Environmental Scan February 2022

Potential road safety implications are represented as follows:

Political

| P | T | En | MP | Ec | VF | RU | G |

(From L to R) Population, Technology, Environment, Mobility Patterns, Economics, Vehicle Fleet, Road Users, Governance

State Initiatives

METRONET `RU`

The METRONET rail program is a key budget priority of the State Government.[1] METRONET aims to encourage people to make greater use of the Perth metropolitan public transport system. It is a vital part of the State Government's broader vision for the town planning and sustainability of Perth.

In delivering new rail and rail stations, the program will support urban infill development, and the creation of more connected and compact communities around new public transport hubs across Perth.[2]

WA Recovery Plan[3] [4] `En`

The $5.5 billion WA Recovery Plan guides State Government economic stimulus spending in response to the COVID-19 pandemic. The plan launched in July 2020. The plan delivers additional funding into areas including major road infrastructure, upgrades to improve regional road safety, cycling and walking infrastructure, and public transport.

State Infrastructure Strategy[5] `RU` `En` `VF`

Following a period of public consultation, Infrastructure WA's draft infrastructure strategy, 'Foundations for a Stronger Tomorrow', is with the State Government for approval. When finalised, this strategy will guide medium to long term infrastructure investment and governance in WA. The strategy considers, but also looks beyond, the challenges posed to WA by the COVID-19 pandemic. The strategy will shape State Government decisions on road, port, and public and active transport infrastructure development into the future. It will also promote investment in new technologies, including into autonomous vehicles.

State Underground Power Program[6] `En`

Since 1996, this program has been replacing overhead power lines with underground power in Perth. This long term program is currently in its sixth round of funding, and continues to improve road safety by removing power poles as hazards on the side of roads.

Reconnect WA initiatives[7] `RU`

A $185 million package to attract visitors, workers and international students to WA once the state's domestic and international border opens in accordance with WA's Safe Transition Plan.

Commonwealth Initiatives

National Road Safety Strategy `G`

The Federal Office of Road Safety was established to coordinate government and non-government stakeholders in road safety to improve outcomes in this area across Australia.[8] On 22 December 2021, the office released the new National Road Safety Strategy for 2021-2030,[9] although it is set to be further reviewed by Federal and State transport ministers in February 2022.[10] The national strategy adopts a safe system approach and the Movement and Place framework to achieve a long term goal of zero deaths and serious injuries by 2050. The strategy sets interim targets for 2030 of reducing road deaths by 50% and serious injuries by 30%.

Joint Select Committee on Road Safety[11] `G`

This Committee has broad remit to report on measures to reduce injuries and deaths on Australian roads.[12] It has taken evidence from a broad range of stakeholders in road safety. The Committee is due to report on or before 1 July 2022.

Federal Budget[13] `En`

The 2021-22 Federal Budget provides WA with a $1.3 billion infrastructure package, divided between METRONET and other road and rail infrastructure projects.

WA Agricultural Supply Chain improvements – Package 1[14] `Ec` `En`

The Federal Government has released $200 million in funding to upgrade rail and roads in the Wheatbelt and Great Southern, and roads used by the agricultural sector in the Wheatbelt, Midwest and Goldfields-Esperance regions of WA. These upgrades will reduce freight movements on regional roads by enabling more grain to be transported on rail.

Responsibility for regulating road safety is divided across the three tiers of government:[15]

The Federal Government regulates safety standards in new vehicles and provides funding to the States for road infrastructure.

State and Territory Governments operate and maintain the road network, manage road rules, and co-ordinate post-crash response through managing the health sector.

Local Governments operate and maintain local roads and footpaths.

The information in this document is current as at 7 February 2022

Economic

Location of employment opportunities (MP) (RU)

Changing economic conditions may impact the distribution of employment opportunities between metropolitan Perth and the regions. Employment opportunities in the regions, and government policy designed to attract workers to these jobs, incentivises people to seek a 'sea or tree change' and relocate to the regions.

A strong mining industry continues to create new jobs in regional WA. This sector's demand for more workers, a tight job market in WA, and COVID-19 outbreaks in the eastern states, have resulted in the first positive interstate migration rate to WA since 2013.[16] The WA Government has helped to drive this increase in migration, offering financial incentives to fly-in fly-out workers who live in the eastern states, yet work in regional WA, to relocate to WA.[17]
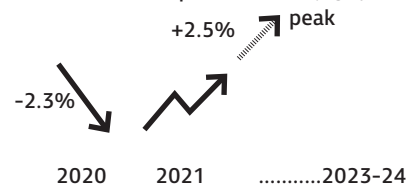
2021 also saw the biggest ever grain harvest on record in WA.[18] The WA Government implemented its Paid Escape program to respond to the new jobs created by this bumper harvest.[19] This program offers financial incentives to attract workers to skilled and unskilled jobs in agriculture, fisheries and food processing in Geraldton, Northam, Merredin, Albany and Esperance.[20]

Household spending (VF) (RU)

In WA, household spending on goods, including on vehicles, has recovered strongly following the large COVID-19 related downturn in the June quarter 2020.

Household consumption:

+2.75% peak

+2.5%

-2.3%

2020   2021 2023-24

Retail trading hours (MP) (RU)

In WA, many retail businesses can only trade between 8am-5pm on Saturday and 11am-5pm on Sunday and public holidays. Retail trading hours continue to be a topic of debate in WA.[21]
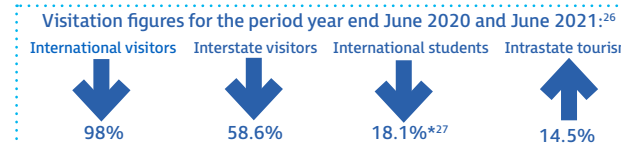
Unemployment in WA (MP) (RU)

6.2% Jan '21

3.4% Dec '21

7.0% Jan '21

6.4% Dec '21

Unemployment[22]   Underemployment[23]

Research suggests that a low unemployment rate is associated with additional road crashes compared to higher unemployment.[24] Higher economic activity means more vehicles on the road, more discretionary travel such as tourism, and increases in alcohol sales leading to high risk travel.[25]

Tourism (MP) (RU)

The COVID-19 pandemic has had a major impact on the Australian tourism industry. The staged closure of the international border from February 2020 effectively stopped international tourism to Australia. Travel between WA and the eastern states has been limited, as WA has constantly changed its rules over a domestic hard border in response to COVID-19 outbreaks in the east. This hard border, and freedom of movement within WA for most of the pandemic, has encouraged WA residents to travel within the State to the regions for their holidays.
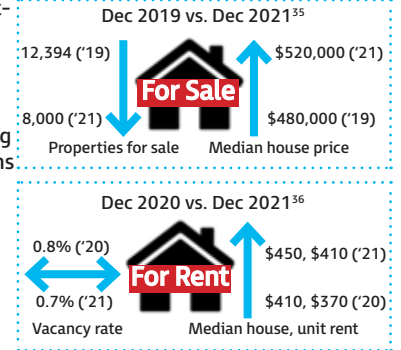
Visitation figures for the period year end June 2020 and June 2021:[26]

International visitors   Interstate visitors   International students   Intrastate tourism

98%   58.6%   18.1%*[27]   14.5%

*(Jan-Sept 2021 compared to same period of 2020)

When borders reopen, international tourism[28] and education[29] may take some time to recover to pre-pandemic levels. Given this, and that 77% of all spending on tourism was domestic in 2019,[30] it is likely that interstate tourism will drive recovery in the tourism sector.

