T2D → TORRENS TO DARLINGTON

Sir Donald Bradman Drive Variable Message Sign

Briefing to Kadaltilla / Adelaide Park Lands Authority

26 June 2025

River Torrens to Darlington Project

T2D → TORRENS TO DARLINGTON

The River Torrens to Darlington (T2D) Project respectfully acknowledges the Kaurna Peoples as the Traditional Custodians of the T2D Project area and recognises their continuing connection to land and waters.

We pay our respects to the diversity of cultures, significance of contributions and to Elders past, present and emerging.

Agenda

Purpose

Brief Kadaltilla on need for and seek approval to construct a Variable Messaging Sign (VMS) on Sir Donald Bradman Drive (SDBD) as part of the River Torrens to Darlington (T2D) Project.

Agenda

1. Overview of T2D and VMS
2. VMS requirements for SDBD
3. Site selection
4. Preferred design
5. Alternative design
6. Department's approach

T2D → TORRENS TO DARLINGTON

North-South Corridor

For more than a decade, the Australian and South Australian Governments have worked collaboratively to expand and deliver the North-South Corridor

- **Northern Expressway**
  Completed 2010
- **South Road Superway**
  Completed 2013
- **Southern Expressway Duplication**
  Completed 2014
- **Torrens Road to River Torrens**
  Completed 2018
- **Northern Connector**
  Completed 2020
- **Darlington Upgrade Project**
  Completed 2020
- **Regency Road to Pym Street**
  Completed 2021
- **River Torrens to Darlington (T2D)**
  To be completed by 2031

T2D Project

The River Torrens to Darlington (T2D) Project is the final 10.5 km section of the North-South Corridor and once completed will deliver a 78 km non-stop motorway between Gawler and Old Noarlunga.

Northern Tunnels – run between James Congdon Drive and the existing open motorway south of Grange Road. Approx. 2.2 km of twin three-lane tunnels with open motorway at each end of the tunnels.

Open Motorway – links the Southern and Northern Tunnels, connection to Anzac Highway, Richmond Road and James Congdon Drive.

Southern Tunnels – runs between the open motorway at Darlington to just south of Anzac Highway in Glandore and provide key connectivity to Anzac Highway. Approx 4 km of twin three-lane tunnels, with open motorway at each end of the tunnels.

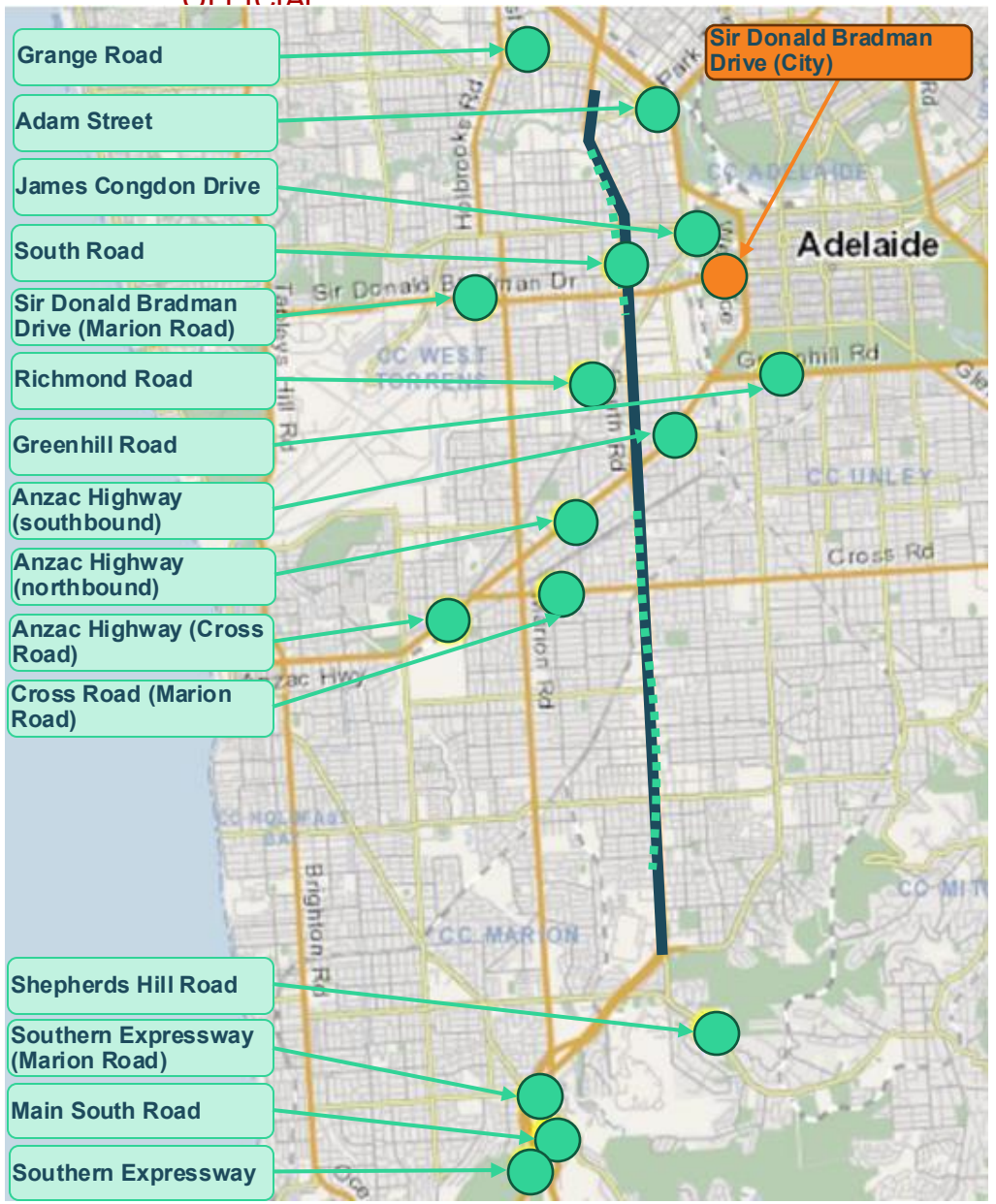
What is a Variable Message Sign (VMS)?

- VMS enable the timely provision of information to motorists by displaying graphical and text-based messages relating to road conditions ahead.
- The information enables motorists to understand and make informed choices in relation to their travel, either by preparing for the conditions they are approaching or selecting an alternate route.
- VMS messages also assist the Department's Traffic Management Centre (TMC) to manage incidents and congestion and help to reduce the likelihood of secondary incidents.
- Being implemented across the road network, but there are 16 sites focused on approaches to the T2D section of the North-South Motorway, supplementing existing VMS and new signage being delivered as part of T2D Main Works.
- Overhead gantries are preferred due to increased visibility to motorists. Drivers have previously indicated preferences for overhead gantries for static directional signage (white text on green background).

