

Park Terrace changes - 2023

Background information

Safety concerns with Park Terrace were identified as part of the process of developing the TTMP. Below we set out further information about these safety concerns. In addition, community feedback was considered during the development of the scheme. This includes concerns raised around the crossing at Park/Salisbury and the shared nature of the walking and cycling facilities.

Safety concerns for people crossing at Park/Salisbury

One of the safety issues identified was at the Park Terrace/Salisbury Street intersection for people crossing the road due to the two northbound lanes of faster traffic and the island being unable to accommodate demands at peak times, also groups of school children were observed riding their bicycles through this crossing.



School children using the Salisbury Street crossing on bicycles

Crossing count data (June 2023) shows that there are 79 people crossing during the morning peak (38 people on bicycles and 41 people walking). The staggered arrangement makes it difficult for people on bikes and with assisted devices or pushchairs to use, particularly when there is an oncoming user.

In addition to current surrounding land-uses, the proposed Park Terrace retirement Village is located on the site fronting Park Terrace and Salisbury Street. This includes independent living as well as assisted living and resthome accommodation. As a result, additional pedestrian movements will be generated by this development at this location.

For people walking southbound on Park Terrace, trying to cross the slip lane on Salisbury Street to access the central island is difficult because visibility is restricted to the north so a person crossing is undertaking the movement without fully being able to see what traffic is heading south to make the turn. Further the cut-down does not align with the pedestrian crossing point, instead it guides you towards the full kerb and grass area of the island.



Pedestrian crosswalks not aligning at Salisbury Street

This turn is often completed at high speed so there is a risk of a collision that could result in a serious injury to a person walking.

When considering the adjacent land-uses, the traffic volumes, traffic speed, the existing demands using the crossing and future demands, and community interest, improving this crossing would rank highly among against other crossing improvement locations in the city. The Waka Kotahi Pedestrian Network Guidance recommends that a pedestrian median island or a raised signalised crossing would provide the most appropriate crossing type for the users observed.

Safety concerns for people cycling

While a shared path is provided along the riverside, people are choosing to ride bicycles along this section of Park Terrace on the road. This is an area with faster vehicle speeds and the bus also travels in the kerbside lane. The current lane widths do not align with best practice provided by Waka Kotahi NZ Transport Agency in the Cycling Network Guidance for shared (cycles and vehicles) kerbside lanes where the posted speed limit is 50Km/h and particularly where the operational speeds are higher.



People riding bicycles on the road (traffic lanes do not meet best practice guidance)

Road status

By way of background to the road usage and safety information set out below, the road status for Rolleston Avenue and Park Terrace are as follows:

Street name	District Plan Classification	Intended function	Serving
Rolleston Avenue	local street	Entirely for access purposes and are not intended to act as through routes for motor vehicles.	Botanic Gardens, Christ's College, the Arts Centre, the Museum and the hospital. As such there are large numbers of people moving around by all modes of transport.
Park Terrace	local distributor street	Specific type of collector road which are important for distribution of traffic to parking precincts or provide for public transport movements.	Hagley Park, a school, residential properties and a hotel. Future development includes the Ryman retirement Village.

Road usage

Part of the process to identify the safety concerns included collecting traffic count and speed data during February 2023 prior to the work being implemented (in summertime). Further data was collected in June 2023 following implementation (in wintertime). The tables below show volumes and speed data:

	Park Terrace (50km/h) Feb 23		Park Terrace (50km/h) Jun 23	
Volume& speeds	Northbound	Southbound	Northbound	southbound
Volume (7-day average)	10,450	5,170	9,137	4,527
Mean speed	52.4 km/h	54 km/h	45.8 km/h	42 km/h
85%ile speed	58.0 km/h	44.9 km/h	51 km/h	51 km/h
% of drivers travelling over the speed limit	63.4%	31.5%	18.7%	16.8%

	Rolleston Ave (30km/h) Feb 23		Rolleston Ave (30km/h) Jun 23	
Volume& speeds	Northbound	Southbound	Northbound	southbound
Volume (7-day average)	3,247	3,979	2,251	3,134
Mean speed	32.3 km/h	33.6 km/h	26.3 km/h	25.5 km/h
85%ile speed	40.0 km/h	40 km/h	31.9 km/h	31.9 km/h
% of drivers travelling over the speed limit	64.6%%	73.1%	23.1%	22.5%

It is clear from the table above that speeding was an issue on Park Terrace prior to the implementation of the changes with over 60% of northbound vehicles exceeding the posted speed limit of 50km/h. Regardless of the cause of a crash, speed is the difference between someone being able to walk away relatively unharmed or being seriously injured or killed. Reducing the operating speed vehicles travel on the network, creates safer outcomes for our communities.

