



Assessment of Environmental Effects

Waipara Solar Farm – 380 Waipara Flat Road

FAR NORTH SOLAR FARMS LTD

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1. Introduction

1.1 Overview

This Assessment of Environmental Effects (AEE) report has been prepared on behalf of Far North Solar Farms Limited (FNSF) (hereafter referred to as 'the Applicant').

The AEE supports a resource consent application to Environment Canterbury Regional Council (ECan) and Hurunui District Council (HDC) to establish a 143.8 MWp solar farm at 380 Waipara Flat Road, Waipara.

Overall, resource consent is sought as a discretionary activity.

This report has been prepared by Williamson Water & Land Advisory Ltd (WWLA) in fulfilment of section 88 of the Resource Management Act 1991 (RMA).

1.2 Applicant and Property Details

Table 1. Applicant and property details

Applicant	Far North Solar Farm Ltd
Site address	380 Waipara Flat Road, North Canterbury
Owner of application site	Northgreen Arable Limited
Site area	242.4 ha (The proposed solar modules comprise 180.8 ha)
Legal Description	LOT 2 DP 19025 LOT 1 DP 320376 SECS 3-4 SO 17514 RS 37988 37989 37990
Record of Title reference	80697, CB32B/7, CB571/26
Additional limitations/considerations	Weka Creek adjoins rear (north-eastern) boundary of the site Land within the site is classified as Highly Productive Land (HPL) (LUC Class 3)
District Council & Relevant Plan	Hurunui District Council (HDC) Hurunui Operative District Plan 2022
District Plan Zoning & Overlays	Zoning - Rural zone Rural Area - Located within the Waipara Wine Growing Area Hazards – Flood crossing the site near the southern end & Flood Assessment Zone at the southern point of the site Other – Powerline – National Grid Line with support structures and Electricity Distribution Line 66kV crossing the southern part of the site.
Regional Council & Relevant Plan	Environment Canterbury Regional Council (ECan) Regional Policy Statement Canterbury Land and Water Regional Plan (CLWRP)
Address for service during consent processing	William Water & Land Advisory Attention: Laila Alkamil Email: s 9(2)(a) Ph: s 9(2)(a)
Address for service during consent implementation and invoicing	Far North Solar Farm Ltd Attention: Richard Homewood Email: s 9(2)(a) Ph: s 9(2)(a)

The Record of Title is included in **Appendix A** and the application forms are included in **Appendix B**. The signed Form 8A from the landowner is attached as **Appendix C**.

1.3 Overview of Resource Consent Requirements

Resource consent is sought from ECan under the following rules of the Canterbury Land and Water Regional Plan (CLWRP):

- **Rule 5.94B** – The discharge of construction-phase stormwater, other than into or from a reticulated stormwater system, into a surface waterbody, or onto or into land in circumstances where a contaminant may enter groundwater or surface water, that does not meet one or more of the conditions of Rule 5.94A as a **restricted discretionary** activity; and
- **Rule 5.97** – The discharge of stormwater, other than from a reticulated system, into a river, lake, wetland or artificial watercourse or onto or into land in circumstances where a contaminant may enter water that does not meet one or more of the conditions of Rule 5.95 or Rule 5.96 as a **discretionary** activity.

Resource consent is sought from HDP under the following rules of the Hurunui Operative District Plan 2022 (HDP):

- **Rule 3.4.5(1)** – Buildings and structures which do not meet the requirements of Rule 3.4.3 or Rule 3.4.3.7 as a **restricted discretionary** activity;
- **Rule 7.4.5(2)** – Any energy activity that is not otherwise specified as a permitted, restricted discretionary or non-complying activity as a **discretionary** activity; and
- **Rule 11.4.6(1)** – Buildings and structures (excluding utility buildings and structures) which do not meet the standards as a permitted or controlled activity, unless specified as a non-complying activity, as a **restricted discretionary** activity.

Overall, resource consent is sought as a **discretionary activity**.

2. Description of the Receiving Environment

2.1 Site Location and Description

The subject site is located at 380 Waipara Flat Road in Waipara, which is situated to the west of the Waipara township. The site comprises one land parcel, Section 3 Survey Office Plan 17514, which has a total land area of approximately 242 hectares.

The site is bound to the west by State Highway 7 (SH7) and to the east by Weka Creek. The Weka Creek connects to the Waipara River, which lies approximately 350 m to the south of the site.

Waipara Flat Road is identified in Appendix 8.1 of the Hurunui Operative District Plan as being a strategic arterial.

The Waipara Substation is located on the eastern side of MacKenzie Road, approximately 600 m east of the site.

The surrounding area is rural in character with farming operations surrounding the site. In addition, there are properties used for viticulture and rural lifestyle purposes. The nearest urban settlement is Waipara which is located to the east of the subject site.

Historically the property has been used for farming, including sheep and cattle. There is an existing dwelling located on the site. In addition to this, the site currently contains two sheds, a wool shed, steel sheep yards, cattle yards.

There are no identified wetlands within the site.



Figure 1. Locality Plan, site boundaries shown in red (Source: Canterbury Maps).

2.2 Records of Title

The application site consists of the following land parcels as outlined in **Table 2** below.

Table 2. Record of Title details.

Legal Description	Site Area	Instruments
Lot 2 DP19025 and Lot 1 DP320376	39.4 ha	7170870.1 Consent Notice (affects Lot 1 DP320376) - A right (in gross) to convey electric power over parts marked C and D on DP 418186 in favour of MainPower New Zealand Limited created by Easement Instrument 8139734.1. - Land Covenant in Easement Instrument 9085090.2 - rights to convey water created by Transfer A446643.1 - right to convey water created by Transfer 5466409. - Section 241(2) Resource Management Act 1991 (affects DP 320376)
Section 3-4 Survey Office Plan 17514	201.6 ha	- Subject to a right (in gross) to convey electricity over parts marked A and B on DP 359430 in favour of Transpower New Zealand Limited created by Easement Instrument 6649262.2 - Subject to Section 8 Mining Act 1971 - Subject to Section 168A Coal Mines Act 1925
Rural Section 37988, Rural Section 37989 and Rural Section 37990	1.4 ha	- Subject to Section 8 Coal Mines Amendment Act 1950 - Subject to a right (in gross) to convey electric power over parts marked E and F on DP 418186 in favour of MainPower New

		Zealand Limited created by Easement Instrument 8139734.1 - 1.5.2009 at 2:57 pm Land Covenant in Easement Instrument 9085090.2 - 11.6.2012 at 10:45 am
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2.3 Previous Resource Consents

Historically, consent has been granted by Environment Canterbury for wells associated with the farming activities on the site.

2.4 Ground Contamination

A review of the aerial photography indicates no HAIL¹ activities have occurred on the site. It appears that the site has been predominantly used for farming purposes (currently and historically).

2.5 Culture and Heritage

A review of ArchSite did not identify any archaeological sites within the site's vicinity. Additionally, there are no protected trees, heritage structures, scheduled sites, or waahi taonga identified within the Hurunui District Plan or Environment Canterbury Maps.

2.6 Land Use Capability and Soils

The site and surrounding area is predominantly flat in gradient.

The western portion of the site is identified as Class 3 under the Land Use Capability classification system, whilst the eastern side of the site is within Class 4.

- Soils within LUC 3 are defined as arable land with moderate limitations restricting crop types and intensity of cultivation, suitable for cropping, viticulture, berry fruit, pastoralism, tree crops and forestry.
- Soils within LUC 4 which are defined as arable land with significant limitations for arable use or cultivation, very limited crop types, suitable for occasional cropping, pastoralism, tree crops and forestry. Some Class 4 soils are also suitable for viticulture and berry fruit.

As a result part of the land which the proposed solar farm is to be located on is classified as Highly Productive Land (HPL) under the National Policy Statement for Highly Productive Land (NPS-HPL).

¹ Hazardous Activities and Industries List.

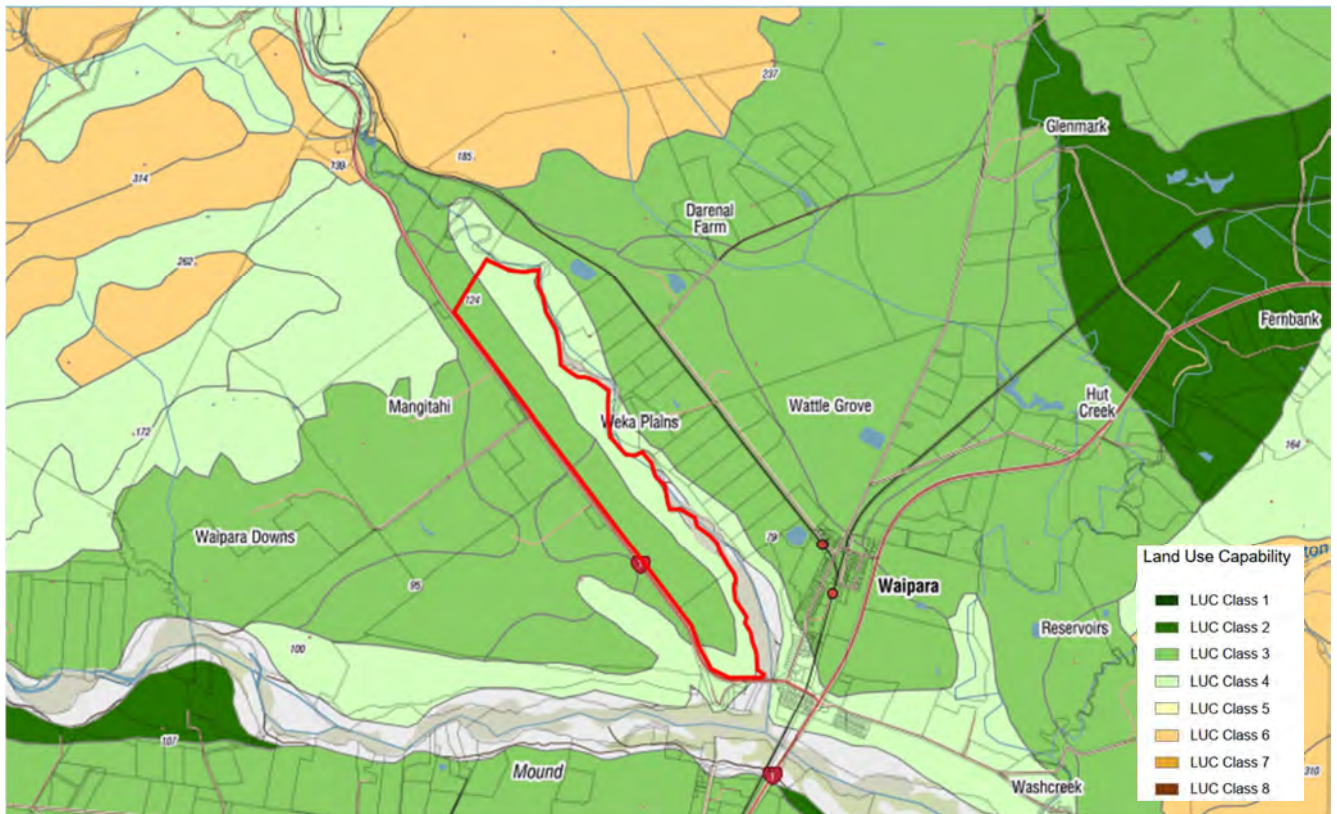


Figure 2. LUC maps (Source: Landcare Research NZ Limited).

2.7 Natural Hazards

The site has been identified on the Planning maps as containing a fold, and also being located in the fault zone.

