

**BEFORE THE INDEPENDENT COMMISSIONER
OF CENTRAL OTAGO DISTRICT COUNCIL**

IN THE MATTER of the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of an application for resource consent by Helios OTA
OP LP ("**Helios**") to construct, operate and maintain a
photovoltaic solar farm and associated infrastructure
including a substation and transmission line
infrastructure for renewable electricity generation at
48 Ranfurly-Naseby Road, Naseby ("**Project**")

**STATEMENT OF EVIDENCE OF LOGAN PAUL COPLAND
ON BEHALF OF HELIOS**

21 JULY 2025

1. EXECUTIVE SUMMARY

- 1.1 This evidence is provided in relation to traffic and transportation matters.
- 1.2 In summary, subject to conditions, adverse effects relating to safety and efficiency of the transport network will be sufficiently managed during construction and operation.
- 1.3 This conclusion is formed on the basis that:
- (a) The traffic flows on the surrounding road network are very low, and even during worst case construction traffic periods, the additional traffic is within the capacity of the transport network. With the implementation of a Construction Traffic Management Plan ("CTMP") (including a range of ongoing traffic management measures), I do not consider that construction traffic from the Project will lead to unacceptable adverse transport effects.
 - (b) During the operating life of the Project, traffic generation levels will be very low and are unlikely to be noticeable to other road users. Therefore, no mitigation is required to manage the operational traffic effects from the Project, but ongoing mitigation is required to manage effects arising from glint and glare on road safety.
- 1.4 Subject to minor amendments, I support the conditions of consent relating to transport included in the Section 42A Report.

2. INTRODUCTION

- 2.1 My full name is Logan Paul Copland. I am a Principal Transportation Planner at Abley Limited ("**Abley**"), a transportation, spatial and data intelligence professional services company. I am also the Business Delivery Manager for Abley's Land Development team, where we focus on providing specialist traffic and transport advice relating to land development projects.
- 2.2 I hold a Master of Planning degree with distinction from the University of Otago, New Zealand. I have been a Full Member of the New Zealand Planning Institute since October 2024.

- 2.3 I have seven years' experience as a transportation professional, having worked as a Transport Planner / Engineer in both the public and private sectors since 2018.
- 2.4 In the first four years of my career, I was employed by the Dunedin City Council as a Transport Planner / Engineer. In this role, I was regularly tasked with evaluating the effects of land development projects on the transportation network and providing transport advice on resource consent applications, plan changes and Notices of Requirement.
- 2.5 I have worked at Abley since 2022, initially as a Senior Transportation Planner and from December 2024 as a Principal Transportation Planner. During my time at Abley, my work has primarily been focused on land development and transport design projects of varying types and scales. I provide advice to a range of public and private sector clients and have prepared numerous transportation assessments and undertaken resource consent reviews on behalf of many local authorities throughout New Zealand.

Involvement in the Project

- 2.6 Abley was engaged by Helios in 2023, and I was the author of the transportation assessment submitted with the consent application for the Project dated 23 August 2023.
- 2.7 I visited the Project site on Friday 21 July 2023 and, at the time of the hearing I will have visited the site for a second time.
- 2.8 Abley was also asked by Helios to provide transportation advice with respect to glint and glare effects on road safety in 2025¹.

Code of conduct

- 2.9 I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and will continue to comply with it while giving oral evidence before the Hearing Commissioners. Except where I state that I am relying on the evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

¹ Abley was engaged to review the glint and glare assessment insofar as it relates to potential traffic safety effects arising from glint and glare from the proposed solar panels. Abley reviewed the ITP Renewables Glint and Glare Assessment dated September 2023 and subsequent Glare Study Addendum dated 24 June 2024 and Minimum Screening Analysis for Maniatoto Solar Farm dated 30 April 2025.

3. SCOPE

3.1 This evidence is given in respect of the resource consent application by Helios for the proposed new solar farm at 48 Ranfurly-Naseby Road, Naseby ("Site"). In my evidence I:

- (a) Describe the existing transport environment;
- (b) Provide a summary of the transport aspects of the resource consent application;
- (c) Describe the transport effects and proposed mitigation;
- (d) Summarise my assessment of road safety effects in relation to glint and glare;
- (e) Respond to transport-related submissions;
- (f) Respond to the Section 42A Report; and
- (g) Comment on the proposed conditions.

4. DESCRIPTION OF THE EXISTING TRANSPORT ENVIRONMENT

4.1 The Site is located between Ranfurly-Naseby Road to the west and Ranfurly Back Road to the east.

4.2 Ranfurly-Naseby Road is a sealed two-lane rural road that connects Ranfurly with Naseby and links to State Highway 85 at its southern end (approximately 500m south of the southernmost part of the Project Site) via a priority-controlled T-intersection, which has an auxiliary right turn lane and a basic left turn treatment (widened shoulder). It has a posted speed limit of 100km/h, with a mean operating speed of 86km/h. The road is chip-sealed, approximately 6.0 metres wide, and provides for access to adjacent activities and a through movement function between SH85 and Naseby.

4.3 Compared to Ranfurly-Naseby Road, Ranfurly Back Road is a much lower-trafficked rural road mainly used for property access rather than through movement, serving the adjacent pastoral farming activities. It has a narrow 4.0m carriageway, a 100km/h speed limit, and a much lower mean operating speed of 25km/h. The road is not suitable for regular two-way traffic and is classified as a local road under the District Plan.