Ongoing economic reliance on resource sector (RU)

The mining sector is WA's biggest industry. In November 2021, it accounted for 47% of the state's gross state product.[31] The sector relies on fly-in fly-out (FIFO) and, to a lesser extent, drive-in drive-out (DIDO) workers. FIFO and DIDO generally work long 10-12 hour shifts. Fatigue, especially at the end of a work swing, can increase the risk of road related safety issues for FIFO and DIDO workers. Fatigued FIFO workers face a particular risk when driving home from the airport after they have flown out from site.[32]
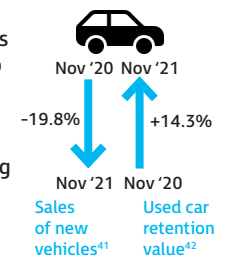
Housing stress (MP) (RU)

Decreasing housing affordability may lead people to live further from the city centre and spend more time commuting. The Perth housing market has tightened significantly since the COVID-19 pandemic began in early 2020.[33] However, there is some evidence that the housing market is, after 18 months to 1 November 2021, starting to lose steam.[34] While the rental market has been largely flat in terms of vacancies, it remains an exceedingly tight market, as rents have continued to rise.

Dec 2019 vs. Dec 2021[35]

12,394 ('19) $520,000 ('21)

8,000 ('21) $480,000 ('19)

For Sale

Properties for sale   Median house price

Dec 2020 vs. Dec 2021[36]

0.8% ('20) $450, $410 ('21)

0.7% ('21) $410, $370 ('20)

For Rent

Vacancy rate   Median house, unit rent

Vehicle sales and retention (VF)

The COVID-19 pandemic has contributed to a global shortage in semiconductor chips, restricting new vehicle supply across the world.[37] Used vehicles have seen sharp price increases, as consumers have turned to the used vehicle market because of these supply chain issues.[38] There is some evidence that used car prices are beginning to stabilise.[39] Moody's Analytics forecast that new vehicle supply should begin to ease by mid-2022, which will help to calm the used-vehicle market.[40]

Nov '20 Nov '21

-19.8%   +14.3%

Nov '21   Nov '20

Sales of new vehicles[41]   Used car retention value[42]

Freight movement (MP) (En)

As at 31 January 2021, there was a 6% increase in registrations across Australia of light trucks and 1.7% increase of heavy trucks, from the previous year.[43]

The COVID-19 pandemic has disrupted supply chains across the world. This has also resulted in a significant shortage of shipping containers.[44] The closure of the international border has also impacted the movement of air freight in and out of Australia. Approximately 80% of Australia's air freight exports are transported in regular passenger flights, compared to 20% in specific cargo flights.[45] These disruptions to sea and air freight may impact consequential freight movements on our roads.

Sociological

Sea and tree change (P)(MP)

The COVID-19 pandemic has accelerated an existing trend across Australia of migration from the cities to the regions.[46] It is difficult to predict whether this migration will continue above trend as the pandemic develops.[47]

Migration to the regions in WA is linked to the strength of the mining industry.[48] A strong mining industry has provided more employment opportunities in the regions. This has driven demand for regional inland housing ('tree change') and increased inland property prices in WA, compared to greater demand for coastal regions ('sea change') in the Eastern States.[49]

Net migration flow to the regions means more road users on regional roads.

Urban sprawl and infill development (MP)

Metropolitan Perth sprawls more than 150km from north to south. WA State Government town planning initiatives such as the Perth and Peel @ 3.5million frameworks aim to limit unsustainable urban sprawl in Perth and encourage significantly greater infill development. These frameworks promote higher-density residential development around urban activity centres and high-frequency public transport routes.[50] They are part of the State Government's vision for a connected and sustainable Perth, which also includes programs such as METRONET.

(Image: Department of Planning, Lands and Heritage)[51]

Rededicating urban land to new construction and high-density development will create more compact and connected local communities across Perth.[52] This will concentrate more people in Perth's urbanised environments and may create more local employment opportunities. Urban infill will reduce the distance people need to commute for work and encourage road users to make greater use of public transport.[53]

Public transport use (RU)

The COVID-19 pandemic has had a considerable impact on public transport use in Perth. At the end of 2021, public transport patronage remains significantly down on pre-pandemic levels.[54] However, there has been a small improvement in patronage between 2020 and 2021.[55]

Transperth total boardings for October last 5 years

Oct-17	12,068,032
Oct-18	12,406,020
Oct-19	12,537,394
Oct-20	9,088,936
Oct-21	9,490,882

Masks are now mandatory on public transport in WA.[56] While difficult to predict, it is possible that mask mandates and an increased public health risk may further impact public transport use in the short to medium term.

In the longer term, WA Government initiatives such as the Perth and Peel @ 3.5million frameworks and METRONET are aimed at improving access to public transport networks across Perth. These initiatives may see longer term shifts in people's tendency to use public transport as an alternative to driving.

Advances in trauma care (RU)

Road trauma encompasses more than the physical injury suffered by a road user involved in a crash. It also includes the mental injury that the road user or someone connected to them, such as their family, may also incur.

The World Health Organization stresses the importance of mental health care as part of the response to a crash.[57] The mental health component of road trauma is becoming an increasing focus of the post-crash response.

