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10 February 2025

Selwyn District Council
Attn: Jane Anderson, Consultant Planner
Via email: Jane.Anderson@selwyn.govt.nz

Kia ora Jane

RE: RC245775 - Darfield Solar and Energy Storage Ltd Additional Response to the Request for Further Information, Landscaping Matters

This letter sets out the response from the Darfield Solar and Energy Storage Ltd (**"DSES"**) to the additional landscaping further information matters identified in memo provided with the Selwyn District Council (**"SDC"**) letter dated 12 November 2024. The responses are provided in the table below.

While a number of plans and visual simulations are not yet in a position to be provided, we consider it prudent to share our initial responses to these matters, as well as outline how we will intend to address those outstanding items. This is to ensure that the information being provided is sufficient to ensure that Council's Consultant Landscape Architect concerns will be addressed with the resulting images and plans. However, please do not hesitate to get in touch with us should you wish to discuss any matter outlined below.

To confirm, the following list is a summary of the outstanding documents to be provided separately to this response, subject to SDC feedback on the responses in this letter:

- Visual simulation of site entrance (Viewpoint 7);
- Cross section of BESS etc through to Viewpoint 14;
- Updated versions of all existing visual simulations to include a location map in title block;
- ZTV map without viewpoint locations, and with a 2km separation from site contour added;
- Separate viewpoint locations map, altered to make it clearer where markers are in relation to dwellings;

- Updated planting plan, amended to align with suggested plant species list naming and to include 66kv lines to reflect implications on plant heights those will have, in high-resolution pdf;
- Updated suggested plant species list, with naming amended to align with that on planting plan;
- Additional visual assessment for Mount Oxford; and
- A plan showing which viewpoints will have low-moderate and moderate temporary visual effects are, and including notes re anticipated duration of said temporary effects for each receiver.

We anticipate that the above information will be available for submitting to Council by 7 March 2025.

Please also find attached an amended version of our proffered district condition 22, regarding the glint and glare adaptive management plan, and an indicative diagram outlining widening of the shoulder on a 180m long section of the eastern side of State Highway 73, north and south of the intersection with Homebush Road. These have each arisen as agreed actions to address raised concerns following a meeting with Council's Transportation Consultant and Waka Kotahi | New Zealand Transport Agency, also held on Tuesday, 4 February 2025.

We have also received written approval from Fonterra in relation to the factory property, which is attached. It is noted that we are anticipating receipt of written approval from Fonterra in relation to the other properties owned by Fonterra that are located adjacent to this subject site.

Ngā mihi,

Andrew Brown
Mitchell Daysh Limited
andrew.brown@mitchelldaysh.co.nz

Attachments:

1 Updated Condition 22; Glint and glare adaptive management plan
2 Proposed seal widening: SH 63 / Homebush Road

SDC Request	DSES Response
Landscape	
1. The following outlines information I require to finalise my peer review of the LVA for Resource Consent Application RC245775 for works associated with the ground-mounted agrivoltaic development located off Homebush Road, Darfield.	Noted.
2. Regarding the Visual Simulations please:	
i) Provide a visual simulation image from Viewpoint 7 and/or Viewpoint 8 including the construction access and proposed entranceway.	i) As per meeting on 4 February 2025, a visual simulation from Viewpoint 7 will be provided as soon as practicable. It will include simulations of with and without established adjacent mitigation planting either side of the construction access and permanent entranceway. It is noted that these two entrances will utilise the same vehicle crossing location, as shown on drawing DAR-001 of Appendix 5 – Scheme Plans of the Resource Consent Application. The temporary construction traffic will then travel along an access track located within the site, which, for a short distance runs parallel to the site boundary. That temporary construction route then travels northward through the site to the temporary construction laydown area shown on that same plan.
ii) Provide a visual simulation image from Viewpoint 14 including the substation / ancillary buildings etc.	ii) As per meeting on 4 February 2025, it has been clarified that provision of a cross section from and including the proposed BESS and substation facilities through to Viewpoint 14 will be provided as soon as practicable.
iii) Provide a visual simulation image from Viewpoint 19 and/or 25.	iii) Based on the matters discussed during the meeting on 4 February 2025, we have considered these requested visual simulations, and do not consider that they will provide a material contribution to Council appreciating the actual and potential adverse visual effects of this proposal. This is discussed as follows: • Viewpoint 19 – This relates to the carriageway of the section of Auchenflower Road located east of Loes Road (Viewpoint 20 represents the dwelling at 526 Auchenflower Road). This section is not formed to a regular rural gravel road standard, instead it is in the form of two separate but parallel worn tyre paths, with an established grass strip running between them. Based on the current formation standard, it would appear that this is likely only intermittently utilised by the occupiers of the dwelling located at 526 Auchenflower Road.

