



NEDLANDS SAFE ACTIVE STREET

Final Route-Level Evaluation Report



Acknowledgement of Country

The Department of Transport and Major Infrastructure acknowledges the Traditional Custodians of the land throughout Western Australia and pay our respects to Elders past and present.

We acknowledge the members of all Aboriginal communities, their cultures and continuing connection to Country throughout the State.

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SAFE ACTIVE STREETS PILOT PROGRAM

The Department of Transport and Major Infrastructure (DTMI) worked with local governments between 2015 and 2023 to develop, trial and evaluate safe active streets (SASs).

SASs use local area traffic management treatments to reduce car speeds to 30 km/h and create environments that encourage more people to walk, wheel and ride in their communities.

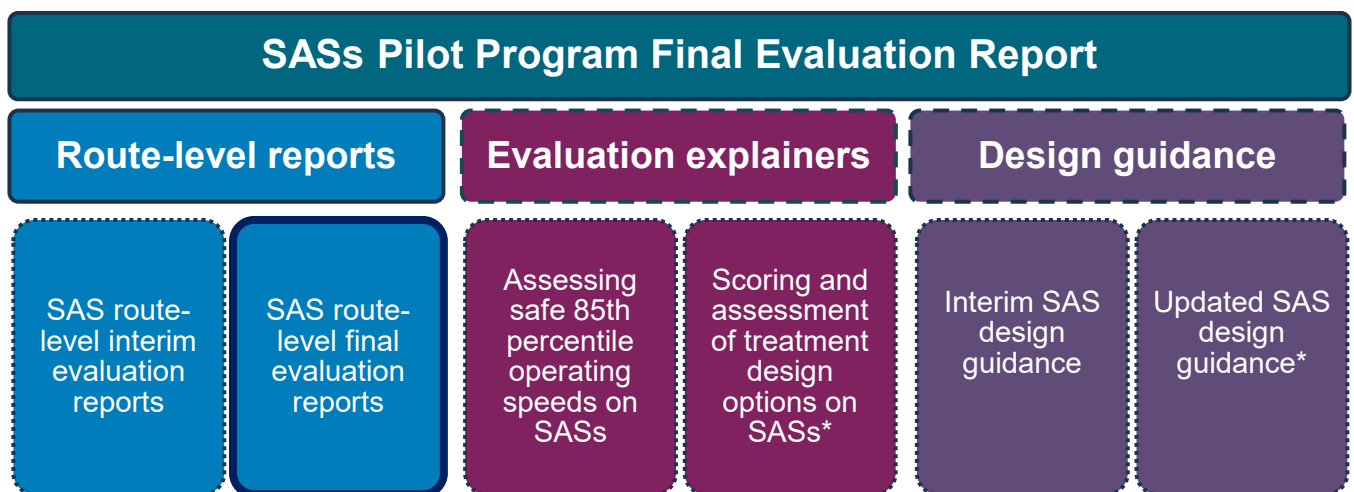
The SASs Pilot Program in Western Australia (WA) was motivated by research which showed that a fear of sharing the road with motor vehicles was a key barrier to many people riding bikes more often. Local research, including a large community-wide cycling survey undertaken in 2015 by the Royal Automobile Club of WA¹ and the 2015 Auditor General’s Report into Safe and Viable Cycling,² highlighted the need for quieter and more comfortable local bicycle routes to remove barriers to active transport and the perceived lack of safety on local roads.

An evaluation plan and framework were established to test whether redesigning a street using traffic management treatments could reduce vehicle volumes and speeds, leading to increased active travel, and positive community sentiment towards the SAS.

Evaluation document suite

This document forms part of the [SASs Pilot Program Evaluation](#). It provides a summary of results across three key change indicators for one of the nine evaluated projects, and a discussion of how the route performed overall.

The results outlined in this final route-level report should be read in conjunction with the SASs Pilot Program Final Evaluation Report,³ and other supporting material including methodology explainers and SASs design guidelines.



Suite of interrelated documents to be read in conjunction with the Nedlands SAS final route-level report

¹ RAC – WA, 2015. [RAC Cycling Survey: 2015](#). Royal Automobile Club of WA, Perth, WA.

² OAG – WA, 2015. [Western Australian Auditor General’s Report: Safe and Viable Cycling in the Perth Metropolitan Area](#). Office of the Auditor General, Perth, WA.

³ DTMI, 2026. [Safe Active Streets Pilot Program – Final Evaluation Report](#). Prepared by the Department of Transport and Major Infrastructure. Perth, WA.

* Document to come.

CITY OF NEDLANDS SAFE ACTIVE STREET

Executive summary

The 2.4 km Elizabeth Street and Jenkins Avenue SAS route provides a link from Broadway Fair Shopping Centre to Bay Road across the local area. Consultation, design and delivery spanned six years between 2016 and 2021.

This SAS route generated broadly positive outcomes.

Design treatment changes that influenced speed and vehicle volume reductions on the Nedlands SAS contributed to positive road safety outcomes across route. This saw increased rates of active travel along the SAS.



Despite these positive user behaviour outcomes, the route generated negative sentiment from the community.

Key project insights

Overall, the design treatments and measures applied on the Nedlands SAS led to positive results for user behaviour. Walking increased on both the SAS and control streets, while bike riding increased on the SAS but declined on the control streets.

After construction, vehicle movements along the SAS route dropped substantially, and 85th percentile speeds reduced to within the preferred operating range on most of the route segments, with one exception indicating potential for further speed reducing treatment improvements at some locations.

Lower vehicle speeds and volumes appears to have contributed to an overall decrease in the number and severity of crash incidents between vehicles and vulnerable road users on the SAS, making the SAS route more appealing from a road safety perspective. This was most evident on the Elizabeth Street segments of the SAS, which experienced three incidents before construction and zero incidents during and after construction.

These changes, particularly speed reductions on the SAS, contributed to a positive road safety experience across the SAS route.

Results for community sentiment were strongly negative, however, indicating a missed opportunity to continue community consultation and engagement after construction. Low community sentiment post construction combined with positive route outcomes, indicates dissonance between community understanding of the design intentions and community use of the route.

Project recommendations

Recommendations to improve outcomes on this SAS project, informed by insights summarised in the SASs Pilot Program Final Evaluation Report, include:

- Incorporating activation, consultation and evaluation (ACE) principles⁴ throughout all phases of project planning, design, delivery and post construction review.
- Lowering 85th percentile speeds consistently across all segments of the route to within the preferred operating range, by considering additional road treatments as required.

⁴ DTMI, 2023. [WA Bicycle Network Grants Program: WABN Grants Program Resources - Activation, Consultation and Evaluation \(ACE\) Guidance](#). Department of Transport and Major Infrastructure. Perth, WA.

Program insights

The SASs Pilot Program was successful in trialling a new approach to road safety and active transport on suburban streets. The program has attracted national and international interest, and the SAS concept is being taken up by local authorities in WA and across Australia.

The [SASs Pilot Program Final Evaluation Report](#) detailed the rich array of insights generated through the pilot program, which provide context and relevance to the following individual project key insights and recommendations.