Mental health (RU)

Mental health has become an increasingly prominent issue in recent years. Mental illness is estimated to cost the Australian economy up to $70 billion per year.[58] There is evidence that the COVID-19 pandemic has increased psychological distress at a population-level across Australia.[59]

Perhaps surprisingly, early evidence suggests that the impact of COVID-19 on mental health has been similar between States and Territories, despite significant differences between the periods of lockdown experienced in each jurisdiction.[60]

Research suggests that truck drivers are particularly vulnerable to mental health issues. A three year survey from 2018-2021 by Monash University has found that half of all truck drivers in Australia have suffered psychological distress.[61]

International students in Australia face a particular set of mental health challenges, from isolation and loneliness due to a lack of family and friends, to issues caused by bullying and racial discrimination.[62]

Drug and alcohol use (RU)

The impact of the COVID-19 pandemic on drug and alcohol use is difficult to generalise.

There is evidence that lockdowns across Australia resulted in short term changes in alcohol consumption and illicit drug use, followed post-lockdown by regression to pre-lockdown levels.[63]

The longer term impacts of the pandemic on alcohol and drug use are unclear and currently the subject of research.[64]

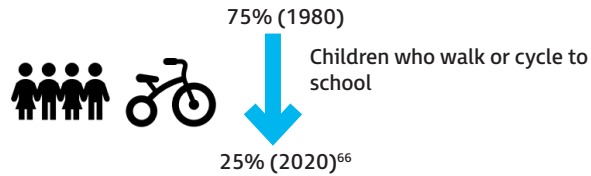An average of 40 people are killed in alcohol related crashes in WA each year.
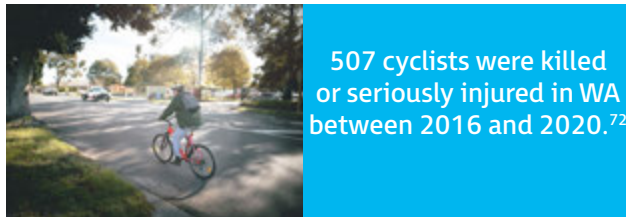
Sociological (cont...)

Active road users RU

The percentage of people who regularly travel by walking or cycling in Australia (or by 'active transport') is low by international standards.[65] Concerningly, the long term trend is one of decline.

75% (1980)

Children who walk or cycle to school

25% (2020)[66]

Active transport programs aim to change the mix of road users and increase the number of people who regularly walk or cycle to travel. In WA, the State Government's 'Your Move' program encourages people to find active ways to travel to and from work and school, and around their communities.[67] This program provides online resources and activities to encourage people to change their behaviours.[68]

The COVID-19 pandemic has driven short term increases in cycling levels across Australia, including in WA.[69] In the longer term, shifts in the active transport rate will be driven by town planning priorities in urban infill and high-density residential development, and the development of active transport infrastructure such as pedestrian and cycle paths.[70] The greater access to public transport provided by these programs will also improve active transport rates, as people often walk or cycle for part of a public transport journey.[71]

507 cyclists were killed or seriously injured in WA between 2016 and 2020.[72]

647 children (aged 0-16) were killed or seriously injured on WA roads between 2016 and 2020, 26% of whom were pedestrians.[73]

Aboriginal road safety and closing the gap RU

Aboriginal and Torres Strait Islander people are a separate and distinct area of focus within the National Road Safety Strategy 2021-30. Actions to reduce the over representation of these populations in road trauma link with the Closing the Gap Priority Reforms, particularly working together with Aboriginal communities and organisations to meet shared goals, and partnerships to address road safety.[74] Other relevant Closing the Gap priorities include the need to build community capacity, improve government institutions and program delivery to be more culturally appropriate and responsive to community needs, and improve data access and capability by Aboriginal people in order to assist with local decision-making.[75]

Aboriginal and Torres Strait Islander people are up to six times more likely to be involved in a traffic accident compared to the Australian non-Aboriginal population, and are (1.4 times) more likely to suffer serious injury or (2.7 times more likely to) die as the result of a vehicle crash.[76]

Culturally and Linguistically Diverse (CALD) communities and road safety RU

There are frameworks to promote engagement with CALD communities,[77] but limited information on whether these encourage CALD communities to participate in road safety or what challenges might exist. A study into information access during the pandemic suggests that people from a CALD background, particularly newer arrivals, depend on their social networks to learn about available services. However, those without community connections rely on information issued by service providers.
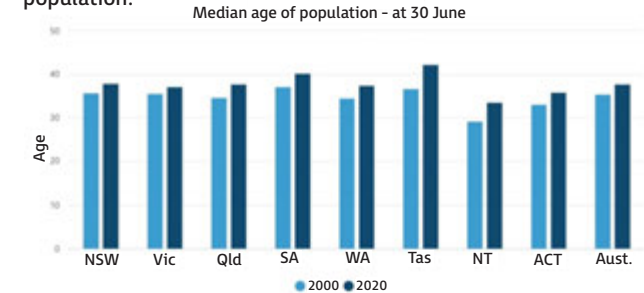
While accessing information online has increased over time, there are still segments of CALD communities without internet access. Varied communication techniques and engagement with CALD communities to ensure policies and services are appropriate and achieve the greatest reach are therefore important.[78] In a road safety context, being able to access information has implications for road safety awareness. Access to services such as driver education and licensing can also have broader implications for employability, independence and social connectivity.

(Image: Central Goldfields Shire Council)[79]

Population demographics P

The long term demographic trend in Australia is of an ageing population.
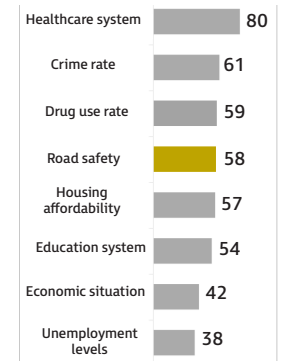

Median age of population – at 30 June

Source: Australian Bureau of Statistics. Twenty years of population change 17/12/2020[80]

Elderly road users may be more vulnerable to trauma caused by road crashes.[81] This has knock-on effects. Post-crash, elderly road users may spend longer in the health care system, or be unable to return to their own homes and need to enter an aged care home.[82] These changes to an elderly crash victim's life may also have lasting impacts on their family and friends.[83]

19% of people killed or seriously injured on WA roads between 2016 and 2020 were aged over 60.[84]

Road safety priorities of road users[85] RU

In November 2021, over 1000 people were asked to rate issues that WA needs to address as a priority. Perhaps unsurprisingly given the COVID-19 pandemic, the healthcare system had the highest % of ratings as a very high priority. Meanwhile, the community's prioritisation of road safety declined between Nov 2020 and Nov 2021. That said, when road safety is considered by itself and not with other factors, its importance has remained reasonably consistent over the last three years.