The small area of the site located at the southern end is identified as being within a flood assessment zone as identified in **Figure 3** (below). No solar panels or any other work is proposed in this part of the site subject to the flood assessment zone.

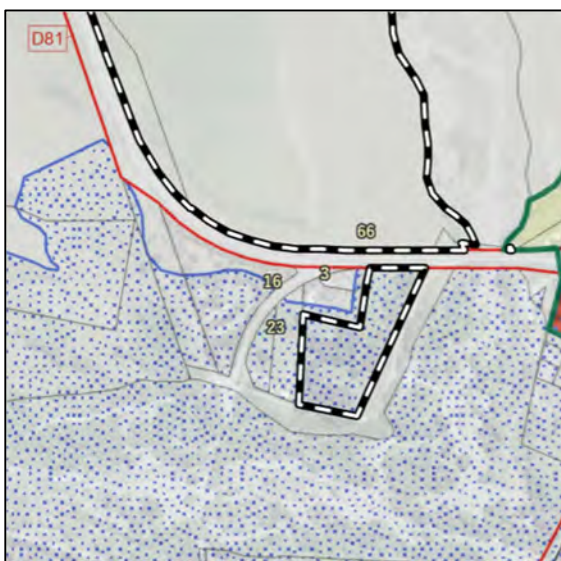


Figure 3. Identification of the Flood Assessment Zone (in blue shading) within the application site (Source : Hurunui District Plan).

2.8 Landscape Values

2.8.1 General Setting

A Landscape and Visual Assessment has been prepared for the proposal and is attached as **Appendix D**.

The subject property occupies a rural landscape characterised by large land holdings. To the north east, between MacKenzies Road and Weka Creek, a series of rectangular lots have been created and share a commonality with regard to their focus on (primarily) viticultural production. A number of the dwellings associated with these rural residential lots are located along the western edge of the terrace above the river and offer views to the west and south west across the river (refer to photos 4, 5, and 7).

To the east, dwellings located along the western edge of the Waipara township offer views to the west, across and along the river bed to the subject property

2.8.2 Visual Catchment

The visual catchment of the site is described in the Landscape and Visual Assessment report (**Appendix D**) and is summarised as follows:

The subject property is bounded by Waipara Flat Road (SH7) on its western side. As is evidenced by photos 10 and 11 in the Landscape and Visual Assessment, views from this road across the upper terrace within the site are possible. When approaching the property from the south, heading north, views into the site are screened by the low inter-terrace slope that runs parallel to the curve of the road. From further along the State Highway to the east however, views 'along' the riverbed to the north to the eastern edge of the site (and its south eastern corner) are possible.

Similarly, the ribbon of dwellings located along the western side of the Glenmark Drive within the Waipara township offer views over a distance of between 400m – 1.km, across the River bed to the eastern edge of the site. This includes number 55 Glenmark Drive which is located to the west of the aforementioned 'ribbon' of dwellings, and elevated on the terrace edge above the riverbed. The dwelling within this property is separated by a minimum of some 400m from the site.

Around the junction of the State Highway and MacKenzies Road views across the riverbed to the site are possible from a number of dwellings and the Glenmark Railway Station.

The site is largely hidden from Mackenzies Road, screened by landform or vegetation, but a number of rural residential properties along MacKenzies Road contain dwellings which have been located close to a subtle inter-terrace slope closer to the riverbed, and between 200m and 600m from the site. These dwellings offer views across the riverbed to the site.

Transitory views to the site are possible from the Weka Pass Railway, which sidles up the riding landform to the north west of MacKenzies Road and offers slightly elevated views to the south to the site.

3. Description of the Proposal

3.1 Overview

The proposed site plan is attached as **Appendix C**. In summary, the proposed development consists of the following:

- Solar panels over 18.8 ha of the site to generate in the region of 143,873 (kWp). The details of the solar panels are provided below.
- Access paths are provided at regular intervals through the site. Associated with this is one existing vehicle crossing – no new vehicle accessways are proposed.
- An MV room is proposed near to the road boundary with SH7. Thirty inverter stations are proposed at regular intervals across the site adjacent to the access tracks proposed.
- An area of grape vines for a winery which are proposed in the south eastern corner of the site adjacent to Weka Creek.
- An exclusion zone is proposed around the existing house and buildings located on the site adjacent to the eastern boundary. No solar panels or any other works are proposed in this area.
- The revegetation is the slopes between the terraces. The boundary with the creek has a mix of planting, being mostly Japanese Cedar but in some places natives on request from the adjacent neighbour.
- The road boundary, southern and north western and eastern boundary of the site are proposed to have boundary screen planting which is proposed to be 3m in width and 4m tall
- The site is to be surrounded by a fence 1.8m in height, and of 3 strands of barbed wire above

3.2 Solar Panels

The project utilises a single axis tracking system arranged in 2-module-in- portrait configuration. The arrangement includes 26 modules in series, corresponding to a 2x26 table arrangement. Solar panels will be mounted on H piles driving into the ground as illustrated on **Figure 4** below.

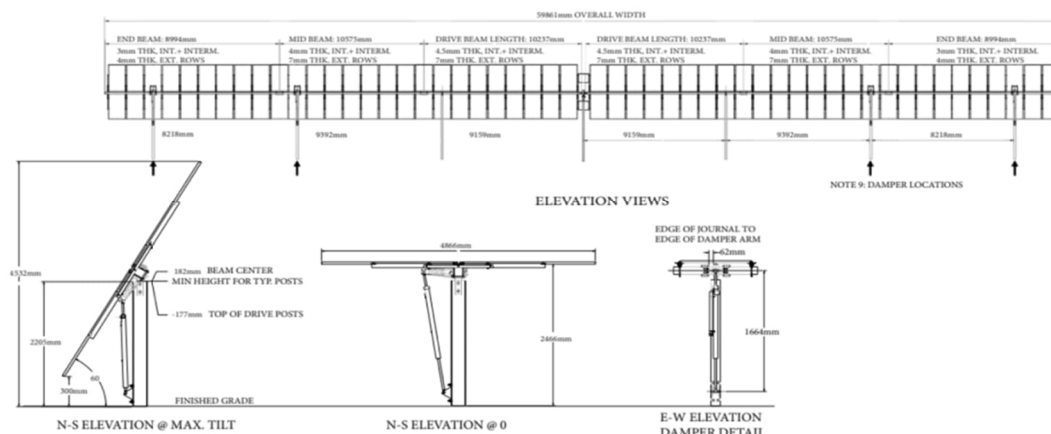


Figure 4. Proposed Solar panel structures (Source: FNSF2024).

Piles will be 50mm wide with a maximum cross section height of 150mm and will be driven 2m into the ground. It is proposed that there will be approximately 72,896 piles across the whole site.

Areas of hardstanding are proposed for the 27 x 20 foot shipping containers (6.06m x 2.43m) for inverters, a 65m x 30m area for the switch yard and a maximum of 1000 m² for fire fighting trucks. In addition to this, a laydown area of approximately 1,000 m² is proposed by the site entrance, alongside a turning circle which will be 20 x 20 m².

It is proposed that while the solar farm is in operation, the land will be grazed by sheep to control pasture growth and when the project is decommissioned, the structures will be unscrewed and removed, piles, uplifted and wiring / cabling taken out.

‘Building’ is defined in Hurunui Operative District Plan as meaning any structure, whether temporary or permanent, movable or immovable, but excludes any structure that is no more than 2.5 m in height, and no more than 10 m² in gross floor area and excludes any earth bund or stockpiled materials. The solar panels are 4.1 m at full tilt. Therefore, the solar panels and inverters are considered to be defined as buildings.

For full drawings, please refer to **Appendix C**.

3.3 Earthworks

The total surface area of ground impacted by the installation of the solar structures is outlined in **Table 3** below.

Table 3. Earthwork volumes.

Activity	Volume (m ³)	Area (m ²)
Earthworks to create the access through the site	8,400	28,000
Cable trench	24,700	24,700
Hardstands for the inverters and MV room	3,900	12,850
Contingency (20%)	7,400	13,110
Total	44,400	78,660

3.4 Site Preparation

Some internal shelterbelts and roadside planting will be removed to facilitate the proposed development. Other than this, the site is predominantly clear and contains grass. Because the mounting structures are piled, this restricts the area of land disturbance required for the site to specific areas of the site (rather than bulk earthworks). In summary earthworks are required for the following:

- Upgrade of existing accessways and construction of internal accessways;
- Mounting posts for the solar panels;
- Formation of the cable trenches for the associated solar panel infrastructure;
- Foundation area for the MV room and inverters; and
- Perimeter security fencing (timber post deer fence of up to 2.1 m).

A Construction Management Plan (CMP) will be prepared once a contractor has been appointed. The Applicant proposes that a condition of consent be included that the CMP would be submitted to Council for certification prior to works commencing. For further information, refer to the proposed draft consent conditions in **Appendix E**.

Work associated with trenching and connection to the National Grid does not form part of this application.

3.5 Infrastructure Establishment and Construction

The solar arrays will arrive on the site partly pre-configured in a container-based units. 30 inverters will be placed on the site (refer to **Appendix C**), which will be used to collect the electricity generated and convert it to grid power. The electronics make minimal noise and only has small, internal cooling fans. The inverters will be placed as centrally as possible within the site to minimise any potential disruption to neighbours. An assessment of noise effects has been undertaken to measure any construction noise in addition to the operational noise of the proposed solar farm. This assessment is contained in **Appendix G**.

Construction activities will take place over a 12 month period, with construction and primary electrical works being carried out in the first few months of construction. Deliveries will be on a strict schedule during the regular working week with an average of 3 truck deliveries per day during the construction period. Curtainsider trucks will be required to deliver materials during construction. All trucks will be parked within the site when making deliveries.

A pre-construction traffic management plan will be prepared once a contractor has been appointed. The Applicant proposes that a condition of consent be included that this management plan would be submitted to Council for certification prior to works commencing (refer to the proposed consent conditions in **Appendix F**).

The proposed site entrances and internal accessways will be designed to comply with the Hurunui District Council transportation standards.

3.6 Works in Proximity to High Voltage Transmission Lines

As outlined in **Section 2.1** there is a high voltage transmission line traversing the southern portion of the site.

The *New Zealand Code of Practice for Electrical Safe Distances* (NZECP:34) specifies minimum approach distances to all overhead power lines for construction activities and the placement of the solar panels. The design of the solar farm has sought to avoid transmission lines wherever possible and as such all panels and associated structures will be located a minimum of 20 m from the centreline of the transmission lines. No works or structures are proposed within the National Grid Yard (12 m setback either side of the centreline of the transmission line).

In addition to this, minimum safe electrical separation distance requirements, including for persons working near overhead lines and the operation of mobile plant, will be maintained at all times in accordance with NZECP:34 regulations.

To achieve this, the following measures will be implemented:

- Access to the support structures will be maintained at all times during construction and operation of the solar farm;
- For any earthworks required to be undertaken in proximity to transmission lines, dust suppression methods will be implemented in order to avoid arcing of lines; and
- No machinery will operate in proximity to the lines.

The Applicant has proffered resource consent conditions to address these matters (refer to **Appendix F**).

3.7 Operational Activities

Once constructed, the solar farm requires some maintenance which will involve the creation of 1-2 full time equivalent roles locally. Monitoring of the system is carried out remotely however maintenance to the communications systems, motors for the tracking tables, solar panel and inverter connections will all require some intervention during the operational life of the plant. Annual cleaning of the panels (with water only) will also be carried out.

