

Reference: 23.464r03v02

19 December 2024

Coombes Property Group
C/- Element

Attention: Victoria Hale, Senior Environmental Planner

**RE Proposed Construction and Demolition (C & D) Waste Management Facility (SSD-62855708)
Response to Goodman Submission**

Dear Victoria,

We refer to the State Significant Development application (SSD-62855708) involving a proposed Construction and Demolition (C & D) waste management facility at 2-4 Hale Street, Botany.

TRAFFIX has been forwarded submission from Goodman concerning the proposed SSD as contained in a letter prepared by Guy Smith (Head of Planning, Goodman) dated 3 September.

TRAFFIX has reviewed all relevant comments from a traffic engineering /parking perspective and has responded to each issue below. This is with reference to the updated Traffic Impact Assessment (TIA) report (TRAFFIX Reference: 23.464r01v12) dated December 2024.

Goodman Submission:

- **Lack of Calibration or Documentation**

- The TIA does not indicate whether the traffic model was calibrated against observed queue lengths or other traffic data, raising doubts about the accuracy of the current traffic representation.
- The SEARs specifies that the assessment must include:

"An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts on existing performance levels at key intersections, using a calibrated SIDRA (or similar) traffic model."
- The TIA lacks information on whether or how the base case model was calibrated. Calibration typically involves comparing observed and modelled queue lengths and signal phase times to ensure accuracy.
- Data for Calibration: Observed signal times should be obtained from Transport for NSW (TfNSW) by requesting SCATS history data files recorded on the days when traffic counts were conducted.
- Due to the absence of documented calibration details, it is questionable whether the model has been accurately calibrated. Any performed calibration should be documented in the TIA.

TRAFFIX Response:

All submitted traffic (SIDRA) models have been undertaken in accordance with industry best practice and calibrated to the physical intersection geometry and observed conditions.

Specific reference is made to the recent SSD approval for Goodman's 3-storey warehouse and distribution centre development located at 2-8 Lanceley Place and 14 Cambell Street in Artarmon under SSD-48478458, which involved:

- Construction of 12 warehouse units with a total Gross Floor Area (GFA) in the order of 25,538m²; and,
- Traffic generation potential in the order of additional 79 and 74 vehicle trips per hour during the AM and PM peak periods respectively.

A comparison of the approved SIDRA modelling input parameters for SSD-48478458 and the subject development under SSD-62855708 is provided in **Table 1** below.

With reference to **Table 1**, the SIDRA modelling undertaken for the subject proposal is consistent with that of the recently approved Multi-level Warehouse, Artarmon (SSD-48478458), which has a substantially higher traffic generation corresponding to the substantial GFA being proposed/approved.

The only exception is that the SIDRA modelling undertaken for the subject proposal adopted a PCU of 2.5 for all heavy vehicle movements in accordance with AUSTRROADS Research Report AP-R609-19, 2019 which recommended a PCU of 2.1 for B-Double vehicles, and hence the SIDRA prepared for the subject proposal is considered more conservative than that of the recent approved SSD-48478458.

Table 1 – SIDRA Modelling Input Comparison

SIDRA Input Parameters	Approved Multi-level Warehouse, Artarmon SSD-48478458	Proposed C & D Waste Facility SSD-62855708
Site Level of Service Method	Delay (RTA NSW)	Delay (RTA NSW)
Intersection Layout	Physical features of existing intersections	Physical features of existing intersections
Intersection Geometrics	Coded with reference to NearMap aerial imageries as well as site visit observations	Coded with reference to NearMap aerial imageries as well as site visit observations
Basic Saturation Flow	Default	Default
Peak Flow Factor	Default	Default
Gap Acceptance	Default	Default
Pedestrian Walking Speed	Default	Default
Speed Limits	Existing posted speed limits	Existing posted speed limits
SCATS	Obtained but not adopted in SIDRA to inform user defined cycle times	Not obtained and not used
PCU – Cars	Default	Default
PCU – Heavy Vehicles	2.0	2.5
PCU – Articulated Vehicles	3.0	

It is pertinent to note that the predicted impacts of construction and operational traffic have been assessed to result in a net reduction of the traffic generation potential of the site, and conservative SIDRA modelling input parameters, consistent with that of recent SSD approvals, demonstrates nearby critical intersections operates at LoS C or better.

