RAC Federal Budget Submission 2024-25

Priorities for a safer, sustainable and connected WA

RAC
For the better

RAC is a voice for over 1.3 million Western Australians. Since our foundation in 1905, RAC has existed to be a driving force for a better WA by championing change that will create a safer, sustainable and connected Western Australia.

Purpose

The driving force for a better WA.

Vision

2030: A safer, sustainable and connected future for Western Australians.

Mission

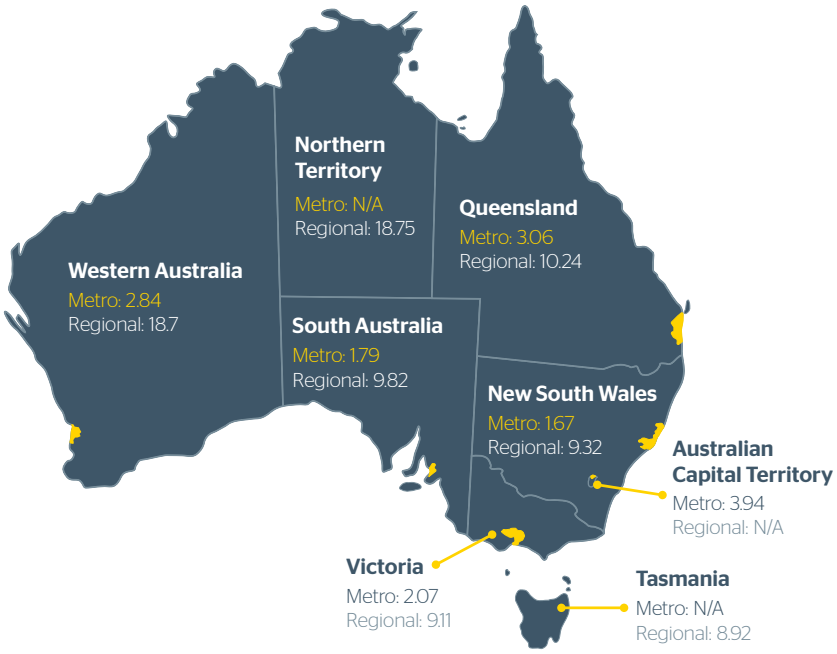
Delivering great member services and experiences, while inspiring positive community change that makes life better in WA.

The 2024-25 Federal Budget presents an opportunity to fund critically important programs and projects to save thousands of lives and serious injuries, reduce harmful vehicle emissions and better connect people. These initiatives will also create thousands of jobs and help safeguard WA's, and Australia's, productivity and liveability into the future.

RAC has four key priorities for funding in the 2024-25 Federal Budget. We also have longstanding strategic infrastructure and policy priorities which remain important for ensuring a safe, sustainable and connected future for WA. These are set out at the end of this submission.

RAC's priorities for the 2024-25 Federal Budget are:

- Fully funding the remainder of the Regional Road Safety Program.
- Funding a new program applying low-cost safety treatments to over 8,000 kilometres of high speed sealed local government roads in WA.
- A WA program of safe and connected active transport infrastructure, behaviour change, and enhanced streets and places for active travel.
- Accelerating the transition to cleaner transport through increased infrastructure, incentives and education.



2022 road deaths per 100,000 people. Source: Australian Automobile Association

Our key priorities

1. Regional Road Safety Program

The challenge:

- Regional WA presents a significant challenge to saving lives and reducing serious injuries on our roads – over five years, more than 500 people have been killed and nearly 2,900 seriously injured on WA's regional roads[1].
- Of the 175 fatalities on WA's roads in 2022, over two thirds (or 120 deaths) occurred on regional roads, despite only 21 per cent[2] of the population living there. This translates to a fatality rate of 18.7 road deaths per 100,000 population in regional WA, which is significantly higher than in other States and Territories (except Northern Territory) as well as the regional national average of 10.6 road deaths per 100,000 people in 2022[3].
- Much of the regional road network is unforgiving of mistakes, with high-speed two-way traffic, roadside hazards such as trees and a lack of safety features. Over two thirds of all fatal and serious injury crashes in our regions were the result of run- off-road or head on crashes – deaths and serious injuries that could be avoided through implementation of effective low-cost safety treatments.
- Infrastructure Australia has prioritised poor quality parts of Australia's regional road network[4] and more specifically single vehicle, run-off road crashes in WA[5], as issues of national significance. These issues have also been recognised within the State Infrastructure Strategy, and road safety strategies at both the state and federal levels.

