



The declining rate of walking and cycling to school in Perth



CONTENTS

EXECUTIVE SUMMARY	4
1 INTRODUCTION	6
1.1 Strategic alignment	6
2 PROBLEM DEFINITION	7
2.1 Mode share	7
2.2 Impacts and urgency	8
2.3 Absence of strategic objectives for active travel to school in WA	11
3 CAUSAL FACTORS	12
3.1 Access and traffic exposure	12
3.2 Safety concerns	13
3.3 Distance between home and school	13
3.4 Car ownership	13
3.5 Labour force participation	13
4 CHALLENGES FOR WA	14
4.1 Growth in school age population	14
4.2 The need for strategic direction	16
4.3 School site selection and access	16
4.4 Parking supply and demand	18
4.5 Barriers to safe access for vulnerable road users	18
4.6 Road safety guidelines for local governments and schools	19
5 OPPORTUNITIES AND RECOMMENDATIONS FOR WA	20
5.1 Setting clear directions for active travel to school	20
5.2 Mode share targets for travel to school in Perth	22
5.3 Leading a consultative review of planning processes in practice	23
5.4 Managing the supply of parking and safe active transport infrastructure	23
5.5 Consulting local governments	23
5.6 Supporting flexible working arrangements	23
5.7 Trial park and walk zones	23
5.8 Expanding the reach of the Your Move Schools program	24
5.9 Conditional approvals requiring Your Move participation	24
5.10 Trialling combined infrastructure and behaviour change initiatives using recent technological innovations	25
5.11 Improving school travel data collection and analysis	25
5.12 Increasing bike proficiency	25
6 CONCLUSION	26
GLOSSARY OF TERMS	28
APPENDIX A: PRIMARY STAKEHOLDERS	29
REFERENCES	30



Woodlands Primary School at pick-up time
© WEST AUSTRALIAN NEWSPAPERS LIMITED



Children holding hands walking to school

EXECUTIVE SUMMARY

This paper defines the problem of declining active travel to school in Perth and includes a summary of the benefits of addressing the problem, its underlying causes, and opportunities and challenges for reversing the decline.

The paper was prepared in consultation with state government agencies, industry representatives and peak bodies (see Appendix A).

Fewer Australian children walk and bike ride to school than ever before. Over the past 40 years the national rate of active travel to school has declined from 75 to 25 per cent. In Perth, the rate is as low as 20 per cent and one half of children travel to school by car despite living less than one kilometre away.

This momentous decline in active travel to school not only impacts the economy and transport network, it also affects some of the most vulnerable members of the community. Children who are driven to school are more likely to be sedentary and have ongoing health problems throughout their lives, including overweight and obesity. The annual cost of overweight and obesity

to the Western Australian (WA) health system is projected to reach \$610.1 million by the year 2026.

The Australian Health Policy Collaboration and over 70 of Australia's leading chronic disease experts consider active travel to school the most effective way to reverse the trend in childhood inactivity and associated disease.

In addition to health costs, the annual economic cost of car travel to school in the Perth metropolitan area is estimated at over \$186 million, consisting of travel time, vehicle operating costs and road crashes.

Factors contributing to the decline in walking and bike riding to school include:

- ▶ poor access and traffic exposure around schools;
- ▶ safety and parent/carer perceptions;
- ▶ distance between home and school;
- ▶ increased car affordability and ownership; and
- ▶ parent/carer time constraints due to higher labour force participation.

The factors are further complicated by unique challenges across the Perth metropolitan area including growth in school population, lack of policy coordination, poor school site selection, parking supply and demand issues, and barriers to safe access for vulnerable road users.

Strong latent demand for active travel exists within Perth's school population with over 50 per cent of students wanting to regularly walk and bike ride to school.

The Transport Portfolio has a lead role to play in enabling children to walk and bike ride by setting clear objectives, mode share targets and strategies, improving planning policies and processes, enabling collaboration and delivering interventions designed to address major barriers to active travel.

The benefits of addressing the decline in active travel to school are substantial. For instance, the cumulative economic benefit of 50 per cent active travel to school mode share reached over 20 years is estimated at \$818 million.

Reversing the decline in active travel to school aligns with key State Government strategies including the *Department of Transport Strategic Plan 2020-22*, *METRONET Sustainability Strategy*, *Western Australian Bicycle Network Plan 2014-2031*, *State Public Health Plan for Western Australia 2019 - 2024*, *Western Australian Health Promotion Strategic Framework 2017-2021* and *Sustainable Health Review Final Report to the Western Australian Government (2019)*.

1 INTRODUCTION

The main objective of this paper is to define the problem of declining walking and bike riding to school in Perth, and to inform the coordinated delivery of policy and interventions to reverse this decline.

The problem definition contains a summary of current school travel mode shares, impacts and urgency for the State Government, benefits and examples of success from around the world.

This is followed by an overview of the external factors influencing walking and bike riding to school as well as the challenges and opportunities for reversing the decline in WA including suggested mode share targets.



Mother and daughter walking to school

1.1 Strategic alignment

Addressing the problem of declining active travel to school is aligned with the following key State Government transport strategies:

- ▶ *Department of Transport Strategic Plan 2020-22*: addressing the decline in active travel to school contributes to the achievement of 'Strategic Priority 2' by providing 'safe and effective transport' for WA school children.¹
- ▶ *METRONET Sustainability Strategy*: addressing the decline in active travel to school supports the long-term objectives of 'Station Precincts Delivery' by increasing 'access, changing/alternative transport modes and active transport'; promoting 'safe and socially inclusive places' and 'healthy and positive places for people to live'; and contributing to 'energy efficient and low carbon communities'.²
- ▶ *Western Australian Bicycle Network Plan*: addressing the decline in active travel to school supports the State Government's investment in cycling infrastructure by encouraging more children to develop bike riding skills and habits at an early age leading to increased use in the future.³
- ▶ *State Public Health Plan for Western Australia 2019 - 2024*: coordinating policies to increase active travel to school will help promote public health as a development priority.
- ▶ *Department of Health Western Australian Health Promotion Strategic Framework 2017-2021*: reversing the decline in active travel to school will help lower the incidence of avoidable chronic disease and injury in WA by facilitating improvements in health behaviours and environments.⁴
- ▶ *Sustainable Health Review Final Report to the Western Australian Government (2019)*: reversing the decline in active travel to school will help halt the rise in obesity and support children and families in getting the best start in life by becoming physically and mentally healthy.⁵