In the circumstances, further traffic surveys (i.e. queuing surveys) is not warranted to improve the level of calibration to further optimise the LoS of the SIDRA models, noting minor improvements in SIDRA modelling accuracy is not expected to yield significant variations in the average vehicle delay resulting in a shift in the LoS band that the intersection operates within.

On the above basis, the provided SIDRA modelling is deemed to have satisfied the Planning Secretary's Environmental Assessment Requirements (SEARs) and TfNSW Traffic Modelling Guidelines (Ver 1.0) as well as consistent with SSD assessment requirements.

- **Discrepancies in Traffic Queuing**

- *There appear to be discrepancies between the modelled and observed traffic queues on Hale Street. These differences suggest the base case model may not accurately represent actual traffic conditions.*
- *Base Case Queue Lengths: The modelled maximum queue lengths on Hale Street in the base case (existing situation) are:*
 - o *AM Peak: 47 metres*
 - o *PM peak: 63 metres*
- *Concerns Over Accuracy: The report does not indicate whether the model was calibrated to observed queue lengths, nor does it provide observed queue lengths. Google Maps, despite being not the appropriate tool for this purpose, typically shows significantly larger queues on Hale Street, extending beyond the roundabout at Hale Street and Luland Street, as depicted in the figure below.*
- *Although Google Maps might not always capture peak hour queues, it underscores the need for collecting accurate queue length data.*

TRAFFIX Response:

All submitted traffic (SIDRA) models have been undertaken in accordance with industry best practice and calibrated to the physical intersection geometry and observed conditions.

The provided SIDRA modelling is deemed to have satisfied the Planning Secretary's Environmental Assessment Requirements (SEARs) and TfNSW Traffic Modelling Guidelines (Ver 1.0) as well as consistent with SSD assessment requirements that facilitated the approval of the Multi-level Warehouse, Artarmon (SSD-48478458).

- **Study Area Considered for SIDRA Intersection Modelling**

- *The traffic assessment is limited to the single signalised intersection of Foreshore Road with Hale Street. Though generally suitable for a project of this scale, it should also consider downstream and upstream impacts from adjacent intersections.*
- *The roundabout at Hale Street and Luland Street was excluded despite being crucial for Estate access, limiting the TIA's comprehensiveness.*
- *Since Luland Street serves as the primary access road to the Estate, the exclusion of this intersection limits the ability of the TIA to evaluate the Proposal's direct impact on this vital access route.*
- *Given the identified queue extensions and project implications towards Botany Road, an operational assessment of this roundabout is essential.*

TRAFFIX Response:

The traffic modelling study area has been agreed with TfNSW as part of the consultation process during the preparation of EIS and undertaken in accordance with SEARs.

Reference is also made to the letter received from Transport for NSW (TfNSW) dated 30 August 2024 (TfNSW Reference: SYD24-00365/02) confirming that there are no further requirements, and the proposed development is unlikely to have a significant impact on the classified road network.

Furthermore, additional SIDRA modelling for the roundabout at Hale Street and Luland Street has been included in the updated submission demonstrating satisfactory levels of service in all modelled scenarios.