Theory of change supported

- Combining comprehensive physical interventions with a posted speed limit of 30 km/h: increases active travel (walking and bike riding).
- Reduces vehicle volumes and speeds, making streets safer for all users.

Effective design features identified

- Road width narrowing and traffic calming treatments spaced every 80–100 m: these measures physically slow vehicles and change vehicle direction, leading to:
 - lower traffic volumes and speeds
 - increased bike riding and walking.

Critical drivers of benefit realisation determined

- Route selection: must form a direct or indirect connection to key attractors (activity centres, shops, schools, stations, recreation areas) and form part of the long-term cycle network (LTCN).
- Design features: narrowed road widths and treatments 80–100 m apart.
- Cost efficiency: projects costing \$600,000 – \$1.2 million per km likely achieve a benefit cost ratio (BCR) >1, if the above conditions are met.

Application of ACE principles is essential

- Activation: built infrastructure reflects social needs and the desires of people who will use it.
- Consultation: engagement integrated throughout the project lifecycle is a form of activation and enables community consultation.
- Evaluation: impact measured against anticipated outcomes.

Application of results into future program delivery

The SAS Design Guidance⁵ summarises the range of measures that can be applied and the key factors that have been found through this pilot program to influence user behaviour positively. These principles and guidelines will help local governments and practitioners plan and activate routes, consult with impacted communities and evaluate outcomes, whilst considering the application of design treatments and measures appropriate to their local context.

⁵ DTMI, 2025. [Planning and Designing for Active Transport: Safe active street design guidance](#). Prepared by the Department of Transport and Major Infrastructure. Perth, WA.

PROJECT OVERVIEW

The 2.4 km Elizabeth Street and Jenkins Avenue SAS route provides a link from Broadway Fair Shopping Centre to Bay Road across the local area.

The route starts at the Broadway intersection with Elizabeth Street and travels in a westerly direction to Dalkeith Road. There is a shared path section along Dalkeith Road which then connects to Jenkins Avenue and travels west again to just before Bay Road at the Town of Claremont border.

The SAS forms important connections to local amenities such as the University of Western Australia and Broadway Fair Shopping Centre on the one end, Holy Rosary Catholic Church, Loreto Nedlands Primary School, Nedlands Primary School along the route and ends near Bay Road.

City of Nedlands SAS project map

Key route destinations

- University of Western Australia
- Broadway Fair Shopping Centre
- Peace Memorial Rose Garden
- Holy Rosary Catholic Church
- Loreto Nedlands Primary School
- Nedlands Primary School
- Connection to Bay Road

Unique design features

- Red asphaltting
- Raised plateaus at junctions
- Formalised parking bays
- Priority intersections for continuous movement
- Raised plateaus on intersections and road humps
- Landscaping enhancements with additional trees
- Kerb improvements for easier street-to-path connections

Legend

- Raised plateau
- Intersection priority change
- Shared path



Nedlands SAS route map

Timelines

Delivery

- Community consultation: 2016-18
- Construction: July 2018-December 2020
- Lines and signs completion: April 2021
- Official opening: December 2021

Evaluation:⁶

- Pre-construction data collection (user behaviour): May 2018
- Post-construction data collection (user behaviour): May 2021 and May 2022
- Post-construction data collection (community sentiment): October-November 2022
- Interim evaluation report: 2023
- Final evaluation report: 2026

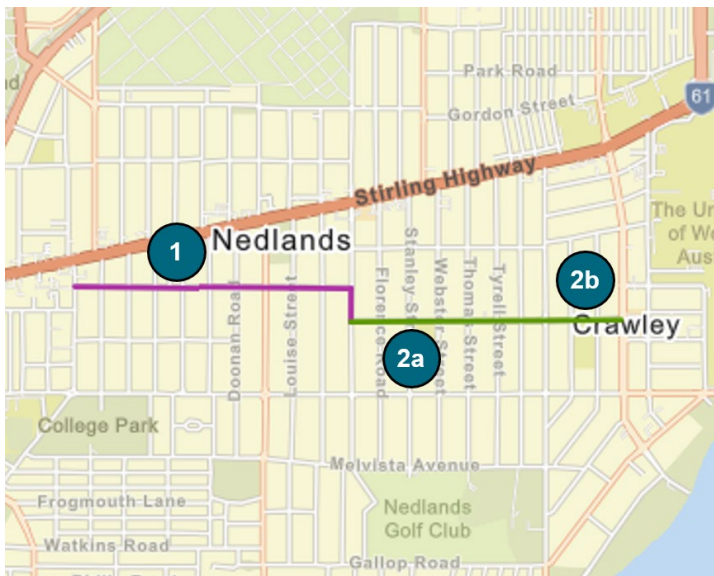
Segments

For monitoring and analysis, the SAS was split into ‘segments’ based on differences in form of the existing route and treatments applied during delivery of the SAS. This route was separated into segments as follows:

1. Jenkins Avenue (Bay Road to Dalkeith Road)
2. Elizabeth Street (Dalkeith Road to Broadway)

During analysis of user behaviour, segment 2 was further split due to different patterns in usage observed at either end of that long segment, making sub-segments:

- a. West of Bruce Street
- b. East of Bruce Street



Map of the Nedlands SAS route showing ‘segments’ used for data analysis

⁶ Note: Between data collection periods, city-wide travel patterns were disrupted by COVID-19 lockdowns. The post-construction SAS data collection periods, however, were chosen because [DTMI’s network monitoring](#) indicated they were much less affected by these disruptions. Any remaining impacts are expected to have influenced both the treatment (SAS) and control streets equally.

WHY WE COLLECT DATA

Evaluating a project by collecting data on people's behaviour and sentiment helps us to determine:

- whether the aims of a project have been achieved
- what combinations of interventions were most effective
- whether further improvements could still be made to improve outcomes.

These insights help to guide infrastructure investment in local communities that support the growth of active transport.

SASs Pilot Program

The SASs Pilot Program trialled unique combinations of design features that reflected local community needs and contexts, while also complementing each local government's approach to building an integrated active transport network.

Nine SAS projects, including this one, were included in the evaluation study. For more information on the evaluation methodology, theory of change, and overall program insights see the [SASs Pilot Program Final Evaluation Report](#).

Project aims

The following aims were investigated for each project included in the evaluation study, and results were compared across projects to derive program level insights that could lead to improvements in design guidelines and future SAS delivery.

1. Reduce motor vehicle numbers
2. Reduce 85th percentile speeds to within acceptable operating thresholds⁷
3. Increase the number of riding and walking trips made throughout the week
4. Increase the number of people of all ages and abilities making local trips by riding and walking
5. Influence user, resident and wider community perceptions of SAS routes as safe and comfortable places to walk, wheel and ride.

