NZTA Rolleston Access Improvements NoR - Package 1 Transport review

Executive Summary

Abley Limited (Abley) has been engaged by Selwyn District Council (Council) to provide independent transport planning advice in respect of Notices of Requirements (NoR) in Rolleston prepared by NZ Transport Agency Waka Kotahi (NZTA) for the SH1 Rolleston Access Improvements Project.

SH1 Rolleston Access Improvements Project has been divided into two packages:

- Package 1 - comprising the construction and operation of a new roundabout and associated improvements at the intersections of SH1 and Dunns Crossing Road/Walker Road and associated works.
- Package 2 – comprising the construction and operation of the balance of the Rolleston Access Improvements including an overpass of SH1 connecting Rolleston Drive North and Jones Road, changes to nearby intersections (including Hoskyns Rd, Tennyson St, and Rolleston Drive South) and associated works.

Our review of the NoR is limited to the potential transport effects on Selwyn District Council's roading network, and any effects on the safe access to properties directly affected by the NoR. We have not reviewed potential NoR effects within NZTA's existing transport corridor given this is a matter for NZTA, for example we have not reviewed safety aspects of the design of works that will remain in NZTA ownership. Nor have we taken a position on the extent of the NoR boundaries over third party land, other than where this might affect access to the transport network.

We have reviewed lodged NoR documents and s92 responses and make the following recommendations:

- That further discussion occurs between NZTA and CSI Property Limited to ensure the constructed form of the SH1/Dunns Crossing Road intersection can accommodate future traffic demands, including development within land recently rezoned to the west of Dunns Crossing Road. Noting that prior modelling delivered through the Plan Change rezoning processes established that two right turn lanes on the from Dunns Crossing Road approach are required into SH1, ideally the roundabout should be constructed to cater for this demand. This will avoid additional costs and disruption that would result if NZTA only construct a single circulating lane for right turns out of Dunns Crossing Road. In the context of the NOR it is understood that the designation footprint is sufficient to enable the larger roundabout to be designed and constructed. Refer to our discussion in Section 2.1.
- More modelling assessment work is undertaken to ensure the Detailed Business Case (DBC) traffic model replicates the current levels of congestion on the network and revisit the future modelling assessment accordingly. This would provide a more robust representation of the extent to which the design of the roundabout will satisfactorily manage future traffic demands, whether the NOR footprint is sufficient to accommodate this design and whether there are further impacts across the local transport network which require further mitigation. The risk in the context of the NOR is that the proposed infrastructure will be under-engineered and when constructed the performance of the SH1 / Dunns Crossing / Walker Road roundabout and other parts of the local road network will be much worse (that is with more congestion and delay) than modelled. Refer to our discussion in Section 2.1.
- Further information be provided to demonstrate that the matters raised in section 5.3 of the Flow economic assessment peer review (included in the DBC Appendix R) have been agreed between the modelling team and the peer reviewer. We note that the DBC Appendix S includes additional future year modelling of the scheme but it is unclear whether Flow have reviewed this content and/or confirmed that it has been signed off through the peer review process. Refer to our discussion in Section 2.1.
- That NZTA continues to work with Council to align local road improvements as required to manage the traffic effects of Package 1 and Package 2 on the local road network. We

recommend that Council consider requesting a Network Integration Management Plan condition. Refer to our discussion in Section 2.1.

- That Council confirm with its internal Strategic Transport Lead whether it intends to provide a walking and cycling path along the southern side of SH1, identified in Council's Walking and Cycling Strategy 2018. The SH1/Dunns Crossing Road roundabout may foreclose the opportunity to provide this link. Refer to our discussion in Section 2.2.
- That Council request that the CTMP condition be expanded to include the requirements and objectives from section 7.5.2 of the ITA including clearly addressing property access for affected parties. Refer to our discussion in Section 3.1.
- That Council consider requesting a condition requiring assets vested to Council to be designed in accordance with Council's Engineering Code of Practice. Refer to our discussion in Section 3.2.

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Quality Assurance Information

Prepared for	Selwyn District Council
Project number	SDC-J084
Prepared by	Dave Smith and Mat Collins
Reviewed by	Dave Smith

Date issued	Status	Approved by
25 February 2025	A	Dave Smith

1. Introduction

Abley Limited (Abley) has been engaged by Selwyn District Council (Council) to provide independent transport planning advice in respect of Notices of Requirements (NoR) in Rolleston prepared by NZ Transport Agency Waka Kotahi (NZTA) for the State Highway 1 (SH1) Rolleston Access Improvements Project.

SH1 Rolleston Access Improvements Project has been divided into two packages:

- Package 1 - comprising the construction and operation of a new roundabout and associated improvements at the intersections of SH1 and Dunns Crossing Road/Walker Road and associated works.
- Package 2 – comprising the construction and operation of the balance of the Rolleston Access Improvements including an overpass of SH1 connecting Rolleston Drive North and Jones Road, changes to nearby intersections (including Hoskyns Rd, Tennyson St, and Rolleston Drive South) and associated works.

This report summarises our review of Package 1. In preparing this report we have taken the following documents into consideration:

- Notice of Requirement for Alteration of a Designation – Designation NZTA-1 – State Highway 1 prepared by Mr Pearson for NZ Transport Agency dated 25th October 2024.
- Package 1 Assessment of Effects on the Environment (AEE), prepared by NZTA, dated 30 September 2024 – introduction and transport sections only.
- AEE Appendix H Integrated Transport Assessment (ITA), prepared by Beca, dated 29 September 2024.
- AEE Appendix C General Arrangement revision C, prepared by Beca, dated 11 October 2024.
- AEE Appendix D Resident Access Plan, prepared by Beca, dated 9 August 2024.
- Consent Order issued by the Environment Court in relation to ENV-2023-CHC-113, dated 31 October 2024.
- S92 responses from Beca, dated 4 December 2024 and 3 February 2025.

The designation extent of Package 1 is shown in Figure 1.1, and includes:

- A new roundabout at the intersection of SH1/Dunns Crossing/Walkers Road.
- Realignment of Dunns Crossing Road and the formation of a cul-de-sac on Dunns Crossing Road to maintain existing property accesses.
- Realignment of Walkers Road intersection.
- Provision of a new shared path for cyclists and pedestrians, including a subway beneath SH1 between Dunns Crossing Road and Walkers Road.
- Provision of a new rail level crossing for Walkers Road and the shared path.

Our review of the NoR is limited to the potential transport effects on Selwyn District Council's roading network, and any effects on the safe access to properties directly affected by the NoR. We have not reviewed potential NoR effects within NZTA's transport corridor given this is a matter for NZTA. Nor have we taken a position on the extent of the NoR boundaries over third party land, other than where this might affect access to the transport network.