2 PROBLEM DEFINITION

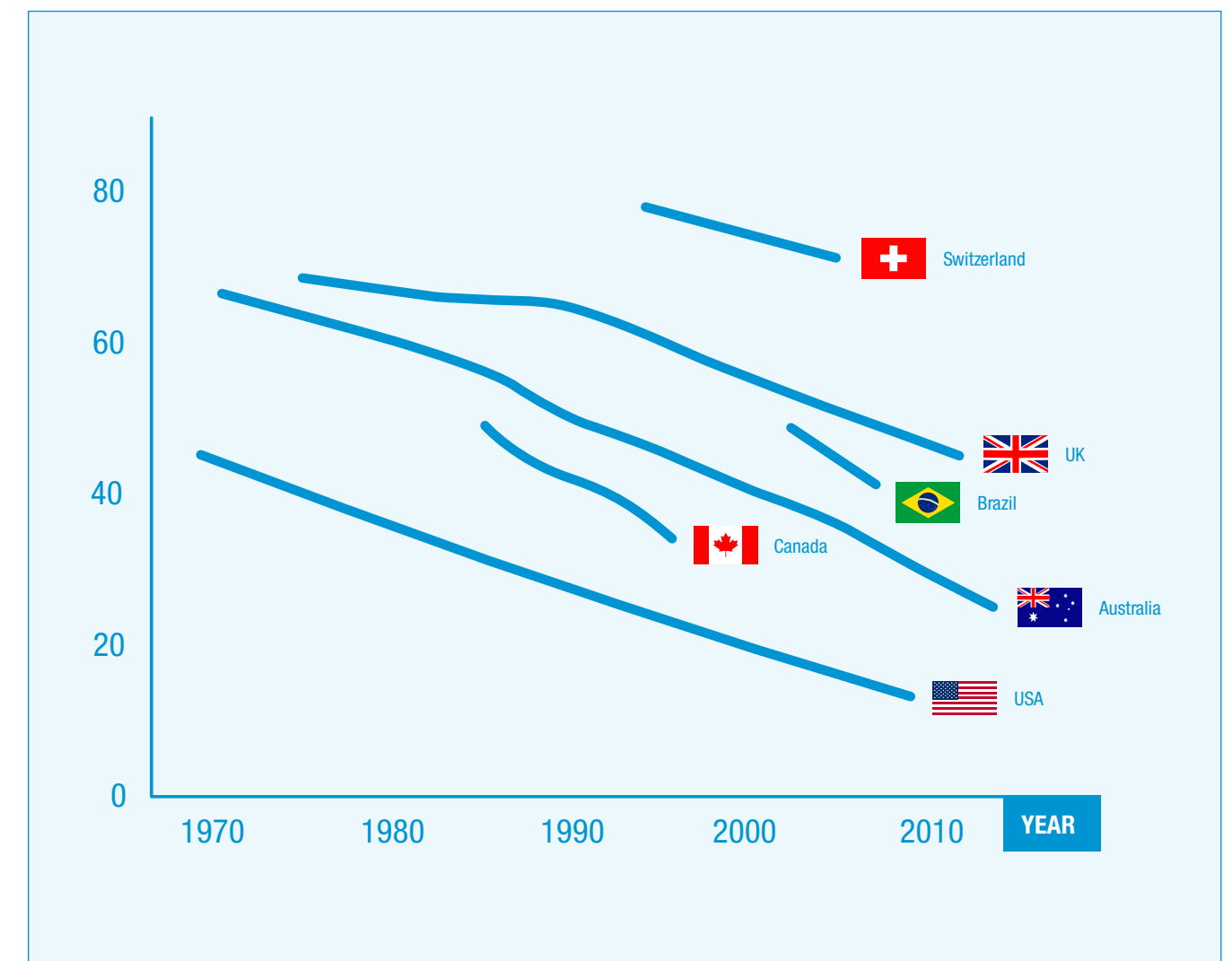
2.1 Mode share

Fewer Australian children walk and cycle to school than ever before. Over the past 40 years the national rate of active travel to school has declined from 75 to 25 per cent.⁶ In Perth, the rate is as low as 20 per cent⁷ and one half of children travel to school by car despite living less than one kilometre away.⁸

The decline in active travel to school is cause for concern, especially when compared with other journey mode shares, such as walking to work, which has declined by 2.0 per cent mode share over the same period.⁹

The declining rate of walking and bike riding to school is not unique to Australia, with other countries experiencing similar downward trends (as shown in Figure 1 below).

Figure 1: International decline in active travel to school



Source: Active Healthy Kids Australia, 2015



Redcliffe Primary School at pick-up time
© WEST AUSTRALIAN NEWSPAPERS LIMITED

2.2 Impacts and urgency

The impacts of declining active travel to school are immediate and long term including increased travel times, more traffic congestion, less opportunity for skills development and self-efficacy and associated lower return on investment in cycling infrastructure, childhood obesity and chronic disease, and road infrastructure costs.¹⁰

In addition, the declining rates of walking and bike riding to school are likely to further compound transport challenges faced by the State Government over the next decade.

2.2.1 Travel time

The burden on Perth's transport network will increase over the next decade as the school age population increases from 400,000 to a approximately 490,000.¹¹ This will result in the average car travel time to Perth schools increasing by 40 per cent.¹²

Most of the growth in school student population will occur in outer metropolitan areas, where parents/carers already experience the lengthiest work commute times in Perth (in excess of 45 minutes)¹³. Growth will also occur in the Central Sub-Region, which is a key land use planning and infrastructure area due to high density, and residential and workforce population.

2.2.2 Traffic congestion

Traffic around Perth schools is an increasing issue for parents/carers and continues to attract media attention.¹⁴ A recent RAC survey suggests 85 per cent of parents/carers experience 'heavy congestion or traffic jams' outside their local school.¹⁵

More traffic also places pressure on the Department of Education (DoE) to install more car parking bays on new and existing school sites, placing unnecessary additional pressure on the State Budget.¹⁶

Increased traffic also contributes congestion on local roads, resulting in pressure on local governments to provide more on-street parking and management.

2.2.3 Return on investment in cycling infrastructure

The State Government has committed more than \$265 million for cycling and walking infrastructure in WA. Achieving a return on this investment depends on the level of use of this infrastructure both now and in the future. This may be impacted by the trending decline in active travel to school and the associated decrease in skill development and self-efficacy to safely use this infrastructure.

2.2.4 Health

In WA one in four children and over 70 per cent of adults are overweight or obese and the annual cost of this health crisis to the WA health system is projected to reach \$610.1 million by the year 2026.¹⁷

Active travel to school has a primary role to play in addressing this health crisis. Children who are driven to school are more likely to be car-dependent, sedentary and have ongoing health problems throughout their lives, including overweight and obesity.

For these reasons, the declining rate of active travel to school is considered a major health issue by the Australian Health Policy Collaboration¹⁸, the Heart Foundation¹⁹ and over 70 of Australia's leading chronic disease experts.²⁰

2.2.5 Economic costs

The annual economic cost of car travel to school in Perth is estimated at over \$186 million.²¹ This comprises \$90 million for travel time; \$65 million for vehicle operating costs; and \$30 million for crashes and externalities.

Travel to school comprises approximately 18.4 per cent of morning peak transport trips in the Perth metropolitan area and is therefore a significant proportion of the daily transport task²² including:

- ▶ Approximately 250,000 car trips on Perth roads every day; and
- ▶ Approximately 1.06 million vehicle kilometres travelled (VKT) by car per day.²³

2.2.6 Environment

School car trips in Perth produce approximately 386,000 tonnes of carbon dioxide per year.²⁴

Research indicates childhood exposure to pollution can have long term detrimental impacts on health including low lung function, and conversely lower exposure can have positive impacts such as improved cardiovascular outcomes and weight status.²⁵



The Belmont community enjoying the Surrey Road Safe Active Street

2.3 Absence of strategic objectives for active travel to school in WA

While there are at least 16 policies and guidelines impacting school travel behaviour and outcomes, there are currently no strategic objectives for school travel in WA. The absence of strategic objectives to coordinate these policies creates risk of negative impacts and unintended consequences.

2.3.1 Benefits

The government and community can save \$2.63 million per year by shifting one per cent of school trips from car to walking and bike riding.²⁶

Shifting from car to active travel to school by 30 per cent of all trips would have an estimated benefit of approximately \$78 million per year.

Increasing active travel to school will also have the following potential benefits for Perth school-aged children²⁷, their families, schools and communities:

- ▶ Reduced congestion, travel times and parking problems around schools;²⁸
- ▶ Life-long improved health and emotional wellbeing through higher physical activity levels;²⁹
- ▶ improved academic performance due to better concentration;³⁰
- ▶ Reduced carbon dioxide emissions and improved air quality;³¹ and
- ▶ Reduction in road transport infrastructure maintenance.³²

2.3.2 Examples of success

The problem of declining active travel to school has been addressed with varying degrees of success around the world:

- ▶ Denmark has reversed the trend by implementing combined *Safe Routes to School* programs, strong national leadership and urban planning.³³
- ▶ In the United States of America, despite the overall decline, *Safe Routes to School* has increased the rate of walking and bike riding to participating schools including:
 - ▶ 18 per cent increase in active travel to school resulting from engineering improvements; and
 - ▶ 25 per cent increase in active travel to school resulting from education and encouragement (behaviour change programs).³⁴
- ▶ In the United Kingdom a £63 million investment in the *Bikeability* bike education program has contributed to increasing bike riding to school.³⁵
- ▶ In WA the Your Move Schools program resulted in a five per cent shift from car to walking and bike riding amongst participating schools from 2014-2019.³⁶



Students from our Lady of the Cape Primary School ride to school safely on their shared path.

