Boffa Miskell

Memorandum

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Attention:	Richard Bigsby at SDC
Company:	Boffa Miskell Ltd
Date:	24 October 2023
From:	Emma McRae, Principal Landscape Architect
Message Ref:	Buckleys Road Solar Farm: Further Information request - Glint and Glare
Project No:	BM210727

Introduction

The following memo provides further information as requested by Selwyn District Council in their s92 request of 29th September 2023. The letter states:

The applicant's Glint & Glare analysis in Appendix 13 was reviewed and assessed on behalf of the Council. The review identified that the applicant's assessment did not consider worst case eye height associated with larger vehicles such as tractors and other large vehicles such as trucks, buses and haulage vehicles, etc, that would frequently use these roads. There would be a greater safety impact associated with glare impacts on larger vehicles. The eye heights for these vehicles are considered around 2.5m.

With regard to road routes where there is predicted glare at an eye height of 2.5m, please advise what interim mitigation measures will be used before the proposed plantings reach the minimum height that they will be maintained at. This could include the planting of more established trees at 3m or greater, or appropriate vegetation in the small local areas where predicted glare levels for road traffic may have greater impact.

Additional analysis

In response to this, further analysis has been carried out on the roads surrounding the site. A bare earth analysis with an eye height of 2.5m was analysed to determine the incidence of glare at this eye height. The findings are outlined in Table 1 below:

Table 1: Glint and Glare Analysis of nearby Roads at 2.5m eye height
*Refer to **Figure 18** in the Landscape Assessment Graphic Supplement*

Road Name	Analysis results	Recommendations
Branch Drain Road	Modelling identifies that a small stretch at the northern end of the road has the potential for glare. This coincides with existing vegetation of approximately 3m height on the boundary of Branch Drain Road (see VP14).	No further mitigation required.
Brookside and Irwell Road	Modelling identifies a small stretch of the road has the potential for glare approaching the bend in the road, as illustrated on **Figure 18**. Glare has the potential to occur between the months of February to May and August to November, between the hours of 5-8pm.	Potential glare available in the direction of travel towards the site would be screened by existing vegetation as illustrated on Figure 19 along eastern site boundary. This vegetation is

	Duration of the glare period during these times is predicted at less than 10 minutes per day.	between 3 and 10m in height and is visible in the right-hand side of VP3 on Figure 10.
Buckleys Road	Modelling identifies a small stretch of the road potential for glare as illustrated on **Figure 18**. Glare has the potential to occur between the months of October to April between the hours of 5-6am in the morning and 5-8pm in the evening. Duration of the glare period during these times is predicted at less than 10 minutes per day.	Potential Glare in the location of VPs 1 & 2 would be oblique to the direction of travel along the road corridor. Mitigation is not required, however, proposed planting along the site boundary would screen any potential glare from view.
Caldwells Road	Modelling identifies a small stretch of the road has the potential for glare approaching the bend in the road, as illustrated on **Figure 18**. Glare has the potential to occur between the months of April to September, between the hours of 4-6pm. Duration of the glare period during these times is predicted at 10 minutes per day or less.	For potential glare identified at the junction of Caldwells and Hanmer Road in the location of VP6, it is proposed to have no panel backtracking in this location, to avoid the effects of glare in alignment with the road corridor until planting achieves a height of 3m where it would screen views from higher vehicles. For the area of the Wahi Taonga site where there is no planting, no backtracking is proposed to eliminate glare.
Dunsandel and BrooksideRoad	Modelling identifies no glare geometrically possible.	No further mitigation required.
Grahams Road	Modelling identifies no glare geometrically possible.	No further mitigation required.
Hanmer Road	Modelling identifies that a small stretch of the road has the potential for glare as illustrated on **Figure 18**. Glare has the potential to occur between the months of April to October between the hours of 4-6pm. Duration of the glare period during these times is predicted at 10 minutes per day or less.	For potential glare identified at the junction of Caldwells and Hanmer Road in the location of VP6, it is proposed to have no panel backtracking in this location, to avoid the effects of glare in alignment with the road corridor until planting achieves a height of 3m where it would screen views from higher vehicles. For the area of the Wahi Taonga site where there is no planting, no backtracking is proposed to eliminate glare.
Irwell Rakaia Road	Modelling identifies potential glare of less than 5 minutes per day between 5 and 7am in February/March and September/October at northern end of the road. Existing vegetation at the corner of Irwell Rakaia Rd and along Branch Drain Road (see VP14) would screen this glare from view.	No further mitigation required.
Smythes Road	Modelling identifies potential for glare from a limited location and duration (less than 2 mins per day) only.	No further mitigation required.
Stewarts Road	Modelling identifies no glare geometrically possible	No further mitigation required.

Conclusion

Further analysis at 2.5m high on a bare earth scenario has identified that four roads (Brookside and Irwell, Buckleys Road, Caldwells Road and Hanmer Road) in the vicinity of the site have the potential for glare visible to road travellers in higher vehicles. Potential glare from Buckleys Road is not orientated in the direction of travel for road users, therefore no further mitigation is required. Potential glare from Brookside and Irwell Road will be screened by existing tall shelterbelt vegetation. For potential glare from Hanmer and Caldwells Roads, the area of no backtracking will be extended to the southeastern quadrant of the site to avoid the potential for glare while proposed planting establishes to a height where it would screen viewers in higher vehicles.