

## REVIEW COMMENTS RESPONSE FORM

**PROJECT NO. AND TITLE** S20240137 – Shakespeare Street/Cook Street Roundabout Safety and Design Review

**REVIEWED DOCUMENT** Draft 1

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#	Category	Findings	Recommendation
1	Speed Checks	The raised courtesy crossings have a ramp width of 1.5 m; therefore, the reviewer has assumed the ramp grades to be 1:15. According to research studies and Austroads AP-R642-20 on the Effectiveness and Implementation of Raised Safety Platforms, the comfortable speed over a ramp grade of 1:15 is 30 km/h.	Should the ramp grade be less than 1:15 after construction, the comfortable speed over the ramp would exceed the safe system threshold for vulnerable users.
2	Speed Checks	The reviewer has undertaken 85th percentile car and 6 m van tracking through the designed roundabout; the speeds of these vehicles can exceed 50 km/h.	Consider further speed reduction through: <ul style="list-style-type: none"> <li>• Increase in roundabout central island radius</li> <li>• Further widening the roundabout mountable apron radius</li> <li>• Further widening the northeastern kerbline</li> <li>• Straightening and narrowing lane widths</li> <li>• Diagonal shoulder marking to remove unused area</li> </ul>
3	Vehicle Tracking Checks	The reviewer has been informed that Fonterra milk trucks, of up to 22 m truck and trailer, will be navigating all approaches of the roundabout. Additionally, 19.45 m semi-trailer trucks have been observed travelling in multiple directions.	Consider undertake vehicle tracking using the dual design vehicles of 22 m truck and trailer and 19.45 m semi-trailer trucks to ensure that the design does not impede vehicular movements, while simultaneously tightening the roundabout to optimise speed reduction.

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4	Raised safety platform	The approach ramp for the proposed raised safety platform for the northbound direction of Shakespeare Street is not orientated perpendicularly to the traffic flow. This misalignment could cause the front wheels of a vehicle to rise and fall not concurrently, potentially leading to instability and affect the safe operation of larger vehicles such as buses and heavy commercial vehicles.	Consider realigning the raised safety platform approach ramp to orientated perpendicularly to the traffic flow.
5	Raised safety platform	The northern approach on Shakespeare Street serves as both a bus route and a high-volume route for heavy commercial vehicles. The proposed configuration of the raised safety platform could create discomfort and safety issues for bus passengers and heavy commercial vehicles, as well as significantly increase journey times for buses.	Consider bus-friendly or Swedish-style speed table configuration.
6	Walking and Cycling	A high number of cyclists were observed crossing and traveling at the roundabout. Due to the high volume of traffic, especially at peak times, cyclists are required to wait for extended periods of time.	Consider installing cycle holding rails at the crossings to provide support to cyclists at crossing points.
7	Walking and Cycling	There are large number of commercial driveways on Cook Street, which conflicted with the shared path. This could increase the conflicts between vehicles accessing the driveways and path users.	Consider implementing the NZTA 'High-Use Driveway Treatment' across these driveways to highlight the presence of high conflict zone
8	Walking and Cycling	An accessway adjacent to 58 Shakespeare Street provides access to Sheridan Crescent. Its direct alignment with the crossing point may increase the risk of cyclists crossing without checking.	Consider realigning the crossing point away from the access to reduce cyclist speed approaching the crossing point.
9	Traffic Services	The dragon tooth markings at the proposed raised safety platform is incorrect.	Consider amending the dragon tooth marking as specified in the NZTA Pedestrian Network Guide (PNG).
10	Traffic Services	The 'Keep Clear' marking outer edges should be perpendicular to the traffic flow, as it serves as a holding line for the stopping vehicles.	Consider realigning the outer edges of the 'Keep Clear' marking to be perpendicular to the traffic flow.
11	Traffic Services	The following signages are missing: <ul style="list-style-type: none"> <li>R2-3 'Priority Give Way Roundabout' signs must be provided on the left side of the approaches to the roundabout according to TCD manual. R2-3 sign should also be installed on the right side on the islands as per TCD manual.</li> </ul>	Consider installing these signages as part of the construction.

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		<ul style="list-style-type: none"> <li>A A13-1 'Intersection Direction' sign should be considered at the corner of the traffic islands to enhance guidance for vehicles, especially in low light conditions.</li> </ul>	
12	Tactile Pavers	<ul style="list-style-type: none"> <li>Warning tactile pavers are required to span the full width of the crossing, in accordance with RTS14: Guidelines for Facilities for Blind and Vision-Impaired Pedestrians (RTS14), to ensure they are not missed by visually impaired pedestrians.</li> <li>Directional tactile pavers are required only where the path deviates from the continuous accessible route, as stated in the RTS14 guidelines.</li> </ul>	Ensure the tactile pavers configuration aligns with the RTS14 guidelines to enhance safety for visually-impaired pedestrians.
13	Stormwater	Stormwater design has not been provided for assessment, therefore reviewer cannot assess the adequacy of the stormwater management. However, given the downhill grade to the north, stormwater consideration such as catchpits should be installed upstream of the raised safety platform.	Consider install drainage system at the raised safety platform.
14	Utility Services	Existing underground services have not been provided for assessment; therefore, the reviewer cannot assess the potential conflicts with the proposed design. The construction of the roundabout upgrade, including central island widening, concrete mountable apron, kerbs and channels, raised safety platform, and pavement reinstatements, could potentially conflict with existing underground services.	Ensure all utility services are located prior to the commencement of construction.
15	Pavement	The existing pavement at the roundabout is deteriorating, and the proposed raised safety platform is likely to exacerbate this due to the fatigue movements from vehicles braking, stopping, and accelerating.	Consider rehabilitating the pavement adjacent to the proposed raised safety platform.