3 CAUSAL FACTORS

The low rate of walking and bike riding to school is due to the following factors:

- ▶ poor access and traffic exposure around schools;
- ▶ safety and parent/carer perceptions;
- ▶ distance between home and school;
- ▶ increased car affordability and ownership; and
- ▶ parent/carer time constraints due to higher labour-force participation.

3.1 Access and traffic exposure

Perth children who live in neighbourhoods with high accessibility via pedestrian and shared paths and low traffic exposure are three times more likely to walk to school than those who live in areas with low access and high traffic exposure.³⁷

More than half of Perth primary schools fail to meet the Western Australian Planning Commission's target for walkability.³⁸

Ninety-five per cent of primary schools have some exposure to high traffic volume roads (including primary, district and local roads).

3.2 Safety concerns

Safety concerns are an important factor influencing school travel decisions and almost 50 per cent of Australian parents/carers believe driving is the safest form of school travel.³⁹

When it comes to walking and bike riding, WA parents/carers are specifically concerned about the lack of children's crossings, traffic exposure, and 'stranger danger'.⁴⁰

Public opinion also plays a role in the decisions of parents/carers with over 30 per cent reporting concerns that other parents/carers will judge them as being irresponsible if they let their children travel to school independently.⁴¹

3.3 Distance between home and school

The distance between home and school is a major determinant of active travel participation.⁴² In Perth almost one third of students attend private schools⁴³, which typically have a larger catchment area and lower rates of walking and bike riding.⁴⁴

WA parents and carers are concerned about the lack of safe crossings, traffic exposure, and stranger danger.

3.4 Car ownership

Research demonstrates the more cars people own, the less likely they are to walk or ride.⁴⁵ In Perth the rate of car ownership per household has increased by 20 per cent over the past 20 years (61 per cent of Perth households now own two or more cars compared with 51 per cent in 1996).⁴⁶

The increasing rate of car ownership is partly due to the increasing affordability of motor vehicles. In Australia the real cost of motor vehicles has decreased by 60 per cent since the 1970s.⁴⁷ At the same time improvements in technology and features have made cars more appealing.⁴⁸

3.5 Labour force participation

The national rate of female labour force participation has increased from 24.6 per cent in 1964⁴⁹ to 73.2 per cent in 2018⁵⁰. While this has many positives, it has created additional time constraints for parents/carers and is an underlying factor causing more parents/carers to drive their children to school.⁵¹

This trend is likely to continue with female workforce participation predicted to grow by 8.8 per cent over the next few years and male participation to grow by 5.6 per cent.⁵²

4 CHALLENGES FOR WA

The factors behind the decline in active travel to school are further complicated by a unique combination of challenges across the Perth metropolitan area including the growth in school population size, lack of school active transport policy coordination, poor school site selection and access, outdated parking supply and demand guidelines, and barriers to safe access for vulnerable road users. These are described in more detail below.⁵³

These challenges have been identified through desktop research and consultation with primary stakeholders. Stakeholders were consulted based on their direct involvement in the provision of active travel to school planning, infrastructure, management and policies (See Appendix A).

4.1 Growth in school age population

The total number of metropolitan school age children is forecasted to increase from 400,000 to 490,000 over the next decade.⁵⁴

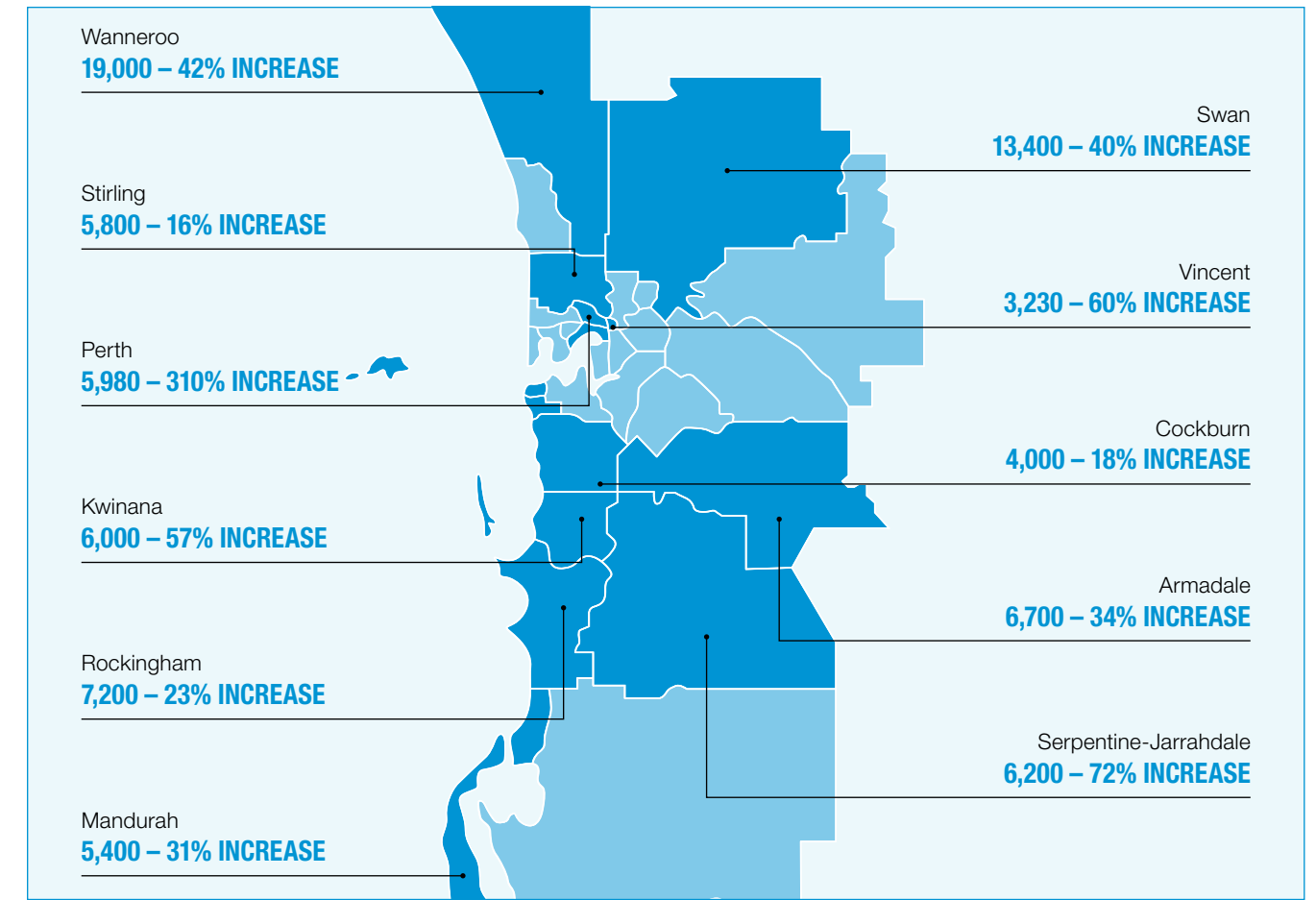
The growth in the number of school aged children (shown in Figure 2) presents a major challenge for land use and transport planning. The growth will occur mostly in outer metropolitan suburbs and the Central Sub-Region.

A number of these outer areas already have the lengthiest commute times in the metropolitan area (shown in Figure 3). This means any increase in travel time due to potential congestion is likely to be a greater problem for parents/carers who live in these areas and choose to drive their children to school on their journey to work.

Servicing these outer suburbs and schools by public transport will be difficult due to the radial nature of the public transport network, placing greater emphasis on the need for improved active transport infrastructure especially for schools with local catchments (and feasible distances for walking and bike riding).

