Pedestrian Priority at Traffic Signals

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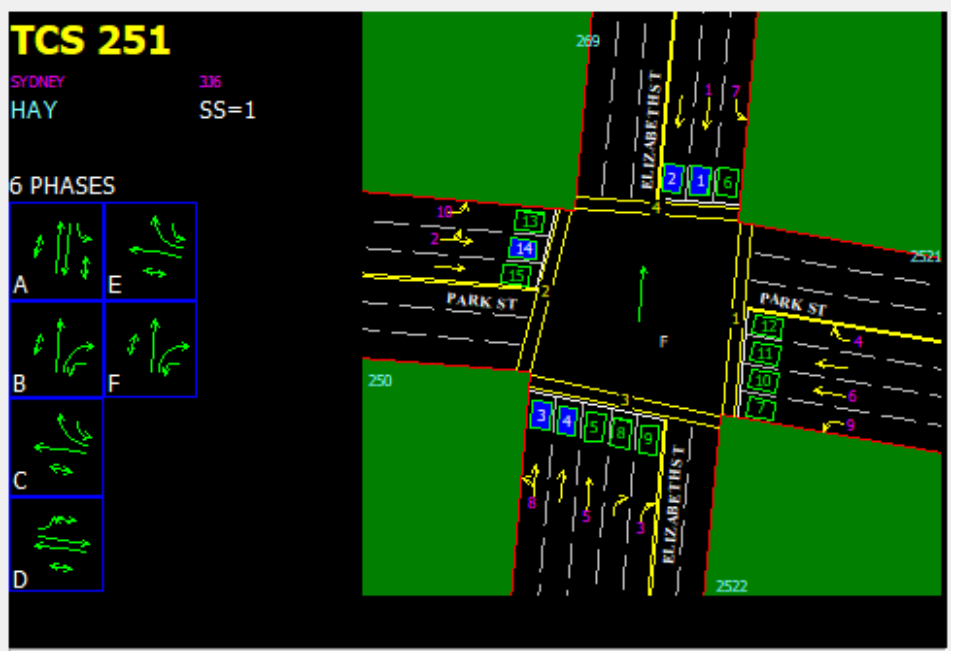
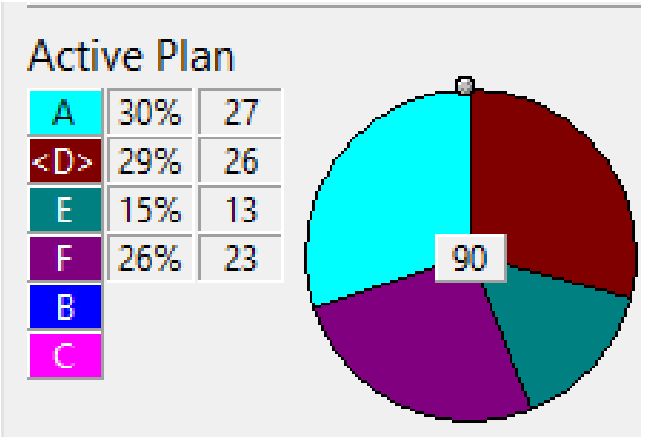
Acknowledgement of Country

Transport pays respect to Elders past and present, and recognises and celebrates the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW.

Traffic Signal Terminology





SCATS

Sydney Coordinated Adaptive Traffic System

Coordination / Linking / Marriage Chains

A green wave for vehicles along a corridor

Phase Time

The amount of time given to a movement or series of movements at a signalised intersection