Healthcare system	80
Crime rate	61
Drug use rate	59
Road safety	58
Housing affordability	57
Education system	54
Economic situation	42
Unemployment levels	38

Technology and Data

Advances in safer technology and vehicles T VF

Advanced Driver Assistance Systems (ADAS) that help drivers to avoid or mitigate accidents are already available in vehicles on sale in Australia. Safety features include lane departure warnings, fatigue warnings and blind spot monitoring.[86] ADAS are increasingly becoming standard features in new vehicles – a trend that is expected to continue here and around the world.

From July 2022	Intelligent Speed Assistance technology mandated in all new vehicles (EU)[87]
From March 2023	All new model vehicles to have autonomous emergency braking (Aus - mandated)[88]
By 2024	All new model vehicles to have lane keeping systems (Aus – proposed)[89]

A safer vehicles initiative in Victoria targets young drivers in regional areas - a cohort that is over-represented in serious road crashes. The unsafe2safe scheme provides young people (aged 18-25) with a subsidy of $5000 to replace their older vehicles with newer cars that feature more modern safety technology. A limited trial is underway to test the concept before the scheme is rolled out to as many as 1000 young regional drivers in 2022.[90]

Younger drivers (aged 17-25) make up 25% of Australian road fatalities despite being only 10-15% of the licensed driver population.[91]
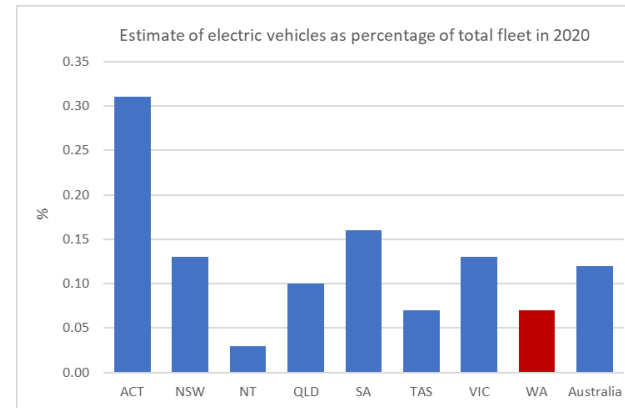
Digital platforms for data linkage/sharing T

Complementing any legislative changes will be the need for appropriate digital platforms to support greater sharing of road safety information between agencies. The WA Office of Digital Government has prioritised working with agencies to establish secure cloud-hosted data sharing infrastructure, and promoting better data linkage between government agencies.[92]

Increased uptake of electric vehicles VF T

Although electric vehicles (battery electric and plug-in hybrid) in WA as a proportion of the total passenger and light commercial vehicle fleet has increased, electric cars still only make up a small percentage.[93]

Estimate of electric vehicles as percentage of total fleet in 2020

The State Electric Vehicle Strategy promotes greater uptake of electric vehicles in order to reduce greenhouse gas emissions and complement renewable hydrogen and battery initiatives. Investment in electric infrastructure such as charging stations, and regulatory and planning reforms to make it easier to install charging facilities in buildings and neighbourhoods are priorities.[94]

(Image: WA Government, State Electric Vehicle Strategy)[95]

More electric vehicles could be good for road safety. A low centre of gravity (enhancing vehicle stability) and more up-to-date technologies (such as ADAS) can make electric vehicles safer.[96] There is also anecdotal evidence that the way electric vehicles are driven to conserve battery power (slower speeds and braking more gently) may also modify driver behaviour to benefit road safety.[97] However, there are also some potential negatives including the quieter operation of electric vehicles that may pose a risk to pedestrians and cyclists.[98]

Developments in driving automation VF T

There are varying degrees of driving automation that range from human-driven vehicles with limited or partial automation, to conditional, high and full automation where an automated driving system drives the vehicle for sustained periods or at all times with little or no human driving required.[99]

(Image: AMAX)[100]

One of the main anticipated safety benefits of fully autonomous/driverless vehicles is fewer accidents caused by human driving behaviour.[101] While the majority of Australian vehicles currently have no, or only limited automation, vehicles with higher levels of automation are expected to become more available in coming years. Vehicles with conditional automation (for example, those that can drive along segments of highways without continuous monitoring by a driver) are forecast to become available in Australia as soon as 2022.[102]

(Image: RAC Intellibus, Department of Transport)[103]

As automated technologies continue to develop and proliferate, driver training may also need to be reviewed to ensure that drivers still have the skills and behaviours needed to safely operate vehicles featuring these technologies.[104]

Technology and Data (cont...)

Digital technologies and distraction T RU

Findings are mixed around the distraction caused by headphones or texting/speaking on a mobile phone but research suggests that pedestrians walk slower and are less likely to look at traffic while crossing.[105] The current road rules around driver distraction do not apply to pedestrians,[106] but focusing too much on pedestrian distraction also risks diverting attention from solutions that are known to improve pedestrian safety such as speeding and driver inattention.[107]

Mobile phone ownership in Australia is projected to keep growing (over 80% of Australians are expected to be using smartphones by 2025).[108] This has road safety implications, not only for distracted pedestrians, but users of e-rideable devices which are also becoming more popular. While new rules around e-rideables state that riders must exercise "due care and attention",[109] long-term monitoring may need to consider distraction from digital devices when regulations are reviewed in the future.

An observational study of over 25,000 pedestrians in Sydney in 2019 found that a sizeable proportion of pedestrians (36%) used a mobile phone or headphones while crossing the road and more than 3% of pedestrians crossed the road illegally while using a digital device.[110]
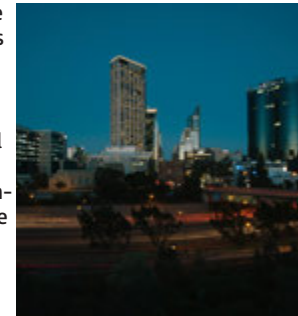
Digital technologies and driver training T RU

Telematics are vehicle systems that capture real-time data on acceleration, turning, braking, speed and location. Information can be communicated to drivers who can use it to monitor (and potentially improve) their own driving behaviour.[111] Smartphone telematics use an app to provide feedback to drivers without the need for hardware to be installed in the vehicle.
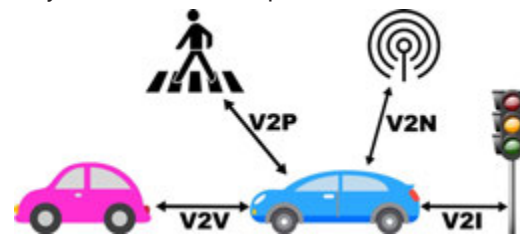
Virtual Reality (VR) technology has potential to complement formal driving instruction and/or allow learner drivers to practice skills. Given that many young people are already familiar with gaming and VR technology, it could be used to assist with hazard perception skills and greater self-awareness around risky behaviour.[112] VR technology is also becoming increasingly affordable and may offer greater access to driver training.[113]