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	It is noted that the Kimberley Road end of this section of Auchenflower Road is formed to a regular rural gravel road standard up to the driveway for the dwelling 526 Auchenflower Road. This would indicate that this is probably the most regularly utilised section of this part of Auchenflower Road. As such, there is limited value in understanding visual effects on users of this section of Auchenflower Road as part of Council's assessment of this proposal. • Viewpoint 25 – This relates to a viewpoint occupied only by the carriageway of Kimberley Road, located approximately halfway between the dwellings at 292 and 355 Kimberley Road. An image looking from this Viewpoint towards the site has been provided within Appendix 10 – Landscape and Visual Assessment. Within this image, it is clear that there will be limited visibility of the proposal, given the limited visibility there is of the low-growth shelterbelt that is located adjacent to the Fonterra factory, visible immediately in the foreground to the factory in the image. Given this, we do not consider that providing this additional visual simulation provided at the location of Viewpoint 25 will materially assist Council with their assessment of this proposal.
iv) Provide an additional visual simulation from Viewpoint 3 facing north / northwest towards the Fonterra factory to depict the effects of the removal of the existing shelter belts within the site.	iv) Based on the matters discussed during the meeting on 4 February 2025, it is not considered that a visual simulation in this location will materially improve Council's understanding of the actual and potential effects of the proposal. It is noted that the removal of the existing internal shelter belts is proposed, but this will be initially mitigated through the erection of temporary screening while the mitigation planting becomes established. The temporary screening will be to the same height as the minimum proposed height of the mitigation planting and thus will have a comparable visual screening effect with regards to the construction and operation visual effects of the proposed agrivoltaic occurring within the site. The height of the mitigation planting, once established, will exceed or equal the height of the panels. The exception to that statement is those that may be erected at the maximum height (to accommodate ground undulations), and only when at the very maximum tilt during the daily tracking motion. The maximum tilt of the panels will only occur for a short period at the start and end of each day, as shown on Figure 5 of page 5 of Appendix 9 – Glint and Glare Memo of the Resource Consent Application. Based on a further detailed review of this, considering the winter and summer solstice, it is estimated that this will occur for between 15-45 minutes in the morning, and a few minutes less in the evening (based on the tracking tables being orientated 7 degrees off north-south, so get site occupation maximisation). This is considered to be of a short duration overall. As a result of the removal of the existing shelter belt, which is currently higher than 3m, it is anticipated that there will likely be a greater vertical extent of the Fonterra facilities visible. However, this will be towards the base of the Fonterra structures, as opposed to enabling visibility of a previously fully screened dairy factory. The high-speed nature of the road network in this location will ensure that the change of those transient views will be small in scale and of limited duration as they pass the site. As such, it is considered that the proposal will not result in a noticeable change in visual effects associated with the adjacent Fonterra facilities when viewed from this part of the public road network.
v) Provide location maps on each visual simulation image page.	v) While it is noted that each visual simulation page includes the coordinates in the title block, these will be amended accordingly and shared as soon as practicable.