3.8 Stormwater

To assess the stormwater on site, an Assessment has been carried out and is located in **Appendix H**.

Whilst the panels themselves are impermeable, they are mounted individually with a minimum 5.8m spacing between each table. The ground underneath will remain vegetated and permeable. Rain will runoff from the panels and fall to the ground, where it will infiltrate into the soil as it would without the panels being present.

The Stormwater Engineer has confirmed that the ground has high soakage and stormwater runoff only occurs in low probability rain events. Furthermore, it is confirmed that modelling with the rational method supported that the proposed development maintains stormwater neutrality. Concurrently, the partial shading from the PV modules will reduce evapotranspiration in the summer months, reducing potential demand for irrigation. It is considered that this is an external positive effect on the Waipara catchment water resource.

No grading or contouring of the site is proposed which would otherwise alter the flow of stormwater runoff.

3.9 Consideration of Alternatives

Schedule 4 of the RMA requires the consideration of alternatives is given where it is likely that an activity will result in any significant adverse effects on the environment. As discussed in **Section 5** below, the proposed activity is not considered to result in any significant adverse effects on the receiving environment.

Notwithstanding this however, the applicant has assessed the viability of sites across New Zealand for solar farming. This site possesses the necessary aspect, solar hours, topography and proximity to electricity demand and infrastructure. On that basis, this site is considered the best practicable option for a solar farm.

The site was selected after more than two years of investigation, across Canterbury and North Canterbury. Aspects that were considered were:

- Value of the land for other activities
- Location of connection point and ability of the connection to take the injection volumes
- Solar irradiation of the site, including shading
- Aspects of the site including overlooking residences and the ability to screen the site
- Access to roads

- Possibility of impact from sound
- Degree of earthworks required
- Site risk including flooding, earthquakes, land subsidence
- Currently investment in the property (facilities such as milking sheds, houses, sheds and irrigation
- Other infrastructure in the area- the site has four sets of power lines crossing it, going to a nearby grid exit point. Pylons, poles and wires are common on the land

The land was identified as being marginal for farming, allowing the solar to add maximum value to the landowner and minimise the displacement of other activities. In this case, the only displacement was cropping, which will not be possible in the areas where panels are placed but will be possible on the lower river flats.

The site is adjacent to State Highway 7. The expected noise from the site during the day will be considered as comparable to the existing noise levels, which should reduce the risk of residences being built along that edge of the solar farm site.

The existing farm infrastructure is considered to be concentrated around the managers house, and is remaining in use, while not displacing areas for the solar farm.

4. Resource Consent Requirements

4.1 Overview

The site is zoned 'Rural' under the Hurunui District Plan (HDP). Transpower transmission lines are identified as traversing the southern portion of the site. No other overlays apply to the site. **Table 4** provides an assessment against the HDP rules and development standards.

Please note, for the purposes of this assessment, the solar panels as well as the MV rooms and inverters are considered to be buildings².

The required resource consents under the HDP and the Canterbury Land and Water Regional Plan (CLWRP) for the proposed works is outlined in **Table 4** below. Overall, resource consent is required as a **discretionary** activity.

Table 4. Resource consents required.

Proposed activity	Rule reference / description	Activity status	Comment
Hurunui District Plan			
Construction and operation of a solar farm (including construction of ancillary buildings / infrastructure).	Rule 3.4.5 (1) – Buildings and structures which do not meet the requirements of Rule 3.4.3 or Rule 3.4.3.7.	Restricted discretionary	The proposed inverters are setback approximately 15 m from the road boundary with the State Highway, rather than the 25 m setback as required.
Earthworks for the construction of access tracks and solar array installation			The proposal will result in approximately 44,400 m ³ of disturbed earth over the site. Therefore, this exceeds the maximum area and volume permitted under Rule 3.4.5(16).
Operation of a solar farm	Rule 7.4.5 (2) – Any energy activity that is not otherwise specified as a permitted, restricted discretionary or non-complying activity.	Discretionary	The proposal is not specifically provided for, and therefore requires consent under Rule 7.4.5(2) ³ .
Inverters	Rule 11.4.6 (1) – Building and structures (excluding utility buildings and structures) which do not meet the standards as a permitted or controlled activity, unless specified as a non-complying activity.	Restricted discretionary	The proposed inverters are setback approximately 15 m from the road boundary, therefore not complying with the minimum setback distance of 20 m under Rule 11.4.5(e).
Canterbury Land and Water Regional Plan			

² Building' is defined in Hurunui Operative District Plan as - *means any structure, whether temporary or permanent, movable or immovable, but excludes any structure that is no more than 2.5 m in height, and no more than 10 m² in gross floor area, and excludes any earth bund or stockpiled materials*. The solar panels are more than 2.5m in height (4.1 m at full tilt). Therefore the solar panels and inverters and MV rooms are considered to be defined as buildings.

³ The proposal is not considered to be a "commercial scale energy activity" - given that the Applicant is not currently defined as an 'electricity operator' under the Electricity Act 1992.

Proposed activity	Rule reference / description	Activity status	Comment
Stormwater discharge to land (construction-phase)	Rule 5.94B – The discharge of construction-phase stormwater, other than into or from a reticulated stormwater system, into a surface waterbody or onto or into land in circumstances where a contaminant may enter groundwater or surface water, that does not meet one or more of the conditions of Rule 5.94A.	Restricted discretionary	There is potential for more than 2 ha of exposed land to be disturbed and therefore the proposal does not meet Rule 5.94A(b).
Stormwater discharge to land (operational)	Rule 5.97 – The discharge of stormwater, other than from a reticulated stormwater system, into a river, lake, wetland or artificial watercourse or onto or into land in circumstances where a contaminant may enter water that does not meet one or more of the conditions of Rule 5.95 or Rule 5.96.	Discretionary	The proposed discharge will come from the solar farm, which is not considered to be a rural activity under Rule 5.96(d). Therefore, consent is required under Rule 5.97.

4.1.1.1 Matters of Discretion

The relevant matters of discretion that the consenting authorities have restricted their discretion in relation to the rules above are outlined in **Table 5**. These matters have been incorporated into the effects assessment in **Section 5**.

Table 5. Matters of discretion

Rule	Matters of discretion
Hurunui District Plan	
Rule 3.4.5 (1) – Building and structure which do not meet the requirements of Rule 3.4.3.1	(a) Height, bulk and location of building or structure; (b) Exterior finishing and appearance of the buildings or structure; (c) Landscape treatment and screening; and (d) Maintenance of natural character, landscape and amenity values.
Rule 11.4.6 (1) – building and structures	(a) The height, size, scale, form, external colour/finish, reflectivity and design of building and additions to buildings; (b) The extent of coverage by buildings and impervious surfaces within the Outstanding Natural Feature or Landscape; (c) The location of buildings and associated earthworks, specifically in relation to their impact on any natural landform features; (d) The ability to maintain a backdrop of landform or vegetation behind the building; (e) The proximity to other buildings in the rural environment;

	(f) The proximity to boundaries with other sites; (g) The extent and nature of landscaping, including how this achieves integration of buildings into the surrounding landscape; (h) The location of site access and vehicle parking spaces; (i) Visibility from publicly accessible view points; (j) Effects on natural character or landscape values; (k) Effects on Ngai Tahu values; (l) Effects on Geopreservation sites listed in Appendix 11.1; (m) The location and characteristics of any associated structures including impermeable surfaces, and outbuildings; and (n) The extent to which indigenous vegetation is required to be removed to undertake the building.
Canterbury Land and Water Regional Plan	
Rule 5.94B	(a) The actual and potential effects of the discharge on the quality of surface water, aquatic ecosystems, Ngāi Tahu cultural values; and (b) The actual and potential effects of the discharge of the quality and safety of human and animal drinking water; and (c) The actual and potential adverse environmental effects of the quantity of water to be discharged on the banks or bed of a waterbody or on its flood carrying capacity, and on the capacity of the network convey that discharge; and (d) The potential benefits of the activity to the applicant, the community and the environment.

4.1.2 Permitted Activities

The activities listed in **Table 5** have been identified as permitted activities under the HDP, CLWRP and the Canterbury Air Regional Plan (CARP).

Table 5. Permitted activities.

Proposed activity	Rule reference / description	Comment on compliance						
Hurunui District Plan								
Operational noise	Rule 3.4.3(9)(b) – Noise from activities on any site must not exceed the following limits at any point within the notional boundary of any dwelling: <table><tr><th>Daytime (0700-1900 inclusive)</th><th>Night-time (All other times)</th></tr><tr><td>55 db L_{Aeq}</td><td>45 db L_{Aeq}</td></tr><tr><td></td><td>70 db L_{AFmax}</td></tr></table>	Daytime (0700-1900 inclusive)	Night-time (All other times)	55 db L _{Aeq}	45 db L _{Aeq}		70 db L _{AFmax}	The proposal complies with the daytime noise rule, noting that even in the most conservative “worst-case scenario”, the noise levels are predicted to be at least 20 decibels below the daytime noise limits. Operation of the solar farm at night would comply with then night-time limits, noting that even in the most conservative “worst-case scenario”, the noise levels are night are predicted to be 10 decibels below the night-time limits.
Daytime (0700-1900 inclusive)	Night-time (All other times)							
55 db L _{Aeq}	45 db L _{Aeq}							
	70 db L _{AFmax}							

Proposed activity	Rule reference / description	Comment on compliance
		For further information, refer to the Acoustic Assessment in Appendix G .
Construction noise	Rule 3.4.3(9)(g) – Construction noise – construction noise must be measured and assessed in accordance with the provisions of NZS6803:1999: “Acoustics – Construction Noise”.	Will comply (refer to the Acoustic Assessment in Appendix G).
Lighting	Rule 3.4.3(24)(g) – Exterior lighting: All exterior lighting shall be: (i) Fully shielded with no light spill being permitted above the horizontal plane; and (ii) Equal to or less than 3000K correlated colour temperature.	Not applicable – the site will not be lit.
Structures and works in proximity to National Grid transmission lines and support structures	Rule 3.4.3(11) - Setback from National Grid transmission line support structures and setback from centreline of National Grid lines: (a) No sensitive activity, hazardous facility, building or structure (excluding fencing) shall be located within: (i) 12 m of a foundation of a 220 kV or 350 kV National Grid transmission line support structure; or (ii) 10 m of a foundation of a 66 kV National Grid transmission line support structure. (b) No sensitive activity, hazardous facility, building or structure (excluding fencing) shall be located within the following corridors except where they are farm buildings or horticultural structures that meet the requirements of Clause 2.4.1 of NZECP34:2001: (i) 12 m of the centre line of a 220 kV or 350 kV National Grid transmission line; or (ii) 10 m of the centre line of a 66 kV National Grid transmission line. (c) Fencing shall be located a minimum of 5 m from the foundation of a National Grid transmission line support structure except where it meets the requirements of Clause 2.3.3 of NZECP34:2001.	Will comply. There will be no structures within 12 m of the foundation or centreline of the transmission lines on the site. Any fencing will be located at least 5 m from the foundation of the National Grid Transmission line support structure.
Vehicle movements (construction and operational)	Rule 3.4.3(17) – The maximum number of vehicle movements associated with any site is: (a) Heavy vehicles – 4 movements per day; and (b) Other vehicles – 20 movements per day.	Will comply. There will be no more than 3 heavy vehicle movements per day during the construction of the proposed solar farm, reducing to less than one per day once the site is operational.
Vehicle access	Rule 8.4.3(1) – Vehicle access to any district arterial or strategic arterial road for activities generating up to 100 equivalent car movements per day: The creation of any new property vehicle crossing or the use of an existing vehicle crossing for a new activity, including the relocation of such access points on any district or strategic arterial road must meet the following standards: (a) No alternative legal access is available to another road; (b) The activity complies with the standards for distances, clearance from intersections and minimum access spacing in Table 8.1; (c) The design and construction of vehicle crossing intersections with road and/or localised road widening must be in accordance with either Figure 8.4 or Figure 8.6 depending on traffic generation; and	Will comply. All proposed accesses will comply with the requirements set out in Appendix 8.1 of the HDP.

