

Adam Vincent

From: Mishka Banhidi <mbanhidi@propertygroup.co.nz>
Sent: Monday, 26 May 2025 4:08 pm
To: Adam Vincent
Cc: Sarah Brooks
Subject: Helios - Solar Farm
Attachments: Maniatoto Solar Farm Layout_Updated May 2025 (1).pdf; ITP - Glint and Glare Minimum Screening Assessment May 2025.pdf

Hi Adam,

As previously discussed:

1) Removal of the Battery Energy Storage System (BESS) from the application:

Helios wishes to formally request that the BESS component of the solar farm proposal be removed from the application.

Given this is a longer dated project with a projected construction commencement of 2029, the specific BESS model is not able to be confirmed due to the current uncertainty around the exact BESS models and technologies that will be available at the time of detailed design. We acknowledge the BESS aspect of the project was a focus of public submissions. Given the level of detail required to definitively respond to submitters' questions regarding fire mitigation measures associated with the BESS is not available at the time of the hearing (and cannot be until detailed project design is significantly more advanced, closer to the time of project installation) we have made the decision to remove the BESS from the application.

We confirm the BESS has been removed from the updated layout attached. The layout of the solar farm and proposed components remain unchanged.

Any potential future provision of BESS centrally within the site adjacent to the substation (on the area labelled 'utility area') would require a separate resource consent and would be considered by Council based on its own merits. If a future application of this nature were to be submitted for consent, Helios would be able to include much more comprehensive detail of the exact model and specifications of the BESS and inbuilt fire mitigation measures in relation to the context of the local environment.

As an update, we confirm a fire risk assessment is currently in preparation and will address submitters' comments in regards to the fire risk of the PV solar farm components subject to the application (solar panels, inverters, onsite substation). The report will be provided to the Council shortly, for consideration in the Section 42A report.

2) Council commissioned peer reviews:

We understand the Council has engaged the following peer reviews which are commencing at the end of May:

- Ecology - Andrew Wells, Wildlands Consultants
- Landscape - Ben Espie, Vivian+Espie

Helios and our advisors are available to provide additional information as required during the peer review process. In support of the peer reviews we provide the following updates:

- Ecology - Helios and Boffa Miskell are engaging with the Department of Conservation regarding their submission. For the sake of efficiency, we propose a call be organised between Wildlands and Boffa Miskell once the initial review of the application is completed by Wildlands. The purpose of the call will be to respond to any initial questions and provide an update on the discussions with DoC to ensure alignment in regards to any proposed consent condition wording.
- Landscape - A Landscape Planting Maintenance and Monitoring Plan will be submitted to Council this week to provide additional detail in relation to plant height, type and establishment and maintenance. This is supplementary and builds on the information provided in the Landscape Effects Assessment prepared by Boffa Miskell.

In addition, to inform the specificity of the Planting Maintenance and Monitoring Plan, additional glint and glare assessment has been undertaken to confirm where planting is required, and to what height, to ensure all glint and glare is contained within the site. This additional detail is attached and has been incorporated into the planting plan detail to be provided this week.

