



TRAFFIC IMPACT STATEMENT

KNet File No: #1357900Ø

PROJECT: DEADWOOD ROAD, SPRUNGBACK ROAD AND WINDAWS ROAD INTERSECTION UPGRADE

DRAWING NO.	TYPE	SHEET NO.	AMENDMENT NO.
7517	TRAFFIC CONTROL	29	H
7517	TRAFFIC CONTROL	30	H
7517	TRAFFIC CONTROL	31	H
7517	TRAFFIC CONTROL	32	H
7517	PEDESTRIAN ACTUATED CROSSING	34	H
50450	PEDESTRIAN ACTUATED CROSSING	1	15

LOCATION: Deadwood Road / Sprungback Road / Windaws Road Intersection, Paronama

BACKGROUND

Deadwood Road is one of southern Adelaide's major north-south arterial routes, with Sprungback Road and Windaws Road providing a key east-west connection. The locality of these roads is shown in **Figure 1**.



Figure 1 Project Locality

The Deadwood/Sprungback/Windaws Road (DSW) intersection has been an ongoing bottleneck issue for commuters and local traffic movements for a considerable time.

There are currently more than 49,000 vehicles a day entering the existing offset 'T' arrangement. The level of road crashes is relatively high, at 57 crashes between 2014 and 2018.

The upgraded intersection will reduce the likelihood, and wherever possible, the severity of crashes. The changes will improve the overall operation of the intersection and optimise the intersection to ensure delays to road users are minimised.

PROPOSAL

The proposed upgrade will incorporate:

- The realignment of Sprungback and Windaws Road to form a four-way signalised intersection
- The inclusion of an additional through-lane along Deadwood Road in the southbound direction
- The addition of two through lanes on the Sprungback and Windaws Road approaches
- The installation of an additional right turn lane along Deadwood Road in both directions
- The replacement of an existing Koala Crossing on Windaws Road to a Pedestrian Actuated Crossing
- The installation of bicycle lanes through the junction on all approaches

TRAFFIC CONTROL DEVICES

Standard traffic control devices

This proposal includes the following traffic control devices to be installed or removed in accordance with the Australian Standards, Code of Technical Requirements and Operational Instructions:

- Signage (standard and directional)
- Pavement marking & delineation
- Intersection control signs
- Traffic signals
- Bicycle & pedestrian paths, crossings & associated infrastructure.

The traffic control layout and signal design have been developed in accordance with AS1742.2/14, Austroads and DIT Standards and Guidelines. The realignment of the existing staggered T arrangement to a more conventional 4-way signalised intersection will result in a completely new set of signals. No existing hardware is to remain.

Combination signal poles and lighting poles have been used where possible to minimise the amount of road furniture, thereby reducing the crash potential at the intersection.

The intersection is modelled to operate using double diamond overlap (DDO) phasing utilising a cycle length of 120 seconds in accordance with the requirements of RD-GM-D4.

DIT has requested that all high entry left turn lanes are to be signal controlled. Left turn movements will still operate under a 'left turn at any time with care' control but the pedestrian movements will be under full control. This may lead to longer delays for some pedestrian movements but will eliminate some of the ambiguity surrounding these movements with what will be a safer outcome for pedestrians. This is considered particularly appropriate for this site given that it is adjacent to Bedford Industries which has clients with special needs who are more vulnerable in these situations.

The phasing remains unchanged for all scenarios. DDO phasing was selected as this sequence provided the most optimum performance outcomes. No specific bus phases or longer run duration for key bus routes are presently proposed.

In addition to the complete upgrade of the main site there is an existing koala crossing approximately 170m west servicing Pasadena High School across Windows Road. To ensure efficient coordination with the adjacent main site and improve safety of this crossing is it proposed to upgrade this crossing to a fully controlled pedestrian actuated crossing (PAC).

