Applicant response to the Request for Additional Information

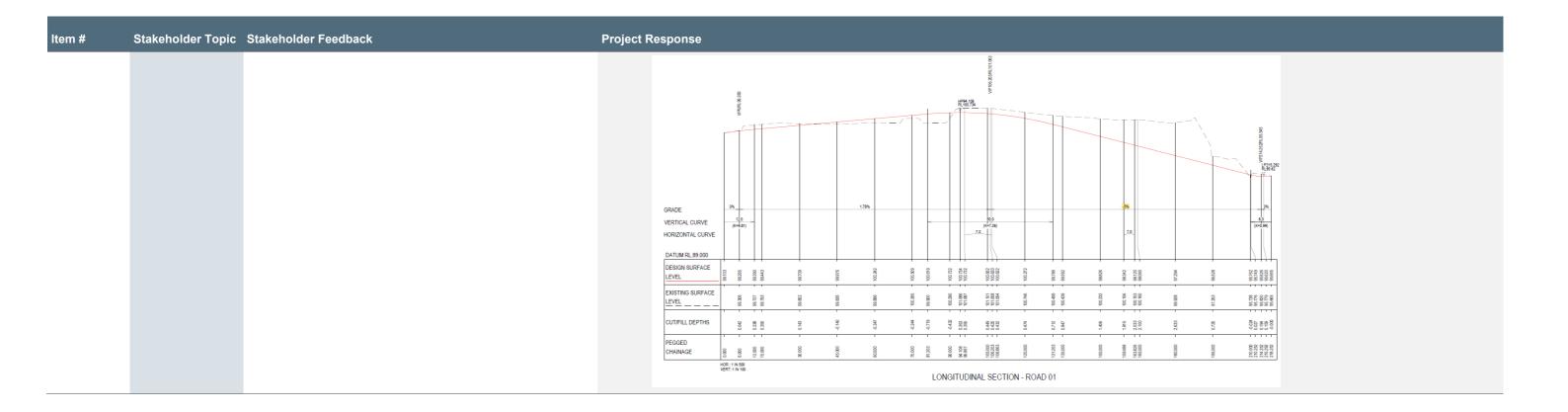
Item #	Stakeholder Topic	Stakeholder Feedback	Project Response
	Queue Assessment and provision of a deceleration lane	TfNSW has concern regarding the close proximity of the proposed Road 01 with signalised intersection of Showground Road/De Clambe Drive and potential impact on State road network. It should be noted that there is only one south bound traffic lane on De Clambe Drive, and any queuing for vehicles to turn into the Road 01 would block south bound through traffic and adverse impact on the road network. TfNSW in its pre-DA meeting with the proponent requested queue assessment and investigating provision of a deceleration lane for vehicles entering Road 01 from De Clambe Dr.	As agreed during our consultation meetings with TfNSW on the 17 and 22 February 2022, a deceleration lane for vehicles entering Road No.1 from De Clambe Drive was not required at this location based on the following reasons: • The location of the Road No.1 was indicated in The Hills DCP and approved under the concept masterplan. • A SIDRA model was undertaken as part of the concept masterplan and updated as per TfNSW request to include the future bus lane on the west bound approach including the preferred agreed option – left-in, left-out intersections, two way traffic flow and included the 2021 background traffic volumes (extracted from the Doran Drive Precinct), which informs the mid-block traffic volumes on Analausian Way and De Clambe Drive. It is expected that there will be limited growth on local streets and therefore, the extracted traffic volumes are considered appropriate for the future year traffic modelling for 2026 and 2031. The SIDRA model forecast 60 vehicles (at maximum per peak hour) to turn left into Road No. 1 from De Clambe Drive in 2031 PM peak hour. This indicates that there will be no queueing of these left turn vehicles entering Road No. 1 given its a left-in left-out intersection. • Road No. 1 / De Clambe Drive intersection is approximately 60m away from Showground Road. With a forecast of maximum 60 vehicles per hour and the traffic regulated through the existing traffic lights at Showground Road, it is very unlikely that 10 vehicles would arrive at the same time (in the same traffic signals cycle) and cause a long queue at this location. If this was the case, the distance from Showground Road has the capacity for the unlikely event to store a queue length of ten vehicles. • De Clambe Drive is a local street designed for slow traffic, there is an existing driveway (without an existing deceleration lane) along De Clambe Drive which current, and future use will be for construction access only. Vehicles turning into the precinct at the intersection of Showground Road/ De Clambe Drive
			A copy of the queue assessment and assessment of the deceleration lane was issued to TfNSW in September 2021.
Transport for NSW (item 2)	HRV restrictions	Swept paths for a Heavy Rigid Vehicle (HRV) indicates a number of conflicting movements. The plans show HRV will overhang the centreline on Road 01 when entering from De Clambe Drive. Concern is raised vehicles waiting to exit from Road 01 to De Clambe Drive would restrict HRV entering and impact the through traffic on De Clambe Drive. Mitigation measures should be provided. Access restrictions into	The Applicant agrees that access Heavy Rigid Vehicles (HRV) restrictions into Road No.1 should be implemented outside of the construction timeframe/s and should provide exemption for emergency vehicle access. The intention of Road No.1 is to primarily service the residential development lots and to the proposed neighbourhood park. The proposed local road has been designed to accommodate (but not purposely built for) HRV's, with flexible bollards capable of extending outside the road carriageway. Road No.1 can accommodate the largest vehicles intended to be using the road on a semi-regular bases, being Council waste collection vehicles and furniture removalist trucks (which is around 8.8m / Medium Rigid Vehicle).
