

SAFE SYSTEM NETWORK SAFETY PLANS. A PRACTICAL GUIDE FOR LOCAL GOVERNMENTS

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Network Safety Plans are now firmly embedded in Australia's National Road Safety Strategy. Every road authority, whether State or Local, is expected to take a whole of network approach to managing road safety risk. Yet for many local governments, the concept still feels unclear, expensive, or out of reach.

This article has two clear purposes.

First, to show that Safe System Network Safety Plans do not need to cost an arm and a leg.

Second, to show that not all Network Safety Plans are equal. All plans can improve safety to some extent, but the way a plan is developed determines whether it genuinely sets a path toward zero death and serious injury, or whether it simply chips away at the problem.

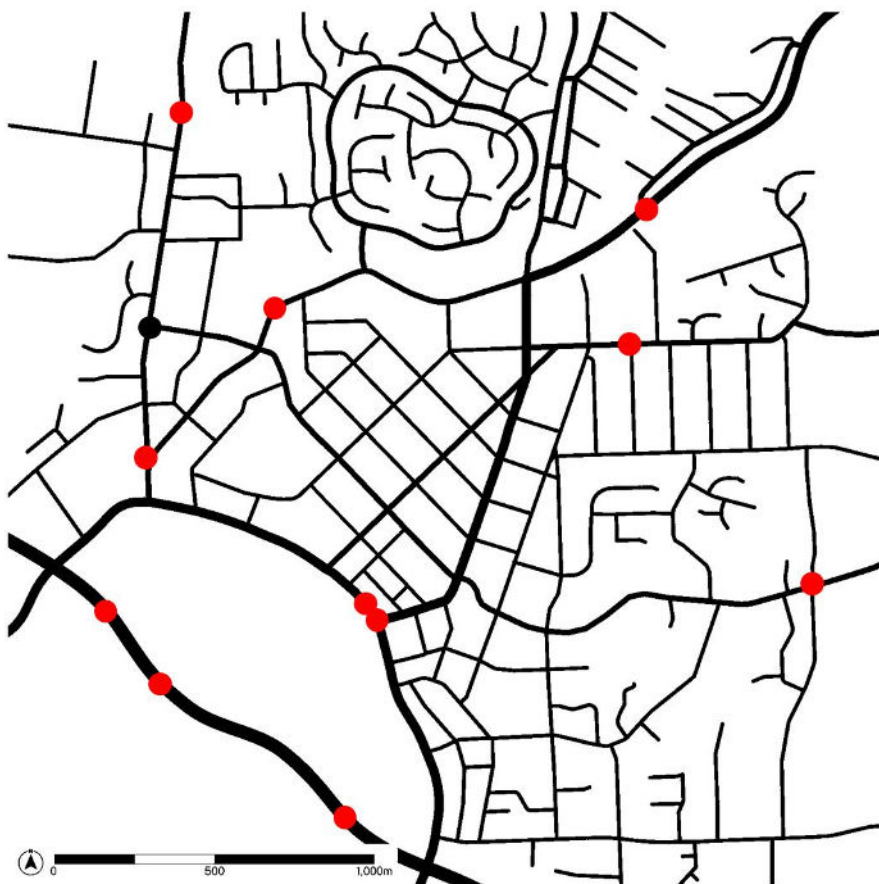
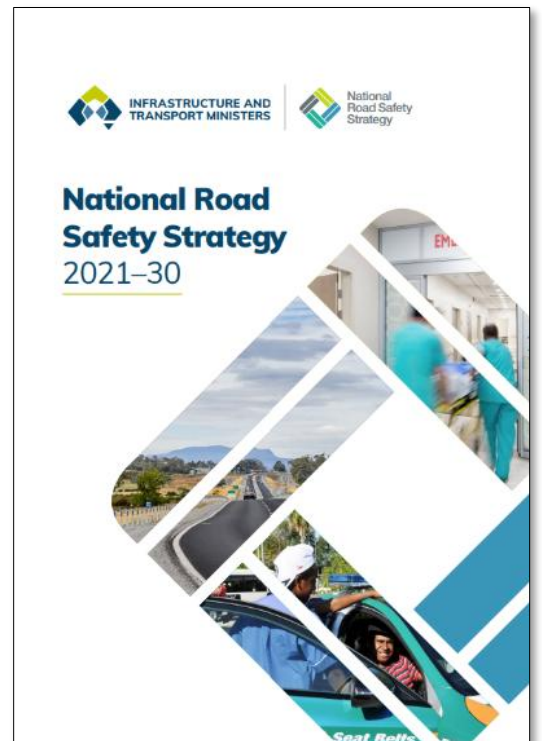
There has been a lot of discussion about Network Safety Plans recently, and rightly so. They represent one of the most important shifts in how we manage road safety because they move us away from reacting to individual crash sites and instead focus on managing risk across the entire road and street network.