Growth in safer road technologies En VF T

Intelligent Transport Systems use information and communications technologies to collect information on road conditions in real time and guide the actions of traffic system managers and road users.[114] The first Smart Freeway in Perth (Kwinana Freeway Northbound) applies electronic signage and coordinated on-ramp traffic signals. The next phase (Mitchell Freeway Southbound), due for completion in late 2023, will use similar technologies to improve driver safety by reducing merge point conflicts and congestion.[115]

Cooperative Intelligent Transport Systems (C-ITS) permit real-time information sharing between vehicles (V2V), between vehicles and roadside infrastructure (V2I), and between vehicles and pedestrians and cyclists via wireless devices. These technologies can improve road safety by, for example, alerting drivers to a hazard over the crest of a hill, variable speed limits along a stretch of road, or pedestrians at an upcoming crossing. Vehicles fitted with C-ITS are anticipated in Europe and the US over the next few years, with Australia expected to follow.[116] [117]
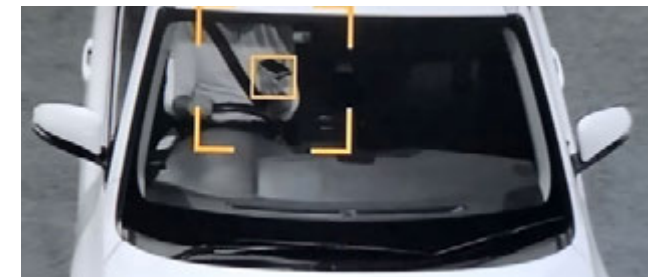
(Image: Vehicular Communication (modified) CC BY-SA 4.0)[118]

Ongoing advances in smart road technology that may also contribute to road safety in the future include: smart intersections (combining cameras, artificial intelligence, object recognition software, and V2I to help drivers anticipate hazards around blind corners), smart street lights (using sensors and Wi-Fi to modify light levels in the presence of pedestrians and vehicles), and development of automatic crash notifications in vehicles that operate independently of cellular networks and can enable a more efficient post-crash emergency response (eCall).[119]

Developments in infringement management technology T

Western Australia may be able to benefit from the experience of jurisdictions that are implementing new infringement management technologies. Queensland introduced mobile phone and seatbelt cameras in November 2021 that use artificial intelligence software to filter images and identify possible instances of driver mobile phone use or failure of the driver or front seat passenger to wear a seatbelt.[120] Advanced camera technology to detect mobile phone and/or seatbelt violations is already in use in New South Wales and Victoria and will be introduced in South Australia in 2022.

(Image: Drive.com.au)[121]

Broader technological advances may also impact traffic enforcement and road safety in coming years. This includes ongoing improvements to camera technology (enabling the capture of clearer images), development of artificial intelligence and computer learning algorithms (allowing devices to more accurately identify possible violations), greater integration of technologies (permitting multiple functions such as licence plate recognition and monitoring of traffic and behaviours),[122] and the use of drones equipped with cameras and wireless communications to detect traffic violations and assist in post-crash investigations.[123]

Legal and Regulatory

New eRideable rules (T) (RU)

New rules governing the use of electric rideable devices came into effect in WA on 4 December 2021.[124]

E-SKATEBOARDS · E-SCOOTERS · E-WHEELS · HOVERBOARDS · E-UNICYCLE · E-SKATES

Electric bikes and motorised scooters (<200w) are subject to their own regulations but may be ridden on roads as well as shared paths and bike lanes.[125] The maximum legal speed for eRideables and e-bikes is 25kph. Anecdotal evidence from other states suggests that illegal modifications to e-bikes are relatively easy and some bicycles can reach higher speeds than their construction allows, therefore making them unsafe for the rider and other path/road users.[126] As eRideable and e-bike use continues to increase in WA, any future evaluations of the regulations may need to check that speed restrictions, and other rules designed to keep riders and users of shared spaces safe, remain fit for purpose.

Future law reform with possible road safety implications (RU)

Medicinal cannabis

In WA, medicinal cannabis supply and prescription must comply with Medicines and Poisons legislation. Recreational cannabis remains illegal and drug driving offences apply regardless of whether cannabis has been prescribed.[127] Cannabis use increases the risk of traffic accidents although it is unclear if there is a "safe" level of cannabis use that does not impair driving. The relationship between levels of THC (the main psychoactive component of cannabis) in the body and degree of impairment is variable[128] so blood levels are not always a good measure of whether drivers are fit to drive or not. Specific research is also needed on the effects of medicinal cannabis use on driving.[129] The WA Parliament has established a Select Committee to Inquire into Cannabis and Hemp including the potential to amend the current legislation and regulations which apply (to report by October 2022).[130]

Infringement management

Western Australia's traffic infringement management system is being reformed to replace existing software with a new system that offers more flexible payment options, online management and potential for a shared platform with other government agencies responsible for traffic and non-traffic infringements.[131] Although beyond the scope of the current reform process and its associated legislative changes, developments in road safety interventions may inform future considerations around traffic infringements. For example: the immediacy of infringements (evidence suggests that punishments administered immediately after an offence can reduce the likelihood of reoffending),[132] understanding the disproportionate impact of fines on disadvantaged members of the community[133] and research into positive (rather than punitive) approaches such as incentives and reinforcing good behaviour to improve road safety outcomes.[134]

Food delivery services

Food delivery services such as Uber Eats and Menulog have become increasingly popular in Australian capital cities (including Perth), especially following COVID lockdowns.[135]

In late 2020, four food delivery riders were killed in NSW when riding bicycles/motorcycles, including one who had been riding an e-bike that was not road-legal.[136] The NSW Government recently released a guide targeting food delivery platforms. Although not legally binding, it reminds businesses of their legal obligations under workplace health and safety legislation. Guidance is provided on how to reduce the risk of injury to food delivery riders who use bicycles and motorcycles for their work, including: how businesses and delivery riders should manage unsafe work practices (working hours and fatigue), complete all training, use appropriate equipment (riders to be provided with PPE including hi-vis vests) and interact safely with other road users.[137]

Should food delivery services continue to proliferate in WA, the safety of delivery riders may become more of an issue, particularly for those using vulnerable modes of transportation (including e-bikes and e-scooters) for work.

