Australian Flexible Pavement Association

WHITE PAPER

A Case for Periodic Road Resealing.

MAY 2026

YOUR INDUSTRY. YOUR NETWORK. YOUR ADVANTAGE.

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About AfPA

AfPA is the peak body for Australia's multi-billion-dollar flexible pavement industry; the sector responsible for the design, manufacture, construction, and maintenance of the road surfaces that connect communities across the country. Founded in 1969 to give the industry a unified national voice, AfPA represents the full supply chain: asphalt producers, bitumen suppliers, sprayed surface operators, equipment manufacturers, State Road authorities, and a growing number of local councils. Together, our members build and maintain approximately 470,000 kilometres of paved road, underpinning a transport sector that contributes over $200 billion to the national economy each year.

Our advocacy is structured around five strategic pillars: advocacy and investment in road maintenance, health and safety, sustainability and circular economy, technical excellence, and workforce capability. In practice, this means government submissions at federal and state level, data-supported position papers, targeted stakeholder engagement with road authorities and transport departments, and public advocacy through media, industry forums, and conference program. AfPA's positions are grounded in evidence and the collective expertise of our broad member base, further informed by three national committees, Safety, Sustainability, and Technology, each drawing on deep practitioner knowledge from across the industry.

A persistent focus of AfPA's advocacy is Australia's road maintenance backlog, which currently stands at approximately $13.6 billion. Large-scale new infrastructure consistently dominates political headlines and ministerial announcements, while the ongoing maintenance work, spray sealing, resurfacing, rehabilitation, that keeps the existing network safe and functional remains chronically underfunded. AfPA's pre-budget submissions have consistently made the case for a 'Fix it First' approach, arguing that sustainable, long-term maintenance pipelines are essential to prevent further network degradation and protect the public investment already embedded in existing road infrastructure.

AfPA also leads the industry's transition toward sustainability and net zero. Since releasing the Industry Commitment to Net Zero in 2022, AfPA has developed the Sustainability Framework for Pavements (SF4P), a procurement-embedded framework that enables road authorities and members to define best practice, quantify achievements, and embed sustainability metrics into tendering. AfPA has published findings from its Forum on Low Carbon Innovations; including case studies where EME2 high-modulus asphalt achieved a 49 per cent reduction in CO_2 emissions on major projects and is developing a nationally consistent Asphalt Life Cycle Assessment tool. Councils and state authorities are increasingly adopting crumb rubber asphalt, recycled materials, and emulsion primers as a direct result of this sustained effort.

When circumstances demand rapid action, AfPA moves at pace. In early 2026, supply chain constraints significantly impacted bitumen and diesel costs across Australia. AfPA engaged directly with ministers and senior road authority leaders in every jurisdiction and successfully advocated for rise-and-fall price mechanisms for the flexible pavement industry across Australia for state works. After 57 years advocacy for our members, we continue to demonstrate the clear value of a coordinated, unified, national voice for the industry with established government relationships and credible data behind every conversation.

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Executive Summary

Australia's road network is among the most valuable public assets the nation owns, supporting a transport sector that generates $137.2 billion annually and carries 260 billion vehicle kilometres each year (BITRE, 2024). Like any asset of this value, it must be actively protected, maintained, and preserved for future generations. For roads, this begins with consistent periodic maintenance and resealing of the existing network, applied on time, at scale, and to a measurable benchmark. This white paper presents an evidence-based case for restoring and sustaining periodic maintenance investment across Australia's road network, drawing on a converging body of Australian and international research to support state and local jurisdictions where resealing rates have declined materially over the past decade.

Resealing is the application of a new layer of binder and aggregate to the road surface, restoring its function, protecting the underlying pavement layers, and reducing the need for full structural rehabilitation. Unlike reactive maintenance, which addresses defects as they emerge, periodic resealing is a planned, preventative intervention, and is widely recognised as one of the most cost-effective tools available to road agencies.

The evidence supporting this is consistent across decades of research and multiple jurisdictions. When maintenance is postponed, costs compound rapidly, a treatment that is cost-effective today can multiply several times over within a few years and escalate further still if deferred until structural failure becomes unavoidable. Reconstruction, when it is ultimately required, can cost many times more per square metre than timely resealing. Across the full lifecycle of a pavement asset, periodic resealing consistently delivers significant cost savings and materially extends serviceable life.

The Australian Flexible Pavement Association calls on road authorities to target a minimum resealing rate of 7% of the road network each year to maintain network condition.