Proposed activity	Rule reference / description	Comment on compliance
	(d) One vehicle crossing must serve no more than 6 lots.	
Shelterbelt removal	Rule 13.4.2 (1) – Indigenous vegetation clearance in the following circumstances: (e) Where it has been planting and/or managed as part of a domestic or public garden or has been planted for amenity purposes or as a shelterbelt.	Will comply. The proposal involves the removal of shelterbelt planting only – no other indigenous vegetation will be removed.
Activities / structures in the Natural Hazard Area and Fault Awareness Zone	Rule 15.4.3 (2) – The following standards apply to activities within a Natural Hazard and Awareness Areas identified in the planning maps and in Appendix 15.2: (a) For dwellings, extensions to dwellings that increase the floor area by more than 10% from that existing at 15 October 2016, habitable accessory buildings or principal buildings located within the Flood Assessment Zone, a floor level is provided which is at least 400 mm above the 0.5% annual exceedance probability (1 in 200 year event) flood event. Compliance with this standard shall be demonstrated by a flood assessment from an organisation or individual that has been certified by the Chief Executive of Hurunui District Council as being appropriately qualified and experienced; and (b) For building or structures located within a Fault Awareness Zone, the building or structure is not a Building of Importance.	Will comply. The small southern part of the site is located in a Flood Assessment Zone. However, no buildings or other structures are proposed in this area. The site is located in the Fault Awareness Zone; however, no Buildings of Importance are proposed.
Canterbury Land and Water Regional Plan		
Operational stormwater discharge	Rule 5.95 – The discharge of stormwater, other than into or from a reticulated stormwater system, into a river, lake, wetland or artificial watercourse or onto land in circumstances where a contaminant may enter a river, lake, wetland or artificial watercourse, provided: - The discharge is not from, into or onto contaminated or potentially contaminated land; - The discharge is not into: - A water race, as defined in Section 5 of the Local Government Act 2002; and - A wetland, unless a wetland is part of a lawfully established stormwater or wastewater treatment system; and - A waterbody that is Natural State, unless the discharge was lawfully established before 1 November 2013; and - The discharge does not result in an increase in the flow of the receiving waterbody at the point of discharge of more than 1% of a flood event with an Annual Exceedance Probability of 20% (one in five year event); and - The discharge meets the water quality standards in Schedule 5 after reasonable mixing with the receiving waters, in accordance with Schedule 5; and - The concentration of total suspended solids in the discharge shall not exceed: 50 g/m³ where the discharge is to any spring-fed river, Banks Peninsula river, or to a lake except when the background total suspended solids in the waterbody is greater than 50 g/m³ in which case the Schedule 5 visual clarity standards shall apply; or	Will comply. - The discharge is not from or into contaminated or potentially contaminated land; - The discharge is to ground soakage only – there will be no discharge of stormwater to any waterbody, water race or wetland. - The discharge meets water quality standards as set out Schedule 5. - The concentration of total suspended solids in the discharge will not exceed specified limits. - The discharge is not within a Community Drinking-water Protection Zone. - The discharge does not occur where there is an available reticulated stormwater system.

Proposed activity	Rule reference / description	Comment on compliance
	(b) 100 g/m³ where the discharge is to any other river or to an artificial watercourse except when the background total suspended solids in the waterbody is greater than 100 g/m³ in which case the Schedule 5 visual clarity standards shall apply; and 6. The discharge to water is not within a Community Drinking-water Protection Zone as set out in Schedule 1; and 7. The discharge does not occur where there is an available reticulated stormwater system.	
Earthworks	Rule 5.175 – The use of land to excavate material, provided: 2. Over an unconfined or semi-confined aquifer: (a) The volume of material excavated is less than 100 m³; or (b) The volume of material excavated is more than 100 m³ and: (c) There is more than 1 m of undisturbed material between the deepest part of the excavation and the seasonal high water table level; and 3. The excavation does not occur within 50 m of any surface waterbody.	Will comply. - There will be at least 1 m of undisturbed material between the deepest part of the excavation and the seasonal high water table. - No earthworks will take place within 50 m of any surface waterbody.
Canterbury Air Regional Plan		
Discharge of dust to air from earthworks	Rule 7.32 – The discharge of dust to air beyond the boundary of the property of origin from the construction of buildings, land development activities, unsealed surfaces or unconsolidated land, is a permitted activity provided the following conditions, where applicable, are met: 1. The building to be constructed is less than 3 stories in height, or where the building is greater than 3 stories in height, a dust management plan is prepared in accordance with Schedule 2 and implemented by the person responsible for the discharge into air; and 2. The area of unsealed surface or unconsolidated land is less than 1000 m², or where the area of unsealed surface or unconsolidated land is greater than 1000 m² a dust management plan is prepared in accordance with Schedule 2 and implemented by the person responsible for the discharge into air; and 3. The discharge does not cause an offensive or objectionable effect beyond the boundary of the property of origin, when assessed in accordance with Schedule 2.	Will comply. - No buildings will be constructed that are more than 3 stories in height. - A Dust Management Plan is attached in Appendix I. - The proposed discharge will not cause an objectionable effect beyond the boundary of the subject site. All works will be undertaken in accordance with best practice dust management controls to ensure adverse effects are appropriately managed.

4.1.2.1 Proposed Plan Change 7

Proposed Plan Change 7 (PC7) amends the CLWRP in relation to numerous matters, including the consideration of cultural values and water quality management. PC7 does not change provisions in relation to operational stormwater. On that basis, there are no resource consent requirements under PC7 which apply to this application.

4.2 Other Consents and Approvals Required

The appropriate approvals from Transpower will be sought for the connection of the solar farm to the electricity transmission and distribution network in accordance with the Electricity Industry Participation Code 2010.

Given that the access to the site is provided from a State Highway, an application for the new vehicle crossings will be made to Waka Kotahi prior to works commencing on site, if a new crossing is required.

Upon completion of detailed design, the applicant will obtain the building consents (if required) for the proposed structures in accordance with the Building Act 2004.

5. Assessment of Effects on the Environment

The following sections identify and assess the types of effects that may arise from the proposed works. The assessment also outlines the measures that FNSF proposes to implement to avoid, remedy or mitigate any potential adverse effects on the environment.

Actual and potential effects on the environment have been identified as including;

- Positive effects;
- Effects on soils;
- Landscape and visual effects;
 - Visual amenity effects
 - Rural character
- Construction effects:
 - Noise effects;
 - Dust effects;
 - Traffic effects;
- Operational effects;
 - Noise effects
 - Glare effects
- Stormwater diversion and discharge effects;
- Effects of earthworks and sedimentation generation on water quality; and
- Cultural effects.

5.1 Positive Effects

The proposal directly supports the uptake of low-carbon renewable electricity generation and enables the reduction of New Zealand's greenhouse gas emissions. In doing so, the proposal provides security and resilience to the electricity generation network, by reducing pressure and reliance on the National Grid and regional distribution network. The provision of renewable energy is an important positive effect, as it contributes directly to New Zealand's goal of net zero emissions by 2050 as set out in the Climate Change Response (Zero Carbon) Amendment Act 2019.

More broadly, the proposed solar farm will enable greater electricity generation, and therefore it provides economic and social benefits by enabling the functioning of communities and businesses across the district.

The opportunity to enhance the Weka Creek is a positive landscape outcome. This will be fully fenced to prevent stock access to the waterway, with low-level and locally appropriate riparian planting providing shade cover and habitat.

5.2 Effects on Soils

As outlined in the Soil Assessment in **Appendix J**, the proposal will have a negligible effect on the productivity potential of the soils on the site. There is adequate space in-between the solar panels (approximately 6 m) to enable the grazing of sheep farming. Furthermore, eliminating any heavy stock such as cattle and horticulture cropping will minimise the risk of soil compaction and organic matter loss due to pugging, soil cultivation and machinery movement.

The carbon status of the soil will be maintained, and the solar panels can be easily removed and the site reinstated to fully grazing upon completion of solar use. Overall, adverse effects on prime soils are considered less than minor.

5.3 Landscape Effects

5.3.1 Visual Amenity Effects

The site is visible from a number of viewpoints as outlined in the attached Landscape and Visual Assessment (refer **Appendix D**) and as summarised in **Section 0**.

The character of the landscape is most strongly influenced by land use. In the immediate vicinity of the site, this includes cropping and viticulture, but in the wider area it also includes sheep / drystock.. The proposal will result in a change in landscape character by introducing a large area of built forms and when experienced from within the visual catchment to the northeast, east and south east, the solar farm will become a noticeable, eye-catching, and unique element of the wider landscape. However, such a change is not necessarily considered adverse or inappropriate. The wider landscape is a modified landscape that is extensively used for primary production and contains built forms such as sheds and houses, and electricity infrastructure in the form of the switchyard on MacKenzies Road and various overhead lines.

Views from the west, including from Waipara Flat Road will be precluded within some 3 years by the proposed hedge / shelterbelt.

There are two types of proposed screening: the boundary screening and the internal plantings on the slope areas. The boundary planting is predominantly Japanese Cedar, (except where neighbours have explicitly requested native trees be used). The internal plantings on slopes between the terraces are to be native species, which are slower growing but will provide greater environmental benefits, as well as providing screening.

At a conceptual level, the proposal represents an additional type of primary production activity that features built forms and electricity infrastructure. But rather than using the land and soil for productive use, the proposal uses the sky and climate – a defining and integral element of this landscape – so, as well as farming food, the proposal farms energy. The difference is that the solar farm will diminish the undeveloped nature of the site, introducing extensive built form. Whilst the site will continue to be grazed with sheep, ultimately the pastoral visual character will be impacted.

The presence of shelterbelts within the wider landscape enables the appropriate use of shelter screening along all sides of the site. Screening views from the eastern aspect, where receptors are offered views from the elevated terraces across the river bed to the Site is not completely possible, although the proposed boundary screening and revegetation planting of the inter-terrace slopes will both strengthen, and increase the legibility of the natural patterns of the landscape, as well as fragmenting and softening views of the structures.

The boundary screening and inter-terrace plantings will screen most of the panels from most viewpoints, and while the panels are at lower angles (during most of the day and overnight) the solar farm will be well screened. The removal or trimming of the existing shelter belts trees on State Highway 7, which will be replaced by screening trees (that are limited to 5m) will enhance the longer distance views towards the distant hills. The ALE planting plan shows the new plantings and the heights and intended species across the site.

The site office and other ancillary buildings will be relatively insignificant to the whole development, and in character with both the wider rural character and the new activity of the site such as not to draw specific attention.

The perimeter deer fencing will have a distinctly rural character, although it is the intention that this be screened by the perimeter plantings.

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

- Road users on Waipara Flat Road: High number of individuals with a low to moderate sensitivity to change.
- Visitors to the Weka Valley Railway. Medium number of individuals with a low to moderate sensitivity to change.

