This case study shows how Star Rating maps, Safer Roads Investment Plans (SRIPS) and tools within the iRAP software platform ViDA maps may be used to guide site selection for 2+1 roads with a median barrier.

This is a new case study drawn from data from Groningen in a project carried out by Dutch mobility club ANWB and included as part of the capitalisation of other projects foreseen in the SLAIN proposal (section 2.2). The work was completed in 2014 as part of surveys of provincial roads in the Netherlands conducted by Serbian motoring club AMSS. Figure 1 shows the national Star Rating map for Groningen.

Figure 1. Groningen Star Rating Map for provincial roads

1 https://eurorap.org/dutch-initiative-for-safer-provincial-roads/
Using the Safer Roads Investment Plan (SRIP) for the Groningen provincial road network enables identification of 2+1 with median barrier as the fourth-ranked measure and economically justified countermeasure over 13km (Figure 2).

The ViDA tool enables attention to be drawn to the road section of the N366 between Stadskanaal and Veendam (Figure 3) and, by eye, to where this measure is mostly commonly identified as being economically justified (Figure 4). The ViDA Safer Roads Investment Plan indicates that 50 fatal and serious casualties could be saved over 20 years (Figure 5). Figures 6 and 7 show images of the route at those locations.

Local engineers then decide whether these roads as identified may be amenable to conversion to the 2+1 configuration based upon crash history and local need and priorities.
As described in other case studies in this series, the suitability of the road for a 2+1 configuration with a wire rope median could then be assessed on the basis of such factors as:

- statistical data on frontal crashes: sections of concentration of frontal accident
- traffic flow
- functional and technical characteristics of the roads
- the average Speed of vehicles
- the viability of the proposed actions and the expected social benefit.

In the Netherlands other pressures such as tree conservation (see Figures 5 and 6) and priorities for cyclists would mean however that installation of a 2+1 with median barrier at this location would be unlikely.

**Conclusions**

This case study has shown how Star Rating maps, Safer Roads Investment Plans (SRIPs) and tools within the iRAP software platform ViDA maps may be used to guide site selection for 2+1 roads with a median barrier. Engineers may then inspect the location and decide whether, probably with due consideration to road-widening, conservation of trees and priorities for other road users, whether it is possible, desirable and a priority to implement the measures at these locations.