Government of **Western Australia**
Department of **Transport**

Safe Active Streets Program:

STIRLING

Interim Evaluation Report – 2023

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We acknowledge the Traditional Custodians of this land and pay respect to the Elders past, present and future.

WHAT IS THE SAFE ACTIVE STREETS PILOT PROGRAM?

The Department of Transport's (DoT) Safe Active Streets Pilot Program commenced in 2015, and since that time has seen the construction of 12 safe active streets across Perth and regional WA, with eight completed within the program period that will form part of the evaluation of the pilot program.

Developed in partnership with local government, safe active streets are active travel routes on quiet local streets, where speeds have been reduced to 30 km/hr to allow for a safer shared street space.

Other treatments such as narrowing road widths, slow points and intersection changes on the streets can help to create low speed residential precincts. With lower vehicle speeds, the streets aim to improve amenity for the community and are much safer for all users, such as people walking, bike riders of all ages and abilities and people driving.

Safe active street routes are also chosen as they form part of wider bicycle networks, connecting to off-road shared paths and linking community amenities such as schools, railway stations or shops.

WHY WE COLLECT DATA

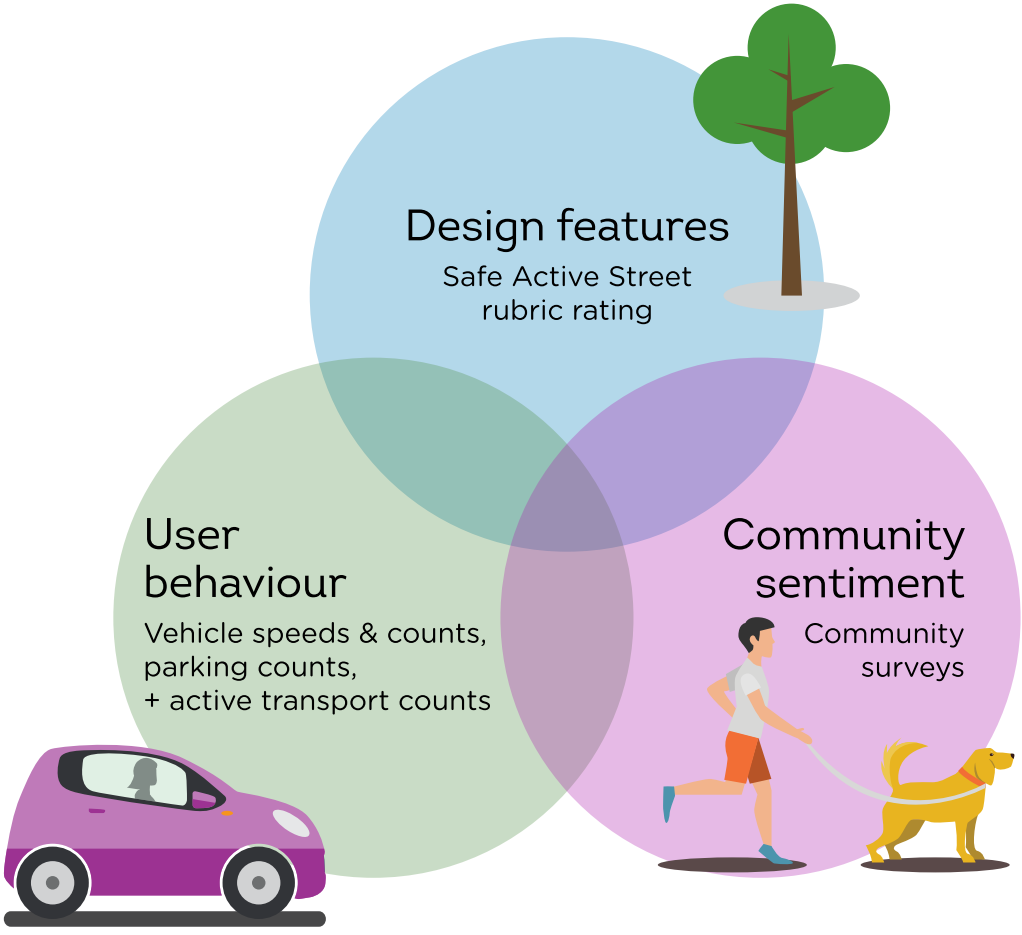
Collecting transport data helps us to better understand transport choices and behaviours. This insight assists us to guide infrastructure investment in local communities to support the growth of active transport.