The opportunity:

The Regional Road Safety Program (RRSP) is a landmark State Government initiative delivering effective, low-cost safety treatments such as sealing shoulders, installing audible edgelines, medians and/or centrelines to address run-off-road and head on crashes across the state regional road network.

The program, announced by the State Government in August 2019[6], was originally costed at $900 million and modelling by Main Roads WA estimated it would:

- save more than 2,100 people from being killed or seriously injured;
- reduce regional road trauma by 60 per cent;
- create thousands of direct and indirect jobs over the life of the program, which would likely result in skilled and non-skilled, as well as regional employment and training opportunities; and
- yield a strong return on investment with a high Benefit Cost Ratio (BCR) of 4.05 (to put this into context, in a post implementation evaluation of 19 national road investment projects delivered between 2008-09 to 2012-13, the average BCR was 1.82[7], and the Morley-Ellenbrook Line which was endorsed by Infrastructure Australia in May 2020 has a BCR of 1.1[8]).

Importantly, the RRSP also assists with the delivery of *Driving Change: A Road Safety Strategy for Western Australia 2020–2030 (Driving Change)*, and the *National Road Safety Strategy 2021-30* which commits to implementing staged risk-reduction treatments for roads with moderate to high traffic volumes, including audio tactile linemarking (rumble strips), median treatments, targeted stretches of barrier treatment, shoulder widening and sealing, intersection treatments and protection on curves and from roadside hazards.

To date, over $1 billion has been committed by state and federal governments, with (as of September 2023) over 7,000 kilometres (km) of road treated since 2020-21. Early evidence indicates that the program is having a positive impact on state road fatal or serious injuries in regional WA: In the five years prior to the commencement of this program, there were on average 367 fatal or serious injuries on state roads in regional WA compared with 305 on local roads. In the three years since the program commenced, there has been an average of 307 fatal or serious injuries on local roads, which is unchanged from the 2015-2019 average. However, the average number of fatal or serious injuries on state roads has fallen by 12 per cent to 323, and in 2022 there were actually fewer fatal or serious injuries on state roads than on local roads[9].

While program costs have increased since the program was announced in 2019, it is critical that the program is rolled out in full so that the safety benefits are realised across the more of the state regional road network. The faster the program can be fully funded and implemented, the more deaths and serious injuries will be prevented.

RAC calls on the Federal Government to:

» Commit funding to roll out the Regional Road Safety Program.

1 Road Safety Commission (2023). Western Australian Road Fatalities and Serious Injuries 2022. Retrieved from: https://www.wa.gov.au/government/publications/western-australian-road-fatalities-and-serious-injuries-2022 (accessed 7 November 2023).
2 Australian Bureau of Statistics (2022). Population estimates by selected Non-ABS Structures, 2001 to 2021. Retrieved from: https://www.abs.gov.au/statistics/people/population/regional-population/latest-release#data-download (accessed 26 October 2022).
3 Australian Automobile Association (2023). New analysis reveals regional road trauma challenge. Retrieved from: https://www.aaa.asn.au/newsroom/new-analysis-reveals-regional-road-trauma-challenge/ (accessed 7 November 2023).
4 Infrastructure Australia (2022). Regional road network safety improvements. Retrieved from: https://www.infrastructureaustralia.gov.au/map/regional-road-network-safety-improvements (accessed 7 November 2023).
5 Infrastructure Australia (2020). Regional and rural WA road network safety improvements. Retrieved from: https://www.infrastructureaustralia.gov.au/map/regional-and-rural-wa-road-network-safety-improvements (accessed 7 November 2023).
6 WA Government (2019, August 1). Federal backing sought for WA road safety initiative [Media statement]. Retrieved from: https://www.wa.gov.au/government/media-statements/McGowan-Labor-Government/Federal-backing-sought-for-WA-road-safety-initiative-20190801
7 Bureau of Infrastructure and Transport Research Economics (2018). Ex-post Economic Evaluation of National Road Investment Projects. Retrieved from: https://www.bitre.gov.au/publications/2018/rr_145 (accessed 28 October 2022).
8 Infrastructure Australia (2020). METRONET: Morley-Ellenbrook Line Project evaluation summary. Retrieved from: https://www.infrastructureaustralia.gov.au/projects/metronet-morley-ellenbrook-line-project_(accessed 28 October 2022).\
9 Based on analysis of WA crash data provided by Main Roads WA.