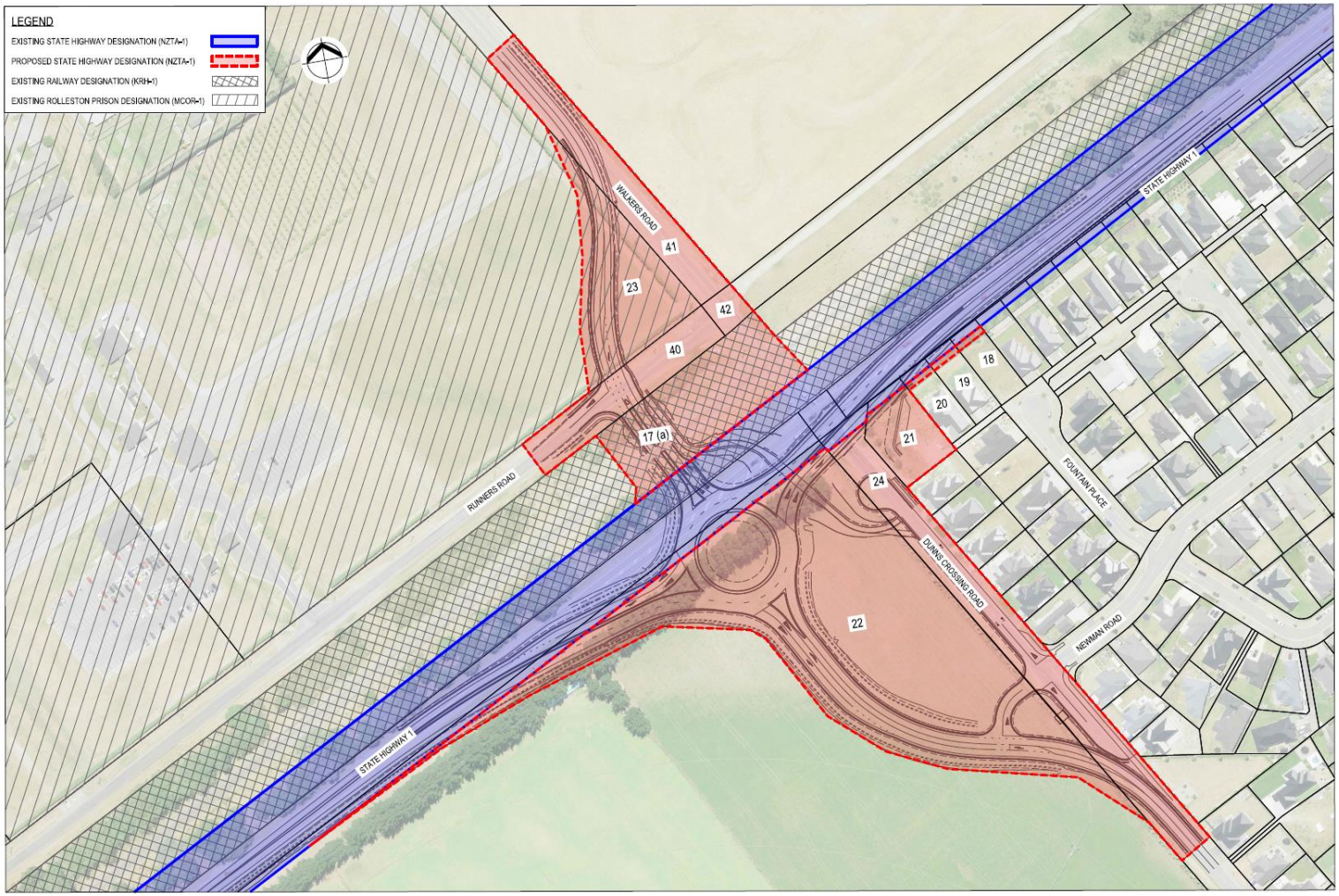

Figure 1.1 Package 1 Designation extent (Source: Notice of Requirement for Alteration of a Designation)

2. Review of transport matters

The following subsections summarise the key transport matters that we considered during the review of the lodged application, which include:

- Transport modelling and project interdependencies
- Design matters.

2.1 Transport modelling and project interdependencies

The ITA reports on the Paramics transport model, which has been used to assess the transport effects of Package 1 and Package 2. Following our review of the Package 1 application documents we requested further information, which we have summarised below:

- We requested a copy of the peer review report and other transport modelling documents from the Detailed Business Case (DBC), so we could review the underlying Paramics transport model that the NoR relies upon.
- We requested further details on the inputs, assumptions, and sensitivity testing of the Package 1 network, particularly as the Paramics transport model did not include extensive urban development anticipated by several Plan Changes west of Dunns Crossing Road and recently enabled by a Consent Order (Decision No. [2024] NZEnvC 269).
- We requested further information about the effects on the future local road (Council) network, as the Paramics transport model included local road improvements that currently do not have funding, and the ITA had limited detail on the effect on local road capacity.

These matters are discussed below.

Paramics transport model peer review

The DBC documentation was provided, and it was noted that the transport modelling had been peer reviewed during the preparation of the DBC. Specifically Appendix R of the DBC includes peer review documents including:

- A peer review of the Transport Model Development Report (which is Appendix G of the DBC) undertaken by Flow Transportation Specialists (Flow) and dated 22 June 2021.
- A response to the aforementioned Flow transport model peer review prepared by Stantec dated 13 June 2023.
- A peer review of titled Review of Economic Assessment undertaken by Flow Transportation Specialists (Flow) and dated 7 November 2022 which includes a Traffic Modelling Review focusing on the future year models in section 5.3 of the Flow technical note.
- A response to the aforementioned economic assessment peer review prepared by Stantec dated 20th June 2023, however it is noted that responses to the future traffic modelling section 5.3 are not included in this document.

As prior peer reviews have been undertaken, Abley have not undertaken our own review of the models, but instead have relied on the comments and outcomes of the Flow peer reviews.

We agree and accept the findings of the modelling peer review as documented in the 22 June 2021 technical note. However we consider there is one point which has not been satisfactorily closed off through the peer review process.

The final bullet point of the Flow technical note states the following (copied verbatim and in its entirety):

> *Furthermore, it seems that the modelled travel times are consistently low compared to the observed data. That is, the total times are 13% faster in the morning peak, 15% in the inter peak and 16% in the PM peak. The report acknowledges this trend, and suggests that it is reasonably common for transport model comparisons with Google travel time surveys. We are*

not aware that this is the case, and it may be of concern that the model under-represents travel times within the study area. This may lead to an overly conservative estimate of the benefits of the Project, or it may mean that an option is predicted to operate satisfactorily, when in fact it should be predicted to be operating closer to or at capacity. However, given that the traffic flow validation appears to be good (ie the flows are not consistently low, based on the lines of best fit and the traffic flow scatterplots), this may be considered to be a ***Moderate, rather than a significant issue – if*** *it means that the free flow/link speeds rather than congestion* at intersections, are the predominant factors leading to the underestimates in travel times.

The 13th June 2023 response to this issues simple states "*Some minor overestimations of link free-flow speeds. Intersection operation / capacity / delay robust.*", but does not provide additional assessment of justification to address this matter.

We consider this is a significant issue as:

- the tables in section 6.4 of the DBC Appendix G consistently show that nearly all observed travel times are greater than the modelled travel times, in the majority of cases by more than 15%.
- this means that the model is underpredicting the time taken for vehicles to traverse the network at all times of day.
- the travel time graphs included in Appendix D of the DBC Appendix G traffic modelling report show steep slopes (and differences between observed and modelled slopes) over short sections of each route, indicating that for these sections there is substantial more observed congestion than modelled congestion. The differences herein are not in our view explained by differences in free/flow/link speeds but reflect a model which underpredicts congestion.
- when future traffic growth is added to the model, the impact of the addition traffic will be under-estimated as the model is under-predicting congestion.

The risk in the context of the NOR is that the proposed infrastructure will be under-engineered and when constructed the performance of the SH1 / Dunns Crossing / Walker Road roundabout and other parts of the local road network will be much worse (that is with more congestion and delay) than modelled.