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vi) Provide a summary of the depiction of growth time post planting / implementation of the landscaping shown in the mitigation planting simulations (i.e. temporal data;4 years growth or otherwise).	vi) As stated on the final paragraph on page 5 within Appendix 10 – Landscape and Visual Assessment, it is anticipated that it will take 4-6 years for the mitigation planting to become fully established and achieve visual impermeability. It is at this stage of growth that the visual simulations depict for those showing the mitigation planting.
vii) Confirm the mitigation planting simulations shows the plants at a 3-metre height.	vii) It is confirmed that the visual simulations depict the mitigation planting at 3m height, as stated on each of the visual simulation pages that depict the mitigation planting.
viii) Outline whether the planting shown on the montages based on the Option 1 or Option 2 arrangement.	viii) The mitigation planting shown in the visual simulations is based on the Option 2 arrangement, which is stated within the report as being the recommended format of planting. It is noted however, that the level of screening anticipated from both Options 1 and 2, once established, will be the same.
3. ZTV / Viewpoint Map(s); please:	
i) Confirm whether the ZTV map modelling includes existing shelter belts and vegetation within the subject site (that have been proposed to be removed) and confirmation that the proposed mitigation planting has not been included in the ZTV modelling.	i) It is confirmed that the ZTV modelling excludes the existing shelter belts and vegetation within the subject site that are proposed to be removed and does not include the proposed mitigation planting. A revised ZTV model can be provided that shows the impact of the proposed mitigation planting, if this will assist. Please advise.
ii) Remove the Viewpoint Locations data from the ZTV Map and provide as a high-quality JPEG (for better resolution to cross reference the rural residential dwellings with	ii) The ZTV map will be amended accordingly and the resulting two separate maps shared as soon as practicable.

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visibility identified from the ZTV DSM model).	
iii) On the Viewpoint Location Map reduce the size / opacity of the Group labels on the plan and provide as a high-quality JPEG.	iii) The viewpoint location markers will be altered in the above separate map to be provided to more clearly depict the location that they are considered from, in particular in relation to nearby dwellings. This information will be included in the map to be provided as soon as practicable in accordance with S92 matter #3.iii) above.
iv) On the ZTV mark a general distance circumference (dotted line area) from the outer edges of the site up to 2 km away1 of which the modelling has been undertaken i.e. model extents.	iv) The ZTV map will be altered to include separation distances out to 2km. This information will be included in the revised ZTV map to be provided as soon as practicable in accordance with S92 matter #3.iii) above.
4. Please provide an assessment of how the mitigation planting aligns with the Selwyn District Council planting guides, including the Land Drainage Planting Design, the Trees and Vegetation Policy documents and any other relevant documentation. Please refer to other relevant SDC information, such as the Native Planting of Canterbury Plains information for suitability of species. Additionally, for the Mitigation planting:	Consideration was given to all relevant planting guides by Council and other relevant agencies. Suitable plants from the Land Drainage Recommended Native Plant Species List will be used in the mitigation screen planting mix. Species more suited to wet conditions have not been used. Consideration was given to the Trees and Vegetation Policy, however this appears to be more directed to planting on Council land and within reserve areas. Plant species have also been selected following consideration of the FENZ species flammability risk requirements (being low to moderate flammability risk).
i) Please provide the Planting Plan as a high-quality JPEG / PDF plan with dimensions of the recommended mitigation planting shown in more detail.	i) A high-resolution pdf of the Planting Plan, amended as outlined below, will be provided as soon as practicable.