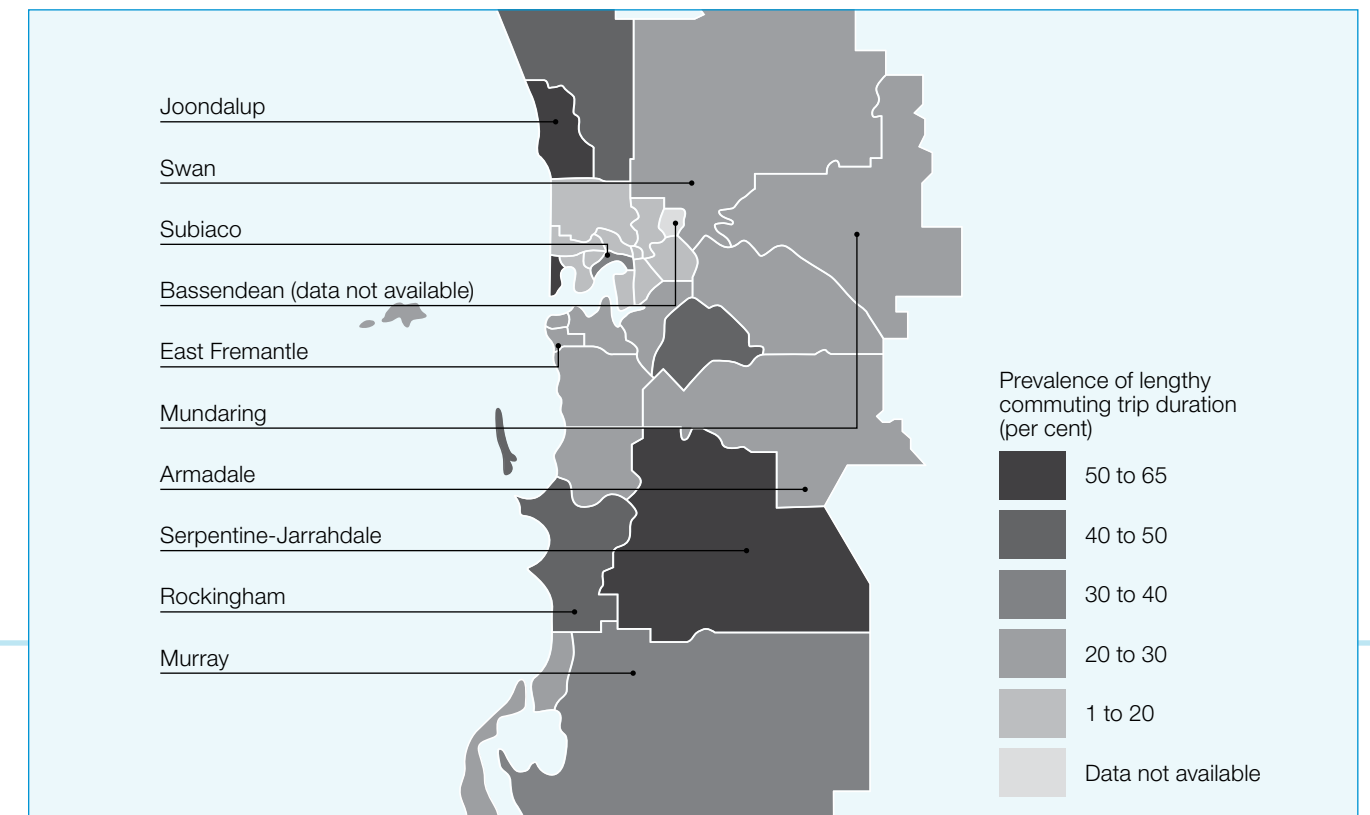
Population growth in the Central Sub-Region is likely to place an additional burden on the transport network through increased demand for roads and public transport.

Figure 2: Perth LGAs with above average forecasted growth in school age population for the period 2021-2031 (includes additional population numbers forecasted for each LGA and per cent growth).



Source: Department of Planning, Lands and Heritage, *WA Tomorrow* population forecasts.

Figure 3: prevalence of lengthy commute trips by local government area (lengthy = 45 minutes or more)⁵⁸



Source: Bureau of Infrastructure, Transport and Regional Economics.

4.2 The need for strategic direction

In WA walking and bike riding to school are impacted by at least 16 policies and guidelines from seven state government agencies (as shown in Figure 4). There are currently no clear, shared, or measurable objectives to achieve optimum walking and bike riding mode shares.

This creates unintended consequences and major barriers for children who wish to walk, bike ride and even catch public transport to school, as outlined in the following sections.

4.3 School site selection and access

Safe and efficient access is a key enabler for walking, bike riding and public transport to school,⁵⁹ and school site location is an essential ingredient for access.

In WA school sites are usually identified during the structure planning process. However, the design of movement networks can be changed through the subdivision and development processes, which creates major and sometimes insurmountable challenges including insufficient opportunities for cross-government consultation and shared decision making. Examples of poor access include:

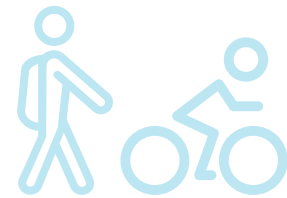
- ▶ poor connectivity between Brabham Primary School and surrounding pedestrian pathways (see case study on page 17);
- ▶ location of the Swan Christian College school site on a primary distributor road, resulting in unsafe access by all road users;⁶⁰
- ▶ missing pathways connecting Caversham Primary School to local neighbourhoods (see case study on page 17);
- ▶ location of Saint John Bosco College on Armadale Road resulting in unsafe access and narrow local road network preventing access by school buses;⁶¹
- ▶ absence of bus bays at Butler College;⁶² and
- ▶ inconveniently located and inadequate number of bus bays at Byford Secondary College.⁶³

Some of the above will be addressed through the Department of Planning, Lands and Heritage's (DPLH) review of Development Control Policy 2.4 – Planning for School Sites.

Figure 4: policies and guidelines affecting active travel to school in WA

- ▶ *Road Traffic Code 2000* (WA Police)
- ▶ *Main Roads Act 1930* (MRWA)
- ▶ Primary School Brief Traffic Management (DoE, Department of Finance)
- ▶ Secondary School Planning Guide Traffic Management (DoE, Department of Finance)
- ▶ Connecting Station Routes Cycle Design Guidelines (PTA)
- ▶ Legislation, policies and guidelines affecting active travel to school in WA (DoT)

- ▶ Development Control Policy 2.2 – Residential Subdivision (DPLH)
- ▶ Development Control Policy 2.4 – Planning for School Sites (DPLH)
- ▶ Development Control Policy 2.6 – Road Planning (DPLH)
- ▶ Design WA – Liveable Neighbourhoods/ Neighbourhood Design (DPLH)



- ▶ International Standard 39001: Road traffic safety (RTS) management systems
- ▶ Policy and Guidelines for Road Safety Audit (MRWA)
- ▶ Application and Warrants for Childrens Crossings (WA Police)

- ▶ *WA Road Traffic Act 1974* (DoT, WA Police, MRWA)
- ▶ Policy and Application Guidelines for Speed Zoning (MRWA)
- ▶ *Public Transport Authority Act 2003* (PTA)

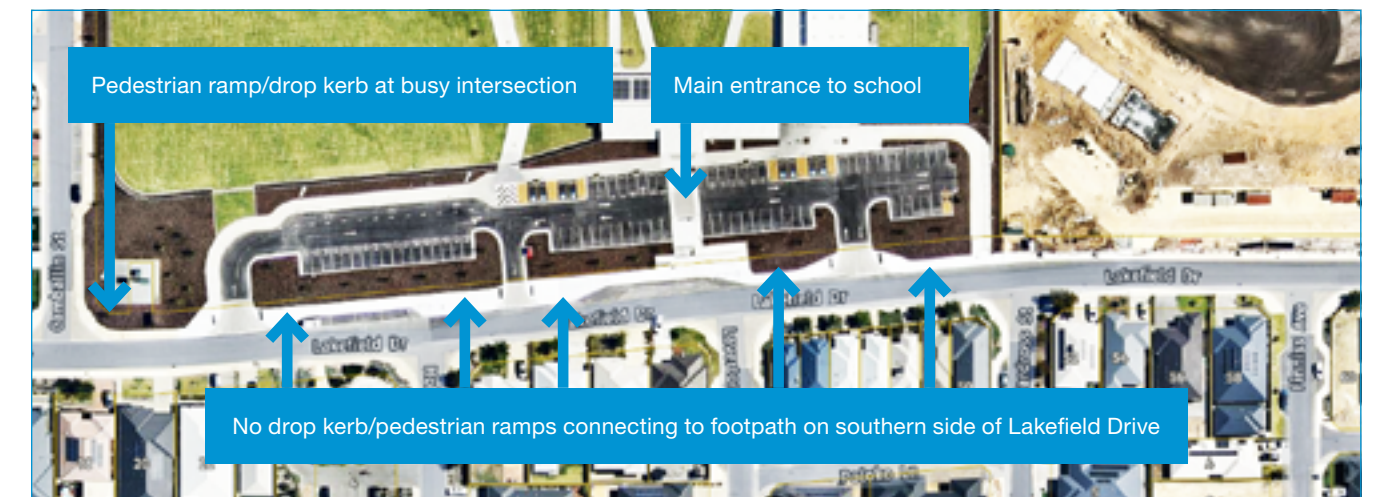
CASE STUDY: BRABHAM PRIMARY SCHOOL

Brabham Primary School is a new public school open in April 2021 in the City of Swan, with an intake capacity of 858 students. The school exists within a new subdivision area that is partially developed with development work ongoing.