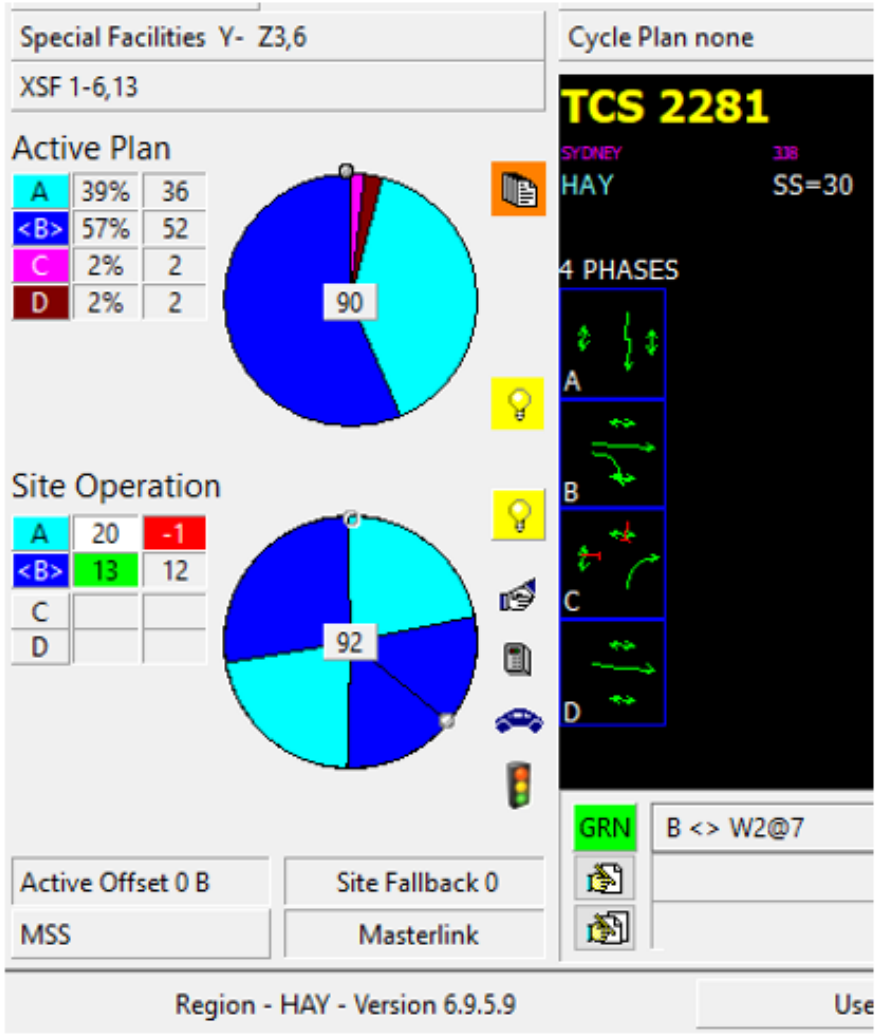
Cycle Time

The sum of all phase times at a signalised intersection

Stretch / Arterial Phase

The default phase at a signalised intersection

Reducing Cycle Times



Pedestrian Benefit

1. Basic reduced cycle times increase the rate in which pedestrian phases are called reducing the wait time and delay for pedestrians.
2. Another option is double cycling which maintains some level of vehicle coordination while increasing the rate in which pedestrian phases are called further reducing wait time and delay for pedestrians.
3. Traffic signals are generally set up to “marry” so that if you get a green at your first intersection you will get a green at the second and third. However, during periods of low traffic simple intersections remained married to major intersections with pedestrians left waiting for the Green Man with no traffic. Wherever possible, Network Operations have broken these marriage chains to reduce pedestrian delay.

Dwell on Red – Rest In Ped

Pedestrian Benefit

All traffic signals have a stretch or arterial phase. Other phases call away from the stretch by demand. By convention the stretch is the highest value vehicle phase.

At Dwell on Red sites, the stretch is the pedestrian phase and vehicles call their phase by detection at the stop line. The level of service for pedestrians is high and this approach provides substantial benefit where vehicle volumes are low, for at least part of the day

Limitations

If vehicle traffic is frequent, operation may appear similar to normal signal operations, e.g. Martin Place during peaks

Walk for Green

Pedestrian Benefit

Generally the Pedestrian WALK signal (Green Man) is activated for 6-8 seconds at the beginning of a phase before the signal changes to the CLEARANCE (Flashing Red Man). Where no conflict exists, such as at one way streets the WALK is displayed longer, in some situations for up to 60 seconds longer.

This can be applied at any intersection where there is no conflicting traffic phase, except where there is a priority demand.