But there are many different ways to approach this task, and some approaches amount to little more than business as usual. We already know that business as usual will not deliver the step change required to meet our nationally agreed target of zero death and serious injury by 2050. The challenge, and the opportunity, is to develop Network Safety Plans that are strategically aligned with the Safe System and genuinely capable of delivering long term trauma reduction.

What is a Network Safety Plan and why do we need it?

For many decades, road safety investment was dominated by a focus on crash clusters. We looked for locations with a history of serious crashes and treated those sites. At the time, this was absolutely the right thing to do because crash concentrations were very high and treatment benefits were substantial.

Today, the situation is very different. Many of the high-risk black spots have already been treated. Crashes are now far more dispersed across the network. In fact, around two thirds of serious crashes occur at locations where there has not been another crash in the previous five years. This tells us something very important. Risk is no longer primarily concentrated at isolated locations. It is systemic and spread across the whole network.



A Network Safety Plan responds directly to this reality. Instead of asking where the last crash occurred, it asks where serious injury and death are likely to occur in the future and why. It considers the function of every road and street, how it is used by different road users, what speeds are being travelled, what level of protection is provided, and whether those conditions align with known human tolerance to crash forces.

In short, a Network Safety Plan shifts the focus from treating history to managing future risk.

Understanding the function of the network

The foundation of any meaningful Network Safety Plan is an understanding of how the road and street network actually functions. Without this, safety planning becomes little more than a collection of isolated projects.

In jurisdictions with mature strategic planning frameworks, such as established Movement and Place systems, this step can be relatively straightforward because much of the functional thinking already exists. For other local governments, this need not be complex. A simple and effective starting point can be a high-level categorisation of the network into key traffic routes, pedestrian focused areas, local access streets, freight routes, and cycle routes.