It is strongly recommended that more assessment work is required to replicate the current levels of congestion on the network and revisit the future modelling assessment accordingly. This would provide a more robust representation of the extent to which the design of the roundabout will satisfactorily manage future traffic demands, whether the NOR footprint is sufficient to accommodate this design and whether there are further impacts across the local transport network which require further mitigation.

We further recommend that further information be provided to demonstrate that the matters raised in section 5.3 of the Flow economic assessment peer review have been agreed between the modelling team and the peer reviewer. We note that the DBC Appendix S includes additional future year modelling of the scheme but it is unclear whether Flow have reviewed this content and/or confirmed that it has been signed off through the peer review process.

West of Dunns Crossing Road Plan Changes

The Paramics transport model did not include urban development along the western side of Dunns Crossing Road, as sought by Plan Changes 73, 80 and 81, and a similar submission on the Proposed Selwyn District Plan by CSI Property Limited (the CSI Property land). The extent of this rezoning is shown in Figure 2.1.

Subsequent to the lodgement of the NoR, a consent order was issued by the Environment Court which approved the rezoning of the CSI Property land, enabling up to 3,770 households and several small commercial centres. Development of the CSI Property land is anticipated to have the potential to generate in the order of 3,200-3,400 vehicle movements in peak hour (based on 0.85-0.9 trips per household).

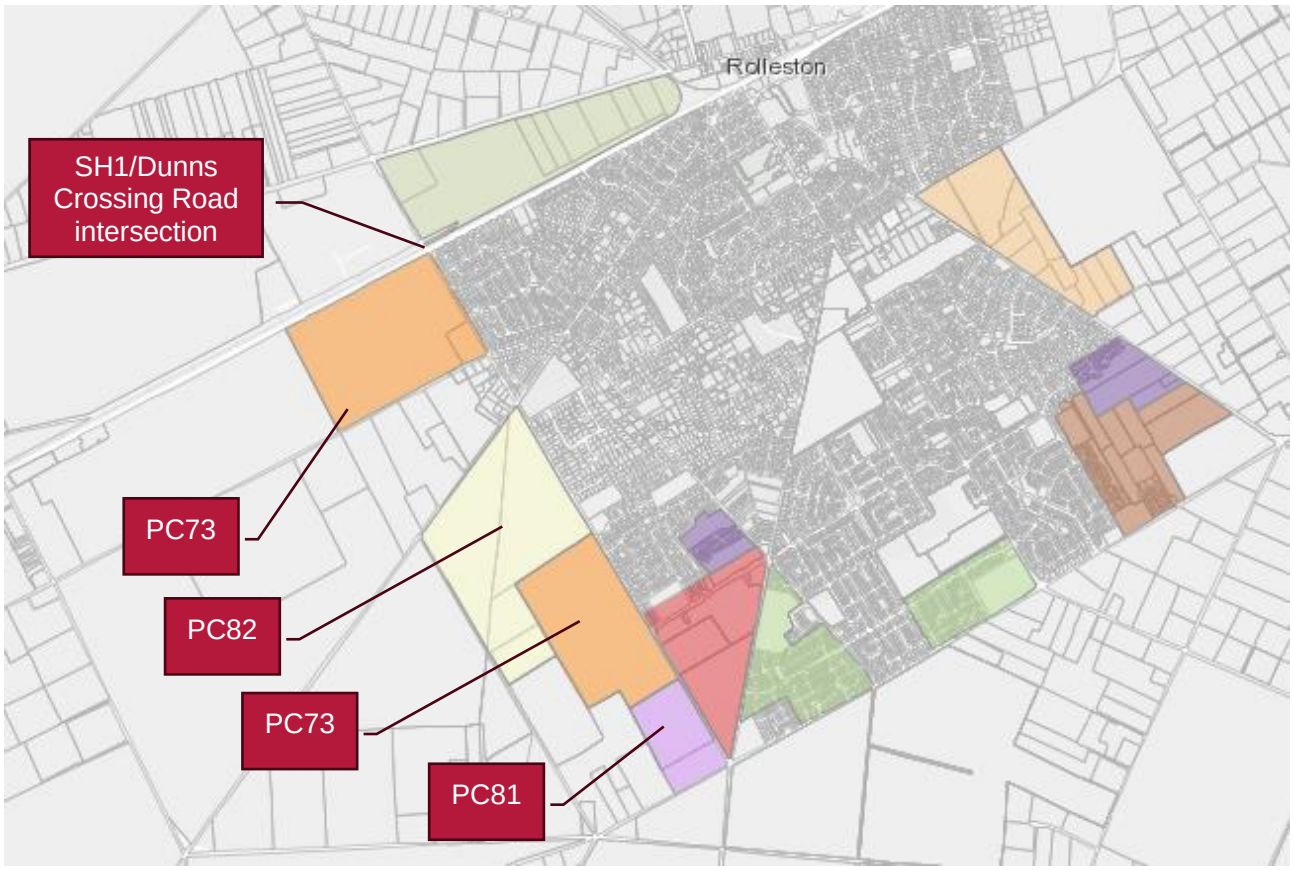

Figure 2.1 West of Dunns Crossing Plan Changes (Source: Selwyn District Council[1])

While the ITA states that the traffic effects of the CSI Property land were assessed through the respective Plan Changes, we note that the modelling for the rezonings assumed a different transport network than that assumed by the NoR. The modelling for the rezoning assumed:

- Two right turn lanes out of Dunns Crossing Road and a roundabout at Rolleston Drive south with two right turn lanes[2]
- Dual circulating lanes on all approaches of the SH1/Dunns Crossing Road roundabout[3].

As the NoR only proposes a single circulating lane at the SH1/Dunns Crossing Road roundabout, we are concerned that the NoR design will not have sufficient capacity to accommodate future traffic volumes of the CSI Property land. Further, given some of the assessments for the CSI Property land also assumed a roundabout may be installed at the SH1 / Rolleston Drive south roundabout, they are also likely to have assumed lower levels of traffic demand through the Dunns Crossing roundabout compared to the NoR.

We requested sensitivity testing to explore this matter, however, as this request was refused, we undertook preliminary assessment ourselves[4]. We found that, in the long-term future when the CSI Property land was accounted for:

[1] https://www.selwyn.govt.nz/property-And-building/planning/strategies-and-plans/selwyn-district-plan/plan-changes
[2] Refer section 2.2 of https://www.selwyn.govt.nz/__data/assets/pdf_file/0009/396216/Appendix-D-Integrated-Transport-Assessment.pdf
[3] Refer Figure 12 of https://www.selwyn.govt.nz/__data/assets/pdf_file/0016/530206/Two-Chain-Road-Appendix-B-Transport.pdf; figure 14 of https://www.selwyn.govt.nz/__data/assets/pdf_file/0006/571245/Appendix-D-Integrated-Transport-Assessment-Including-Appendix-1,2-and-3.pdf; Refer paragraph 18 of https://www.selwyn.govt.nz/__data/assets/pdf_file/0003/1084539/PC81-and-PC82-evidence-Chris-Blackmore.pdf
[4] SH1 Dunns Crossing Road Walkers Road Intersection - Proposed Roundabout Upgrade and Right Turn Capacity from Dunns Crossing Road technical note, prepared by Abley, dated 19 December 2024.

- The single right turn lane from Dunns Crossing Road, as proposed by the NoR, is likely to have poor performance in the morning peak period with high levels of congestion on Dunns Crossing Road and on local roads throughout Rolleston.
- A dual right turn lane arrangement for Dunns Crossing Road, is required to ensure the roundabout and the local transport network performs satisfactorily.