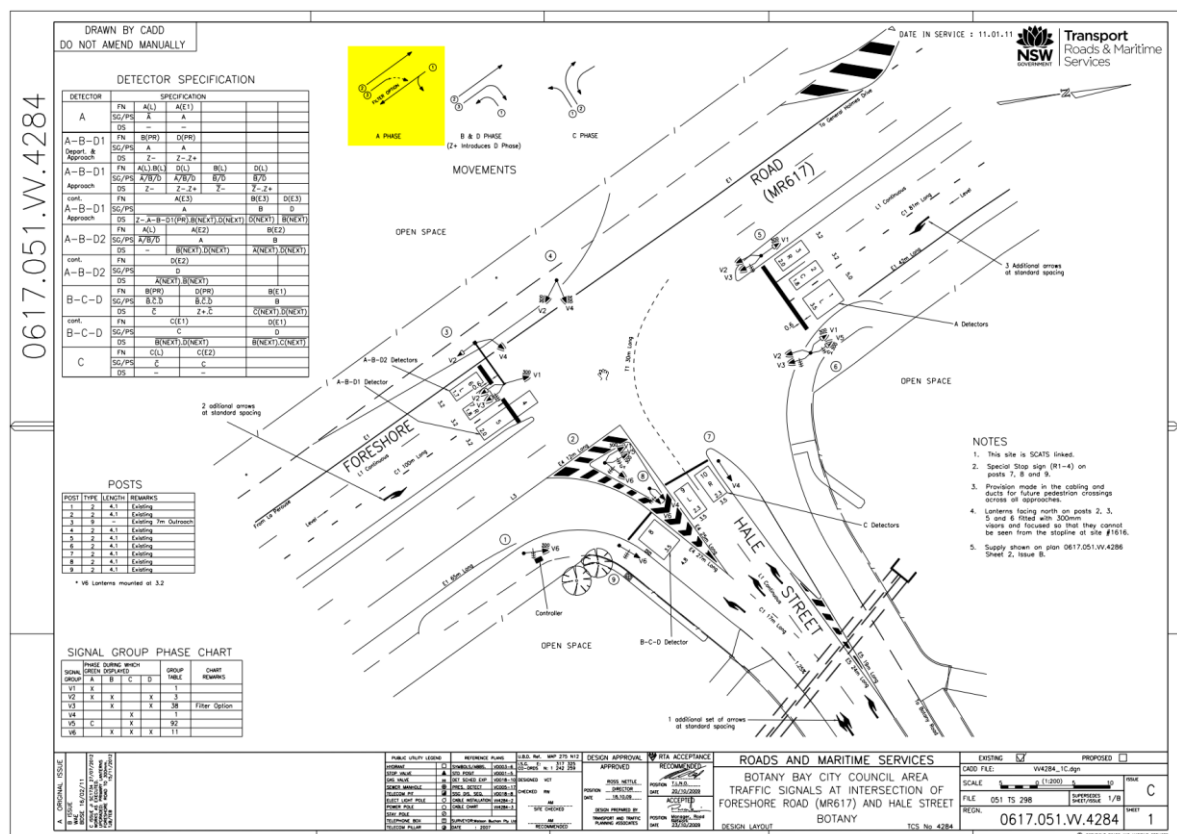
Model Accuracy

- The base case model indicates Level of Service (LOS) A for peak hours at the Foreshore Road/Hale Street intersection, suggesting minimal delays. However, discrepancies in queue lengths question the accuracy of this depiction.
- Modelled signal control allows a 'filtered' right-turn from the south during Phase A, raising concerns given the 80 km/h speed limit on Foreshore Road and the need to filter across three lanes. The TCS plan does not support a 'filtered' right-turn.

TRAFFIX Response:

All submitted traffic (SIDRA) models have been undertaken in accordance with industry best practice and calibrated to the physical intersection geometry and observed conditions.

Signal phasing has been set up in accordance with TCS No. 4284 (REGN. 0617.051.W.4284) showing a right-turn filter option for Foreshore Road in Phase A, reproduced in **Figure 1** below.



- **Need for a Comprehensive Signal Coordination Assessment**

- The Foreshore Road / Hale Street intersection is in close proximity to two other signalised intersections on Foreshore Drive:
 - o Foreshore Road / Ulm Avenue / Generals Holmes Drive off-ramp
 - o Foreshore Road / Generals Holmes Drive
- Due to their proximity (approximately 110 meters), these intersections likely operate under coordinated signal control. Therefore, the Foreshore Road / Hale Street intersection should have been evaluated as part of a network model in SIDRA, including the adjacent intersections, to provide a comprehensive analysis of traffic impacts.

TRAFFIX Response:

The traffic modelling study area has been agreed with TfNSW as part of the consultation process during the preparation of EIS and undertaken in accordance with SEARs.

Reference is also made to the letter received from Transport for NSW (TfNSW) dated 30 August 2024 (TfNSW Reference: SYD24-00365/02) confirming that there are no further requirements, and the proposed development is unlikely to have a significant impact on the classified road network.