2. Safety improvements on high speed local government roads

The challenge:

- As outlined under the first priority, regional WA presents a significant challenge to saving lives and reducing serious injuries on our roads, with an unforgiving road network and a high fatality rate.
- The Regional Road Safety Program is helping to address this challenge through low-cost safety upgrades, but it is almost entirely focused on the state road network, with just $35 million invested through the program in local government managed roads.
- Around half of deaths and serious injuries in regional WA occur on local government managed roads (accounting for approximately 300 deaths and serious injuries each year)[10], meaning that these roads also need to be improved in order to deliver national and state road safety targets.
- Local governments manage approximately 113,000km of regional road, only around 26,000km of which is sealed[11]. Many of these roads have low traffic volumes when compared to state roads, and would not be eligible for Regional Road Safety Program treatments due to them being unsealed or having a narrow road seal and/or lack of line marking[12]. There is therefore a need for a new low-cost program tailored to local government roads.
- Due to the nature of local road networks in regional and remote areas, crashes are spread across large areas such that there are fewer 'black spot' locations with a significant crash history – improving safety will require a widespread approach. In addition, many of these roads have lower traffic volumes, attract less funding and may never be prioritised to receive the treatment necessary to improve safety.

The opportunity:

A new program to apply low-cost treatments to 8,208km of road that forms over one third of WA's high-speed sealed local road network, is critical to reduce road trauma on our local roads.

In late 2022, RAC commissioned the National Transport Research Organisation (formerly the Australian Road Research Board) to review up to 10,000km of sealed, high-speed WA roads managed by local governments and develop a business case to seek funding to improve road safety on these roads by applying (mainly) low-cost treatments. The WA Local Government Association and Main Roads WA were project partners, supporting the project through: a funding contribution; active participation in the project working group; and a joint commitment to use the project deliverables to improve road safety outcomes.

The business case responds to Infrastructure Australia's priority listing: *Regional Road Network Safety Improvements,* and also strongly aligns with other priority listings including *Regional and Rural WA Road Network Safety Improvements,* and *Road Access Improvements to Remote WA Communities.*

439 local government roads in WA have been prioritised for treatments using a number of criteria: high-speed limit (90km/h or more) sealed roads; routes providing a regionally significant function[13]; roads with a 'high' crash rate[14]; and high-speed peri-urban roads identified by Main Roads WA. The proposed treatments are as follows:

Countermeasure	Treatment length (km)
Lane widening	3,388
Centreline	5,651
Edge lines	4,892
Sealed shoulder	4,359
Audio tactile linemarking	4,159
Wide centreline treatment	39
Hazard removal/protection	38

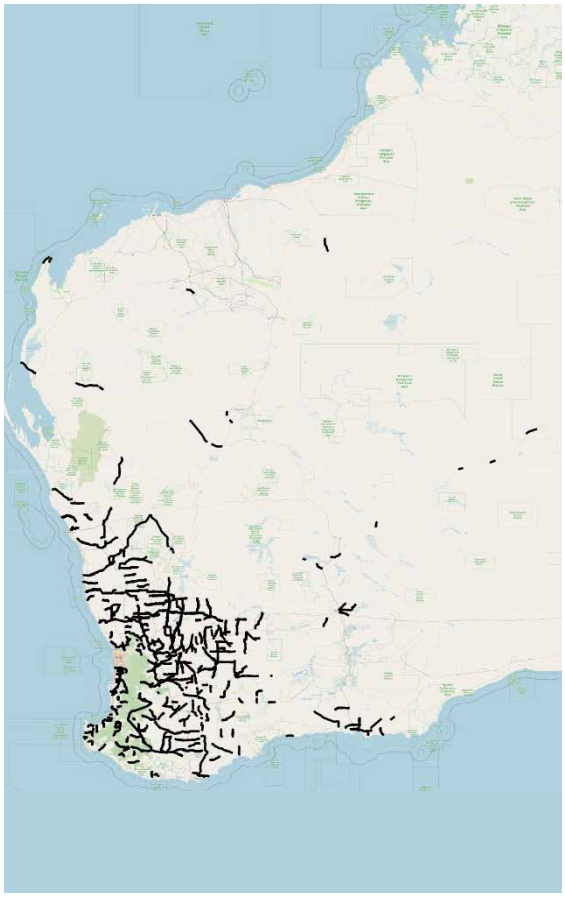
The program's impact has been assessed in the following two ways, utilising:

1. The Australian Roads Assessment Program[15] (AusRAP)
   - > The average Star Rating Score[16] across the 8,208km of road assessed was 38.4 before the countermeasures, and this reduced to 29.1 after the countermeasures, which is an average reduction of 24 per cent. A Star Rating improvement was demonstrated for 950km of road and the number of km of road rated 2 stars or above increased from 1,230km to 2,002km, an increase of approximately 771km (63 per cent).
2. Main Roads WA crash reduction factors[17].
   - > Most importantly, the investment will realise an estimated reduction of 138 fatalities and 489 serious injuries over a 30-year lifespan. The conservative benefit-cost ratio resulting from this is 0.91 and does not account for minor injury or property damage only crashes.