Any questions please don't hesitate to ask,

Kind regards,

Mishka Banhidi
Senior Planner

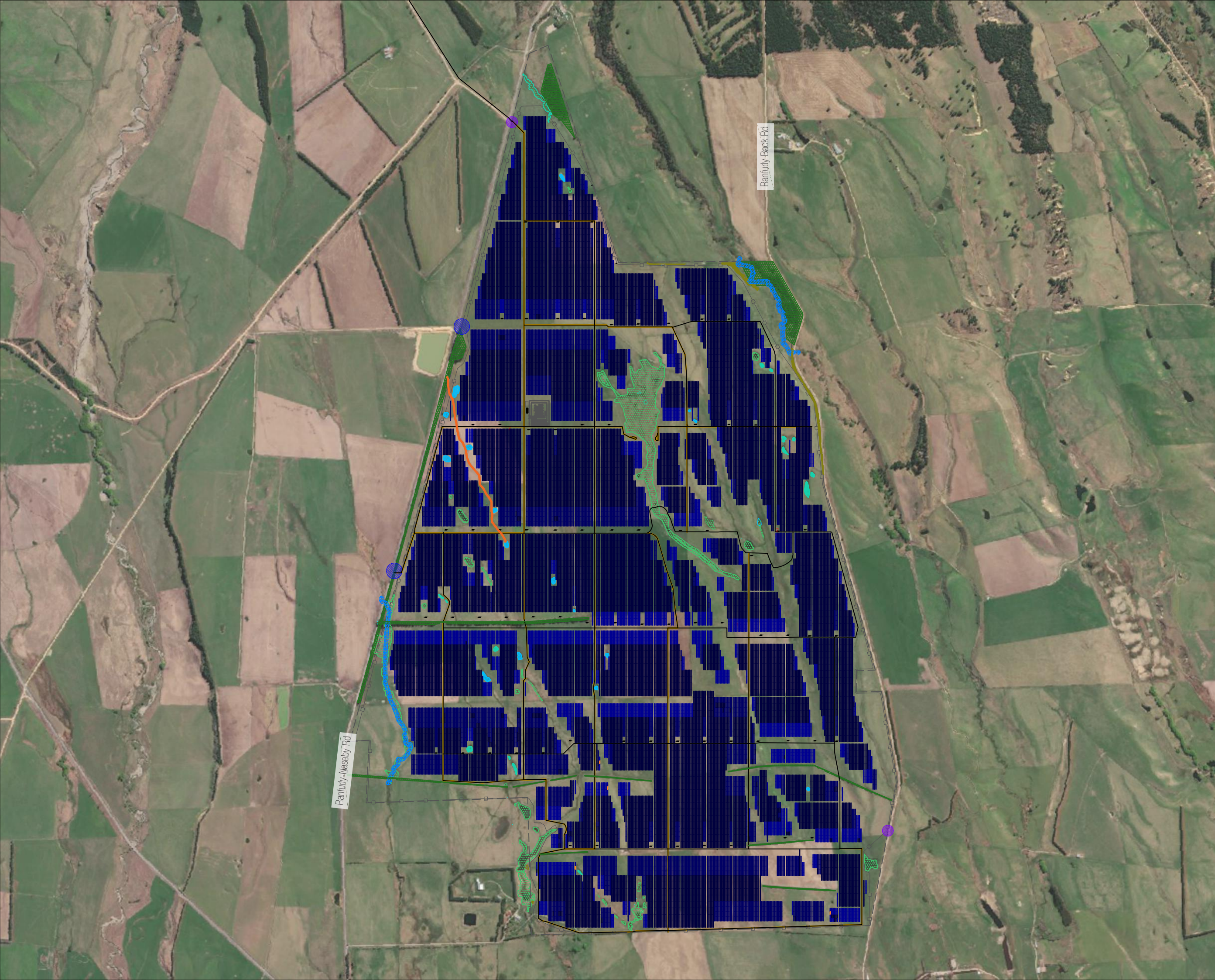


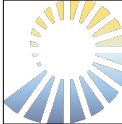
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Helios

Legend:

---	Legal Boundary
-□-	Site Fence & Security Cameras
---	Main Site Access Track
	Solar Panel Arrays (104, 78, 52 panel tables shaded dark-light navy)
---	Inverter Stations
■	Indicative Substation Layout (Site office, storage and water storage adjacent)
■	Utility Area
●	Primary Site Access Point
●	Secondary Site Access Point
■	Wetland with Indigenous Vegetation (5+m buffer)
■	Wetland with Exotic Vegetation
■	Existing Constructed Pond
■	Existing Vegetation to be Maintained
■	Existing Waterway
■	Hawkdun Idaburn Irrigation Setback

Project Details:

LATITUDE	-45.0613
LONGITUDE	170.1051
INTERCONNECTION VOLTAGE	220 kV
LEASED AREA	665.1 Ha
FENCED AREA	638.9 Ha
ARRAY AREA	562.7 Ha
FENCE LENGTH	11,692 m
PV Capacity	329 MWp DC
CONNECTION CAPACITY	300 MW
TOTAL SITE COVERAGE	20.5%

Project Name:

Naseby

Drawing Name:

Preliminary Layout

Revisions:

Version	Date	Created By	Reviewed By	Description & Notes
0	10/01/2024	JM	DR	Initial Release
A	08/05/2025	JM	-	Module & DCI Update

Scale:

1:400,000m

Date:

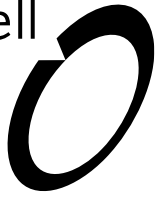
08/05/2024

Revision Number:

A



Boffa Miskell



MĀNIATOTO SOLAR FARM

LANDSCAPE PLANTING & MAINTENANCE PLAN
Prepared for Helios Energy Ltd

28 May 2025



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Appendices

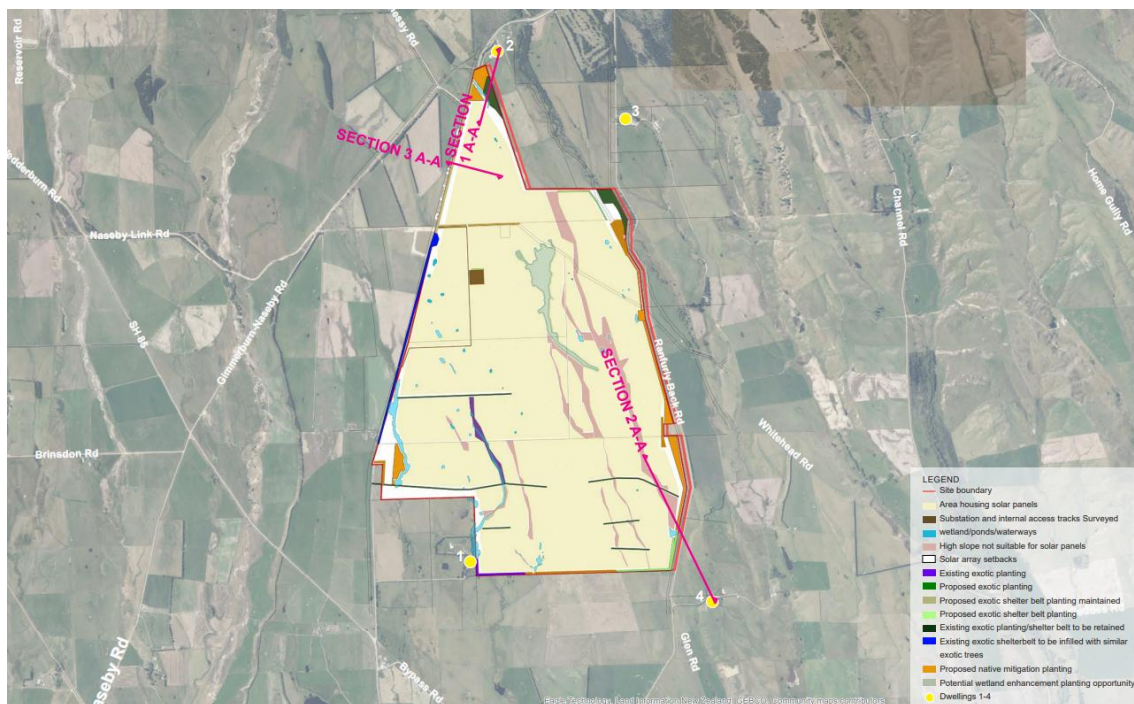
Appendix 1: Plant Palette Grades and Heights

1.0 Introduction

This Landscape Planting and Maintenance Plan (LPMP) has been prepared to support the implementation, health and ongoing maintenance and management of both the proposed new planting and the existing screening vegetation on the Mānīatoto solar farm site, in accordance with recommendations in the Landscape Assessment¹. The objective is to ensure the solar farm is integrated into the surrounding landscape and visual effects are minimised.