Accordingly, the chosen study area and SIDRA modelling is deemed to have satisfied the Planning Secretary's Environmental Assessment Requirements (SEARs) and TfNSW Traffic Modelling Guidelines (Ver 1.0) as well as consistent with SSD assessment requirements.

- **Signal Cycle Time**

- *Current Settings in SIDRA Model: The assessed cycle time in the SIDRA model is 95 seconds (AM) and 90 seconds (PM), appearing low given assumed coordination with nearby intersections where cycle times typically range from 120 to 140 seconds during peaks.*
- *Verification using SCATS history data and LX files from TfNSW would yield more accurate analyses.*
- *Best Practice Consideration: It is standard practice to set the cycle time to observed values in the base case model scenarios. Any changes to cycle time, due to likely signal coordination, could increase traffic delays and result in a lower level of service.*

TRAFFIX Response:

Reference to the TfNSW modelling guidelines notes that the maximum practical cycle length for traffic signals under saturated conditions is 120-150 seconds, under these conditions 120 seconds is near maximum for two and three phase intersections which is applicable to the Foreshore Road / Hale Street intersection. Accordingly, the modelled cycle times is therefore well within the maximum and acceptable.

It is also widely acknowledged amongst industry experts that SIDRA recommends intersections running under SCATS Coordinated should use the Fixed-Time/Pretimed (EQUISAT) analysis option which has been adopted in the submitted SIDRA models. It is noted although SCATS is an adaptive control system, the Fixed-Time/Pretimed (EQUISAT) analysis method is recommended to emulate the SCATS control algorithms. SCATS green splits and cycle time may change cycle by cycle. The green splits and cycle time determined by SIDRA INTERSECTION should be considered to represent average timings under SCATS control for the analysis period.

Given that the defined study area in consultation with TfNSW does not include any other intersections along the classified road network with upstream or downstream signalised intersections, therefore SIDRA modelling does not need to be networked where signal coordination needs to be further considered.

It is reiterated all submitted traffic (SIDRA) models have been undertaken in accordance with industry best practice and calibrated to the physical intersection geometry and observed conditions.

- **Swept Path**

- *The swept path analysis shows that exiting B-double vehicles might encroach onto parked vehicles on Hale Street's southern side and cross into opposing lanes when entering, posing potential safety concerns.*

TRAFFIX Response:

The swept path analysis provided in the latest submission clearly demonstrates B-double vehicles do not encroach onto parked vehicles on Hale Street's southern side.

Vehicles turning out of the site will need to cross opposing lanes and give way to vehicles on the public road under Australian Road Rules (ARR). There are no safety concerns with vehicle right turn movements that would occur in every driveway, including heavy vehicle movements at Goodman's Port Air Industrial Estate (34 Luland Street & 1&1A Hale Street / Lot 100 DP1213007) when heavy vehicles including B-doubles need to turn right in or out of the Goodman's site.

- **Truck Access**

- *The Proposal's 29-meter-wide truck access is less than 20 meters from the Hale/Luland Street roundabout. This proximity raises safety issues, highlighting the need to include the roundabout in the assessment.*

TRAFFIX Response:

The proposed truck access location has been strategically positioned to satisfy site operational requirements and is located as far practicable from Foreshore Road being the critical classified road to optimise road network capacity.

The proposed position of the driveways has also been satisfactorily designed in accordance with AS 2890.1 (2004) and AS 2890.2 (2018) and will operate safely and efficiently.

Traffic modelling of the roundabout of Hale Street / Luland Street has also been included in the updated TIA demonstrating satisfactory and safe operation.

Closing Statement

It is emphasised that the proposed development has been assessed to result in a net reduction in the vehicle generation potential of the site compared to the existing approved development that currently operates on the site.

On this basis, the proposed development would clearly be in the interest of local stakeholders and Council in the context of road network capacity concerns.

In any event, the updated Traffic Impact Assessment (TIA) report (TRAFFIX Reference: 23.464r01v12) dated December 2024 demonstrates that the subject SSD application is supportable on traffic planning grounds.

We trust the above is of assistance and please contact the undersigned should you have any queries.

Yours faithfully,

Traffic



Thomas Yang
Executive Engineer