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ii) Please mark on the anticipated location of the three typologies on the Suggested Plant Species list (being Exotic single species border, Native single species border and native mixed species border) on the Planting Plan.	ii) The Planting Plan and supporting Suggested Plant Species List will be amended to more clearly align and articulate what they relate to (particularly with regards to proposed and existing vegetation). The amended Planting Plan (in high-resolution pdf) and supporting Suggested Plant Species List will be provided as soon as practicable.
iii) Please mark on the Planting Plan the existing overhead 66kV line (to understand where constraints to height / maximum clearance areas exist).	iii) The amended Planting Plan being provided in response to S92 matter #4.ii) above will also be amended to include this information.
iv) Please confirm the minimum offset from the planting to the panels to remove any potential effects of shading (from planting on to the panels) and outline what is the maximum height that planting can be established at adjacent to panels (to remove any risk of shading to the effectiveness of the panels).	iv) The proposed offset of the mitigation planting from the panels will be at least 5m, to accommodate the internal access track network. The mitigation planting, once it has achieved maximum height, will be maintained to have a minimum height of at least 3m. Any height of the mitigation planting achieved above that, and the frequency of the associated maintenance schedule of the mitigation planting, will be at DSES' discretion, while ensuring that the minimum height for achieving appropriate visual and client
v) A brief statement on the anticipated long-term maintenance of plants including for example, infill planting, or maximised height etc.	v) The proposed mitigation planting will be subject to the following implementation and maintenance measures: • Each plant will be planted at a PB3 size at a minimum height of 25cm tall. • The hedgerow will be fenced off so it will not be affected by stock grazing. • The proposed plants will be irrigated for the first 3 years via an automatic irrigation system. • If any tree dies or becomes diseased, it will be replaced with a new plant as listed on the Suggested Plant Species List.

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5. Please provide a brief assessment / summary and subsequent ratings from the recreational areas in the Canterbury foothills, including the views from Mount Oxford (etc) (noting that the Fonterra diary factory is clearly visible from these locations). Being that these are highly memorable, frequented and distinct recreational areas in the Selwyn District, please note the overall visual effects, particularly of the effects of the glint and glare, when viewing down from these locations.	It is noted that the Glint and Glare assessment guidelines, as outlined within Table 7 of Appendix 9 – Glint and Glare Memo of the Resource Consent Application, advise that modelling is required for aviation receivers located 5km or less from a source. These are considered to be the most sensitive activity to potential glint and glare effects, with less sensitive receiver types having lessor proximity thresholds. This is discussed on pages 10-11 of the aforementioned Glint and Glare Memo. In this case, as there are no air traffic control towers or take off/landing approaches located within 5km of the site, the proximity threshold for the next most sensitive receiver, residential, was applied to the glint and glare modelling for this proposal, i.e. 3km. Mount Oxford is located at least 24km from the subject site, and is therefore located well outside of the guidelines for modelling consideration. While the site may potentially be visible from this viewpoint, visibility does not in of itself infer adversely affected. The scale of the proposal, when considered through the lens of the considerable distance between the subject site to Mount Oxford, is such that it will likely have a negligible adverse visual effect. Additional assessment of this matter will be provided with the pending documents referenced elsewhere in this response.
6. A description / review of the landscape cumulative effects of the proposal.	The proposed development and the adjoining Fonterra factory represent two very different types of visual forms, and thus effects. The proposed development occupies a large footprint but has little vertical element when viewed from a human perspective. The highest structure / feature of the proposal, being the proposed parts warehouse, is no greater than 11m in height. The parts warehouse is proposed to be located approximately 100m east of the shared boundary with the Fonterra factory site. This is located at least 350m from any external viewpoint locations from which the Fonterra facility would also be visible. The Fonterra facility occupies a comparatively small footprint compared to the proposed agrivoltaic development but has a considerable vertical aspect. The highest point of the Fonterra facilities is identified as being approximately 56m (Drier 2, refer Condition 23), based on the ECan discharge permit CRC230410, issued on 24 March 2023. The contrasting nature of the horizontal versus vertical aspects of these two adjoining facilities is such that it largely mitigates the cumulative visual effects of the proposal to the receiving environment. The Landscape and Visual Assessment (Appendix 10) has considered the effect of the proposal within the requirements of the definition of effect in the RMA (which included cumulative effect.
7. Please explicitly list / confirm, and mark on an aerial map, where the temporary effects noted as 'low-moderate' and 'moderate' will be experienced from and for how long, noting that the LVA outlines	A map is currently being prepared to address this matter and will be provided to Council as soon as reasonably practical.