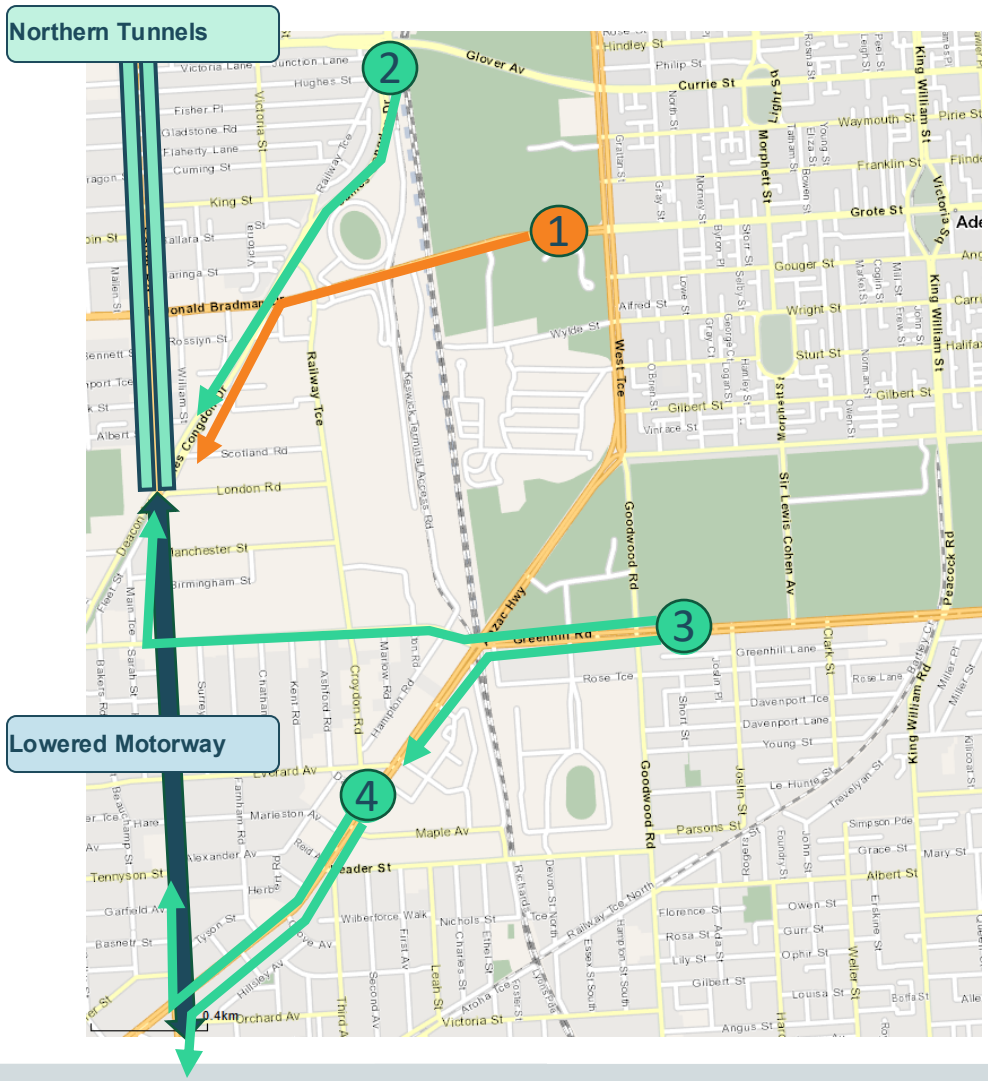
VMS for T2D

16 locations on key approaches to inform motorists of major incidents, tunnel closures and travel times

- Located within the council areas of:
  - City of Adelaide
  - City of Charles Sturt
  - City of Marion
  - City of Mitcham
  - City of Unley
  - City of West Torrens.
- Depending on the site, the VMS will be placed either in the median or verge with associated cabinet / parking bay to be co-located nearby.
- Construction is planned for Q4 2025 to assist with traffic management during construction of the T2D Main Works.



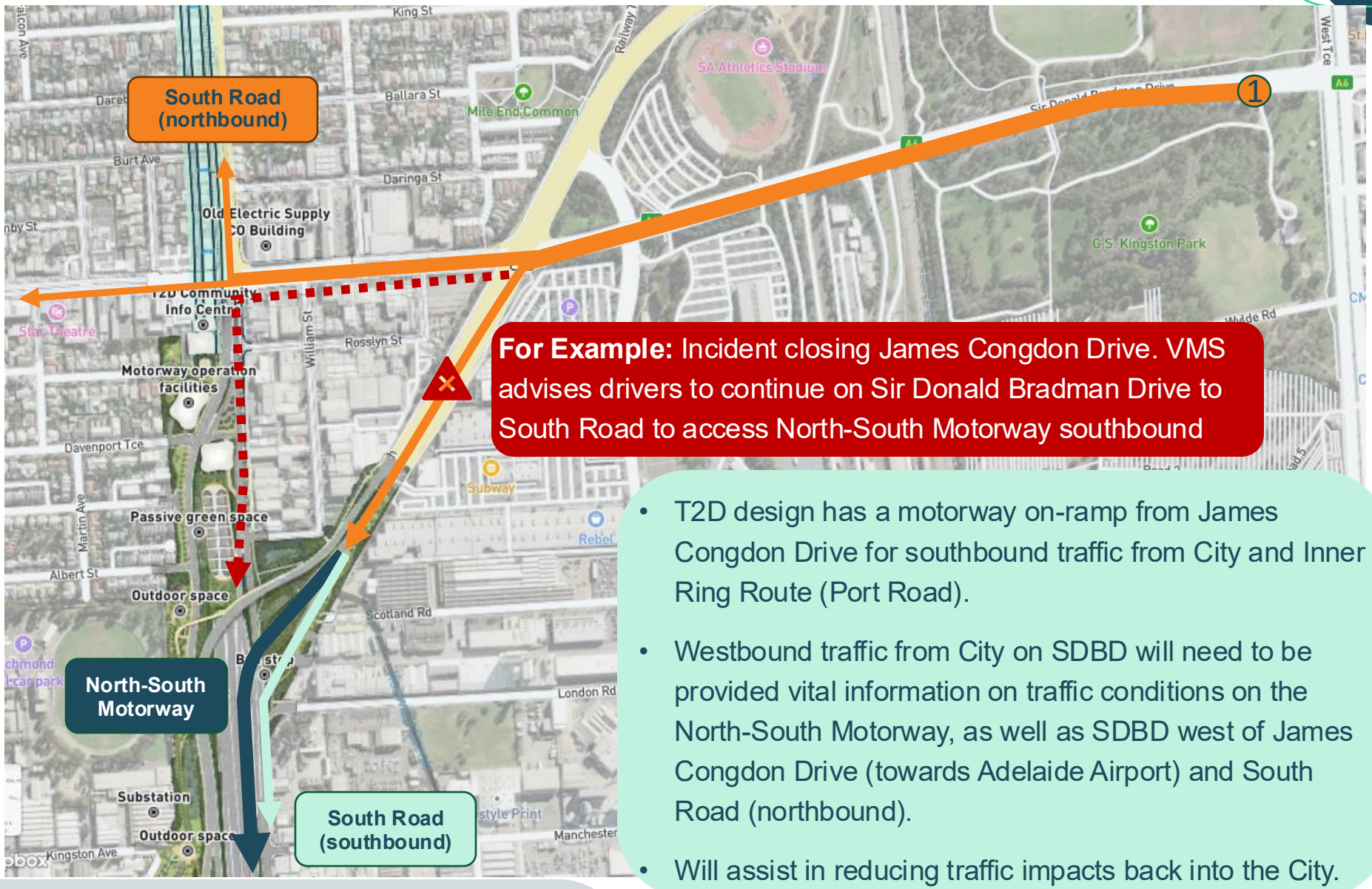
Requirements for SDBD VMS & near City sites