In response to further information requests, Beca confirmed that a dual right turn and dual circulating lane could be provided within the NoR boundary, as shown in Figure 2.2. We are satisfied that the NoR does not foreclose the opportunity for the SH1/Dunns Crossing Road intersection to provide the traffic capacity needed to support development within the CSI Property land.

We are concerned that, if the single circulating lane is constructed as proposed in NZTA's design, this will necessitate future reconstruction of the intersection to provide the dual right lane arrangement needed to support development within the CSI Property land. This is likely to add additional construction costs and additional disruption to the transport network during construction. Further discussion is needed between NZTA and CSI Property Limited to ensure the constructed form of the SH1/Dunns Crossing Road intersection can accommodate future traffic demands.

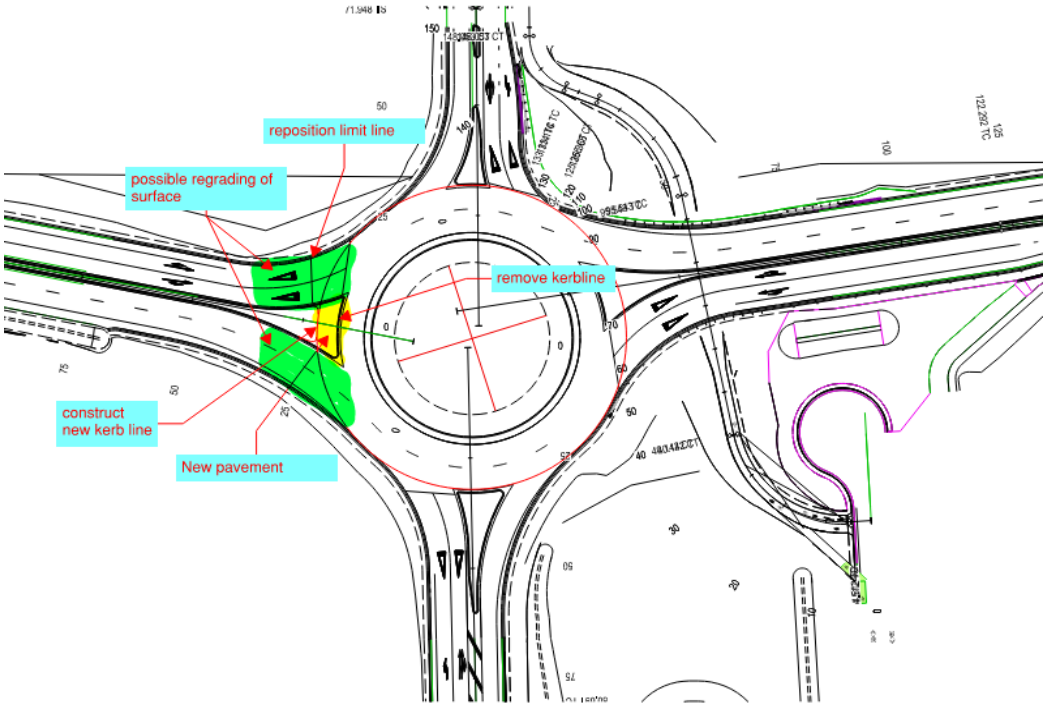

Figure 2.2 Potential method to incorporate a dual circulating lane for double right turn lanes from Dunns Crossing Road into SH1 (Source: S92 response dated 3 February 2025)

Effects on the future local road network

Section 5.2.3 details local road improvement projects that have been adopted in the Paramics transport model. We noted that some of these differ from our understanding of likely future local roading projects, and that funding of many Council transport projects was uncertain.

Beca responded stating that Rolleston is a rapidly growing area with a range of localised upgrades to the network needed to support growth in the surrounding area. They noted that the timing and form of these upgrades are subject to significant uncertainty regarding funding and prioritisation. Further, Beca states that the upgrades assumed in the ITA were agreed with the Client group, including Council, as part of the Detailed Business Case.

We agree that Rolleston is rapidly growing and understand that Council is operating within a constrained funding environment, including the extent of NZTA co-funding for local road improvements. We emphasise that local road improvements will be required to manage the traffic effects of Package 1 and Package 2, for example Table 6-7 of the ITA demonstrates that delays at the intersection of Levi Road and Weedons Road increase from 60 seconds to 669 seconds in the 2038 morning peak with the text noting that an upgrade is identified in the Regional Land Transport Plan and Selwyn District Council Long Term Plan.

Ableyhas previously advised Auckland Council on a series of interlinked NoRs for future transport corridors in North Auckland, lodged by NZTA and Auckland Transport. The following Network Integration Management Plan condition was recommended, to manage uncertainty around funding and delivery timeframes of the various corridors and ensure coordination between road controlling authorities. We recommend that Council consider requesting that this condition be applied to Package 1.

xx. Network Integration Management Plan (NIMP)

a. *At least six (6) months prior to the start of detailed design for a Stage of Work, the Requiring Authority shall prepare, in collaboration with other relevant road controlling authorities, a Network Integration Management Plan (NIMP).*

b. *The objective of the NIMP is to identify how the Project will integrate with the planned transport network in the Rolleston area to achieve an effective, efficient and safe land transport system. To achieve this objective, the NIMP shall include details of the:*

    a. *project implementation approach and any staging of the Project, including both design, management and operational matters; and*

    b. *sequencing of the Project with the planned transport network, including both design, management and operational matters.*

2.2 Transport design

We requested further information about several aspects of the design:

- Confirmation of driver, pedestrian and cyclist sightlines. These queries were satisfactorily addressed where they affect Council's road network, although we note that the driver sightline on the approach to the Dunns Crossing Road relies on a clear line of sight outside of the road carriageway – this can be addressed through detailed design and subsequent safety audits.
- Integration with potential future pedestrian and cyclist infrastructure. Refer to our discussion below.
- Design aspects of the Dunns Crossing Road realignment.

These matters are discussed below.

Integration with potential future pedestrian and cyclist infrastructure

We identified that the SH1/Dunns Crossing Road roundabout may foreclose the opportunity to provide a walking and cycling path along the southern side of SH1, identified in Council's Walking and Cycling

Strategy 2018[5], due to a 2m wide and 75m long pinch point between a roadside barrier and retaining wall, as shown in Figure 2.3.

Beca responded stating that NZTA and Council have indicated that they are not planning a future path connection in this location. We recommend that Council confirms this with its internal Strategic Transport Lead.

