24 April 2026

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MEMO

TO:	Tim Carter, Carter Group Ltd
FROM:	Nick Fuller, Principal Transport Engineer
PROJECT REF:	0021-050_Ryans Road_M006

FTAA-2504-1054: 104 RYANS ROAD, CHRISTCHURCH APPLICANT SECTION 70(4) RESPONSE TO TRANSPORT COMMENTS

1. This memorandum provides response to transport comments received on the Draft Decision and Conditions provided by Christchurch City Council (the Council), the New Zealand Transport Agency (NZTA), Christchurch International Airport Ltd (CIAL) and TWT Holdings Limited (TWT) with regards to the above Fast-Track application.

Christchurch City Council Comments

Pound Road / Ryans Road Safety & Efficiency

2. Draft Decision subdivision condition 3 seeks to stage the development of the site, with a hold point and additional traffic modelling of the Pound Road / Ryans Road intersection (and potentially upgrades) prior to the balance of the development commencing. This condition was initially suggested by the Council in its section 53 comments on the application dated **15 September 2025**. In response, I provided a statement of evidence addressing the Council's comments, which was included in the Applicant's section 55 response. That statement of evidence included additional traffic modelling to address the matters raised by the parties invited to comment on the application. In addition, the joint memorandum of myself, Mr Jeremy Phillips and Ms Clare Dale responding to the Draft Conditions (02 April 2026) sets out the reasons why I (and the Applicant's planning experts) consider the proposed condition to be unnecessary.[1]

3. I will not repeat that evidence here but in summary, the joint memorandum concludes that the proposed staging condition (Subdivision Condition 3), insofar as it relates to further traffic modelling or the requirement for an upgrade to the Pound Road / Ryans Road intersection, is unnecessary and not supported by the evidence. The traffic effects of the development on the intersection have been robustly assessed using Council's accepted 2038 growth forecasts plus additional increases specifically in the Dakota Park, Waterloo Park and Main South Road industrial areas. This approach acknowledges the underlying Council growth projections are potentially low and provides a more robust approach than simply adopting the Council 2038 growth forecasts. The modelling demonstrates that the

[1] Joint memorandum of counsel of Nick Fuller, Clare Dale and Jeremy Phillips dated 14 April 2026.

intersection operates acceptably, with no more than minor adverse effects attributable to the development. Therefore, there is no evidential basis for imposing a staging trigger linked to additional modelling or to the timing of any intersection upgrade.

4. For ease of reference, the joint memorandum dated 2 April 2026 is attached as **Attachment 1**.

5. As noted in the draft decision, Council expressed a view that the ITA suffered from a lack of calibration which they said, "can have a noticeable effect on the accuracy of the results." I have previously explained that the calibration used in the traffic modelling worsened the operation of the right turn so that the actual operation would likely operate better than expected. Notwithstanding, the above, to address the Council concerns, I have undertaken additional traffic surveys (on 31st March) and modelling of the intersection to better understand the operation of this intersection, with a focus on the average right turn queue (as identified by the proposed condition). The basis of this modelling is set out further in **Attachment 2** to this memorandum. This is further to the modelling set out in my statement of evidence dated 28 November 2025[2].

6. As a summary, a traffic model of the Pound Road / Ryans Road intersection has been developed using the existing road geometry and traffic volumes observed in March 2026. Although road works were taking place on Ryans Road and Grays Road at that time (and not complete until mid-2026), the intersection was open and fully operative and the road works were not readily apparent or visible (including any road works signage) from any location within the intersection. As such, the model is considered to be a reasonable basis for assessing the operation of the intersection notwithstanding road works occurring further along the road corridor.

7. The estimated right turn queue length is 60m, which is from the centre of the intersection to where the existing Pound Road northbound lane sealed width (including shoulder) is 6m to accommodate passing of queued vehicles (as illustrated in **Figure 1**).

[2] The modelling was included in Appendix 7 of that response.