Investigations indicate over 80 per cent of Brabham Primary School parents want their children to walk or ride to school,⁵⁶ which will help develop healthy, active travel habits from the outset.

Unfortunately the local walking and bike riding network is not designed to meet this demand due to poor connectivity including lack of connecting pedestrian ramps and drop-kerbs, and pedestrian ramps placed in high-traffic access and egress locations. Students and families walking or riding to school from the largest residential area in the eastern side of Brabham must negotiate traffic two to three times to cross Partridge Street, which is a 60km/h zone. The City of Swan is currently working with the Department of Education to resolve these connectivity issues.

Figure 5: Brabham Primary School - poor connectivity



CASE STUDY: CAVERSHAM PRIMARY SCHOOL

Caversham Primary School was originally established in 1904 and services 559 students from the suburbs of Dayton and West Swan in the City of Swan. The school is located on the eastern boundary of the catchment area, with the largest residential area located to the west. Students and families walking and riding to the school must travel along Coast Road to reach the school, but connectivity on Coast Road is severed by two parallel sections of missing pathway meaning children must cross the road multiple times.

Figure 6: Caversham Primary School - missing pathways



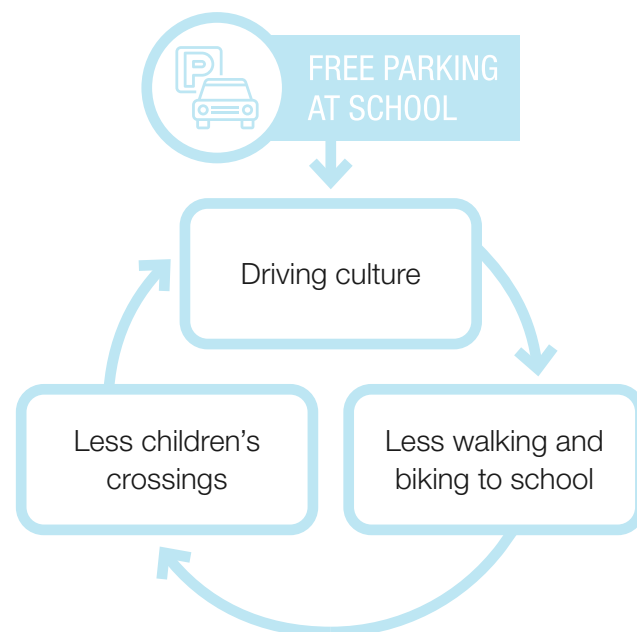
4.4 Parking supply and demand

Parking availability is a significant determinant of mode choice. In Perth's CBD if free parking is available, people travelling to work are 52 times less likely to choose active travel over their car.⁵⁷

The school planning guidelines for traffic management⁵⁸ include formulas for calculating the number of parking bays for each school site.⁵⁹ The formulas are based on recommendations developed in the now outdated *Taskforce on Road Safety at School Report Volume 2 1992*. Consequently, the school planning guidelines omit best practice demand management techniques developed over the past three decades.

School parking supply is often approved based on forecasted demand for the maximum number of transportable classrooms that may (or may not) be installed in the future⁶⁰, which forgoes the opportunity to use parking supply as a highly effective demand management strategy.

Figure 7



4.5 Barriers to safe access for vulnerable road users

Safety plays a decisive role for the rate of children's participation in walking and bike riding to school.⁶¹

According to research by the Curtin-Monash Accident Research Centre, 1,897 children were involved in crashes while walking and bike riding to school in WA between 2006 and 2016.⁶² The research also finds that children are more likely to be involved in a crash during school hours due to their exposure to higher volumes of traffic.

Further, child and adolescent pedestrians were more likely to be involved in a crash between 500m and 2km from school, and bike riders were more likely to be involved in a crash between 2km and 5km from school.

Children's crossings enable students to safely cross roads under the supervision of a WA Police-trained traffic warden. They are a key enabler for active travel to school.⁶³

There is currently no provision to install new crossings at existing and new schools until demand can be demonstrated through pedestrian and traffic counts.⁶⁴ This policy is in direct contrast with the policy for provision of parking on school sites, for which there is no requirement to demonstrate demand.

The availability of free parking at schools increases the rate of driving, contributes to early habit formation and normalises a culture of driving in each school community. This reduces the demand for walking and bike riding, which reduces the likelihood of approval for children's crossings and further decreases the likelihood of children engaging in active travel.

This cycle is demonstrated in Figure 7 (left).

4.6 Road safety guidelines for local governments and schools

The *Road Safety Around Schools Guidelines*⁶⁵ are dual guidelines for local governments and schools to plan and manage road safety around schools.

The school edition of the guidelines places heavy emphasis on the safety risks of walking and bike riding to school, and suggests a potentially overwhelming range of approaches and controls to mitigate these risks, especially for time-poor education professionals.

At present there is no understanding of the extent and consistency of guideline application by schools or local governments.



Saint Augustine Primary School students encourage drivers to slow down

5 OPPORTUNITIES AND RECOMMENDATIONS FOR WA

This section of the Paper outlines potential opportunities for the government and Perth schools to address the declining rate of active travel to school.

Strong latent demand for active travel exists within Perth's student population. Over 50 per cent of students would prefer to regularly walk and bike ride to school and only 10 per cent would prefer to be driven.⁶⁶ Tackling some of the barriers that prevent students from walking and bike riding to school may unlock this latent demand.



Primary school students parking their bikes

5.1 Setting clear directions for active travel to school

Clear strategies, objectives, roles and responsibilities can form the basis for successful coordination of the policies that affect active travel to school.

A governance structure consisting of a steering group or other form of leadership group can facilitate the development and ongoing monitoring of strategies to reverse the decline in active travel to school.

The WA Bike Riding Reference Group recently formed the Active Travel to School Working Group (ATS Working Group) to provide advice on potential options for reversing the declining rate of active travel to school.

The ATS Working Group includes representatives from the Department of Transport, Main Roads WA, the Public Transport Authority, the Department of Education, the Department of Health, the Road Safety Commission, the Department of Health, the Institute of Public Works Engineering Australasia and Western Australian Local Government Association.

Inclusion of secondary stakeholders from key research and advocacy groups, such as the RAC and Heart Foundation, will keep the group informed about the latest research and assist with achieving co-benefits for transport and health.

Children walking to school



5.2 Mode share targets for travel to school in Perth

Setting mode share targets⁶⁷ for travel to school would provide the Transport Portfolio with a measurable basis to coordinate policy, and design and evaluate interventions to reverse the decline in active travel to school.

Potential mode share targets for Perth may be determined based on latent demand and economic benefit:

- ▶ Latent demand suggests a mode share target of 50 per cent active travel to school is feasible, which would result in an estimated benefit of \$78 million per year; and
- ▶ The cumulative economic benefit of a 50 per cent active travel to school mode share target delivered over 20 years is approximately \$818 million.

50 per cent active travel to school would result in an annual economic benefit of \$78 million.