- 4.4 Traffic volumes on both roads are low. Ranfurly-Naseby Road has an average daily traffic (“**ADT**”) flow of 300 vehicles per day, while Ranfurly Back Road has an ADT of 40vpd². Estimated peak hour flows are 30 and 5 vehicles per hour, respectively. Both roads function well within their capacity at present.
- 4.5 There are no pedestrian or cycling facilities on either road, which is consistent with the rural setting and low demand for such infrastructure. The Otago Rail Trail, a popular cycling route, passes through Ranfurly and Wedderburn but does not go past the Site (refer to Figure 1).

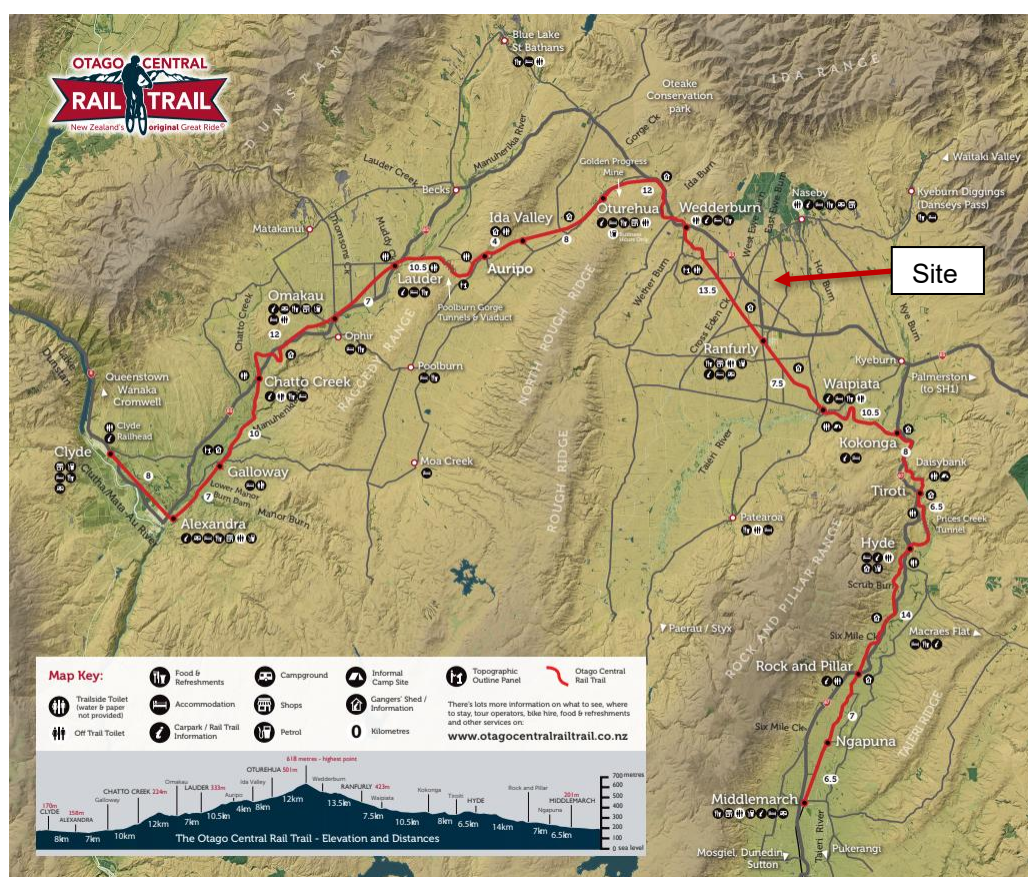


Figure 1: Site location relative to Otago Central Rail Trail³

- 4.6 Public transport is not available in the immediate area, although a school bus (Route D130119) runs along Ranfurly-Naseby Road.
- 4.7 Crash data from NZTA Crash Analysis System over the past five years shows four reported crashes in the area, including one fatal crash due to excessive speed. No consistent safety issues or road design deficiencies were identified in the vicinity of the Site.

² Transport Assessment, Section 3.2.

³ <https://www.otagocentralrailtrail.co.nz/assets/Trail-Map.pdf>.

5. SUMMARY OF THE TRANSPORT ASPECTS OF THE RESOURCE CONSENT APPLICATION

Access

- 5.1 As described in Section 5.2 of my Transport Assessment, four access points are proposed for the Site, three from Ranfurly-Naseby Road and one from Ranfurly Back Road, refer Figure 2.