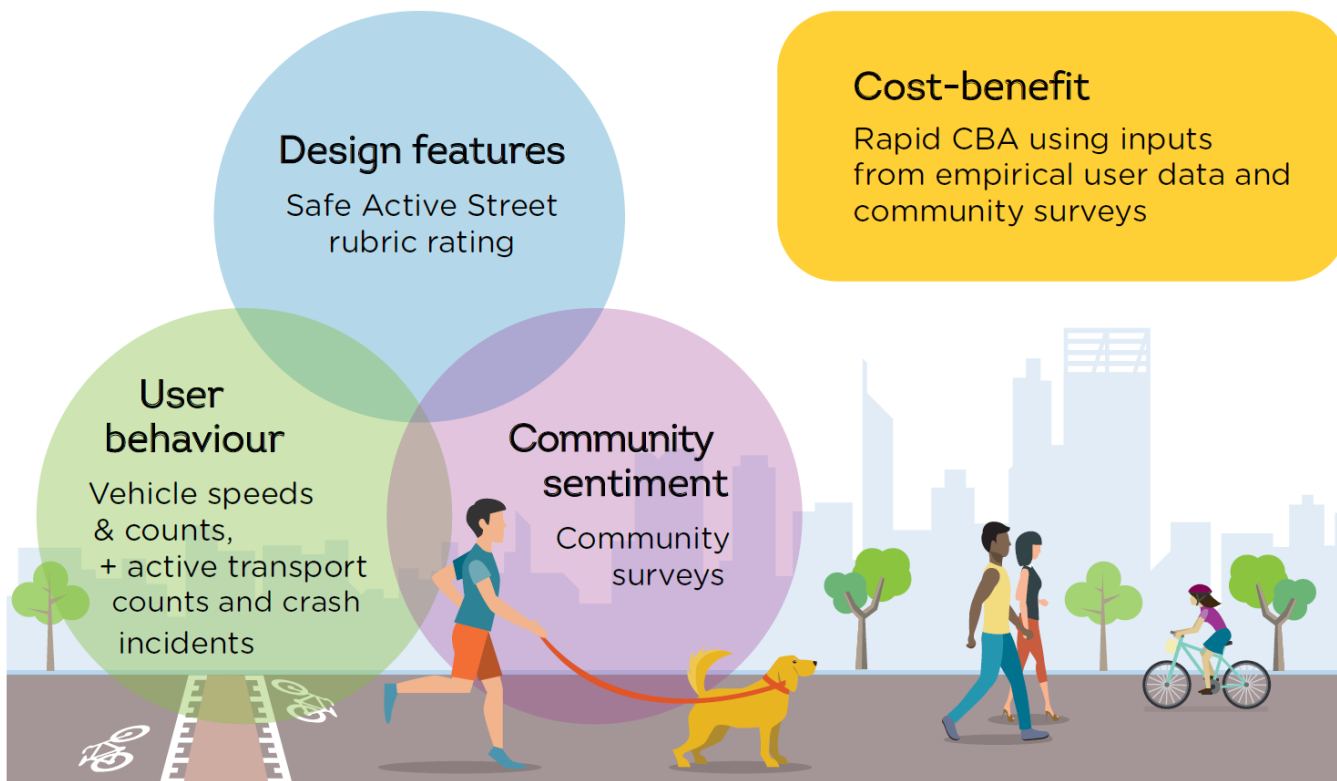
Evaluation framework

A comparative impact evaluation methodology was developed to collect and analyse data on three key change indicators for each SAS:

- **Design features** – scores to quantitatively differentiate between the types and scale of features, treatments and supporting measures applied to the route.
- **User behaviour** – vehicle counts and speeds (using pneumatic tube surveys), and active travel counts (using video surveys), collected pre- and post-construction. Small samples of available crash data were reviewed and discussed at the project level only, to aid interpretations of other data.
- **Community sentiment** – qualitative data on sentiment and perceptions, collected via community, resident and user surveys post-construction.

⁷ DTMI, 2026. [Planning and Designing for Active Transport: Explainers - Assessing 85th percentile speeds on safe active streets](#). Prepared by the Department of Transport and Major Infrastructure. Perth, WA.

At the program level, the evaluation framework included a fourth key indicator: cost benefit. The [SASs Pilot Program Final Evaluation Report](#) includes discussion of outputs from a cost benefit analysis conducted on data from each of the nine evaluated projects and provides a summary of the factors that influenced whether a project received a BCR >1, indicating a positive return on investment.



Data sources for each safe active street key indicator, illustrated to show theoretical interactions

OUTCOMES

Design features

Evaluation of the design features applied on each SAS route was a complex task due to the wide range of measures and treatments available, which could be chosen to influence different unique, yet complementary effects on user behaviour and community sentiment.

Assessment rubric

To assess the types and scale of treatments and supporting measures applied in each pilot project, a consistent scoring rubric and guidelines were developed for the SASs Pilot Program, which required a group of invited transport engineers and planners to agree on scores during focus group sessions.

Twenty-one criteria were identified across five design categories:

1. Active transport infrastructure
2. Connectivity
3. Traffic calming
4. Parking bay infrastructure
5. Placemaking and legibility.

Through facilitated consultation, design scores (0-4) were determined, where scores reflected the degree of improvement applied for each criterion per route segment assessed. Total average scores per route segment and category (grouping of criterion) could then be interpreted as:

<1 = minimal improvements	1-2 = moderate improvements	2-3 = major improvements	>3 = substantial improvements
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Results

Table 1 provides a breakdown of scores per route segment and design category.

Overall, the route averaged a design score of 2.07, indicating major improvement was achieved across the whole route.

- The route score was brought up by substantial improvements to ‘parking bay infrastructure’, with informal parking replaced with embayed parking on both sides of the road.
 - The SASs Pilot Program Final Evaluation determined that consistent use of formalised ‘parking bay infrastructure’ had a traffic calming effect by narrowing the road carriageway and should be considered as a supportive design feature to reduce vehicle volumes and speeds.
- Scores for ‘connectivity’ were major which is an indication of suitable route selection.
 - The route linked to key local destinations including Broadway Shopping Centre and local schools.
 - The SASs Pilot Program Final Evaluation determined that route selection is a critical driver of benefit realisation, with direct influences on current and latent demand.
- Scores for ‘placemaking and legibility’ were also major, due to the use of red asphalt and landscaping enhancements which added to the route’s attractiveness and user awareness of the SAS.

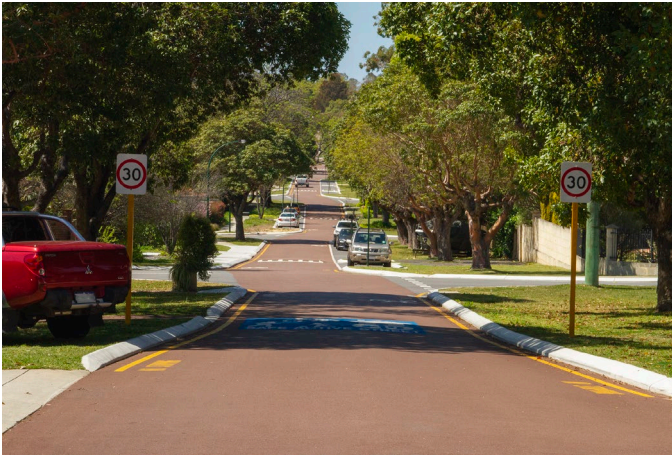
- Scores for 'traffic calming' and 'active transport infrastructure' were moderate as no narrowed slow points, and very few road humps, were installed along the route and only some locations of existing footpath provision were widened to support additional pedestrian movement.
 - Nevertheless, the existing grid structure of the intersecting streets set the intersection treatments approximately 100 m apart, which together with the formalised parking infrastructure may have influenced drivers' speed reductions.