Those associated with private viewpoints include the occupants of dwellings located on the northern side of Glenmark Drive, and the Occupants of dwellings accessed from MacKenzies Road.

As discussed in the Landscape and Visual Assessment, views from Waipara Flat Road will be seen by a high number of individuals with a low to moderate sensitivity to change.

Shelterbelt / hedge screen planting is proposed along the northern, western (roadside) and a portion of the southern boundaries of the site. On the basis of this, the majority of road views into the site will be substantially curtailed within three years, and the site is expected to be fully screened within five years.

Taking into account the above, the proposal is expected to have a minor effects in the short term (as screening is established in the first three years), reducing to less than minor in the medium to long term (five years onwards).

5.3.2 Rural Character Effects

The character of an area can be adversely affected by activities that generate effects that are incompatible with that character. The HDP describes the rural areas of the Hurunui district as portraying a sense of open space and perceived natural landscape. However, the HDP also recognises the rural area to be a working environment featuring activities such as farming, forestry, and other primary production as well as a living environment for residents. It is also recognised that other non-primary production land uses, such as infrastructure and renewable electricity generation, have a functional and locational need to be located in rural areas.

It is considered that effects on the rural amenity values of the area will be less than minor for the following reasons:

- There will be no pollution or effects on air quality arising from the proposed solar farm;
- The solar panels are 4.1 m at full tilt in height and requires minimal ancillary infrastructure, therefore meaning the spacious open character of the area will be maintained;
- Minimal vegetation will be removed to facilitate the construction of the solar farm. Mitigation planting is also proposed; and
- There will be very minimal traffic associated with the solar farm, during construction it is expected that up to three trucks will be required per day. Once operational, the site will largely be unmanned and will be accessed only occasionally for maintenance of the solar panels; Whilst the solar panels meet the definition of a building there are not buildings in the usual sense
- Rural land within the district is an important resource, not only for its productive potential, but also for social, cultural and conservation values. As a range of land uses establish and use the rural environment there is the potential for rural amenity values to be reduced and rural character to be lost.
- In this case the proposal involves the establishment of a solar farm. The panels themselves are only 4.1 high when at full tilt and will not therefore be overly dominant within the receiving environment. Vegetation planting is proposed to assist with the integration of the solar panels within the current setting.
- In terms of the production potential of the land, the site will still be used for grazing activities, and the solar panels are designed such that they can easily be removed from the site and the site returned to more productive land uses in the future. The land will not therefore be removed from the rural land 'pool' indefinitely.
- The solar panels will not generate noise effects and therefore the rural amenity values will be maintained.
- It is considered that the proposed solar farm will be complimentary to existing land uses and will not unduly constrain rural production activities from establishing in the zone.

5.4 Construction Effects

A detailed CMP will be prepared by the appointed Contractor to minimise the impact of construction activities. The CMP will reflect the proposed work sequencing and site establishment works required for the proposal (refer to the proposed draft conditions in **Appendix F**).

5.4.1 Noise Effects

The proposed construction activity is limited to earthworks for the construction of internal accessways, installation of the solar arrays (which use a small rig for driving piles to the relevant depth of approximately 1.6 m) and battery-powered hand tools. The proposed construction works will be undertaken in accordance with the *New Zealand Standard NZS 6803:1999 'Acoustics – Construction Noise'*.

The noise produced from the construction activities is likely to be similar to normal rural activities, such as harvesting or cultivating. Overall, the noise effects from construction activity is considered to be less than minor.

5.4.2 Dust Effects

The proposed works require minor earthworks only and therefore the potential for dust generation is low. Notwithstanding this however, appropriate dust control measures will be implemented to minimise potential effects. Dust mitigation measures are likely to include the following:

- Minimise the extent of exposed areas at any given time where possible;
- Maintain site accesses in good condition, including with gravel to minimise dust generation;
- Enforcement of maximum speed limits on the site to prevent dust generation; and
- Any vehicle loads moving fine material to be covered appropriately.

Overall, with these control measures in place, dust effects are considered to be less than minor.

5.4.3 Traffic Effects

A pre-Construction Traffic Management Plan will be produced with deliveries scheduled for working hours only (see the **Appendix F** for the proposed conditions). Construction traffic will be focused towards the initial phase of the build period with up to 3 truck deliveries per day. Construction staff will park on site in the temporary compound area. All construction plant and equipment will be unloaded within the site and all turning and manoeuvring of vehicles is limited to the site. Once completed site maintenance is limited and will be carried out by staff arriving in small vans.

It is considered therefore that the construction traffic effects can be appropriately managed such that any potential adverse effects will be less than minor.

5.5 Operational Effects

5.5.1 Noise Effects

An Acoustic Assessment has been undertaken and it located within **Appendix G**. The Acoustic Assessment found the following:

- The location of the solar farm is well chosen from a noise perspective. The fairly large distances between the inverters and the nearest receivers would result in noise from the solar farm being low overall.
- The solar farm will typically operate during periods of daylight and, although it will operate during the “statutory night-time” at times. The solar farm is expected to generate lower noise levels during cooler periods of lower solar gain (e.g. mornings and evenings). Noise levels will typically be below the existing ambient noise level.
- Operational traffic noise will not be significant compared to existing noise traffic noise levels on Waipara Flat Road.

- The HDP noise rule of 55 dB LAeq will be readily complied with by the proposed operation. The nighttime noise rule of 45 dB LAeq (during dawn and dusk in the summer months) would also be readily complied with.

As a result, it is considered that any adverse noise effects will be less than minor.

5.5.2 Glare Effects

Refer to the Glint and Glare Study in **Appendix K**.

The solar panels are coated in low-reflectivity material to reduce the reflection of light to reduce glare effects offsite. PV solar panels are designed to reflect as little sunlight as possible (generally around 2% of light received), resulting in minimal glare. Seen from above (such as from an aircraft), they appear dark-grey and do not cause a glare or reflectivity hazard. Compared to other everyday materials, solar panels reflect less light than building roofs, vehicles and water.

In addition to this, the Glint and Glare Study found that providing ample screening around solar farms largely addresses any potential or actual glint and glare effects on road users and neighbours. For this site, considerable setbacks are provided from the property boundary (15 m) and extensive screen planting is proposed. On that basis, glint and glare effects are considered to be less than minor.

The areas of possible glint and glare for some short periods of the year will be addressed by selecting a suitable angle and direction of the home (or “stow”) position that is effect between dusk and dawn. Tilting the panels up to 10 degrees away from the possible receptors will be used to eliminate the glare at the times identified as it possibly occurring.

5.6 Stormwater Diversion and Discharge Effects

A Stormwater Assessment (**Appendix H**) has been prepared for the proposal.

The assessment finds that the proposed solar panels will have no adverse effects on stormwater runoff. While the modules themselves are impervious, they sit on tables that are only 2.2 m wide and oscillate. The tables have 20 mm gaps every 1.1 m between the PV panels to allow runoff to reach and infiltrate the ground. Precipitation will therefore be concentrated along lines that are perpendicular to the rotating axis with 1.1 m spacing. The maximum size area that will receive no direct precipitation is the area of a fully inclined panel which is 1.15 m by 1.1 m. Runoff is concentrated around these perimeters. With such a small area, runoff will quickly disperse over the available area so that all available surfaces will be irrigated.

The proposed development is not expected to increase runoff or change the quality or pattern of stormwater from the site.

On that basis, stormwater diversion and discharge effects are considered to be less than minor.

5.6.1 Effects of Earthworks and Sedimentation Generation on Water Quality

If not managed appropriately, earthworks activities have the potential to cause adverse erosion and sedimentation effects. In particular, earthworks and the associated mobilisation of sediment may adversely affect high quality freshwater habitats and associated aquatic organism in the vicinity of the works.

The works involve approximately 44,400 m³ of earthworks in order to install piles into the ground to support the solar panels. No earthworks will be undertaken within 100 m of any surface waterbody. The proposed works will be undertaken in accordance with an approved Erosion and Sediment Control Plan (ESCP), which will be developed in line with best practice erosion and sediment control measures as set out in Environment Canterbury's *Erosion and Sediment Control Toolbox*⁴.

⁴ <https://esc.canterbury.co.nz/>

Measures to be implemented to protect against the adverse effects from earthworks include:

- Stabilised entry / exit points and wash down facilities;
- Silt fences (as required);
- Sediment retention devices (as required);
- Stockpiles to generally be avoided (and if not avoided, covered when not in use); and
- Runoff diversion bunds where appropriate to capture sediment in any surface water runoff.

Taking into account the limited nature of earthworks in relation to the site as a whole, and the measures set out above, any potential effects of earthworks and sedimentation generation on water quality is considered to be less than minor.

5.7 Cultural Effects

The Applicant has approached Ngāi Tūāhuriri Rūnanga for regarding this proposal (refer to the Consultation Record in **Appendix L**). To date, no formal comments have been received on the application and Cultural Values Assessment / Cultural Impact Assessment (CVA / CIA) is not available.

Pending provision of a CVA, the following is noted regarding cultural effects at this point in time:

- The proposal is for the purpose of providing renewable electricity, which supports the economic and cultural well-being and health and safety of people and communities;
- The proposal involves minor earthworks and no stream works are proposed; and
- Adverse effects from the proposed stormwater discharge is considered to be less than minor.

On the basis of the points raised above, cultural effects are anticipated to be less than minor.

5.8 Summary of Effects

The proposed solar farm will provide numerous positive effects, notably the provision of renewable electricity generation for the Canterbury Region. The proposal will also increase security of electricity supply during dry periods of low hydro electricity production, assist in stabilising electricity prices with more renewable generation, and achieve New Zealand's emissions targets.

The proposed development will occur in accordance with robust measures in place to ensure adverse effects on the receiving environment are managed.

6. Statutory Assessment

6.1 Section 104 of the RMA

Section 104 of the RMA sets out the matters to which a consent authority must have regard to, subject to Part 2 of the RMA, when considering an application for resource consent. These are:

- Any actual and potential effects on the environment of allowing the activity (refer Section 5 above);
- Any relevant provision of:
 - a national environmental standard;
 - other regulations;
 - a national policy statement;
 - a New Zealand coastal policy statement;
 - a regional policy statement or proposed regional policy statement;
 - a plan or proposed plan; and
- Any other matter the consent authority considers relevant and reasonably necessary to determine the application;
- Section 105 and 107 matters.

The following subsections address the relevant provisions identified above.

6.2 Part 2 of the RMA

Part 2 of the RMA sets out the purpose and principles of the Act. The purpose of the RMA is to promote the sustainable management of natural and physical resources.

The Court of Appeal decision in *RJ Davidson Family Trust v Marlborough District Council* [2018] NZCA 316 clarifies that if a plan has been “competently prepared” under the RMA then it may be that in many cases the consent authority will feel assured in taking a view that there is no need to refer to Part 2 as it would not add anything to the evaluation exercise⁵. The Canterbury Regional Policy Statement (CRPS), CLWRP and HDP are considered to contain provisions which have been prepared having regard to Part 2, and which contain a coherent set of policies designed to achieve clear environmental outcomes. Based on the direction established by the Court of Appeal, it is considered that an assessment against Part 2 therefore adds little, if any value, to the overall evaluation.

Based on the assessment of the proposal against the objectives and policies of the CRPS, CLWRP and HDP set out in **Sections 6.7-6.10**, the proposal is considered to be consistent with Part 2 of the RMA.