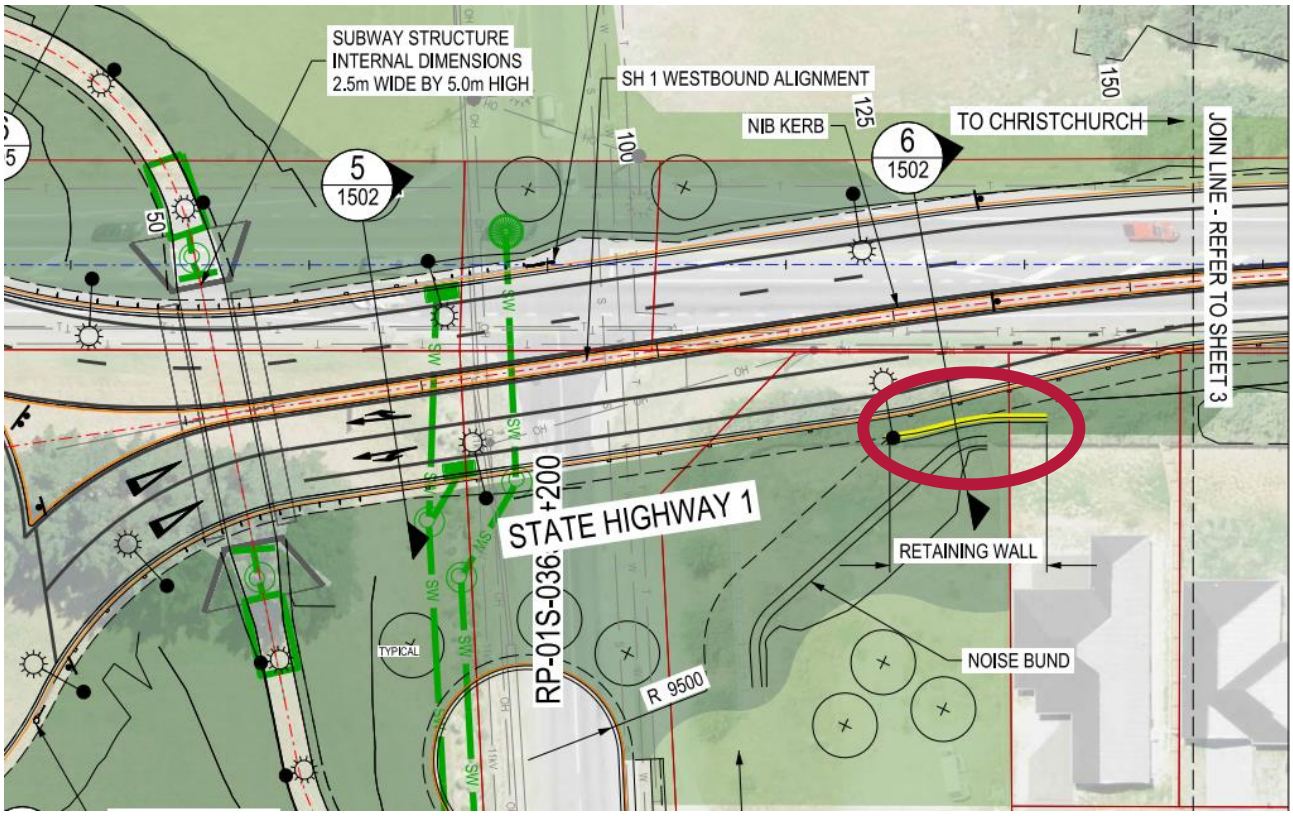

Figure 2.3 Potential pinch point for future path adjacent to SH1

Dunns Crossing Road realignment

The proposed works include realigning Dunns Crossing Road and creating two short no exit sections of Dunns Crossing Road, as shown in Figure 2.4. The works propose a cul-de-sac turning head at the northern end, but there is no turning head at the southern end.

While appreciating that a southern cul-de-sac head would require a significant increase in land acquisition on the western side of Dunns Cross Road, we queried whether the proposed design was practical for future users. We requested:

- Heavy vehicle tracking to demonstrate how Council waste collection vehicles could manoeuvre within the southern section
- Light vehicle tracking for 388 Dunns Crossing Road to demonstrate whether occupants could manoeuvre into and out of the property
- Commentary on the practicalities of Council having to maintain/replace the carriageway of Dunns Crossing Road the vicinity of 388 Dunns Crossing Road, as the tapering of the carriageway may lead to accumulation of debris and difficulty for laying new carriageway surfacing.

[5] Selwyn Walking and Cycling Strategy 2-18, Appendix C.1: Rolleston Township Network Plan, available online at https://www.selwyn.govt.nz/__data/assets/pdf_file/0011/282566/Final-2018-Walking-and-Cycling-Appendices-V4-Adopted-Resized.pdf

Beca provided Drawing 3338703-10-CA-9021, showing the heavy vehicle turning pad located to the south. While this did not directly respond to our request for vehicle tracking assessments, we consider that the NoR boundary provides enough space to allow the design to accommodate vehicle tracking requirements, and that this can be addressed during detailed design including road markings and signage to confirm the purpose of this faciity.

Regarding the maintenance of the carriageway, Beca responded stating that the design will be further discussed and agreed with Council during detailed design. We accept this response and consider that the designation boundary provides sufficient space for enable flexibility in the final design.

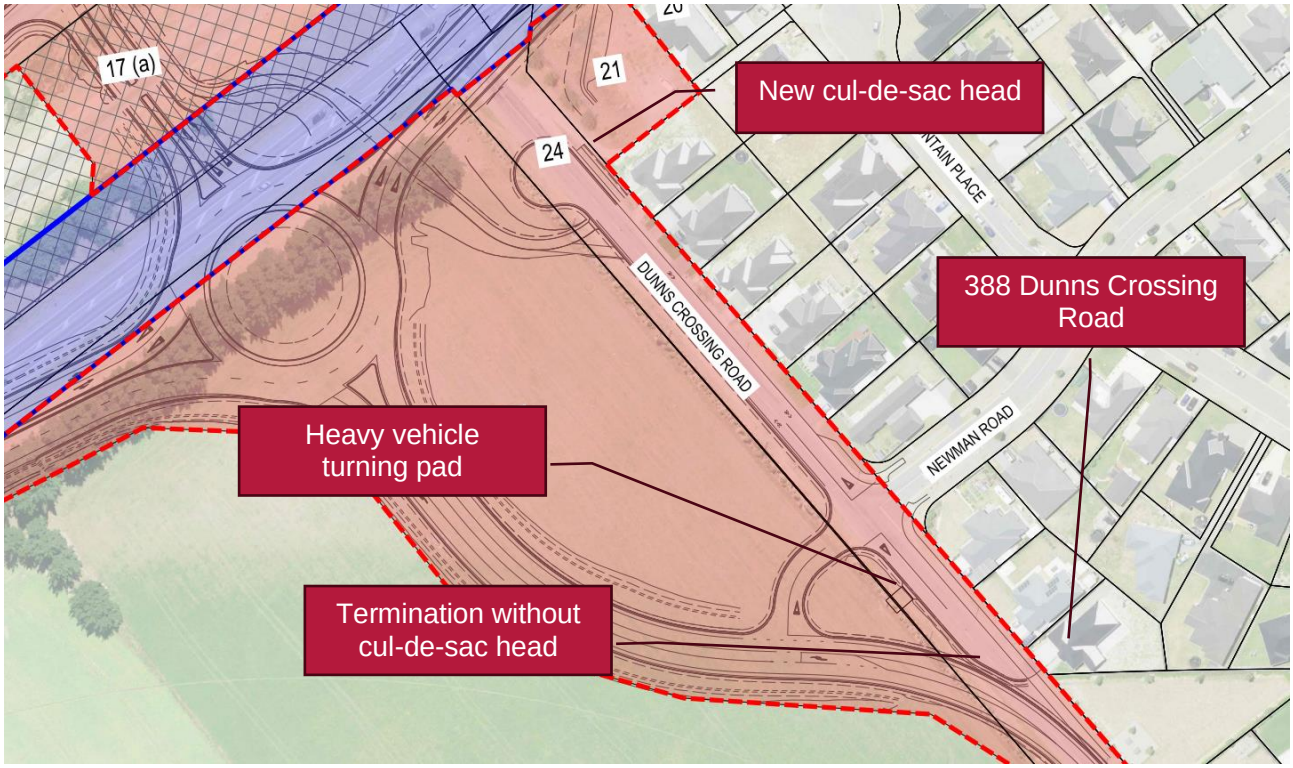

Figure 2.4 Dunns Crossing Road cul-de-sac and dead head

3. Conditions of designation

We recommend that several matters are addressed through conditions of designation.