All 97 local governments who own the roads identified for treatments were consulted and to date, 69 local governments have responded to the consultation, all in support of the initiative.

RAC calls on the Federal Government to:

- » Co-fund with the State Government a new $552 million program applying low cost safety treatments to over 8,200km of high speed sealed local government roads in WA to save hundreds of lives and serious injuries.



Map of roads prioritised for the business case. Source: NTRO

10 Based on analysis of WA crash data provided by Main Roads WA.
11 Western Australian Local Government Association (2022). Report on Local Government Road Assets & Expenditure 2020-2021. Retrieved from: https://walga.asn.au/policy-advice-and-advocacy/infrastructure/roads/report-on-local-government-road-assets-and-expendi.aspx (accessed 7 November 2023).
12 Shoulder sealing and audible line treatments can only be applied to roads that already have centre lines and edge lines.
13 As identified in Roads 2040. See: https://walga.asn.au/policy-advocacy/our-policy-areas/infrastructure/roads/roads-2040-regional-road-development-strategies
14 Two or more mid-block KSI crashes or one or more mid-block KSI crashes and 5 or more mid-block crashes in total. Only mid-block crashes were considered since the mass-action nature of the treatments targeted mid-block crash types, predominantly run-off-road and head-on crashes.
15 AusRAP measures the level of safety built into a road based on its existing design and features.
16 Each road is given a Star Rating Score (SRS) based on an assessment of more than 50 attributes. Each SRS fits into one of five star rating bands, where one star is the lowest safety rating and five stars is the highest safety rating. For example, a 3-star road has an SRS of at least 5 but less than 12.5.
17 A Crash Reduction Factor (CRF) is the percentage reduction in crashes resulting from the implementation of a treatment or countermeasure.

3. Safe and connected active transport program

The challenge:

- The greater Perth population is forecast to grow by approximately 30 per cent, to just over 2.6 million by 2031. This will place a significant additional burden on the transport network, with over 7 million daily trips forecast and modelling indicating that the annualised cost of road congestion will more than double from $1.5 billion in 2016 to $3.6 billion in 2031. Alongside growing road congestion, the annualised cost of public transport crowding is also expected to increase almost tenfold, from $17 million in 2016 to $159 million in 2031[18].
- Mode shift from private vehicles to active and public transport remains limited, with an estimated 4.2 million private car trips made each day in Perth and 2.8 million of these trips being under 5km[19]. Most people can cycle 5km in about 20 minutes[20], so these shorter vehicle trips are the most easily replaced by cycling or eRideables.
- Approximately one-third of Perth's strategic, secondary and specialised activity centres[21], including several within Perth's inner area, currently exhibit low accessibility by public transport[22], increasing the importance of active transport connections.
- Dissatisfaction with existing active transport infrastructure is high and fear of sharing the roads with motorists is a main reason for not cycling more often – Western Australians want more investment in off-road/shared path cycling infrastructure and projects to make local streets safer for people riding a bike[23].
- Currently, insufficient priority and support is given to the reallocation of road space for active (and public) transport, critical gaps remain in the cycle network[24], and there is a need to maintain existing infrastructure[25] to enhance amenity and safety. In 2020, the government released the Long-Term Cycle Network for Perth and Peel, identifying more than 5,500km of primary, secondary, and local routes across Perth and Peel – just 38 per cent of this network currently exists[26].

The opportunity:

Of high importance to reducing the cost of transport and congestion in Perth and supporting thriving, healthy and active communities now and into the future is scaling up action and investment to accelerate the delivery of safe and connected active transport infrastructure.

Making it easier for people to travel by active modes has wide ranging benefits related to addressing climate change, reducing transport costs, managing congestion, improving air quality, increasing physical activity, and reducing social isolation. To do this, we need to not only consider infrastructure solutions, but also broader social-ecological factors including policy and regulation, individual attitudes and beliefs, and our social norms and shared values.

Australian Transport Assessment and Planning have established that every kilometre walked or cycled has an economic benefit by reducing vehicle operating costs, mitigating traffic congestion, improving air quality and health, and saving on road building and maintenance costs[27] In 2020, the 'Australian Cycling Economy' was estimated to have directly generated $6.3 billion in direct industry output ($3.4 billion in direct value add)[28] and the Queensland Government Department of Transport and Main Roads has found that the strongest funding scenario to realise the greatest net benefit of investing in cycling infrastructure is full delivery of the highest priority (primary) cycle network routes[29], which would result in a return of almost $5 in economic benefits for every $1 invested. This is a significant return on investment that supports additional funding for active transport infrastructure.