Evaluation of the Safe Active Streets Pilot Program is being undertaken, including each of the eight projects involved.

Due to the complexity and differing treatments applied to each of the projects, the evaluation has been designed to collect and analyse data on three key components:

1. Design features
2. User behaviour
3. Community sentiment

The data presented in this interim evaluation report for the Stirling Safe Active Street discusses initial insights of the available data on design features and user behaviour. Community surveys are being undertaken which will provide additional insights on community perceptions about the safe active street. Further analyses of all data will also be undertaken and incorporated into the final evaluation report due in 2024.



CITY OF STIRLING, SAFE ACTIVE STREET

The City of Stirling's Safe Active Street is a 4.12 km route linking Odin Road/Beatrice Street to Scarborough Beach, along Shaw Road, Stoner Street, Ambrose Street, Moorland Street and Manning Street.

Project completion dates:

- **June 2018: Stage 1** — Beatrice Street, Shaw Street, Stoner Street and Ambrose Street
- **May 2019: Stage 2** — Moorland Street (linking Huntriss Road to Grand Promenade)
- **April 2021: Stage 3** — Moorland Street, Deanmore Road and Manning Street (linking Grand Promenade to West Coast Highway)

SAFE ACTIVE STREETS MAP

Unique design features

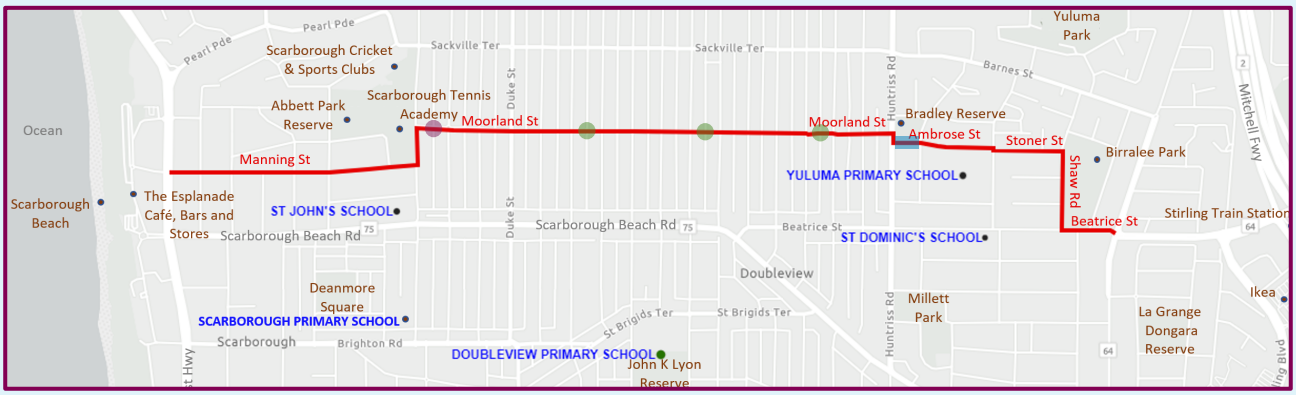
- Safe active street line marking
- Raised plateaus
- On street parking
- Priority change at intersections
- Kerb reconstruction (with planting)
- Slow points
- Traffic filtering i.e., filtered permeability

Legend

- Slow point
- Filtered permeability
- Shared path

Key route destinations

- Stirling Station
- Mitchell Freeway Principal Shared Path
- West Coast Highway
- Scarborough Beach
- Stirling City Centre
- Yuluma Primary School
- Birralee Park
- Bradley Reserve
- Abbett Park



EVALUATION PROCESS

Video surveys and pneumatic tube counters were used to collect pre and post construction measures of:

- Bike rider movements
- Vehicle traffic counts
- Vehicle traffic speeds
- Vehicle parking counts

VIDEO SURVEYS

Video surveys were conducted on the Stirling Safe Active Street, over different three-day periods between 6.00 am and 6.00 pm. Data collection was conducted in February 2018 (pre-construction) and February 2021 (post-construction) across all stages.