With the exception of two PACs, no major signals are located within 1.5 km of the project, and therefore no consideration has been undertaken of linking and or coordination with adjacent sites. It is assumed the adjacent PACs on Windows Road and the southern approach of Deadwood Road would be linked with the appropriate complimentary phase/s on their respective approaches.

IMPACTS

Sight Distance

In accordance with Clause 7.8 and 7.9 of the DIT master specification, RD-GM-D1 Road Design, the Safe Intersection Sight Distance ("SISD") has been assessed for the upgraded intersection.

The required SISD has been determined from Austroads Guide to Road Design, Part 4A (AGRD4A). Using a design speed of 70km/h and an assumed driver reaction time of 2.0 seconds, Table 3.2 of AGRD4A indicates a minimum SISD of 151m.

This has been achieved on all approaches to the upgraded intersection and for the connecting side roads within the extent of the project.

Pedestrians and Cyclists

In accordance with the Business Requirements Document for the DSW intersection, cycling lanes have been installed on all approaches.

Table 4 Traffic Load Distribution Data Adopted (ref: RD-PV-D1 Pavement Design & AGPT02-17).18 of AGRD3 indicates that a desirable minimum bicycle lane width of 1.5m should be adopted for a speed limit of 60km/h, noting that the posted speed limit on all approaches to the intersection is 60km/h. A 1.5m wide bicycle lane is included on all approaches and meets Austroads recommendations.

In accordance with the project's Business Requirements 2.5m wide footpaths are provided. This width aligns to the minimum shared path width specified by Table 5.2 of AGRN6A for a Local Access Path. This width is considered suitable for the relatively low peak volume of pedestrian and cyclists that would use the footpaths.

Through stakeholder consultation bicycle ramps have been included at the commencement to of the left turn auxiliary lanes on the Sprungback Road and Windows Road approaches. The ramps allow cyclists to access the footpath and avoid riding between the through lanes and the left turn lanes. Cyclists can re-entry the roadway via the pedestrian ramps located at the intersection.

OUTCOME

A “quick” version of the Safer Systems Assessment (SSA) has been undertaken for the existing Staggered T signalised intersection of Deadwood Road with Sprungback Road and Windows Road, and compared against the 4-way signalised intersection upgrade proposed for this site. The SSA scores for the before and after arrangements are:

- Before Treatment: 265/448
- After Treatment: 160/148

The SSA has shown that the redesign of the intersection has enabled several key improvements that approach a safer systems model of design. This is achieved through the removal of detrimental road alignments that require high turning movements, lacking integrated cycling space/infrastructure and lined with roadside hazards. This is achieved through the implementation of modern design principles

CONSULTATION

The access configuration has been developed in liaison with

- DIT
- City of Gotham
- Local Community
- Heritage SA
- Market Gardens Historical Society
- Adjacent Stakeholders, including Sacred Heart Hospital and Vandelay Industries

TRAFFIC IMPACT STATEMENT CERTIFICATION AND ENDORSEMENT

Select one of the following:

For proposals with standard traffic control devices only

I certify that the installation, alteration or removal of the traffic control devices described in this TIS and shown on the attached plan(s) is appropriate to achieve the desired traffic management and road safety outcomes at the location, **and** is in accordance with the Australian Standards, DIT’s *Code of Technical Requirements* and DIT’s *Operational Instructions*, and I endorse this traffic impact statement.

or

For proposals with non-standard traffic control devices

I certify that the installation, alteration or removal of the traffic control devices described in the TIS and shown on the attached plan(s) is an appropriate treatment at the location and I endorse this traffic impact statement.

PREPARED BY: (Traffic Control Device Proposer) Signed:	Name: Hedda Lettuce	Date: 12-10-2020
	Position: Principal, Senior Civil and Traffic Engineer	
ENDORSED: (Recognised traffic engineering practitioner) Signed:	Name: Chester Minute	Date: 16-12-2020
	Position: Manager, Traffic Services	