A continuous, low-stress network is essential for people of all ages and abilities to be able to travel safely, comfortably, and conveniently by active and non-motorised modes. A complete network should not only be made up of paths and other off-road facilities, but also needs to reallocate and prioritise space on existing roads and streets to make them more comfortable for active travel.

Infrastructure Australia has recognised the essential role of active transport in reducing car reliance and emphasised the need to bring forward the completion of cross-boundary local government transport networks and importance of maintenance and upgrade programs for pathways[30].

The WA Bicycle Network Plan outlines that the expansion of the Principle Shared Path (PSP) network is a key action with the intention for the 2023-2031 program to focus on areas beyond the 15km radius of the Perth central area. Given the PSP network forms the 'spine' of the active transport network across metropolitan Perth, accelerated completion ahead of 2031 will ensure more people have access to the broader network while a dedicated maintenance and improvement fund would increase the accessibility and convenience of routes.

The State Government is completing long-term cycle network strategies for WA and most local governments have comprehensive local plans for walking and cycling. Dedicated long-term funding to deliver these plans will ensure achievement of complete active transport networks, connecting people from where they live to stations, schools, workplaces and neighbourhood centres. Increased state funding for local networks will also support the significant investment in METRONET by making stations more accessible by foot and bike.

Funding should be directed to:

- Accelerate delivery of critical routes in the Long-Term Cycle Network for WA, with a focus on completing primary routes, and strategic secondary and local routes that connect key local destinations (including schools, stations and neighbourhood centres) and activity centres across metropolitan Perth and regional urban centres.
- Optimise the existing shared path network to make it safe and available to everyone by providing secure bike parking at strategic locations and by maintaining and upgrading existing shared paths, to improve surface and lighting quality (including trialling smart path lighting solutions).
- Incentivise local governments to deliver strategic, regionally significant active transport infrastructure routes and projects that are planned but require increased state funding and alternatives to the matched funding model currently in place.
- Enable cost-effective wide scale trials of innovative approaches to rapidly reallocate road space, expand provision for pedestrians and cyclists and create safer streets (including measures such as pop-up bike lanes and slower speeds).
- Build capacity and skill in active travel through delivering travel behaviour change programs in parallel with major transport investment in public infrastructure and services (e.g. Your Move) to encourage active travel.
- Get more children riding safely to school by accelerating investment in the *Active Travel to School Roadmap 2023-2030* initiatives.

RAC calls on the Federal Government to:

- Co-fund with the State Government funding towards a program of safe and connected active transport infrastructure and programs in WA (a minimum of $40 million each year in addition to existing funding spent on active travel) to grow participation in active modes.

18 Infrastructure Australia (2019). Urban Transport Crowding and Congestion. Retrieved from: https://www.infrastructureaustralia.gov.au/publications/urban-transport-crowding-and-congestion (accessed 30 August 2023).
19 Infrastructure Australia (2022). Perth Active Transport Improvements. Retrieved from: https://www.infrastructureaustralia.gov.au/map/perth-active-transport-improvements (accessed 30 August 2023).
20 Based on average values for journey to work for Victorian Integrated Survey of Transport and Activity (VISTA) participants. Retrieved from: https://transport.vic.gov.au/about/data-and-research/vista (accessed 30 August 2023).
21 As defined by Department of Planning, Lands and Heritage in SPP 4.2 Activity Centres (2023) as community focal points that include activities such as commercial, retail, higher density housing, entertainment, tourism, civic/community, higher education, and medical services. Retrieved from: https://www.wa.gov.au/system/files/2023-07/spp_4.2-activity-centres.pdf (accessed 30 August 2023).
22 RAC (2016). Transport Accessibility of Perth's Activity Centres. Retrieved from: https://rac.com.au/about-rac/advocating-change/reports (accessed 30 August 2023).
23 RAC (2022). RAC Member Priorities Tracker: Cycling. Retrieved from: https://rac.com.au/about-rac/advocating-change/reports/member-priorities-tracker (accessed 6 October 2023).
24 As identified in the Department of Transport's Long-term Cycle Network for Perth and Peel, as well as several regional cycle strategies. Note: while titled the 'cycle' network it is accepted this network will service other active transport modes, including walking, eRideables, etc. Retrieved from: https://www.transport.wa.gov.au/activetransport/long-term-cycle-network.asp (accessed 30 August 2023).
25 RAC (2018). Shared Path Lighting Review. Retrieved from: https://rac.com.au/about-rac/advocating-change/reports (accessed 30 August 2023).
26 Calculation based on data provided by Department of Transport, Western Australia (2023).
27 Commonwealth Department of Infrastructure and Regional Development (2016). Australian Transport Assessment and Planning Guidelines: M4 Active Travel. Retrieved from: https://www.atap.gov.au/mode-specific-guidance/active-travel/5-estimation-of-benefits (accessed 30 August 2023).
28 We Ride Australia (2021). The Australian Cycling Economy Report – Estimating the size and scope of the Australian Cycling Economy in 2020. Retrieved from: https://bicyclingaustralia.com.au/wp-content/uploads/2021/10/The-Australian-Cycling-Economy_October-2021-Updated.pdf (accessed 6 October 2023). Direct contribution is the market value of goods and services (i.e. gross revenue) produced by each segment of the cycling industry, after accounting for intra-industry sales (to avoid double counting). Value Add is the market value of goods and services produced by the cycling industry, after deducting the cost of goods and services used. That is, Value Add is a subset of Gross Output and represents the marginal/additional economic value generated by the cycling industry.
29 Queensland Government (2023). Queensland Cycling Strategy 2017 – 2027. Retrieved from: https://www.publications.qld.gov.au/dataset/queensland-cycling-strategy-2017-2027 (accessed 6 October 2023).
30 Infrastructure Australia (2021). Australian Infrastructure Plan. Retrieved from: https://www.infrastructureaustralia.gov.au/2021-australian-infrastructure-plan (accessed 30 August 2023).