Video surveys involve placing video cameras at strategic locations to detect the movements of bike riders and pedestrians. Survey footage is then analysed to extract pedestrian and bike rider activity.

These surveys were conducted on the safe active street route and on adjacent intersections off-route to detect area wide trends. There are four comparable pre and post construction sites along the route shown in this report.

PNEUMATIC TUBE COUNTS

Pneumatic tube counters were placed at specific mid-block sections of road and at adjacent locations off-route to detect area wide trends.

Pneumatic tube counters involve rubber hoses being stretched across the road and connecting at one end to a data logger. Tube counters were used to detect vehicle traffic volumes and speeds. Vehicle volumes reflect the 85th percentile speed which is the speed at or below which 85 percent of vehicles are travelling.

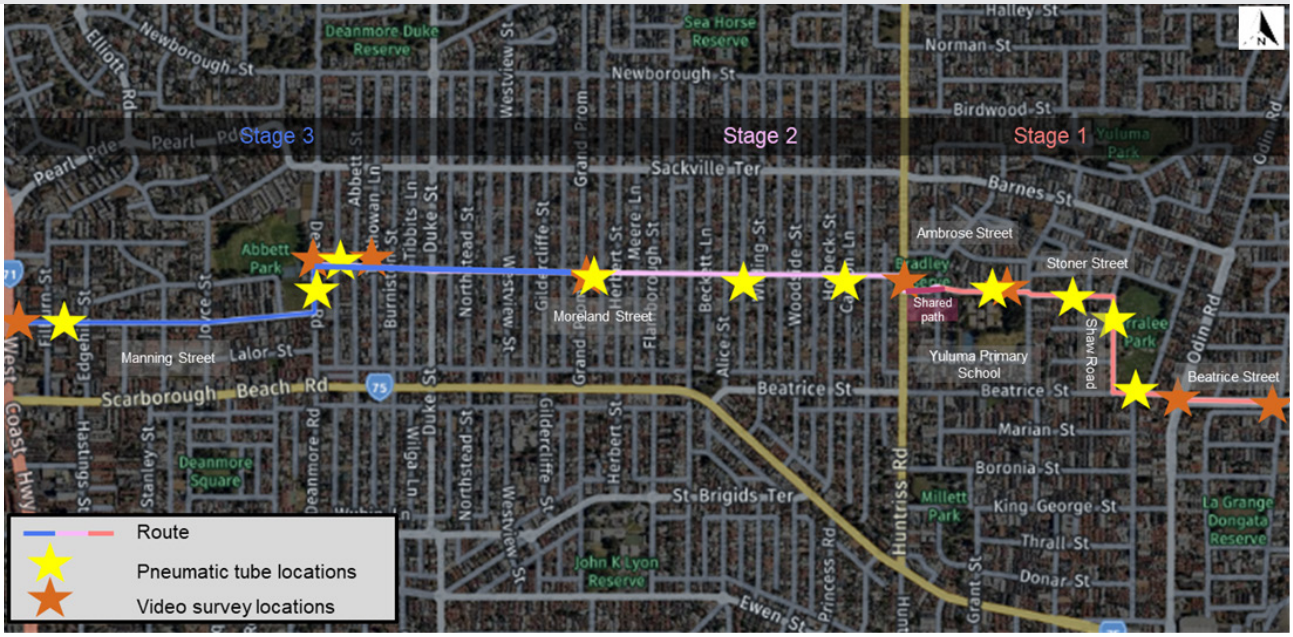
Tube counters were in place over a specified period to capture the pre and post construction counts. In this report, four comparable pre and post construction sites along Stage 1 have been shown, three sites along Stage 2 and three comparable sites along Stage 3.

Both data collection methods enable DoT to observe changes in activity pre and post construction.

Data collection dates:

- **Stage 1:**
  August 2018 (pre-construction) and October 2021 and May 2022 (post-construction)
- **Stage 2:**
  February 2018 (pre-construction) and February 2021 (post-construction)
- **Stage 3:**
  February 2018 (pre-construction) and February 2021 and June 2022 (post-construction)

Route map with pneumatic tube counter and video survey locations



KEY INSIGHTS

Walking and bike rider activity

The largest increase in the number of people walking was observed in Stage 1 around Yuluma Primary School during the week.