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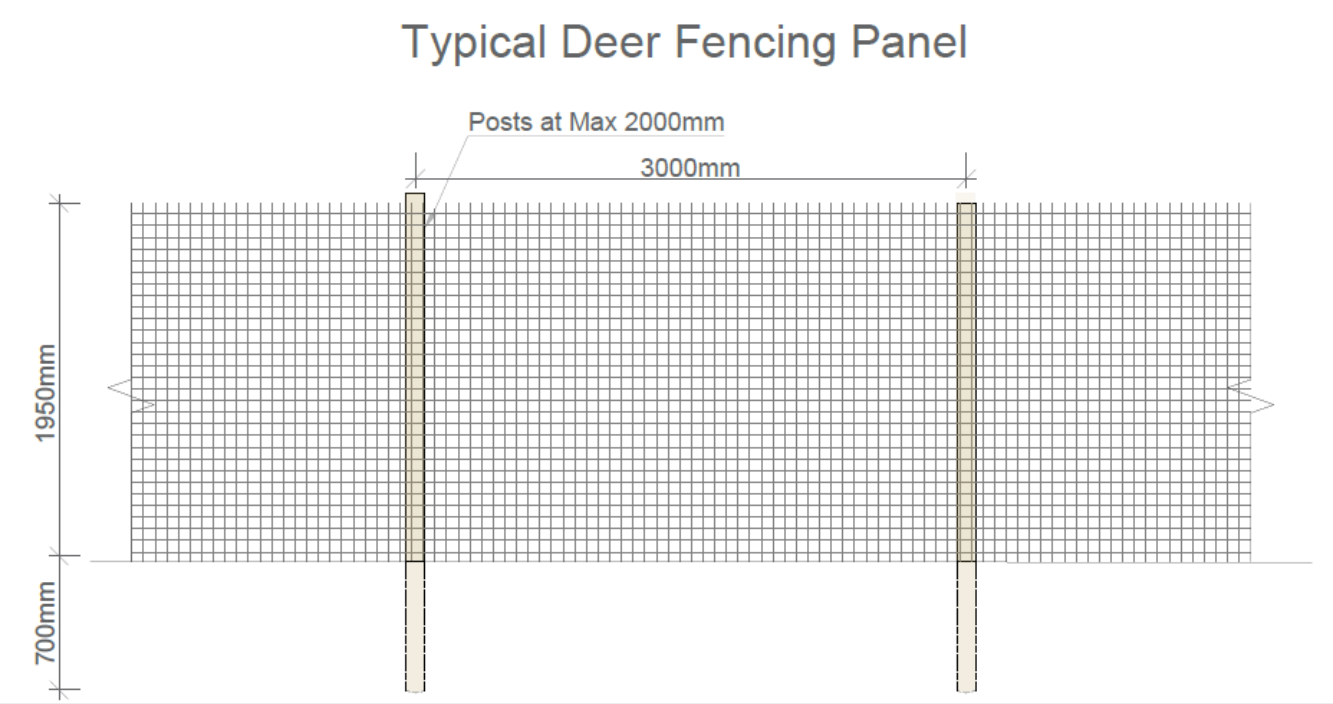
construction time frames at 18 months and plant growth to take full effect at 4-6 years2.	
8. Please provide a further description and associated example image of the fencing being this will be visible from the surrounding areas i.e. what is the type and anticipated appearance of security fencing (itemised at deer-style security fence at 2.4m high).	The proposed security fencing would be comparable to that shown in the below diagram, although to a maximum height of 2.4m. This indicative diagram has been borrowed from a comparable development within the rohe of Waikato District Council, which obtained approval from an EPA panel on 22 December 2023. The second image is of an example of the style of deer fencing we are intending to utilise. It is noted that the visual simulations all include deer fence of the proposed height within the generated images. 

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9. Proposal descriptors:	
i) The LVA notes that 'PV tracking management will be used to mitigate the effects of glare while the screen planting grows'. Please provide a summary of how this is to occur and for what period of time.	i) As outlined in the S92 response provided to Council on 17 January 2025, the use of PV tracking management is no longer proposed to mitigate the effects of glare while the screen planting grows. However, for Council's information, this has been confirmed as achievable through communication with one of the main manufacturer of the PV tracking tables. The software for these mechanisms can be set to avoid the angle of the PV modules for that period of the day, each day that it is identified as resulting in an adverse glare effect (i.e. yellow glare level). The software directs the tracking table angle to tilt beyond that of the offending angle prior to the identified time, so that normal tracking movements can resume shortly after the offending period has passed.

