

# MEMORANDUM

**To:** Laila Alkamil  
WWLA Ltd.

**From:** Simon Cocker  
Simon Cocker Landscape Architecture

**Date:** 28 August 2023

**Subject:** FNSF Solar Farm Moroa Road: Landscape comments

**Application #:** .220103

---

Dear Laila,

You have asked that I respond to a matter raised in the email from Council dated 18 August 2023 which relates to landscape and visual matters. Specifically, the request states:

*1. Effects on Electricity Transmission Lines (Transpower assets) Assessment of Effects on the Environment*

*The effect of the conditions offered in respect of Transpower's assets will mean that some planting cannot be implemented in accordance with the proposed landscape plans. For clarity these plans should be updated.*

*In addition some planting will be altered in key viewing locations, in particular, the view west travelling along Bidwills Cuttings Road. Please provide comment in regards to the potential landscape and visual effects and confirm whether the assessment of effects for users of Bidwills Cuttings Road will see any change from the original assessment of a 'low' level of effect.*

The conditions / document referred to was appended (Attachment 1) to the letter from WWLA Ltd to Council dated 11 August 2023. The relevant portion states:

- 8. Any proposed new trees or vegetation within 12 metres either side of the centreline of the MST-UHT A National Grid transmission line must not exceed 2 metres in height at full maturity and must comply with the Electricity (Hazards from Trees) Regulations 2003, or any subsequent revision of the regulations.*
- 9. Any proposed new trees or vegetation outside of 12 metres either side of the centreline of the MST-UHT A National Grid transmission lines must be setback sufficiently to ensure the tree cannot fall within 4 metres of the National Grid transmission lines and must comply with the Electricity (Hazards from Trees) Regulations 2003, or any subsequent revision of the regulations.*

The landscape mitigation plan (Figure 2b) has been amended to reflect the condition, and the updated report attached.

The change will not result in any change in the level of potential adverse effect for either the occupants of 489 Bidwells Cutting Road, or users of Bidwells Cutting Road. Views from the road to the portion of the boundary subject to the change are blocked by the substation, and by the existing dwelling within 489. Views from the dwelling within 489 to the portion of the boundary subject to change are screened by existing vegetation.

Yours sincerely,



Simon Cocker



## **ATTACHMENT 1 – Revised Landscape Assessment**

# **FAR NORTH SOLAR FARM LTD.**



**Proposed Solar Farm  
Moroa Road, Greytown**

## **Landscape Assessment**

**28 August 2023  
22042\_01 Rev 3  
FINAL**



## Document Quality Assurance

<b>Bibliographic reference for citation:</b> Simon Cocker Landscape Architecture Limited. 2022. <i>Moroa Road, Greytown Solar Farm: Landscape Assessment</i> .		
Prepared by	Simon Cocker Landscape Architect Principal SCLA	
Reviewed by	Simon Cocker Landscape Architect Principal SCLA	
Ref.	22042_01	
Status: [FINAL]	Revision / version 3	Issue Date: 28 August 2023
<b>Use and Reliance</b> <p>This report has been prepared by Simon Cocker Landscape Architecture Limited (SCLA) on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. SCLA does not accept any liability or responsibility in relation to the use of this report contrary to the above, or to any person other than the Client. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by SCLA for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.</p>		

# TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b>	<b>3</b>
<b>2.0</b>	<b>ASSESSMENT METHODOLOGY</b>	<b>3</b>
<b>3.0</b>	<b>THE PROPOSAL</b>	<b>4</b>
<b>4.0</b>	<b>EXISTING ENVIRONMENT</b>	<b>6</b>
4.1	The Site context and character	6
4.2	Statutory Matters	8
4.3	Visual catchment of the site	10
<b>5.0</b>	<b>IDENTIFIED LANDSCAPE VALUES</b>	<b>13</b>
<b>6.0</b>	<b>ASSESSMENT OF LANDSCAPE EFFECTS</b>	<b>14</b>
6.1	Physical - abiotic attributes	14
6.2	Physical - Biotic attributes	15
6.3	Physical – land use and built attributes	15
6.4	Physical – archaeology and cultural attributes	15
6.5	Perceptual attributes	15
6.6	Social, cultural and associative attributes	21
6.7	Summary of landscape effects	21
6.8	Potential effects arising from solar panels	22
<b>7.0</b>	<b>ASSESSMENT AGAINST THE STATUTORY PROVISIONS</b>	<b>22</b>
<b>8.0</b>	<b>CONCLUSION</b>	<b>23</b>
APPENDIX 1	Figures	24
APPENDIX 2	Landscape and visual effects assessment methodology	-
APPENDIX 3	Determination of landscape quality	-
APPENDIX 4	Visual simulations	-

# 1.0 INTRODUCTION

Simon Cocker Landscape Architecture (SCLA) has been engaged by Far North Solar Farms Ltd. (FNSF Ltd), to undertake a landscape, and visual amenity assessment for a photovoltaic solar farm on Moroa Road, Greytown (refer to Figure 1).

The proposed development involves minor earthworks to establish the appropriate contours and foundations for a solar farm, followed by construction of the solar panels and associated infrastructure either under or over ground transmission to the substation at the eastern end of Moroa Road.

This document will focus upon a description of the site, the characteristics of the proposal and an analysis of the landscape, identification of any affected parties or individuals, an assessment of the landscape, and visual amenity effects of the activity.

Specific to the type of activity under consideration, reference has also been made to the BRE planning guidance publication<sup>1</sup> which includes guidance for the assessment of landscape and visual effects associated with ground mounted solar PV systems.

The site is located within the Primary Production Zone. It is understood that the activity status of the application is a restricted discretionary activity.

# 2.0 ASSESSMENT METHODOLOGY

The assessment has been prepared by a Registered Landscape Architect with reference to the Te Tangi a Te Manu (Aotearoa New Zealand Landscape Guidelines). The assessment methodology is detailed in Appendix 2. In addition, this report has been prepared in accordance with the NZILA (New Zealand Institute of Landscape Architects) Code of Conduct<sup>2</sup>.

## Effects Ratings and Definitions

The significance of effects identified in this assessment are based on a seven-point scale which includes very low; low; moderate-low; moderate, moderate-high, high, and very high. For the purpose of this assessment, a rating of low – moderate equates to minor in terms of RMA terminology.

## Desktop study and site visits

In conducting this assessment, a desktop study was completed which included a review of the relevant information relating to the landscape and visual aspects of the project. This information included:

- The Wairarapa Combined District Plan (2012);
- Plan titled 'Module General Arrangement Layout – [175 MWp], Rev E';
- AEE prepared by WWLA Ltd., July 2022;
- Visual simulations prepared by Virtual View, dated November 2022 (contained in Appendix 4);
- Boffa Miskell Ltd. Wairarapa Landscape Study. 2010;
- Wildland Consultants Ltd. Wairarapa Plains Ecological District Survey report for the Protected Natural Areas Programme. 2000. Dept of Conservation, and;
- Aerial photography, Wairarapa District Council GIS mapping, Bing Maps (aerial photography), and Google Earth.

---

<sup>1</sup> BRE Trust. *Planning guidance for the development of large scale ground mounted solar PV systems*. October 2013

<sup>2</sup> Contained in Appendix 1 of: [http://www.nzila.co.nz/media/50906/registered\\_membership\\_guide\\_final.pdf](http://www.nzila.co.nz/media/50906/registered_membership_guide_final.pdf)



A visit was undertaken on the morning of 24 April 2022. The weather conditions during the visit were sunny with light winds.

Subsequent to the first iteration of this assessment being prepared, the proposed area of the solar farm – being ‘the Site’ – has been expanded. Assessment of these expanded areas has been based on site photography (captured during the site visit by SCLA), aerial photography, photos captured by FNSF Ltd., and visual simulations prepared by Virtual View.

## Visual simulations

The visual simulations are contained in Appendix 4. The simulations have been prepared in accordance with the NZILA Best Practice Guide (BPG 10.2<sup>3</sup>)

The camera alignment was achieved by using handheld GPS positions and heights from LINZ topographic data. The photos were aligned using a wider terrain model of the contextual landscape.

The larger grade mitigation planting have been simulated at 3m high and the smaller at 2.5m. This represents height at the time of commissioning. The spacing of the trees has been modelled at 1.5m in a double staggered row.

The panels have been simulated the panels in their flat position at 2.2m high.

## 3.0 THE PROPOSAL

Far North Solar Farm Ltd seeks consent to construct a 175 MWp photovoltaic solar farm within the subject site. The proposal is illustrated in Figure 2a. The site covers an area of 237 Hectares, with the most of the area covered with tracking solar panels, covering an actual area under the panels of 66Ha. The panels have 6m spacing between the rows, and grazing will occur on the entire site.

As is evidenced in Figure 2a, the proposed Site straddles Moroa Road. To the north of the road – and bounded on its southern edge by the road, the solar farm occupies an area of 170 ha, and extends for a distance of 2km along Moroa Road.

To the south of the road, two discrete areas are proposed, both of which are bounded by Moroa Road on the northern boundary. The western-most part of the farm will occupy 44ha, and the easternmost will occupy 24ha.

In total for the site, 4,720 arrays will be placed along with 32 Inverter Stations (each approximately the size of a container) and 300,000 solar panels (595WP Canadian Monocrystalline PV Module currently planned, each 2.1 x 1.1m ). The panels will fixed to solar tracking mounting structure through the mounting legs which will be secured by screw piles or driven piles in the top soil.

The panels will be mounted on 9,200 tracking tables, with the panels mounted in portrait format (2P) and 32 panel long tables. These single-axis solar trackers track the sun east to west, rotating on a single axis 2.2m above the ground. Each table will have a small electric motor to drive the table, moving once about every 15 minutes. The panels will have a centre height of 2.2m (refer to plate 1 below) and a maximum height at full-tilt (55°) of 4m.

The spacing between the rows of tables will be 6m, with a pitch (centre to centre) of 10m. Therefore, since the panels are 2.1m in length, and each pitch being 10m, there will be a 6m gap at noon when the panels are horizontal.

---

<sup>3</sup> [https://nzila.co.nz/media/uploads/2017\\_01/vissim\\_bpg102\\_lowfinal\\_gQFss9X.pdf](https://nzila.co.nz/media/uploads/2017_01/vissim_bpg102_lowfinal_gQFss9X.pdf)



The fence will most likely be constructed with wooden poles and 2.1m in height. This will be set 3m inside the existing 5 wire fence, with the gap between being for tree planting.



Plate 1. Example images of proposed infrastructure

### **New substation.**

In the area immediately to the west of the existing substation, a new substation will be created. This is due to the Transpower/Powerco being size constrained. The new substation will match the existing style of the switch yard, with a gravel surface, contained drains and similar equipment installed. This site will not be easily visible from any road or houses except 289 Bidwells Cutting Road. It will be behind the existing pylon on that property and screened with trees.

The entire area will be grazed by the existing owner.

There has been no earthworks or physical modification of the site undertaken by the applicant prior to consents being lodged. Vegetation clearance (removal of shelterbelts within the footprint of the farm), and earthworks to provide a contour suitable for installation of the solar arrays will be required.

Figure 2a illustrates how the applicant intends to undertake planting to create a visual buffer along all boundaries of the three separate areas of the Farm. Where existing shelterbelts currently define the external boundary, these shall be retained and reduced in height to 3.0m, and supplemented by a new vegetative screen as proposed for the balance of the external boundaries.