- The largest increase was observed over the weekdays at the Ambrose Street site which indicates use of the route to access Yuluma Primary School.
- Walking activity saw increases at each end of Moorland Street over the weekend, possibly due to Abbett Park located on the west end and Bradley Reserve on the east end of the route.
- The largest decreases in walking activity were observed in Stage 3, particularly over the weekend.

Bicycle riding observed increases at seven (out of eight) sites over the weekend along the route.

- Increases in bike riding were seen across all Stages (1-3) over the weekend, with the exception of the site located in Stage 3 at Moorland and Abbett Street, which remained somewhat unchanged.
- An increase in bike riding activity was also seen at five (out of eight) sites during the week.

Walking activity (raw counts)

Comparable sites	Weekday		Weekend	
	Pre-construction	Post-construction	Pre-construction	Post-construction
Stage 1: Cedric Street and Geneff Street	227	139	136	97
Stage 1: Beatrice Street and Odin Street	209	167	138	108
Stage 1: Ambrose Street and Yuluma Primary School	395	**594**	132	99
Stage 2: Moorland Street and Huntriss Road	205	156	176	**193**
Stage 2: Moorland Street and Grand Promenade	154	126	191	140
Stage 3: Moorland Street and Abbett Street	210	**235**	246	**261**
Stage 3: Manning Street and Deanmore Road	271	107	218	171
Stage 3: Manning Street and West Coast Highway	604	489	1,219	858

Bold indicates an increase in activity

Bike riding activity (raw counts)

Comparable sites	Weekday		Weekend	
	Pre-construction	Post-construction	Pre-construction	Post-construction
Stage 1: Cedric Street and Geneff Street	49	**58**	38	**57**
Stage 1: Beatrice Street and Odin Street	52	**90**	43	**68**
Stage 1: Ambrose Street and Yuluma Primary School	13	**23**	21	**30**
Stage 2: Moorland Street and Huntriss Road	37	35	42	**82**
Stage 2: Moorland Street and Grand Promenade	44	**55**	31	**57**
Stage 3: Moorland Street and Abbett Street	40	38	52	48
Stage 3: Manning Street and Deanmore Road	49	**55**	64	**76**
Stage 3: Manning Street and West Coast Highway	90	86	157	**175**

Bold indicates an increase in activity

Vehicle volumes and speeds

Vehicle volumes declined at the five sites along the route.

- Stage 1: Vehicle volumes saw a large decrease at the eastern end along Beatrice Street (between Shaw Road and Bates Road), while the other three sites did not show a decrease.
- Stage 2: Vehicle volumes significantly decreased at the two sites located along Moorland Street (at Holbeck Street and Ravenscar Street, and at Alice Street and Wilding Street), and remained largely unchanged at Grand Promenade and Herbert Street.
- Stage 3: Large decreases in vehicle volumes were observed across all three sites.

A large reduction in (85th percentile) vehicle speeds was observed at six (out of ten) comparable sites along the route, however, speeds could be reduced further.

- Stage 1: Vehicle speeds remained similar along Stage 1 with the sites located at each end at Beatrice Street and at Ambrose Street, where speeds were around 32 km/hr pre and post construction, however there is a need to reduce speeds on Shaw Street and Stoner Street as these continue to remain high. This could be attributed to lack of regulatory speed restriction signage, where traffic entering the route are unaware of the change in traffic conditions or are not recognising/registering the speed restriction pavement markings.
- Stage 2: The 85th percentile vehicle speeds were reduced at all sites, suggesting the current treatments in this section are contributing to reduced vehicle speeds. These could be further reduced to achieve an 85th percentile speed of 37 km/hr or below.
- Stage 3: Decreases were observed at all three sites on Stage 3, however the speed at two sites, along Deanmore Road and Manning Street, could be further reduced to achieve an 85th percentile speed of 37 km/hr or below. The width of the route in Stage 3 could also be contributing to higher speeds. A substantial decrease in speed can be observed at the Moorland Street site, which is likely due to the positioning of the single lane slow point between the roundabout and the intersection.

