

Investigation into the Upgrade of the West Terrace and Sturt Street Intersection

Tuesday, 17 September 2024
Infrastructure and Public Works Committee

Strategic Alignment - Our Places

Program Contact:
Mark Goudge, Associate Director
Infrastructure

Public

Approving Officer:
Tom McCready, Director City Services

EXECUTIVE SUMMARY

At its meeting on 14 May 2024, Council resolved for the Administration to prepare a report on the upgrade of the intersection of West Terrace and Sturt Street.

A preliminary design investigation has been undertaken to identify risks and seek a solution to address these risks and the issues raised in the petition received by Council.

The design investigation has identified that to improve the intersection's safety and functionality, including addressing current path widths and hazard clearances, additional space should be allocated for pedestrians and cyclists on the western side of West Terrace. This would require the removal of one northbound lane. The additional space could potentially accommodate new trees to create a buffer between the path and vehicle traffic lane and to provide shade for people using the path, as envisaged in the draft City Plan to create a greener boulevard. A high-level concept design has been developed in response to the investigation and is presented in [Link 1](#).

Preliminary traffic modelling of the effect on traffic operations shows a localised minor increase in delays to motorists on the northbound carriageway for the length of West Terrace between South Terrace and Sturt Street.

Noting that only a preliminary investigation with accompanying high level design work has been undertaken to inform the development of this report, additional funding would be required through the 2025/2026 Business Plan and Budget to further progress design development including more detailed traffic modelling, detailed cost estimation and consultation with external stakeholders including the Department for Infrastructure and Transport.

Future design development will also need to be coordinated with any proposed speed limit changes as part of the City Wide Speed Limit Review, which is planned to be presented to Council for consideration in late 2024.

RECOMMENDATION

The following recommendation will be presented to Council on 24 September 2024 for consideration

THAT THE INFRASTRUCTURE AND PUBLIC WORKS COMMITTEE RECOMMENDS TO COUNCIL
THAT COUNCIL

1. Notes the findings of this report.
2. Notes this initiative will be presented to Council for further consideration through the 2025/2026 Business Plan and Budget process, to enable further design development, detailed traffic modelling, detailed cost estimation and consultation with the Department for Infrastructure and Transport and other key stakeholders.
3. Notes that traffic changes to the adjacent Reeces Lane will be implemented in the 2024/25 Financial Year and design works will continue in 2024/25 to improve the road gradient at the intersection of Reeces Lane and Sturt Street.

IMPLICATIONS AND FINANCIALS

City of Adelaide 2024-2028 Strategic Plan	Strategic Alignment – Our Places An upgrade of the West Terrace and Sturt Street intersection will provide a safer and more attractive walking and wheeling environment, encouraging active travel.
Policy	Not as a result of this report.
Consultation	Not as a result of this report.
Resource	Additional resources are required to further develop concept designs and to undertake additional and more detailed traffic modelling.
Risk / Legal / Legislative	Not as a result of this report.
Opportunities	Reduced crash risk for all transport modes and opportunity for increased greening.
24/25 Budget Allocation	No budget allocation.
Proposed 25/26 Budget Allocation	\$100,000 - \$200,000, subject to design scope.
Life of Project, Service, Initiative or (Expectancy of) Asset	Not as a result of this report.
24/25 Budget Reconsideration (if applicable)	Not as a result of this report.
Ongoing Costs (eg maintenance cost)	Not as a result of this report.
Other Funding Sources	State Government grants may be available for implementation of projects.

DISCUSSION

1. At its meeting on 14 May 2024, Council received a Petition – *Upgrades to the Intersection of West Terrace and Sturt Street*, and subsequently requested that the Administration prepare a report to further investigate upgrading the intersection.
2. This report has been developed in response to Council's request.

Sturt Street Primary School Petition

3. The Petition – *Upgrades to the Intersection of West Terrace and Sturt Street* and subsequent discussions between Administration and the Principal of Sturt Street Community School, identified the following issues with the current operation of the West Terrace and Sturt Street intersection:
 - 3.1. A hostile walking and riding environment created by large vehicles travelling at speed along West Terrace and their proximity to path users.
 - 3.2. The inadequacy of the width of the path located adjacent to the West Terrace Cemetery to accommodate groups of children and accompanying carers when travelling to and from school and for school excursions.
 - 3.3. A risk of conflict between people using the shared path on the west side of West Terrace and motor vehicles using the access to the West Terrace Cemetery.
 - 3.4. A risk of conflict between passing cyclists and people accessing the push button to activate the crossing, located on the west side of West Terrace.
 - 3.5. Poor driver compliance with the traffic signals, with drivers disobeying traffic lights.
 - 3.6. Long delays for pedestrians waiting to cross West Terrace, resulting in risk taking with people crossing on a red pedestrian signal.
 - 3.7. Inadequate time separation between motor vehicles turning from Sturt Street and people walking and cycling across West Terrace, which has resulted in crashes.