4. Accelerating the transition to clean vehicles

The challenge:

- New modelling based on a New Zealand study by climate researchers estimates more than 11,100 Australian adults die prematurely each year due to exposure to traffic emissions[31].
- In Australia, in 2021, more than 19 per cent of carbon dioxide equivalent (CO_2-e) emissions were from transport. Road transport contributed to over 87 per cent of transport emissions, with 51 per cent of road transport emissions coming from cars alone[32].
- In 2021, per person, Australia's carbon dioxide (CO_2) emissions were almost double the Organisation for Economic Co-operation and Development (OECD) average[33].
- In 2020, Australia recorded the highest total oxides of nitrogen (NOx) emissions per capita – almost 116 kilograms – of all OECD countries; this is over three and a half times New Zealand's NOx emissions per capita, almost six and a half times the OECD figure, and almost ten times the OECD Europe average[34].
- As at June 2023, Australia's gasoline fuel quality was ranked 94th in the world, down from 89th in 2022. Currently Australia's fuel ranks worse than Argentina (93rd), Bosnia & Herzegovina (92nd), and Seychelles (91st)[35].
- In 2022, battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV) sales represented only 5.1 per cent of new vehicle sales in Australia (with BEVs representing only 3.04 per cent and PHEVs only 0.41 per cent in WA[36]), and while this is a sizeable increase of over 180 per cent from the previous year, it still lags far behind the global average of 14 per cent[37].
- According to our members[38] who aren't considering an electric or hybrid for their next vehicle, the top barriers[39] are cost and access to charging infrastructure.

The opportunity:

According to RAC members[40] the most effective ways for government to reduce vehicle emissions are: providing incentives for purchasing low emissions vehicles; investing in electric vehicle (EV) charging infrastructure; regulating emissions through national standards for new vehicles; increasing investment in alternative fuel sources; transitioning the public transport fleet to low emissions vehicles; and increasing the quality of fuel.

Transport decarbonisation is a critical part of our transition towards a zero-emissions future and the Federal Government has committed to reduce greenhouse gas emissions by 43 per cent below 2005 levels by 2030[41]. Modelling by Aurecon[42] shows only BEVs and fuel cell electric vehicles (FCEVs) have the potential to come close to the magnitude of life cycle[43] CO_2-e reductions needed to meet Paris Agreement commitments[44]. Operating on WA's existing mixed grid[45], the life cycle emissions of BEVs are already lower than a comparable petrol vehicle by 55 per cent, and as the electricity mix continues to decarbonise, this gap will increase - on a fully renewable grid, the emissions of a BEV would be 86 per cent lower. The life cycle emissions of a FCEV powered by green[46] or grey[47] hydrogen would be 83 per cent or 50 per cent lower on a petrol equivalent, respectively.