Daily weekday average vehicle volumes (number of vehicles)

Comparable sites	Pre-construction	Post-construction	
	August 2018	October 2021	May 2022
Stage 1: Beatrice Street: Shaw Road and Bates Road	421	429	**387**
Stage 1: Shaw Street: Dodds Place and Stoner Street	572	682	609
Stage 1: Stoner Street: Morris Road and Shaw Road	332	449	418
Stage 1: Ambrose Street: Farris Street and Morris Road	347	433	389
	February 2018	February 2021	
Stage 2: Moorland Street: Holbeck Street and Ravenscar Street	356	**198**	
Stage 2: Moorland Street: Alice Street and Wilding Street	192	**191**	
Stage 2: Moorland Street: Grand Promenade and Herbert Street	347	347	
	February 2018	February 2021	June 2022
Stage 3: Moorland Street: Deanmore Road and Abbett Street	1,107	**843**	**736**
Stage 3: Deanmore Road: Moorland Street and Manning Street	2,418	**1,485**	**1,327**
Stage 3: Manning Street: Filburn Street and Edgehill Street	809	**721**	**631**

Bold indicates a decrease in volumes

Daily average (85th percentile) vehicle speeds

Comparable sites	Pre-construction	Post-construction	
	August 2018	October 2021	May 2022
Stage 1: Beatrice Street: Shaw Road and Bates Road	32 km/hr	32 km/hr	33 km/hr
Stage 1: Shaw Street: Dodds Place and Stoner Street	46 km/hr	**42 km/hr**	46 km/hr
Stage 1: Stoner Street: Morris Road and Shaw Road	46 km/hr	46 km/hr	46 km/hr
Stage 1: Ambrose Street: Farris Street and Morris Road	31 km/hr	33 km/hr	32 km/hr
	February 2018	February 2021	
Stage 2: Moorland Street: Holbeck Street and Ravenscar Street	49 km/hr	**39 km/hr**	
Stage 2: Moorland Street: Alice Street and Wilding Street	43 km/hr	**39 km/hr**	
Stage 2: Moorland Street: Grand Promenade and Herbert Street	42 km/hr	**38 km/hr**	
	February 2018	February 2021	June 2022
Stage 3: Moorland Street: Deanmore Road and Abbett Street	42 km/hr	**33 km/hr**	**32 km/hr**
Stage 3: Deanmore Road: Moorland Street and Manning Street	54 km/hr	**41 km/hr**	**40 km/hr**
Stage 3: Manning Street: Filburn Street and Edgehill Street	46 km/hr	**44 km/hr**	**43 km/hr**

Bold indicates a decrease in speeds

SUMMARY

- Overall, the Stirling Safe Active Street has seen positive growth in the number of people using the route for bike riding, particularly over weekends. There has also been large growth in the number of people walking around Yuluma Primary School during the week, however, growth in walking activity has not been observed along the full length of the route.
- Vehicle speeds have been reduced across nearly all sites, however where they are still above the recommended target; further treatments may need to be considered to further reduce 85th percentile speeds. The Stirling Safe Active Street is immersed in a street grid system with multiple entry and exit points from the surrounding distributor roads. By nature, the grid system improves orientation and route directness but this may be impacting the effectiveness of the speed restrictions. The route could benefit from additional regulatory speed signs placed in prominent locations to emphasize the 30 km/hr speed restriction to entering traffic.
- The current treatments are impacting the number of vehicles using the route as large reductions in vehicle volumes are evident at each end of the Stage (1-3), i.e., at the entry points of each Stage. Volumes will be impacted by the grid system, as again, there are multiple entry points from distributor roads which would contribute to increased volumes along some sections.
- Community perception data will help to ascertain the breadth and depth of positive or negative community sentiment for the Stirling Safe Active Street.
- The Safe Active Streets Pilot Program Evaluation Report will include statistical analyses of the full dataset and will be available in 2024.