Mode share targets from other jurisdictions include:

- ▶ An increase from 14 to 37 per cent walking and bike riding to primary school and 15 to 20 per cent walking and bike riding to secondary school in South East Queensland over a 20-year period from 2011 to 2031;⁶⁸ and
- ▶ An increase from 49 to 55 per cent walking to school for 5-10 year olds in the United Kingdom over an eight year period from 2017 to 2025.⁶⁹

These mode share targets share some contextual similarity with Perth. The targets for South East Queensland are part of a regional planning strategy to address the problem of population growth and urban sprawl, which has also been identified as a major challenge for land use and transport planning in Perth.

In the United Kingdom mode share targets have been set to assist the government with transforming local areas through reduced congestion, improved physical and mental health, improved local economies, healthier workforces, thriving high streets and greater access, which reflects the strategic aims of the WA State Government's *METRONET Sustainability Strategy*.

5.3 Leading a consultative review of planning processes in practice

A thorough review of relevant planning processes, policies and guidelines, in practice, will help improve the foundations for increasing active travel to school.

Such a review will identify structure planning challenges and unintended consequences that arise during planning and development processes, to enable evidence-based changes and mitigation measures designed to overcome some of the major challenges including poor site selection and access, and traffic exposure.

5.4 Managing the supply of parking and safe active transport infrastructure

The disparity between the supply of parking and active transport safety infrastructure can be addressed with two measures:

1. Update the school traffic management guidelines to reflect best practice in transport planning and include the use of parking as a demand management measure; and
2. Improve the criteria for children's crossings to include installation at new school sites before they are opened and to generally make it easier for existing schools to gain safe crossings for vulnerable road users.

5.5 Consulting local governments

Consulting Perth metropolitan area local governments will identify unique challenges and develop partnership and funding opportunities to deliver better planning outcomes and active travel to school infrastructure specifically 'first and last mile' infrastructure. This could include improving 'first and last mile' infrastructure around schools, and/or improving the general walkability of neighbourhoods through better lighting, landscaping, trees and pathways.

5.6 Supporting flexible working arrangements

Flexible work arrangements have been directly correlated with higher rates of active travel to school⁷⁰ and could be promoted as an effective part of the solution to parent/carer time constraints in Perth.

The social distancing measures in place during COVID-19 coincided with an increase in the rate of walking and bike riding for local trips⁷¹, which is partly attributable to the higher number of people working from home or remotely. This presents an opportunity to address the barrier created by the growth in labour force participation and associated time constraints, by providing parents/carers with shorter or no commute times, making it easier for them to walk or ride to school with their children.

5.7 Trial park and walk zones

Park and walk or drop-off zones are an effective way to increase participation in walking amongst students who live further than 2km from their school.⁷² They are also a potential solution for local congestion around schools.

Drop-off zones may be trialled to assist with reversing the decline in active travel, particularly to private and secondary schools in Perth.

5.8 Expanding the reach of the Your Move Schools program

The Department of Transport's (DoT) Your Move Schools program has been delivered successfully to 109 out of 719 schools in the metropolitan area over the past six years, achieving mode shift from car to walking and bike riding of 5 per cent (for participating schools).⁷³

Expansion of the program to the maximum number of reachable schools within the metropolitan area is expected to achieve an estimated 2.5 per cent mode shift from car to walking and bike riding for all school trips in Perth.⁷⁴

The estimated return on this investment is \$6.5 million in economic benefits, which could be achieved in a relatively short time frame of five years, at an estimated cost of \$4.2 million.

5.9 Conditional approvals requiring Your Move participation

The DoT's Your Move Schools Program has traditionally been delivered on a voluntary basis only, however, in 2019, the Department of Finance and DoE introduced a Development Application condition requiring primary schools to actively participate in the program to gain planning approval of transportable classrooms.

Similar conditions for program participation could be considered for other investments such as children's crossings and school buses.

5.10 Trialling combined infrastructure and behaviour change initiatives using recent technological innovations

Combined active travel infrastructure and behaviour change programs such as *Safe Routes to School* have been implemented with success both in Australia and other countries. In Queensland, the State Government recently announced a \$20 million investment in the School Transport Infrastructure Program, which aims to improve safety for pedestrians, cyclists and road users around schools.⁷⁵

Currently there is no active *Safe Routes to School* program in WA (WALGA RoadWise provides templates for safe route markings only).

DoT is pursuing opportunities to trial new initiatives at school sites in Perth including partnership opportunities with the City of Stirling through the Your Move Stirling Program in 2020 and 2021. These interventions will draw on the latest web-based technology for engagement and infrastructure auditing and mapping.

DoT is also exploring research partnership opportunities with key advocates such as Telethon Kids Institute, the Heart Foundation and the RAC. Other partnership opportunities may include working with the Safety House program and Neighbourhood Watch to identify ways to improve safety for children walking and bike riding to school.

5.11 Improving school travel data collection and analysis

More data on school travel will enable improved decision making for policy interventions including improved targeting based on factors such as latent demand or propensity for change, feasibility, access and return on investment.

The Perth Area Travel and Household Survey (PATHS) will yield more insights on school travel as the survey progresses and yearly data becomes available, but other sources are required, such as school catchment data and levels of access.

Gaining access to school catchment data and mode choice will also enable improved calibration of the Transport Portfolio's Strategic Transport Economic Model (STEM) to inform better transport planning, investment decisions and business cases.

5.12 Increasing bike proficiency

More data is required on children's bike proficiency to determine the need for bike education at WA schools. Bike education has the potential to increase life-long participation in bike riding and maximise use of cycling infrastructure investments.



Walk to school bus, City Beach

6 CONCLUSION

The mobility, social and economic context for travel to school has changed considerably since the 1970s with more parents/carers in full-time employment, increased car ownership and greater emphasis on safety risks. These factors have made it easier for parents/carers to choose to drive rather than walk or ride their children to school.

The decline in active travel to school is an urgent problem that has immediate and long-term negative impacts on some of the most vulnerable members of the community: school children.

Perth children face increased risk of obesity, overweight and chronic disease as a result of their declining participation in walking and bike riding to school.