Table 1: Design scores* per category, segment and overall for the Nedlands SAS route

Segment	Active transport infrastructure	Connectivity	Traffic calming	Parking bay infrastructure	Place-making and legibility	Total*
Segment 1: Jenkins Ave (Bay Rd to Dalkeith Rd)	1.75	2.33	1.29	3.5	2.4	2
Segment 2: Elizabeth St (Dalkeith Rd to Broadway)	1.75	2.33	1.86	3.5	2.2	2.14
Overall average route score	1.75	2.33	1.58	3.5	2.3	2.07

*Total average scores per segment and category can be interpreted as: <1 = minimal improvements, 1-2 = moderate improvements, 2-3 = major improvements, >3 = substantial improvements.

Examples of applied design treatments



Entry treatment mid-block, alternating formalised parking



Raised intersection



Left turn only on exit



Blue patch mid-block, with narrowed carriageway



Restricting traffic movements – one way



Intersection – red asphalt showing SAS priority

User behaviour

Evaluation of user behaviour followed a comparative impact approach, with before-after, control-intervention (BACI) data collection design.

Data collection design

A BACI data collection design was applied to differentiate between the effects of interventions applied on the treatment route and changes that may have occurred 'naturally' in the surrounding area. Data was collected before construction at carefully selected sites on the SAS (treatment) and at comparative sites on similar nearby streets (control) and repeated at the same sites after construction at consistent times of the year to minimise influence of seasonal variation.

With a BACI design, traffic and movement flow on control streets did not need to match with treatment streets, and an appropriate analysis of change (odds ratio) was determined.

Odds ratio analysis

To assess changes in counts of vehicles, walkers and bike riders on the treatment compared to control routes, a statistical measure of probability was applied known as an 'odds ratio', which compares the odds of an outcome occurring in one group to the odds of it occurring in another group (regardless of differences in raw counts across groups).

Odds ratios were used to estimate whether the outcomes observed on the SAS route were likely attributable to the SAS, unlikely attributable, or consistent with trends observed on the control streets.

Scores range from 0-2 and sometimes higher, with scores >1 indicating higher odds of the treatment influencing the outcome and scores <1 indicating decreased odds. It is common, however, that during interpretation of results, a middle range is determined that indicates a neutral or indeterminate result. During analysis of the SAS user behaviour data, a middle range of 0.93 and 1.08 was determined as neutral change or change on the SAS that was consistent with trends observed on the control routes.

Assessing 85th percentile speeds

It was not suitable to apply odds ratios for 85th percentile speeds because the posted speeds were intentionally reduced on the SAS route. Instead, a method was developed specifically to assess the effectiveness of the lowered speed limits and changed street conditions of SAS routes on driving behaviour, through which DTMI identified an acceptable operating range and upper bound for 85th percentile speeds. For more information, see the supporting document: [Assessing Safe Operating Speeds on 30 km/h Streets](#).

Calculating average daily results

Vehicle counts and speeds were detected across 14 consecutive days, including weekdays and weekends, at consistent seasonal and temporal periods before and after SAS construction. Active transport counts were detected across three weekdays and one weekend day, at consistent seasonal and temporal periods before and after SAS construction.⁸

Data collection periods were carefully selected to avoid local area events, public holidays and school holiday periods. If collection technology failed, samples were repeated immediately.

Calculations of average daily results were undertaken by:

- i. averaging the available weekday and weekend data per collection period
- ii. applying weightings for the number of weekday and weekend days per week
- iii. adding the result to determine average weekly activity
- iv. dividing by seven to achieve an average daily estimate.

This method was applied to achieve consistency across the available dataset, and smooth out any day-of-the-week fluctuations that may have occurred. In this way, data between control and treatment sites, and across SAS locations could be compared consistently.

⁸ This SAS underwent a repeat of post-construction sampling, which showed durability of the post-construction results. To streamline reporting, the data of both periods were combined and averaged.

Vehicles

Method

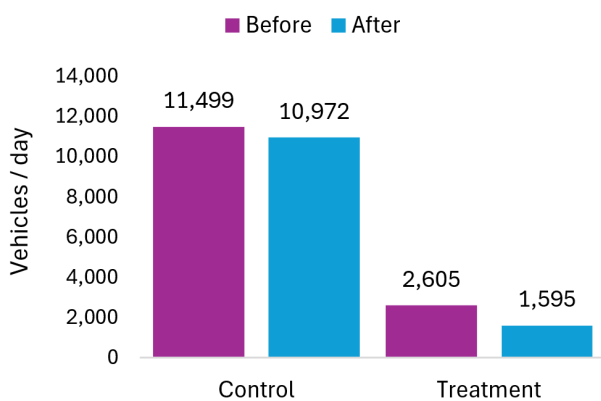
Pneumatic tube counters were used to detect vehicle traffic volumes and speeds. They were placed at strategically selected midblock locations on the SAS route (treatment) and comparable locations on adjacent streets (control). Depending on segment length, between 1 - 4 counters were placed on each.

Results

Vehicle volumes - overall

- Vehicle counts reduced on both the treatment route (-39 per cent) and control streets (-5 per cent), with a larger proportional decrease on the treatment route.
- Comparing changes on the treatment and control routes, the odds ratio generated a high score of 1.36, **indicating the SAS was likely responsible for the decreases observed enroute.**

Figure 1: Nedlands – average daily vehicles

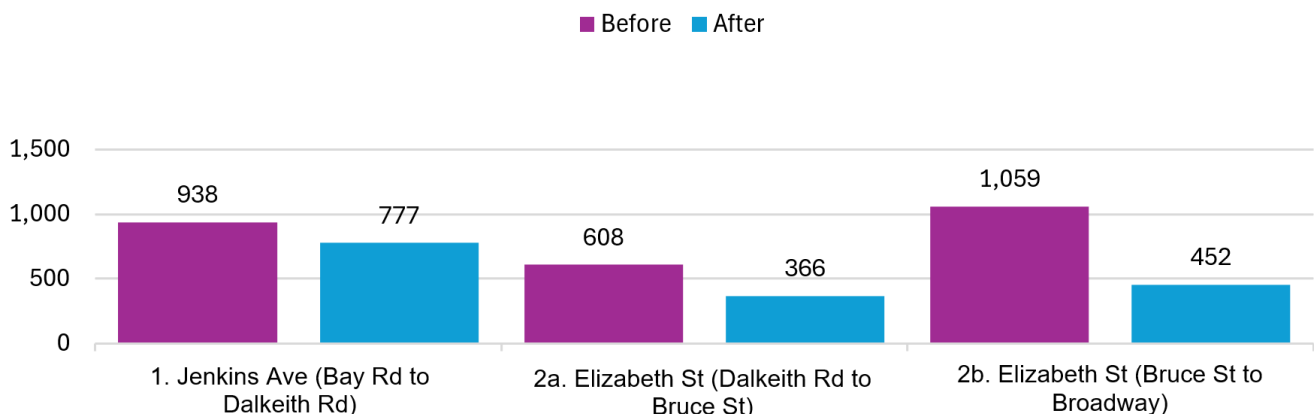


Vehicle volumes on the SAS decreased to a relatively larger proportion than control streets. The odds ratio indicated that the decrease in vehicle volumes on the SAS route after construction was likely attributable to the SAS when compared with trends on control streets.