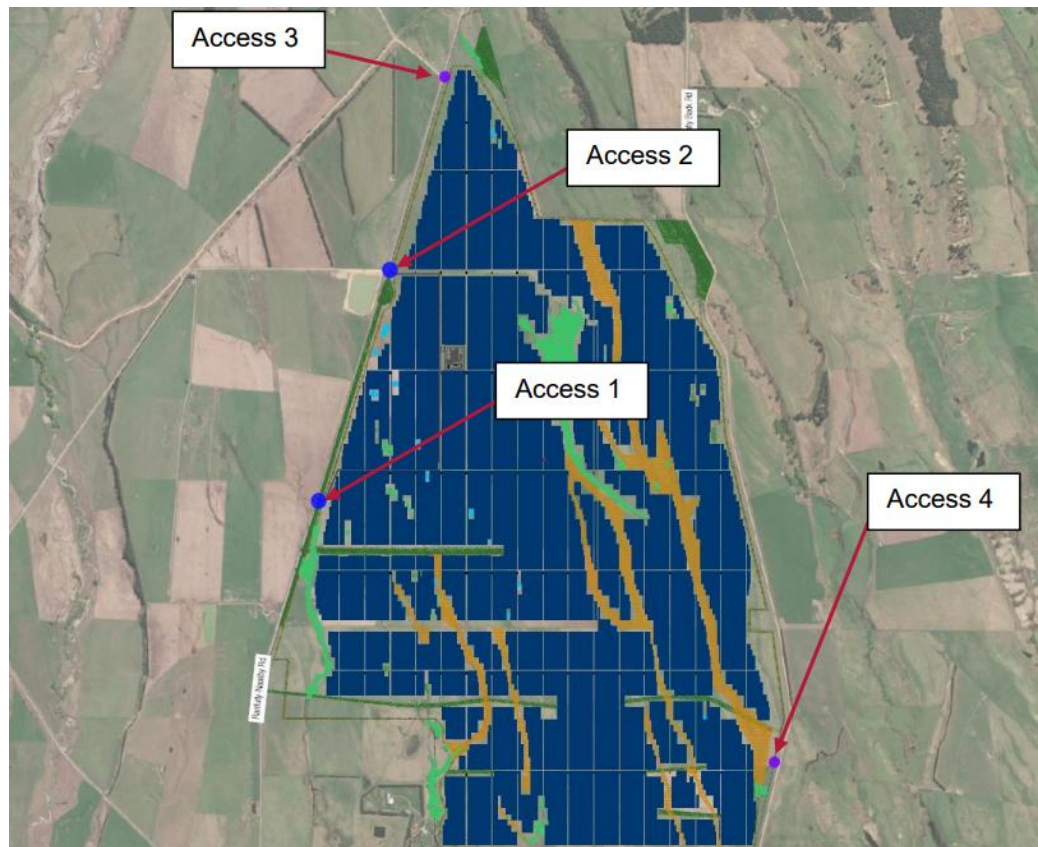


Figure 2: Access locations

- 5.2 During construction, heavy vehicles will use Accesses 1 and 2 in a one-way circulation pattern — entering via Access 1 and exiting via Access 2. This system is intended to manage vehicle movements safely and efficiently and will be supported by driver inductions and a temporary traffic management plan.
- 5.3 Accesses 3 and 4 are secondary and intended for light vehicle use only, providing more direct access to different areas of the Site and minimising internal travel. All access points will be retained after construction, although only Accesses 1 and 2 will remain in regular use. Existing gates are already in place at Accesses 1, 2, and 3, while Access 4 will require a new vehicle crossing to be constructed. As set out in Sections 5.2-5.5 of my Transport Assessment, all accesses comply with the minimum sight distance

requirements in the District Plan, and can be designed in a way that ensures that they operate safely and efficiently for their intended use.

Trip Generation

- 5.4 As described in Section 6 of my Transport Assessment, construction will be the main source of traffic generation for the Project, with activity tapering off significantly after Site establishment. I have estimated traffic generation based on data provided to me from a previously constructed 100MWp solar farm and scaled to reflect the larger size and extended 24-month construction period of the Naseby project. Construction traffic is expected to follow a bell-curve pattern, peaking during months 9 to 18 of the construction period⁴. The busiest months (13 and 14) are expected to generate up to 183 heavy vehicles and 110 light vehicles per month, resulting in an average of 15 heavy and 9 light vehicle trips per day during peak periods. These estimates have been reviewed by Helios, who have confirmed they are representative for this project. However, now having understood that there could be up to 250 staff onsite during the peak construction period, I consider this may bring rise to some additional vehicle movements during the peak construction period compared with what I assessed previously. I consider this below.
- 5.5 Construction will typically occur from 7am to 5pm, Monday to Saturday, with worker arrivals and departures spread over two-hour windows in the morning and evening. Following further discussions with Helios, I understand that staff will be transported to the site primarily using shuttle vans and buses, which will reduce the level of traffic generation compared to a scenario where staff travelled to and from the site via single occupancy vehicle. I remain of the view that the likely level of trip generation during construction will be modest relative to the capacity of the network.
- 5.6 Accesses 1 and 2 will be used exclusively for construction traffic, operating in a one-way loop (entry via Access 1 and exit via Access 2), which avoids the need to design the accesses for two-way vehicle movements.
- 5.7 Post construction, traffic generated by the Project will be very low, and can be easily accommodated by the existing road network.

6. DESCRIPTION OF TRANSPORT EFFECTS AND PROPOSED MITIGATION

- 6.1 In my Transport Assessment, I concluded (in summary) that the effects of the proposal on the transport network (including during the construction phase) will be acceptable. Overall, the level of trip generation (both during the construction and operational phases) is modest, and is not anticipated to create any notable adverse effects with respect to road safety or efficiency matters.
- 6.2 In Section 10 of my Transport Assessment, I made several recommendations intended to minimise the effects of the proposal on the transportation network. These recommendations remain largely applicable, and are generally reflected in the draft conditions of consent, which I comment on in more detail in Section 10 of my evidence.
- 6.3 In Section 7 of my Transport Assessment, I recommended that heavy vehicles do not use the SH85 / Goff Road intersection, and instead stay on SH85, passing through Ranfurly. The reason for that recommendation was because SH85, at Goff Road, does not have dedicated turning facilities, whereas the SH85/Ranfurly-Naseby Road intersection is constructed of a higher standard (with an auxiliary right turn lane) and is therefore more conducive to a higher number of vehicle movements. I note that this matter has been raised by submitters, and has been further commented on in the Section 42A report. I comment on this matter in Sections 8 and 9 of my evidence.

7. SUMMARY OF GLINT AND GLARE EFFECTS ON ROAD SAFETY

- 7.1 Subsequent to completing my Transport Assessment, I was asked by Helios to review the effects of potential solar panel glint and glare on road safety.
- 7.2 My review relied on the expertise of ITP Renewables, as I am not qualified to undertake glint and glare assessments.⁵ The scope of my review was to consider the potential road safety effects resulting from ITP Renewables' analysis⁶.
- 7.3 My review concluded that yellow glare on the public roading network would be a safety risk and should be avoided entirely – in my experience this is a commonly held view by transport experts and glint and glare experts.