Site Context

4. The section of West Terrace in the vicinity of Sturt Street has a 60 kilometres per hour speed limit and hosts numerous transport functions including Adelaide Metro bus services with 29 routes in operation, and a daily traffic volume of 55,000 with 4% being commercial vehicles.
5. The Marino Rocks Greenway is located on the western side of West Terrace, forming part of a 15km walking and cycling route that connects the start of the *Coast to Vines Rail Trail* to the Adelaide CBD.
6. West Terrace in the vicinity of Sturt Street consists of 11 lanes of traffic including a dedicated northbound kerbside bus lane operating 7:00 am to 7:00 pm Monday to Friday. Parking is permitted within the eastern kerbside lane outside of peak traffic times. A pedestrian crosswalk is provided across West Terrace, south of Sturt Street. Cyclists are permitted to use this crossing. A dedicated bicycle crossing of West Terrace is aligned with the Sturt Street eastbound bicycle lane. Paths are provided both sides, with widths up to 4.5m on the east side and 3.2m on the west side, with the west side path operating as the Marino Rocks Greenway shared path.
7. The Sturt Street approach to West Terrace has the urban default speed limit of 50 km/hour and accommodates Adelaide Metro bus services with 7 routes in operation and overall daily traffic volumes of 5,700 with 4.8% being commercial vehicles.
8. The West Terrace Cemetery access has two lanes of traffic accommodating 110 vehicles per day. A signal controlled pedestrian crossing is provided across the access. This crossing allows people on the Marino Rocks Greenway to be held whilst motor traffic leaves and enters the cemetery. However, the current signal phasing and arrangement of the Sturt Street traffic lanes result in people on the path being held at a red signal every time the right turn vehicle movement from Sturt Street to West Terrace takes place.
9. Of the 20,300 vehicles per day recorded heading north along West Terrace, 11,500 originate from Anzac Highway, with 5,800 from Goodwood Road and 2,200 from South Terrace.
10. Since 2018 there have been three casualty crashes at the intersection causing one serious injury and two minor injuries. In addition to this there have also been another five reported non-casualty crashes in the intersection and another ten rear end crashes at intersection approaches.