TMC requires VMS at these locations due to the catchment for on-ramps to the North-South Motorway from the City after T2D completed.

1. **Sir Donald Bradman Drive VMS –** Captures westbound traffic on SDBD from City Centre
   - Access to southbound lowered motorway
2. **James Congdon Drive VMS –** Captures southbound traffic on JCD from Port Road (incl. Health Precinct)
   - Access to southbound lowered motorway
3. **Greenhill Road VMS –** Captures westbound traffic on Greenhill Road (incl. from City)
   - Access Northern Tunnel via Richmond Road intersection
   - Access Southern Tunnel via Anzac Highway intersection
4. **Anzac Highway VMS –** Captures southbound traffic on Anzac Highway (incl. from City)
   - Access northbound lowered motorway via Anzac Highway intersection
   - Access Southern Tunnel via Anzac Highway intersection

Requirements on SDBD westbound

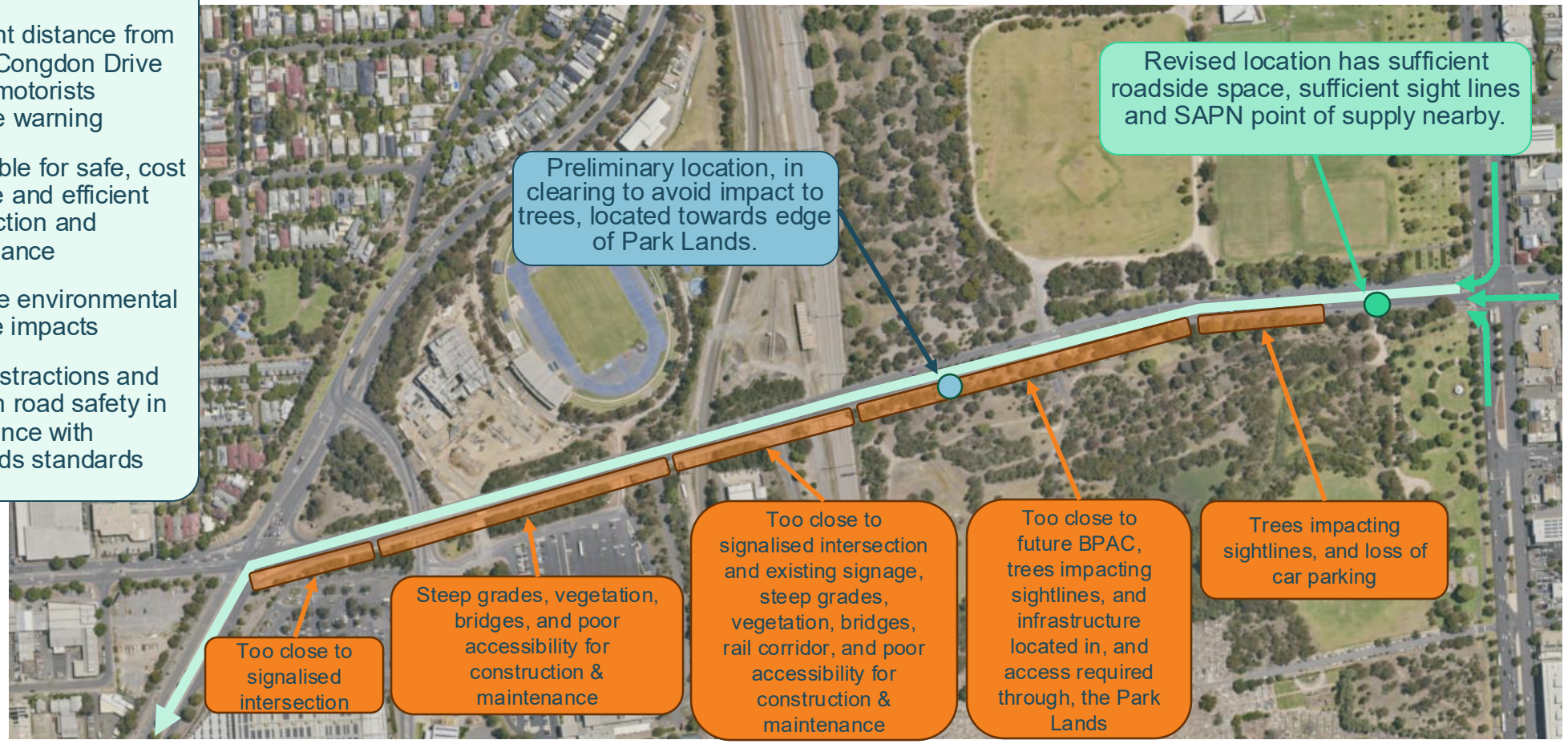


- T2D design has a motorway on-ramp from James Congdon Drive for southbound traffic from City and Inner Ring Route (Port Road).
- Westbound traffic from City on SDBD will need to be provided vital information on traffic conditions on the North-South Motorway, as well as SDBD west of James Congdon Drive (towards Adelaide Airport) and South Road (northbound).
- Will assist in reducing traffic impacts back into the City.