⁵ Refer to the evidence of Mr Nicholas Logan (Glint and Glare) for further information on glint and glare assessments.

⁶ Refer to Maniatoto Solar Farm Glint and Glare - Traffic Effects Review prepared by Abley dated 13 June 2025. Section 1.1 outlines the ITP Renewables analysis subject to the peer review.

- 7.4 Conversely, green glare on the road network may be acceptable, however, this needs to be considered in context with traffic volumes, road geometry, and safety records of nearby roads. My review of the adjacent roads concluded that green glare effects on these roads is acceptable.
- 7.5 ITP renewables has stated that the following mitigations are required to ensure there are no yellow glare effects on adjacent roads:
- (a) Prior to the commencement of operation of the Project, specific areas of planting as shown in Figure 2 of the Minimum Screening Analysis for Māniatoto Solar Farm dated 30 April 2025 are implemented at a height of at least 3m, and
 - (b) A solar panel back tracking limitation of 10 degrees must be implemented⁷.
- 7.6 I understand that ITP Renewables consider that the rest angle of 10 degrees may be able to be adjusted in the future, subject to further assessment once the landscaping has been established. I consider it is appropriate to enable the review and potential amendment to the panel rest angle, only in the event it can be sufficiently demonstrated that no yellow glare will occur within the public road network.
- 7.7 Further, while not my area of expertise, to reflect my recommendation to remove all yellow glare from the road network, I recommend that Helios prepare and maintain a Glint and Glare Adaptive Management Plan. From a traffic perspective, the primary purpose of this plan is to provide ongoing monitoring of glint and glare effects on the road network, to ensure that unacceptable (yellow) glare effects are avoided in perpetuity.
- 7.8 I have addressed these matters in draft conditions of consent, refer to Section 10 of my evidence.

8. RESPONSE TO TRANSPORT RELATED SUBMISSIONS

- 8.1 I have reviewed submissions that relate to transportation matters and have identified the following consistent themes raised by submitters:
- (h) **Road pavement effects:** Concerns about damage to Ranfurly-Naseby Road and other local roads from heavy construction traffic.

⁷ Refer to the evidence of Mr Nicholas Logan (Glint and Glare) for further discussion on the rest angle of 10 degrees to be implemented.

Requests for pavement condition monitoring, maintenance responsibilities, and cost recovery mechanisms⁸.

- (i) **Vehicle Routing and Access:** Suggestions to use Ranfurly Back Road instead of Ranfurly – Naseby Road, and Goff Road instead of SH85 through Ranfurly. Questions about the safety and design of Site access points. Concerns about driver compliance with designated entry/exit routes. Requests for curfews or restrictions on heavy vehicle movements⁹.
- (j) **Construction Traffic Estimates:** Scepticism about the accuracy of projected vehicle movements. Requests for more transparency on data sources and assumptions. Concerns that estimates do not account for all construction-related activities (e.g. water trucks, delivery of materials)¹⁰.
- (k) **Construction Staff Traffic:** Lack of detail on how 200–250 workers will travel to and from the Site, and provision of parking within the Site¹¹.
- (l) **Road Safety Concerns:** Safety risks for cyclists, tourists, and unfamiliar drivers on rural roads. Concerns about increased traffic volumes and interactions at access points¹².
- (m) **Glare/Glint Effects:** Potential for glare or glint effects from solar panels on drivers¹³.

8.2 I respond to these matters in the following paragraphs.

Road Pavement Effects

8.3 Submitters have raised concerns relating to the impacts of increased heavy vehicles on the local road pavements. This is a common concern for larger land development projects during the construction phase.

8.4 In Section 10 of my Transport Assessment, I recommended that use of Ranfurly Back Road (a local road, narrow and unsealed) by heavy vehicles be avoided, with heavy vehicles instead being required to access the Site using

⁸ 18 (Craighead); 60 (Munro); 119 (Davison); 134 (MacLeod); 153 (Lucas).

⁹ 60 (Munro), 73 (de Louw), 118 (Potter) 128 (Healey).

¹⁰ 73 (de Louw); 78 (Potter); 81 (Swinbourn).

¹¹ 73 (de Louw), 78 (Potter), 81 (Swinbourn), 134 (MacLeod), 153 (Lucas).

¹² 18 (Craighead), 81 (Swinbourn), 118 (Potter), 119 (Davison), 128 (Healey).

¹³ 18 (Craighead), 81 (Swinbourn), 128 (Healey).

Ranfurly Naseby Road (a Rural Collector Road, two-lane/two-way sealed carriageway).

- 8.5 I consider that since Ranfurly-Naseby Road is a Rural Collector Road, heavy vehicle movements, such as those travelling between Naseby, Ranfurly, and further afield, can be reasonably anticipated, and in fact form part of the receiving environment¹⁴.
- 8.6 In addition, I note Mr Vincent sets out in the S42A report that use of Ranfurly Naseby Road by construction traffic is preferable, because it is sealed and therefore is able to better withstand heavy vehicle movements compared to a metalled road¹⁵. Moreover, the Central Otago District Council (“**Council**”) Infrastructure Manager has expressed a preference for heavy vehicles to use sealed roads, where possible, to minimise damage to gravelled roads.
- 8.7 Based on the above, I understand Council is comfortable with the proposal with respect to pavement impacts.