6.3 National Environmental Standards

6.3.1 Resource Management Act (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NESC) Regulations (2011) came into effect in 2012. The NESC applies to assessing and managing the actual or potential adverse effects of contaminants in soil on human health from five activities, including soil disturbance. The NESC only applies to land which is considered to have had an activity occur which is on the

⁵ Para. [25]

Hazardous Activities and Industries List (HAIL). As set out in **Section 2.4**, there is no indication any HAIL activities have been undertaken on the site and therefore the NESCS is not considered to apply to this proposal.

6.3.2 Resource Management (National Environmental Standards for Freshwater) Regulations 2020

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-Freshwater) sets out requirements for carrying out certain activities that pose risks to freshwater and freshwater ecosystems.

There are no wetlands on site. No works are proposed within 100 m of the wetlands. There will be no discharge of stormwater into any wetland. On that basis, the NES-Freshwater does not apply to the proposal.

6.3.3 National Environmental Standards for Electricity Transmission Activities 2009

The National Environment Standards for Electricity Transmission Activities 2009 (NES-ETA) sets out a national framework for activities on existing electricity transmission lines however they do not apply to the construction of new transmission lines or REG. Therefore, the NES-ETA does not apply to the proposed works.

6.4 National Policy Statements

6.4.1 National Policy Statement for Freshwater Management 2020

The National Policy Statement for Freshwater Management 2020 (NPS-FM) directs local authorities on how they are to manage freshwater under the RMA. An assessment against the relevant provisions of the NPS-FM is set out in Table 6 below. Overall, the proposal is consistent with the NPS-FM.

Table 6. NPS-FM objectives and policies assessment.

Objective/policy	Comment
Objective 1 – The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises: a. First, the health and well-being of water bodies and freshwater ecosystems b. Second, the health needs of people (such as drinking water) c. Third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.	The proposed works will be undertaken in accordance with best practice controls in place to manage the potential for adverse effects on freshwater ecosystems. Overall, the proposal prioritises the health and well-being of waterbodies, while also ensuring the ability of people and communities to provide for their social, economic and cultural wellbeing is enabled by the provision of renewable electricity generation.
Policy 1 – Freshwater is managed in a way that gives effect to Te Mana o te Wai.	The proposed stormwater discharge will soak to ground only. There will be no discharge to freshwater bodies. There will be no discharge of sediments or other contaminants in order to give effect to Te Mana o te Wai.
Policy 7 – The loss of river extent and values is avoided to the extent practicable.	The proposal will avoid the loss of river extents and values. All stormwater will be discharged to ground for soakage and will be undertaken in accordance with best practice guidelines.
Policy 15 – Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with this National Policy Statement.	The proposal will enable the construction and operation of a solar farm, which will provide renewable electricity to the Canterbury region. In doing so, the proposal will enable communities to provide for their social, economic and cultural well-being in way that manages and protects freshwater values.

6.5 National Policy Statement Renewable Energy Generation 2011

The National Policy Statement for Renewable Electricity Generation 2011 (NPS-REG) recognises the importance of renewable energy in helping New Zealand achieve the Government's target of 90 percent of electricity from renewable sources by 2025. The NPS-REG promotes a more consistent approach to balancing the competing values associated with the development of New Zealand's renewable energy resources when councils make decisions on resource consent applications.

This proposal is directly supported by the single objective of the NPS-REG, which sets out to provide for the development, operation and maintenance and upgrading of new and existing REG activities. The proposed solar farm will provide a resilient and renewable source of electricity generation for the Hurunui District, which will reduce the dependency and pressure on the National Grid and improve the resilience of New Zealand's electricity network.

It is also noted that the Government is proposing to strengthen the NPS-REG to enable renewable electricity activities. The Government has identified that an additional 300-500 MW of electricity is required per year over the next 30 years to meet projected demand – 170% more than today's capacity⁶. This proposal will contribute an additional 143.8 MWp to the National Grid, significantly increasing the nation's renewable electricity store.

6.6 National Policy Statement for Highly Productive Land 2022

The National Policy Statement for Highly Productive Land 2022 (NPS-HPL) is newly released and provides direction on how to improve the way highly productive land is managed under the RMA.

The NPS-HPL objective is to protect highly productive land for use in land-based primary production, and it contains various policies to achieve this. It is noted that under the 'Implementation' section of the NPS-HPL, territorial authorities are directed under Section 3.9(1) to avoid the inappropriate use and development of highly productive land that is not land-based production. The exceptions to this are listed in Section 3.9(2), which includes when there is a functional or operational need for the use or development to be on highly productive land for the maintenance, operation, upgrade or expansion of specified infrastructure. The proposed solar farm is for renewable electricity generation into the National Grid, and therefore it is regionally significant infrastructure that meets the definition of 'specified infrastructure'. There are also functional and operational requirements for it to be located on the subject site.

An assessment against the relevant provisions of the NPS-HPL is provided in Table 7 below. Overall, the application is considered consistent with the NPS-HPL.

Table 7. NPS-HPL objectives and policies assessment.

Objective/policy	Comment
Objective 2.1 – Highly productive land is protected for use in land-based primary production, both now and for future generations.	The proposed solar farm will not adversely impact the productive potential of the soils on the site, which will be protected for both current and future generations.
Policy 2.2 (1) – Highly productive land is recognised as a resource with finite characteristics and long-term values for land-based primary production.	As discussed in Section 5.2 , the carbon status of the soil will be maintained and the solar panels can be easily removed and the site reinstated to fully grazing upon completion of solar use. Overall, adverse effects on prime soils are considered less than minor.

⁶ <https://www.mbie.govt.nz/have-your-say/renewable-electricity/>

Objective/policy	Comment
Policy 2.2 (8) – Highly productive land is protected from inappropriate use and development.	The proposed solar farm will enable the productive potential of the site to remain. The site will either be cropped or grazed by sheep to ensure grass is managed, while also enabling electricity generation to be undertaken. The proposal is an appropriate use of the site.

6.7 Canterbury Regional Policy Statement

An assessment against the relevant provisions of the CRPS is provided in **Table 8** below. Overall, the proposal is consistent with the provisions of the CRPS.

Table 8. CRPS objectives and policies assessment.

Chapter 5 – Land Use and Infrastructure	
Objective / Policy	Comment
Objective 5.2.1 - Development is located and designed so that it functions in a way that: (2) Enables people and communities, including future generations, to provide for their social, economic and cultural well-being and health and safety; and which: (a) Maintains and where appropriate, enhances the overall quality of the natural environment of the Canterbury region, including its coastal environment, outstanding natural features and landscapes, and natural values; (b) Provides sufficient housing choice to meet the region's housing needs; (c) Encourage sustainable economic by enabling business activities in appropriate locations; (d) Minimises energy use and /or improves energy efficiency; (e) Enables rural activities that support the rural environment including primary production; (f) Is compatible with, and will result in the continued safe, efficient and effective use of regionally significant infrastructure; (g) Avoids adverse effects on significant natural and physical resources including regionally significant infrastructure, and where avoidance is impractical, remedies or mitigates those effects on those resources and infrastructure; (h) Facilitates the establishment of papakainga and marae; and (i) Avoids conflict between incompatible activities.	The proposal will provide renewable electricity to the National Grid – and in doing so, will enable people and communities, including future generations, to provide for their social, economic and cultural well-being and health and safety. Furthermore, the proposal will maintain, and where practical, enhance the quality of the natural environment. The proposal has an operational and functional requirement to be located in the rural zone. It will not cause reverse sensitivity effects, instead it is complementary to the surrounding agricultural activities.
Policy 5.2.2 (1) – To recognise the benefits of enabling people and communities to provide for their social, economic and cultural well-being and health and safety and to provide for infrastructure that is regionally significant to the extent that it promotes sustainable management in accordance with the RMA.	The proposal directly supports the uptake of low-carbon renewable electricity generation and supports the reduction of New Zealand's greenhouse gas emissions. In doing so, the proposal enables people and communities to provide for their social, economic and cultural well-being. Overall, the proposal promotes sustainable management in accordance with the RMA.
Policy 5.2.2 (2) – To achieve patterns and sequencing of land-use with regionally significant infrastructure in the wider region so that: (b) Adverse effects resulting from the development or operation of regionally significant infrastructure are avoided, remedied or mitigated as fully as practicable.	Adverse effects from the proposed solar farm are sufficiently avoided, remedied and mitigated as far as practicable.

Policy 5.3.5 – Within the wide region, ensure development is appropriately and efficiently served for the collection, treatment, disposal or re-use of sewage and stormwater, and the provision of potable water, by: (1) Avoiding development which will not be served in a timely manner to avoid or mitigate adverse effects on the environment and human health; and (2) Requiring these services to be designed, built, managed or upgraded to maximise their on-going effectiveness.	The proposed stormwater runoff will soak to ground and does not require external treatment. Adverse effects on the environment and human health are avoided.
Policy 5.3.6 – Within the wider region: (1) Avoid development which constrains the on-going ability of the existing sewerage, stormwater and potable water supply infrastructure to be development and used.	The proposed stormwater discharge will not impact the constraints of existing infrastructure.
Section 16 – Energy	
Objective 162.2 – Reliable and resilient generation and supply of energy for the region, and the wider contributions beyond Canterbury, with a particular emphasis on renewable energy, which: (1) Provides for the appropriate use of the region's renewable resources to generate energy; (2) Reduces dependency on fossil fuels; (3) Improves the efficient end-use of energy; (4) Minimises transmission losses; (5) Is diverse in the location, type and scale of renewable energy development; (6) Recognises the locational constraints in the development of renewable electricity generation activities; and (a) Avoids any adverse effects on significant natural and physical resources and cultural values or where this is not practicable, remedies or mitigates; and (b) Appropriately controls other adverse effects on the environment.	The proposal provides a unique opportunity to generate power during the day, thereby allowing the hydro lakes to store more water during the day to increase capacity at night. Given climate change and more extreme weather events that are expected, there is a higher likelihood of severe drought affecting the performance of hydro lakes. Therefore, the co-location of the proposed solar farm with the hydro power scheme will assist with providing a more resilient power generation network. Adverse effects on significant natural and physical resources and cultural values are appropriately avoided and managed, as discussed in Section 5. The solar farm will use the existing transmission infrastructure, which is designed to be as efficient as possible and is already in place. Due to the capacity of the existing infrastructure, a large scale solar farm is required to justify the connection costs incurred.
Policy 16.3.3 – To recognise and provide for the local, regional and national benefits when considering proposed or existing renewable energy generation facilities, having particular regard to the following: (1) Maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions; (2) Maintaining or increasing the security of supply at local and regional levels, and also wider contribute beyond Canterbury	The proposal directly supports the uptake of low-carbon renewable electricity generation, which contributes to New Zealand achieving net-zero status by 2050. In addition, the proposal will increase the security of supply at a national level, providing renewable electricity that will benefit the Canterbury region.

6.8 Canterbury Land and Water Regional Plan

An assessment against the relevant provisions of the CLWRP is provided in **Table 9** below. Overall, the proposal is consistent with the provisions of the CLWRP.

Table 9. CLWRP objectives and policies assessment.