The Mānīatoto solar farm Site is shown in **Figure 1**. The Site is located between the Ranfurly-Naseby Road and Ranfurly Back Road, approximately 3.3 km southwest of Naseby and some 4.3 km north of Ranfurly. The Site comprises a total area of approximately 660 hectares leased from two local farming families.

Figure 1 – Mānīatoto Solar Farm Site: Landscape Mitigation Plan



The Mānīatoto solar farm design includes the retention of all mature trees/vegetation as well as extensive screen planting and wetland enhancement (refer to Landscape Mitigation Plans (Figures 5A-F) in the Graphic Supplement to the Landscape Assessment and illustrated in Figure 1 above). Proposed species and coverage vary in response to varying landscape characteristics such as existing vegetation, landform and landscape features as well as the nature and extent of mitigation required including, for glint and glare.

The purpose of this LPMP is to refine the proposed suitable plant species mixes and outline guidelines for their implementation and ongoing maintenance and management. In addition to the

¹ Boffa Miskell Limited, 2024, Mānīatoto Solar Farm: Landscape Effects Assessment, p60

mixed height native planting, a mix of taller, faster growing, screening species is identified to enable future planting plans to specify concentrated pockets of taller planting. For example, taller species capable of achieving 3m are proposed to be planted along the southern boundary at locations labelled 'OB17 Ex SW 3 Extension and OB16 Ex Internal Extension' on Figure 2² below, in Year 1, as mitigation for glint and glare. Detailed planting plans including grades, layout, numbers and spacing will be prepared following granting of consent and provided to Council for review prior to construction commencing.

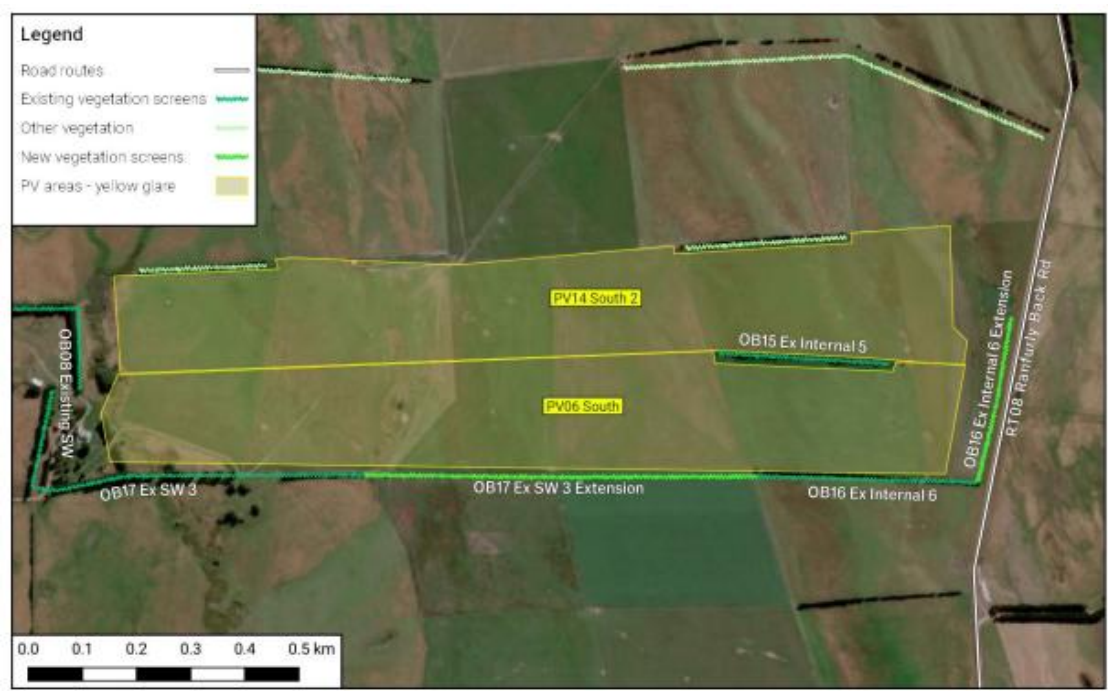


Figure2: New vegetation screens (OB17 Ex SW 3 Extension and OB16 Ex internal 6 Extension) needed to mitigate residual yellow glare from the PV areas PV06 and PV14.

2.0 Planting Notes

2.1 Proposed Plant Lists

The proposed mitigation planting includes the following species. Final species mixes may include additional species to enhance biodiversity values. Refer to the Appendix for details on plant palette heights and grades.

PLANT SPECIES LIST	
Botanical Name	Common & Māori Names
Mixed Height Native Planting Palette – Total Area: 26.27ha	
<i>Coprosma crassifolia</i>	Mingimingi

² Source: ITP Renewables, Consultants Advice Note to Helios Energy, 30/04/2025

<i>Coprosma intertexta</i>	Tangled Coprosma
<i>Coprosma propinqua</i>	Mingimingi
<i>Coprosma rugosa</i>	Needle-leaved Mountain Coprosma
<i>Corokia cotoneaster</i>	Korokio
<i>Austroderia richardii</i>	South Island Toe Toe
<i>Cordyline australis</i>	Ti Kouka / Cabbage Tree
<i>Olearia odorata</i>	Scented Tree Daisy
<i>Olearia hectorii</i>	Hectors tree daisy
<i>Olearia lineata</i>	Small-leaved tree daisy
<i>Phormium cookanum</i>	Wharariki / Mountain Flax
<i>Leptospermum scoparium</i>	Mānuka
<i>Discaria toumatou</i>	Matagouri
<i>Carmichaelia petriei</i>	Desert broom
<i>Chionochloa rubra</i>	Red Tussock
<i>Chionochloa rigida</i>	Narrow-leaved Snow Tussock / wī kura
<i>Ozothamnus leptophyllus</i>	Cottonwood / tauhinu
<i>Pittosporum tenuifolium</i>	Kōhūhū
<i>Plagianthus regius</i>	Ribbonwood / Mānatu
<i>Pseudopanax crassifolius</i>	Horoeka
<i>Sophora microphylla</i>	Kōwhai
<i>Veronica salicifolia</i>	Koromiko
Native Planting Palette for Screening	
<i>Coprosma crassifolia</i>	Mingimingi
<i>Coprosma rugosa</i>	Needle-leaved Mountain Coprosma
<i>Pittosporum tenuifolium</i>	Kōhūhū
<i>Plagianthus regius</i>	Ribbonwood / Mānatu
<i>Sophora microphylla</i>	Kōwhai
Wetland Planting Palette – Total Area: 11.41ha	
<i>Carex coriacea</i>	NZ Swamp Sedge
<i>Cordyline australis</i>	Ti Kouka / Cabbage Tree
<i>Coprosma propinqua</i>	Mingimingi
<i>Plagianthus regius</i>	Ribbonwood / Mānatu