Vehicle Routing and Access

- 8.8 Submitters have raised concerns regarding the proposed routing of construction traffic and the use of specific access points to the Site. These concerns include:
- (a) Requests to use Ranfurly Back Road rather than Ranfurly – Naseby Road.
 - (b) Questions about the safety and design of Site access points.
 - (c) Concerns about whether drivers will comply with the proposed entry/exit system.
 - (d) Requests for curfews or restrictions on heavy vehicle movements.
 - (e) Concerns about heavy vehicles travelling through Ranfurly township, and requests that Goff Road be used instead.
- 8.9 Regarding (a), in my opinion, Ranfurly-Naseby Road is the most appropriate access route for construction traffic. As outlined in Section 3.1 of the Transport Assessment, it is a sealed, 6.0m-wide Rural Collector Road with a painted centreline and is designed to accommodate regular two-way vehicle

¹⁴ Mobile Road records 15% of the ADT flows on Ranfurly-Naseby Road are heavy vehicle movements.

¹⁵ Section 42A Report, Paragraph 99.

movements. In contrast, Ranfurly Back Road is unsealed, and has a carriageway width of approximately 4m, and is not suitable for regular two-way traffic or heavy vehicle use¹⁶. It is classified as a Local Road in the District Plan.

- 8.10 Regarding (b and c) the proposed one-way circulation system—entry via Access 1 and exit via Access 2¹⁷—is a standard and effective approach for managing construction traffic. Section 5.2 of the Transport Assessment outlines this configuration, and Sections 5.4 and 5.5 confirm that sight distances at both access points comply with the minimum requirements of the District Plan. The access geometry has been designed to accommodate semi-trailers, and vehicle tracking diagrams are provided in Appendix A of my Transport Assessment.
- 8.11 I consider that the system described above and in the Transport Assessment can be effectively implemented through standard processes such as driver induction, Site signage, and a CTMP.
- 8.12 Regarding (d), I consider that setting curfews for heavy vehicles is not required to manage transportation effects, but I acknowledge it may be desirable to do so for non-transport related reasons (such as amenity). I therefore consider this is better addressed by the project planner.
- 8.13 Regarding (e), some submitters have queried why the Transport Assessment recommended that construction traffic avoid Goff Road and instead use SH85 through Ranfurly. The reason for this recommendation was that, while Goff Road is a more direct route to the Site, the eastern intersection of Goff Road and SH85 lacks dedicated turning facilities.
- 8.14 I accept, however, the Goff Road route is more direct for traffic approaching from the east, and some truck drivers may therefore wish to follow this route rather than staying on SH85, travelling through Ranfurly. Accordingly, I have considered the traffic effects associated with additional use of this intersection in more detail.
- 8.15 The SH85/Goff Road (western) intersection includes a basic left turn treatment, and the volumes of traffic expected are well below the point at which an auxiliary left turn lane is warranted. I therefore consider that no further assessment is required for this movement.

¹⁶ I consider the Ranfurly Back Road is appropriate for emergency services and low frequency maintenance vehicle access, as proposed for Access 4.

¹⁷ Refer to Figure 2 of my evidence.

- 8.16 The SH85/Goff Road (eastern) intersection does not include a right-turn bay, refer to Figure 3 below.



Figure 3: Goff Road / SH85 / Ranfurly Back Road intersection geometry¹⁸

- 8.17 I have assessed the suitability of this intersection based on the following factors:

- (a) **Road safety issues:** I have reviewed NZTA's Crash Analysis System ("CAS") for the 2019 – 2025 period. There were no reported crashes during this period.
- (b) **Current SH85 traffic volumes:** SH85 carries less than 1,500 annual ADT movements^{19 20}, which I consider to be very low. Assuming 10% of ADT occurs during the peak hour, this equates to approximately 150 vehicles per hour.
- (c) **Current Goff Road traffic volumes:** Goff Road was estimated to carry 350 ADT in 2016²¹. Allowing for some growth²², I estimate it still carries fewer than 450 ADT. Assuming 10% of the ADT occurs during the peak hour, this equates to approximately 45 vehicles per hour (two way). Conservatively assuming that all of these movements went through this intersection, and half of those movements make a

¹⁸ Google Maps.

¹⁹ NTZA Count Site 08500067; Kyeburn – Ranfurly Road, 905 ADT, with 13.5% heavy vehicles.

²⁰ NTZA Count Site 08500090; Ranfurly – Wedderburn Road, 1,274 ADT, with 14.8% heavy vehicles.

²¹ MobileRoads estimate (2016); 350 ADT with 10% heavy vehicles.

²² 2% per annum, which is considered conservatively high in this low growth, rural context.

right turn into Goff Road, this equates to 23 right turns into Goff Road from SH85 per hour at present.

- (d) **Speed environment:** SH85 has advisory speed signage of 65 km/h on both approaches to the intersection, and therefore a design speed of 75km/h is reasonable when applying the Austroads warrant guide discussed below.
- (e) **Sight lines:** Extensive sight distances are available on SH85 in both directions at the eastern Goff Road intersection.
- (f) **Suitability for heavy vehicles:** Goff Road is identified on NZTA's High Productivity Motor Vehicle (HPMV) network map²³ as an "Approved Local Authority Road", which confirms its suitability for heavy vehicle use.
- (g) **Construction traffic:** as discussed in the Transport Assessment, the peak construction months are expected to generate an average of 24 construction vehicle trips per day (15 heavy and 9 light).

8.18 Referring to the Austroads Guide to Traffic Management Part 6, Figure 3.25, I have assessed whether a right turn bay is warranted with construction traffic added to the current flows. In the assessment, I have considered a worst-case scenario whereby all 24 construction vehicle movements use the intersection during the peak hour²⁴, and that all of those vehicles will also turn right into Goff Road.

8.19 In reality this will not occur with construction traffic more likely being spread throughout the day, and on different parts of the road network. Even when adopting that worst-case scenario, the intersection still does not meet the threshold for requiring a right-turn bay (which is indicated by the red curved line in Figure 4).