According to Commonwealth Scientific and Industrial Research Organisation (CSIRO) EV projections for WA's Wholesale Electricity Market[48], the likely scenario[49] is that in 2030 there will be approximately 287,000 passenger BEVs within the SWIS area[50]. International Council on Clean Transport research[51] indicates that to service this many vehicles, at minimum, 14,500 workplace, 1,900 DC fast chargers and 9,800 public AC chargers would be required – and this would need to be scaled up to service the whole of WA. At a national level, CSIRO's modelling suggests that EVs[52] could account for around 52 per cent of new passenger vehicle sales and almost 15 per cent of the total vehicle fleet in Australia in 2030[53]. Given the uptake anticipated in the near-team, urgent action and additional investment is needed to fill network gaps and install charging infrastructure in the areas where it is, and will be needed, most.

In 2023 RAC welcomed the Federal Government's inaugural *National Electric Vehicle Strategy*[54]. In 2022, RAC also welcomed the additional allocation of almost $250 million to the Driving The Nation fund, which included $39.9 million to help expand the national EV charging network[55].

While it was pleasing to see these commitments, further investment to accelerate and enable the uptake of low and zero emissions vehicles is required. Such funding should be directed to:

- continuing to scale up investment to enable and support the wider roll out of charging infrastructure – identified by Infrastructure Australia as an issue of national significance[56];
- scaling up tax and other financial incentives and subsidies, informed by willingness to pay and consumer choice modelling, that further accelerate the uptake of low and zero emissions vehicles; and
- community education campaigns and programs that improve consumer access to EV information covering topics such as ownership, charging and energy consumption, and the impact of vehicle emissions on health and the environment.

RAC calls on the Federal Government to:

- Commit to scaling up funding for infrastructure and initiatives that will significantly accelerate and support the transition to clean transport.

31 University of Melbourne (Melbourne Climate Futures) (2023). Health Impacts Associated With Traffic Emissions In Australia. Retrieved from: https://www.unimelb.edu.au/_data/assets/pdf_file/0006/4498161/Expert-Position-Statement_Vehicle-emissions_FINAL.pdf (accessed 4 August 2023).
32 Department of Climate Change, Energy, the Environment and Water (2023). Australia's National Greenhouse Accounts. Retrieved from: https://ageis.climatechange.gov.au/ (accessed 31 October 2023).
33 Organisation for Economic Co-operation and Development (2023). Air and GHG emissions. Retrieved from: https://data.oecd.org/air/air-and-ghg-emissions.htm#indicator-chart (accessed 4 August 2023).
34 Ibid.
35 Stratas Advisers (2023). Six Countries Move Up in Top 100 Ranking on Gasoline Sulfur Limits. Retrieved from: https://www.stratasadvisors.com/insights/six-countries-move-up-in-top-100-ranking-on-gasoline-sulfur-limits/2023-06-22t010102-0400 (accessed 4 August 2023).
36 Federal Chamber of Automotive Industries (2023). VFACTs WA Report – New Vehicle Sales December 2022 [subscription].
37 International Energy Agency (2023). Global EV Data Explorer. Retrieved from: https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer (accessed 4 August 2023).
38 RAC (2022). RAC Member Priorities Tracker: Sustainability. Retrieved from: https://rac.com.au/about-rac/advocating-change/reports/member-priorities-tracker (accessed 4 August 2023).
39 Key barriers identified by respondents who said that they would not consider purchasing an electric or hybrid vehicle next or did not know what vehicle they would purchase next.
40 Supra note 38.
41 Department of Climate Change, Energy, the Environment and Water (2022). International climate action. Retrieved from: https://www.dcceew.gov.au/climate-change/international-commitments (accessed 31 October 2023).
42 Modifying the International Council on Clean Transport research/modelling for the Western Australia context in 2023. Using average vehicle characteristics and fuel and electricity consumption in real-world driving conditions. Scenarios considered the South West Interconnected System emission factors for 2021 grid mix (which is 0.68kg CO_2-e/kWh) sourced from Clean Energy Regulator EERS release, and a potential future where only renewable energy is used for electricity supply and hydrogen production.
43 Accounting for the tailpipe emissions, fuel and electricity production, and vehicle manufacturing. Assumptions include average vehicle lifetime of 240,000km; fuel economy; and emissions. Inputs include: fuel/electricity production; fuel/electricity consumption; maintenance; and vehicle, hydrogen tank and battery manufacturing.
44 Limiting global warming to below 2°C, preferably below 1.5°C, pre-industrial levels. United Nations Climate Change (2023). The Paris Agreement. Retrieved from: https://unfccc.int/process-and-meetings/the-paris-agreement (accessed 11 August 2023).
45 Assumptions based on 2021 grid mix (which is 0.68kg CO_2-e/kWh). Clean Energy Regulator (2023). EERS release 2021-22. Retrieved from: https://www.cleanenergyregulator.gov.au/OSR/EERS/Archived-EERS-releases/EERS-release-2021-22 (accessed 11 August 2023).
46 Green hydrogen is extracted using a method that does not produce GHG emissions.
47 Grey hydrogen is extracted from natural gas, or methane, typically using steam reformation. Emissions during this process are not captured or stored, and are released into the atmosphere.
48 Australian Energy Market Operator (2022). WEM Electricity Statement of Opportunities. Retrieved from: https://aemo.com.au/en/energy-systems/electricity/wholesale-electricity-market-wem/wem-forecasting-and-planning/wem-electricity-statement-of-opportunities-wem-esoo (accessed 11 August 2023).
49 CSIRO has modelled four scenarios: Exploring Alternatives; Progressive Change; Step Change; and Hydrogen Export. It has been noted that the tentative mappings for the 2023 WEM Electricity Statement of Opportunities indicate that Step Change is the expected scenario.
50 Modelling covers the South-West Interconnected System project area, and does not include the North-West Interconnected System or regional power.
51 The International Council on Clean Transportation (2021). Charging Up America: Assessing the Growing Need for U.S. Charging Infrastructure Through 2050. Retrieved from: https://theicct.org/publication/charging-up-america-assessing-the-growing-need-for-u-s-charging-infrastructure-through-2030/ (accessed 9 October 2023).
52 Includes battery electric vehicles; plug-in hybrid vehicles; and fuel-cell electric vehicles.
53 Commonwealth Scientific and Industrial Research Organisation (2023). Electric vehicle projections 2022. Retrieved from: https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2022/2023-inputs-assumptions-and-scenarios-consultation/supporting-materials-for-2023/csiro-2022-electric-vehicles-projections-report.pdf
54 Department of Climate Change, Energy, the Environment and Water (2023). The National Electric Vehicle Strategy. Retrieved from: https://www.dcceew.gov.au/energy/transport/national-electric-vehicle-strategy (accessed 31 October 2023).
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Other strategically important priorities