Vehicle volumes – segment comparison

- Vehicle counts reduced on all segments.
 - The most dramatic reduction was observed on segment 2b, between Bruce Street and Broadway. These changes were likely most influenced by the SAS connection with Broadway being altered from two-way access to a one-way exit. This section also includes access to the primary school and suggests probable reductions in vehicle use for student pick-ups and drop-offs.

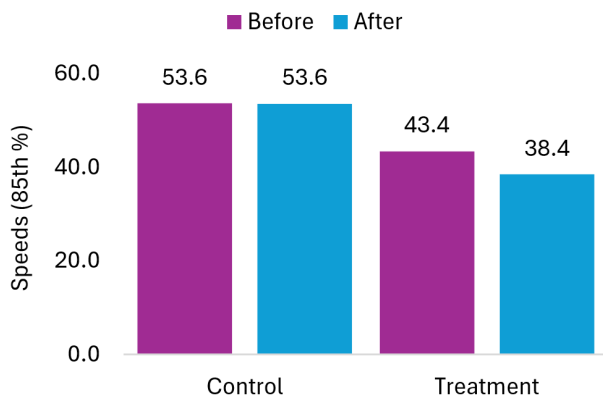
Figure 2: Nedlands – average daily vehicles on SAS segments



Vehicle speeds - overall

- There was an observed reduction in 85th percentile vehicle speeds on the treatment route, achieved through features such as low midblock plateaus. Despite there being no narrowed slow points or raised intersection plateaus installed, 85th percentile vehicle speeds were reduced to within an upper bound of the preferred operating range: 32.1 km/h to 38.1 km/h.
- Recommendations could include continued monitoring of speeds, minor or localised interventions where context warrants, or targeted speed reductions at specific locations.

Figure 3: Nedlands – 85th percentile speeds

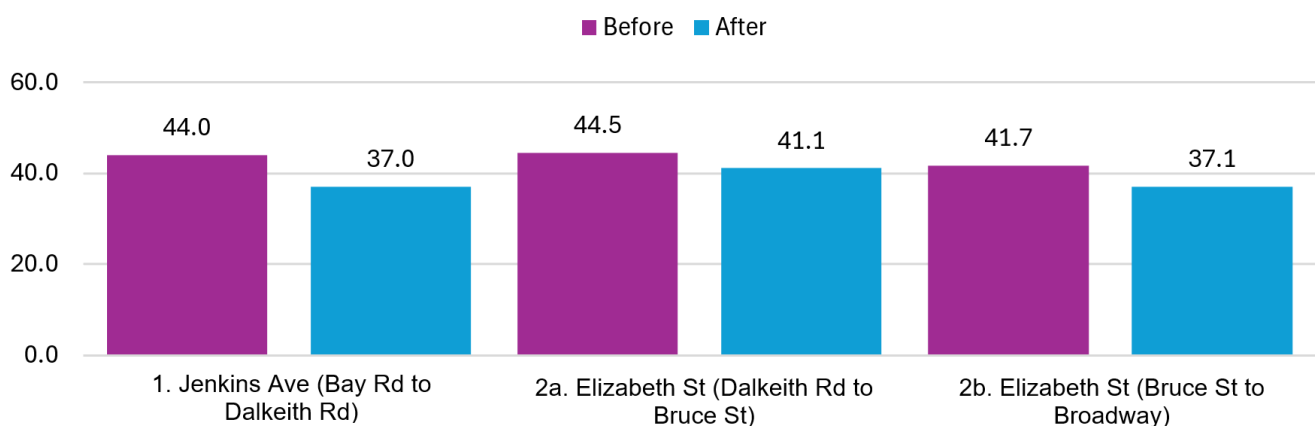


This result indicates moderate overall SAS performance in supporting the safety of vulnerable road users by sufficiently lowering the fastest vehicle speeds, with variability across the route.

Vehicle speeds – segment comparison

- All segments took a very similar design approach, with moderate improvements to ‘traffic calming’ and substantial improvements to ‘parking bay infrastructure’.
- This route had an existing grid structure which set the intersection treatments approximately 100 m apart. Short distances between intersections combined with formalised parking infrastructure may have influenced many drivers’ speed reductions.
 - The higher 85th percentile vehicle speeds on segment 2a, however, indicate this was not sufficient and additional measures, such as carriageway narrowing or vertical deflections, could be applied between Dalkeith Road and Bruce Street to further reduce the fastest speeds.
 - Segment 2b achieved 85th percentile speeds within the preferred operating range, related to the introduction of a one-way exit only restriction to traffic flow with Broadway and use of road humps between Viewway and Bruce Street.
 - Segment 1 achieved 85th percentile speeds within the preferred operating range, which could be related to the greater number of speed limit signs present on that segment.

Figure 4: Nedlands – 85th percentile (fastest) speeds on SAS segments



Additional insights - vehicle volumes and speeds on mid-route distributor road

- The Nedlands SAS included a section of the route that ran along a local distributor road, Dalkeith Road. On this section, a shared path connection was provided off-road due the high volume of average daily vehicle traffic. A raised plateau was provided to connect the shared path at a mid-block location on Dalkeith Road between Jenkins Avenue and Elizabeth Street.
- Data was collected on this section of the route for vehicle volumes and speeds, to determine whether the SAS route impacted drivers' use of this cross-street and whether 85th percentile speeds were reduced to facilitate the SAS intentions of attracting walkers and riders. Data showed:
 - daily vehicle volumes decreased substantially on this local distributor road after construction of the SAS route and shared path connection.
 - 85th percentile speeds were also reduced after construction, although posted speeds on Dalkeith Road remained at 50 km/h.
- These changes show the SAS route had an overall impact on:
 - re-routing local vehicle traffic to avoid use of the local distributor road
 - drivers becoming more aware of their speeds in line with the intention of the SAS to provide a safe connection for people walking, wheeling and riding between Elizabeth Street and Jenkins Avenue.

