



**Statens vegvesen**

Norwegian  
Public Roads Administration

# **Road Safety measures in respect of MC at Route 32 - Vision zero**

Pictures from before and after measures are  
carried out

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# Telemark County, Skien



Route 32 from Solvika to the Church of Gjerpen

UGLAND



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**Problem: Poor visibility on curve**

**Measure: Remove rocks**

Before

After



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**Problem: Poor visibility on curve**

**Measure: Remove trees**

Before

After



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**Problem: Poor visibility on curve and hazardous elements in the safety zone**

**Measure: Remove trees, move columns to the inside, move mailbox to the entrance**

Before



After



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**Problem: Unprotected guardrail posts in the outside of a curve**  
**Solution: MC guardrail of polyethylene (from Hallingplast A/S)**



Damages from the snow plough after the first winter



# MC guardrail of polyethylene



New solution:

Putting on a spacer between the post and the guardrail protects the mc-rail from damages from the snow plough.

Distance between the posts: c-c 2 m





## MC guardrail of steel (from HIASA)



Putting on a spacer between the post and the guardrail protects the mc-rail from damages from the snow plough.

Specially made end terminal.

Distance between the posts: c-c 2 m



**Problem: Hazardous signing columns**  
**Measure: Passive safety masts for vehicles and guardrailwith MC-rail for MC**

Before



After





**Problem: Faulty guardrail terminal**

**Measure: Extend guardrail and swing it into the entrance**

Before

After



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**Problem: Poor visibility from the entrance to the curve**  
**Measure: Move the entrance far away from the curve**  
**(Remove concrete elements from the safety zone)**

Before



After



**Problem: Poor visibility at junction**

**Measure: Remove vegetation and lower the terrain  
New signs are raised and mounted on a  
passive safety mast**

Before



After





**Problem: Hazardous change from the ditch to the entrance**

**Measure: Extend the subdrain and slacken the profile**

Before

After



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**Problem: Deep ditch and gravel from the entrance**  
**Measure: Guardrail bent into the entrance and asphalt 5 m from the roadside**

Before



After





**Problem: Gravel from the entrance**  
**Measure: Asphalt 5 m from the roadside**  
Before After





**Problem: Rocks within the safety zone**  
**Measure: Crush rock and fill up against rock face**

Before

After



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# Problem: Protruding rock within the safety zone Measure: Crush the rock

Before

After



For the future: Remove the cabinet from the ditch.



**Problem: Poor visibility of pedestrians when crossing in the dark with ordinary road lighting in the curve**

**Measure: Put up extra columns for highlighting the crossing**

Before



After



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**Measure: Highlighting the pedestrian crossing with white light and achieving a high level of vertical illuminance; to make pedestrians visible to oncoming drivers.**





**Problem: Faulty guardrail terminal and columns within the safety zone.**

**Measure: Extend the guardrail and install a forgiving terminal**

Before

After



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# Measure: Guardrail terminal EuroET with a cover of plastic





## Problem: Faulty guardrail terminal

### Measure:

**Left:** Extend the guardrail, swing it into the entrance, bring it down and anchor it.

**Right:** Extend the guardrail, swing it over the ditch and anchor it in the slope.





**Problem: Many sign post lacks breakaway coupling**  
**Measure: New signing with a passive safety mast**  
Before After



For the future: Remove the wooden column and put the lines into the ground.