SDBD Site Selection

Requirements

- Sufficient distance from James Congdon Drive to give motorists advance warning
- Accessible for safe, cost effective and efficient construction and maintenance
- Minimise environmental and tree impacts
- Avoid distractions and maintain road safety in accordance with Austroads standards



SDBD Site Selection – Preliminary

Preliminary Site Location

Considerations

- Located approximately 700m in advance of the intersection with James Congdon Drive.
- There is clear space and ground is relatively level at this location to support the VMS and cabinets.
- VMS would be over roadway to avoid removal of trees.
- Longer distance for power from SAPN connection.
- Maintenance vehicle access within Park Lands (outside road reserve).
- Preliminary feedback from Council was not to have infrastructure in Park Lands.
- Subsequent feedback of potential future Bicycle and Pedestrian Activated Crossing (BPAC) impacted selected site.

SDBD Site Selection – Selected

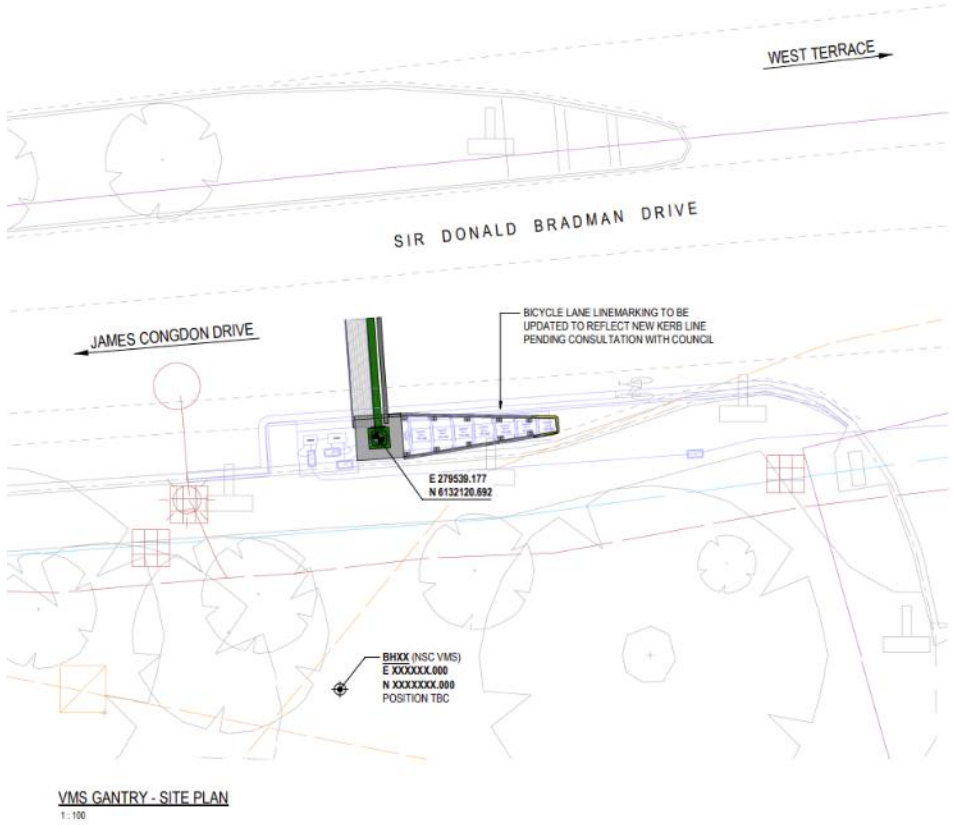
Current Site Location

Considerations

- Approximately 110m from the intersection of Sir Donald Bradman Drive and West Terrace (AS4582 states 140m).
- Achieves minimum 6.2s reading time required by DIT Master Specifications.
- For the **Preferred Design (Type A VMS)**, gantry, cabinets and conduits are completely within the road reserve.
- Minimises impact to existing vegetation – may require minor pruning of low branches on one tree.
- Close to SAPN points of supply.

Preferred Design – Layout

Layout

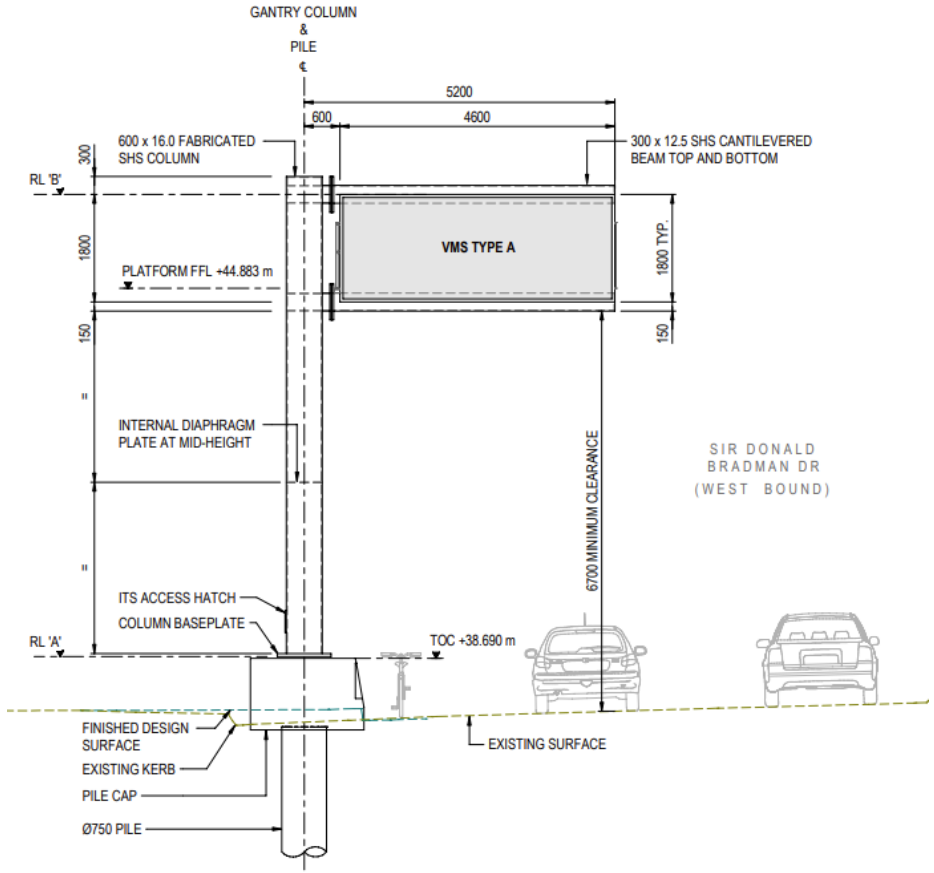


Design Considerations

- Located in the road reserve outside of GS Kingston Park / Wirrarninthi (Park 23) and away from trees.
- Occupies a footprint less than 20m^2 within the road reserve, with loss of only one car park and maintenance of shared use path and on-road bicycle lane.
- Gantry constructed on a short concrete plinth (820mm) with a sloped face on traffic side with battleship crash barrier protection on approach.
- Crash barrier equipped with wide-type crash cushion at its eastern (approach) end.
- 1.7m high and 0.8m wide traffic signals cabinet, used as the intelligent transportation system (ITS) cabinet to be installed on the western side of the gantry.
- On-street parking is proposed for maintenance vehicles along Sir Donald Bradman Drive within the vicinity.