Autonomous vehicles (T)

Current WA legislation does not permit vehicles on the road without a driver although a permit may be granted by the Department of Transport for automated vehicle trials. Nationally, a regulatory framework for automated vehicles is yet to be developed.[138]

(Image: Queensland Govenment)[139]

Improvements to data sharing/linkage (G)

Data and analysis helps to inform evidence-based road safety policy and target investment. Some challenges include disparate data collections managed by multiple agencies, data gaps, and inconsistent definitions across data sets. Initiatives are underway at national and state level to improve data harmonisation and sharing.

National	
A national approach to measuring non-fatal crash outcomes.	National project that links hospital and crash data to achieve a consistent national measure of serious injury.[140]
Intergovernmental Agreement on data sharing between Commonwealth and State and Territory governments.	Signed on 9 July 2021 to make the sharing of data the default position across jurisdictions provided it is done safely, securely, ethically and lawfully.[141]
State	
Proposed privacy and information sharing legislation. (Image: Department of Premier and Cabinet)	The proposed framework will protect personal information collected by government, guide data sharing between public sector agencies and authorised third parties (such as universities) and data linkage.[142] Public consultation took place in 2019 but reform has been delayed due to COVID.[143]

Environmental

P T En MP Ec VF RU G

Impact of climate change En RU

Climate trends have the potential to impact road safety into the future. Rain, storms, strong winds, and high temperatures can increase crash risk by reducing visibility, road friction, or compromising road surface. High temperatures can increase driver irritability and fatigue leading to diminished concentration and reaction time.[144] Southwest Western Australia's climate has been changing, particularly over the last 50 years:

1.1°C
Increase in average annual temperature

20%
Annual rainfall decrease

At the same time, annual rainfall has increased over northern and interior WA.[145]

Some European countries cite emissions reduction as the reason for reducing speed limits on rural roads[146] and in town centres. On city streets, lower speed limits (e.g. 30kph in Paris, Brussels, Bilbao and Glasgow) also create more pedestrian and cyclist-friendly environments.[147]

Environmental concerns are among the reasons given by millennials (those aged 24-39) for driving less compared to older generations.[148] Motivated by a desire to reduce their carbon footprint, younger people are more likely to use options such as car sharing and carpooling.[149] While this potentially reduces vehicles

(Image: Chabe01, CC BY-SA 4.0)[150]

delaying driving rather than renouncing car use entirely,[151] but COVID may upset the trend. Highlighting how vehicle use is sensitive to many more factors than environmental consciousness alone, a recent survey of over 3000 people in 9 countries found that COVID concerns had made public transport less attractive and nearly a third of people without a car intended to buy one within six months - nearly half of these were millennials.[152]

Modifying the physical environment to reduce road traffic risk En

Increasingly, the Movement and Place Framework is guiding the management of road networks. Speed management and road design occur on a spectrum based on the relative functions of roads as corridors prioritising movement, or liveable places with community value.[153]

(Image: ACT Government)[154]

A Movement and Place Framework is currently being developed for WA. More integration between transport and land use planning should clarify priorities for different roads and help to reduce conflicts between road users.[155]

In urban areas and urbanised regional centres, design can contribute to a safer environment by reducing vehicle speeds and prioritising pedestrian and cyclist safety. Design elements include narrower traffic lanes, roundabouts, shorter city blocks (creating more junctions where vehicles must stop and pedestrians can cross), street trees and traffic calming measures such as speed humps and chicanes.[156]

In contrast, rural areas feature long distances, high speed roads and sparse built form that require different design elements. The Movement and Place Framework suggests that as corridors connecting rural towns and regional centres, the most important considerations here are facilitating safe movement by protecting and maintaining roadside vegetation, and using safe system design practices such as audible edge lines on roads.[157]

(Image: World Resources Institute)

Around 24% of crashes resulting in death or serious injuries on rural and 12% on metropolitan roads, are caused by excessive or inappropriate speeds to the conditions.[158]

Road and roadside safety upgrades En

Main Roads WA lists current and future metropolitan and regional projects that apply engineering-based solutions to mitigate road safety risk. Specific initiatives include urban road safety upgrades that target local roads and apply safety treatments such as roundabouts and raised safety platforms.[159] The Regional Road Safety Improvement Program seeks to upgrade 7000km of regional roads by July 2022 by installing audible edge lines and sealing road shoulders to provide drivers with more room and time to react if their vehicle leaves the lane.[160] The Black Spot Program targets locations with crash history for road treatments that will help to reduce risks.[161]

Urban Road Safety Upgrades >
04 October 2021
Through the Low Cost Urban Road Safety Program, we are seeking to proactively reduce crashes on local government roads.

Regional Road Safety Upgrades >
27 October 2021
Up to 7,000 kilometres of regional roads will be upgraded across the state by July 2022. Treatments include sealing existing, unsealed shoulders and installing audible lines to warn drivers who veer out of their lane.

(Images: Main Roads WA)

Regional areas accounted for nearly 60% of Western Australia's overall road toll in 2021.[162]