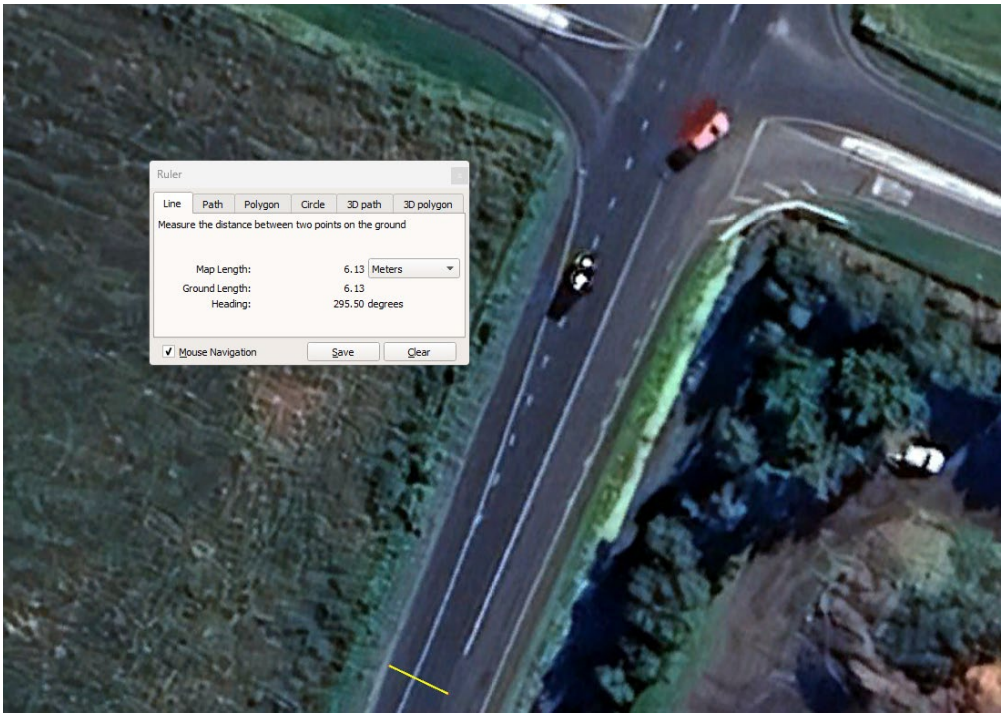

Figure 1: Pound Road Right Turn Facility Length
[Image Sourced from Google Earth]

8. In this model, the give-way parameters were amended to match the model predicted queue lengths of the right turn from Pound Road south into Ryans Road to the observed queues, as the initial model underestimated these average queue lengths. The adjustments made to these give way parameters were either the same as, or less than the modelling presented in my evidence dated 28 November 2025 response. This reinforces and further confirms that the outcome of the previous modelling and conclusions were correct.

9. The model confirms that, based on Council's 2038 growth forecasts (plus additional increases specifically In the Dakota Park, Waterloo Park and Main South Road industrial areas), the average queue lengths with the full built development are 58.5m in the AM peak hour and 7.4m in the PM peak hour. These are both within the length of the 60m right turn facility. Therefore, it is considered the intersection operation is acceptable and no restriction on the staging of development relative to the timing of upgrades to this intersection is required. This is consistent with, and confirms, the outcomes of the modelling and the conclusions set out in my earlier evidence in relation to the Pound Road / Ryans Road intersection.

10. This also confirms that the effects of the development on the Pound Road / Ryans Road intersection will be no more than minor, both with and without an intersection upgrade. In my opinion, draft Subdivision Condition 3 goes beyond what is necessary to address the traffic effects of the development. The modelling and evidence demonstrate that the intersection operates acceptably within the available right-turn stacking length under Council's 2038 growth forecasts (plus additional increases specifically In the Dakota Park, Waterloo Park and Main South Road industrial areas), and accordingly there is no adverse effect requiring mitigation through the proposed condition.

11. Furthermore, in relation to Draft Subdivision Condition 3, I note the following:

    i. While the Panel appears to have accepted my queuing analysis, it nevertheless states that "the function of the intersection as assessed by [me] may require remarking and potentially seal extensions, as a minimum", and relies on that view as the basis for Draft Subdivision Condition 3 (staging). I do not agree with this conclusion. It is not apparent how the Panel has reached this view, nor what evidence it relies on to support the proposition that future remarking and / or seal extension would be required. Neither my previous assessment nor the updated modelling demonstrates that such works are necessary for the development to proceed. In my opinion, there is therefore no basis to impose a staging condition on that premise.

    ii. No party has put forward alternative traffic modelling or evidence to support the proposition that an intersection upgrade is required, or that any particular staging threshold (including a 50% release trigger) is appropriate. It is not clear what evidence the Panel relies on to establish 50% as an appropriate, meaningful or effects-based trigger point if a trigger were to be imposed at all. In my view, the traffic effects of the development can be accommodated acceptably at full build-out, and there is therefore no need for a staging trigger linked to further modelling or intersection upgrades.

12. I therefore maintain my conclusion that the proposed staging condition is unnecessary and is not supported by evidence.

Condition requiring footpaths on both sides of all internal roads

13. I note that the Panel has expressed preliminary support for draft condition 82A, which requires footpaths to be provided on both sides of all internal roads. I addressed the need for such a condition in my earlier evidence. In summary, my evidence explained that the provision of footpaths on both sides of the internal road network is not necessary to address any significant adverse effects. Any effects arising from the provision of a footpath on only one side of the road are not significant and would be no more than minor. As such, the imposition of this condition is not required to mitigate any adverse effects.