Preferred Design – Appearance

Elevation – looking west



Design Considerations

- 8.7m total height (top of gantry and VMS board).
- 4.6 x1.8m (VMS board) cantilevered over the carriageway with a 6.7m clearance to traffic.
- The gantry and maintenance platform enables safe maintenance with minimal traffic disruption (required by Department's Master Specifications).
- Gantry coloured Dark Green in accordance with NSC T2D Urban Design requirements.
- Requires crash cushion and concrete barrier to meet Austroads safety requirements – crash cushion must have yellow end.
- Design has kept footprint of site to a minimum, including an accepted DIT departure to use a traffic signals cabinet as ITS cabinet.

Preferred Design – Visual Impact

Assessment

- Smaller scale than existing trees
- Crash barrier and gantry is prominent but consistent with expectations of road environment
- VMS of similar scale to existing directional signage gantries in Park Lands
- No change to hard footprint within the Park Lands

*** Artist's impression only**

Preferred Design – Comparative Assessment

Port Road

West Terrace

Wakefield Road

Preferred VMS sign

Preferred Design – Reasons & Benefits

Visibility – overhead gantry is most visible to motorists, can utilise graphics to messages and flashing LED lights can be integrated.

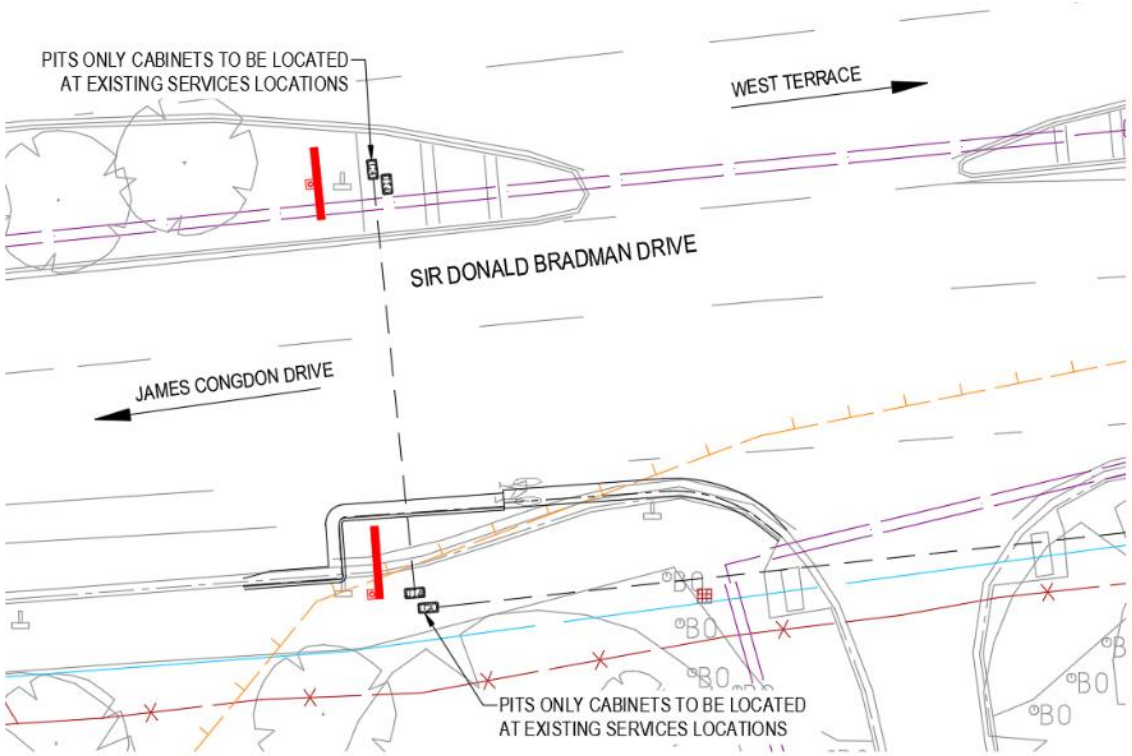
Legibility – more conspicuous and more characters provides improved messaging

Safety and Resilience – example left is following collision with crash barrier protecting VMS on Regency Road approaching North-South Motorway.

Maintenance access – integrated platform allows minor maintenance work to signage without lane closures.

Alternate Design – Layout

VMS Layout

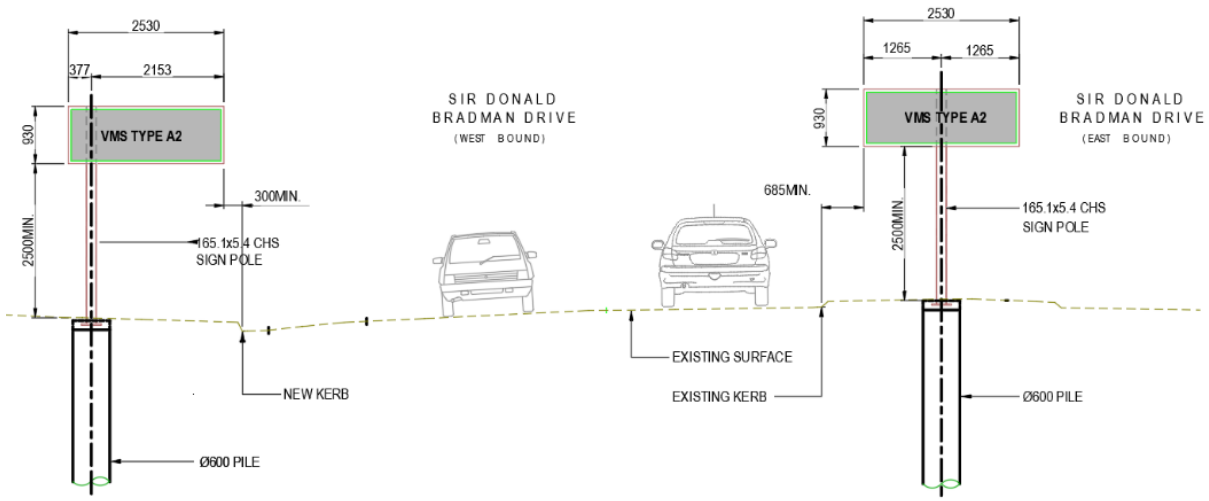


Design Considerations

- Located in the road reserve outside of GS Kingston Park / Wirrarninthi (Park 23) with two separate **Type A2** VMS signs situated on the left verge and central median
- Is not the preferred option of TMC due being less visible and less messaging capability.
- Use of **energy absorbing pole buffers** enables removal of crash cushion and concrete barrier:
  - Will need Technical Services acceptance of design departure.
- Cabinets will need to be moved away from roadside as they no longer have barrier protection.
- Avoids impacting on street trees in median and no loss of car parking.
- On-street parking is proposed for maintenance vehicles along Sir Donald Bradman Drive within the vicinity.