It is proposed that the screen plantings comprise *Cryptomeria japonica* (Japanese cedar) hedges planted as a double staggered row (at 1.5m spacings). The hedges will be maintained to a minimum height of 4.0m, so that screening is afforded to the proposed structures from external locations, but also avoiding shading on the solar arrays.

The size / grade of these plants will vary depending on the level of mitigation sought. Where potentially affected receptors have been identified and where the level of potential adverse effect exceeds 'low' as defined in Appendix 2, the proposed plants will be approximately 2.5m – 3.0m in height at the date of commissioning. These will be contract grown so ensure a supply of plants of this size. Elsewhere (with the exception of planting beneath the MST-UHT A National Grid transmission line), the *Cryptomeria* will be planted as 1.5m tall trees and so will be 2.0 – 2.5m tall at the date of commissioning.

On the shared boundary of the Site and Lot 1 DP 68272 Blk 1 Huangaru (#489 Bidwells Cutting Road), a short length of lower screen planting is proposed. This planting – comprising a double staggered row of *Phormium tenax*, planted as 1L grade plants – shall be planted where the boundary is within 12 metres either side of the centreline of the MST-UHT A National Grid transmission line. This is to comply with the Transpower specified conditions.

The use of shelterbelt (*Cryptomeria*) plantings has been adopted in deference to the existing landscape character of the area – which is structured by shelterbelts.

The timing of the development is orientated around disturbance and stabilisation of the site (with grass cover and planting) through the Spring period with infrastructure installation through the Summer period 2024/25 and commissioning in December 2025. Planting is expected to occur in June – August 2024.

The site will be enclosed by a 2.1m security fence. The fence will be constructed from wire mesh, with galvanized steel posts and will be visually permeable. The posts and mesh will be left to weather to a dull grey galvanized finish. The fence will be located on the inside of the shelterbelt, so that the fence will be visually screened once the shelter belt has become established

### **Operational activities**

The Site will be accessed via a crossing off Moroa Road. The crossing will be constructed from concrete, and accessways within the Site will be constructed from metal.

The site will not be lit.

It is anticipated that the site will generate very little traffic. The Site will be grazed by the existing landowners.

## **4.0 EXISTING ENVIRONMENT**

### **4.1 The site context and character**

Figure 1 illustrates the location of the Site. It is situated some 4km to the south west of Greytown, within the Wairarapa Valley. In broad terms, the Wairarapa Valley forms a part of the Palins and Lowlands landscape type. Formed by down warping along the West Wairarapa Fault. The valley is open at its southern end, forming Palliser Bay, between the Rimutaka Range on the west and the Aorangi Range on the east.

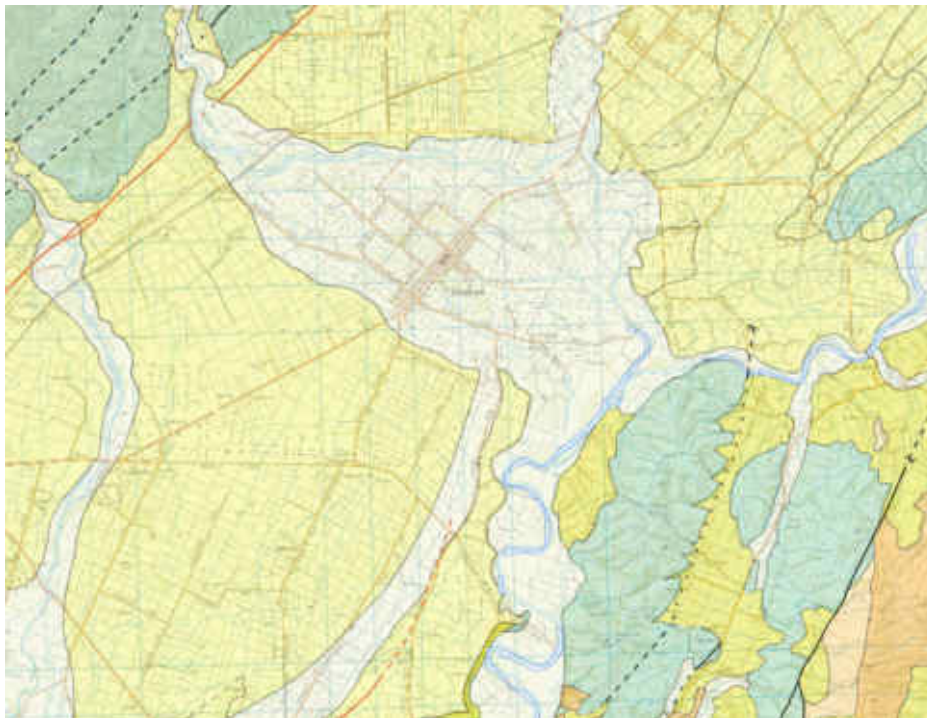


Plate 2: Geology

These two range features dominate views from within the Valley (refer to photos 1, 2 and 3).

The Ruamahanga River and its tributaries are also a dominant feature of the plains, and have essentially created them through deposition of river gravels. River gravels and alluvium form the underlying geology (refer to Plate 2). The fertility and ease of development for agriculture meant that the plains and lowlands were readily developed for agriculture and they have been extensively modified.

The plains are intensively grazed, with areas in horticultural crops declining during the past decade, apart from the areas in grapes around Martinborough and Gladstone, and also more recently north of Masterton. The majority of the towns and settlements in the Wairarapa are located on the plains.

The plains, can be broadly separated into two, the northern plain comprising flat, gently undulating to rolling land most of which is intensively grazed with shelterbelts, amenity plantings and small areas of native forest remnants. The northern plain is also where most of the Wairarapa towns are located (Featherston, Greytown, Carterton, Masterton) and consequently a smaller subdivision and settlement has occurred around each of these towns. The southern plain is occupied by Lake Wairarapa.

The subject Site is positioned within the Central Plains character area, as defined in the Wairarapa Character Study<sup>4</sup>. This document describes the landscape as being defined by flat to gently undulating, free-draining, old and recent gravel fans, terraces and floodplains<sup>5</sup>, but with lower rainfall it is drier than the western and southern plains. The Wairarapa Plains Ecological District PNAP survey identifies the subject Site as occupying an area described as forming an 'Older aggregation plain, and explains that it is:

*Formed of marine gravel terraces, through Pleistocene infilling of a former seaway, and wide spreading shallow fans of greywacke detritus carried from the eroding Tararua Range by the Tauherenikau, Waiohine, and Waingawa Rivers during the last glacial stage of the Pleistocene era. These fans have stony surfaces, but a loess veneer lends a smoothness to the terraces (a maximum altitude 300 m a.s.l.).*

Compared to the Western Plains – which is close to the Tararua Ranges – the Central Plains landscape has a feeling of openness and expansivity (refer to photos 1 - 5). To the east, the distinctive profile of the Nga Waka - a - Kupe and Maungaraki Ranges are prominent landmarks and backdrops.

The Ruamahanga River is a dominant feature in this character area. It meanders tightly, hugging the eastern side of the plains due to the large quantities of gravel which have been swept down from the Tararua Ranges.

The alignment of roads lines is based on a modified grid pattern which reflects the flat topography of the plains and historic settlement patterns.

Land use is quite diversified and includes dairy, sheep and beef farming, scattered areas of market gardening, and orchards. Some arable farming occurs in this area with irrigation systems on some of these properties. Land cover is dominated by grazed pasture and shelterbelts; whilst amenity plantings are less extensive than on the western plains. Indigenous vegetation is very limited and insignificant, limited to some distinctive stands of kanuka, and small isolated lowland forest remnants such as the 13 hectare Trenair (Lowes Bush) broadleaf remnant, and occasional groups or single trees.

Land parcels on the plains tend to follow a regular, linear pattern, with drainage ditches and shelter belts creating a distinctive patchwork. The area is characterised by well-established rural and rural-residential enclaves with some evidence of recent rural residential development. Smaller landholdings around the fringe of the urban areas between 1

---

<sup>4</sup> Boffa Miskell Ltd. *Wairarapa Landscape Study*. 2010

<sup>5</sup> As illustrated in Plate 1, the Site is underlain by Late Pleistocene River Deposits whilst the river corridors, and historic river alignments (including Greytown) are underlain by Holocene river deposits.

and 4 hectares characterise the area with a larger scale and less dense settlement pattern further from the towns. Transmission line pylons are also present and in some places are prominent elements in this flat landscape.

In pre-European times the central plains area was dominated by waterways and wetlands and so with the exception of elevated places was used mainly for temporary camps by people walking through the main valley. The area was valued because of the bountiful supply of animal and plant food sources found within the patchwork of swamps, streams and forests. The Ruamahanga River was used for transporting people and goods the length of the valley when bulk items were required to be moved between pa that were built on rises near the banks of the river. As modification of the land occurred following European settlement Maori started to build marae such as Papawai at Greytown and Puanani at Carterton, often becoming involved in agriculture and other introduced industry in those locations.

## 4.2 Statutory Matters

### Wairarapa Combined District Plan (2021)

The Site is situated within the Primary Production Zone. This document describes the rural character of the zone as follows:

*While rural properties vary in size, the rural environment is typically characterised by the following elements:*

- *Open space, natural landscapes, and vegetation predominate over the built environment;*
- *Working productive landscape, with a wide range of agricultural, horticultural and forestry purposes, with potential for associated effects, including noises and odours;*
- *Large areas of exotic and indigenous vegetation, including pasture, crops, forest and scrublands;*
- *Range of built forms, from reasonably large utilitarian buildings associated with primary production, through to small utility buildings;*
- *Place where people live and work, with low population density;*
- *A road network ranging from unsealed local roads with low traffic volumes to busy State Highways; and*
- *Allotments self-serviced in terms of water supply and wastewater disposal*

#### 4.3.1 Objective Rur1 – Protection of Rural Character & Amenity

*To maintain and enhance the amenity values of the Rural Zone, including natural character, as appropriate to the predominant land use and consequential environmental quality of different rural character areas within the Wairarapa.*

#### 4.3.2 Rur1 Policies

- d) *Maintain and enhance the amenity values, including natural character, of the differing Rural character areas through appropriate controls over subdivision and the bulk, location and nature of activities and buildings, to ensure activities and buildings are consistent with the rural character, including an appropriate scale, density and level of environmental effects.*
- e) *Manage subdivision, use and development in a manner which recognises the attributes that contribute to rural character, including:*
  - (i) *Openness and predominance of vegetation*
  - (ii) *Productive working landscape*
  - (iii) *Varying forms, scale and separation of structures associated with primary production activities*
  - (iv) *Ancillary living environment, with an overall low population density*
  - (v) *Self-serviced allotments.*

#### 16.3 Objectives, Policies and Methods: 16.3.1 Objective NUE1 – Management of Network Utilities

*To enable the efficient development, maintenance and operation of network utilities, while avoiding, remedying or mitigating adverse effects on the environment.*

- (d) *Avoid, remedy or mitigate any adverse effects of network utilities on the amenity and character of the Wairarapa environment, particularly outstanding landscapes and natural features.*

#### 16.3.2 NUE1 Policies

- (a) Controls on subdivision and land development as needed to avoid, remedy or mitigate the adverse effects of new development on the efficient operation of network utilities.

### Permitted Baseline

In terms of a permitted baseline, it is noted that the following activities within the Rule Zone are permitted under the WCDP:

- Structures (other than dwellings) up to 15 m in height;
- Intensive farming (not within 500 m of an existing dwelling); and
- Wastewater discharge from a municipal wastewater treatment system.