It is interesting to note that generally vehicle volumes are higher during the winter months, however the tube counts at this location have shown a decrease in vehicle volumes. It is also anticipated that cycle numbers would reduce during winter months, however this has not been the case in this location. There is no tube count data for the Park Terrace shared path prior to the implementation of the works. A screen line count on the Park Terrace path north of Salisbury Street from 20 March 2023 showed that 86 people were riding bicycles and 5 people scootering from 0730-0830 hours. Of the people riding 60% were male and 40% were female. This equates to about 1.6 people riding bicycles or scooters per minute.

A manual count of users was completed during the evening peak hour (1700-1800 hours) on Wednesday 4 April 2023. Of people using the shared path just north of Kilmore Street. The following were counted:

- 57 people riding on the shared path.
- 54 people walking on the shared path.
- 13 people scootering/skateboarding on the shared path.

There were a further 29 people counted riding their bicycles on the road.

The number of cycle users on the Rolleston Avenue shared path were recorded in March 2023. There are no pedestrian counts on the shared paths.

Rolleston Avenue (Hereford to Worcester)

5 Day Average			7 Day Average			85%ile Speed		Mean Speed	
North	South	Both	North	South	Both	North	South	North	South
757.0	732.0	1,489.0	674.0	631.0	1,305.0	22.3 km/h	23.8 km/h	17.8 km/h	19.2 km/h

The highest number of people riding was on Tuesday 7 March 2023 when 1740 people rode over the tube counter. The speed data shows that people riding were generally travelling between 10 and 30km/h. A small number of people riding were travelling between 30 and 40km/h.

The number of E-scooter trips along Rolleston Avenue are shown below. The data is taken from the ride report.

Month	Data
April 2022	1295 trips in the survey area from 525 people
April 2023	1250 trips in the survey area from 475 people
June 2022	890 trips in the survey area from 370 people

Environment Canterbury provide two bus services an hour along Rolleston Avenue and Park Terrace (Route number 17). There are two northbound stops within the TTMP area, these are at Christ's College and Peterborough Street. There are two southbound stops located south of Chester Street (east) and south of Gloucester Street.

Crash analysis

The Waka Kotahi Crash Analysis System (**CAS**) was used to gain an understanding of any underlying safety issues on Rolleston Avenue and Park Terrace. There have been eight recorded crashes in the

five year period to the end of 2022. Four of the eight crashes involved people riding bicycles and all resulted in minor injury

The crashes involved:

- A cyclist travelling along the roadway was doored by a person exiting a vehicle.
- A cyclist wanting to travel ahead from Armagh St to the park, was hit by a vehicle turning right across the cyclist.
- A cyclist was travelling south and was obscured by a concrete truck that had stopped to allow the vehicle to turn onto Peterborough Street.
- A cyclist travelling south on Rolleston Avenue across Gloucester Street was hit by a vehicle turning right into Gloucester Street.

The remaining four crashes were vehicles only and were non-injury crashes. There were no trends identified within the crash data.

Currently CAS provides a limited view of trauma on the transport network. CAS does not generally report on incidents not involving a motor vehicle, nor single person crashes, and with only a portion of non-fatal vehicle crashes being recorded in CAS (due to under-reporting) it is clear that it only provides a small sample of what actually occurs on the network.

The crash history shows a history of people on bicycles being involved in crashes along Rolleston Avenue and Park Terrace. The original road layout is not conducive to a safe pedestrian and cyclist environment.

Underpinning the vision of Road to Zero are seven guiding principles, which include promoting good choices but plan for mistakes, designing for human vulnerability, and making safety a critical decision-making priority. Creating safer infrastructure contributes to a safer system, which is the goal of Road to Zero.

Safe system audits

A scheme stage Safe System Audit was completed. Safe system audits replace safety audits. The primary objective of a Safe System audit is to deliver a project that achieves an outcome consistent with the Safe System approach, that is, minimisation of death and serious injury. This audit followed the Waka Kotahi NZ Transport Agency Safe System Audit Guidelines (2022) with identification of safety concerns.

Prior to implementation of the scheme, the project team responded to the issues and the audit was closed out.

A post-construction audit has been undertaken. Some issues were identified with the Rolleston Ave Changes and the Park Terrace Changes. These include:

- Further consideration of pedestrian desire lines on Rolleston Avenue at intersections and bollard placement.
- Coloured surfacing – provide further coloured surfacing.
- Signage – location, height and orientation.