Figure 5: Dalkeith Road – average daily vehicles

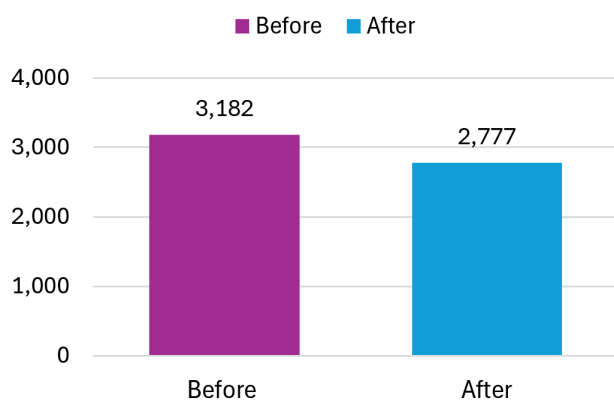
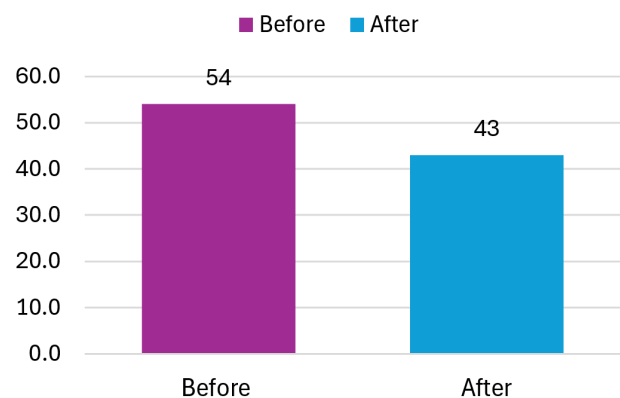


Figure 6: Dalkeith Road – 85th percentile vehicle speeds



Active transport

Method

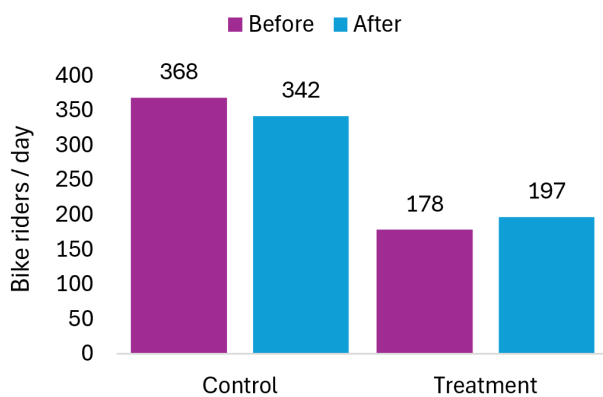
Video surveys were used to detect rates of active transport. Video cameras were placed at strategically selected intersections on the SAS route (treatment) and comparable locations on adjacent streets (control). Depending on segment length, between 1 - 4 counters were placed on each.

Results

Bike riding - overall

- Riding activity increased on the treatment route (+11 per cent) and decreased on the control streets (-7 per cent), suggesting that the SAS was effective in encouraging riders to switch to using the route.
- Comparing changes on the treatment and control routes, the odds ratio generated a high score of 1.45, indicating the **SAS was likely responsible for the increases observed enroute.**

Figure 7: Nedlands – average daily bike riders



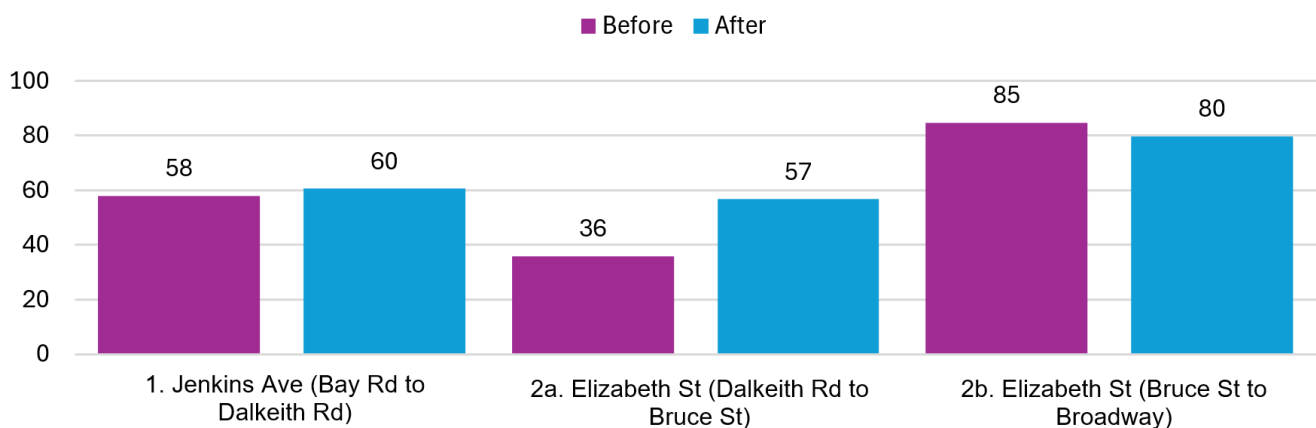
Bike riding activity increased on the SAS to a much higher proportion than control streets, indicating it was a more attractive route for bike riders.

The odds ratio indicated that the increase in bike riding on the SAS route after construction was likely attributable to the SAS when compared with trends observed on nearby control streets.

Bike riding – segment comparison

- Daily bike riding activity remained consistent on segments 1 and 2b.
- Segment 2a, between Dalkeith Road and Bruce Street saw the largest increase in bike riders, which could be due to increased bike riding movement from adjacent streets of families and children riding to and from Nedlands Primary School and Loreto Nedlands Primary School.

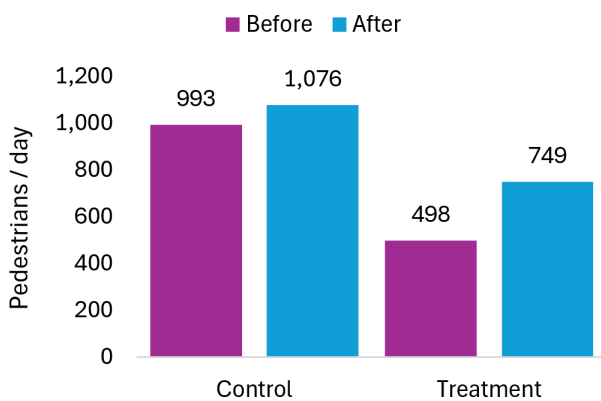
Figure 8: Nedlands – Average daily bike riders on SAS segments



Walking – overall

- Walking activity increased on both the treatment route (+51 per cent) and control streets (+8 per cent) however increased by a much higher proportion on the treatment route, indicating preference for pedestrians to use the route over alternative streets.
- Comparing changes on the treatment and control routes, the odds ratio generated a high score of 1.55, **indicating the SAS was likely responsible for the increases observed enroute.**