14. The Panel appears to have reached the view that such a condition is appropriate on the basis that the proposed development has a greater density than the development at Dakota Park. I wish to clarify that my assessment was based on the actual density and design of the proposed development itself. The reference to Dakota Park was used only as an analogy to demonstrate consistency with the surrounding development pattern and was not relied upon as a justification for concluding that footpaths on both sides of the internal roads are unnecessary.

15. In summary, my evidence and assessment have not identified any adverse effects that would necessitate the imposition of a condition requiring footpaths on both sides of all internal roads.

NZ Transport Agency Submission

16. The NZTA comments on the Draft Conditions build on Council's proposed subdivision condition 3 and to include references to the SH1 / Ryans Road intersection, Pound Road /

SH73 intersection, George Bellew / SH1 interchange and the SH73 / SH1 intersection. At the outset it is noted that at no point has NZTA identified any failings with the modelling provided that suggests the effects of the proposed development need to be reassessed. In my opinion, there is no evidential basis to support the amendments sought by NZTA in relation to these additional intersections. Nor is the inclusion of these intersections necessary to address any identified adverse effects arising from the development, given the absence of modelling or other technical evidence demonstrating that upgrades are required or that the proposal gives rise to unacceptable effects at those locations.

17. The following sets out a brief overview of the NTZA feedback received to date on the Application:

    i. ***Comments from Invited Parties (15 September 2025):*** Identifying four intersections of interest to the NZTA, although not relating these concerns back to the traffic modelling provided. The comments note that "*NZTA will incorporate the development traffic impacts into our Hornby strategic case study to ensure proper integration with broader network planning*." The summary states that "*The scale of traffic generation (8,804 daily movements) onto an acknowledged failing network creates potential for significant adverse effects on state highway performance. However, these risks can be managed through appropriate conditions and independent verification. NZTA considers a suite of conditions would be required to resolve these impacts, and would welcome further engagement with the applicant to develop these."*

    ii. ***Applicant Response to Section 53 comments:*** As part of preparing the response to the section 53 comments, the Applicant team met with the NZTA[3] on 8 October 2025 in which the NZTA did not raise any concerns with the modelling undertaken;

    iii. ***Response to Minute 6 (18 December 2025):*** The NZTA response to Minute 6 suggested conditions that solely addressed the capacity of the SH73 / Pound Road intersection. No concerns were raised regarding the traffic modelling that supports the Application; and

    iv. ***Comments of Draft Conditions (2 April 2026):*** The NZTA comments seek to reassess the transport effects of the proposal on the wider transport network prior to Stage 3 commencing. However, no concerns were raised regarding the traffic modelling that supports the Application.

18. Overall, I consider the NZTA feedback on subdivision condition 3 (and that condition in its entirety) should be disregarded given no concerns have been raised by the NZTA regarding the validity of the assessment provided to date, the tacit acceptance of the wider effects (except for concerns regarding the SH73 / Pound Road intersection) in their response to Minute 6 and for the reasons set out above and in the joint memorandum dated 2 April 2026 on the Draft Conditions.

[3] See Attachment 5 of the statement of evidence of Nick Fuller dated 19 November 2025 (being Appendix 7 to the Applicant's s 77 response).

CIAL

19. CIAL has sought amendments to subdivision condition 3 through its comments on the Draft Conditions, which record CIAL's support for retaining a subdivision staging condition. The covering memorandum accompanying those comments notes that Mr Andrew Metherell assisted in preparing CIAL's response. However, I am not aware of any expert transport evidence having been provided by Mr Metherell in support of the specific amendments sought, either at this stage or at any earlier stage of the Fast-track process.

20. I also note that the changes proposed in the CIAL submission not only seek to refine the wording, but also seek to alter the performance criteria proposed by Council. Notwithstanding my position on the need for such a condition (as set out above and in the joint memorandum dated on 2 April 2026), I consider that Council should be responsible for deeming what is acceptable operation (in this case with regard to queue lengths) on their road network.

21. Given no technical evidence has been provided to support the inclusion of this condition and for the reasons set out above, I consider that neither the condition itself nor the amendments proposed by CIAL are necessary or appropriate.

TWT HOLDINGS LIMITED

22. TWT Holdings Limited (TWT) supports the proposed subdivision staging condition. That matter has been addressed above and in my earlier evidence, and I do not repeat it here.

23. TWT also seeks confirmation and reassurance that the proposed berm and shoulder treatments will provide sufficient space to accommodate any future frontage upgrades on the southern side of Ryans Road in accordance with Council's specifications through an indicative cross section attached to the conditions of consent.

24. Condition 81 (Existing Road Frontage) and the cross section shown in the Capture plan set (RC-RD320) has been addressed in my earlier evidence, including through the changes sought by Council in its s 53 response. The cross-section appears to be consistent with Council standards and Council has not raised issue with the draft condition in its section 70 response. For completeness, I also note that note that TWT did not raise this matter in its s 53 response.