Alternate Design – Appearance

Elevation – looking west



Design Considerations

- Type A2 signs 2.53 x 0.93m in dimension on frangible poles (similar to traffic light poles).
- Total height of at least 3.43m with minimum 2.5m clearance.
- Requires use of **energy absorbing pole buffers**.

Alternate Design – Visual Impact

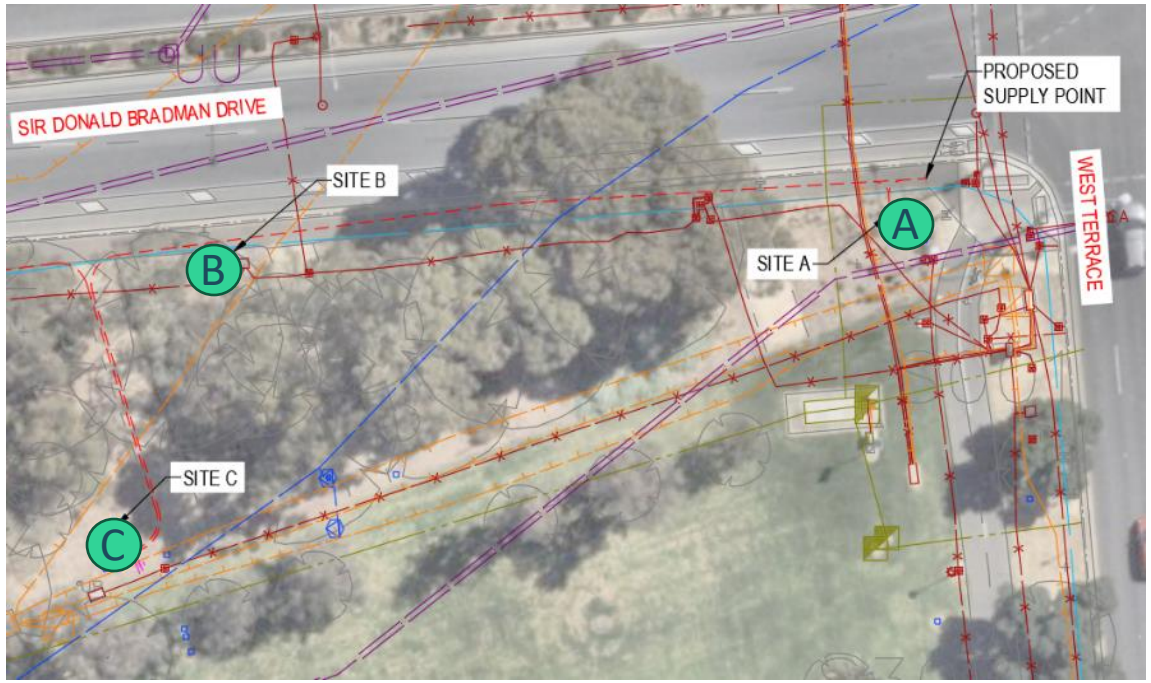
*** Artist's impression only**

Assessment

- Small scale that blends into background – less visible or noticeable for motorists
- Energy absorbing pole buffers have signage consistent with road environment
- VMS of similar scale to existing directional signage on poles in Park Lands
- Small increase to hard footprint within the Park Lands for ITS cabinets and requires trenching from supply points.