Endnotes

1 METRONET.
2 The METRONET Sustainability Strategy.
3 WA Government. WA Recovery Plan initiatives.
4 The 2021-22 State Budget includes significant investment in various transport projects (Budget Transport Factsheet).
5 Infrastructure Western Australia. State Infrastructure Strategy, draft for public comment.
6 Energy Policy WA. State Underground Power Program.
7 Reconnect WA package.
8 Office of Road Safety.
9 Office of Road Safety. National Road Safety Strategy for 2021-2030.
10 Jake Evans, "Barnaby Joyce sends road safety plan back to ministers after experts warn it would fail to reduce deaths". ABC News, 27 January 2022.
11 Parliament of Australia. 2021 Joint Select Committee on Road Safety.
12 Parliament of Australia. Resolution of appointment for 2021 Joint Select Committee on Road Safety.
13 Department of Prime Minister and Cabinet. Federal Budget infrastructure boost to help build Western Australia's economic recovery.
14 Department of Infrastructure, Transport, Regional Development, and Communications. Investment Road and Rail Program. WA Agricultural Supply Chain Improvements – Package 1.
15 Office of Road Safety. National Road Safety Strategy for 2021-2030.
16 Centre for Population. December 2021 Population Statement. Georgia Hitch. "Population data shows movement after COVID lockdowns, drop in migration rate". ABC News, 20 December 2021.
17 Australian Mining. WA slowly converting FIFO workers.
18 Department of Primary Industries and Regional Development. Season 2021-22.
19 WA Government. The Paid Escape.
20 Department of Primary Industries and Regional Development. Regional travel and accommodation support scheme. 21 Chamber of Commerce and Industry WA. Retail Trading Hours in WA – A Case for Reform.
22 ABS. Labour Force January 2021 statistics and Latest Release statistics (accessed 28 January 2022).
23 Ibid.
24 Curtin-Monash Accident Research Centre. The Relationship between Socio-economic Factors and Road Safety in Western Australia.
25 Monash Accident Research Centre. The Development of a Framework for Road Safety Strategy Evaluation.
26 Tourism Western Australia. Visitation figures for year ending June 2021.
27 Department of Jobs, Tourism, Science and Innovation. November 2021 Economic Profile WA.
28 Tourism Research Australia. Tourism 2020.
29 Tourism Research Australia. Tourism 2020.
30 Tourism Research Australia. Domestic tourism forecasts 2021-22 to 2025-26.
31 Department of Jobs, Tourism, Science and Innovation. November 2021 Economic Profile WA.
32 Sustainable Built Environment National Research Centre. Challenges for the FIFO/DIDO Workforce: Impacts on Health, Safety and Relationships. September 2015. Teegan Modderman, "DIDO road safety: a shared responsibility". Safety Solutions, 1 October 2014.
33 RIEWA. Perth metro sales and rental figures.
34 Jesinta Burton. "Perth home values drop as market loses steam". Business News, 1 November 2021. Colin Brinsden. "Australian real estate: First home buyers giving up seeking loans, Perth records negative monthly result". Perth Now, 1 November 2021.
35 RIEWA. Perth metro sales and rental figures.
36 RIEWA. Perth metro sales and rental figures.
37 Ben O'Shea. "John Hughes reveals new car shortage after industry success in wake of COVID". The West Australian, 29 March 2021.
38 Ben O'Shea. "John Hughes reveals new car shortage after industry success in wake of COVID". The West Australian, 29 March 2021.
39 Neil Dowling. "Used-car prices take a breather". GoAutoNews, 23 October 2021.
40 Neil Dowling. "Used-car prices take a breather". GoAutoNews, 23 October 2021.
41 FCAI Vfacts data for November 2021.
42 Datium Insights–Moody's Analytics Used Vehicle Price Index (updated December 2021).
43 ABS. Motor Vehicle Census, Australia.
44 Nick Baker and Ian Coombe. "What is the great shipping container shortage and could it ruin your Christmas?". ABC, 29 October 2021.
45 Tourism Research Australia. Tourism 2020.
46 REA Insights Regional Australia Report. November 2021.
47 Emilia Terzon. "COVID-19 has made a treechange more alluring – but that may not last". ABC News, 24 June 2021.
48 REA Insights Regional Australia Report. November 2021.
49 REA Insights Regional Australia Report. November 2021.
50 Perth and Peel @ 3.5million frameworks.
51 Department of Planning, Lands and Heritage. Image.
52 Perth and Peel @ 3.5million frameworks.
53 Perth and Peel @ 3.5million frameworks.
54 Transperth public transport performance data (monthly boarding data for bus, train and ferry).
55 Transperth public transport performance data (monthly boarding data for bus, train and ferry).
56 Department of Premier and Cabinet. WA Safe Transition Plan.
57 Injury Matters. Road Trauma in Western Australia Position Paper June 2021. WHO. Post-crash response: supporting those affected by road traffic crashes.
58 Productivity Commission. Inquiry Report into Mental Health.
59 Australia's Mental Health Think Tank. COVID-19 and Australia's Mental Health.
60 Australia's Mental Health Think Tank. COVID-19 and Australia's Mental Health.

61 Phoebe Hosier. "Landmark research reveals 'horrific' mental health crisis facing Australian truck drivers". ABC, 21 November 2020.
62 Department of Education, Skills and Employment. Australian strategy for international education 2021-2030; Orygen. International Students and their Mental Health and Physical Safety Report – June 2020.
63 AIHW. Impacts of COVID-19 on alcohol and other drug use.
64 AIHW. Impacts of COVID-19 on alcohol and other drug use.
65 RMIT Centre for Urban Research. Active Transport Policy Brief.
66 WA Department of Transport. The declining rate of walking and cycling to school in Perth.
67 WA Department of Transport. Your Move program details.
68 WA Department of Transport. Your Move website.
69 Metrocount has published bicycle (and e-scooter) data for several sites around Australia (including one in Perth at the South Perth foreshore) between Jan 2019 and Feb 2021 showing increases in bike/e-scooter use post-COVID compared to before.
70 RMIT Centre for Urban Research. Active Transport Policy Brief.
71 RMIT Centre for Urban Research. Active Transport Policy Brief.
72 Road Safety Commission. 'Staying safe on WA roads'.
73 Road Safety Commission. 'Child Safety WA Roads'.
74 Office of Road Safety. National Road Safety Strategy 2021-30.
75 Australian Government. National Agreement on Closing the Gap – Priority Reforms.
76 Pammer et al. Keeping Safe on Australian Roads: Overview of Key Determinants of Risky Driving, Passenger Injury, and Fatalities for Indigenous Populations'.
77 Department of Local Government and Communities. Engaging Culturally and Linguistically Diverse Communities. A guide for the public sector.
78 Federation of Ethnic Communities' Councils of Australia. Multicultural Access and Equity Report.
79 Central Goldfields Shire Council. Image.
80 ABS. Twenty Years Population Change.
81 Australasian Trauma Society evidence to federal Joint Select Committee Inquiry on Road Safety (7 October 2021, p. 9).
82 Australasian Trauma Society evidence to federal Joint Select Committee Inquiry on Road Safety (7 October 2021, p. 9).
83 Australasian Trauma Society evidence to federal Joint Select Committee Inquiry on Road Safety (7 October 2021, p. 9).
84 Road Safety Commission. 'Staying safe on WA roads'.
85 KANTAR Community Attitude Monitor Wave 7 (February 2022)
86 Federal Chamber of Automotive Industries. "Advanced Driver Assistance Systems".
87 European Transport Safety Council. "Intelligent Speed Assistance specifications officially published". Also Jenkins, S. "Mandatory speed limiters to be fitted to all new UK cars after 2022", Evo News.
88 ANCAP Safety. "ANCAP welcomes mandatory autonomous emergency braking (AEB) technology from 2023".
89 Australian Government Department of Infrastructure, Transport, Regional Development and Communications. "Lane Keeping Systems for light vehicles".
90 VicRoads. "unsafe2safe".
91 The George Institute. "Young Driver Factbase".
92 WA Department of the Premier and Cabinet. "Data Analytics & Insights".
93 National Transport Commission. Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2020.
94 WA Department of Water and Environmental Regulation. State Electric Vehicle Strategy for Western Australia.
95 Ibid.
96 Hilster, E. et al. Safety and electric passenger cars.
97 Lenzo, B. "Electric cars could make the roads safer – here's how".
98 Pardo-Ferreira, et al. "New Risk Situations Related to Low Noise from Electric Vehicles: Perception of Workers as Pedestrians and Other Vehicle Drivers".
99 National Transport Commission. National enforcement guidelines for automated vehicles.
100 AMAX Engineering (nd), Image.
101 Sun, Y., Olaru, D., Smith, B., Greaves, S., and Collins, A. (2017). "Road to autonomous vehicles in Australia: an exploratory literature review". Road & Transport Research 26(1): 34-47.
102 Austroads. Future Vehicles Forecasts Update 2031 (Research Report AP-R654-21).
103 WA Department of Transport, Image.
104 Austroads. Education and Training for Drivers of Assisted and Automated Vehicles (Research Report AP-R616-20).
105 Green, M. "Distracted Pedestrians by Digital Devices".
106 National Transport Commission. Developing technology-neutral road rules for driver distraction
107 Ralph, K., and Girardeau, I. "Distracted by 'distracted pedestrians'?" Transportation Research Interdisciplinary Perspectives 5:100118.
108 Granwal, L. "Smartphone penetration as share of population of Australia 2017-2025".
109 Road Traffic Code 2000 (WA) regulation 229(b).
110 NRMA. Look up. Keeping pedestrians safe.
111 NSW Government, State Insurance Regulatory Authority. NSW Young Drivers Telematics Trial.
112 Liverpool John Moores University. 'LJMU students learn to drive with virtual reality driving lessons'.
113 Pammer, K., et al. 'Keeping Safe on Australian Roads: Overview of Key Determinants of Risky Driving, Passenger Injury, and Fatalities for Indigenous Populations'.
114 Australian Government Department of Infrastructure, Transport, Regional Development and Communications, nd. "Intelligent Transport Systems".
115 Main Roads WA. "Smart Freeways make sense".
116 Federal Chamber of Automotive Industries. "Cooperative Intelligent Transport Systems".
117 Australian Government Department of Infrastructure, Transport, Regional Development and Communications. "Intelligent Transport Systems".
118 Creative Commons, Image.