Standards that relate to these activities restrict the height of the structures, height in relation to boundary conditions and distance from other existing dwellings. Despite this, there is a fairly permissive baseline that provides for a wide range of rural activities, acknowledging that these activities have visual and landscape effects. Therefore, any potential landscape and visual effects associated with the proposed solar farm needs to be considered in the context of this permitted baseline and the activities that may be undertaken as of right (as per s95D(b), s95E(2)(a) and s104(2) of the RMA).



Plate 3: Aerial photo of agricultural shelter structures (Google Maps)



Plate 4: View from Fabian Road toward shelter structure illustrated in Plate 3. [Google Streetview]



On this basis it is reasonable to conclude that the permitted baseline for the site includes greenhouses or shelter structures which may extend across the entire, or a significant portion of the site, such as the example illustrated below in Plates 3 and 4. The illustrated structures are located some 4km to the east of the Site, and to the south east of Greytown.

### 4.3 Visual Catchment

Given the flatness of the plains landscape, the visibility and visual catchment of the subject Site is dictated – principally – by vegetation and separation distance. The main body of the Site is accommodated within a triangle formed by State Highway 2 to the north and north west, Moroa Road to the south, and Bidwells Cutting Road to the east. The eastern portion of the Site to the south of Moroa Road is defined by that road on its northern side, and flanked by Settlement Road to the south, and Battersea Road to the east.

The western portion to the south of Moroa Road is defined by Moroa Road on its northern side, but isolated from No. 1 Line (to the west), and Settlement Road (to the east) by a distance of some 1km.

Table 1 below lists the potentially affected properties.

As is apparent from Figure 1, Pharazyns Road extends from State Highway 53 (some 3.5km to the south). The road is little more than a farm track where it approaches and adjoins this portion of the Site, but to the south it provides access to a small number of residential properties. The closest of these is located near the junction with Phillips Road and is separated by approximately 1.5km.

Moroa Road offers direct views into the northern and southern portions of the Site for a distance of some 1,400m to the west, from the road where it adjoins those portions, and from the road as far as its junction with Battersea Road, some 350m to the east (refer to photos 1, 4, and 5 – 10). This gravel road experiences a low volume of traffic, and provides access to a limited number of properties.

At its western end – some 2.0km from the Site – a cluster of rural residential properties occupy the triangle formed by the diverging State Highway and Moroa Road, but these properties are set within a robust and containing structure of shelterbelts and other vegetation and this limits opportunities to gain views to the east.

Landholdings along the balance of Moroa Road tend to be large and there are few residential properties. Two properties are situated to the south of the road to the east of the western portion of the Site, and opposite the south western corner of the main portion of the Site. These are identified as Lots 1 and 2 DP 28980. The latter lot (identified on Google Maps as the Wairarapa Eco CSA Farm) is visually screened from the Site by vegetation.

In addition, two vacant residential lots are located on the south western corner of Moroa Road and Battersea Road. These lots offer views north across the road to the main portion of the Site.

A number of smaller rural residential properties are accessed from Settlement Road and Battersea Road (refer to photos 11 and 12). These properties are illustrated on Figure 3 and a number adjoin the southern portion of the Site. This portion of the Site is partially separated from these properties by a fragmented shelterbelt which is situated on the Site's southern boundary. Lots 1, 2, 3 and 4 DP 521225, and Lot 2 DP 308376 have the potential to gain more direct views into the southern portion of the Site. These properties are separated from the northern portion by Moroa Road and a distance of some 500m.

A number of properties on Battersea Road offer the potential to gain westerly views into the southern portion of the Site. These are identified as Lots 1, 2 and 3 DP 306239 and are separated from the Site by a distance of some 240m.

The majority of residential properties along Bidwells Cutting Road are located to the east of this road, are approximately 650m from the Site and are buffered from the road by vegetation within gardens.

Dwellings situated within smaller lots two larger holdings; being Lot 2 DP 490058 (refer to photo 3, 14 and 16), and Pt Lot 10 DP 3106 (refer to photos 2 and 13) offer the potential for westerly views to the Site over a distance of some 600 – 700m.

Views from the State Highway are in part restricted by shelterbelts which delineate paddock boundaries between the State Highway and Site. Distant and glimpse views are possible from isolated positions such as that represented by photos 17 – 20. The Site is a minimum of 900m from the State Highway. The majority of residential properties accessed from the State Highway tend to be screened from the Site. The exception to this is a recently constructed dwelling within Lot 3 DP 510604, located a minimum of 315m from the north western boundary of the subject Site.

Address	Legal desc.	Comment	Distance
<b>Occupants of dwellings accessed from Bidwills Cutting Road (to the east and north east). Photo ref: 2, 3, 16, 13, 14</b>			
244 Bidwills Cutting Rd (Owners brother, has signed a non-objection)	LOT 1 DP 490058 LOT 2 DP 468232 SECS 53	Two storey dwelling oriented to north west. View to west and south west partially screened by garden vegetation. Unimpeded views across landscape to Site (north west)	740m
263 Bidwills Cutting Rd	PT SEC 45 GREYTOWN SMALL FARM SETT BLK I (#263)	Single storey dwelling set back from road. Views to south west and west screened by garden vegetation. Views to north west more open and unimpeded	450m
268 Bidwills Cutting Rd	LOT 2 DP 490058 (#268)	Recently constructed two storey dwelling located within paddock to west of road. Panoramic views across the landscape to the northern, western and eastern quadrants, with little garden vegetation of any scale.	250m
269 Bidwills Cutting Rd	PT SECS 45 GREYTOWN SMALL FARM SETT BLK I (#269)	Two storey, set back from road on east side. Views to the west are partially screened by garden vegetation. Views to the south west are more open and unimpeded	530m
247 Bidwills Cutting Rd	LOT 1 DP 34841	Single storey dwelling. Views to west, south west and north west screened by garden vegetation..	430m
255 Bidwills Cutting Rd	PT SEC 46 SMALL FARM SETT BLK I HUANGARU	Single storey dwelling with views over low boundary planting to west. Views to north west screened by garden vegetation.	430m
273a Bidwills Cutting Rd	LOT 1 DP 468232 (#273A)	Recent subdivision (273a – 273d. All vacant. Open view to west across road to Site	440m
299 Bidwills Cutting Rd	LOT 1 DP 468232 (#299)	Single storey dwelling set back from eastern side of road with fragmented views to east and south east through garden vegetation and trees of some scale.	500m to west 190m to SW
312 Bidwills Cutting Rd (Property owner.).	PT LOT 10 DP 3106 LOTS 1 3 DP 76478 (#312)	Single storey dwelling set back from western side of road with unimpeded views to north and north west, fragmented views to the west, south west and south through garden vegetation.	175m to west 40m to south
-	SEC 1 SO 20659 MOROA DIST BLK I HUANGARU (Substation)	N/A	N/A
489 Bidwills Cutting Rd	LOT 1 DP 68272 BLK I HUANGARUA SD (#489)	Single storey dwelling. Views to north, west, east and south screened by garden vegetation. Fragmented glimpse views to north west.	50m to west 70m to north
<b>Users of Bidwills Cutting Road. Photo ref: 2, 3, 16, 13, 14</b>			
		Largely unimpeded views to the west across the landscape from the road corridor to the Site between #312 north to the dwelling within #224.	440m at southern end, 800m at northern end.
<b>Occupants of dwellings accessed from Battersea Road (to the east and south east).</b>			
#28 Battersea Road	-LOT 1 DP 65364 BLK I HUANGARUA SD	Dwelling contained by vegetation within garden on northern, western and southern quadrants.	190m to west 230m to north
#50 Battersea Road	LOT 1 DP 306239 BLK I HUANGARUA SD (#50 Battersea Road)	Views to north west and west partially blocked by structures and vegetation	225m
#72 Battersea Road	LOT 2 DP 306239 BLK I HUANGARUA SD	Single storey dwelling. Open views to west and north west across paddocks	280m
#80 Battersea Road	LOT 3 DP 306239 BLK I HUANGARUA SD	Single storey dwelling. Open views to west and north west across paddocks	225m
#84 Battersea Road	LOT 3 DP 306239 BLK I HUANGARUA SD	Single storey dwelling. Open views to west across paddocks. Views to north west and north toward Site screened by shelterbelt on boundary with #80.	240m to corner of Site
#100 Battersea Road	LOT 2 DP 327775	Single storey dwelling. Filtered views to west through garden vegetation. Potential for narrow oblique view through gaps in vegetation to north west across paddocks	200m to corner of Site



#100a Battersea Road	LOT 2 DP 327775	Dwelling screened by garden vegetation from westerly and northerly views	250m to corner of Site
<b>Users of Battersea Road.</b>			
		Road corridor largely contained by shelterbelt and hedgerow vegetation. Glimpse views to west across landscape to Site along the frontage of #80.	300m
<b>Occupants of dwellings accessed from Settlement Road (to the south). Photo ref: 12</b>			
#26 Settlement Road	LOT 4 DP 327775 (#26)	Single storey dwelling screened from views to north and west by garden vegetation, and additionally by boundary plantings with neighbour to west and north west (Shelterbelt retained on southern boundary of Site and trimmed to 3.0m)	240m
#38 Settlement Road	LOT 1 DP 302672 (#38)	Single storey dwelling close to road screened from views to north and west by boundary plantings with neighbour. Possible glimpse views to north east. (Shelterbelt retained on southern boundary of Site and trimmed to 3.0m)	300m
#54 Settlement Road	LOT 1 DP 308376 (#54)	Single storey dwelling with views to north and north west filtered by curtilage plantings. Shelterbelt along southern site boundary screen views to north east and north. Potential filtered views to north west to Site. (Shelterbelt retained on southern boundary of Site and trimmed to 3.0m)	180m
#56 Settlement Road	LOT 2 DP 308376 (#56)	Single storey dwelling with open outlook to north across Site.	75m
#76 Settlement Road	LOT 1 DP 521225 (#76)	Single storey dwelling. Views to north and north east filtered by curtilage planting to north of dwelling, and boundary plantings with neighbour top north east	260m to south west corner of Site
#90 Settlement Road	LOT 2 DP 521225 (#90)	Single storey dwelling. Views to north and north east screened by shelterbelt within #96.	310m to south west corner of Site
#97 Settlement Road	LOT 4 DP 521225 (#97)	Single storey dwelling with open views across landscape to north and north east (toward Site).	280m to eastern area 450m to main (northern) area
#96 Settlement Road	LOT 3 DP 521225 (#96)	Single storey dwelling with open views across landscape to north and north north east. Views to north east and east screened by shelterbelt on boundary with #56.	120m to eastern area 450m to main (northern) area
<b>Users of Settlement Road. Visual simulation ref: 12</b>			
		Road corridor largely contained by shelterbelt and other vegetation from junction with Battersea Road, west until the termination of the public road at #56. Glimpse views north to the Site at this point.	345m
<b>Occupants of dwellings accessed from Moroa Road. Rep photos ref: 8</b>			
#286 Moroa Road	LOT 1 DP 28920 BLK I HUANGARUA SD	Single storey dwelling with open views to north. Views softened by fragmented vegetation on northern / road boundary of property. (Shelterbelt on southern boundary of Site retained but trimmed to 3.0m)	160m
	LOT 2 DP 28980 BLK IV WAIRARAPA SD BLK I	CSA Wairarapa Eco Farm. Views internalised by structure of shelterbelts and vegetation.	Nil
	LOT 2 DP 570788	Vacant lot fronting onto Moroa Road, across road from Site. Views north to Site filtered by vegetation on northern boundary.	20m boundary to boundary
	LOT 3 DP 570788	Vacant lot fronting onto Moroa Road, across road from Site. Views north to Site filtered by vegetation on northern boundary.	20m boundary to boundary
Wairarapa Clay Target Club	LOT 1 DP 475450	Open views along Moroa Road and to north east to Site	1,000m
<b>Users of Moroa Road. Rep photos ref: 1, 4, 5, 6, 7, 8, 9, 10</b>			
		Travelling from the west, views to the main (northern) portion of the Farm, and western portion over a distance of some 1.4km and 900m respectively. The road corridor is, for the most part open and affords long views across the landscape to the north and south. Travelling from the east, views of the main portion of the Site are constrained until the junction with Battersea Road. Views to the eastern portion are not available until the receptor has passed the western (shelterbelt) boundary of #28 Battersea Road (LOT 1 DP 65364 BLK I HUANGARUA SD).	20m – 1.4km
<b>Occupants of dwellings located on Pharazyns Road</b>			
#18 Pharazyns Road	LOTS 8 9 10 D P 991 LOT 9 DP 28980	Distant views across landscape to north. Southern boundary of the Site is defined by a shelterbelt and this screens views into the Site from the south and south west.	1.5km
#1 Pharazyns Road	LOT 3 DP 78705 BLK IV WAIRARAPA SD	Distant views across landscape to north. Southern boundary of the Site is defined by a shelterbelt and this screens views into the Site from the south and south west.	1.7km