<i>Carex secta</i>	Makura Sedge
<i>Carex virgata</i>	Pukio / Swamp Sedge
<i>Carex secta</i>	Purei
<i>Juncus distegus</i>	Wiwi
<i>Phormium tenax</i>	Harakeke
<i>Schoenus pauciflorus</i>	Bog Rush
Exotic Shelterbelt Palette – Total length: 1.32km	
<i>Cedrus atlantica</i>	Atlantic Cedar
<i>Cupressus macrocarpa</i>	Macrocarpa

2.2 Preparation of Planting Areas

- **Grass Areas:** Hard graze the planting areas as short as possible prior to planting. Spot spray planting areas with herbicide (i.e. Glyphosate) as per manufacturers specifications onto existing grass cover. If soil is excessively compacted in proposed planting areas, cross rip compacted area along the contour to 300mm depth to assist with drainage (this is to be confirmed on site based on ground conditions). Alternatively, if area of compaction is very limited, drill holes with 150-200mm auger blade. This will loosen compacted soil and provide adequate starting base for plants to establish.
- **Wetland Areas:** Several wetlands within the site are identified for enhancement by removal and control of invasive weeds and additional planting. Contractor and Ecologist to review the planting areas prior to planting to confirm what weeds need priority control. Where existing wetland plants are present with weeds that may compete with new planting, manually create planting spots through hand or mechanical removal of competing grasses or weeds. In areas dominated by exotic grass and weeds spot spraying may be used 2-4 weeks prior to planting. Contractor to select suitable weather windows and use industry best practice herbicide application methodology and rates to ensure there is no damage to adjacent existing wetland areas. Final planting areas and plant layouts to be field fitted in response to ground conditions at the time of planting. Contractor to ensure only wet tolerant species are planted in areas with high or standing groundwater.

All planting areas are to be securely fenced for stock exclusion prior to planting being completed.

2.3 Services Location

Ensure any existing underground services are located and protected during planting and larger growing species are located at least 2m away.

2.4 Hardiness of Plants

Plants to be fully hardened having been acclimatised in a local nursery or holding yard to sun, exposure and cold.

Plants shall be good quality nursery stock, appropriately fertilised and in healthy condition with no obvious nutrient or element deficiencies.

Plants which have not been hardened off and plants with soft growth or plants requiring additional support to that specified will not be accepted.

Plants should be eco-sourced from within the Māniototo Ecological District. If not available, plants can be sourced from elsewhere within the Central Otago Ecological Region or neighbouring regions if species are unavailable locally and if project deadlines do not allow for plants to be sourced within the region.

Plant nominated plant species at the indicated spacings with a method according to best horticultural practice. Ensure plants have not dried out at time of planting and do not go into the ground frozen.

2.5 Planting

All planting should be undertaken by a suitably experienced and qualified ecological restoration contractor to ensure quality of planting, including most effective plant layout and species compositions.

All plant holes should be dug or drilled slightly wider than plant pots or bags. When planted, the finished plant depth should be up to 1cm below ground level to enable more moisture retention and reduce drying during warmer seasons. Plants should be firmly “heeled in” to remove all air pockets. A tug test should reveal no movement. Ensure the collar of the plant is free from soil to prevent rot.

Unless irrigation is installed, plants are to be planted with water retention crystals applied as per manufacturers recommendations, pre-charged/wetted and placed in the bottom of each plant hole.

All plants to be installed with a 450mm biodegradable plant guard on all plants with a wool weed mat. This will retain moisture and keep plants cooler in summer, and is important for protection from wind, frost, and browsing mammals. This also increases the efficiency of plant maintenance.

2.6 Planting Season

The planting season runs from September to November and March to May. To take advantage of cooler temperatures and increased rainfall, we recommend planting early in the season (autumn if stock is available), as this will significantly improve the chances of successful establishment. Early planting is especially important if a temporary irrigation system cannot be installed and only occasional watering by water truck is available. In the event of unseasonable cold snaps at the scheduled time of planting, additional mitigation measures might be required,

e.g. storing plants under cover the night before planting and waiting until ground is no longer frozen.

2.7 Irrigation

Ideally all plants are to receive establishment irrigation for at least the first two years after planting. The irrigation design and install are to be prepared by a suitably qualified irrigation specialist. If irrigation is not feasible, water retention crystals in planting holes are to be used as an alternative.

Irrigation schedule to be programmed to suit seasonal demand and site requirements. A smart water controller with soil moisture probes can be used to adjust watering schedule to suit climate conditions and ensure efficient use of water.

2.8 Maintenance

Regular landscape maintenance visits are to be completed, especially through the summer, to check for plant survival and manage competition from grass regrowth and perennial weeds. Undertake maintenance of the landscaping works regularly for 36 months from practical completion of the landscape work.

This should be undertaken by a suitably qualified ecological restoration contractor to ensure targeted control of threat species and to ensure no plant by-kill. Contractor would also observe any new weed threats and advise best practice control of weeds.