Alternate Design – Potential Cabinet Locations

ITS Cabinet site options



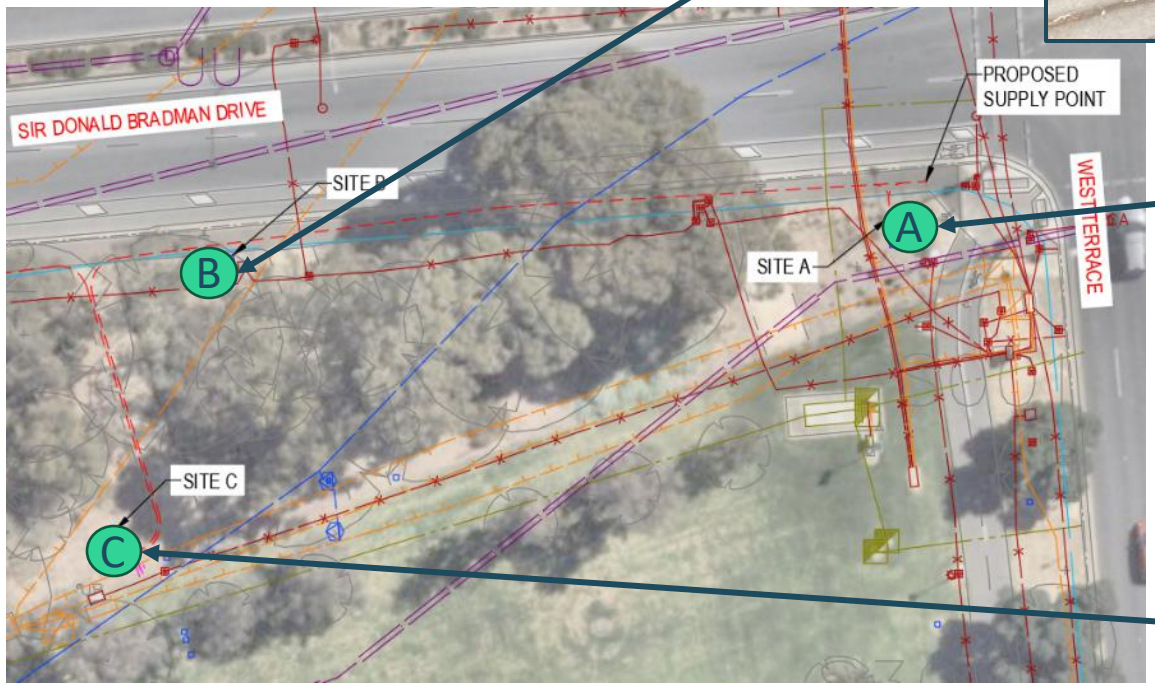
Design Considerations

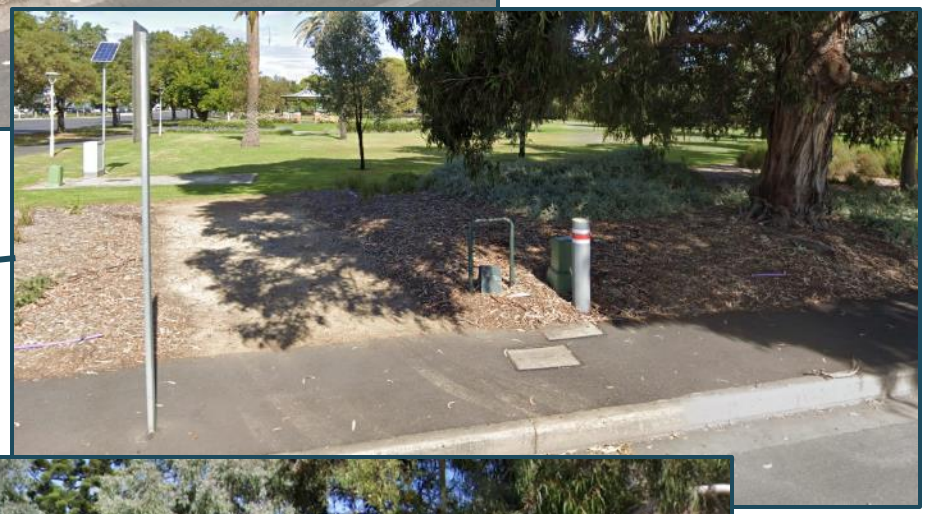
Pit and Cabinet footprint is 5m² within GS Kingston Park / Wirrarninthi (Park 23) adjacent to existing services / cabinets.

- **SITE A** – Close to power supply and in vicinity of existing Gas Cabinets near West Terrace intersection.
- **SITE B** – Close to existing power cabinet adjacent to footpath.
- **SITE C** – Close to existing UP Cabinet along footpath in GS Kingston Park.

Alternate Design – Potential Cabinet Locations

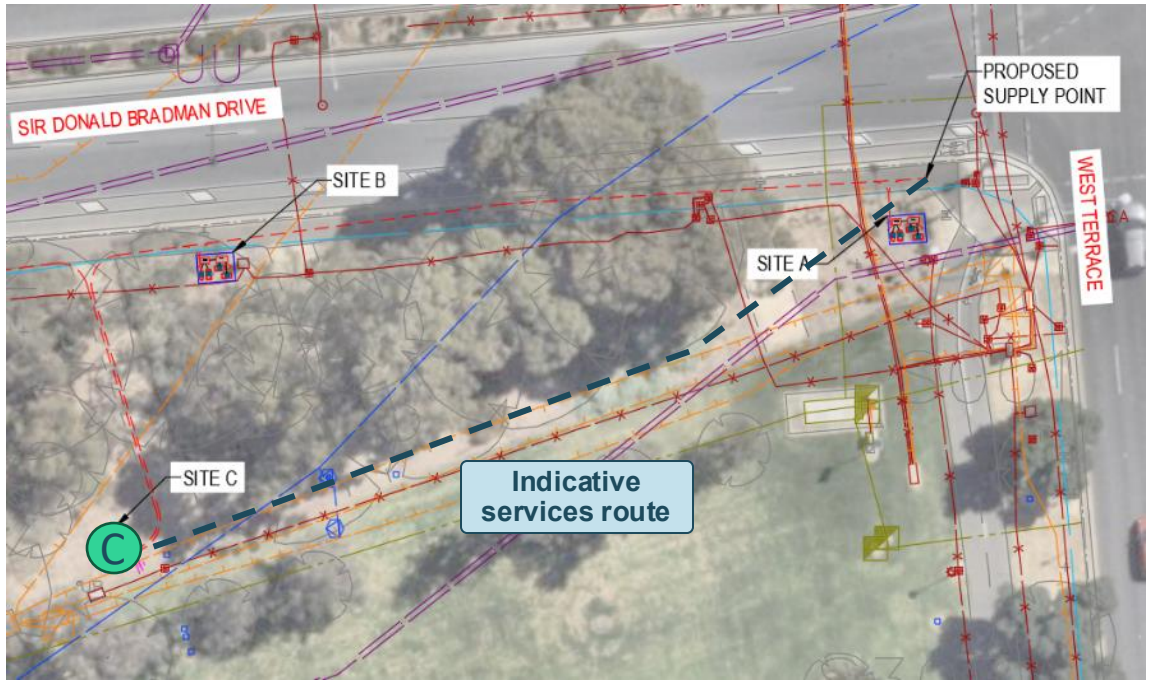
ITS Cabinet site options





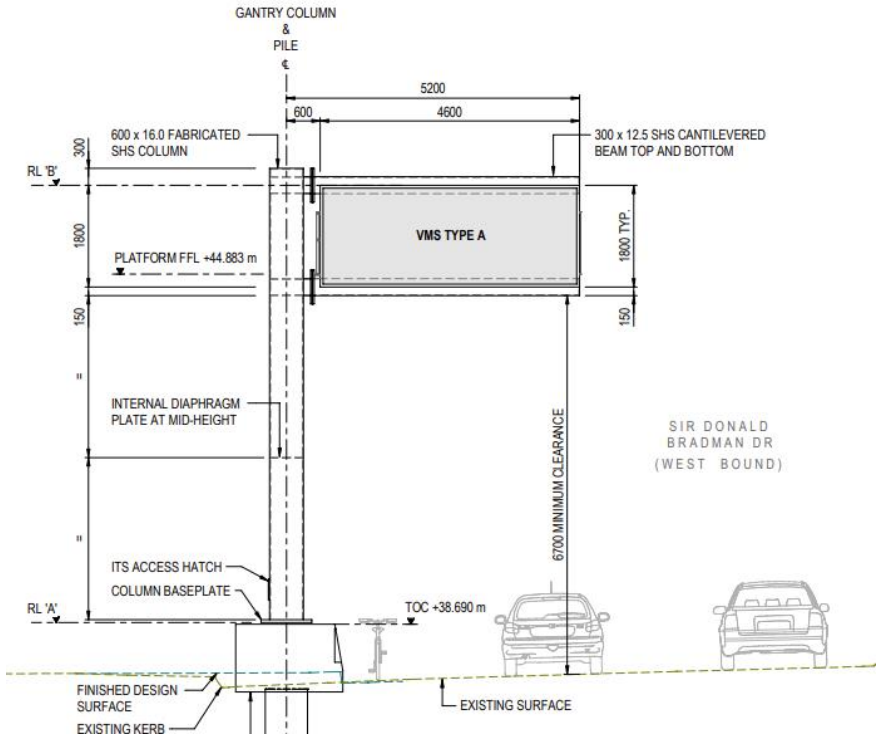
Alternate Design – Preferred Cabinet Location (Council staff)