255A No 1 Line	Lot 3 DP 536011	Distant views across landscape to north. Southern boundary of the Site is defined by a shelterbelt and this screens views into the Site from the south and south west.	1.7km
<b>Occupants of dwellings accessed from State Highway 2. (to the north) Rep photos ref: 17, 18, 19, 20.</b>			
#1832 SH2	LOT 1 DP 510604	Two storey dwelling located close to, but screened from State Highway by garden vegetation. Building enclosed on eastern, western and southern sides by garden / curtilage vegetation. Possible glimpse views to south 'past' shed. These views screened by shelterbelts further to south	600m
#1822 SH2	LOT 1 DP 28920 BLK I HUANGARUA SD	Single storey dwelling located close to but screened from State Highway by garden vegetation. Building benefits from views to west and east, but views to south east and south (toward Site) are screened by proximate vegetation on adjoining property to south	690m
#1808B SH2	PT LOT 3 DP 5226 INT IN R/W BLK I HUANGA	Two storey dwelling set back from State Highway. Enclosed by vegetation with no views to Site although potential views to south east and Site from access.	425m
#1808 SH2	LOT 1 DP 84332	Two storey dwelling buffered from State Highway and set within a framework of vegetation. Long views across landscape to south east but Site largely screened by intervening shelterbelts.	700m
#1832A SH2	LOT 2 DP 510604	No dwelling within lot. Boundaries of lot vegetated with shelterbelts on eastern, southern and western sides. Potential view through gap in south western corner to south.	335m
#1832B SH2	LOT 3 DP 510604	Single storey dwelling located in north eastern corner of lot. Lot contained by shelterbelts on eastern, western and northern boundaries. Dwelling is oriented to west, and outlook primarily focused in this direction, but direct and unimpeded views to Site (south and south east) from the southern façade of the building and outdoor living areas. (Shelterbelt on northern portion of western boundary of Site retained but trimmed to 3.0m)	260m
<b>Users of State Highway 2: Rep photos: Rep photos ref: 17, 18, 19, 20.</b>			
		To the north of the main portion of the Site (between the Site and the State Highway), the 'grain' of the landscape has a north west – south east patterning, with the shelterbelts assuming this alignment. This precludes views to the Site until the receptor is at a point to the north west (as represented by VP19). From this point east to #1822 State Highway 2, glimpse views are possible across the flat landscape over a minimum distance of between 500 – 700m. These views tend to be fragmented by shelterbelt vegetation and are not easily gained when travelling along the road at speed.	500 – 700m

Table 1: Potentially affected properties / individuals

## 5.0 IDENTIFIED LANDSCAPE VALUES

The Wairarapa Character Study summarises the key landscape characteristics of the Central Plains Character Area (within which the subject Site is identified as being located) as follows:

- Flat to gently undulating topography
- Climatic conditions – drier than the western plains
- Sheep and beef farming, dairying, large scale orchard operation, pockets of rural-residential development on fringe of towns
- Very little native vegetation present
- Distinctive backdrops of the Waka and Maungaraki Ranges.

The study identifies the grid pattern which reflects the flat topography of the plains and historic settlement and how these are manifest in the land parcels on the plains which tend to follow a regular, linear pattern, with drainage ditches and shelter belts creating a distinctive patchwork.

The Wairarapa Ecological District PNAP survey identifies a number of sites within the vicinity of the subject Site – to the south west and east – but no features of values within the Site.

Within this context, when the landscape is assessed against the attributes set out as Table 1 in Appendix 3, it is determined that the landscape quality is at most, 'Ordinary'. It displays a distinguishable landscape structure,

characteristic patterns of landform and land cover often masked by land use, together with some features worthy of conservation, and some detracting features.

## 6.0 ASSESSMENT OF LANDSCAPE EFFECTS

The effects covered in this assessment, include those that can occur in relation to physical features, viewing audiences and visual amenity and/or on the site's contribution to the existing landscape character and amenity values, as follows:

- Landscape effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced. This may in turn affect the perceived value ascribed to the landscape and includes visual amenity effects under the ambit of 'experiential attributes'.

Impacts on landscape effects can result from change in the components, character or quality of the landscape. Usually these are the result of landform or vegetation modification or the introduction of new structures, facilities or activities. All these impacts are assessed to determine their effects on landscape character and quality, rural amenity and on public and private views. In this report, the assessment of potential effects is based on a combination of the landscape's sensitivity and visibility and the nature and scale of the development proposal.

The nature of landscape effects (of which visual amenity effects is a component) generated by any particular proposal can, therefore, be:

- Positive (beneficial), contributing to the visual character and quality of the environment.
- Negative (adverse), detracting from existing character and quality of environment; or
- Neutral (benign), with essentially no effect on existing character or quality of environment.

Landscape and visual amenity effects can be rated on a seven-point scale from Very High, through to Very Low (refer to Appendix 2).

Change in a landscape does not, of itself, necessarily constitute an adverse landscape or natural character effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways, these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use.

The aim is to provide a high amenity environment through appropriate design outcomes, including planting that can provide an adequate substitution for the currently experienced amenity.

### 6.1 Physical - abiotic attributes

The key abiotic attributes of the site include the landform, its geology, and its hydrology. Overall, the abiotic attributes of the site and its context have subject to only limited modification and retain the characteristic flatness and spaciousness, albeit contained, punctuated and structured by shelterbelt plantings.

The proposal will, at most only require a very limited modification to the topography of the Site. Construction of the farm will necessitate only limited earthworks, the panels being supported on galvanised steel 'piles' that will be driven into the ground. Once the activity has been terminated, these piles can be removed.

The proposal will require no changes in the hydrological systems of the area.

## 6.2 Physical - biophysical biotic attributes

The biotic attributes of the Site are the living organisms which shape an ecosystem. The proposal will only necessitate the clearance of predominantly exotic shelterbelt vegetation within the Site, and the anticipated change to the biotic attributes resulting from the proposal will be very small.

## 6.3 Physical – land use and built attributes

As identified above, the Site occupies a location within a landscape which is rural and productive, but with pockets of rural residential settlement at the western end of Moroa Road, at its eastern end (accessed from Battersea Road and Settlement Road, along Bidwells Cutting Road to the east of the Site, and to the north west, accessed from the State Highway). The Site itself inhabits an expansive and pastoral landscape which is structured by shelterbelts.

The proposal will result in the Site being occupied by solar panels, although the land will retain its productive potential, with grazing or cropping operations possible between the rows of tables and beneath the panels.

The proposal seeks to visually screen the structures from potential external locations through the planting of vegetative screens. These features will replicate existing features which are present in the landscape, and so will maintain the existing patterning and character of the landscape.

It is considered that the change resulting from the proposal on the land use and built attributes of the Site will be very small.

## 6.4 Physical – archaeology and cultural attributes

The AEE reports that there are no overlays or significant heritage features associated with the Site.

## 6.5 Perceptual attributes

Experiential attributes comprise the interpretation of human experience of the landscape. This includes visible changes in the character of the landscape – its naturalness as well as its sense of wildness and remoteness including effects on natural darkness of the night sky.

The Site is situated within a flat landscape in which vegetation of a relatively small scale has the potential to terminate views. The majority of the potential public view locations associated with the Site are spatially separated from the Site, and as such, even where views to the Site are possible, the receptor will only be afforded views of the 'edge' of the farm.

Where not screened by existing, or proposed mitigation planting, this will appear as a low dark line, and the extent and scale of the farm will not be apparent. The proposed advanced grade mitigation planting will, as is evidenced by visual simulations 1 – 5, contained in Appendix 4, predominantly screen such views immediately with the exception of those periods when the panels are at 'full tilt'.

It is anticipated that the smaller grade mitigation screen planting will be partially effective immediately, and fully effective within a period of 1 – 2 years (refer to visual simulation 6). Only along Moroa Road will receptors traveling along the road gain immediate views of the proposed structures; these set some 4 – 5m back from the edge of the road reserve. Such views will be screened by the proposed mitigation planting within 3 – 5 years.

The proposed mitigation planting strategy has been developed such that it mimics the existing and characterising vegetative features within the landscape. Once established, the vegetative screen plantings will fully enclose the three areas of the Farm, and will appear consistent with the existing vegetative character of the landscape.

The visual catchment of the site is described in section 4.3 and the primary viewers can be gathered into three main groups, based on a commonality of views-types and geographical locations. Those associated with public viewpoints are as follows:

1. Users of Bidwills Cutting Road;
2. Users of Battersea Road;
3. Users of Settlement Road;
4. Users of Moroa Road;
5. Users of State Highway 2, and
6. Visitors to the Wairarapa Clay Target Club on Moroa Road.

Those associated with private viewpoints are as follows:

1. Occupants of dwellings on Settlement, Battersea and Bidwells Cutting Road.
2. Occupants of dwellings on Moroa Road;
3. Occupants of dwellings to the north (accessed from SH2), and;
4. Occupants of dwellings accessed from, or near Pharazyns Road.

Within these geographical groups, there exist subgroups, including occupants of residential properties, occupants of vehicles and pedestrians, and visitors to, or occupants of commercial premises and offices. The sensitivity to change within the visual environment of these subgroups varies, with occupants of dwellings being most sensitive, whilst users of the road / occupants of vehicles being least sensitive.

The sensitivities assumed, and applied are as follows:

1. Road users on Bidwills Cutting, Battersea and Moroa Road: Low to moderate number of individuals with a low to moderate sensitivity to change.
2. Road users on Settlement Road. Very low to number of individuals with a low to moderate sensitivity to change.
3. Users of State Highway 2. High number of individuals with a low sensitivity to change.
4. Visitors to the Wairarapa Clay Target Club on Moroa Road. Low to moderate number of individuals with a low sensitivity to change.
5. Occupants of residential properties on Bidwills Cutting, Battersea, Settlement and Moroa Road. Low to moderate number of individual with a high sensitivity to change.
6. Occupants of residential properties on Pharazyn Road. Very low number of individual with a high sensitivity to change.
7. Occupants of residential properties State Highway 2. Low number of individual with a high sensitivity to change.