A minimal plant survival rate of 80% is to be achieved. Dead or dying plants are to be replaced in the next planting season (September to November and March to May) if loss rates are in excess of this. Maintenance team to provide regular reporting of maintenance activity to the project manager during the 36-month maintenance period (refer to maintenance schedule). This is to be provided for review upon request by the Council officer.

3.0 Landscape Maintenance Plan

3.1 Project Overview

The purpose of this landscape maintenance plan is to outline guidelines for the ongoing maintenance and management of the mitigation planting at the Helios Mānātoto Solar Farm (Naseby).

The planting is as shown within the boundary extents on the Landscape plan sheet 5 in the Landscape Graphic supplement.

3.2 Objectives

The primary objectives are to ensure that the planting as shown on the landscape plan is established and maintained to achieve the outcomes specified in the Landscape and Visual Effects Assessment. They include the following:

- To ensure the visual mitigation of the proposed solar farm is achieved.
- To ensure that the adequate maintenance is undertaken to ensure long term visual screening along the boundaries of the site.
- To ensure the successful establishment and longevity of the planting.
- To foster native ecosystems and provide habitat for native wildlife along the waterways / wetland/ ponds.
- To ensure that the existing mature planting to be retained remains healthy and long lasting with appropriate pruning where specified.

3.3 Maintenance guidelines

To achieve the objectives of the project, the following maintenance guidelines should be followed:

3.3.1 Irrigation (if any)

- Irrigate the newly planted vegetation regularly during the establishment phase, which lasts for the first three years (and beyond if required), particularly during dry summer periods. Whenever possible, use dripper lines, as they are more efficient and direct water to the plant's stem.
- During the establishment phase, irrigation should be minimised to deep watering once a week to encourage plants to develop deep roots that search for moisture, rather than shallow roots that are more vulnerable to drought.
- As plants become established, gradually decrease the frequency of watering to allow them to adapt to naturally occurring soil moisture levels
- Monitor soil moisture levels and adjust watering as needed to prevent waterlogging or drought stress. Smart water controller with soil moisture probes can be used to control watering.
- The irrigation system must be appropriately winterized for the longevity of the system.
- If irrigation is not available water retention crystals are considered a suitable alternative. Crystals to be installed in each plant hole as per manufacturers specified rates and installation instructions.

3.3.2 Weed Control

- Plant release maintenance should occur at least two times per year (spring and autumn) during the establishment period (3 years). Release maintenance consists of manually locating each plant, hand pulling weeds from within plant guards, and release spraying vegetation around plant guard up to 500mm in diameter. At time of maintenance, observe new weed incursions and address these with best practice (cut and paste, ring barking, or mechanical scrub clearing) at the time of

observation. During releasing plant losses should be recorded and follow-up infilling should occur at next opportunity.

- Ensure any herbicide spraying avoids overspray or drift that can damage existing native plants or shelterbelts.

3.3.3 Pest control

- The Otago Regional Council (ORC) utilizes the Modified McLean Scale (MMS) to evaluate rabbit infestation levels. This scale ranges from Level 1 (no sign of rabbits) to Level 8 (very high infestation). Under the Regional Pest Management Plan (RPMP), land occupiers are required to maintain rabbit populations at or below Level 3 on the MMS. If rabbit densities exceed this threshold, landowners are obligated to implement control measures to reduce the population. Refer to the following link for additional information:
<https://www.orc.govt.nz/environment/biosecurity-and-pests/animal-pests/rabbits/>
- Following a rabbit infestation level assessment, establish a control program. Rabbit control methods options include fumigation and poisoning using Pindone. Traps and/or trapping and shooting can also be considered as an additional means of rabbit population control. Hare control will typically require shooting or trapping.
- Monitor plants for signs of browsing damage that may result from potential fencing failures.
- If signs of ungulate browsing damage on plants are observed, implement control measures such as fencing or targeted culling to reduce browsing pressure and promote the recovery and regeneration of vegetation.
- Consider preparing and executing a pest monitoring and control strategy on site to control mustelids, possums, cats and rodents to assist with survival of native lizards, invertebrates, and birdlife. It may include tools such as trapping, shooting, gassing and rodent bait stations with a dedicated pest controller attending the property regularly. As predator numbers drop, the pest control strategy would continue but can be reduced to a maintain population suppression. A detailed pest monitoring and control strategy plan can be provided upon request.

3.3.4 Large grade tree management

- Shelterbelt planting (including the existing trees to be retained as shown on the Landscape plan on page 5 of the Graphic Supplement) are to be pruned regularly to maintain view shafts. Any gaps in mitigation and shelterbelt planting are to be infill planted.

3.3.5 Monitoring and evaluation

Regularly monitor and evaluate plant survival and health. Adjust management practices as needed based on the results.

3.3.6 Suggested Maintenance schedules

ACTIVITY	YEAR 1 (4 visits)	YEAR 2 (3 visits)	YEAR 3 (2 visits)
Check Staking and Rabbit Protection Guards	At each site visit, adjust as required to ensure plant is protected or removed if plant growth has begun to be restricted.		
Provide Monitoring and Maintenance Report to Project Manager	After each maintenance visit		
Weed Control - Mechanical or Chemical	Perform weed control at each site visit, especially during peak growth. Refer methods described above.		
Watering	As required during dry periods (especially during initial two years).		As required
Replacements of Dead or Damaged Plants	Replace dead plants during planting season (Sept to Nov and March to May)		

4.0 Conclusion

This landscape management strategy for the Helios Mānātoto Solar Farm provides a basis for successful establishment of the proposed planting but should however be treated as a living document to allow improvements and adoption to unique site conditions. Any questions, please follow up with the undersigned.