Objective / Policy	Comment
Section 2A – National Direction	
Policy 2A.1(1) – When considering any application for a discharge the consent authority must have regard to the following matters: (a) The extent to which the discharge would avoid contamination that will have an adverse effect on the	As discussed in Section 5, adverse effects on the life-supporting capacity of fresh water will be avoided. Overall, adverse effects on surface water and groundwater quality are assessed as being less than minor.

life-supporting capacity of fresh water including on any ecosystem associated with fresh water; and (b) The extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on my ecosystem associated with fresh water, resulting from the discharge would be avoided.	
Policy 2A.1(2) – When considering any application for a discharge the consent authority must have regard to the following matters: (a) The extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their contact with freshwater; and (b) The extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities are affected by their contact with fresh water resulting from the discharge would be avoided.	Adverse effects on the health and people and communities as affected by their contact with freshwater are avoided. As discussed in Section 5, adverse effects on the receiving environment are less than minor from this proposal.
Section 3 – Objectives	
Objective 3.5 – Land uses continue to develop and change in response to socio-economic and community demand.	This application directly supports the operation of a proposed solar farm that will address socio-economic and community needs for renewable electricity.
Objective 3.24 – All activities operate at good environmental practice or better to optimise efficient resource use and protect the region's fresh water resources from quality and quantity degradation.	The proposal will be undertaken in accordance with best practice guidelines to optimise efficient resource use.
Section 4 – Policies	
Policy 4.12 – There are no direct discharges to surface water bodies or groundwater of: (a) Untreated sewage, wastewater (except as a result of extreme weather related overflows or system failures) or bio-solids; (b) Solids or hazardous waste or solid animal waste; (c) Animal effluent from an effluent storage facility or a stock holding area; (d) Organic waste or leachate from storage of organic material; and (e) Untreated industrial or trade waste.	There will be no discharge of those materials to surface water bodies.
Policy 4.17 – Stormwater run-off volumes and peak flows are managed so that they do not cause or exacerbate the risk of inundation, erosion or damage to property or infrastructure downstream or risks to human safety.	Refer to the Stormwater Assessment in Appendix H. All operational stormwater will soak to ground with no stormwater flows occurring off site. Overall, stormwater run-off volumes and peak flows will be managed to minimise risks of inundation, erosion and damage to property or infrastructure downstream.

6.9 Canterbury Air Regional Plan

An assessment against the relevant provisions of the CARP is provided in **Table 10** below. Overall, the proposal is consistent with the provisions of the CARP.

Table 10. CARP objectives and policies assessment.

Objective / policy	Comment
Objectives	
Objective 5.1 – Air quality protects the mauri and life supporting capacity of the environment.	There will be no discharge of dust beyond the boundary of the site and no adverse effects on air quality. The mauri and life supporting capacity of the environment will be protected.
Objective 5.9 – Offensive and objectionable effects and noxious or dangerous effects on the environment are generally avoided.	There will be no offensive or objectionable effects on the environment.
Policies	
Policy 6.1 – Discharges of contaminants into air, either individually or in combination with other discharges, do not cause: (a) Diverse effects on human health and wellbeing; or (b) Adverse effects on the mauri and life supporting capacity of ecosystems, plants or animals; or (c) Significantly diminished visibility; or (d) Significant soiling or corrosion of structures or property.	All works will be carried out in accordance with best practice erosion and sediment guidelines and controls in place to ensure adverse effects are avoided.

6.10 Hurunui District Plan

An assessment against the relevant provisions of the HDP is provided in **Table 11** below. Overall, the assessment is considered to be consistent with the relevant provisions of the HDP.

Table 11. HDP objectives and policies assessment.

Objective / policy	Comment
Chapter 3 – Rural	
Objective 3.1 – The character and amenity values of rural areas are maintained while providing for a variety of activities including those associated with primary production.	As discussed in Section 5.3 above the rural character and amenity values of the site and surrounding area will be maintained.
Objective 3.2 – Rural areas are managed so that primary production activities are able to be carried out efficiently and effectively.	The proposed solar farm will not restrict primary production activities from establishing in the zone.
Policy 3.2 – To protect highly productive soils by discouraging activities that will have adverse effects on their continued productive use and life-supporting characteristics that are difficult to reverse.	As discussed in Section 5.3 above the site contains highly productive soils, the proposed solar farm however will not affect the quality of the site soils. The site can also be used for grazing whilst the solar farm is operational and the solar panels can be easily removed from the site in the future and the land returned to more productive land uses should that be necessary in the future. The site will therefore not be removed from the 'rural land pool' indefinitely.
Policy 3.5 – To enable a variety of activities to occur within rural areas while managing adverse effects on character and amenity values by seeking that the scale and siting of development: 1. Maintains a dominance of open space and plantings over buildings, especially when viewed from public places such as roads; 2. Maintains privacy and rural outlook for residential activities;	As discussed in Section 5.3 above the proposed solar farm is considered complimentary to other more productive land uses and the solar farm will have a less than minor effect on rural character and amenity values.

Objective / policy	Comment
3.Protects access to light for sensitive activities and primary production; 4.Achieves an appropriate level of compatibility with existing development within the surrounding area; 5.Avoids unduly affecting the amenity of existing sensitive activities being exposed to noise and adverse light emissions at night; 6.Avoids, mitigates or remedies adverse visual effects if sited on prominent ridges or immediately adjacent to strategic arterial roads, district arterial roads and collector roads, or to Lake Sumner Road; and 7.Is appropriate to the location, including recognising the need for activities reliant on a natural resource to be located where the resource is available.	
Policy 3.6 – To manage potential conflict between incompatible activities.	The proposal solar farm will be compatible with more productive land uses as well as residential activities. The solar farm is not a sensitive activity nor will it generate any adverse noise, traffic or odour effects.
Policy 3.7 – To avoid, remedy or mitigate the detrimental effects of signs on public safety and amenity values.	The proposal will not contain any signs that will impact public safety and amenity values.
Policy 3.8 – To control noise emissions at reasonable levels and where they exceed those levels, mitigate the effects of noise through noise reduction methods including separation distances between those noise-emitting activities and sensitive activities.	As discussed in Section 5.4.1 and Section 5.5.1 , the proposal will not result in unreasonable noise levels and will readily comply with the limits during both construction and operation.
Chapter 7 – Energy	
Objective 7.1 – The development, operation, maintenance and upgrading of new and existing renewable energy generation activities is provided for, while ensuring that conflicts between these activities and sensitive environments are managed.	The proposal involves the construction and operation of a 143.8 MWp solar farm. There are no nearby sensitive environments.
Policy 7.1 – To recognise the national, regional and local significance and benefits of energy production from renewable resources by: 1. Enabling the investigation, identification and assessment of potential sites for renewable energy generation and investigations into renewable energy generation technologies and methods; 2. Providing for community and commercial scale renewable energy production in less sensitive environments (those not identified in policies 7.6 and 7.7); and 3. Enabling small scale on-site energy production from renewable resources.	This policy recognises that the need to develop, operate, maintain and upgrade renewable electricity generation activities is a matter of national significance. The proposal is for the construction and operation of a solar farm which will feed electricity into the local network. The Applicant is not however an 'electricity operator' as defined by the Electricity Act 1992. The proposed activity is however akin to a commercial scale electricity activity and will provide significant regional and local benefits in terms of electricity output. The site is in the rural zone and is therefore less sensitive than other zones, i.e. residential zones.
Policy 7.5 – To acknowledge the practical and logistical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable energy generation activities, including the need to locate these activities where the renewable energy resources are available.	Solar farms require a large area of land, with good solar access and in close proximity to the electricity network. This particular site possesses the necessary aspect, solar hours, topography and proximity to electricity demand and infrastructure and is therefore an optimal site for commercial scale electricity generation.
Policy 7.6 – To manage renewable energy activities to minimise effects by:	1. There are no other known solar farms, or other renewable energy activities within this locality;

Objective / policy	Comment
1. Managing cumulative effects; 2. Requiring setbacks from sensitive activities; 3. Controlling noise emissions; 4. Managing construction activities including vehicle movements; and 5. Maintaining amenity values and character.	2. There are no known sensitive activities within close proximity to the site; 3. There will be very minimal noise emissions (the electronics make minimal noise and only has small, internal cooling fans); 4. The solar arrays will arrive on the site partly pre-configured in a container-based units. Construction activities will take place over a 12 month period, with construction and primary electrical works being carried out in the first few months of construction. Deliveries will be on a strict schedule during the regular working week with an average of 3 truck deliveries per day during the construction period. All trucks will be parked within the site when making deliveries. A pre-construction traffic management plan will be prepared once a contractor has been appointed. Once operational there will be minimal traffic generation associated with the operation of the solar farm, the farm will largely be managed remotely with occasional access to the site for maintenance activities; and 5. As discussed in Section 5.3 above the rural amenity values of the site will be maintained.
Policy 7.7 – To consider environmental compensation or offsetting measures, including measures or compensation which benefits the local environment and community affected, where any residual environmental effects of renewable energy generation activities cannot be avoided, remedied or mitigated.	As discussed throughout this report the proposal is not expected to have any adverse environmental effects that cannot be remedied or mitigated.
Chapter 11 – Landscape	
Policy 11.2 – Ensure that the adverse effects of subdivision, use and development on the values of each identified Outstanding Natural Feature or Landscape are avoided where possible, and where avoidance of adverse effects is not possible, adverse effects are remedied or mitigated.	As discussed in Section 5.3 , potential and adverse effects on landscape values are approximately avoided and mitigated by the proposed screening.
Policy 11.5 – When considering proposals for new development in Outstanding Natural Features and Landscapes, consider making allowance for increased development potential where significant benefits to the environment or community, or enhancement outcomes are achieved.	The proposal will provide significant community benefit in the form of renewable electricity generation, which will improve the resilience of the National Grid for the district and region.
Chapter 15 – Natural Hazards	
Objective 15.1 – Subdivision, use and development of land is enabled while avoiding or mitigating the adverse effects of natural hazards.	The proposal will not exacerbate natural hazard risks.
Policy 15.4 – To avoid the development of land within any Fault Awareness Zones for post emergency infrastructure or infrastructure which large numbers of people congregate in, unless that infrastructure has been appropriately designed and sited in relation to the fault hazard.	The proposal is appropriately designed to locate in the Fault Awareness Zone.

6.11 Sections 105 and 107

Sections 105 and 107 are relevant to applications under section 15 of the RMA. Section 105 of the RMA requires the consent authority to have regard to the nature of the discharge and the sensitivity of the receiving environment, the applicant's reasons for the proposed choice and possible alternative methods of discharge. These matters have been addressed throughout this report, particularly in **Section 2** which describes the receiving environment, **Section 3** which describes the proposed works, **Section 3.9** which considers alternatives and **Section 5** which assesses the effects on the environment.

Section 107 restricts the granting of discharge permits in certain circumstances, namely if, after reasonable mixing, the contaminant or water discharged (by either itself or in combination with the same, similar, or other contaminants or water) is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals; and
- Any significant adverse effects on aquatic life.

The effects of the proposed discharge to land is considered in **Section 5**. There will be no adverse effects from the proposed works on receiving waters. Overall, it is concluded that the discharge would meet the tests set out in section 107(1)(c) to (g), and therefore, the resource consent application can be granted.

6.12 Other Matters

6.12.1 Iwi Management Plans

6.12.1.1 Waitaki Iwi Management Plan 2019

The Waitaki Iwi Management Plan 2019 sets forward the aspirations for Te Runanga o Araowhenua, Te Runanga o Waihao and Te Runanga o Moeraki (Ka Papatipu Runaka). It constitutes their expression of rakatirataka in fulfilment of their kaitiaki responsibilities in the Waitaki Catchment.

Of relevance to this proposal, the plan outlines the following strategic objectives:

- Mana whenua have a co-governance and co-management role over the Aoraki; and
- Wahi tupuna are protected and the relationship mana whenua have with these landscapes is enhanced.