Limitations

Cannot be implemented where pedestrian phase conflicts with a vehicle phase and in some instances where there is interaction with Light Rail

Countdown Timers

Pedestrian Benefit

This replaces the flashing Red Man with a timer. This counts down the time remaining for pedestrians to clear the marked foot crossing before vehicle traffic is permitted. This allows additional crossing time for pedestrians.

This has been applied at selected sites across NSW especially in high pedestrian activity areas subject to certain conditions

Limitations

Can only be implemented on sites with an exclusive pedestrian phase

Green on Green

Pedestrian Benefit

Provides protection for pedestrians from turning vehicles. This does not generally cover the entire time it takes to cross the road but places pedestrians in a position more visible for drivers to see them

Initially applied at two phase signalised intersections across NSW following a coronial inquest. This program is being expanded to cover all traffic signals and is now mandated whenever major works are undertaken outside of this program

Limitations

Impacts efficiency of intersection operation for vehicles

Innovative Traffic Signal Design / Removal

Pedestrian Benefit

At the intersection of George Street and Hay Street, the pedestrian marked foot crossings have been removed as the intersection now only caters for trams.

Pedestrians are able to cross in all directions without needing to wait for a Green Man.

Along the Light rail route a number of pedestrian crossings have been removed for this reason.

Limitations

Nil.

Reduced Speed Limits

Pedestrian Benefit

Reduced trauma suffered by pedestrians when hit by vehicles travelling at lower speeds

Perception of a more inviting place for pedestrians to be, especially when coupled with good design

40km/h used extensively cross CBDs throughout NSW. Some trials of 30km/h currently underway in Greater Sydney.

Limitations

Perceived increase in journey time to motorists. Possible increase in speeding fines, negative feedback from those caught speeding.

Missing Pedestrian Crossings

TfNSW has been working to implement missing pedestrian crossings across NSW wherever possible especially in HPAAs. This includes Cleveland Street at Young Street as shown below, as well as:

- Cleveland Street at Pitt Street
- Goulburn Street at Wentworth Street
- Railway Square – George, Pitt, Lee, Quay Sts
- Lang Road at Driver Avenue

Other sites are set out in a list which will be constructed over the next few years subject to funding.

Auto-Pedestrian Activation

Pedestrian Benefit

Pedestrians don't need to press a push button as the Green Man is called automatically.

First introduced in Sydney CBD in the 1990's, now also operating in Parramatta, Redfern, Chatswood, Liverpool, North Sydney, Newtown, St Peters, and numerous isolated intersections. The automation ran for a certain time period when pedestrian volumes were high. Outside of these times pedestrians were still required to press the push button

During Covid pedestrian covers were introduced around key health precincts and the Sydney CBD to limit the spread of the virus. This required the automation 24/7 introduction. These have since been removed

Proposal Going Forward - Trials

Touchless Pedestrian Activation

At two sets of traffic signals in Alexandria we are currently trialling the use of touchless pedestrian sensors. Instead of pushing the button a pedestrian must wave their hand in close proximity to the sensor to place a demand.

Call Acknowledgement

As part of this trail a call acknowledgement feature has been added where a light illuminates when the demand is placed. We are currently looking into the feasibility and cost of expanding this feature so that the light is displayed if the demand is placed automatically.

This is still currently being designed and is not yet an off-the-shelf feature.

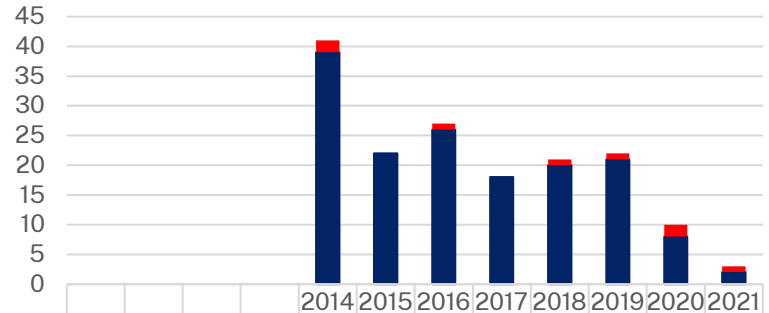
Summary

Transport will continue to work with stakeholders to improve pedestrian priority wherever possible in accordance with both the movement and place and road space reallocation frameworks. However, this has to be balanced against the impacts on other modes of transport, including Buses, Bicycles, Trams, Service Vehicles and General Traffic. Also, achieving this goal will require a significant cultural shift and to be effective this has to be achieved over a reasonable period of time.