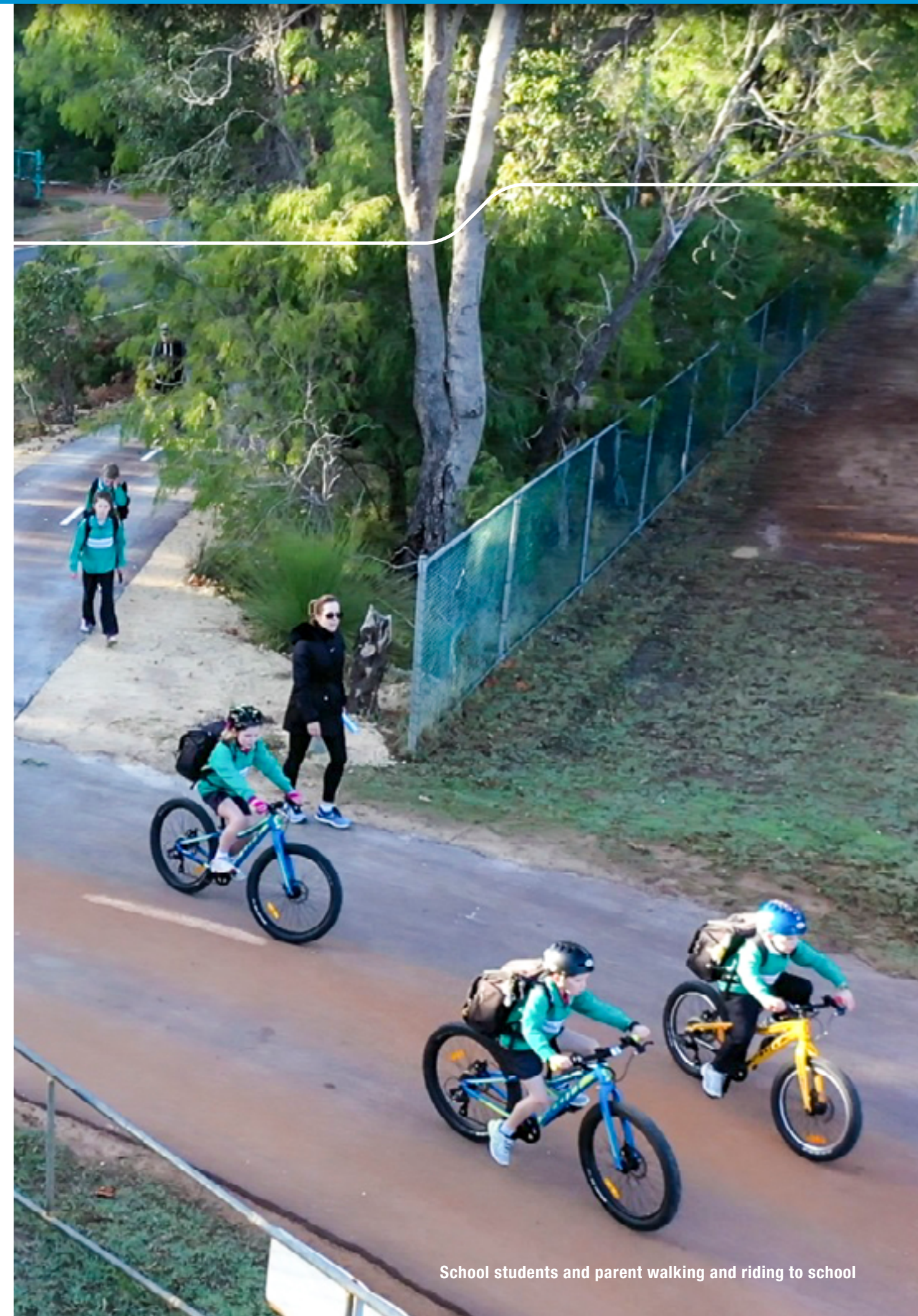
Even if the decline in active travel to school ceases, the low rate of active travel has the potential to cost the WA economy over \$800 million in travel time, vehicle operating costs and road crashes over the next 20 years.

The problem presents an opportunity for the State Government to achieve co-benefits across transport and health as it will help alleviate health impacts, and it will deliver close to one billion dollars in transport economic benefits.

The Transport Portfolio has an opportunity to play a leading role in achieving these benefits primarily through its ability to improve land use and transport planning outcomes, and policy interventions such as Safe Routes to School and Your Move Schools.

The endeavour to address the decline must start with a collaborative effort to coordinate outcomes across key transport, planning and safety policies with shared strategies and clear objectives. For these strategies to be effective, they must address the barriers to walking and bike riding that make it easier for parents/carers to choose to drive their children to school, through improved access and travel times, and better management of parking and supply of children's crossings.

Over the longer term, improvements in data collection will enable better measurement of the effectiveness of interventions and may suggest the need for broader planning and other reforms.



School students and parent walking and riding to school

GLOSSARY OF TERMS

Active travel	Walking and bike riding (the paper does not include scooting and skateboarding because there is currently no mode share data available for these modes).
Externalities	The effect of mode shift on society and people who do not change their mode of travel including decongestion, car accident cost savings, public transport accident costs, environmental externality reductions and health benefits. ⁷⁶
First and last mile	First and last mile describes travelling from a transportation hub, such as a train station or bus stop, to a final destination, such as work or school. When users have difficulty completing this journey, it is known as the last mile problem.
Mode share	The percentage of all transport trips completed by a particular mode including car driving, public transport, walking and bike riding. Mode shares are commonly calculated for specific journey purposes such as work and education.
Mode shift	Changes in mode share over time.
Overweight and obese	Abnormal or excessive fat accumulation that may impair health. ⁷⁷
Transport Portfolio	WA's key transport agencies - the Department of Transport, Main Roads Western Australia and the Public Transport Authority.

APPENDIX A: PRIMARY STAKEHOLDERS

The following stakeholders were consulted during the preparation of this paper:

- ▶ Department of Planning, Lands and Heritage;
- ▶ Department of Education;
- ▶ Department of Finance;
- ▶ Department of Health;
- ▶ Department of Communities;
- ▶ Department of Transport;
- ▶ Main Roads WA;
- ▶ Public Transport Authority;
- ▶ WA Police;
- ▶ Road Safety Commission;
- ▶ Western Australian Local Government Association;
- ▶ The Association of Independent Schools WA;
- ▶ Catholic Education WA;
- ▶ The Royal Automobile Club of WA;
- ▶ Telethon Kids Institute;
- ▶ Cancer Council WA; and
- ▶ The Heart Foundation.