8.20 Given there are no identified safety issues recorded at the intersection, existing traffic volumes on SH85 and Goffs Road are low, and that it does not trigger the need for turning facilities when construction traffic flows are added, I consider that it is acceptable if heavy vehicles use Goff Road when accessing the Site. Moreover, I note that any increase in use on Goff Road, including the

²³ <https://experience.arcgis.com/experience/7a56fbc0c4fb47c78a5f1fc2e55cae7b/page/Page-1?views=Legend>.

²⁴ As discussed in Section 6.1 of the Transport Assessment 24 construction vehicle trips per day are expected (15 heavy and 9 light).

SH85/Goff Road intersection, will be temporary in line with the construction period of two years.

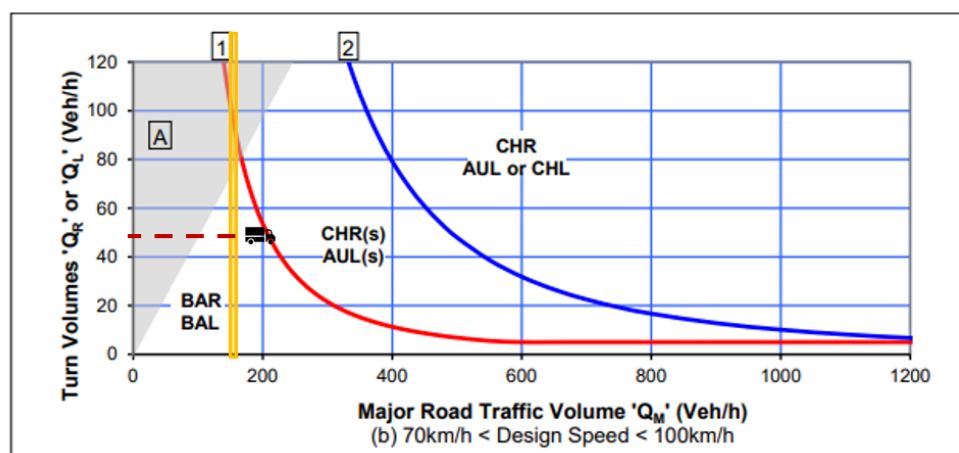


Figure 4: AUSTROADS turning bay warrant Figure 3:25, showing anticipated traffic volumes (yellow line: SH85 volume, dashed red line/truck: turning volume Goffs Road)

- 8.21 Based on this assessment, I now do not consider it necessary for construction traffic to be required to avoid Goff Road. As noted in Paragraph 9.6 of my evidence, this is consistent with the recommendation of the Reporting Planner in the S42A Report.

Construction Traffic Estimates

- 8.22 Several submitters have questioned the accuracy of the construction traffic estimates provided in the Transport Assessment, particularly in light of the scale of the proposed Project and the number of construction workers expected on Site.
- 8.23 Construction traffic estimates were developed by Abley, and checked by Helios, based on data from a previously established 100MWp solar farm. These figures were then extrapolated to reflect the scale of the proposed Project, which has a longer construction period of approximately 24 months. This methodology is outlined in Section 6.1 of the Transport Assessment.
- 8.24 Helios has confirmed that the extrapolated figures are based on their experience and consultation with contractors and consultants familiar with comparable projects in Australia and considers them to be a reasonable and representative assumption for the purposes of assessing transport effects.

- 8.25 The peak construction months are expected to generate an average of 24 vehicle trips per day (15 heavy and 9 light), as shown in Table 6.2 of the Transport Assessment. While some submitters have suggested that these figures may be conservative, I consider that they are appropriate for the scale and nature of the Project, based on the information provided to me by Helios. However, as noted in Paragraph 5.4 of my evidence, there is likely to be additional vehicle movements generated by construction staff during peak construction periods. I discuss this under the Construction Staff Traffic heading below.
- 8.26 I also note that the Transport Assessment recommends the preparation of a CTMP, which will provide further detail on vehicle movements, scheduling, and mitigation measures with the input of the lead contractor selected to deliver the Project. This will allow for adaptive management of traffic effects during the construction phase.

Construction Staff Traffic

- 8.27 Several submitters have raised concerns about the lack of detail regarding how construction staff – estimated at up to 250 workers during the busiest times of the construction programme – will travel to and from the Site each day. I acknowledge that the Transport Assessment did not explicitly include staff traffic in its trip generation estimates (refer Section 6.1), as at that stage I was unaware of the number of staff required onsite to deliver the project.
- 8.28 Importantly, as noted in paragraph 5.5 of my evidence, staff will be transported to the site primarily using shuttle vans and buses, which will reduce the level of traffic generation compared to a scenario where staff travelled to and from the site via single occupancy vehicle.
- 8.29 At this stage, it is not possible to determine with explicit accuracy where all staff will be travelling from over the construction programme period, as this will be in part dependent on the appointed construction contractor and where suitable accommodation can be sourced. However, based on locations of nearby settlements, it is likely that staff will be sourced from a mix of Naseby, Ranfurly and potentially further afield from Clyde and Alexandra if necessary (or for staff or contractors who may visit the Site less frequently).
- 8.30 Since the current traffic flows on the surrounding transport network are very low, the addition of traffic generated by staff, particularly noting the use of shuttles and buses, is unlikely to create any network capacity or safety issues.

- (a) For staff arriving from the south (e.g. from Ranfurly or further afield), the intersection of SH85 and Ranfurly-Naseby Road is appropriately designed, with an existing auxiliary right turn lane.
- (b) For staff arriving from the north (e.g. from Naseby), Ranfurly-Naseby Road is a sealed, low-volume rural road with sufficient width and visibility to accommodate additional light vehicle traffic. The road is classified as a Rural Collector Road, and I consider it suitable for the expected increase in vehicle movements during the construction period.

