Intersections that have both a high crash rate per vehicle, and a moderate to high total crash rate, are a higher priority than those with only a high total crash rate.

If funding was unlimited and all intersections could be improved at once, this would be sufficient information. Unfortunately it does not show which of these intersections will be very expensive or very economical to make safer. This is where Level of Safety Service is useful.

Level of Safety Service (LoSS) is a performance indicator included in the NZTA High Risk Intersections Guide. LoSS quantifies the performance of an intersection relative to comparable intersections of the same form and traffic flows.

LoSS categories are determined for each type of intersection (urban/rural, X/T, priority/roundabout/signals) by plotting the crash rates against a ‘product of flow’. The boundaries between categories are the 90th, 70th, 50th and 30th percentile lines through this data (Figure 2).

Intersections that perform poorly (LoSS V) compared to expected performance will often have inherent flaws that can be readily mitigated, such as approach speed or sight distance problems.

Those that perform as well or better (LoSS I) than similar intersections are likely to require more extensive work to deliver safety improvements, such as transformation from priority control to a roundabout (Figure 3).

The Level of Safety Service indicator enables practitioners to prioritise at a glance the high risk intersections that are likely to provide the greatest road safety benefits. It also indicates what type of improvement is safest for different traffic volumes (Figure 4).

Why is LoSS useful?
The Level of Safety Service indicator enables practitioners to prioritise at a glance the high risk intersections that are likely to provide the greatest road safety benefits. It also indicates what type of improvement is safest for different traffic volumes (Figure 4).