25. In those circumstances, I consider the condition as currently proposed is appropriate and sufficient. The inclusion of an indicative cross-section within the conditions of consent is not necessary given the matters are already addressed through the approved plans and Condition 81 as proposed.

CONCLUSION

26. Overall, I maintain the conclusions reached in my earlier evidence. For the reasons set out above, Draft Subdivision Condition 3 (staging) and Draft Condition 82A (footpaths on both sides of internal roads) are not necessary to address the transport effects of the proposal. In addition, the amendments and additional requirements sought by Council, the NZTA,

CIAL, and TWT are not necessary, appropriate, or supported by expert transport evidence. In my opinion, the transport conditions as proposed by the Applicant are appropriate and sufficient to appropriately manage the effects of the development.

Attachment 1: 2 April 2026 Joint Memorandum

Before the Expert Panel

FTAA-2504-1054

Under	**Fast-track Approvals Act 2024**
In the matter of	an application for approvals in relation to the Ryans Road Industrial Development
By	**Carter Group Limited** Applicant

Joint memorandum of Nick Fuller (transport) and Clare Dale/Jeremy Phillips (planning)

2 April 2026

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Joint memorandum of Nick Fuller (transport) and Clare Dale/Jeremy Phillips (planning)

1 This memorandum is jointly provided on behalf of the Applicant by:

(a) Nick Fuller (transport);

(b) Clare Dale (planning); and

(c) Jeremy Phillips (planning).

2 We each provided evidence and assessments within our respective areas of expertise on the Ryans Road Industrial Development (**Project**).

3 Given that the specified parties have also been invited to comment on the draft conditions within the same timeframe as the Applicant, we consider it most efficient and proportionate, for the Panel's purposes, for this initial response to be tightly focused.

4 This memorandum focuses specifically on our concerns with the proposed staging conditions (in particular, subdivision condition 3) and is intended only to signal our key concerns with that condition. It should be read together with the responses to the Panel's comments on the draft Christchurch City Council (**CCC**) and Canterbury Regional Council (**CRC**) conditions, including conditions beyond those relating to staging.

Staging condition – traffic modelling / intersection upgrade

5 For the reasons set out under the headings below, we do not consider that the proposed staging condition (Subdivision Condition 3) is necessary, nor is it appropriately supported by expert evidence.

Adequacy and currency of traffic modelling

6 Council's proposed staging condition appears to be founded on concerns that are either already addressed through the existing assessment or rely on speculative assumptions rather than established evidence. The traffic modelling underpinning the application adopts CCC's own accepted 2038 growth forecasts, applies additional growth within known industrial catchments, and incorporates robust assumptions for traffic generation associated with the proposed development. CCC has acknowledged that this modelling represents the most up-to-date and appropriate version available at the time of lodgement, and it remains so at the time of assessment.

7 In these circumstances, requiring modelling to be "updated" when no newer or alternative baseline model exists is inappropriate. Any such update would necessarily incorporate background growth unrelated to the proposal, thereby moving the assessment beyond the relevant "existing environment" for the purposes of consent determination, contrary to the principles articulated in *Queenstown Lakes District Council v Hawthorn Estate Ltd* and in paragraph 155 of the panel's draft decision.[1] In particular, as currently framed, subdivision condition 3 would risk capturing speculative or unconfirmed development assumptions that are not reasonably foreseeable and that are not attributable to this proposal.

8 Established transport assessment practice requires effects to be assessed using the best available information at the time of decision making, rather than imposing open ended obligations to revisit modelling in response to future uncertainties. That standard has been met in this case through the comprehensive modelling and assessments provided in support of the Project.

9 Accordingly, it is our opinion, based on the Applicant's technical assessment, that the proposed staging condition is not necessary to address any identified adverse effects and cannot be justified on either an evidential or methodological basis.

Modelling outcomes and intersection performance

10 In addition to the modelling relied on in the Integrated Transport Assessment that accompanied the Substantive Application, Mr Fuller has undertaken additional analysis confirming that, even at full development (i.e. release of 100% of the lots), the average right turn queue from Pound Road into Ryans Road remains within the available stacking length provided by the existing widening.[2] There is no evidence from either the Applicant's traffic engineering experts or CCC that the proposal would give rise to significant adverse safety or efficiency effects at the Pound Road / Ryans Road intersection justifying the proposed condition. Nor is there any evidence establishing that a release of 50 % of the lots represents an appropriate, meaningful, or effects-based trigger point, if a trigger were to be imposed at all.

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[1] *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424 at [84].

[2] Statement of evidence of Nick Fuller dated 19 November 2025 at [19]-[24] and Appendix 1; and Supplementary statement of Nick Fuller dated 19 February 2026.