Issued by: Mathilde Menard



Landscape Architect at Boffa Miskell

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Phone no: M: +64 27 208 5573

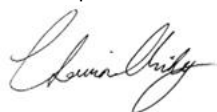
Reviewed by Gabe Ross

Landscape Architect, Principal at Boffa Miskell



Peer reviewed by Chantal Whitby

Landscape Architect at Habitat Restorations Aotearoa



Appendix 1:

Mānīatoto Solar Farm – Plant Palette Grades and Heights

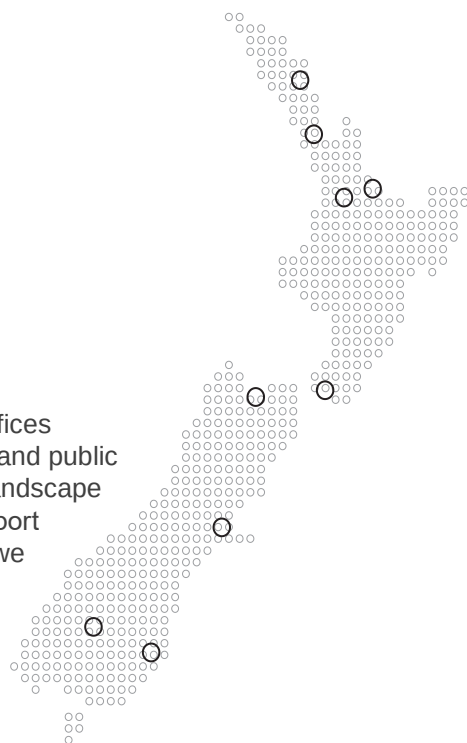
Mixed Height Native Planting Palette		Pot size	Height after 5 years*	Mature Height
<i>Coprosma crassifolia</i>	Mingimingi	PB3	2m	2-4m
<i>Coprosma intertexta</i>	Tangled Coprosma	PB3	1.5-2m	2m
<i>Coprosma propinqua</i>	Mingimingi	PB3	2m	3-5m
<i>Corokia cotoneaster</i>	Korokio	PB3	1.5m	1.5-3m
<i>Leptospermum scoparium</i>	Mānuka	PB3	2m	4-5m
<i>Discaria toumatou</i>	Matagouri	PB3	1.5m	4m
<i>Carmichaelia petriei</i>	Desert broom	PB3	1.5m	1.5-2m
<i>Ozothamnus leptophyllus</i>	Cottonwood / tauhinu	PB3	1.5m	2-3m
<i>Pittosporum tenuifolium</i>	Kōhūhū	PB6	2m	6-8m
<i>Plagianthus regius</i>	Ribbonwood / Mānātu	PB6	3.5m+	12m
<i>Pseudopanax crassifolius</i>	Horoeka	PB3	1.5m	12m
<i>Sophora microphylla</i>	Kōwhai	PB6.5	2m	8-15m
<i>Veronica salicifolia</i>	Koromiko	PB3	2m	4m
Habitat Restoration - recommended additional species				
<i>Coprosma rugosa</i>	Needle-leaved Mountain Coprosma	PB3	3m	3m
<i>Austroderia richardii</i>	South Island Toe Toe	PB3	2m	2m
<i>Cordyline australis</i>	Ti Kouka / Cabbage Tree	PB3	4m	10m
<i>Olearia odorata</i>	Scented Tree Daisy	PB3	1m	3m
<i>Olearia hectorii</i>	Hectors tree daisy	PB3	3m	10m
<i>Olearia lineata</i>	Small-leaved tree daisy	PB3	3/4m	5m
<i>Phormium cookianum</i>	Wharariki / Mountain Flax	PB3	1.5m	1.5m

Exotic Shelterbelt Palette		Pot size	Height after 5 years	Mature Height
<i>Cedrus atlantica</i>	Atlantic Cedar	PB3	2m+	30m
<i>Cupressus macrocarpa</i>	Macrocarpa	PB3	7m	25m

* Note: The recommended pot size at planting and projected plant heights after five years are based on information from three nurseries, either experienced in or located within the Mānīatoto area, as well as input from Habitat Restorations, drawing on their local expertise.

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Consultants Advice Notice

To	Sarah Brooks, Senior Environmental Planner, Helios Energy		
From	Nicholas Logan, Project Engineer, ITP Renewables		
Subject	Minimum screening analysis for Maniatoto Solar Farm		
Project No.	25038	CAN No.	001 v2
Date	30/04/2025	Pages	6

Background

ITP Renewables conducted the glint and glare study for Helios Energy’s proposed Maniatoto Solar Farm at 48 Ranfurly-Naseby Road in Central Otago. Helios has committed to implement a backtracking limit angle of 10° to mitigate potential glare impacts. This advice notice extends our original analysis to demonstrate the minimum vegetation screening needed to mitigate any residual glare impacts. We assume that readers are familiar with our original 2023 study¹ and our June 2024 addendum.²

For brevity, this study focuses on “yellow” glare—which has the potential to cause afterimage to observers—to the exclusion of “green” glare—which has low potential to cause afterimage.

Residual glare analysis

For this analysis, ITP Renewables removed all vegetation screening—including existing lines of trees beyond the project area—from the ForgeSolar model used in our original study and set the rest angle to 10° for all PV areas. The results are summarised in Table 1 below and indicate that four road routes received yellow glare from three sections of the array. The sources of this glare are shown in Figure 1.

Table 1: Residual yellow glare with a 10° rest angle and no vegetation screening

Source	Receptor	Yellow glare (hr/yr)
PV03 Sub West	RT01 Ranfurly Wedderburn Rd	1.3
	RT06 Ranfurly Naseby Rd	1.8
PV06 South 1	RT08 Ranfurly Back Rd	42.8
PV14 South 2	RT07 Bypass Rd	22.5
	RT08 Ranfurly Back Rd	91.3

¹ ITP Renewables (2023), 23048 – Naseby Solar Farm – Glint and Glare Study Final
² ITP Renewables (2024), 23048-CAN001 – Glare Study Addendum