Investigation and Preliminary Assessment

11. Providing infrastructure that encourages more active travel and a greener built form aligns with the long-term aspirations of the City of Adelaide Strategic Plan 2024-2028: Our Environment, to create a resilient, protected and sustainable City. The draft City Plan – Adelaide 2036 aims to improve pedestrian access across West Terrace to the Adelaide Park Lands through reviewing road design and function, with a view to narrowing the roadway and increasing greening. West Terrace is identified in the City Plan (draft) as a high priority street for greening. The Integrated Transport Strategy will further support desired pedestrian, cycling and vehicular movements within the city.
12. The current intersection arrangement and connecting paths fail to meet current design guidance and best practice as follows:
 - 12.1. The Guide to Road Design Part 6A: Paths for Walking and Cycling (GRD6A) recommends a minimum width of 3m for a regional path or a principal bicycle network. Where there is a high probability of conflict between path users a greater width of 4m should be provided. The 4m path width is not achieved, with signalling equipment at the intersection creating restrictions reducing the useable width to 1.4m, which is reduced further when people are waiting to cross.
 - 12.2. GRD6A recommends a 1 metre clearance between the edge of the path and road traffic, with a wider clearance that includes low profile landscaping appropriate where the kerbside lane is heavily trafficked. Currently the existing path width is constrained by the kerb line and boundary fence of the cemetery. From a point 110m south of the cemetery access to a point 25m north of the cemetery access, the current clearance has been reduced to 0m.
 - 12.3. The current signal phasing allows left turning vehicles to filter through pedestrian crossing but vehicles are held back for a short time at the start of the pedestrian crossing phase (late start time). A Safe Systems approach would eliminate the left turn movement conflicting with the pedestrian crossing movement by holding the left turn until pedestrians have completed their crossing. This will influence the performance of the intersection. As a minimum, the late start time should be increased to allow pedestrians to cross to a position that is more visibly prominent to drivers.
 - 12.4. The green time allocated to the pedestrian and cycle crossing of West Terrace will use minimum values to provide more green time for West Terrace motor traffic. However, the minimum times are based on average walking speeds (1.2 metres per second) which are unlikely to be achieved by groups of children and people with mobility issues. The use of a slower walking speed of 0.8 metres per second should be considered, noting that this will reduce the green time allocated for West Terrace motor traffic.
 - 12.5. With the current speed limits and intersection layout, the intersection and adjacent roadway do not currently achieve Safe Systems alignment (the guiding framework for SA Road Safety Strategy). Traffic signals are not a primary Safe System control (as we know that compliance with traffic signals is an issue) and further concept design development will need to consider how primary Safe System alignment might be achieved.
13. A preliminary concept design has been produced to identify the extent of infrastructure modifications needed to reduce or eliminate the issues that have been identified. The preliminary concept design is shown in [Link 1](#). The opportunities and constraints revealed as part of the design process are summarised as follows:
 - 13.1. The ability to widen the shared path and increase the pedestrian waiting area on the west side of West Terrace is constrained by the boundary wall of the West Terrace Cemetery and the envelope of the West Terrace roadway. Of these two constraints, the most plausible opportunity to widen the path and pedestrian waiting area is to reduce the width of the West Terrace roadway.
 - 13.2. Any reduction of the West Terrace roadway will need to maintain the dedicated bus lane and would need to consider the effect on motor vehicle traffic flow on West Terrace and the connecting roads of Anzac Highway and Goodwood Road.
 - 13.3. By removing one northbound traffic lane on West Terrace the shared path can be increased to provide a minimum width of 4.2m, with an additional 1.5m planted verge to provide a buffer between path users and passing motor vehicles. The verge could yield 200m² of additional green space and up to 15 new street trees (subject to underground service location).
 - 13.4. At the West Terrace Cemetery access, the proposed 1.5m wide verge can be used by pedestrians when waiting to cross to stand clear of the shared path, reducing conflict with passing cyclists.
 - 13.5. To minimise the effect of removing a West Terrace northbound traffic lane, the bus lane and adjacent two northbound traffic lanes of the Anzac Highway will need to be maintained (11,500 vehicles per day) through the intersection, with the lane reduction solely effecting the two northbound traffic lanes

connecting from Goodwood Road (5,800 vehicles per day), which will need to merge into one lane north of South Terrace. This has the added benefit of increasing the merging distance of the Anzac Highway and Goodwood Road traffic lanes. The southbound traffic lanes of West Terrace do not need to be modified.

- 13.6. Preliminary traffic modelling of the effect of removing the northbound lane indicates that additional delays of approximately 15 seconds will be expected for motorists heading northbound on West Terrace during the commuter peak periods. However, more extensive traffic modelling that provides a fully calibrated and validated model is required.
- 13.7. Changing the signal phasing to hold left turning movements for longer and the use of a slower crossing speed will require modifications to the signal program and traffic signal infrastructure.
- 13.8. The bus stop on the west side of West Terrace (Bus Stop 1 West Terrace – West Side) can be indented, allowing buses to stop without hindering the progress of following buses.
- 13.9. The finalisation of the concept design will be subject to determining the speed limit for West Terrace resulting from the Citywide Speed Limit Review, noting that to achieve Safe System alignment (guiding framework for SA Road Safety Strategy) infrastructure needs are influenced by speed limits.

Next steps

14. Preliminary engagement with the Department for Infrastructure and Transport (DIT) and other key stakeholders seeking their views will be undertaken.
15. The proposal will be presented to Council for further consideration and endorsement through the 2025/2026 Business Plan and Budget process, to enable further design development, detailed traffic modelling, detailed cost estimation and further consultation with DIT and other key stakeholders.
16. Traffic changes to the adjacent Reeces Lane will be considered for implementation in the 2024/25 Financial Year and design works will continue in 2024/25 to improve the road gradient at the intersection of Reeces Lane and Sturt Street. Construction works at Reeces Lane is intended to occur in conjunction with the West Terrace and Sturt Street Intersection upgrade construction works.

DATA AND SUPPORTING INFORMATION

Link 1 – High Level Concept Plan for West Terrace / Sturt Street Intersection Improvements

ATTACHMENTS

Nil

- END OF REPORT -