	_	Road 01 for HRV and other relevant vehicles should be considered.	Note that, as stated in the traffic report HRVs were only used as a design check vehicle. Swept path for a local residential road is generally 8.8m long (according to Austroads Guide), while a typical unit truck/bus (Heavy Rigid Vehicle) is 12.5m.
Transport for NSW (item 3)	Alternate Route	Mitigation measures should be provided to prevent drivers from using Road 01 as an alternative route (i.e. turning left into Road 01 from De Clambe Dr) instead of using Andalusian Way.	Andalusian Way is considered the shorter route with a free left turn from De Clambe Drive into Andalusian Way. The shared zone environment, which covers almost half of Road No. 1 length, will create a slow traffic environment and discourages drivers from using Road No.1 as an alternate route.
	No right turn restriction – signs and line marking layout plan	No Right Turn restriction should be provided from De Clambe Drive into Road 01. This is not indicated in the Signs and Line marking layout plan.	An updated signs and line marking plan (Drawing MKR00157-00-SK012) has been provided as Appendix B which includes 'No Right Turn' signage to restrict vehicles from turning into Road No.1 from De Clambe Drive.
Transport for NSW (item 5)	Shared Zone	It is advised that a Shared Zone on a public road would require approval from TfNSW. In addition, Shared Zones are to be implemented (i.e. installation of signage and line markings) by TfNSW. Concerns are raised with the traffic volumes which may pass through the proposed Shared Zone. The general criterion for a Shared Zone includes a desirable traffic volume of less than 100 vehicles per hour and equal to or less than 1000 vehicles per day. The proponent should demonstrate that the aforementioned criteria would be met. It is noted up to 94 vehicles during the 2031 AM peak hour is estimated, however it is not clear the expected number of vehicles to pass through Road 01 per day. This information is required to enable TfNSW to consider this matter.	The Applicant acknowledges that a shared zone on a public road requires TfNSW endorsement and implementation. As reported in the Traffic and Access Impact Assessment, the daily traffic estimates at the shared zone is predicted to be approximately 940 vehicles per day or 94 vehicles during the 2031 AM peak hour based on the maximum 873 dwelling in Precinct East (noting the daily traffic generation for residential uses is typically ten times the peak hour generation; which results in a desirable traffic volume of less than 1,000 vehicles per day. During our consultations, our explanation around the traffic volumes was to TfNSW satisfaction, based on the following reasons: • The SIDRA model considers the whole Hills Showground Station Precinct, with Precinct East and Road No. 1 to mainly carry the residential density/ bulk of the whole Precinct. • The Department engaged an independent traffic consultant review which found that the Traffic Assessment (prepared by SCT) used the appropriate methodology and noted that the proposal alone would not trigger any additional infrastructure, as the additional vehicle trips generated would not have adverse traffic implications on the public road network. • Future built form DA's will need to prepare a Green Travel Plan and are restricted by a capped maximum residential and non-residential parking rate. • The location of the site will provide residents and employees alternate options to private vehicle use and the inclusion of pedestrian links/ shared zones provided around the site will support a safe and convenient walk to the Hills Showground Station, further reducing the predicted traffic volumes. During the consultation, TfNSW raised concern regarding the potential impact of vehicles turning left into Road No.1 from Andalusian Way. The applicant has reviewed this

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	High Pedestrian Activity Area	TfNSW notes that a 40 km/h High Pedestrian Activity Area (HPAA) may be more appropriate along Road 01 given the following: • Pedestrian/cyclist amenities and/or local area traffic management devices can be provided along the frontage of the park to cater for safe movement and achieve a similar outcome; and • A 40 HPAA already exists on Doran Drive and Mandala Parade. Expanding the 40 HPAA will maintain consistency within the precinct. TfNSW notes that: • A Shared Zone can be investigated in the future should it be considered necessary; and • The NSW Speed Zoning Guideline is currently undergoing review. Therefore, a different speed zone may be determined to be more appropriate in the future for this environment as well.	concern and confirm that there is adequate capacity for pedestrian vehicles (B99) and Council waste collection trucks to queue in its current location without obstructing traffic along Andalusian Way. The High Pedestrian Activity Area (HPAA) in lieu of shared zone was investigated and acknowledged that it could provide a level of functionality and consistency within the precinct. However, after discussions it agreed that the shared zone design would remain based on the following reasons: The inclusion of a shared zone was approved under the concept masterplan (SSD-9653). The design opportunity for a HPAA was not raised at any previous consultations nor were any concerns on the shared zone raised.