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ii) Please provide a review of what level of glint / glare reduction is to be expected from anti reflective coating.	ii) The glint and glare modelling has factored in the anticipated diffusion from the anti-glare coating, as stated on page 3 of the Forge Solar modelling results, attached to Appendix 9 - Glint and Glare Memo. This page outlines the parameters of the proposal ("Component Data: PV Arrays"), with the anti-reflective coating noted in relation to the panel material ("smooth glass with AR coating"), AR being an abbreviation of anti-reflective. A diagram illustrating the effect of diffusion is included in the aforementioned Glint and Glare Memo, on page 3 (Figure 2).
iii) Further details, including the overall extent of re-grassing / grassed areas, extent of areas of grazing, when this will be implemented and any maintenance of planting / fencing to support anticipated grazing under and around the solar panels (the LVA notes 'will retain pasture and sheep grazing beneath the PV structures').	iii) The proposed site plan, drawing DAR-001 of Appendix 5 – Scheme Plans of the Resource Consent Application, shows all areas of the subject site that are proposed to be developed for panels, access tracks, and hardstand areas for inverters, the BESS units, and associated substation area. All areas of the proposed development area identified as being occupied by panels are proposed to be retained in grass / replanted in grass once all other construction activities are completed. All of the grassed areas under and surrounding the panels will be subject to sheep grazing. The location of any stock management fencing will be determined at detailed design stage. The stock management grazing will be the standard farm post and wire fencing utilised to control sheep access. This will be subject to regular maintenance as would be anticipated with standard farming practices.
10. Should you require any further detail or would like to discuss matters raised in this RFI please do not hesitate to contact me on the details below.	Noted.

ATTACHMENT 1: PROPOSED NEW DISTRICT CONDITION #22 (GLARE)

The condition below is proposed as a replacement for Condition #22 in the documents as lodged (Appendix 07 Proposed Conditions – District).

22 Glint and Glare Adaptive Management Plan

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 as identified in the Glint and Glare Analysis Report (dated 25 June 2024). The GGAMP must include the following:

(a) *Details of screening to be established in line with the Glint and Glare Analysis Report (dated 25 June 2024) as updated by the memo: Darfield Agrivoltaic Development: Request for Additional Information (S92) Response, Mansergh Graham, Dated 9 December 2024, <u>including, as a minimum:</u>*

   i. *<u>Mitigation planting that shall be maintained to a minimum height of 3m along the site boundary with SH73;</u>*

   ii. *<u>Temporary screening to a minimum height of 3m that shall be erected prior to the tracking activity of the panels commencing, and subject to regular maintenance until such time as the above mitigation planting achieves the minimum height of 3m; and</u>*

   iii. *<u>The PV arrays identified as generating the "yellow" glare, as identified in the memo: Darfield Agrivoltaic Development: Request for Additional Information (S92) Response, Mansergh Graham, Dated 9 December 20 shall be erected to the minimum height of 2.8m.</u>*

(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. This includes:*

   i. *The process for lodging a complaint.*

   ii. *The timeline within which the Consent Holder must acknowledge receipt of the complaint.*

iii. *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.*

(d) *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).*

(e) *Monitoring and Evaluation: The Consent Holder must implement a monitoring regime to assess the effectiveness of the mitigation measures implemented under the GGAMP. This includes feedback from affected parties on the resolution of reported glare issues.*

(f) *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:*

i. *A period of three years following the mitigation planting obtaining the minimum 3m height;*