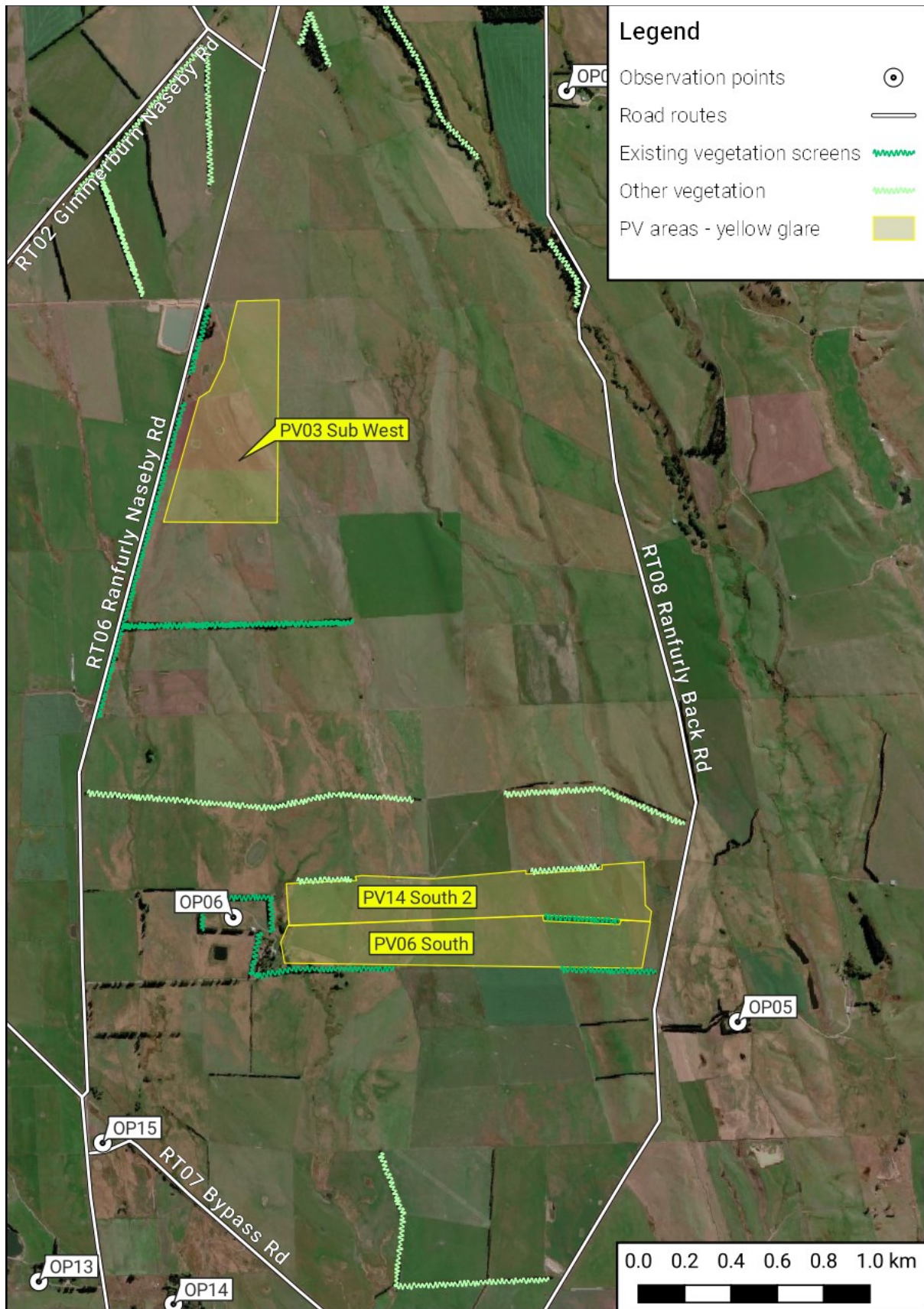


Figure1: Arrays causing residual yellow glare after implementing a backtracking rest angle of 10°.



Minimum screening analysis

We took an iterative approach to determine the minimum vegetation screening needed to mitigate the residual glare identified above.

1. Reintroduce selected existing vegetation screens³ adjacent to the array (“existing vegetation screens” in Figure 1) with a nominal height of 10 m and identify residual yellow glare.
2. Extend this screening until all instances of yellow glare were eliminated.
3. Progressively reduce the height of the vegetation screens to establish a minimum maintainable height needed for effective mitigation.

Following this analysis, we concluded that the “existing vegetation screens” as shown in Figure 1 and the “new vegetation screens” shown in Figure 2 will eliminate the residual yellow glare provided that:

- (a) The vegetation screens are maintained to a height of at least 3 m
- (b) The vegetation screens have sufficiently dense foliage year around to substantially interrupt line of sight.⁴

The results of the final glare analysis are summarised in Table 2. The residual green glare is not hazardous,⁵ and does not require further mitigation.

³ Not all the existing vegetation on the site and surrounding areas was included in the model. Screens labelled “other vegetation” in Figure 1 were not modelled.

⁴ ForgeSolar models screening as a completely opaque barrier that blocks line of sight.