Transport for NSW (item 7)	Location of	Information on the location of all proposed driveway access along Road 01 is requested.	Indicative vehicular access/ driveway crossings providing access to the future residential development lots are provided within Drawing MKR00157-20-C010 of the Civil Plans. These locations are based on the proposed parking entries and service vehicle/ waste collection access points included within the Urban Design Guidelines. Exact location of proposed driveway access along Road No.1 will be completed by the future private developer during detailed design.
Transport for NSW (item 8)		Given that the Shared Zone allows for two-way movement, the provision of parking bays in the Shared Zone may pose a safety risk to pedestrians should the vehicles be permitted to perform Uturns.	A driver completing a U-turn or three-point turn on a local road (where permissible) will be subject to the NSW Road Safety rules. A driver must give way to pedestrians at all times.
Transport for NSW (item 9)	No right turn	The R2-6(R) No Right Turn sign at the intersection of Road 01 and Andalusian Way should be replaced with a R2-14_L All Traffic Left Only sign, assuming a Left-in Left-out arrangement.	An updated Signs and Line marking layout plan (drawing MKR00157-00-SK012) has been provided in Appendix B , which includes an 'All Traffic Left Only' (R2-14_L) sign as a replacement the 'No Right Turn Sign' to enforce the left-in left-out arrangement.

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Transport for NSW (item 10)	Zebra Crossing	Concerns are raised with the provision of a pedestrian (zebra) crossing on Andalusian Way, north of Road 01. The pedestrian crossing may impact the safe and efficient operation of the traffic signals at Carrington Rd / Andalusian Way, though noting that this would be dependent on the traffic volumes. Should this not be an issue, consideration should be given to providing a raised pedestrian crossing instead and to removing the pedestrian facilities / kerb ramps south of Road 01.	The Applicant agrees with a raised pedestrian crossing on Andalusian Way. Andalusian Way is a local street that serves the metro station and wider residential precinct. The proposal for a raised pedestrian crossing (with clear sight lines at this location) will provide safe crossings at the intersection of Andalusian Way / Mandala Parade given the key desire line between Precinct East and the metro station (in the same form of crossing on the Mandala Parade approach). This form of crossing to support a key desire line for walking is aligned with <i>TfNSW Road User Space Allocation Procedure</i> . The location of the proposed crossing on Andalusian Way is exactly the same distance from Carrington Road as the crossing on Doran Drive and is not expected to pose any additional safety concerns. In the instance of traffic queuing along Andalusian Way, it was agreed that a raised pedestrian crossing would be a safer outcome for pedestrians than the removal of the new crossing or its replacement with a pedestrian refuge.
Transport for NSW (item 11)	Drainage pipe	Road 01 – shared path shows drainage pipe and pits in the middle of the road. This is not a good practice and not in accordance with Austroads guidelines. Drainage infrastructure should be located outside the trafficable area for all road users as much as possible including placing pits outside of shared paths (refer Austroads Guide to Road Design Part 5: Drainage-General and Hydrology Considerations, Clause 5.1). On low speed roadways, it is desirable that pit lids are also located outside of traffic lanes as the lids can cause impacts, noise, come loose and cause safety problems and, of course, traffic will be disrupted with future access required for inspection and maintenance (refer Austroads Guide to Road Design Part 5: Drainage-General and Hydrology Considerations, Clause 2.5.5). Suggest investigating possibility of drainage infrastructure to be located at a kerb side of the road. Concerns are raised whether pavement surface flow widths at shared path (road 01) are in accordance with design criteria, in particular as proposed dish drain (DD2) has very limited capacity. The proponent should demonstrate compliance	The central dish drain and stormwater infrastructure included as part of the shared zone within Road No.1 has been proposed as an alternative to the conventional road environment (generally consisting of road pavement with central crown, concrete kerb and gutter lining each side) and provides compliance for the following reasons: • The Practice/General section of the TINSW Technical Direction TTD 2016/001 for the Design and implementation of shared zones including provision for parking notes: • A shared zone should not look like a normal road environment and requires a self-enforcing road environment. Kerbs should generally not be provided in a shared zone to ensure a discernible change in the environment from the surrounding roads, and to facilitate the ease of movement and indicate the priority for pedestrians, especially disabled pedestrians. • The detailed design works considers both Clause 2.5.5 and Clause 5.1 of the Austroads Guide to Road Design, Part 5: Drainage-General and Hydrology Considerations; to ensure the safety of routine inspection/s and maintenance will have minimal impacts on vehicular traffic flow and avoids other shared zone users including pedestrians and cyclists. • The provision of drainage on either side of the road (conventional kerb side arrangement) would result in the need for additional drainage infrastructure. • Considering stormwater infrastructure has been proposed centrally within the road it is anticipated that vehicles will be able to avoid impacts and noise associated with lids, such impacts are considered negligible when compared to the alternative for drainage infrastructure being located on each side of the travel lane. • The central dish drain supports the intended to delineate separation for two-way vehicular traffic along the area of the shared zone where vehicular traffic is acceptable. • The possibility for drainage infrastructure located on either side of the road (conventional kerb side arrangement) was investigated, however, would detract away from the int

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