The information detailed in this case study has been provided by Anas. The case study shows a reduction in risk after implementation of maintenance and some additional measures added during that process.

The SS 51 di Alemagna is a national road and it extends from the city of Conegliano (km 0+000) to the border with the Trentino Alto Adige region (km 118+150) in northern Italy. The road extends for a further 16 km into the Trentino Alto Adige region but this section is not managed by Anas. The road is undivided with one lane in each direction.

For this case study a section in Veneto Region has been analysed. The section is located between CH.2+700 and CH.2+800 in the municipality of Conegliano in the province of Treviso. This stretch of the SS 51 has one lane in each direction and there is an intersection with a secondary road leading to an urban area. The ADTT is about 15,100 vehicles per day.
Maintenance Remedies

The main safety issues of this section related to the small size of the shoulders available to the high level of bicyclists and pedestrians flow and to the poor layout of the intersection, with the bus stops near the intersection.

Figure 3 and 4 show the section and highlight the various elements requiring maintenance or modification. Maintenance works were carried out in 2019 and some modification to the layout done during that time by:

- improving intersection conditions, adding new signs and a pedestrian crossing marking
- building a shared facility for pedestrians and cyclists
- resurfacing.
Case Study

Road Assessment

The Star Rating Score (SRS) has been analysed for 100 meters of this section before and after the maintenance works.

Before the maintenance remedies, the Star Rating Score is 25.15 for vehicle occupants, 30.11 for motorcycles, 149.77 for pedestrians and 59.55 for bicyclists. The Star Rating is 1 star for vehicle occupants motorcycles and pedestrians and 2 stars for bicyclists.

After the maintenance works, the Star Rating Score is 11.29 for vehicle occupants, 16.47 for motorcycles, 123.29 for pedestrians and 53.02 for bicyclists.

The implementation of maintenance remedies focused on the intersection and the vulnerable road users have improved the rating of vehicle occupants, pedestrians and cyclists. For motorcyclists the score improved but the rating remained at 1 star.

If a second step were carried out:

- centerline rumble strips could be added to discourage overtaking
- shoulder rumble strips on could be added to encourage lane-keeping
- traffic calming and pedestrian crossing facilities could be provided across the main carriageway.

If these things were done it would be possible to achieve a further reduction in risk and the Star Rating Score for all users and motorcyclists would achieve a 2-star rating and cyclists 4 stars.

Conclusions

The maintenance carried out improved the road safety status substantially, with the Star Ratings increased from 1- to 2- stars for vehicle occupants and pedestrians and from 2-stars to 3- stars for cyclists. Additional measures could further improve this site.

The maintenance-only remedies implemented are considered effective.