3.1 Construction Traffic Management Plan (CTMP)

We recommend that Council request that the CTMP condition be expanded to include the requirements and objectives from section 7.5.2 of the ITA. This provides an important framework for the later preparation of CTMPs during project implementation. We recommend the following amendments, shown in red, to the proposed CTMP condition (per Beca S92 response dated 4 December 2024).

> ***4. Construction Traffic Management Plan (CTMP)***
>
> *CTMP shall be prepared prior to the start of construction, in consultation with Selwyn District Council. The objective of the CTMP is to avoid, remedy or mitigate, as far as practicable, adverse construction traffic effects. The Construction Traffic Management Plan (SEMP 004) shall include, but need not be limited to, the following:*

1. *the staging of the works, including details of any proposals to work on multiple sections of the Project route concurrently, supported by traffic modelling assessment where multiple worksites may have cumulative effects;*
2. *details of traffic management activities proposed within each section of the project;*
3. *the potential effects of traffic management activities and how these will be managed to minimise disruption on the State Highway and local roads as far as is practicable, and ensure safety for all road users;*
4. *a process for the development and submission of site specific traffic management plans;*
5. *the potential effects of loading and parking activities on the local road network and how these will be managed;*
6. *provide for effective communication and the gathering of feedback from key affected parties, including demonstrating how access to existing properties can be maintained and what alternatives are available where access is temporarily impacted;*
7. *monitoring, auditing and reporting requirements; and*
8. *training requirements for staff.*

3.2 Alterations to existing Council roading assets

As NZTA develops the detailed design for the works, further engagement will be required with Council to determine appropriate designs for assets that will ultimately be owned by Council. For example, changes to Dunns Crossing Road as discussed in Section 2.2. While we anticipate that NZTA will do this as a general approach to good partnership with Council, we suggest that Council consider requesting the following condition.

> ***xx. Local Road design***
>
> *All assets that will be vested to Council shall comply with Council's Engineering Code of Practice, unless otherwise agreed with Council.*

4. Summary and conclusions

We have reviewed the transportation matters associated with Notice of Requirement for Rolleston Access Improvements Project – Package 1, which has been lodged by New Zealand Transport Agency Waka Kotahi. The scope of this specialist transport report is to assist Council in determining the transport outcomes of the NoRs.

We have reviewed the lodgement documents and s92 responses and made the following recommendations:

- That further discussion occurs between NZTA and CSI Property Limited to ensure the constructed form of the SH1/Dunns Crossing Road intersection can accommodate future traffic demands, including development within land recently rezoned to the west of Dunns Crossing Road. Noting that prior modelling delivered through the Plan Change rezoning processes established that two right turn lanes on the from Dunns Crossing Road approach are required into SH1, ideally the roundabout should be constructed to cater for this demand. This will avoid additional costs and disruption that would result if NZTA only construct a single circulating lane for right turns out of Dunns Crossing Road. In the context of the NOR it is understood that the designation footprint is sufficient to enable the larger roundabout to be designed and constructed. Refer to our discussion in Section 2.1.
- More modelling assessment work is undertaken to ensure the Detailed Business Case (DBC) traffic model replicates the current levels of congestion on the network and revisit the future modelling assessment accordingly. This would provide a more robust representation of the

extent to which the design of the roundabout will satisfactorily manage future traffic demands, whether the NOR footprint is sufficient to accommodate this design and whether there are further impacts across the local transport network which require further mitigation. The risk in the context of the NOR is that the proposed infrastructure will be under-engineered and when constructed the performance of the SH1 / Dunns Crossing / Walker Road roundabout and other parts of the local road network will be much worse (that is with more congestion and delay) than modelled. Refer to our discussion in Section 2.1.

- Further information be provided to demonstrate that the matters raised in section 5.3 of the Flow economic assessment peer review (included in the DBC Appendix R) have been agreed between the modelling team and the peer reviewer. We note that the DBC Appendix S includes additional future year modelling of the scheme but it is unclear whether Flow have reviewed this content and/or confirmed that it has been signed off through the peer review process. Refer to our discussion in Section 2.1.
- That NZTA continues to work with Council to align local road improvements as required to manage the traffic effects of Package 1 and Package 2 on the local road network. We recommend that Council consider requesting a Network Integration Management Plan condition. Refer to our discussion in Section 2.1.
- That Council confirm with its internal Strategic Transport Lead whether it intends to provide a walking and cycling path along the southern side of SH1, identified in Council's Walking and Cycling Strategy 2018. The SH1/Dunns Crossing Road roundabout may foreclose the opportunity to provide this link. Refer to our discussion in Section 2.2.
- That Council request that the CTMP condition be expanded to include the requirements and objectives from section 7.5.2 of the ITA including clearly addressing property access for affected parties. Refer to our discussion in Section 3.1.
- That Council consider requesting a condition requiring assets vested to Council to be designed in accordance with Council's Engineering Code of Practice. Refer to our discussion in Section 3.2.