11 The proposed trigger, requiring further modelling to CCC's "satisfaction" that queue lengths do not exceed available stacking for a modelled period, also introduces an unnecessarily uncertain and subjective control that is not supported by evidence. The condition lacks clear, objective performance criteria against which compliance could be assessed and would render progression of the subdivision contingent on discretionary judgment rather than identifiable effects thresholds.

12 For these reasons, we consider the proposed condition to be inappropriate.

Practicality and workability of the proposed condition

13 The proposed condition is also impractical in its operation. Requiring ongoing or repeat traffic surveys and model updates creates a real risk that future results would be materially influenced by traffic generated by unrelated third-party developments, or by unconfirmed transport initiatives (including potential NZTA objectives for Pound Road as a SH1 bypass). This would expose later stages of the subdivision to factors wholly unrelated to the effects of the proposal itself.

14 As a result, the condition could lead to the indefinite delay of later stages of the subdivision, notwithstanding that the traffic effects attributable to this proposal remain unchanged and acceptable. Such an outcome would be neither fair nor reasonable, would not be justified under established principles relating to condition setting under the RMA, and would undermine the certainty and efficiency that the Fast-track Approvals Act 2024 (**FTAA**) is intended to provide.

Intersection upgrade requirement

15 Similarly, the alternative requirement that Stage 3 not proceed until the Pound Road / Ryans Road intersection is upgraded is neither necessary nor proportionate to the effects of the Project. The evidence does not demonstrate that such an upgrade is required to mitigate any adverse effects attributable to the Project. While Mr Fuller accepted in his evidence that the intersection "can" be upgraded, based on traffic modelling, his evidence was clear that such an upgrade is not required for the Project to proceed. On the contrary, Mr Fuller's evidence confirms that the traffic effects at the Pound Road / Ryans Road intersection are **acceptable and no more than minor,** both with and without an intersection upgrade. In those circumstances, there is no need to impose a condition that would require the intersection to be upgraded before any particular stage, or percentage, of the development can be undertaken.

16 Any such upgrade would, in any event, require the acquisition of third-party land over which the Applicant has no control. This creates a real and material risk that the upgrade could be undeliverable, with the consequence that the consent would be effectively sterilised despite the absence of any unresolved traffic effects arising from the proposal itself.

17 Further, the design of any intersection upgrade would itself be dependent on traffic modelling assumptions, giving rise to the same concerns identified above in relation to uncertainty, relevance, and inappropriate attribution of broader network effects to this Project.

18 In these circumstances, the proposed consent condition is more onerous than reasonably necessary to address the actual effects of the development, lacks a sufficient evidential and causal nexus to the proposal, and fails to meet established principles governing the imposition of consent conditions under the RMA and FTAA.

Conclusion

19 For these reasons, we consider that:

(a) the traffic effects of the proposal have been robustly assessed using conservative assumptions and appropriate forecast horizons;

(b) there is no evidential basis for requiring updated modelling or ongoing traffic surveys as a staging trigger;

(c) the proposed condition would be uncertain, impractical, and disproportionate to the identified effects; and

(d) sufficient evidence exists to demonstrate that the subdivision can proceed without staging constraints tied to future modelling or intersection upgrades.

20 Therefore, we consider that proposed subdivision condition 3:

(a) would be contrary to the well-established principles for setting conditions under the RMA;

(b) are not necessary or appropriate to *"facilitate the delivery of"* the project per s3 of the FTAA; and

(c) is *'more onerous than necessary to address the reason for which it is set…'* and is therefore contrary to section 83 of the FTAA.

21 Accordingly, we consider that the draft staging condition proposed as subdivision condition 3 should be deleted and the original Applicant condition reinstated.

22 We have been instructed by the Applicant to review any comments provided by CCC, NZTA and other specified parties in relation to proposed subdivision condition 3 and, if appropriate, we (individually or together) will provide a further technical response addressing those matters.

Dated this 2nd day of April 2026

Nick Fuller

Clare Dale

Jeremy Phillips

Attachment 2: Traffic Modelling

Traffic Surveys & Calibration

28. Traffic surveys (including queue length surveys) were undertaken on Tuesday 31st March 2026 at the Pound Road / Ryans Road intersection from 07:00 to 09:00 and 16:30 to 18:00. We note that the traffic surveys were undertaken at a time when Ryans Road was open (although with traffic light controls to the east of Grays Road beyond the development site) and Grays Road was closed. These road closures are programmed to be in place until mid-2026, so there was no opportunity to undertake surveys with 'normal' traffic volumes prior to providing this response. Notwithstanding this, I consider the model to be a reasonable basis for assessing the operation of the intersection as the intersection was open and fully operative and the road works were not readily apparent or visible from any location within the intersection.

29. The surveyed peak hour traffic volumes are set out in **Attachment 3**, along with forecast volumes at the intersection. The average queue length of the right turn into Ryans Road from the Pound Road southern arm was 0.65 vehicles in the AM peak hour and 0.61 vehicles in the PM peak hour.