⁵ ITP Renewables (2024), 23048-CAN001 – Glare Study Addendum

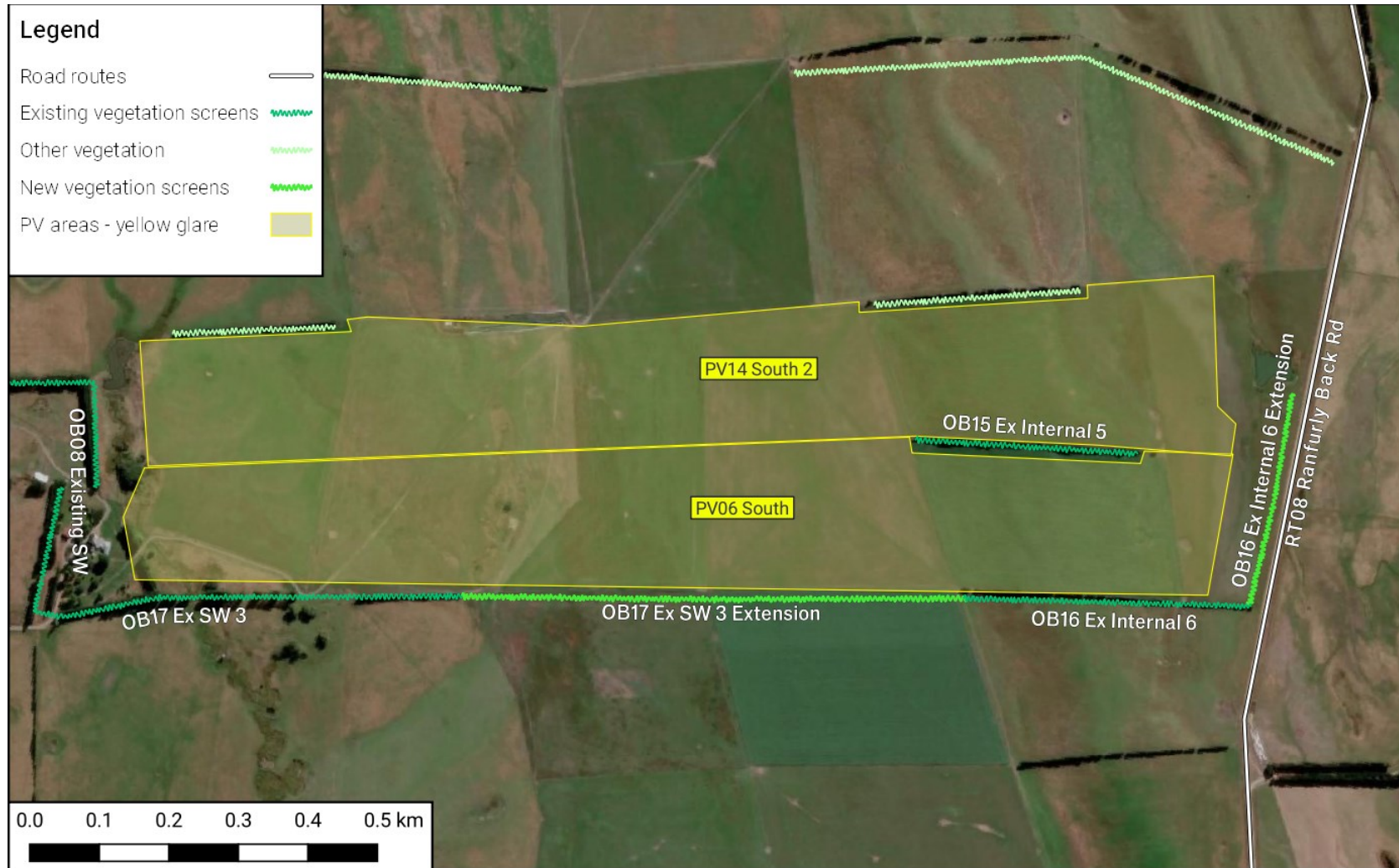


Figure 2: New vegetation screens (OB17 Ex SW 3 Extension and OB16 Ex Internal 6 Extension) needed to mitigate residual yellow glare from the PV areas PV06 and PV14.



Table 2: Residual glare with vegetation screening maintained to a height of at least 3 m

Receptor	Location	Green glare (hr/yr)	Yellow glare (hr/yr)	Daily glare potential
OP01	-45.0745, 170.0642	0.0	0.0	n/a
OP02	-45.0449, 170.108	0.0	0.0	n/a
OP03	-45.0395, 170.1176	0.0	0.0	n/a
OP04	-45.0504, 170.1216	0.0	0.0	n/a
OP05	-45.0868, 170.1291	0.0	0.0	n/a
OP06	-45.082, 170.1017	0.0	0.0	n/a
OP07	-45.1058, 170.1216	2.7	0.0	Up to 11 minutes of green glare between 11:15 am and 11:55 am, from 7 June to 6 July.
OP09	-45.1097, 170.1225	7.6	0.0	Up to 24 minutes of green glare between 11:10 am and 12:00 pm, from 3 June to 6 July.
OP10	-45.1078, 170.1027	3.6	0.0	Up to 19 minutes of green glare between 1:25 pm and 2:10 pm, from 3 June to 6 June and from 17 June to 3 July.
OP11	-45.1074, 170.0876	0.0	0.0	n/a
OP12	-45.1021, 170.0873	3.0	0.0	Up to 19 minutes of green glare between 1:35 pm and 2:15 pm, from 27 May to 20 June and from 28 June to 15 July.
OP13	-45.0959, 170.0903	0.0	0.0	n/a
OP14	-45.0969, 170.0976	2.3	0.0	Up to 9 minutes of green glare between 1:55 pm and 2:10 pm, from 5 June to 8 June and from 21 June to 7 July.
OP15	-45.0906, 170.0941	0.0	0.0	n/a
OP16	-45.0911, 170.0706	0.0	0.0	n/a



Receptor	Location	Green glare (hr/yr)	Yellow glare (hr/yr)	Daily glare potential
RT01	Ranfurly Wedderburn Rd	15.8	0.0	Up to 29 minutes of green glare between 1:10 pm and 2:15 pm, from 27 May to 17 July.
RT02	Gimmerburn Naseby Rd	0.0	0.0	n/a
RT03	Brinsdon Rd	0.0	0.0	n/a
RT04	Naseby Link Rd	0.0	0.0	n/a
RT05	Fennessy Rd	0.0	0.0	n/a
RT06	Ranfurly Naseby Rd	5.6	0.0	Up to 17 minutes of green glare between 1:15 pm and 2:20 pm, from 25 May to 18 July.
RT07	Bypass Rd	15.1	0.0	Up to 37 minutes of green glare between 11:10 am and 12:00 pm, from 3 June to 10 July.
RT08	Ranfurly Back Rd	22.6	0.0	Up to 37 minutes of green glare between 11:00 am and 12:25 pm, from 18 May to 26 July.
RT10	Glen Rd	4.0	0.0	Up to 13 minutes of green glare between 11:10 am and 11:45 am, from 3 June to 9 July.
Total		82.3	0.0	