ITS Cabinet site options



Comparison of Design Approaches

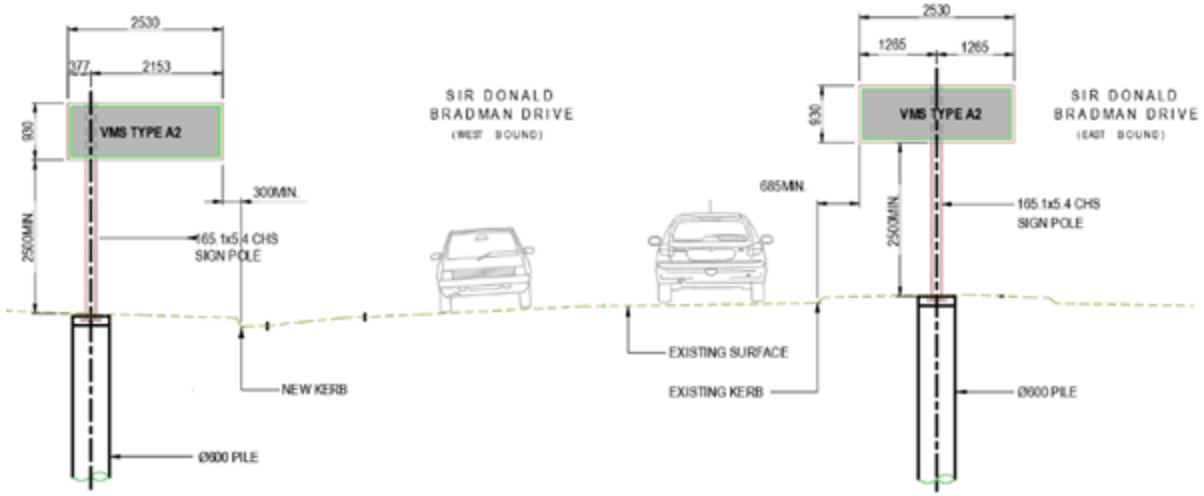
Preferred Design



Alternate Design

Type A2 offers:

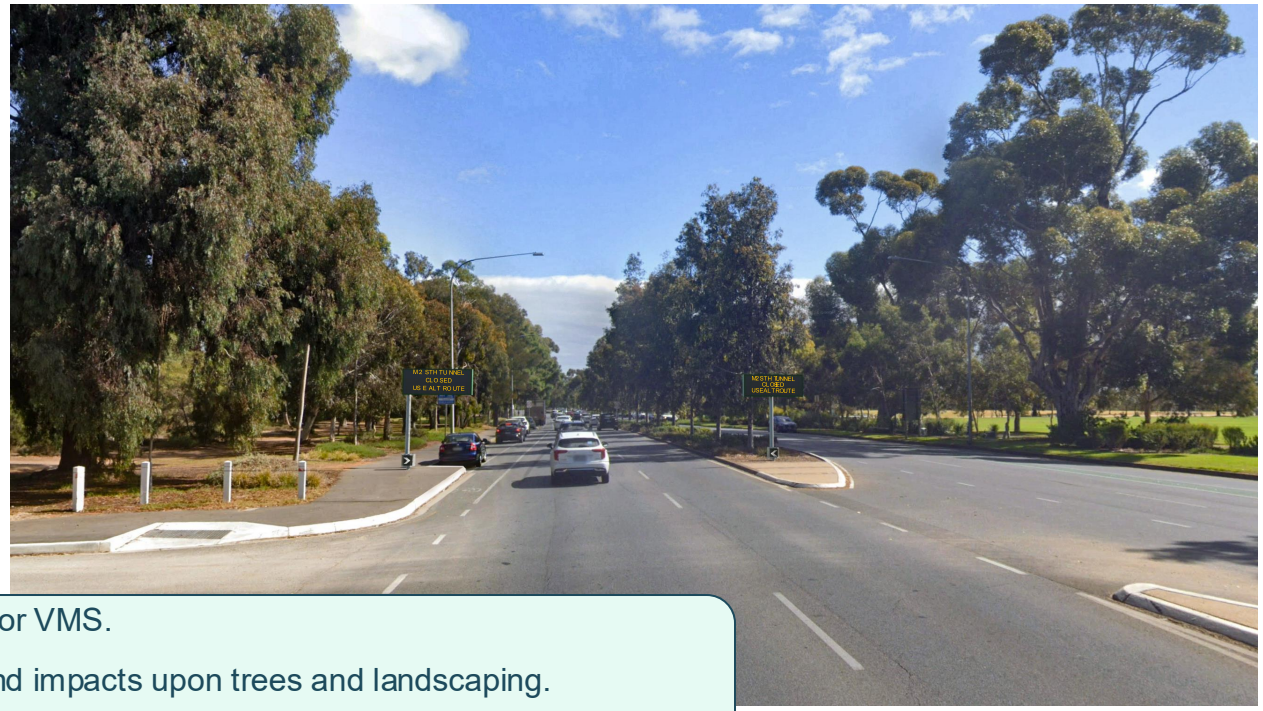
- a smaller form factor, with a smaller sign face, but requires two signs that are less conspicuous to motorists
- a 200mm text first line, and 180mm text on subsequent lines, with less ability for graphical messages



Comparison of Design Approaches

Preferred Design

Alternate Design



- Location most viable considering requirements for VMS.
- Both options minimise footprint in Park Lands and impacts upon trees and landscaping.
- Negligible to no impact to the heritage value of the Park Lands or cultural heritage.
- Acceptable visual impact consistent with existing road infrastructure and arterial road environment.
- Maintenance of footpaths and bicycle lanes and minor impacts to car parking.

Engagement approach

- Engagement with City of Adelaide staff on proposed VMS:
  - Discussions on preliminary site in 2024
  - Meeting on selected site and preferred design 3 April 2025
  - Meeting on revised compromise design 17 April 2025
  - Meeting on-site 30 April 2025 to review ITS Cabinet site options for compromise design.
- **Seek endorsement of proposal from Kadaltilla and City of Adelaide to construct VMS at Sir Donald Bradman Drive within the Park Lands.**
- No specific engagement with community or other stakeholders proposed given this is essential safety component of road infrastructure within the road corridor.
- VMS is an advertising display or sign exempt from development approval in accordance with Clause 5(k)(v) of Schedule 13 of the *Planning, Development and Infrastructure (General) Regulations 2017.*
- Formal agreements executed with City of Adelaide and permits obtained.
- Procurement and construction proposed for Q4 2025.

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Australian Government
BUILDING AUSTRALIA

Government of South Australia
Department for Infrastructure and Transport

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