30. A Sidra model has been created of the intersection, initially using the existing lane geometries plus default parameters for gap acceptance and follow-up headways (i.e. the parameters that affect how aggressive drivers are taking gaps in traffic). The available queue space for the right turn has been estimated as being 60m, which is the length of Pound Road that has a sealed width of at least 6m to the centre of the intersection.

31. The predicted average queue lengths for the right turn into Ryans Road (from Pound Road south) were initially lower than those observed. Therefore, the *gap acceptance factor*[4] for the right turn from Pound Road to Ryans Road was increased from the default 1 for light vehicles to 1.3 and from 1.5 for heavy vehicles to 1.95 (i.e. a 30% increase for both). This is the same change required to calibrate the models as for the assessment provided in November 2025.

32. The resultant average queue lengths for the right turn into Ryans Road from Pound Road south are predicted to be 0.7 vehicles in the AM and 0.9 vehicles in the PM, indicating that the operation of the right turn reasonably represents the existing operation (or over-estimates the queue in the PM peak hour). Model results are included in **Attachment 4**.

Future & With Development Traffic

33. Future traffic volumes have been included in **Attachment 3**, which uses the same process as set out in our November 2025 response[5]. Given the parameters to calibrate the model are unchanged from the November 2025 response as are the predicted with development traffic volumes, results of the with development model are also unchanged and these are included in **Attachment 4**.

[4] Under the calibration tab in Sidra.
[5] Refer to Attachment 1 of the November 2025 transport response.

34. The predicted 2038 with development average queues are 58.5m in the AM peak hour and 7.4m in the PM peak hour. These are both within the length of the 60m right turn facility and therefore it is considered the requirement of the above condition is met and no restriction on the staging of development relative to the timing of upgrades to this intersection is required.

Attachment 3: Traffic Volumes

			2026 Count			2038 No Dev			Dev Traffic		2038 + Dev (Sidra)	
			Total	HCV	PCU	PCU	Total	HCV	Total	HCV	Total	HCV
AM	Pound S	L	13	62%	21	1	1	33%			1	33%
		T	451	19%	537	299	234	28%			209	28%
		R	202	5%	212	602	590	2%	229	5%	744	3%
	Ryans E	L	5	0%	5	217	197	10%	106	16%	240	13%
		T	4	25%	0	1	1	25%			1	25%
		R	2	0%	2	1	1	0%	3	16%	3	16%
	Pound N	L	18	28%	23	7	7	7%	21	5%	16	4%
		T	405	22%	493	315	269	17%			264	17%
		R	11	0%	11	1	1	0%			1	0%
	Ryans W	L	11	0%	11	1	1	0%			1	0%
		T	1	0%	1	1	1	0%			1	0%
		R	3	33%	0	1	1	0%			1	0%
	Intersection	All	1126	16%	1308	1447	1292	12%				
PM	Pound S	L	5	40%	7	1	1	23%			1	23%
		T	624	11%	694	579	526	10%			527	10%
		R	153	3%	157	369	355	4%	75	11%	341	6%
	Ryans E	L	5	0%	5	461	448	3%	206	5%	489	4%
		T	2	0%	0	1	1	0%			1	0%
		R	3	0%	3	1	1	0%	4	5%	3	8%
	Pound N	L	19	0%	19	4	4	3%	10.32	11%	13	9%
		T	714	8%	770	325	290	12%			250	12%
		R	1	0%	1	1	1	50%			1	50%
	Ryans W	L	17	0%	17	1	1	0%			1	0%
		T	0	0%	0	1	1	0%			1	0%
		R	2	0%	2	1	1	0%			1	0%
	Intersection	All	1545	6%	1640	1745	1631	7%				

HCV = Percentage of Heavy Commercial Vehicles

PCU = Passenger Car Units (basis of CAST modelling)