Figure 9: Nedlands – average daily walkers



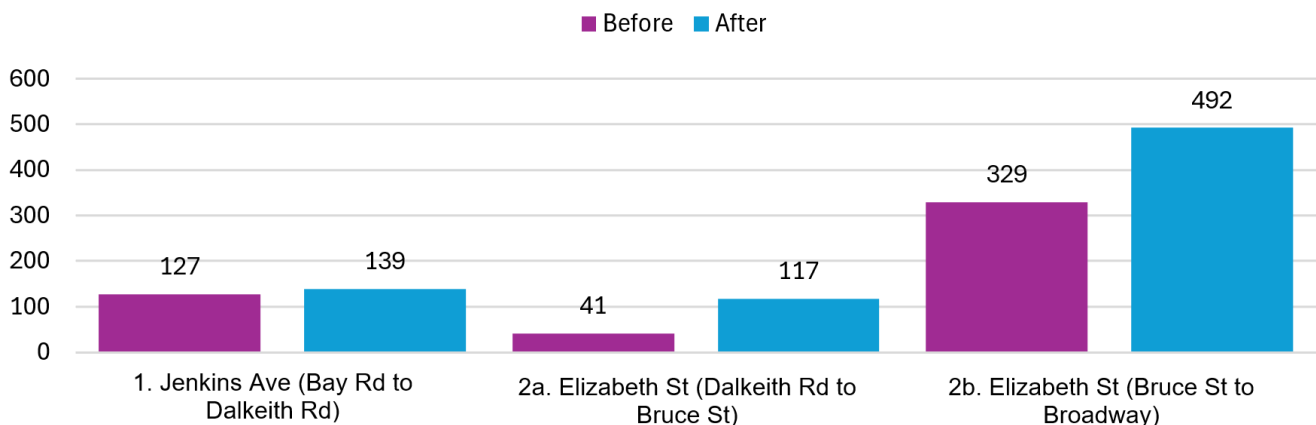
Walking activity increased on the SAS to a higher proportion than control streets, indicating it was a more attractive route for walkers.

The odds ratio indicated that the increase in walking on the SAS route after construction was likely attributable to the SAS when compared with trends observed on nearby control streets.

Walking – segment comparison

- All segments observed an increase in walking. Segments 2a and 2b recorded much larger increases compared to segment 1, likely because of the greater connectivity to key destinations at the eastern end of the SAS.
- These results, together with the large increase in bike riders on segment 2a and the reduction in vehicle volumes across the route, highlight the success of this SAS in achieving its intended design objectives.

Figure 10: Nedlands – Average daily walkers on SAS segments



Crash incidents

Additional to the count data collected to assess user behaviour, a review of available crash data provided an indication of safety performance of the road environment before and after implementation of the SAS.

Objective evidence on the number, type and severity of crashes occurring in the area, in light of the changed user behaviour along the route, helps identify whether the SAS treatments have influenced road safety outcomes.

Method

Crash incidents were downloaded from the Main Roads WA data warehouse via Data WA. Eleven years of reported incidents across the State, from 1 January 2013 to 31 December 2023,⁹ were available which included midblock and intersections.

Data was filtered to anything involving bike or pedestrian, and geospatially mapped to visualise their location, type and injury severity against the SAS routes.

Sample sizes were low, which limited analysis to a simple visual count. Nevertheless, patterns were assessed alongside the design features of the route and user behaviour count results for vehicles, people walking and bike riders.

Sample sizes in active transport related crash data were typically low due to:

- frequency of incidents being generally low in the specific areas of interest
- the incident dataset only containing medical, hospital, fatal or property damage reports.

Results

Table 2 provides a summary of incidents between vehicles and bike riders or people walking, before, during or after SAS route construction, shown for each stage of the SAS route and corresponding control street locations. Notable data patterns:

- The completed Nedlands SAS route experienced two incidents involving a bike rider and vehicle (one was property damage only), from a base of three in previous years.
- The three incidents that occurred before construction were located along the Elizabeth Street section of the SAS, which experienced zero incidents during and after construction. This section also saw the largest growth in bike riding.
- The two incidents after construction occurred on the Jenkins Avenue section of the SAS, near intersections with Taylor Road and Waroonga Road.
- Zero pedestrian incidents were recorded along the SAS route before, during or after construction.
- Several incidents involving bike riders or pedestrians were recorded on control streets before, during and after SAS construction.

This pattern indicates positive SAS performance in supporting the safety of vulnerable road users, with issues at one location that could be reviewed.

⁹ Note: At the time of analysis (late 2025), data for 2024 and 2025 was not available to download.

One medical incident that occurred near the intersection of Waroonga Road and Jenkins Avenue may indicate that additional treatments or wayfinding could be applied on the western end of the route to aid driver awareness.

The lack of incidents on Elizabeth Street, down from a previous high number before construction, indicates improved road safety conditions for vulnerable road users and demonstrates efficacy of the SAS route in achieving these objectives.

Table 2: Incidents between vehicles and bike riders or pedestrians, before, during or after SAS route construction

Years of data reviewed ¹⁰	SAS construction status	Crashes on SAS route – Bike	Crashes on SAS route – Pedestrian	Crashes on control street – Bike	Crashes on control street – Pedestrian
5.5 years	Before	1 hospital 2 medical	Nil	1 hospital 1 medical	2 hospital
2.5 years	During	Nil	Nil	3 medical	Nil
3 years	After	1 medical 1 property damage	Nil	1 medical	1 hospital

¹⁰ Years of data reviewed reflects the combined total of all available incident data analysed relative to the SAS's construction status. Due to the limited sample size and targeted location, averaging incidents per year was not suitable for this analysis.

Community sentiment

Community sentiment was collected to understand how residents and road users perceived the SAS and how they reported using the street before and after implementation. These insights provide valuable context on perceived safety, comfort and self-reported travel behaviours that cannot be captured through traffic counts alone. Incorporating community perspectives enables a more complete assessment of SAS user experience and helps to inform decisions about future refinement or expansion of the program.

Method

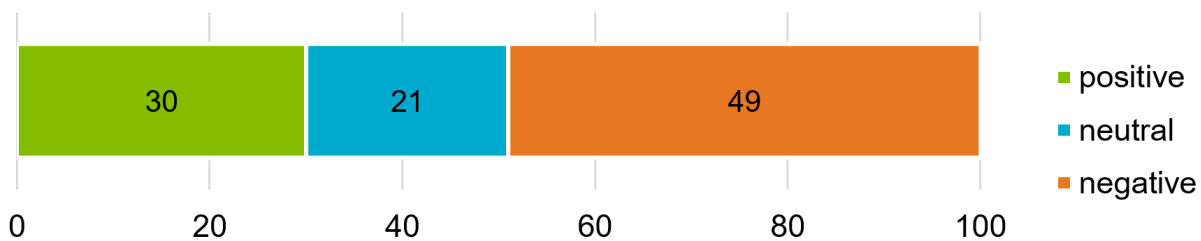
Community surveys were undertaken in 2022, one year following the opening of the SAS.¹¹ Questions focused on the design treatments and effectiveness in delivering the project objectives, self-reported usage of the route (frequency, trip purpose) and demographics.

Results

Community sentiment and perceptions

- Community responses towards the SAS were negative overall:
 - **Only 30 per cent** of all respondents reported feeling positive towards the SAS.
 - This may be due to the short turnaround between construction completion and the community surveys, with one year not long enough for the community to become accustomed to the route.