The lifespan of a spray seal is anywhere between 10 -15 years depending on seal type, traffic conditions, location and climate (Austroads 2026). This lifespan therefore establishes an industry best practice periodic resealing target; a minimum of 7 per cent of the road network should be resealed each year to maintain network condition. Best-practice organisations currently target 10 per cent. Resealing programs have historically achieved this benchmark, however the current decline in resealing rates across local, state, and territory jurisdictions is creating a direct case study in the consequences of falling below it: accelerating deterioration (i.e. potholes), rising reactive repair costs, and a growing backlog of avoidable reconstruction.

The case for action is clear and well documented. A well-maintained road network underpins economic productivity, keeping freight moving efficiently and reducing the costs of congestion and delay. It supports public safety, as smoother, well-sealed roads reduce the risk of accidents and trauma. It strengthens climate resilience, protecting infrastructure against the growing frequency and severity of extreme weather events. And it reflects sound fiscal responsibility, as timely maintenance consistently costs less than deferred rehabilitation. On every dimension that matters to government, sustained periodic maintenance delivers measurable, evidence-backed returns.

AfPA presents this paper as a constructive contribution to government decision-making. We are asking governments to commit to a minimum 7 per cent annual reseal program, and to publish that target. It is the most cost-effective, deliverable infrastructure investment available to Australian governments today.

This white paper is current as of May 2026. Data, policy references, and research findings reflect the most recent information available at time of preparation.

1. Australia's Road Network at an Inflection Point

In 2026, Australia stands at an important juncture in road infrastructure stewardship. Record levels of government infrastructure spending and construction demonstrate strong commitment to expanding the vital networks capacity. Yet alongside this investment in new assets lies a less visible challenge: maintaining the existing network that already serves every Australian community and business daily. The road network managed by local, state, and territory governments represents a substantial public infrastructure investment and faces mounting pressures from multiple directions: road freight volumes are projected to increase 56 per cent between 2018 and 2040 (BITRE, 2022), vehicle travel exceeds 260 billion kilometres annually (BITRE, 2024), heavy vehicle utilisation continues to accelerate surface wear, climate-driven extreme weather is occurring with greater frequency and intensity.

Infrastructure Australia, the nation's independent statutory body providing research, advice, and prioritisation for nationally significant infrastructure projects has identified underfunded and reactive maintenance as a key contributor to reduced asset lifespans and diminished resilience (Infrastructure Australia, 2025a). Across several Australian jurisdictions periodic resealing rates have declined materially over the past decade, resulting in observable consequences: accelerating pavement deterioration, increasing reactive repair costs, and a maintenance backlog that compounds with each deferred treatment. This trajectory is unsustainable, and the cost of continued inaction will far exceed the investment required to reverse it.

2. Resealing Is the Highest-Leverage Maintenance Activity

Routine road maintenance encompasses many activities; pothole repair, drainage clearing, line marking, vegetation control, structural rehabilitation, and all of them matter. But periodic resealing is unique in its leverage. It is the single intervention that, applied on time, prevents the chain reaction that turns minor surface ageing into major structural failure.

Australian road pavements are designed for a service life of 20 to 40 years. The thin bituminous surface of these pavements, however, has a shorter lifespan with sprayed seals typically lasting 10 to 15 years depending on the surface type, traffic conditions, climate and location (Austroads 2026). Once the surface begins to deteriorate, water can enter the underlying layers, compromising the structural pavement and cause it to fail and thereby multiplying intervention cost.

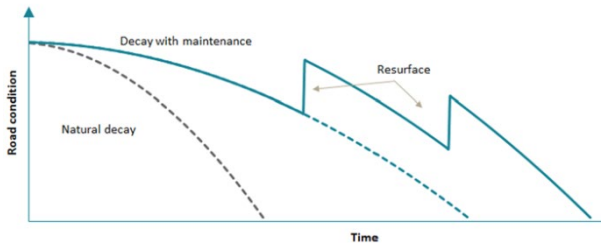
Resealing the road, before deterioration and cracking accelerates, protects pavement against moisture ingress, restores skid resistance, and extends service life at a small fraction of the cost of reconstruction.

Periodic resealing of the network deserves to be treated as a distinct policy priority within the broader category of road maintenance. Routine road maintenance is considered more reactive as it fixes defects as they present; periodic resealing is preventative in preserving the service life of the pavement asset itself. Both are essential, but only one bends the lifecycle cost curve.

3. The Cost Curve and the Tipping Point

Pavement deterioration does not progress linearly. It follows a well-documented curve: condition declines slowly through the early years of pavement life, then accelerates sharply once the surface seal fails and water reaches the base layers (Figure 1). The cost of intervention follows the inverse trajectory. While condition is good, low-cost surface treatments restore the pavement; once the curve bends downward, only structural rehabilitation or full reconstruction will return it to service.

Figure 1: Maintenance treatments during a pavement's lifecycle. Cost of intervention rises exponentially as condition deteriorates.