Attachment 4: Sidra Model Results

MOVEMENT SUMMARY

Site: [1] Pound Ryans - 2025 AM Calibrated (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Pound Rd															
1	L2	All MCs	14	62.0	14	62.0	0.289	6.3	LOS A	0.0	0.0	0.00	0.02	0.00	54.4
2	T1	All MCs	475	19.0	475	19.0	0.289	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
3	R2	All MCs	213	5.0	213	5.0	0.316	10.8	LOS B	0.7	4.8	0.64	0.83	0.74	49.1
Approach			701	15.6	701	15.6	0.316	3.5	NA	0.7	4.8	0.19	0.26	0.23	56.0
East: Ryans Rd															
4	L2	All MCs	5	0.0	5	0.0	0.088	10.3	LOS B	0.1	0.7	0.82	1.00	0.82	37.9
5	T1	All MCs	4	25.0	4	25.0	0.088	61.5	LOS F	0.1	0.7	0.82	1.00	0.82	37.4
6	R2	All MCs	2	0.0	2	0.0	0.088	43.2	LOS E	0.1	0.7	0.82	1.00	0.82	37.9
Approach			12	9.1	12	9.1	0.088	34.9	LOS D	0.1	0.7	0.82	1.00	0.82	37.7
North: Pound Rd															
7	L2	All MCs	19	28.0	19	28.0	0.270	7.0	LOS A	0.1	0.6	0.05	0.08	0.05	55.6
8	T1	All MCs	426	22.0	426	22.0	0.270	0.1	LOS A	0.1	0.6	0.05	0.08	0.05	59.4
9	R2	All MCs	12	0.0	12	0.0	0.270	8.2	LOS A	0.1	0.6	0.05	0.08	0.05	57.0
Approach			457	21.7	457	21.7	0.270	0.6	NA	0.1	0.6	0.05	0.08	0.05	59.2
West: Ryans Rd															
10	L2	All MCs	12	0.0	12	0.0	0.097	10.6	LOS B	0.1	0.7	0.77	0.98	0.77	40.4
11	T1	All MCs	1	0.0	1	0.0	0.097	35.5	LOS E	0.1	0.7	0.77	0.98	0.77	40.4
12	R2	All MCs	3	33.0	3	33.0	0.097	92.6	LOS F	0.1	0.7	0.77	0.98	0.77	39.6
Approach			16	6.6	16	6.6	0.097	28.7	LOS D	0.1	0.7	0.77	0.98	0.77	40.3
All Vehicles			1185	17.8	1185	17.8	0.316	3.0	NA	0.7	4.8	0.15	0.21	0.17	56.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [1 (2)] Pound Ryans - 2025 PM Calibrated (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Pound Rd															
1	L2	All MCs	5	40.0	5	40.0	0.370	6.1	LOS A	0.0	0.0	0.00	0.00	0.00	55.4
2	T1	All MCs	657	11.0	657	11.0	0.370	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
3	R2	All MCs	161	3.0	161	3.0	0.441	19.3	LOS C	0.9	6.1	0.83	1.02	1.16	44.1
Approach			823	9.6	823	9.6	0.441	3.9	NA	0.9	6.1	0.16	0.20	0.23	55.8
East: Ryans Rd															
4	L2	All MCs	5	0.0	5	0.0	0.151	14.0	LOS B	0.2	1.2	0.94	1.00	0.94	30.6
5	T1	All MCs	2	0.0	2	0.0	0.151	81.0	LOS F	0.2	1.2	0.94	1.00	0.94	30.6
6	R2	All MCs	3	0.0	3	0.0	0.151	115.4	LOS F	0.2	1.2	0.94	1.00	0.94	30.6
Approach			11	0.0	11	0.0	0.151	57.8	LOS F	0.2	1.2	0.94	1.00	0.94	30.6
North: Pound Rd															
7	L2	All MCs	20	0.0	20	0.0	0.413	5.6	LOS A	0.0	0.1	0.00	0.02	0.01	57.3
8	T1	All MCs	752	8.0	752	8.0	0.413	0.0	LOS A	0.0	0.1	0.00	0.02	0.01	59.8
9	R2	All MCs	1	0.0	1	0.0	0.413	6.2	LOS A	0.0	0.1	0.00	0.02	0.01	57.4
Approach			773	7.8	773	7.8	0.413	0.2	NA	0.0	0.1	0.00	0.02	0.01	59.7
West: Ryans Rd															
10	L2	All MCs	18	0.0	18	0.0	0.113	12.3	LOS B	0.1	0.9	0.82	1.00	0.82	41.7
11	T1	All MCs	1	0.0	1	0.0	0.113	84.0	LOS F	0.1	0.9	0.82	1.00	0.82	41.7
12	R2	All MCs	2	0.0	2	0.0	0.113	111.4	LOS F	0.1	0.9	0.82	1.00	0.82	41.7
Approach			21	0.0	21	0.0	0.113	25.8	LOS D	0.1	0.9	0.82	1.00	0.82	41.7
All Vehicles			1627	8.6	1627	8.6	0.441	2.8	NA	0.9	6.1	0.10	0.13	0.13	57.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [1 (3)] Pound Ryans - 2038 AM with Dev (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Pound Rd															
1	L2	All MCs	1	33.0	1	33.0	0.192	6.9	LOS A	0.4	3.6	0.48	0.20	0.48	54.0
2	T1	All MCs	220	28.0	220	28.0	0.192	1.0	LOS A	0.4	3.6	0.48	0.20	0.48	57.8
3	R2	All MCs	783	3.0	783	3.0	0.861	19.0	LOS C	8.1	58.5	0.92	1.40	2.29	44.2
Approach			1004	8.5	1004	8.5	0.861	15.1	NA	8.1	58.5	0.83	1.13	1.89	46.6
East: Ryans Rd															
4	L2	All MCs	253	13.0	253	13.0	0.540	12.6	LOS B	1.2	9.1	0.72	0.97	1.05	46.9
5	T1	All MCs	1	25.0	1	25.0	0.540	212.8	LOS F	1.2	9.1	0.72	0.97	1.05	46.5
6	R2	All MCs	3	16.0	3	16.0	0.540	192.6	LOS F	1.2	9.1	0.72	0.97	1.05	46.7
Approach			257	13.1	257	13.1	0.540	15.7	LOS C	1.2	9.1	0.72	0.97	1.05	46.9
North: Pound Rd															
7	L2	All MCs	17	4.0	17	4.0	0.167	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	56.9
8	T1	All MCs	278	17.0	278	17.0	0.167	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
9	R2	All MCs	1	0.0	1	0.0	0.167	5.7	LOS A	0.0	0.0	0.00	0.04	0.00	57.2
Approach			296	16.2	296	16.2	0.167	0.3	NA	0.0	0.0	0.00	0.04	0.00	59.4
West: Ryans Rd															
10	L2	All MCs	1	0.0	1	0.0	0.097	9.0	LOS A	0.1	0.7	0.96	0.96	0.96	21.6
11	T1	All MCs	1	0.0	1	0.0	0.097	77.7	LOS F	0.1	0.7	0.96	0.96	0.96	21.6
12	R2	All MCs	1	0.0	1	0.0	0.097	236.1	LOS F	0.1	0.7	0.96	0.96	0.96	21.6
Approach			3	0.0	3	0.0	0.097	107.6	LOS F	0.1	0.7	0.96	0.96	0.96	21.6
All Vehicles			1560	10.7	1560	10.7	0.861	12.6	NA	8.1	58.5	0.65	0.90	1.39	48.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: C:\Users\NickFuller\OneDrive - Novo Group Limited\Projects - 0021050 Ryans Rd\03 Transport\01 Technical\SIDRA\0021-050 - Pound Ryans - 2025-11.sipx