119 Toh, C.K., et al. "Advances in smart roads for future smart cities".
120 Queensland Government. "Mobile phone and seatbelt cameras".
121 Dowling, J. "Queensland mobile phone and seatbelt detection cameras start today".
122 ITS International. "Top 5 trends in vision technology".
123 Toh, C.K., et al. "Advances in smart roads for future smart cities".
124 Road Safety Commission. "eRideables".
125 Hammond, J. "E-bikes, e-skateboards and e-scooters. What are the rules?" RACWA.
126 Kennedy, E. "Call for change as illegal e-bikes reaching speeds of more than 100 kilometres per hour". ABC News.
127 WA Department of Health. "Cannabis-based products".
128 Arkell, T.R., Spindle, T.R., Kevin, R.C., Vandrey, R., and McGregor, I.S. (2021). "The failings of per se limits to detect cannabis-induced driving impairment: results from a simulated driving study". Traffic Inj. Prev. 22:1–6.
129 Brands, B., et al. "Cannabis, Impaired Driving, and Road Safety: An Overview of Key Questions and Issues".
130 Parliament of Western Australia. "Inquiry into Cannabis and Hemp".
131 Hendry, J. "WA Police eyes new govt-wide infringement solution, data lake set to replace 15-year-old system".
132 Turner, B., et al. Guide for Road Safety Interventions: Evidence of what works and what does not work.
133 Quilter, J., and Hogg, R. (2018). "The hidden punitiveness of fines". International Journal for Crime, Justice and Social Democracy 7(3): 9-40.
134 Compass IoT. "Reducing road fatalities with positive behaviour change".
135 Roy Morgan. "Meal delivery services Uber Eats, Menulog, Deliveroo and DoorDash experienced rapid growth during 2020 – a year of lockdowns & work from home".
136 Zhou, N. "Uber Eats rider died riding e-bike not approved for use in NSW, company confirms". The Guardian.
137 NSW Government, Safework NSW. A guide to managing work health and safety in the food delivery industry.
138 National Transport Commission. Automated Vehicle Program Approach.
139 Queensland Government, Image.
140 Australian Government Department of Infrastructure, Transport, Regional Development and Communications. "Australian Government response to the Joint Select Committee on Road Safety report: Improving Road Safety in Australia".
141 Intergovernmental Agreement on data sharing between Commonwealth and State and Territory Governments.
142 WA Government, Public Sector Reform Unit, DPC. Privacy and Responsible Information Sharing for the Western Australian public sector – Discussion paper.
143 WA Government, Public Sector Reform Unit, DPC. "Privacy and Responsible Information Sharing".
144 Rowland, Bevan, et al. "Road Transport Sensitivities to Weather and Climate Change in Australia".
145 WA Government Department of Primary Industries and Regional Development. "Climate trends in Western Australia".
146 "Europe changes gear over speed limits on country roads". BBC News.
147 Squires, C. "Has the speed limit been reduced in your city? Here's why", World Economic Forum".
148 Wolske, K., et al. "Driving Change: How Millennials are Reshaping the World Without Leaving Home".
149 Standing, C., Jie, F., Le, T., Standing, S., and Biermann, S. (2021). "Analysis of the Use and Perception of Shared Mobility: A Case Study in Western Australia". Sustainability 13(16): 8766. Also Vergnani, R. (2019). "Young people increasingly prefer car sharing to car ownership".
150 Creative Commons, Image.
151 Rerat, P. (2018). "A decline in youth licensing: a simple delay or the decreasing popularity of automobility?". Applied Mobilities.
152 Winton, N. "Coronavirus shaking up car buying as millennials suddenly seeing big plusses; EY Report".
153 Office of Road Safety. "Fact sheet: Movement and place and speed management".
154 ACT Government. "Accessible Canberra".
155 WA Department of Transport. "Movement and Place".
156 Null, S. et al. "6 Road design changes that can save lives".
157 Victoria Department of Transport. Movement and Place in Victoria.
158 Road Safety Commission. Driving Change Road Safety Strategy for Western Australia 2020-2030.
159 Main Roads WA. "Urban Road Safety Upgrades".
160 Main Roads WA. "Regional Road Safety Upgrades".
161 Main Roads WA. "Road safety programs".
162 ABC News Online (5 January 2022).