The assessed level of effect are as detailed in Table 2 below..

Address	Legal descript.	Mitigation	Distance	Construc. effect	Short term	Med to long term
<b>Occupants of dwellings accessed from Bidwills Cutting Road (to the east and north east). Visual simulation ref: 4, 5</b>						
244 Bidwills Cutting Rd (Owner has signed a non-objection agreement)	LOT 1 DP 490058 LOT 2 DP 468232 SECS 53	Two storey dwelling oriented to north west. View to west and south west partially screened by garden vegetation. Views to the north west and the Site will be screened by the proposed advanced grade boundary screen planting.	740m	Low	Low	Nil
263 Bidwills Cutting Rd	PT SEC 45 GREYTOWN SMALL FARM SETT BLK I (#263)	Single storey dwelling set back from road. Views to south west and west screened by garden vegetation. Views to the north west and the Site will be screened by the proposed boundary screen planting.	450m	Nil	Very low	Nil
268 Bidwills Cutting Rd	LOT 2 DP 490058 (#268)	Recently constructed two storey dwelling located within paddock to west of road. Panoramic views across the landscape to	250m	Low to moderate	Low to moderate	Low to moderate

		the northern, western and eastern quadrants, with little garden vegetation of any scale. Views of the Farm from the ground floor of this dwelling, and outdoor living areas will be screened by the proposed advanced grade boundary screen plantings. Views from the first floor will be partially screened.				
269 Bidwills Cutting Rd	PT SECS 45 GREYTOWN SMALL FARM SETT BLK (#269)	Two storey, set back from road on east side. Views to the west are partially screened by garden vegetation. Views to the south west are more open and unimpeded. Views to the Site will be screened by the proposed boundary screen planting.	530m	Very low	Very low	Nil
247 Bidwills Cutting Rd	LOT 1 DP 34841	Single storey dwelling. Views to west, south west and north west screened by garden vegetation.	430m	Nil	Very low	Nil
255 Bidwills Cutting Rd	PT SEC 46 SMALL FARM SETT BLK I HUANGARU	Single storey dwelling with views over low boundary planting to west. Views to north west screened by garden vegetation.	430m	Nil	Very low	Nil
273a Bidwills Cutting Rd	LOT 1 DP 468232 (#273A)	Recent subdivision (273a – 273d. All vacant. Open view to west across road to Site. Views to the Site will be screened by the proposed boundary screen planting.	440m	Very low	Low	Nil
299 Bidwills Cutting Rd	LOT 1 DP 468232 (#299)	Single storey dwelling set back from eastern side of road with fragmented views to east and south east through garden vegetation and trees of some scale. Views to the Site will be screened by the proposed boundary screen planting.	500m to west 190m to SW	Very low	Low	Nil
312 Bidwills Cutting Rd (Property owner.).	PT LOT 10 DP 3106 LOTS 1 3 DP 76478 (#312)	Single storey dwelling set back from western side of road with unimpeded views to north and north west, fragmented views to the west, south west and south through garden vegetation. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	175m to west 40m to south	Low	Low	Low
-	SEC 1 SO 20659 MOROA DIST BLK I HUANGARU (Substation)	N/A		Nil	Nil	Nil
489 Bidwills Cutting Rd	LOT 1 DP 68272 BLK I HUANGARUA SD (#489)	Single storey dwelling. Views to north, west, east and south screened by garden vegetation. Fragmented glimpse views to north west. Future glimpse view to the north west will be screened by the proposed advanced grade boundary screen planting.	50m to west 70m to north	Low	Low	Nil
<b>Users of Bidwills Cutting Road.</b>						
		Largely unimpeded views to the west across the landscape from the road corridor to the Site between #312 north to the dwelling within #224. Views to the Site will over a 3 – 5 year period be screened by the proposed boundary screen planting.	440m at southern end, 800m at northern end.	Low	Low	Nil
<b>Occupants of dwellings accessed from Battersea Road (to the east and south east). Visual simulation ref: 3</b>						
#28 Battersea Road	-LOT 1 DP 65364 BLK I HUANGARUA SD	Dwelling contained by vegetation within garden on northern, western and southern quadrants.	190m to west 230m to north	Nil	Nil	Nil
#50 Battersea Road	LOT 1 DP 306239 BLK I HUANGARUA SD (#50 Battersea Road)	Views to north west and west partially blocked by structures and vegetation. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	225m	Low	Low	Nil

#72 Battersea Road	LOT 2 DP 306239 BLK I HUANGARUA SD	Single storey dwelling. Open views to west and north west across paddocks. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	280m	Low	Low	Nil
#80 Battersea Road	LOT 3 DP 306239 BLK I HUANGARUA SD	Single storey dwelling. Open views to west and north west across paddocks. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	225m	Low	Low	Nil
#84 Battersea Road	LOT 3 DP 306239 BLK I HUANGARUA SD	Single storey dwelling. Open views to west across paddocks. Views to north west and north toward Site screened by shelterbelt on boundary with #80.	240m to corner of Site	Low	Low	Very low
#100 Battersea Road	LOT 2 DP 327775	Single storey dwelling. Filtered views to west through garden vegetation. Potential for narrow oblique view through gaps in vegetation to north west across paddocks. Views to the Site will be screened by the proposed boundary screen planting.	200m to corner of Site	Low	Low	Very low
#100a Battersea Road	LOT 2 DP 327775	Dwelling screened by garden vegetation from westerly and northerly views.	250m to corner of Site	Nil	Nil	Nil

**Users of Battersea Road.**

		Road corridor largely contained by shelterbelt and hedgerow vegetation. Glimpse views to west across landscape to Site along the frontage of #80. Views to the Site will be screened by the proposed boundary screen planting.	300m	Very low	Very low	Nil
--	--	--	------	----------	----------	-----

**Occupants of dwellings accessed from Settlement Road (to the south). Visual simulation ref: 2**

#26 Settlement Road	LOT 4 DP 327775 (#26)	Single storey dwelling screened from views to north and west by garden vegetation, and additionally by boundary plantings with neighbour to west and north west (Shelterbelt retained on southern boundary of Site and trimmed to 3.0m)	240m	Low	Low	Very low
#38 Settlement Road	LOT 1 DP 302672 (#38)	Single storey dwelling close to road screened from views to north and west by boundary plantings with neighbour. Possible glimpse views to north east. (Shelterbelt retained on southern boundary of Site and trimmed to 3.0m). Views to the Site will be screened by the proposed boundary screen planting.	300m	Low	Low	Very low
#54 Settlement Road	LOT 1 DP 308376 (#54)	Single storey dwelling with views to north and north west filtered by curtilage plantings. Shelterbelt along southern site boundary screen views to north east and north. Potential filtered views to north west to Site. (Shelterbelt retained on southern boundary of Site and trimmed to 3.0m).	180m	Nil	Nil	Nil
#56 Settlement Road	LOT 2 DP 308376 (#56)	Single storey dwelling with open outlook to north across Site. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	75m	Low	Low	Nil
#76 Settlement Road	LOT 1 DP 521225 (#76)	Single storey dwelling. Views to north and north east filtered by curtilage planting to north of dwelling, and boundary plantings with neighbour top north east. Views to the Site will be screened by the proposed boundary screen planting.	260m to south west corner of Site	Very low	Very low	Nil
#90 Settlement Road	LOT 2 DP 521225 (#90)	Single storey dwelling. Views to north and north east screened by shelterbelt within #96.	310m to south west corner of Site	Very low	Very low	Nil
#97 Settlement Road	LOT 4 DP 521225 (#97)	Single storey dwelling with open views across landscape to north and north east	280m to eastern area	Low	Low	Nil



		(toward main area of Site to north, and eastern area to north east).  Views north to the main area of Site will be screened by the proposed advanced grade boundary screen planting. Longer filtered views to the main area of the Site will be screened over a period of some 3 – 5 years. Views north east to the eastern area of the Site will be screened by the proposed advanced grade boundary screen planting.	450m to main (northern) area			
#96 Settlement Road	LOT 3 DP 521225 (#96)	Single storey dwelling with open views across landscape to north and north north east. Views to north east and east screened by shelterbelt on boundary with #56. Views north to the main area of Site will be screened by the proposed advanced grade boundary screen planting. Longer filtered views to the main area of the Site will be screened over a period of some 3 – 5 years. Views north east to the eastern area of the Site will be screened by the proposed advanced grade boundary screen planting.	120m to eastern area 450m to main (northern) area	Low	Low	Very low
<b>Users of Settlement Road.</b>						
		Road corridor largely contained by shelterbelt and other vegetation from junction with Battersea Road, west until the termination of the public road at #56. Glimpse views north to the Site at this point. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	345m	Very low	Very low	Nil
<b>Occupants of dwellings accessed from Moroa Road. Visual simulation ref: 1</b>						
#286 Moroa Road	LOT 1 DP 28920 BLK I HUANGARUA SD	Single storey dwelling with open views to north. Views softened by fragmented vegetation on northern / road boundary of property. ((Shelterbelt retained on southern boundary of Site and trimmed to 3.0m). Views to the Site will be screened by the proposed advanced grade boundary screen planting.	160m	Low	Low	Very low
	LOT 2 DP 28980 BLK IV WAIRARAPA SD BLK I	CSA Wairarapa Eco Farm. Views internalised by structure of shelterbelts and vegetation.	Nil	Nil	Nil	Nil
	LOT 2 DP 570788	Vacant lot fronting onto Moroa Road, across road from Site. Views north to Site filtered by vegetation on northern boundary. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	20m boundary to boundary	Low	Low	Nil
	LOT 3 DP 570788	Vacant lot fronting onto Moroa Road, across road from Site. Views north to Site filtered by vegetation on northern boundary. Views to the Site will be screened by the proposed advanced grade boundary screen planting.	20m boundary to boundary	Low	Low	Nil
Wairarapa Clay target Club	LOT 1 DP 475450	Open views along Moroa Road and to north east to Site	1,000m	Low	Low	Nil
<b>Users of Moroa Road.</b>						
		Travelling from the west, views to the main (northern) portion of the Farm, and western portion over a distance of some 1.4km and 900m respectively. The road corridor is, for the most part open and affords long views across the landscape to the north and south.	20m – 1.4km	Low to moderate	Low to moderate	Low