Pedestrian Safety Benefits

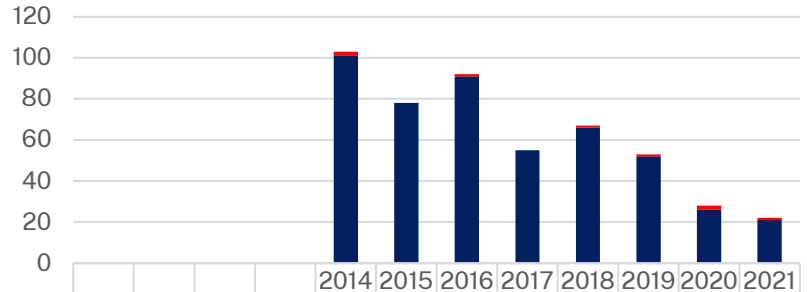
The four graphs below show the last 12 years of data for pedestrians in the City of Sydney LGA and the Sydney 2000 postcode. N.B. Postcode data is only from 2014.

Fatal and Seriously Injured Pedestrian Crashes Postcode 2000



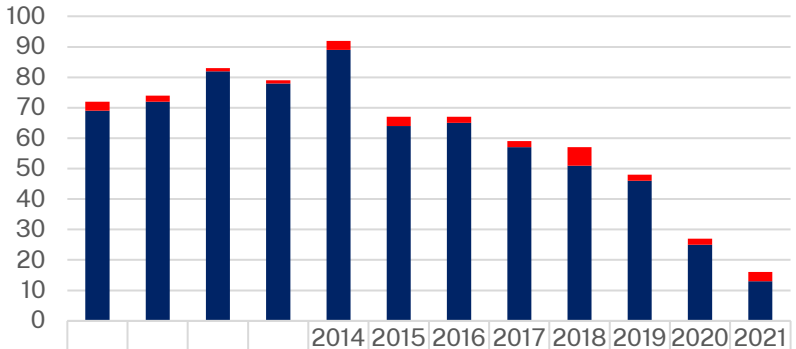
	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	2	0	1	0	1	1	2	1
Seriously Injuries	39	22	26	18	20	21	8	2

All Injury Pedestrian Crashes Postcode 2000



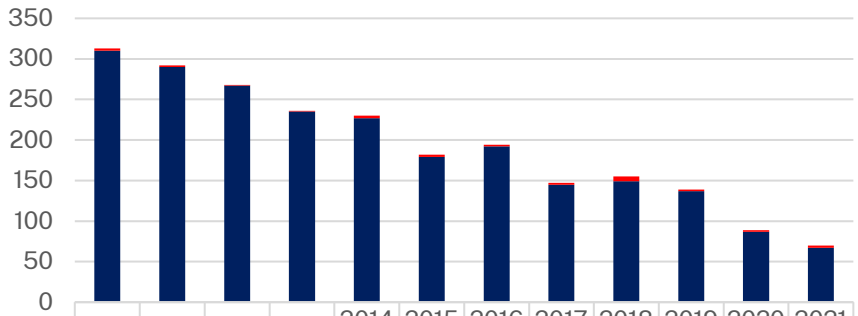
	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	2	0	1	0	1	1	2	1
All Injuries	101	78	91	55	66	52	26	21

Fatal and Serious Injury Pedestrian Crashes City of Sydney LGA



	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	3	3	2	2	6	2	2	3
Seriously Injuries	89	64	65	57	51	46	25	13

All Injury Pedestrian Crashes City of Sydney LGA



	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	3	3	2	2	6	2	2	3
All Injuries	227	179	192	145	149	137	87	67