FURTHER INFORMATION

More information on the Safe Active Street Program can be found on the DoT website: www.transport.wa.gov.au

APPENDIX

Chart 1

Average weekday and weekend walking activity

Pre and post construction (raw counts)

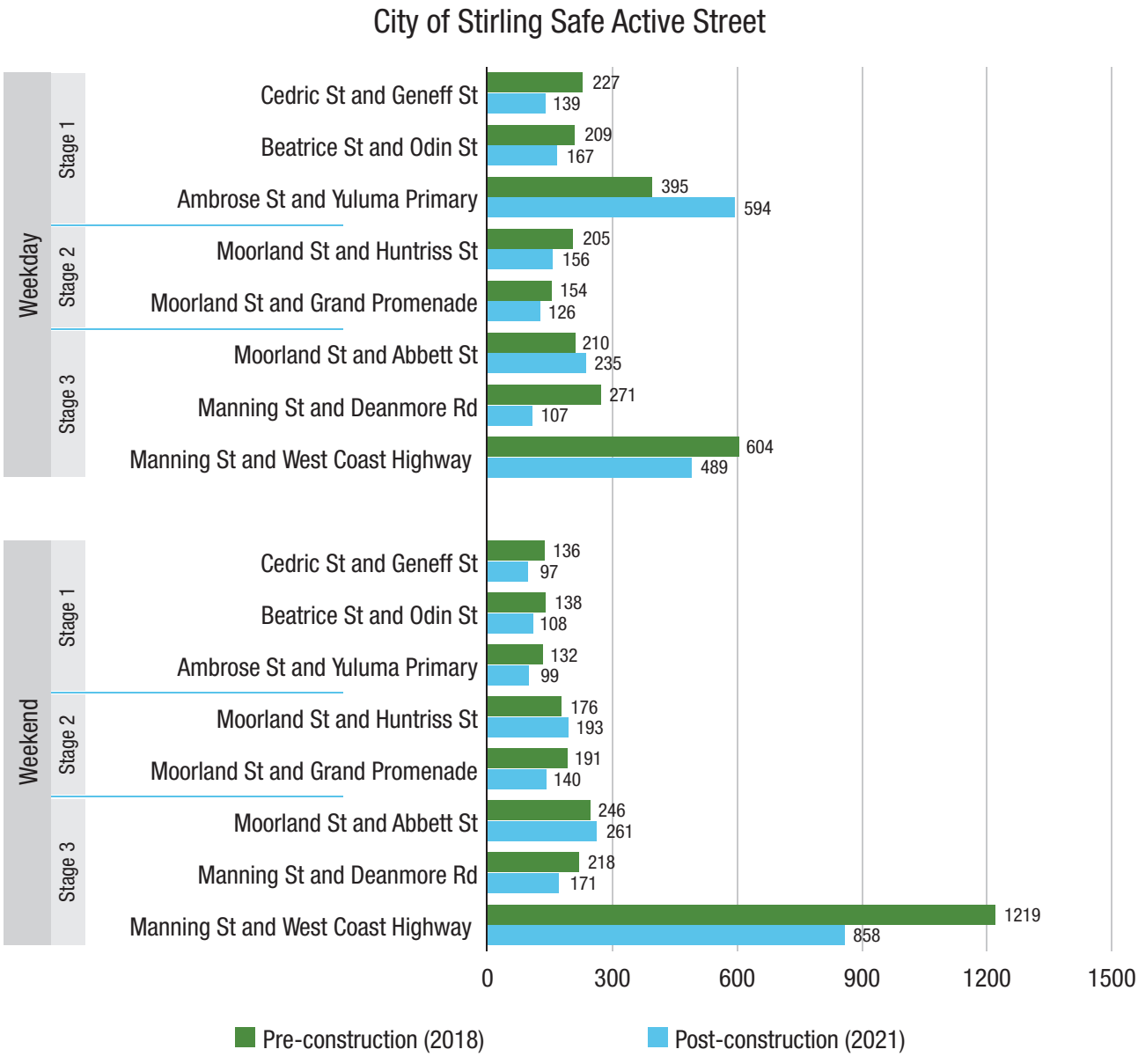


Chart 2

Average weekday and weekend bike riding activity

Pre and post construction (raw counts)