		<p>Travelling from the east, views of the main portion of the Site are constrained until the junction with Battersea Road. Views to the eastern portion are not available until the receptor has passed the western (shelterbelt) boundary of #28 Battersea Road (LOT 1 DP 65364 BLK I HUANGARUA SD).</p> <p>Views to the Site will over a 3 – 5 year period be screened by the proposed boundary screen planting.</p>				
<b>Occupants of dwellings accessed from State Highway 2. (to the north) Rep visual simulation ref: 6</b>						
#1832 SH2	LOT 1 DP 510604	Two storey dwelling located close to, but screened from State Highway by garden vegetation. Building enclosed on eastern, western and southern sides by garden / curtilage vegetation. Possible glimpse views to south 'past' shed. These views screened by shelterbelts further to south. Views to the Site will be screened by the proposed boundary screen planting.	600m	Low	Low	Nil
#1822 SH2	LOT 1 DP 28920 BLK I HUANGARUA SD	Single storey dwelling located close to but screened from State Highway by garden vegetation. Building benefits from views to west and east, but views to south east and south (toward Site) are screened by proximate vegetation on adjoining property to south.	690m	Very low	Very low	Nil
#1808B SH2	PT LOT 3 DP 5226 INT IN R/W BLK I HUANGA	Two storey dwelling set back from State Highway. Enclosed by vegetation with no views to Site although potential views to south east and Site from access. Views to the Site will be screened by the proposed boundary screen planting.	425m	Low	Low	Nil
#1808 SH2	LOT 1 DP 84332	Two storey dwelling buffered from State Highway and set within a framework of vegetation. Long views across landscape to south east but Site largely screened by intervening shelterbelts. Views to the Site will be screened by the proposed boundary screen planting.	700m	Very low	Very low	Nil
#1832A SH2	LOT 2 DP 510604	No dwelling within lot. Boundaries of lot vegetated with shelterbelts on eastern, southern and western sides. Potential view through gap in south western corner to south. Views to the Site will be screened by the proposed boundary screen planting.	335m	Very low	Very low	Nil
#1832B SH2	LOT 3 DP 510604	<p>Single storey dwelling located in north eastern corner of lot. Lot contained by shelterbelts on eastern, western and northern boundaries. Dwelling is oriented to west, and outlook primarily focused in this direction, but direct and unimpeded views to Site (south and south east) from the southern façade of the building and outdoor living areas. (Shelterbelt on northern portion of western boundary of Site retained and trimmed to 3.0m).</p> <p>Views to the Site will be screened by the proposed advanced grade boundary screen planting.</p>	260m	Low	Low	Very low
<b>Users of State Highway 2: Visual simulation ref: 6</b>						
		To the north of the main portion of the Site (between the Site and the State Highway), the 'grain' of the landscape has a north west – south east patterning, with the shelterbelts assuming this alignment. This	500 – 700m	Very low	Very low	Nil

		precludes views to the Site until the receptor is at a point to the north west (as represented by VP19). From this point east to #1822 State Highway 2, glimpse views are possible across the flat landscape over a minimum distance of between 500 – 700m. These views tend to be fragmented by shelterbelt vegetation and are not easily gained when travelling along the road at speed.  Views to the Site will over a 3 – 5 year period be screened by the proposed boundary screen planting.				
<b>Occupants of dwellings located on or near Pharazyns Road</b>						
#18 Pharazyns Road	LOTS 8 9 10 D P 991 LOT 9 DP 28980	Distant views across landscape to north. Southern boundary of the Site is defined by a shelterbelt and this screens views into the Site from the south and south west.	1.5km	Very low	Very low	Nil
#1 Pharazyns Road	LOT 3 DP 78705 BLK IV WAIRARAPA SD	Distant views across landscape to north. Southern boundary of the Site is defined by a shelterbelt and this screens views into the Site from the south and south west.	1.7km	Very low	Very low	Nil
255A No 1 Line	Lot 3 DP 536011	Distant views across landscape to north. Southern boundary of the Site is defined by a shelterbelt and this screens views into the Site from the south and south west.	1.7km	Very low	Very low	Nil

Table 2: Visual amenity effects summary

## 6.6 Social, cultural and associative attributes

Social, cultural and associative values are linked with individual's relationship with the landscape, their memories, the way they interact with and use the landscape and the historical evidence of that relationship.

The Site is separated from public viewpoints, and – it is understood – is not subject to any cultural or historical associations.

Research indicates that public attitudes to solar power are generally supportive, with a ShapeNZ Poll reporting a 69% support for solar power as a preferred energy source<sup>6</sup>. This suggests that public attitudes to a facility generating solar power are unlikely to be negative particularly when the scale and 'intrusiveness' of the facility is minimal.

Overall therefore, it is the opinion of the author that the potential impact on social and associative attributes will be very small.

## 6.7 Summary of landscape effects

In summary, any landscape effects would be limited to an existing area that has been previously modified (cleared of vegetation). The proposal will result a very limited localised change in the abiotic and biotic attributes of the Site, but the landform and vegetation character of the Site will be maintained and will reflect the character of the surrounding area.

Whilst the proposal will result in a marked shift in the character of the Site, the degree of change is commensurate to the change resulting from the construction of horticultural shelter structures as depicted in Plates 3 and 4. Such structures,

<sup>6</sup> [http://www.windenergy.org.nz/store/doc/Wind\\_Energy\\_and\\_Public\\_Opinion.pdf](http://www.windenergy.org.nz/store/doc/Wind_Energy_and_Public_Opinion.pdf)

sometimes seen on the roadsides in the wider area can form a visual barrier of some 3.0 – 4.0m in height. Frequently constructed of white shelter cloth, these structures are visually dominant within the landscape.

Notwithstanding this, the experiential attributes of the proposal would be affected at an immediate site level, with a very small number of proximate receptors affected to some degree, but the level of effect will be low or very low for the majority of individuals.

The social and associative attributes of the site will not be affected and overall it is the opinion of the author that the potential adverse landscape effects will be low.

## 6.8 Potential effects arising from solar panels

The potential for glare associated with non-concentrating photovoltaic systems which do not involve mirrors or lenses is relatively limited. PV solar panels are designed to reflect as little sunlight as possible (generally around 2% of the light received<sup>7</sup>), resulting in negligible glare. The reason for this is that PV panels are designed to absorb as much solar energy as possible in order to generate the maximum amount of electricity or heat. The panels will not generally create noticeable glare compared with an existing roof or building surfaces (NSW Department of Planning 2010).

Seen from above (such as from aircraft) they appear dark grey and do not cause a glare or reflectivity hazard. Solar photovoltaic farms have been installed on a number of airports around the world.

Other onsite infrastructure that may cause glare or reflections depending on the sun angle, include:

- Steel array mounting - array mounting would be steel or aluminium.
- Temporary construction site offices
- Inverter stations
- Transmissions line power poles.

The proposed facility will be contained by mitigation planting and – located within a flat landscape – will not be visible to the majority of viewers since few individuals are offered elevated views from dwelling toward the Site. Where these views are possible, they tend to be from the 'rear' of dwelling, so any glare will not affect primary views from these properties.

## 7.0 AFFECT ON THE STATUTORY FRAMEWORK

Objectives and policies of relevance for the Primary Production Zone focus on the mitigation of adverse effects, particularly on rural character and amenity. In addition, provisions seek the protection of outstanding natural landscapes and features. The Site does not contain / is not overlain by outstanding natural landscapes and features.

The site and its context retain a rural and productive character with a flat and low-lying landscape. Although the landscape has a spacious, open and exposed feeling, views are frequently curtailed or constrained by shelterbelts.

The proposal will maintain this character, with potential views of the structures being screened by shelterbelt / hedges which will be maintained to a height of around 4.0m. The structures within the Site will be of a limited height and will be fully screened by the proposed mitigation planting.

Thus, although the proposed facility will be of a extent and character that has the potential to contrast with the existing landscape character, the flatness of the terrain, the limited height of the proposed structures and the ability to create screening using relatively low mitigation plantings will ensure that the facility is visually contained and will not be evident

---

<sup>7</sup> Spaven Consulting, 2011, Solar Photovoltaic Energy Facilities: Assessment of potential for impact on aviation , report prepared January 2011, for RPS Planning and Development.

from its landscape context. As such, it will maintain the existing rural character and will (with the exception of two neighbouring properties) generate a low level of potential adverse visual amenity effect.

In addition, there is the potential to retain the productive capacity of the Site, with the ability to undertake grazing of small stock, or cropping under and between the structures.

It is the opinion of the author that the proposal will be consistent with the objectives and policies of the Plan where they relate to this assessment.

## 8.0 CONCLUSION

Far North Solar Farm Ltd seeks consent to construct a photovoltaic solar farm within the subject Site.

The site is located within the Primary Production Zone. It is not affected by any landscape overlays in the statutory documents.

The low-lying and flat landscape has a rural, spacious, open and exposed feeling although views are constrained by shelterbelts. Direct views into the Site are afforded from Moroa Road, but from other roads, views tend to be in part obscured by vegetation. Direct, and in some cases proximate views into the Site are possible from properties close to, or adjoining the various parts of the Site on Moroa Road, Settlement Road, Bidwills Cutting Road and to a lesser extent, State Highway 2.

The proposed facility will be of an extent and character that has the potential to contrast with the existing landscape character, but the flatness of the terrain, the limited height of the proposed structures and the ability to create screening using mitigation plantings will ensure that the facility is visually contained and will not be evident from its landscape context.

In addition, it is the opinion of the author that the proposed activity will have the potential to result in a similar outcome, or appearance as an activity that could occur under permitted agricultural practises such as the construction of shelter structures. Such structures are often white in colour and could potentially result in a greater level of visual intrusion.

It is the opinion of the author that the resulting landscape effect of the proposal will be low. The potential adverse visual amenity effect will be low for all receptors once the mitigation planting has become established (within a period of 5 years).

For a very small number of receptors – being users of Moroa Road – the level of effect will be low to moderate initially, diminishing to low within 3 – 5 years. Again, it is noted that, as a permitted activity the construction of agricultural shelter structures – for example – would result in a similar landscape change and level of effect for these individuals.

Similarly, the occupants of 268 Bidwills Cutting Road, the potential adverse effect on whom has been assessed as being low – moderate, could anticipate a similar level of effect from agricultural shelter structures.