Source: Austroads Research Report AP-R588-18 (2018

The U.S. Federal Highway Administration's widely cited 1-3-6-9 rule captures the implication: a pavement intervention costing $1 at the optimal time may cost $3 to $6 if deferred several years, and $9 or more if deferred until structural failure occurs (FHWA, n.d.). The World Bank's transport research goes further, finding that deferred maintenance can compound to up to 18 times the original cost after five years of neglect (World Bank, 2005). In an Australian context, the Victorian Auditor-General has reported that reconstruction costs

councils more than six times as much per square metre as resealing — $82 versus $13.

Austroads' own analysis (2018) reaches the same conclusion through Australian data. Periodic resealing delivers 2:1 to 3:1 lifecycle cost savings over reactive worst-first approaches and can extend pavement life by 50 to 100 per cent, a 20-year design pavement potentially delivering 30 to 40 years of service under optimal periodic resealing.

> The timing of resealing is a critical factor in pavement lifecycle cost.

The implication for asset management is unambiguous. Every year a reseal is deferred past the optimal point, the cost of recovery multiplies, until eventually the only option left is the most expensive one.

4. The +7% Benchmark

Based on a typical sprayed seal lifespan of 10–15 years, industry best practice establishes that a minimum of 7 per cent of a sealed road network should be resealed annually, with leading organisations targeting 10 per cent. This benchmark measures network proportion, not budget ratio, and the distinction matters. A jurisdiction can spend heavily on reactive repairs while still resealing too little of its network to keep pace with surface ageing. The +7 per cent metric cuts through that ambiguity, measuring the one thing that determines whether the network's surface age curve is sustainable.

Several historical resealing programs achieved this benchmark, and its consistent application is associated with stable network condition outcomes. However, in 2026, AfPA estimates that X% of Australian road asset management jurisdictions have since allowed resealing rates to fall materially below the minimum 7% reseal rate, and the consequences are now visible: an ageing surface profile, an expanding backlog of deferred treatments, and reactive repair costs consuming a growing share of available maintenance budgets.

This is not a hypothetical. Each year a reseal cycle is missed, the share of the network in fair-or-better condition shrinks and the cost of recovery rises. The +7 per cent commitment is not an aspiration, it is a fundable, deliverable, and measurable policy target. Restoring periodic resealing programs to this benchmark would arrest the deterioration trajectory, reduce reactive cost growth, and, over a multi-year horizon, significantly reduce the lifecycle cost of the existing road network.

5. Pavement Condition is a Safe System Input

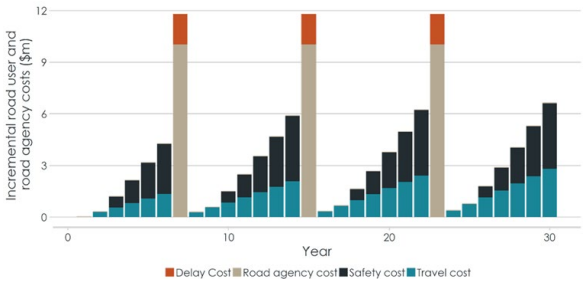
Road trauma imposes a substantial cost on Australia. BITRE (2021) estimates the annual social cost of road crashes at $27 billion (base case), with a range of $22.2 to $30.3 billion. The National Road Safety Strategy 2021–2030 targets a 50 per cent reduction in deaths and serious injuries by 2030 (Commonwealth of Australia, 2021).

Pavement condition is one component of the Safe System approach. Well-maintained surfaces deliver measurably better skid resistance, wet-weather performance, marking visibility, and emergency braking response than deteriorated ones (Figure 2). Austroads (2018) quantifies these effects, demonstrating that the safety, travel time, and road-agency costs incurred between periodic maintenance treatments rise sharply once surface condition degrades (Figure 3).

Figure 2: Impact on Road Roughness and Skid Resistance Measurements with and without Periodic Resurfacing

Source: Austroads Research Report AP-R588-18 (2018)

Figure 3: Safety, Travel, and Road Agency Costs Incurred between Periodic Maintenance Treatments



Source: Austroads Research Report AP-R588-18 (2018)

Maintenance alone cannot eliminate road trauma. But no credible Safe System strategy can ignore the condition of the pavement on which it depends, and periodic maintenance is the most direct lever government has over that condition.

6. Productivity and Freight Efficiency

Road freight underpins the productivity of every supply chain in the Australian economy. With volumes projected to grow 56 per cent between 2018 and 2040 (BITRE, 2022), the cost of operating that freight on a deteriorating network compound over time. Pavement condition has direct, quantifiable effects on vehicle operating costs; fuel consumption, tyre wear, vehicle maintenance, and on travel-time reliability for time-sensitive freight movements (Austroads, 2014; BITRE, 2024). For high-productivity vehicles, sound pavement is a precondition of route access. Deteriorated roads ultimately translate into higher freight costs, which feed into the price of goods and services.

