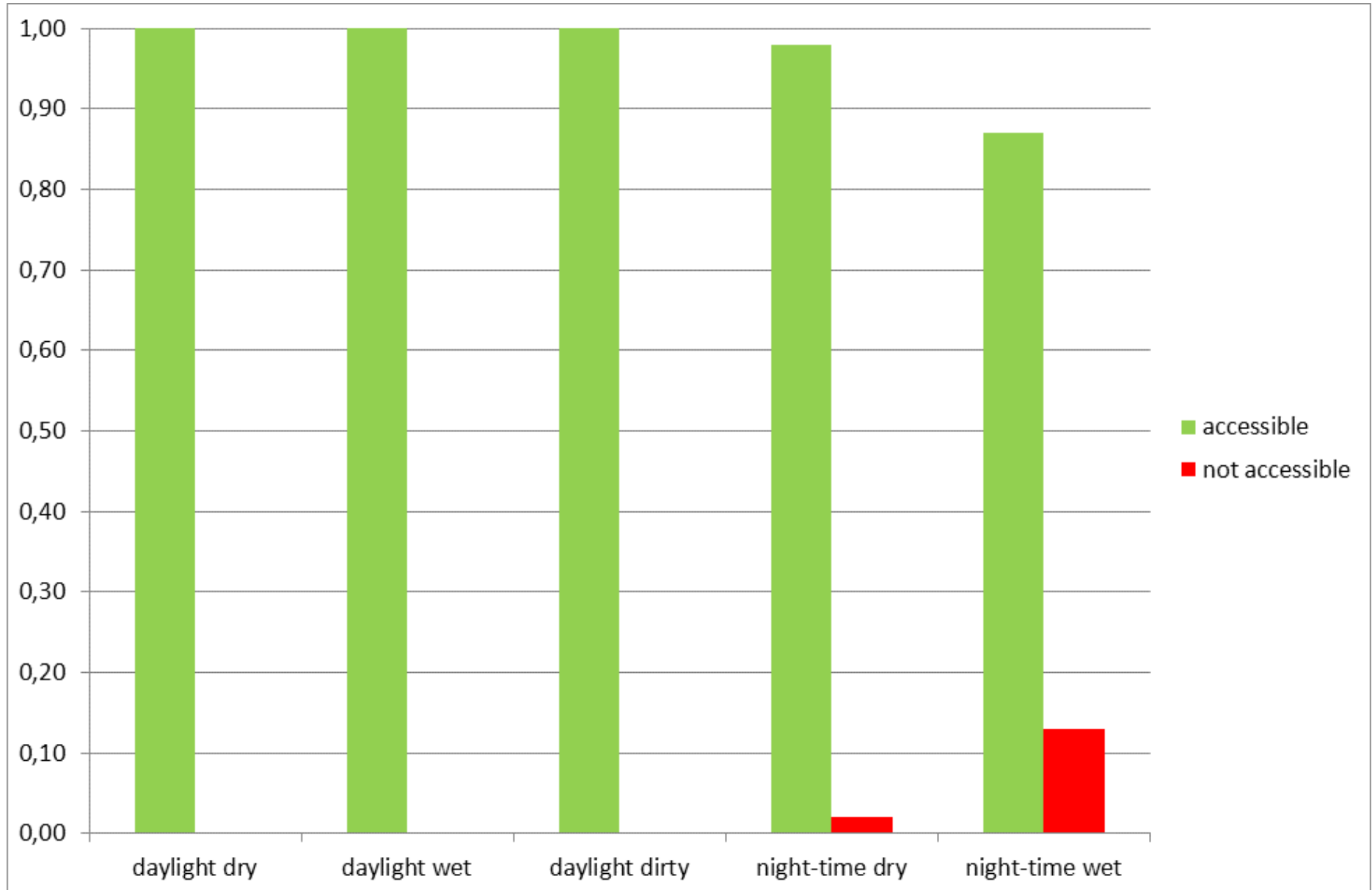




# 9 m wide road with good road markings



# Motorway



## Lowest acceptable performance for the LDW to work

Conditions	Lowest Qd [mcd/m <sup>2</sup> /lx]	Lowest R <sub>L</sub> [mcd/m <sup>2</sup> /lx]
Daylight dry	≈ 65	—
Daylight wet	≈ 65	—
Night-time dry	—	≈ 70
Night-time wet	—	≈ 20

## **LDW has problems:**

- in low opposing sun**
- in headlight illumination, wet conditions**
- on road with no centre line**
- on curvy roads**

***There are no false alarms***

***There are some undesirable alarms***

***Missing alarms in headlight  
illumination on wet roads***

***In general, the accessibility is  
high – 99 %.***

***The performance would be improved  
if there were:***

***Centre lines on all two-lane roads  
Profiled road markings***

**Not tested:**