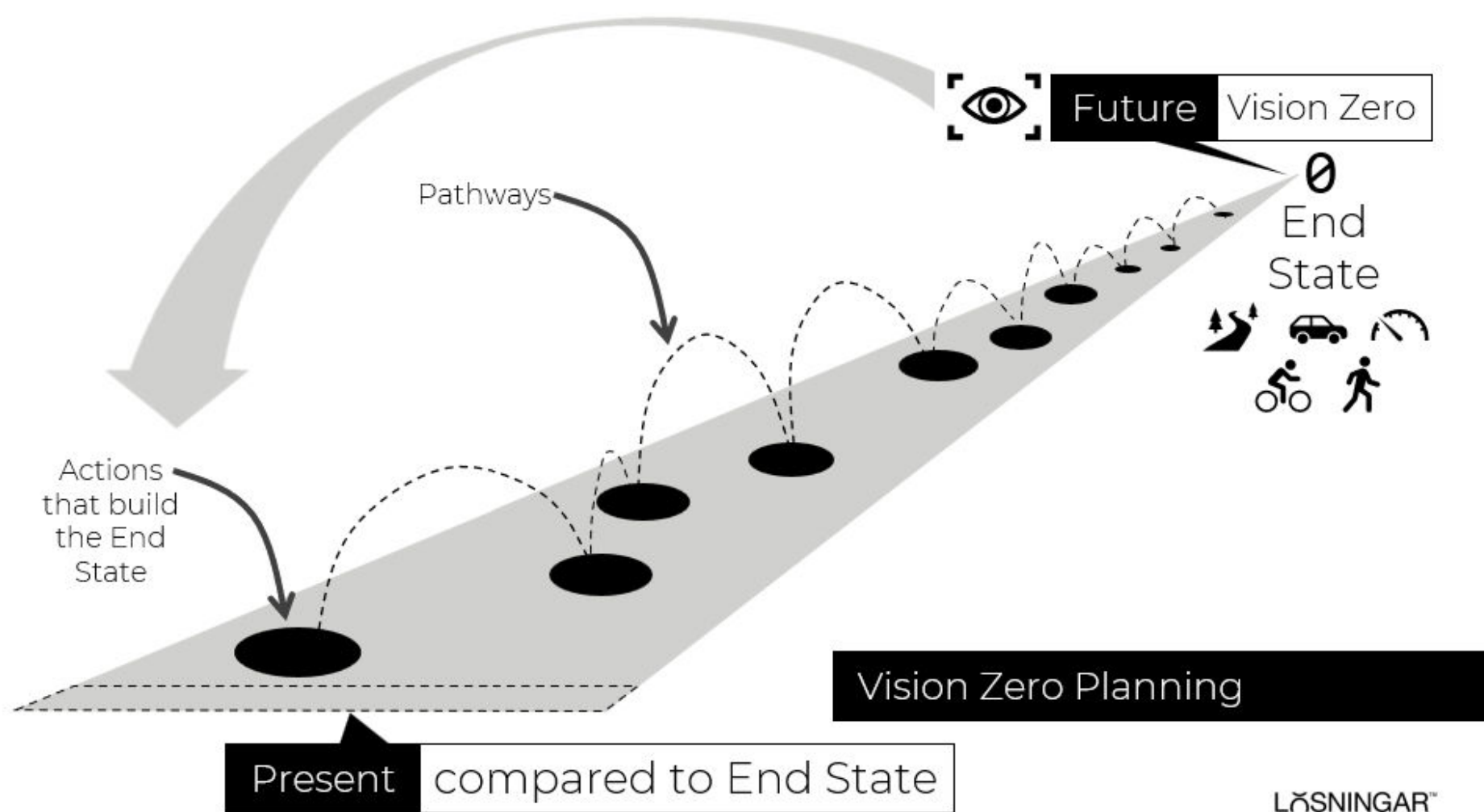
This functional understanding is critical because it directly informs what level of speed, separation, or other protection is required to align with Safe System principles. A busy urban activity street serving pedestrians, cyclists, buses and local traffic demands a completely different safety response to a strategically planned traffic route. Treating them the same will never deliver Safe System outcomes.

Two very different approaches to planning

Once the functional network is understood, there are two fundamentally different approaches that can be taken to safety planning.

The first approach is to assess existing risk and incrementally reduce it through targeted treatments, usually guided by benefit cost ratios. This approach can and does deliver safety benefits. However, it tends to focus on what is affordable or politically acceptable in the short term without any view of a future state of the network. It will not get close to the elimination fatal and serious injury in the long term. It is a band-aid treatment approach.

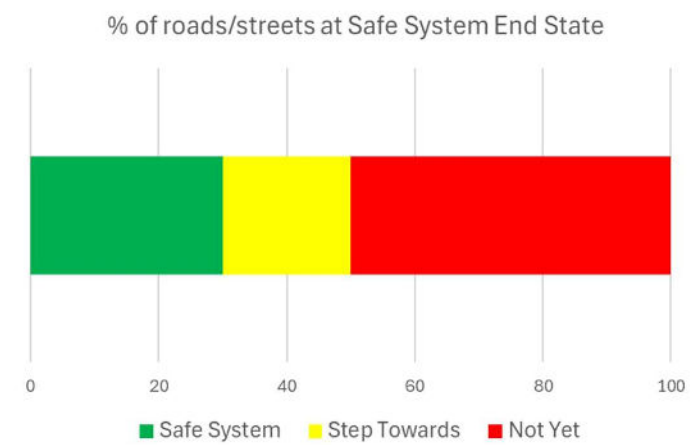
The second approach starts from the opposite direction. It defines what a Safe System network must look like in the future and then compares the existing network to that future state. The resulting safety plan is not just a list of projects. It is a structured pathway for closing the gap between current conditions and a network that is genuinely aligned with human tolerance to crash forces. This approach, pioneered by Dr Johan Strandroth and Dr Jessica Truong is the foundation of contemporary Vision Zero planning and underpins the Lösningar method that has been adopted and applied in Sweden, New Zealand, New South Wales, Victoria and Abu Dhabi.



The power of this approach is that it allows road authorities to move beyond simply counting fatalities and serious injuries as their only performance measures. While those outcomes always remain the ultimate goal, they are relatively slow moving and statistically unstable, especially at local government scale.