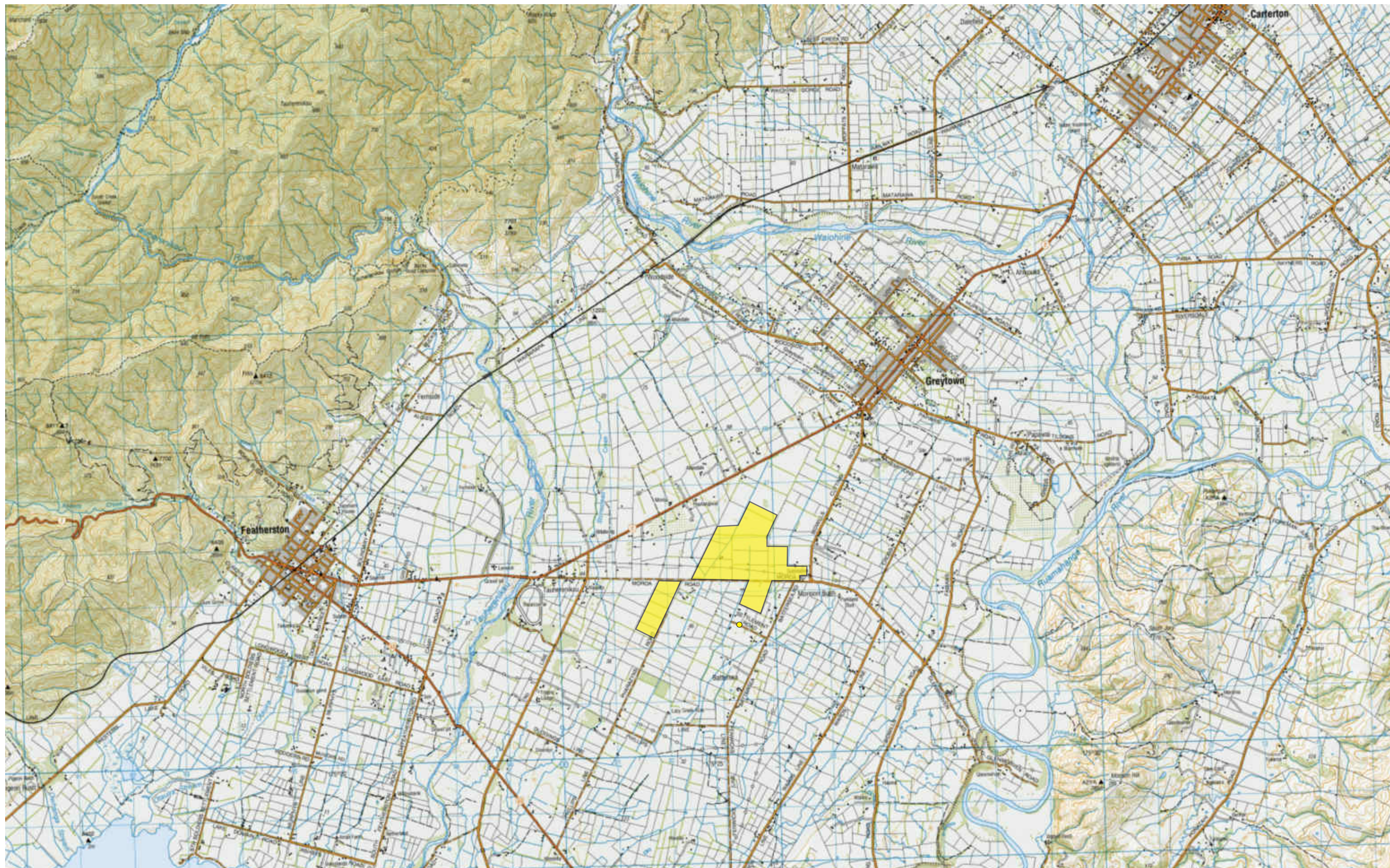
The proposal will be consistent with the provisions of the statutory instruments where they apply to the scope of this report, and the proposal is considered to be appropriate from a landscape and visual perspective.

Simon Cocker



## APPENDIX 1: Figures





 The Site

0m 200m 400m 600m

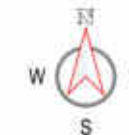
**Far North Solar Farm Ltd.**  
**Moroa Road, Greytown**

FIGURE 1: Location of the site














## FIGURE 2a: The Proposal



## GENERAL NOTES

1. ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE SPECIFIED.  
2. FINAL LAYOUT WILL BE DETERMINED AFTER SITE SURVEY.

### LEGEND

-  - 2 x 28 PV TRACKER MODULE (Longi 545Wp)
-  - 2 x 14 PV TRACKER MODULE (Longi 545Wp)
-  - CANAL
-  - 33kV TRANSMISSION LINE
-  - PLANT INTERNAL ROAD (4m WIDTH)
-  - UNDERGROUND TRENCH (33kV INVERTER/COMMUNICATION CABLE)
-  - INVERTER STATION
-  - SCREENING TREES (2m Height)
-  - WATER TANK (03m)

#### REFERENCE DRAWINGS

No.	DRAWING TITLE	DRAWING No.

PROJECT NAME

GREYTOWN 175MWp  
NEW ZEALAND

OWNER'S ENGINEER

GENERAL CONTRACTOR	
--------------------	--

**AQUILA**   
CAPITAL GENERATING  
ESSENTIAL  
INVESTMENTS

Aquila Capital Renewables Asia Pte. Ltd.  
136 Market Street #15-03 CapitaGreen  
Singapore 048946. [www.aquila-capital.com](http://www.aquila-capital.com)

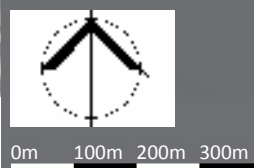
This drawing is property of Aquila Capital and may not be copied (in whole or in part) used for manufacturing or disclosed without prior consent of Aquila Capital Singapore

DRAWN BY	HMW	DATE	25-11-2022	TIME	11:50	TITLE	MODULE GENERAL
CHECKED BY	AKL	DATE	25-11-2022	TIME	11:50		ARRANGEMENT LAYOUT

ACRA-NZD-GT-001

SHEET SIZE A1	SHEET 1 OF 1	SCALE 1:5000	REV E
------------------	-----------------	-----------------	----------





- The Site
- Photo locations
- Potentially affected dwelling
- Existing dense shelterbelt
- Existing fragmented shelterbelt
- Areas of vegetation

## Far North Solar Farm Ltd. Moroa Road, Greytown

FIGURE 3: Context of the Site, viewpoints and neighbouring properties





Pylon located on western boundary of the Site

Photo 1: View to north west across the main (northern) area of the Site from Moroa Road. The Farm will occupy the foreground and midground of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)



PT LOT 10 DP 3106 LOTS 1 3 DP 76478 (#312 Bidwells Cutting Road)



Photo 2: View from Bidwells Cutting Road to west (pan 1 of 2)

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)







LOT 2 DP 490058 (#268 Bidwells Cutting Road)

Photo 3: View from Bidwells Cutting Road to north west (pan 2 of 2)

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)







Photo 4: View east to the main (northern) area of the Site from Moroa Road. The Farm will occupy the midground of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)







Photo 5: View east to the main (northern) area of the Site from Moroa Road. The Farm will occupy the background of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 6: View south east to the western area of the Site from Moroa Road. The Farm will occupy the midground of this view.

Photo taken: 13 October 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 7: View north east across main (northern) area of the farm from Moroa Road.  
The Farm will occupy the foreground and midground of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)







Photo 8: View north east across main (northern) area of the Site from south west corner on Moroa Road.  
The Farm will occupy the foreground and midground of this view.

Photo taken: 24 April 2022

## **Far North Solar Farm Ltd. Moroa Road, Greytown**

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 9: View north west across main (northern) area of the Site from Moroa Road.  
The Farm will occupy the foreground and midground of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 10: View north west across Site from Moroa Road. The Farm will occupy the foreground and midground of this view.

Photo taken: 24 April 2022

**Far North Solar Farm Ltd.**  
**Moróa Road, Greytown**

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)







Photo 11: View to south across western area of Site from Moroa Road

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 12: View to north from entrance to #56 Settlement Road

Photo taken: 13 October 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 13: View to south west across main (northern) area of the Site from Bidwells Cutting Road.  
The Farm will occupy the background of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)







LOT 2 DP 490058 (#268 Bidwells Cutting Road)

Photo 14: View to west across main (northern) area of the Site from Bidwells Cutting Road (pan 1 of 2)  
The Farm will occupy the background of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)



LOT 2 DP 490058 (#268 Bidwells Cutting Road)



Photo 15: View to west across main (northern) area of the Site from Bidwells Cutting Road  
The Farm will occupy the background of this view. (pan 2 of 2)

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 16: View to south west across main (northern) area of the Site from Bidwells Cutting Road  
The Farm will occupy the background of this view.

Photo taken: 24 April 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 17: View to south across main (northern) area of the Site from State Highway  
The Farm will occupy the background of this view.

Photo taken: 13 October 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 18: View to south across main (northern) area of the Site from State Highway  
The Farm will occupy the background of this view.

Photo taken: 13 October 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Barn within 1942 State Highway 2

Photo 19: View to south across main (northern) area of the Site from State Highway  
The Farm will occupy the background of this view.

Photo taken: 13 October 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)





Photo 20: View to south across main (northern) area of the Site from State Highway  
The Farm will occupy the background of this view.

Photo taken: 13 October 2022

## Far North Solar Farm Ltd. Moroa Road, Greytown

Photographs (taken with digital equivalent of 50mm focal length unless otherwise specified)

## **APPENDIX 2: Landscape and Visual Effects Assessment Methodology**



# Landscape and Visual Effects Assessment Methodology

## Introduction

The landscape and visual effects assessment process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, the existing character of the landscape and the experience of it. In addition, the landscape assessment method may include an iterative design development processes which includes stakeholder involvement. The outcome of any assessment approach should seek to avoid, remedy or mitigate adverse effects. A separate assessment is required to assess changes in natural character in coastal areas and other waterbodies.

When undertaking landscape and visual effects assessments, it is important that a structured and consistent approach is used to ensure that findings are clear and objective. Judgement should always be based on skills and experience, and be supported by explicit evidence and reasoned argument.

While landscape and visual effects assessments are closely related, they form separate procedures. The assessment of the potential effect on the landscape forms the first step in this process and is carried out as an effect on an environmental resource (i.e. landscape elements, features and character). The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

**Landscape effects:**

*Change in the physical landscape, which may change its characteristics or qualities.*

**Visual effects:**

*Change to views which may change the visual amenity experienced by people.*

The policy context, existing landscape resource and locations from which a development or change is visible all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the landscape must first be described, including an understanding of the key landscape characteristics and qualities. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described alongside a judgement made on the value or importance of the potentially affected landscape.

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the Quality Planning Landscape Guidance Note<sup>1</sup> and its signposts to examples of best practice which include the UK guidelines for landscape and visual impact assessment<sup>2</sup> and Te Tangi a te Manu<sup>3</sup>.

Assessing landscape effects requires an understanding of the nature of the landscape resource and the magnitude of change which results from a proposed development to determine the overall level of landscape effects.

## Nature of the landscape resource

Assessing the nature of the landscape resource considers both the susceptibility of an area of landscape to change and the value of the landscape. This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;

---

<sup>1</sup> <http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape>

<sup>2</sup> Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

<sup>3</sup> Te Tangi a te Manu (Aotearoa New Zealand Landscape Guidelines), NZILA July 2022.

- The zoning of the land and its associated anticipated level of development;
- The value or importance placed on the landscape, particularly those confirmed in statutory documents; and
- The scope for mitigation, appropriate to the existing landscape.

The susceptibility to change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of

Outstanding Natural Landscape (RMA s.6(b)) based on important biophysical, sensory/ aesthetic and associative landscape attributes, which have potential to be affected by a proposed development.

### Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to existing areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. Table 1 below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing factors		Higher	Lower
Nature of Landscape Resource	Susceptibility to change	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change which would result from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and associative attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or associative attributes. The landscape is of low or local importance.
Magnitude of Change	Size or scale	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	Geographical extent	Wider landscape scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

### Visual Effects

To assess the visual effects of a proposed development on a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of visual influence' of the site and proposal. Where

possible, computer modelling can assist to determine the theoretical extent of visibility together with field work undertaken to confirm this. Where appropriate, key representative viewpoints should be agreed with the relevant local authority.

### Nature of the viewing audience

The nature of the viewing audience is assessed in terms of the susceptibility of the viewing audience to change and the value attached to views. The susceptibility of the viewing audience is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focused on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focused on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the landscape setting.

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors.

Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

### Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change which may distinguish between temporary (often associated with construction) and permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA<sup>4</sup>.

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. Table 2 has been prepared to help guide this process:

Contributing factors		Higher	Lower
Nature of Landscape Resource	Susceptibility to change	Views from dwellings and recreation areas where attention is typically focussed on the landscape..	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.
	The value of the landscape	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers..
Magnitude of Change	Size or scale	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development	Most key features of view retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Glimpse / no view of the proposed development.
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).