The issues raised in the audit associated with the Rolleston Avenue section are being addressed with the contractor, however, outstanding construction issues on Park Terrace have been put on hold until a decision has been made on the layout of Park Terrace.

In lane bus stop

In reviewing the feedback collected during the survey, many submitters referred to the in-lane bus stop and the trial that was installed on Hills Road in 2007. In lane bus stops allow a bus to stop in the traffic lane and general traffic waits behind the bus while people are boarding and alighting. There are no other in-lane bus stops in Christchurch.

Waka Kotahi Public Transport Design Guidance, states that in-lane bus stops:

“enables public transport to stop within traffic lanes rather than needing to exit and re-enter the traffic lane. In-lane bus stops are often achieved through use of bus boarders, which are arrangements where the kerb line is extended outwards for a bus stop. Traditional kerbside bus stops require buses to exit the traffic lane and manoeuvre into a kerbside bus box. This delays buses due to manoeuvring time and the need wait for a gap to re-enter the traffic stream.”

The guidance identifies many benefits for using in-lane bus stops:

- maintain the place of the bus in the traffic lane which gives the bus better priority when re-entering the traffic flow and reduces bus dwell times.
- allow the bus to line up parallel and close to the kerb, largely without manoeuvres.
- provide good accessibility for all passengers.
- create passenger waiting areas that do not impede or conflict with the pedestrian flow on the footpath and, with bus infrastructure off the main footpath, make space available for such things as attractive streetscapes, landscaping, cycle parking and street furniture.
- act as traffic-calming devices by narrowing the road.

A comparison of the in-lane stops at the Hills Road location and the Park Terrace location is shown below:

Design considerations	Hills Road	Park Terrace
Road type	Minor arterial	Local distributor
Function (movement of people is prioritised over the movement of vehicles)	Christchurch Transport Plan – Public Transport & vehicle route	An Accessible City - Park Terrace priority is for walking, cycling and public transport
Operating speed is no more than 50km/h	Mean speed = 46.9km/h in northbound lane	Mean speed = 45.8km/h in northbound lane
Fewer than 800 vehicles per hour (same direction as bus)	1195 (2018 vehicle flows)	Average 750 at peak (2023 flows)
Number of bus routes	1 bus service	1 bus service
Frequency of service	High frequency route (6 services an hour)	Low frequency route (2 services an hour, refer to section 5.24 for boarding data)).

The above table shows that the location of the in-lane bus stops with bus boarders are in different environments with different bus frequencies and service provisions.

To understand the Hills Road trial further, information was sought from the designer in the project team. The designer provided the following information:

- Hills Road had been chosen for a trial of two bus boarders in an outbound direction.
- In the evening peak, there was significant congestion from the intersection with Shirley Road and Warrington Street.

- The first trial that was implemented in November 2006 had the following main features: a narrow flush median, narrow traffic lanes, and a cycle lane between the traffic lane and the bus boarder itself. The first trial was deemed to be ineffective, and the majority of drivers were overtaking a stopped bus. The cycle lane, traffic lane and flush median were wide enough for a car to overtake a stopped bus without having to encroach into the opposing traffic lane. A report was presented to the Shirley/Papanui Community Board on 21 March 2007, to seek approval for an amended concept design for two bus boarders to *“rectify the deficiencies identified with the initial trial.”*
- The second trial started in July 2007. The design was changed so the traffic lanes in both directions were narrow (3.0 m) and separated by a double yellow no overtaking line, the bus boarder was immediately adjacent to the traffic lane, and the cycle lane was placed behind the bus boarder. This layout relies on a stopped bus taking up the whole traffic lane, and consequently very few drivers overtook a stopped bus.
- The second bus boarder trial was effective. A bus stopping during congested peak times was not overtaken by other vehicles due to opposing traffic. Hence, the road ahead of the bus cleared out and upon leaving the stop, the bus could travel faster. The traffic queue had effectively been displaced behind the bus. A report was presented to Council (9 October 2007), to seek approval to extend the trial for a further 6 months *“because at the moment the trial is operating successfully and therefore we would like to include it as an option in the overall Queenspark scheme.”*
- The two options available to the project team after the period that the trial was in place, were to continue with bus boarders along this section or implement an afternoon peak bus lane. The overwhelming response from the community was in favour of bus lanes.
- In June 2008, the overall Queenspark scheme plan was approved by councillors for implementation, including bus lanes on Hills Road (and therefore the removal of the two bus boarders).