MOVEMENT SUMMARY

Site: [1 (4)] Pound Ryans - 2038 PM with Dev (Folder1)
Output produced by SIDRA INTERSECTION Version: 10.0.6.236

New Site
Site Category: (None)
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Pound Rd															
1	L2	All MCs	1	23.0	1	23.0	0.308	5.9	LOS A	0.0	0.0	0.00	0.00	0.00	56.2
2	T1	All MCs	555	10.0	555	10.0	0.308	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	359	6.0	359	6.0	0.389	8.6	LOS A	1.0	7.4	0.56	0.71	0.63	50.5
Approach			915	8.4	915	8.4	0.389	3.5	NA	1.0	7.4	0.22	0.28	0.25	55.8
East: Ryans Rd															
4	L2	All MCs	515	4.0	515	4.0	0.545	11.6	LOS B	1.9	13.8	0.59	0.96	0.83	49.0
5	T1	All MCs	1	0.0	1	0.0	0.545	64.0	LOS F	1.9	13.8	0.59	0.96	0.83	49.1
6	R2	All MCs	3	8.0	3	8.0	0.545	107.7	LOS F	1.9	13.8	0.59	0.96	0.83	48.7
Approach			519	4.0	519	4.0	0.545	12.3	LOS B	1.9	13.8	0.59	0.96	0.83	49.0
North: Pound Rd															
7	L2	All MCs	14	9.0	14	9.0	0.154	6.0	LOS A	0.0	0.1	0.01	0.04	0.01	56.8
8	T1	All MCs	263	12.0	263	12.0	0.154	0.0	LOS A	0.0	0.1	0.01	0.04	0.01	59.7
9	R2	All MCs	1	50.0	1	50.0	0.154	8.7	LOS A	0.0	0.1	0.01	0.04	0.01	54.9
Approach			278	12.0	278	12.0	0.154	0.3	NA	0.0	0.1	0.01	0.04	0.01	59.5
West: Ryans Rd															
10	L2	All MCs	1	0.0	1	0.0	0.048	11.0	LOS B	0.1	0.4	0.92	1.00	0.92	30.4
11	T1	All MCs	1	0.0	1	0.0	0.048	37.1	LOS E	0.1	0.4	0.92	1.00	0.92	30.4
12	R2	All MCs	1	0.0	1	0.0	0.048	127.9	LOS F	0.1	0.4	0.92	1.00	0.92	30.3
Approach			3	0.0	3	0.0	0.048	58.7	LOS F	0.1	0.4	0.92	1.00	0.92	30.4
All Vehicles			1715	7.7	1715	7.7	0.545	5.7	NA	1.9	13.8	0.30	0.45	0.39	54.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.