8.31 Moreover, the CTMP to be prepared with input from the lead delivery contractor closer to the time of construction will provide greater detail on how staff will be transported to and from the Site. This will include a requirement for the construction contractor to implement traffic reduction methods such as encouraging carpooling and providing shuttles and / or buses when there is a higher concentration of staff in a single area.

8.32 While I consider the road network to be adequate, I recommend for completeness that the CTMP include a requirement for the contractor to consider measures to encourage higher vehicle occupancy among construction staff. This could include carpooling, shuttle or bus services, or other transport coordination strategies. These measures would help reduce the total number of vehicle movements on the road network.

Road Safety Concerns

8.33 Submitters have raised concerns about the potential for increased traffic – particularly heavy vehicles – to compromise road safety. Specific concerns include:

- (a) Safety risks for cyclists, tourists, and unfamiliar drivers on rural roads.
- (b) The safety of turning movements at Site access points.

8.34 The Transport Assessment includes a review of crash history using NZTA Waka Kotahi's Crash Analysis System (Section 3.5). Over the five-year period from 2018 to 2023, four crashes were reported in the vicinity of the Site. One was fatal (due to excessive speed), one resulted in minor injuries, and two were non-injury crashes. There is no evidence of a systemic safety issue on the surrounding road network.

- 8.35 The Site access points exceed the minimum sight distance requirement of 160m, as identified in the Central Otago District Plan Table 12.1 Sight Distances. As outlined in Sections 5.4 and 5.5 of the Transport Assessment, Accesses 1 and 2 provide at least 160m of sight distance in both directions, and vehicle tracking confirms that semi-trailers can safely enter and exit the Site. Given the low traffic volumes on Ranfurly-Naseby Road and the low frequency of turning movements, I consider the proposed access arrangements to be safe and appropriate.
- 8.36 While Ranfurly-Naseby Road and Ranfurly Back Road do not have dedicated pedestrian or cycling facilities (Section 3.3), they are low-volume rural roads. I consider the likelihood of conflict between construction traffic and vulnerable road users to be low, and this can be further managed through the Site induction of staff and the CTMP.
- 8.37 I support the inclusion of a CTMP to ensure that any residual risks - such as driver behaviour, signage, or temporary traffic controls - are appropriately managed during the construction period.

Glint/Glare effects

- 8.38 Some submitters have raised concerns about the potential for glare or glint effects from the solar panels to distract drivers on nearby roads. I have reviewed these effects and consider that subject to conditions (refer to Section 10 of my evidence), that glint and glare effects on traffic safety are acceptable. Other submissions regarding glint and glare effects more generally are addressed in the evidence of Mr Logan.

9. RESPONSE TO SECTION 42A REPORT

- 9.1 I have reviewed the Section 42A Report prepared by Mr Vincent, dated 07 July 2025. I make the following comments in regards to transport matters.

Glint and Glare

- 9.2 Paragraphs **82-88** discuss road safety effects relating to glint and glare. Mr Vincent and I are in agreement with respect to the effects arising from Glint and Glare on road safety.

Construction Traffic

- 9.3 Paragraphs **97-100** discuss construction traffic effects.

- 9.4 While Mr Vincent agrees with my assessment of construction traffic effects, he recommends in **Paragraph 98** that all four Site vehicle accesses are constructed in accordance with Part 29 of the Central Otago Roding Policies 2015 (Roding Policy). He notes that the basic parameters for vehicle crossings between the Roding Policy and the District Plan are the same, but the Roding Policy provides more detail relating to construction specification and therefore he considers this standard to be more appropriate than the District Plan when setting the construction requirements for the vehicle crossings. I consider this to be acceptable, and have recommended some minor wording changes to Mr Vincent's recommended conditions in Section 10 of my evidence.
- 9.5 In Paragraph 99, Mr Vincent expresses that he agrees it is preferable for most construction traffic to access the Site from Ranfurly-Naseby Road (as opposed to Ranfurly Back Road). This is because Ranfurly-Naseby Road is wider, and is sealed, and as such it is more conducive to accommodating heavy traffic movements compared with Ranfurly Back Road, which is narrow and unsealed. Mr Vincent also notes that Ranfurly Naseby Road provides a safer connection to the Highway. I agree with Mr Vincent that Ranfurly Naseby Road is the most appropriate access road for the Site.
- 9.6 Paragraph 100 assesses potential use of Goff Road by construction vehicles. Mr Vincent concludes that he does not consider it justified that heavy vehicles be precluded from using Goff Road, and that the effects of the occasional use of Goff Road (by construction traffic at driver or company discretion) will not lead to any significant adverse effects and therefore recommends deletion of the draft condition preventing Goff Road from being used. Based on my further assessment in Section 8, I agree with Mr Vincent in this regard.

10. RECOMMENDED CONDITIONS

- 10.1 I have reviewed the draft conditions from the s42a report. The following conditions are relevant from a transport perspective; however I suggest amendments as shown in ~~strike through~~ and underline:

XX Condition 9 (previous condition 5 in the s42A Report) (Construction Management Plan) (d) *Construction Traffic Management Plan (CTMP) including, as a minimum the following detail:*

- *Truck drivers are advised:*
 - *To adhere to the speed limit and drive to the conditions during*

periods of adverse weather.