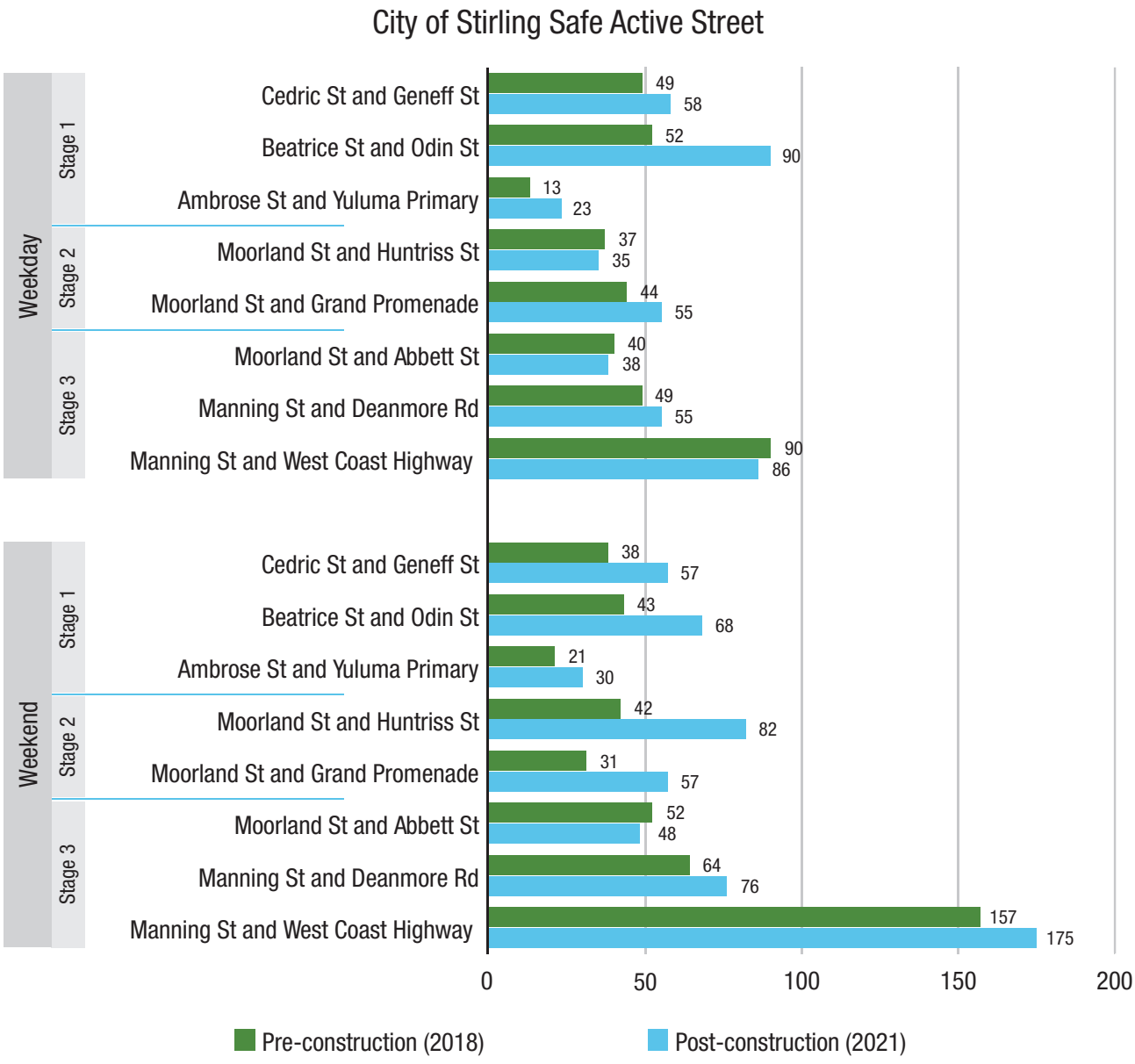


Table 1

Average weekday and weekend user behaviour

Comparable sites	Change in usage post-construction			
	Additional people walking		Additional people bike riding	
	Weekday	Weekend	Weekday	Weekend
Stage 1: Cedric Street and Geneff Street	-88	-39	9	19
Stage 1: Beatrice Street and Odin Street	-42	-30	38	25
Stage 1: Ambrose Street and Yuluma Primary School	199	-33	11	9
Stage 2: Moorland Street and Huntriss Road	-49	17	-3	40
Stage 2: Moorland Street and Grand Promenade	-28	-51	12	26
Stage 3: Moorland Street and Abbett Street	25	15	-2	-4
Stage 3: Manning Street and Deanmore Road	-164	-47	6	12
Stage 3: Manning Street and West Coast Highway	-115	-361	-4	18

This table indicates the additional number of people walking and bike riders post-construction.

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This material is available in alternative formats upon request.