REFERENCES

- 1 Department of Transport, Strategic Plan 2020-22.
- 2 METRONET Sustainability Strategy 2019-2022, <https://www.metronet.wa.gov.au/Portals/31/Project%20Documents/Sustainability/Sustainability%20Strategy.pdf>, website accessed May 2020.
- 3 Department of Transport, Western Australian Bicycle Network Plan, <https://www.transport.wa.gov.au/projects/wa-bicycle-network-plan.asp>, website accessed May 2020.
- 4 Western Australian Health Promotion Strategic Framework 2017-2021, a five-year plan to reduce preventable chronic disease and injury in our communities, 2017.
- 5 Sustainable Health Review: Final Report to the Western Australian Government, 2019.
- 6 P Murray, M Kelly, and L Connell, Urban Design Study – Active Travel to School, report prepared for the Heart Foundation, 2018.
- 7 Based on preliminary available data from the Perth Area Travel and Household Survey (PATHS).
- 8 Based on data analysis of Perth and Regions Travel Survey, 2002-2006.
- 9 Charting Transport, <https://chartingtransport.com/2017/10/24/trends-in-journey-to-work-mode-shares-in-australian-cities-to-2016/>, website accessed May 2020.
- 10 Australian Health Policy Collaboration, Active travel: pathways to a healthy future, 2018.
- 11 Based on WA Tomorrow population forecasts.
- 12 Veitch Lister Consulting, Transport Planning for the Australian Infrastructure Audit: Transport Modelling Report for Perth, report prepared for Infrastructure Australia, 2019.
- 13 Bureau of Infrastructure, Transport and Regional Economics (BITRE), Lengthy commutes in Australia, Report 144, 2016.
- 14 Hiatt, B., Perth school drop-off traffic nightmare sparks calls for McGowan Government intervention, July 2019;
- 15 RAC, RAC survey reveals dangers of school drop-offs, <https://rac.com.au/about-rac/media/media-releases/february-2020/rac-survey-reveals-dangers-of-school-drop-offs>, website accessed March 2020.
- 16 Pers comms, Department of Education, 2020.
- 17 WA Department of Health, The burden and cost of excess body mass in Western Australian adults and children, 2020.
- 18 Australian Health Policy Collaboration, Active travel: pathways to a healthy future, 2018.
- 19 P Murray, M Kelly, and L Connell, Urban Design Study – Active Travel to School, report prepared for the Heart Foundation.
- 20 Australian Health Policy Collaboration, Getting Australia's Health on Track, 2016.
- 21 From Strategic Transport Economic Model (STEM), base model 2016.
- 22 Based on preliminary available data from PATHS.
- 23 From Strategic Transport Economic Model (STEM), base model 2016.
- 24 Based on STEM VKT estimates and average CO2 g/km figures from the Commonwealth Green Vehicle Guide: <https://www.greenvehicleguide.gov.au/>, website accessed 12 October 2020. CGVG adopts a (low) conservative rate, and the actual rate of emissions is likely to be higher.
- 25 Public Health England, Review of interventions to improve outdoor air quality and public health: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795185/Review_of_interventions_to_improve_air_quality.pdf, website accessed 12 October 2020.
- 26 STEM, base model 2016.
- 27 Based on Department of Education, Summary Statistics of Schools and Full-Time Students, 2019.
- 28 Australian Health Policy Collaboration, Active travel: pathways to a healthy future, 2018.
- 29 P Murray, M Kelly, and L Connell, Urban Design Study – Active Travel to School, report prepared for the Heart Foundation.
- 30 Australian Health Policy Collaboration, Active travel: pathways to a healthy future, 2018.
- 31 Australian Health Policy Collaboration, Active travel: pathways to a healthy future, 2018.
- 32 A Davis, Claiming the Health Dividend, Department of Transport, UK Government, 2014.
- 33 Australian Health Policy Collaboration, Active travel: pathways to a healthy future, 2018.
- 34 McDonald, N, Steiner, R, Lee, C, Smith, T Zhu, X & Yang, Y 2014, 'Impact of the Safe Routes to School Program on Walking and Bicycling', Journal of the American Planning Association, vol. 80, no. 2, pp. 153-167.
- 35 UK Department of Transport, Cycling and walking investment strategy report to Parliament, 2020.
- 36 Data Analysis Australia, 2014-2018 Program Effects Report – Your Move Schools, report prepared for the Department of Transport, 2019.
- 37 Trapp G, Giles-Corti B, Pikora T, Bulsara MK, McCormack G, Timperio A. The TRavel, Environment and Kids Project: Preliminary Findings Report. The University of Western Australia, 2010.
- 38 Trapp G, Giles-Corti B, Pikora T, Bulsara MK, McCormack G, Timperio A. The TRavel, Environment and Kids Project: Preliminary Findings Report. The University of Western Australia, 2010.
- 39 Rhodes A., RCH National Child Health Poll - Travelling to school: habits of Australian families, Poll report, <https://www.rchpoll.org.au/wp-content/uploads/2019/02/20190207-travelling-to-school-habits-of-australian-families-1.pdf> (accessed March 2020).
- 40 Rhodes A., RCH National Child Health Poll - Travelling to school: habits of Australian families, Poll report, <https://www.rchpoll.org.au/wp-content/uploads/2019/02/20190207-travelling-to-school-habits-of-australian-families-1.pdf> (accessed March 2020).
- 41 Rhodes A., RCH National Child Health Poll - Travelling to school: habits of Australian families, Poll report, <https://www.rchpoll.org.au/wp-content/uploads/2019/02/20190207-travelling-to-school-habits-of-australian-families-1.pdf> (accessed March 2020).
- 42 Nelson et. al., 'Active commuting to school: how far is too far?', International Journal of Behavioral Nutrition and Physical Activity, 5(1), 2008.
- 43 Department of Education, Summary Statistics of Metropolitan Schools and Full-Time Students, Semester 1, 2020.
- 44 Yan, et. al., 'Travel behaviour differences between private and public-school students in South East Queensland', Australasian Transport Research Forum, 2019.
- 45 Fishman, E. et. al., 'Adult Active Transport in the Netherlands: An Analysis of Its Contribution to Physical Activity Requirements', Plos One, 2015; Owen, E. et. al., 'Active Travel by Built Environment and Lifecycle Stage: Case Study of Osaka Metropolitan Area', International Journal of Environmental Research and Public Health, 2015.
- 46 Australian Bureau of Statistics, Census of Population and Housing, 1996 and 2016.
- 47 Charting Transport, 2018.
- 48 Committee for Perth, The Rising Cost of Living in Perth, 2013.
- 49 Australian Bureau of Statistics, 500 Issues of Labour Force, 2018.
- 50 Australian Bureau of Statistics, Labour force commentary, January, 2018.
- 51 McDonald, C., 'Household interactions and children's school travel: the effect of parental work patterns on walking and biking to school', Journal of Transport Geography, 16, 2008.
- 52 Department of Education, Skills and Government, A statistical snapshot of women in the Australian workforce, <https://www.employment.gov.au/newsroom/statistical-snapshot-women-australian-workforce> (accessed March 2020).
- 53 Primary, secondary and private schools face distinct challenges. For succinctness, the paper highlights general issues only.
- 54 Based on WA Tomorrow population forecasts.
- 55 Bureau of Infrastructure, Transport and Regional Economics (BITRE), Lengthy commutes in Australia, Report 144, 2016.
- 56 Creating Communities, Brabham Primary School Community Engagement Report, 2020.
- 57 Ipsos, Your Move Forum: The Perth Transport Landscape and How to Affect Behaviour Change, Prepared for the Department of Transport, 2019, (<https://yourmove.org.au/media/5854/ipsos-dot-forum-presentation-2019.pdf>) website accessed December 2019.
- 58 Department of Education, Primary School Brief for Traffic Management, 2015; and Department of Education, Secondary School Planning Guide: Subconsultant Brief - Traffic Management, 2015.
- 59 Using the primary school formula as an example, an average sized primary school site is recommended to include 106 parking bays (14 bays per 100 students plus 46 bays for staff).
- 60 Pers. Comms. Department of Finance, 2019.
- 61 Curtis, C., Babb, C. and Olaru, D., 'Built environment and children's travel to school', Transport Policy, 42, 2015, pp 21-33.
- 62 Hobday, M, and Meuleners, L, Child and adolescent pedestrians and cyclists in Western Australia: how safe are they? report prepared for the Road Safety Commission by the Curtin-Monash Accident Research Centre, 2018.
- 63 The TRansport Environment and Kids (TREK) study is perhaps one of the most comprehensive sources of data on active travel to school and safety in Perth. The study concludes that 'lack of safe crossings' is a factor that influences the rate of walking to school. The study also suggests: 'To assist children to cross roads safely and to alleviate parental concerns about stranger danger, additional protections for school children may include crossing guards, adult supervision, and pedestrian safety education.'
- 64 WA Police, Warrant Criteria for Type A and B Children's Crossings, <https://www.police.wa.gov.au/Traffic/Childrens-Crossings>, website accessed December 2019.
- 65 Western Australian Local Government Association, Road Safety Around Schools Guidelines – Local Government Edition, WALGA, 2007, and Western Australian Local Government Association, Road Safety Around Schools Guidelines – Schools Edition, WALGA, 2007.
- 66 Trapp G, Giles-Corti B, Pikora T, Bulsara MK, McCormack G, Timperio A. The TRavel, Environment and Kids Project: Preliminary Findings Report. The University of Western Australia, 2010.
- 67 Suggested targets are indicative only and intended to promote further and strategising.
- 68 Department of Transport and Main Roads, Connecting SEQ 2031 – An Integrated Regional Transport Plan for South East Queensland, 2011
- 69 5-10 year olds, according to the U.K. Department of Transport, National Cycling and Walking Investment Strategy, 2017.
- 70 Yariagadda, A., et. al., 'Modeling children's school travel mode and parental escort decisions', Transportation, 35 (2), 2008.
- 71 Based on preliminary results from the People's Voice Survey conducted by Painted Dog on behalf of the Department of Transport, 2020.
- 72 Vanwolleghem, et. al., Feasibility and effectiveness of drop-off spots to promote walking to school, International Journal of Behavioral Nutrition and Physical Activity, 11, 2014.
- 73 Data Analysis Australia, Your Move Schools – Analysis of Program Effects 2014-2019, Draft report prepared for the Department of Transport, 2020 ; Department of Education, Summary Statistics of Metropolitan Schools and Full-Time Students, Semester 1, 2020.
- 74 The program has an active participation rate of approximately 50 per cent of all schools targeted.
- 75 Queensland Government, Media Statement: Palaszczuk Government delivers third year of record road and transport infrastructure investment, <http://statements.qld.gov.au/Statement/2018/6/12/palaszczuk-government-delivers-third-year-of-record-road-and-transport-infrastructure-investment>, (accessed June 2020).
- 76 ATAP, M5 Travel Behaviour Change, <https://www.atap.gov.au/mode-specific-guidance/travel-behaviour-change/4-benefits-of-tbhc-initiatives> (website accessed, 15 December 2020).
- 77 WHO, Obesity and Overweight, <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight> (website accessed 15 December 2020),

© STATE GOVERNMENT OF WESTERN AUSTRALIA

Published by the Department of Transport
140 William Street
Perth Western Australia 6000

www.transport.wa.gov.au

Phone: (08) 6551 6000

Fax: (08) 6551 6001

Disclaimer: The information contained in this publication is provided in good faith and believed to be accurate at time of publication. The State shall in no way be liable for any loss sustained by anyone relying on the information