Regional and remote freight corridors are particularly exposed. Limited route alternatives mean that surface deterioration on a single corridor can disrupt entire supply chains and isolate communities from essential services. Periodic resealing of strategic regional routes is therefore not a regional-only concern; it is part of the national productivity infrastructure.

7. Climate Resilience

Australian road infrastructure faces accelerating climate pressures, and recent extreme weather events demonstrate the cost of reactive approaches. The 2022 eastern Australia floods caused insurance claims exceeding $6 billion, with combined infrastructure damage and economic loss in Queensland alone reaching $7.7 billion (Lerat and Vaze, 2025). Ex-Tropical Cyclone Ellie's damage to the Fitzroy River Bridge in Western Australia in January 2023 isolated remote communities until a replacement bridge opened in December 2023 (Main Roads Western Australia, 2023).

Periodic maintenance is one of the most cost-effective forms of climate adaptation available to road agencies. A well-sealed surface prevents water ingress into pavement layers, the primary mechanism by which floods and heavy rainfall events accelerate structural failure. Where the underlying pavement structure is sound, networks maintained through regular resealing are better positioned to withstand extreme weather events and recover more quickly, requiring surface repair rather than full reconstruction. Resealing does not substitute for adequate pavement design, but it preserves the integrity of a well-built asset and reduces its vulnerability to climate-driven deterioration.

Sustainability outcomes follow the same logic. Sprayed seals require substantially less material and energy than full pavement reconstruction, reducing embodied carbon and resource consumption.

8. From Evidence to Action

Strong asset management is the foundation of effective periodic resealing programs. The Austroads Guide to Asset Management and the Austroads Road Asset Data Standard (RADS) (Austroads, 2022) provide the technical frameworks for systematic condition monitoring, predictive deterioration modelling, and long-term financial planning. The 2025 NSW Road Asset Benchmarking Report demonstrates the asset management maturity that is increasingly available across Australian local councils (NSW IPWEA, 2025).

Translating those frameworks into sustained resealing programs requires three policy choices:

Ringfenced resealing allocations: Expressing the target as a network proportion, minimum 7 per cent, gives both government and industry a shared, measurable planning horizon, and protects funding from being diverted to other priorities during budget processes. Resealing programs are programmatic, not project-based; they need to be funded that way.

Multi-year funding commitments: Annual budget cycles cause inefficiency in delivery, undermine workforce planning by contractors and road agencies, and produce cyclical underutilisation and overutilisation of equipment and labour. Multi-year commitments enable more efficient delivery, lower per-unit costs, and stable supply-chain investment in skills and capability, particularly important in regional Australia.

Transparent performance reporting: Publishing the annual proportion of the sealed network actually resealed creates accountability against the +7 per cent benchmark and makes the consequences of underperformance visible to the public, treasuries, and ministers. What gets measured gets managed.

9. Conclusion

Australia's road network is one of the largest public assets the country owns. Protecting it begins not with new construction but with timely periodic resealing of what already exists. The evidence, Australian and international, technical and economic, converges on a single conclusion: periodic resealing applied on time, at a minimum of 7 per cent of the network annually, is the most cost-effective infrastructure investment available to Australian governments.

The choice is straightforward. Continue current trajectories where resealing rates have fallen below the benchmark, and accept exponentially compounding reconstruction costs, declining network condition, growing safety risks, reduced freight productivity, and rising vulnerability to extreme weather. Or restore periodic resealing programs to industry-benchmark levels, with best-practice jurisdictions targeting 10 per cent, and capture the lifecycle cost savings, asset preservation, safety gains, productivity benefits, and climate resilience that follow.

AfPA presents this paper as an invitation to partnership. Our member organisations possess deep technical expertise in pavement management, treatment selection, specification development, and innovation assessment, and we offer that expertise to government as a constructive, evidence-based partner. The frameworks, the evidence base, and the industry capability all support the proactive path. What remains is the policy commitment. The road network Australians deserve begins with the choices made in this budget cycle

Our Industry

The flexible pavement industry is responsible for the design, specification, manufacture, construction and maintenance of all forms of flexible pavement to provide a better-connected Australia now and into the future. Click HERE to view more information.

The Australian Flexible Pavement Association (AfPA) work shapes policy, fosters innovation, and promotes best practices across the roads, transport, and construction industries. Our Membership brings together a unique and diverse collective of industry, all State Road authorities and many councils across Australia.

For further information or to discuss opportunities for membership and collaboration:
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