Appendix A.
Section 92 Transport Register of Responses

RFI Register - Transport Modelling

Document reference	SDC Request	NZTA Response	SDC Response (letter from Abley Attached)		NZTA Further Response
Transport					
25	Please provide a copy of the Paramics transport model peer review report and any associated formal model calibration and validation reports. In lieu of formal reporting please supply the model themselves.	The model development report including calibration and validation reports is included in Appendix G - Rolleston DBC - Model Development Report of the DBC.	We have not been provided with a copy of the Detailed Business Case. Please provide a copy of Appendix G of the DBC for our review.	Further information requested. NZTA to provide DBC appendicies to SDC.	NZTA to provide DBC appendicies to SDC.
26	Please provide evidence of any peer review of the Linsig and Sidra models and/or any associated formal reporting to evidence the calibration and validation of these models. In lieu of formal reporting please supply the model themselves.	As reported in Section 4.2 of the ITA, the Linsig models were only used to estimate signal timing settings to be used in the Paramics model for the Project. Subsequently, the Linsig models were not calibrated as the future scenarios do not currently exist. The SIDRA models were only used as a cross check of the Paramics model. The effects assessment relies only on the reported Paramics results. As neither Linsig nor Sidra models were used to assess the effects of the Project, it is not necessary to provide these models.	Noted. Refer to our response to Q25.	Resolved.	N/A
27	Please undertake a sensitivity test at 2038 in the morning and evening peak periods to demonstrate the impacts of the addition of traffic from the full development of PC73, PC80, PC81 and PC82 areas.	PC80 has been approved but was subject to its own effects assessment. The effects of PC80 were assessed with a roundabout assumed at the SH1 / Walkers Road / Dunns Crossing Road intersection. The only difference between the roundabout assumed for the PC80 assessment and the Project roundabout is that PC80 assumed two through lanes on Walkers Road and Dunns Crossing Road which merged to one lane shortly after the roundabout. The through volumes reported in the PC80 ITA are fairly low and would not be expected to require two approach and exit lanes especially given the spare capacity indicated by the ITA for these movements. A sensitivity test for PC80 is not considered necessary. As discussed in section 4.3 of the ITA, the effects of proposed Plan Changes (e.g. PC73, PC81, PC82) on the transport system will be assessed through an independent process. It is therefore not considered appropriate for this assessment of a transport project to demonstrate the impacts of those land use proposals.	We have undertaken a modelling assessment of the SH1/Dunns Crossing Road roundabout, comparing the design proposed by the NoR with the configuration assumed as part of PC73, PC81 and PC82, which included a double right turn for Dunns Crossing Road. Refer to our technical note in Appendix A. Our attached assessment demonstrates that a double right turn lane from Dunns Crossing Road to SH1, as was assumed in the assessment of PC73, PC80, PC81 and PC82, is required to ensure the roundabout and the local transport network performs satisfactorily. In our view it is critical for the intersection to ensure there is adequate space within the proposed designation boundary to provide for intersection that is needed to support PC73, PC80, PC81 and PC82. Please provide further information to demonstrate if a double right turn for Dunns Crossing Road can be accommodated within the designation footprint. Please also explain the rationale for assuming a single lane right turn from Dunns Crossing Road into SH1.	Further information requested	The proposed design was based on the preferred layout from the Rolleston Access Improvements (RAI) DBC where only a single right turn lane was provided from Dunns Crossing Road. NZTA has not agreed to the funding/implementation of additional changes outside of the preferred layout in the RAI DBC. The modelling undertaken demonstrates that the arrangement operates effectively prior to additional demands from these future developments, the timing of which is currently unknown. Regardless, the proposed designation is able to accommodate a design that allows for the implementation of a dual right turn lane from Dunns Crossing Road in the future, as shown below, should this be deemed necessary as these developments are implemented. This is able to be addressed through a s176a Outline Plan.
28	Provide detail of the future growth assumptions out to 2038 with respect to the extent of growth in Izone and number of additional households in Rolleston urban area.	The future growth assumptions are documented in section 2.2.2 of Appendix S - Rolleston DBC - Scheme Modelling and Economics report of the DBC are outlined below. of additional trips between the 2021 and 2038 demand scenarios are noted below: • Industrial Area, Bulk Retail Site South of Link Drive: 85% turn-over level of published 'almost 2,000 car park spaces' during typical weekday PM peak. • Southwest Acland Park Residential Area: 750-1000 additional households. • Northeast Branthwaite Residential Area: 400-500 additional households. • Southeast Farringdon Residential Area: 250-350 additional households. • Falcons Landing Residential Area: 250-350 additional households. The forecast assumptions have been agreed with the Client group and peer reviewed during the DBC process. The forecast models are considered to still be appropriate for the AEE. SDC Strategic Transport Lead Manager Andrew Mazey has been involved in these discussions and is in agreement with this approach.	We have not been provided with a copy of the Detailed Business Case. Please provide a copy of Appendix S of the DBC for our review.	Further information requested	Please see attached Appendix S of the DBC attached.
29	Section 5.2.3 details infrastructure assumptions out to 2038. It is noted that some of these differ from our understanding of likely future local roading projects including: a) Moore street extension – it is understood that funding for this is uncertain and this has been removed from Council's transport model. b) Lowes/Levi/Lincoln Rolleston Road intersection – To be upgraded to signals but is stated in results as a roundabout. c) Selwyn/Lincoln-Rolleston Road intersection – To be upgraded to a roundabout but stated to be a priority seagull. Please provide commentary as to the impact of any of these changes in local road projects on the modelling results and wider assessment of traffic effects.	Rolleston is a rapidly growing area with a range of localised upgrades to the network identified to support growth in the surrounding area. The timing and form of these assumptions are subject to significant uncertainty regarding funding and prioritisation. Therefore, it is appropriate to assume such upgrades, and these were agreed with the Client group including SDC (during the DBC). It is noted that the reference to Lowes/Levi/Lincoln Rolleston Road roundabout is a typographical error in the ITA and was in fact modelled as a signal. The other differences identified are remote from the Project and therefore changes in these assumptions will not have any material impact on the effects assessment of the Project.	Noted with thanks. We agree that Rolleston is rapidly growing and understand that Council is operating within a constrained funding environment, including the extent of NZTA co-funding for local road improvements. We emphasise that local road improvements will be required to manage the traffic effects of Package 1 and Package 2 and encourage NZTA to work with Council to align local road improvements as required	Resolved	N/A

30	Please comment on the impact of Christchurch Southern Motorway Stage 2 (CSM2) opening during the five year period over which Crash Analysis System (CAS) data has been assessed, on the crash analysis conclusions.	The influence of CSM2 had minimal impact on the safety at the SH1/Dunns Crossing Road/Walkers Road as this is approximately 3km downstream of the CSM2 extents with few viable alternative routes for vehicles coming to and from the south. Therefore, the crash history extracted from CAS is considered an accurate representation of the risk at the SH1/Dunns Crossing Road/Walkers Road intersection.	Noted with thanks.	Resolved	N/A
31	Confirmation is sought that these are hourly travel totals, correspond to the full Paramics study area and whether further changes in travel totals might be expected beyond the study area.	Table 6-2 and 6-3 in the ITA correspond to the full modelled period ie 3.5hrs in the AM, PM and 3hrs in the IP and to the full modelled extent as shown in Figure 4-1 of the ITA. The modelled extent is shown in Figure 4.1 of the ITA. The Paramics model extent is sufficient to capture the effects of Project.	Noted with thanks.	Resolved	N/A
32	Additional assessment is requested at 2038 to calculate the capacity of local roads to demonstrate that they will operate well and future flows not exceed capacity.	As reported in Section 3.1 of the ITA, the Project was developed with consideration of the network framework and hierarchy to focus traffic movements on arterial and major movement corridors. Site 6 and Site 9 represent Rolleston Drive and Jones Road respectively. These are primary traffic corridors and are expected to accommodate high volumes. With the scale of growth in these areas, it is expected that there will be capacity constraints particularly at intersections. Site 9 is proposed to be widened as part of the project. While the model shows some delay at the critical intersections, it does not indicate that the links are over capacity. It is therefore considered that these arterial roads can accommodate the higher flows predicted as a result of this Project and no further assessment is required.	Noted with thanks. Refer to our response to Q25 and Q29.	Resolved	N/A
33	Sections 6.6.2 and 6.6.3 present an assessment of anticipated reductions in DSIs. Please add a footnote or other reference to confirm the source of the models used for this assessment.	The Paramics models have been used to estimate the traffic volumes which inform the DSI assessment.	Please confirm that the equations (and which equations) in the NZTA's Crash Estimation Compendium has been used to estimate DSIs, based on Paramics model outputs.	Further information requested.	Conflict of flow intersection crash models have been sourced from the NZTA Crash Estimation Compendium (Models 7.1-7.4). These models have only been used where there is a fundamental change to the layout of the intersection (i.e. SH1/Dunns Crossing Road/Walkers Road, Rolleston Drive Extension/Jones Road, Rolleston Drive/Kidman Street). All other DSI assessments were based on scaling the crash history by the expected change in traffic volumes. In this instance, only Model 7.4 from the NZTA Crash Estimation Compendium was used to assess the SH1 / Dunns Crossing Road / Walkers Road intersection.
34	For the avoidance of doubt it is recommended that the requirement for an Level Crossing Safety Impact Assessment (LCSIA) be added to the condition set.	A Level Crossing Safety Impact Assessment (LCSIA) has been completed and approved by KiwiRail. As the LCSIA is not a NZTA document or approval process, it is not appropriate to form part of the condition set.	Noted with thanks.	Resolved	N/A
35	Commentary is requested on the likelihood and impact of these projects not being in place prior to Package 1 being operational.	The Project is not reliant on these improvements being undertaken as this Project is focused on improving safety at the SH1 / Dunns Crossing Road / Walkers Road intersection. There are no restrictions of movements at this intersection so wider network impacts are expected to be minimal. The local road networks projects are currently being progressed independently by SDC, as agreed with SDC as part of the DBC. These projects are subject to SDC procedures, so the Project is unable to influence the delivery of these projects. It is understood that SDC are currently on track to deliver these projects.	Noted with thanks. Refer to our response to Q25 and Q29.	Resolved	N/A
36	Please comment on the interrelationship between Package 1 and Package 2, and confirm whether any local road (Selwyn District Council) improvements are required to manage the effects of the Rolleston Access Improvements Project on local roads. Where interrelationship or dependencies exist, please confirm how this is proposed to be managed during the delivery of each Package.	This Project can be delivered immediately independent of Package 2 and SDC local road projects. While not relevant to this Project, as discussed in Section 3.4 of the ITA, the key interdependency of Package 2 is the Levi Rd / Weedons Rd intersection upgrade. This is expected to be managed with the on-going joint planning and maintenance of the network between SDC and NZTA.	Noted with thanks. Refer to our response to Q25 and Q29.	Resolved	N/A