### Nature of Effects

<sup>4</sup> Best Practice Guide: Visual Simulations BPG 10.2, NZILA

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways, these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by Table 3 set out below:

Nature of effect	Use and definition
<b>Adverse (negative):</b>	The proposed development would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values
<b>Neutral (benign):</b>	The proposed development would complement (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
<b>Beneficial (positive):</b>	The proposed development would enhance the landscape and / or visual amenity through removal of restoration of existing degraded landscapes uses and / or addition of positive elements or features

Table 3: Determining the Nature of Effects

## Cumulative Effects

During the scoping of an assessment, where appropriate, agreement should be reached with the relevant local authority as to the nature of cumulative effects to be assessed. This can include effects of the same type of development (e.g. wind farms) or the combined effect of all past, present and approved future development<sup>5</sup> of varying types, taking account of both the permitted baseline and receiving environment. Cumulative effects can also be positive, negative or benign.

### Cumulative Landscape Effects

Cumulative landscape effects can include additional or combined changes in components of the landscape and changes in the overall landscape character. The extent within which cumulative landscape effects are assessed can cover the entire landscape character area within which the proposal is located, or alternatively, the zone of visual influence from which the proposal can be observed.

### Cumulative Visual Effects

Cumulative visual effects can occur in combination (seen together in the same view), in succession (where the observer needs to turn their head) or sequentially (with a time lapse between instances where proposals are visible when moving through a landscape). Further visualisations may be required to indicate the change in view compared with the appearance of the project on its own.

Determining the nature and level of cumulative landscape and visual effects should adopt the same approach as the project assessment in describing both the nature of the viewing audience and magnitude of change leading to a final judgement. Mitigation may require broader consideration which may extend beyond the geographical extent of the project being assessed.

## Determining the Overall Level of Effects

The landscape and visual effects assessment concludes with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation.

---

<sup>5</sup> The life of the statutory planning document or unimplemented resource consents



This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in Table 4 below. This table which can be used to guide the level of landscape and visual effects uses an adapted seven-point scale derived from Te Tangi a te Manu (Aotearoa New Zealand Landscape Guidelines)

	Effect rating	Use and definition
<b>More than minor</b> . . . .	<b>Very high</b>	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character
	<b>High</b>	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains. Concise Oxford English Dictionary Definition High: adjective- Great in amount, value, size, or intensity
	<b>Moderate to high</b>	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed.
	<b>Moderate</b>	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent but not necessarily uncharacteristic within the receiving landscape. Concise Oxford English Dictionary Definition Moderate: adjective- average in amount, intensity, quality or degree
<b>Minor</b> . . . .	<b>Moderate to low</b>	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent or uncharacteristic within the receiving landscape.
	<b>Low</b>	No material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic and absorbed within the receiving landscape. Concise Oxford English Dictionary Definition Low: adjective- 1. Below average in amount, extent, or intensity
<b>Less than minor</b>	<b>Very low</b>	Little or no loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation.

Table 4: Determining the overall level of landscape and visual effects

## Determination of “minor”

Decision makers determining whether a resource consent application should be notified must also assess whether the effect on a person is less than minor<sup>6</sup> or an adverse effect on the environment is no more than minor<sup>7</sup>. Likewise, when assessing a non-complying activity, consent can only be granted if the s104D ‘gateway test’ is satisfied. This test requires the decision maker to be assured that the adverse effects of the activity on the environment will be ‘minor’ or not be contrary to the objectives and policies of the relevant planning documents.

These assessments will generally involve a broader consideration of the effects of the activity, beyond the landscape and visual effects. Through this broader consideration, guidance may be sought on whether the likely effects on the landscape resource or effects on a person are considered in relation to ‘minor’. It must also be stressed that more than minor effects on individual elements or viewpoints does not necessarily equate to more than minor effects on the wider landscape resource. In relation to this assessment, moderate-low level effects would generally equate to ‘minor’.

<sup>6</sup> RMA, Section 95E

<sup>7</sup> RMA Section 95D

## APPENDIX 3: Effects ranking and descriptor

Determination of landscape quality		
Category	Criteria	Typical Example
<b>High - Exceptional</b>	Strong landscape structure, characteristics, patterns, balanced combination of landform and land cover	International or nationally recognised site – national park.
	Appropriate management for land use and land cover	
	Distinct features worthy of conservation	
	Sense of place	
	No detracting features	
<b>High</b>	Strong landscape structure, characteristics, patterns, balanced combination of landform and land cover	Nationally or regionally recognised site – national park
	Appropriate management for land use and land cover but potential scope for improvement.	
	Distinct features worthy of conservation	
	Sense of place	
	Occasional detracting features	
<b>Good</b>	Recognisable landscape structure, characteristics, patterns, balanced combination of landform and land cover still evident	Nationally, regionally recognised site all or great majority of area of local landscape importance
	Scope to improve management for land use and land cover	
	Some features worthy of conservation	
	Sense of place	
	Some detracting features	
<b>Ordinary</b>	Distinguishable landscape structure, characteristic patterns of landform and land cover often masked by landuse	
	Some features worthy of conservation	
	Some detracting features	
<b>Poor</b>	Weak landscape structure, characteristic patterns of landform and land cover often masked by landuse	
	Mixed land use evident	
	Lack of management and intervention has resulted in degradation	
	Frequent detracting features	
<b>Very poor</b>	Degraded landscape structure, characteristic patterns of landform and land cover are masked by landuse	
	Mixed land use dominates	
	Lack of management and intervention has resulted in degradation	
	Extensive detracting features	
<b>Damaged landscape</b>	Damaged landscape structure	
	Single land use	
	Disturbed or derelict land requires treatment	
	Detracting features dominate.	

**Table 1** has been adapted for NZ conditions from an example of threshold criteria used by practitioners in the United Kingdom. The original document was prepared by Jeff Stevenson Associates and published in *Guidelines for Landscape and Visual Assessment ("GLVIA")* 3<sup>rd</sup> Edition. Landscape Institute (UK) and IEMA 2013.



## **APPENDIX 4: Visual simulations**



# Viewpoint Location Map

Far North Solar Farm Ltd  
Greytown



- Viewpoint 01  
Moroa Road East  
(E)382096.308 (N)778438.535
- Viewpoint 02  
Settlement Road  
(E)381116.848 (N)777645.524
- Viewpoint 03  
Battersea Road  
(E)381832.703 (N)777879.691
- Viewpoint 04  
Bidwills Cutting Road  
(E)382442.491 (N)779117.539
- Viewpoint 05  
Bidwills Cutting Road  
(E)382420.924 (N)778838.819
- Viewpoint 06  
State Highway 2  
(E)380486.286 (N)780133.058



Date Printed : 07-12-2022





Viewpoint 01 - Existing



Viewpoint 01 - Proposed





Viewpoint 01 - Existing

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



Easting: 382096.308  
Northing: 778438.535  
Elevation : 46.00m  
Height of Camera : 1.5m  
Orientation of View : NW  
Date of Photography : 15 Nov 2022  
Time of Photography : 11:36am

Far North Solar Farm Ltd - Greytown  
Viewpoint 01 - Moroa Road East

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 01 - Proposed

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



Easting: 382096.308  
Northing: 778438.535  
Elevation : 46.00m  
Height of Camera : 1.5m  
Orientation of View : NW  
Date of Photography : 15 Nov 2022  
Time of Photography : 11:36am

Far North Solar Farm Ltd - Greytown  
Viewpoint 01 - Moroa Road East

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 02 - Existing



Viewpoint 02 - Proposed





Viewpoint 02 - Existing

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3





Viewpoint 02 - Proposed

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3





Viewpoint 03 - Existing



Viewpoint 03 - Proposed





Viewpoint 03 - Existing

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



Easting: 381832.703  
Northing: 777879.691  
Elevation : 43.00m  
Height of Camera : 1.5m  
Orientation of View : NW  
Date of Photography : 15 Nov 2022  
Time of Photography : 11:15am

Far North Solar Farm Ltd - Greytown  
Viewpoint 03 - Battersea Road

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 03 - Proposed

**IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3**



Easting: 381832.703  
Northing: 777879.691  
Elevation : 43.00m  
Height of Camera : 1.5m  
Orientation of View : NW  
Date of Photography : 15 Nov 2022  
Time of Photography : 11:15am

## Far North Solar Farm Ltd - Greytown

### Viewpoint 03 - Battersea Road

NOTES: All photos were taken by Virtual View with a Canon 5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 04 - Existing



Viewpoint 04 - Proposed





Viewpoint 04 - Existing

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



Easting: 382442.491  
Northing: 779117.539  
Elevation : 48.00m  
Height of Camera : 1.5m  
Orientation of View : NW  
Date of Photography : 15 Nov 2022  
Time of Photography : 10:12am

Far North Solar Farm Ltd - Greytown  
Viewpoint 04 - Bidwills Cutting Road

NOTES: All photos were taken by Virtual View with a Canon 5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022








Viewpoint 04 - Proposed

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3

	<p>Easting: 382442.491 Northing: 779117.539 Elevation : 48.00m Height of Camera : 1.5m Orientation of View : NW Date of Photography : 15 Nov 2022 Time of Photography : 10:12am</p>	<p>Far North Solar Farm Ltd - Greytown Viewpoint 04 - Bidwills Cutting Road</p>	<p>NOTES: All photos were taken by Virtual View with a Canon 5Dmk2 and a 50mm lens. Photo positions were surveyed by Hand Held GPS.</p> <p>Version info: 0001 Date Printed: 07-12-2022</p>	
---	---	---	--	---





Viewpoint 05 - Existing



Viewpoint 05 - Proposed





Viewpoint 05 - Existing

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



**VIRTUALVIEW**  
VISUALISATION SPECIALISTS

Easting: 382420.924  
Northing: 778838.819  
Elevation : 47.016m  
Height of Camera : 1.5m  
Orientation of View : W  
Date of Photography : 15 Nov 2022  
Time of Photography : 10:33am

Far North Solar Farm Ltd - Greytown  
Viewpoint 05 - Bidwills Cutting Road

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 05 - Proposed

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



**VIRTUALVIEW**  
3D VISUALISATION SPECIALISTS

Easting: 382420.924  
Northing: 778838.819  
Elevation : 47.016m  
Height of Camera : 1.5m  
Orientation of View : W  
Date of Photography : 15 Nov 2022  
Time of Photography : 10:33am

Far North Solar Farm Ltd - Greytown  
Viewpoint 05 - Bidwills Cutting Road

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 06 - Existing



Viewpoint 06 - Proposed





Viewpoint 06 - Existing

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



Easting: 380486.286  
Northing: 780133.058  
Elevation : 59.443m  
Height of Camera : 1.5m  
Orientation of View : SE  
Date of Photography : 15 Nov 2022  
Time of Photography : 14:35pm

Far North Solar Farm Ltd - Greytown  
Viewpoint 06 - State Highway 2

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022







Viewpoint 06 - Proposed

IMAGE TO BE VIEWED AT 50cm FROM EYE FOR CORRECT VIEWING SCALE WHEN PRINTED AT A3



**VIRTUALVIEW**  
3D VISUALISATION SPECIALISTS

Easting: 380486.286  
Northing: 780133.058  
Elevation : 59.443m  
Height of Camera : 1.5m  
Orientation of View : SE  
Date of Photography : 15 Nov 2022  
Time of Photography : 14:35pm

Far North Solar Farm Ltd - Greytown  
Viewpoint 06 - State Highway 2

NOTES: All photos were taken by Virtual View with a Canon  
5Dmk2 and a 50mm lens.  
Photo positions were surveyed by Hand Held GPS.

Version info: 0001  
Date Printed: 07-12-2022