Or

ii. *For a year following any remedial action undertaken.*

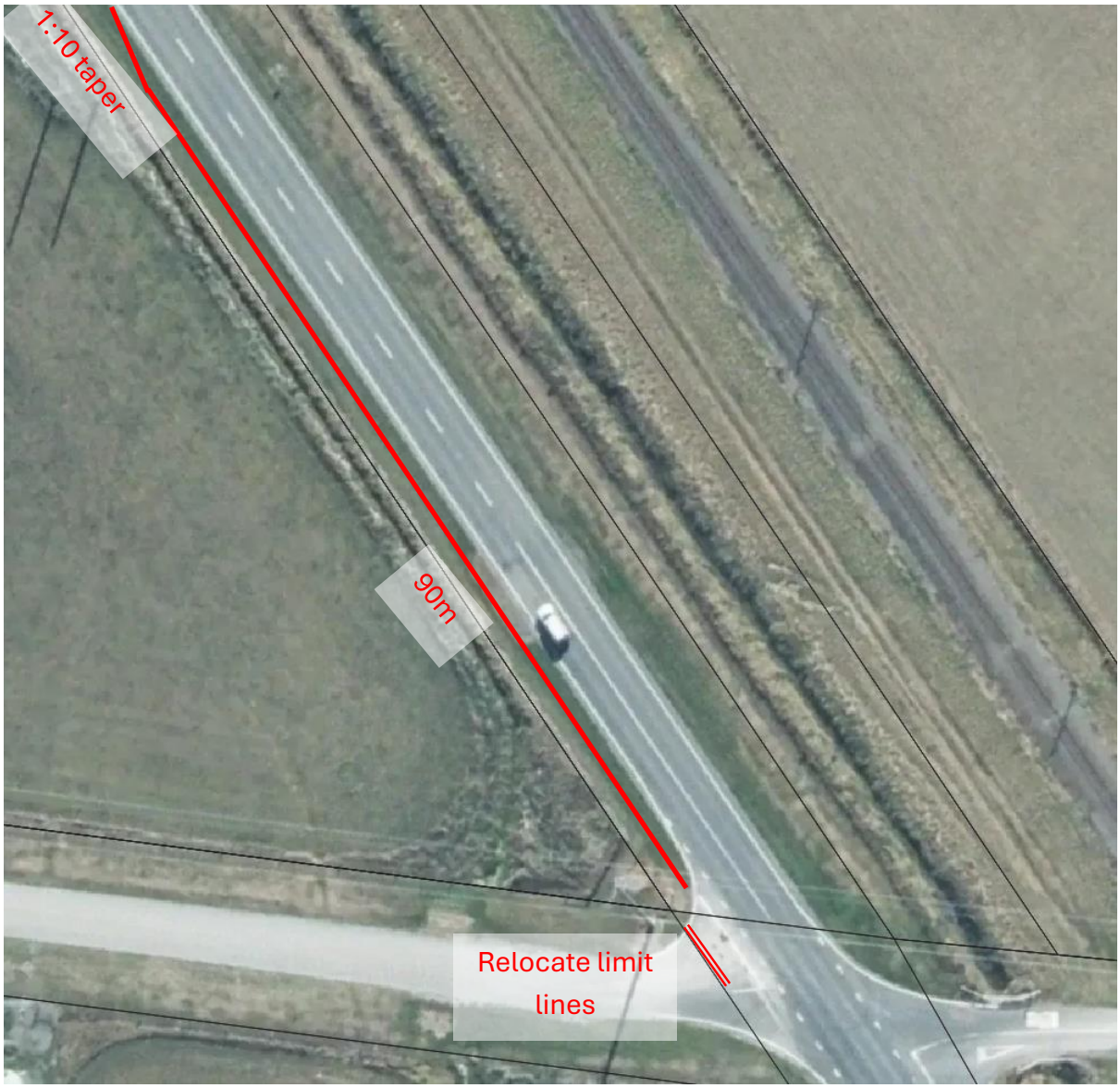
During this period, the Consent Holder is obligated to respond to and manage glint and glare complaints as per the procedures outlined in the GGAMP.