37	It is recommended that the CTMP condition be expanded to include at a minimum the requirements and objectives from section 7.5.2 of the ITA. This provides an important framework for the later preparation of CTMPs.	See amended proposed condition, additions showed in red underlined text: A CTMP shall be prepared prior to the start of construction. The objective of the CTMP is to avoid, remedy or mitigate, as far as practicable, adverse construction traffic effects. *The Construction Traffic Management Plan (SEMP 004) shall include, but need not be limited to, the following:* *1. the staging of the works, including details of any proposals to work on multiple sections of the Project route concurrently;* *2. details of traffic management activities proposed within each section of the project;* *3. the potential effects of traffic management activities and how these will be managed to ensure safety for all road users;* *4. a process for the development and submission of site specific traffic management plans;* *5. monitoring, auditing and reporting requirements; and* *6. training requirements for staff.*	Noted with thanks. We consider that additional detail is required, for example traffic modelling as proposed in Section 7.5.2 of the ITA. We will make recommendations to Council in our final memo.	No further information requested at this stage, but we propose to work with NZTA's traffic experts around condition wording.	
38	It is recommended that consultation regarding property access be addressed through the proposed conditions.	There will no permanent changes to property access as a result of the Project. Access will also be maintained throughout	Section 7.5.2 of the ITA states that consultation will be undertaken during construction works. We will provide our recommended CTMP condition in our final memo.	No further information requested at this stage, but we propose to work with NZTA's traffic experts around an appropriate condition.	
39	Additional detail is sought with respect to transport engineering aspects of the design as follows Please provide: a) A copy of the preliminary Safe System Audit for the design which we understand has been prepared. b) Approach Sight Distance (ASD) and Safe Intersection Sight Distance (SISD) assessments for Walkers Road/Runners Road and Dunns Crossing Road/Newman Road intersections. c) Forward sight distance assessment for cyclists and pedestrians, between "Old Dunns Road North" and the KiwiRail crossing. d) Commentary on whether the width of the pedestrian and cycle underpass, which is shown to be 2.5m wide in the General Arrangement Plans, is sufficient to allow passing movements, considering that the functional/usable width will be less than 2.5m. e) Commentary on whether the pinch point, shown in Figure 2.1, forecloses the opportunity to provide the "Future Reserve Path" proposed by Selwyn District Council as part of its Walking and Cycling Strategy (and shown in Figure 5-10 of the ITA). f) Commentary on why the walking and cycling path along the realigned Two-Chain Road terminates at the Walkers Road/Runners Road intersection, despite the adjacent land to the east of the designation boundary being zoned for General Industrial. g) Heavy vehicle tracking for "Old Dunns Road South", demonstrating whether a waste collection truck can turn around within the new stub road. h) 85th percentile car tracking for 388 Dunns Crossing Road, and confirmation of whether changes to the existing vehicle crossing are required due to the amended kerb line for "Old Dunns Road South"	Refer to specific responses below: a) Design safe system audit will be completed on the detailed design. At the preliminary stage, a safety review was completed to identify any major issues with the design and layout. No just issues were found. b) ASD and SISD for both intersections are achieved. V = 60kph, ASD = 73m, SISD = 123m. This is achieved. c) 35m minimum is achieved for pedestrian forward sight distance (1.07m eye height to 1.07m object height). This equates to an approx. 20kph design speed. For cyclists (1.4m eye height to 0m object height), 35m minimum is also achieved in the southbound direction (downhill approach to the subway from the rail crossing). This equates to a 20kph design speed. d) The shared path for the subway will be 5m wide. This was a drafting error in the general arrangement drawing. e) 'This pinch point' is approximately 10m long with a narrowest width from back of barrier to face of retaining wall of 2m. Any future path will utilise this space. The likely approaches of this future path would be generally straight and would provide good sight distance. f) The shared path proposed as part of this project is to be extended east along old Runners Road and then north along old Walkers Road to terminate near the extent of works. It is understood that as part of the development to the east of Walkers Road, this shared path will be extended through to Two Chain Road. g) Tracking plan provided below for an 11m large rigid vehicle to complete a 3-point turn on Old Dunns Road south at the proposed turning pad. This pad will be moved further south to reduce the length of vehicle reversing. h) No changes are required to the existing crossing. Tracking paths are shown below for entry and exit. This will be discussed at the next SDC design meeting and developed through the detail design. If the tracking is deemed unacceptable by SDC, access to this property will be modified tocome directly off the realigned Dunns Crossing Road. i) This area will have extremely low traffic volumes so will not need regular maintenance or resurfacing. This will be discussed at the next SDC design meeting and developed through the detail design.	a)Please provide a copy of the safety review as it relates to Council's transport network. b)Please show the ASD and SISD visually on the engineering plans for confirmation of the stated measurements. c)Noted with thanks. The underpass is an NZTA asset and therefore it is NZTAs responsibility to confirm design requirements. No further information requested. d)Noted with thanks. The underpass is an NZTA asset and therefore it is NZTAs responsibility to confirm design requirements. No further information requested. e)Please confirm the effective width that will be available (i.e. account for cyclists shying away from the road barrier on one side and the retaining wall on the other). Further, please confirm the forward sight distance on each approach to the pinch point as this may be restricted by the retaining wall. f)Noted with thanks. No further information required. g)Please provide the heavy vehicle tracking assessment, the image in the S92 response document does not show the tracking. h)Please provide the tracking mentioned in the s92 response document, the image provided in the s92 response document mistakenly shows Figure 2.2 from Abley's 12 November 2024 S92 memo. i)Noted with thanks. We will recommend a condition to this effect in our final memo.	Further information requested for a), b), e), g) and h). All other points are resolved other than for i) we will work with the NZTA traffic experts around an appropriate condition.	a) Safety review memo will be provided. Final detailed design safety audit is to be completed at a later date. b) Plans showing sight lines provided below (3338703-10-CA-9019-9022). e) 2m clear width with 0.5m side clearance either side results in 1.0m envelope. Visibility will be (while dependant on and future path alignment) will be approximately 75m min in both directions. However, SDC and NZTA have both indicated that they are not planning on a future path connection in this location due to the proximity to SH1, available land, and an alternative route away from the State Highway. g) Tracking plan provided below (3338703-10-SK-CA-9021). h) Tracking plan for property 388 shown on response to item g.

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