Instead, this future based planning approach enables road authorities to track measurable system level indicators such as vehicle kilometres travelled on roads that meet the Safe System end state, the proportion of the network operating at speeds aligned with Safe System principles, and the number of intersections that meet their required Safe System form.

These indicators provide a far more sensitive and actionable measure of whether the network is genuinely becoming safer over time.



Planning for the vehicles of tomorrow, not just today

A common mistake in network safety planning is to assume that vehicles will remain technologically static. In reality, we already know that vehicle automation, advanced driver assistance systems, and intelligent safety technologies will profoundly change crash risk profiles over the coming decades.

The critical questions are not whether these technologies will reduce trauma, but by how much, under what conditions, and over what timeframes. This matters enormously for infrastructure and speed management decisions being made today that will shape safety outcomes for decades.

Fortunately, local governments do not need to start from scratch with this modelling. The Lösningar team, working with universities and road authorities across multiple countries, has already undertaken extensive work to define realistic future fleet capability assumptions. These assumptions can be integrated into Network Safety Plans at relatively low cost. In most cases, it is entirely reasonable for a local government to adopt the fleet profile of its State or Territory rather than commissioning bespoke modelling.

This approach ensures that today's investment decisions remain compatible with the likely safety capabilities of future vehicles, without creating unrealistic reliance on technology alone to solve systemic infrastructure and speed issues.

The central role of speed

Speed is one of the most powerful levers in the Safe System because it directly determines whether a human body can survive a crash.

For this reason, any credible Safe System Network Safety Plan must explicitly address the speed limit regime across the network. This can be politically sensitive and operationally challenging, however, a long term, evidence based Network Safety Plan provides an essential strategic framework for making these decisions in a structured and defensible way.

Rather than ad hoc or reactive speed changes, the plan sets out where higher speeds can safely be retained because of adequate separation and protection, and where lower speeds are essential because mixing of the crash types that are still possible. Over time, this creates a clear and consistent pathway toward a network where speed limits reflect infrastructure function rather than historical convention.

Dispelling the cost myth

One of the most persistent myths surrounding Network Safety Plans is that they inevitably cost hundreds of thousands of dollars. At State and National levels, this can indeed be the case, particularly where highly detailed modelling, extensive consultation, and bespoke data collection are required.

For local governments, however, this level of expenditure is neither necessary nor appropriate. A Safe System aligned Network Safety Plan can be developed for a fraction of this cost. With a clear understanding of the process, and effective use of existing State and Austroads guidance, many councils can develop meaningful plans substantially in-house.

The key variable is depth. The less time, data and resources available, the lighter the depth of the plan. Importantly, even lighter depth plans can still be genuinely aligned with Safe System principles if they are structured correctly. Precision increases with investment, but strategic direction does not require six figure budgets.

To demonstrate this in practice, Haris Zia, Principal Engineer at Safe System Solutions in Queensland, and I recently delivered a national webinar specifically aimed at helping local governments understand how to develop Network Safety Plans affordably. More than 400 engineers, planners, managers and councillors participated. The strong response reflected a clear appetite across the sector for practical, achievable solutions rather than aspirational but unaffordable frameworks.

Real world experience

The teams at Lösningar and Safe System Solutions have now been involved in the development of Safe System Network Safety Plans at multiple levels of depth and across a wide range of jurisdictions. These include the Victorian Government, the New South Wales Government, the New Zealand Government, Hamilton City Council, Abu Dhabi, and the City of Greater Geelong.

Across all of these projects, one consistent lesson has emerged. The most valuable outcome is not the final report itself. It is the shift in how organisations think about their network, how they prioritise investment, and how they align long term infrastructure and speed management decisions with the ultimate goal of eliminating fatal and serious injury.

A practical message for local government

For local government road managers, the core message is simple. Safe System Network Safety Plans are not an abstract policy exercise reserved for governments with unlimited budgets. They are practical, scalable tools that can be tailored to the resources, data and capability of any council.

They provide a structured way to move from reacting to crashes, toward proactively managing future risk. They help align asset investment, speed management, land use planning and community engagement under a single, coherent safety framework. And most importantly, they offer a credible pathway toward meeting the national commitment to zero death and serious injury.

The Safe System is not about spending more money. It is about spending money in smarter, more strategically aligned ways. A well-structured Network Safety Plan is one of the most powerful tools a local government has to do exactly that.

Need advice on the development of a Network Safety Plan? Get in contact:

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