- *Of the circulation arrangements onsite, including the requirement to access the site via Access 1 and exit the site via Access 2.*
- *An outline of how traffic will be directed onto the site and where parking and the layby area will be located. The layby area must be set back sufficiently away from the gate to avoid vehicles queuing over the sealed access area.*
- *Identifies that only Accesses 1 and 2 are to be used by heavy vehicles and that the use of Access 4 (and Ranfurly Back Road) must not include heavy vehicles. Light vehicle movements through Access 4 may only consist of infrequent access to the rear parts of the solar farm.*
- *Prohibits any form of heavy vehicle access on Ranfurly Back Road.*
- *Any temporary traffic management measures.*
- *Includes detail on how staff will be transported to and from the site, including consideration of measures to encourage higher vehicle occupancy among construction staff (including, but not limited to carpooling, shuttle services or other transport coordination strategies).*

XX Condition 12 (previous condition 9 in the s42A Report): Prior to commencing construction (excluding any enabling works such as geotechnical investigations, piling tests and site surveys or testing), the consent holder must construct/upgrade Access 1, 2, 3 and 4 ~~to be constructed so they are~~ in accordance with Part 29 of Council's Roadway Policies 2015, with the following amendments:

- a) The geometry for Access 1 and 2 must also be in general accordance with the vehicle tracking shown in Appendix A of the Integrated Transport Assessment completed by Abley, titled 'Naseby Solar Farm Development Transport Assessment', dated 23 August 2023.
- b) Accesses 1, 2 and 3 must be sealed from the edge of Ranfurly-Naseby Road to a distance of not less than 5m inside the property boundary.

Note: The consent holder is also required to obtain permission to construct a vehicle crossing, an approved Corridor Access Request and temporary traffic management plan from the Central Otago District Council Roadway Manager prior to the commencement of any works within road reserve. The pavement design for the vehicle crossings should account for the fact that Accesses 3 and 4 will be low use crossings, and not to be used by heavy vehicles.

Condition 32 (previous condition 29 in the s42A report): The Consent Holder must prepare and implement a Glint and Glare Adaptive Management Plan (GGAMP) to address any substantiated adverse glint and glare impacts on affected parties and/or the surrounding road network. The GGAMP must include the following:

- a) Details of mitigation to be established as follows:
 - i) Prior to the commencement of operation of the solar farm, the planting as shown in Figure 2 of the Minimum Screening Analysis for Maniatoto

Solar Farm dated 30 April 2025 are implemented at a height of at least 3m, and

- ii) A solar panel rest angle of 10 degrees, as required to avoid yellow glare effects on the public road.
- b) Contact Information: The GGAMP must provide contact details for the Consent Holder and their agent responsible for addressing glint and glare complaints ensuring that affected parties have a direct line of communication for reporting issues.
- c) Reporting Procedures: The plan must include procedures for reporting glint and glare issues by affected parties, including Road Controlling Authorities for any road network affected by "Yellow glare" or "Green glare". This includes:
 - iii) The process for lodging a complaint.
 - iv) The timeline within which the Consent Holder must acknowledge receipt of the complaint.
 - v) A detailed timeline for the investigation and response process, ensuring that any substantiated glare issues reported are addressed promptly and effectively within a specified timeframe.
 - vi) Adaptive Management Strategies: The GGAMP should detail a range of possible mitigation solutions to address reported glint and glare issues. These solutions may include but are not limited to, ~~physical alterations to the solar farm setup,~~ installation of screening or landscaping to block or diffuse glare, and adjustments to the operational procedures of the solar farm (such as tracking management).
- d) Monitoring and Evaluation: The Consent Holder must implement a monitoring regime to assess the effectiveness of the mitigation measures implemented under the GGAMP, including any road affected by "Yellow glare" or "Green glare". This includes feedback from affected parties on the resolution of reported glare issues.
- e) Duration of the Plan: Unless otherwise authorised by the Consent Authority, the GGAMP must be implemented for whichever is the greater duration of the following:
 - vii) A period of three years following the mitigation planting obtaining the minimum height required by (a) above; or
 - viii) For a year following any remedial action undertaken.

During this period, the Consent Holder is obligated to respond to and manage glint and glare complaints as per the procedures outlined in the GGAMP.

- f) Review and Reporting: If complaints are received, the Consent Holder must submit an Annual Report to the Consent Authority, summarising the glint and glare complaints received, actions taken, and the effectiveness of the mitigation measures implemented. The Annual Report may also recommend whether ongoing management of glint and glare issues is required along with any relevant supporting information.

Note: An adaptive management plan offers a flexible and responsive approach to managing glint and glare that may arise from the approved solar farm, recognising the inherent challenges and uncertainties in accurately predicting glare impacts ahead of time. This approach allows for real-time monitoring and addressing of actual impacts as they occur, rather than relying solely on predictive models that may not fully capture the dynamic and variable nature of sunlight and its interactions with the environment. By focusing on adaptive measures, the plan can more efficiently respond to affected parties' concerns, ensuring that mitigation strategies are directly tailored to the specific conditions and experiences of those impacted. For the avoidance of doubt, the consent holder may adapt the mitigation measures, such as the solar panel rest angle, provided that no yellow glare occurs within the public road network.

- 10.2 The reason for the strike-through in Condition 32(c) is because I understand from Mr Logan that physical alterations to the solar farm setup will not be required in order to avoid yellow glare on the road network. I defer to the expertise of Mr Logan regarding technical methods required to achieve that outcome.
- 10.3 Overall, I consider that these conditions, or those that achieve the same outcome, will ensure that the transport effects (including those related to road glint and glare) are effectively managed. The updated conditions are attached to the evidence of Ms Banhidi.

11. CONCLUSION

- 11.1 Overall, with the recommendations set out in Section 10 of my evidence, I am able to support the proposal from a traffic and transport perspective.

Logan Paul Copland
21 July 2025