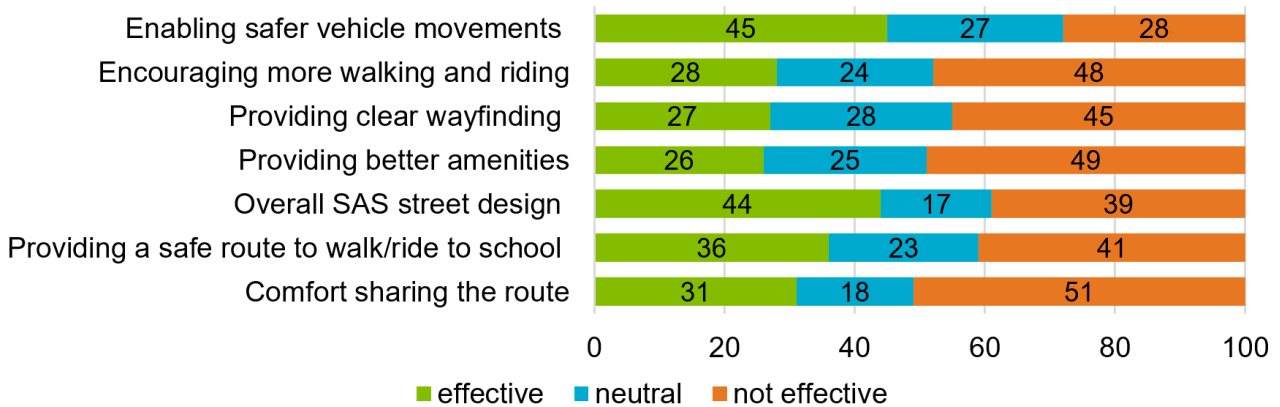
Figure 11: Community sentiment towards the Nedlands SAS (n=169)



- When asked to rate the SAS on effectiveness across several categories, responses were mostly negative.
 - There was, however, a positive perception that the SAS enabled safer vehicle movements; one of the key intentions of the SAS.
 - Improvements to wayfinding and amenities could make user experience better (as described in verbatim responses).

¹¹ Post-construction community surveys would ideally be undertaken one year or longer after construction, to allow time for community and user sentiment to settle.

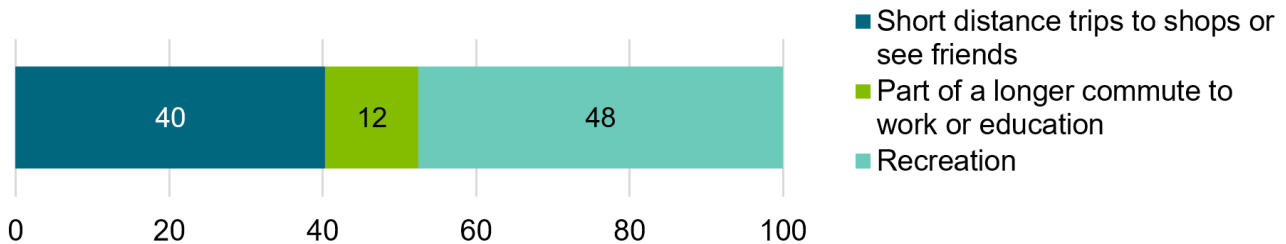
Figure 12: Community perceptions of the SAS (n=169)



Changes in behaviour and trip purpose

- Self-reported changes in behaviour from all respondents were consistent with observations.
 - **22 per cent** = NET increase in active travel
 - **-14 per cent** = NET decrease in vehicle use.
- People who walked or rode a bike along the SAS did so for a mix of reasons, with close to half for recreation and half for transport purposes.

Figure 13: Walking, riding – trip purpose (n=163)



Verbatim responses on what people liked or didn't like about the SAS

Positives

"I ride to school with my children every day on the safe active street. It has been a wonderful thing. Please don't take it away! It does exactly what it sets out to do. It reduces overall traffic, reduces the speed of the traffic that remains, invites more use by cyclists."

"Execution was well managed (we live very close), final outcome in terms of quality etc is good. The intent is good."

"Having a high number of parking bays along the street allow me to park and walk-in to the shopping centre and university. I much prefer taking a longer walk along a leafy street than trying to get parking closer to these locations."

"Definitely stops it being a rat run, slows traffic and as an adult you definitely feel safer on a bicycle. However, for children it would have been better to have a completely separate bike path and that is what I had hoped it would be."

"Not too much traffic. Smooth road to ride and scoot on. Lovely trees."



Negatives

"The speed bumps are too severe, the intersections are too narrow, the road is too narrow, people coming from different directions get confused, and therefore makes it dangerous because no one knows who gives right of way. It also gives pedestrians and cyclists a false sense of security, they zoom up the street assuming they're safe and not looking for traffic."

"Cars do not respect speed limit imposed and drive too close to pedestrians. Noise levels can be high during peak hours. It is safe but not as safe as I think it could be."

"The speed limit is not followed by cars. It has far too much road traffic to be safe for cyclists. The setting of the street along two school routes makes it too congested for children to cycle to and from school. The speed bumps are ineffective at reducing vehicle speed. The narrow road width means cyclists get squeezed out by overtaking cars."

"I believe this work has made the street less safe to drive and cycle on. Now I avoid driving or cycling along this street, as the road is too narrow for cars to safely pass, and equally too narrow for when a bicycle is coming towards a car; it is even worse and more difficult at night. Lighting is poor at night."

SUMMARY OF FINDINGS

Achievements

- Reduction in vehicle volumes along the SAS route and on an intersecting local distributor road.
- Vehicle speeds were reduced to within an upper bound of the preferred operating range: 32.1 km/h to 38.1 km/h.
 - This was achieved without the use of narrowed slow points or raised intersection plateaus; instead, features such as low midblock plateaus were used, with some sections of formalised parking that contributed to narrowing of the carriageway.
- There were increases in riding activity on the route and decreases on neighbouring streets, indicating a switch for riders to use the SAS.
- Increases in walking activity were greater on the route than on neighbouring streets, indicating a preference for pedestrians to use the SAS.

Opportunities for improvement

- Despite achieving positive user behaviour outcomes, the SAS received predominantly negative feedback from the community.
 - This may be due to the short turnaround between construction completion and the community surveys, with one year not long enough for the community to become accustomed to the route.
 - It could also be due to a missed opportunity for continued activation and community consultation after construction and highlights the importance of this element of project delivery.
 - Low community sentiment post construction combined with positive route outcomes, indicates dissonance between community understanding of the design intentions and community use of the route.
- Crash patterns enroute and off route showed strong overall SAS performance in supporting the safety of vulnerable road users, with issues at one location that could be reviewed.

Insights and recommendations

Recommendations to improve outcomes on this SAS project, informed by insights summarised in the SASs Pilot Program Final Evaluation Report:

- Incorporating ACE principles throughout all phases of project planning, design, delivery and post construction review.
- Lowering 85th percentile speeds consistently across all segments of the route to within the preferred operating range, by considering additional road treatments as required.

Alignment with program insights

By trialling the use of different design features, and collecting data on user behaviour and community sentiment, the nine evaluated projects in the pilot program generated a rich array of insights that will guide future design and development of SASs.

The SAS Design Guidance developed through this trial provides insights for retrofitting brownfield sites but perhaps most importantly, guidance on how to establish an SAS on greenfield sites at inception.

With this guidance and support from DTMI, local governments can design and implement more SASs, creating effective 30 km/h shared street spaces for people to walk, wheel and ride comfortably and safely in their communities.