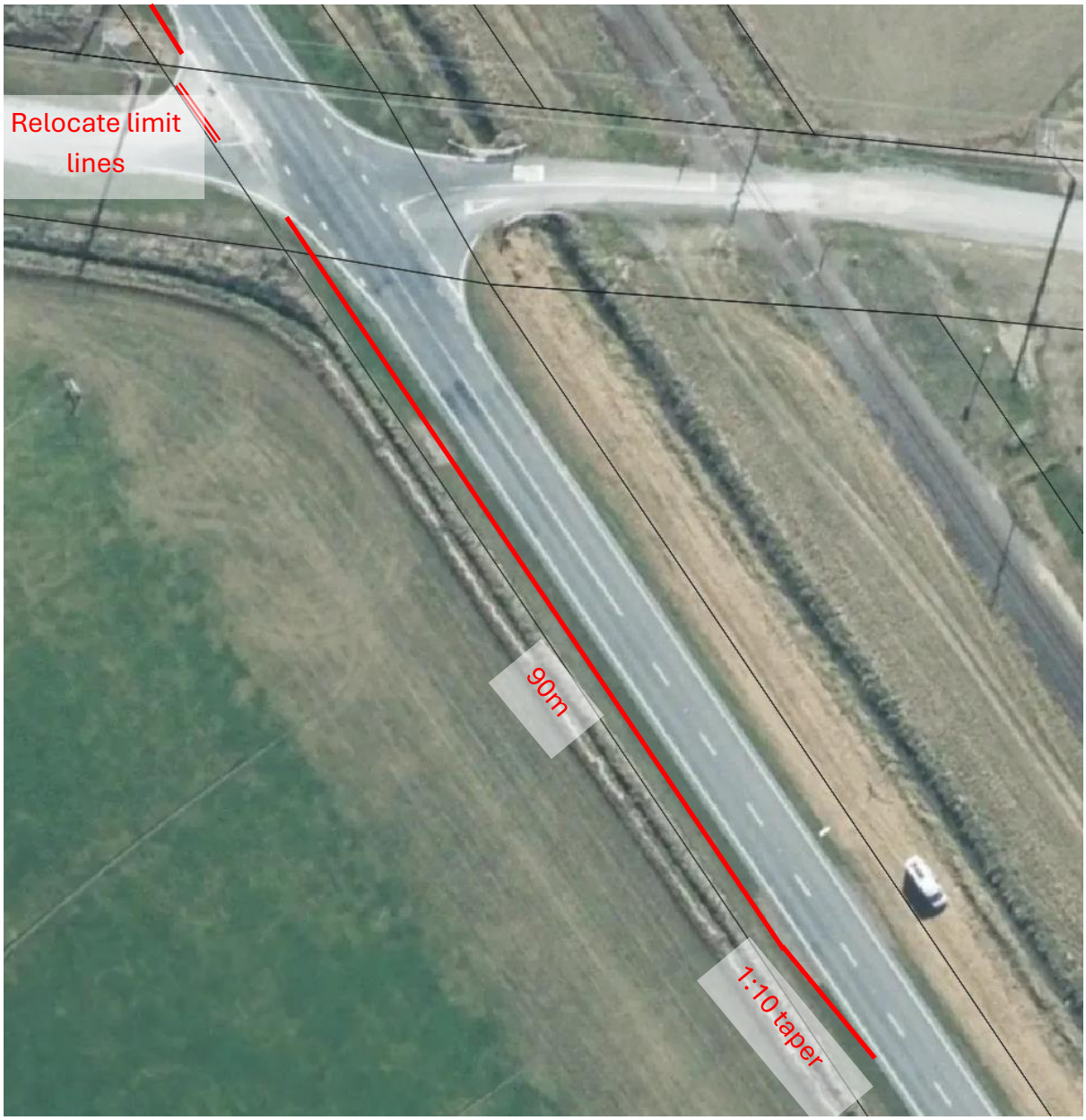
(g) *Review and Reporting: The Consent Holder must submit an Annual Report to the Consent Authority if requested, summarising the glint and glare complaints received, actions taken, and the effectiveness of the mitigation measures implemented. The Annual Report may also recommend whether ongoing management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

Advice Note

An adaptive management plan offers a flexible and responsive approach to managing glint and glare that may arise from the approved agrivoltaic activity, 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.

Attachment 2: Proposed seal widening: SH 63 / Homebush Road




Relocate limit lines
90m
1:10 taper