In addition to these four crucially important priorities, RAC has several longstanding strategic infrastructure and policy priorities which remain important for ensuring a safe, sustainable and connected future for WA.

These are for government to:

- Continue to commit funding towards the rolling program of intersection grade separations and upgrades to improve safety on WA's major highways and strategically important corridors to bring these up to freeway standard. This should prioritise the Reid Highway/Erindale Road intersection (pending the outcome of the current business case) and the remaining signalised and non-signalised intersections along Tonkin Highway such as Armadale Road (estimated at $50-100 million per separation).
- Commit funding towards cross-agency development and deployment of standard architecture for Intelligent Transport Systems across WA to set the foundations for implementing sensors and digital systems to improve real-time management and reliability of the transport network, and support greater prioritisation of public and active transport (approximately $8-10 million).
- Commit funding to prepare for a future with automated and connected vehicles, helping to position WA and the nation to capitalise on advancements in technology and future proof new infrastructure ($150 million). This could include planning and delivery of a Perth-based transport-focused test bed for automated vehicles and Cooperative-Intelligent Transport Systems.
- Commit funding to implement a program of measures to optimise Perth's heavy rail system (including lengthening of remaining platforms on the Midland/ Fremantle/Armadale lines to accommodate 6-car train operations) to make the best use of existing rail assets and cater for increasing demands. A business case identifying program costs was underway in 2022[57] however has not been released.
- Commit funding towards a rolling program of road/rail grade separations and other solutions to remove level crossings, while maintaining connectivity for pedestrians and cyclists. This should prioritise Collier Road and Meadow Street on the Midland Line, and Victoria Street and Jarrad Street on the Fremantle Line and deliver associated urban realm enhancements, improving safety, road, and public transport efficiency and amenity (approximately $2 billion to remove remaining crossings on the Perth Metropolitan passenger network).
- Commit funding towards planning and delivery of a mid-tier rapid transit network, prioritising connections between the University of Western Australia/ Queen Elizabeth II Medical Centre and Canning Bridge (via the CBD and Bentley/Curtin), and also between Scarborough Beach/Stirling to Glendalough and onto the Perth CBD, to enhance access to strategically important centres for employment, retail and tourism (required funding is mode dependent).

57 Department of Infrastructure, Transport, Regional Development, Communications and the Arts (2021). Platform and Signalling Upgrade Program Business Case. Retrieved from: https://investment.infrastructure.gov.au/projects/108598-20wa-mrl (accessed 7 November 2023).


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