The proposal will provide opportunities for mana whenua to be actively involved throughout the project lifecycle. In addition, the proposal will be undertaken in accordance with best practice erosion and sediment controls in place and will have a less than minor adverse effect on the environment (see **Section 5**).

Overall, the proposal is consistent with the strategic objectives identified in this plan.

6.12.1.2 Iwi Management Plan of Kati Huirapa

The Iwi Management Plan of Kati Huirapa sets forward a number of key aspirations / objectives for their rohe.

Of relevance to this application are the following aspirations:

- The Crown and other agents with authority delegated by the Crown, consult with Takata Whenua on all matters Māori as set out in the Resource Management Act;
- Breeding areas for fish, birds, all species in waterways remain undisturbed;

- Corridors of undisturbed vegetation be maintained along all rivers, and between rivers and forests, any areas of indigenous flora and habitats of indigenous fauna to maintain the seasonal migration and movement of birds, all creatures;
- The protection and restoration of natural habitats be encouraged; and
- The planting of flax and other native species which are a source of traditional materials be encouraged.

The proposal will provide opportunities for kaitiakitanga over the lifecycle of the project. There will be no discharge of contaminants or stormwater to any adjacent waterbody. The proposal is overall consistent with the aspirations expressed in the document.

6.12.1.3 Ngai Tahu Resource Management Strategy for the Canterbury Region

This document outlines the key issues and aspirations for Ngai Tahu in the Canterbury region with regards to natural resource management. Of relevance to this proposal are the following policies:

- That Ngai Tahu retain the right to be involved in and contribute to, the resource allocation and management decisions which impact on Tribal resources; and
- That the Canterbury Regional Council should encourage landowners or occupiers to plant vegetation on riparian strips to prevent contaminated run-off into any wetland, waterway or lake.

There will be no impact on waterways as a result of the proposed works. As noted above, mana whenua will be provided with opportunities for engagement throughout the entire lifecycle of the project.

6.12.2 Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework for the development and implementation of climate change policies to address climate change in New Zealand and contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5 Celsius above pre-industrial levels. The amendments set a new domestic greenhouse gas emissions reduction target for New Zealand, including reducing net emissions of all greenhouse gases (except biogenic methane) to zero by 2050.

The proposed solar farm will generate renewable electricity for the Taranaki district, which decreases reliance of the National Grid on fossil fuel sources of electricity, and directly supports the goal of net zero emissions from greenhouse gases by 2050.

6.13 Notification Assessment

6.13.1 Public Notification

Section 95A of the RMA is relevant when a consent authority is considering whether a consent application should be considered with or without public notification.

Section 95A identifies a four-step process. In relation to these steps, the following is noted:

- The applicant does not request public notification of the application.
- There is no rule or national environmental standard that precludes or requires public notification of this application.
- An assessment of effects on the environment is provided in **Section 5** of this report. This assessment concludes that adverse effects on the environment are likely to be less than minor.
- The application is not for any of the activities identified in section 95A(5)(9b) (i.e. a controlled activity, subdivision of land or residential activities, a boundary activity, or an activity prescribed in section 360H(1)(a)(i)).

Based on this assessment, we consider that this proposal meets the tests of the RMA to be processed without public notification.

6.13.2 Limited Notification

For applications that are not publicly notified, under section 95B, the consent authority must determine whether to give limited notification of an application to any affected parties. Section 95B identifies a four-step process. In relation to these steps, the following is noted:

- The application does not need to be notified to any parties under section 95B(4). The proposal will not affect any customary rights.
- The proposed activity is not on or adjacent to, or does not affect, land that is subject of a statutory acknowledgement.
- There are no applicable rules or national environmental standards precluding limited notification.
- No special circumstances are considered to exist in relation to the application that warrant notification of the application to any other persons not already determined to be eligible for limited notification.

Section 95E(1) states that a consent authority must consider a person to be an affected person if the activity's adverse effects on the person are minor or more than minor (but not less than minor). As outlined in the Landscape and Visual Assessment (refer to **Appendix D**), the following properties are expected to experience more than minor short-term effects as construction activities are undertaken:

- 247 MacKenzies Road;
- 253 MacKenzies Road; and
- 249 MacKenzies Road.

On that basis, limited notification to the landowners of the above properties is requested, noting that the Applicant is undertaking consultation with these landowners currently.

6.13.3 Section 95 Conclusions

Based on the steps set out in sections 95A and 95B, we consider that this application should be processed with limited notification to the landowners of the properties listed in **Section 6.13.2**.

7. Consultation

7.1 Mana Whenua

The Applicant has contacted Ngāi Tūāhuriri Rūnanga on numerous occasions regarding the proposal (refer to the Consultation Record in **Appendix L**). This consultation has included the following:

- An email on 13 June 2023 to Katherine Snook outlining the Applicant's desire to engage early in the consenting process regarding the proposal;
- Further emails on 30 June 2023 and 10 July 2023 providing project updates; and
- Further emails at the end of 2023 and into 2024 seeking a meeting to discuss the application.

To date, no comments from Ngāi Tūāhuriri Rūnanga have been received on the proposal.

7.2 Neighbours and Adjacent Landowners

The Applicant has undertaken extensive engagement with adjacent landowners and neighbours prior to the lodgement of this application. For full details, refer to the Consultation Record in **Appendix L**.

The Applicant hosted a Public Open Day on 28 September 2023 on the site for the Waipara Community to attend and learn more about the proposal. Approximately 50-60 people attended the event and technical specialists, including the Applicant's team were present to answer questions.

8. Conclusion

This AEE report has been prepared on behalf of the Applicant to accompany a resource consent application to Hurunui District Council and ECan for the construction and operation of a 143.8 MWp solar farm at 380 Waipara Flat Road, Waipara. Overall, the proposal requires consent as a **discretionary** activity.

The AEE report draws the following conclusions:

- Any adverse effects in relation to the proposed solar farm will, overall, be less than minor and acceptable when considering the significant positive effects of the proposal which includes the generation of low-carbon renewable electricity and supports the reduction of New Zealand's greenhouse gas emissions. In doing so, the proposal provides security and resilience to the electricity generation network, by reducing pressure and reliance on the National Grid and regional distribution network. More broadly, the proposed solar farm will provide social and economic benefits for the region;
- The proposal accords with the relevant NPS-REG, CRPS, CLWRP, CARP and HDP objectives and policies; and
- The proposal is considered to be consistent with Part 2 of the RMA.

The application will be undertaken in accordance with robust mitigation measures to ensure actual and potential adverse effects on the receiving environment are appropriately mitigated.

The Applicant requests that this application is limited notified to the landowners set out in **Section 6.13.2** in accordance with section 95(B) of the RMA.

The Applicant would appreciate the opportunity to review draft conditions.

Appendix A. Record of Title



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

Identifier **80697**
Land Registration District **Canterbury**
Date Issued 26 February 2007

Prior References
CB1C/912

Estate Fee Simple
Area 39.4397 hectares more or less
Legal Description Lot 2 Deposited Plan 19025 and Lot 1
Deposited Plan 320376

Registered Owners
Northgreen Arable Limited

Interests

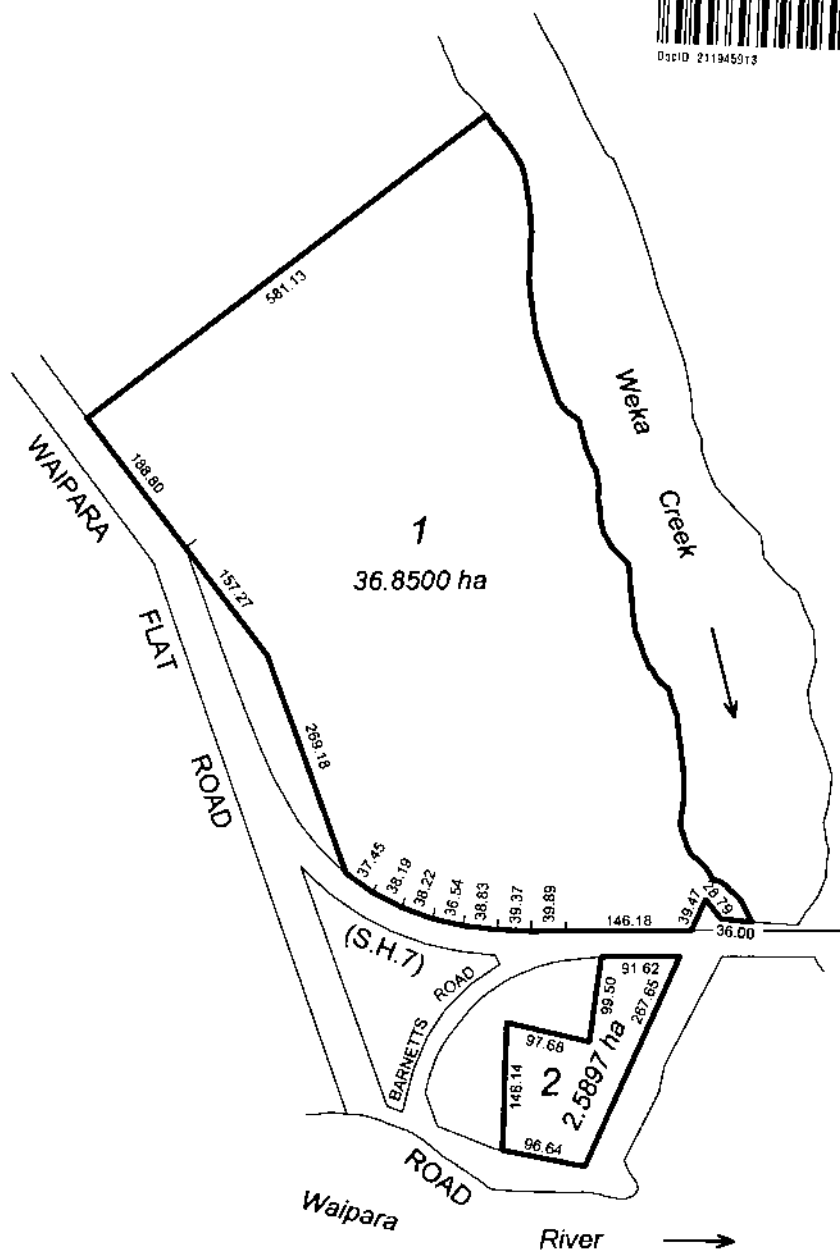
Appurtenant hereto are rights to convey water created by Transfer A446643.1 - 21.2.2000 at 10:50 am
Appurtenant hereto is a right to convey water created by Transfer 5466409.2 - 23.1.2003 at 9:00 am
7170870.1 Consent Notice pursuant to Section 221 Resource Management Act 1991 - produced 20.12.2006 at 9:00 am and
entered 26.2.2007 at 9:00 am (affects Lot 1 DP 320376)
Subject to Section 241(2) Resource Management Act 1991 (affects DP 320376)
Subject to a right (in gross) to convey electric power over parts marked C and D on DP 418186 in favour of MainPower
New Zealand Limited created by Easement Instrument 8139734.1 - 1.5.2009 at 2:57 pm
Land Covenant in Easement Instrument 9085090.2 - 11.6.2012 at 10:45 am
12677542.3 Mortgage to Rabobank New Zealand Limited - 16.3.2023 at 12:54 pm

Title Diagram 80697

Cpy - 01/01, Pgs - 001, 13/02/07, 13:58



D3C1D 211945913



Total Area: 39.4397 ha



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

Identifier **CB32B/7**
Land Registration District **Canterbury**
Date Issued 28 June 1989

Prior References
812624.9 8443 CB15F/126

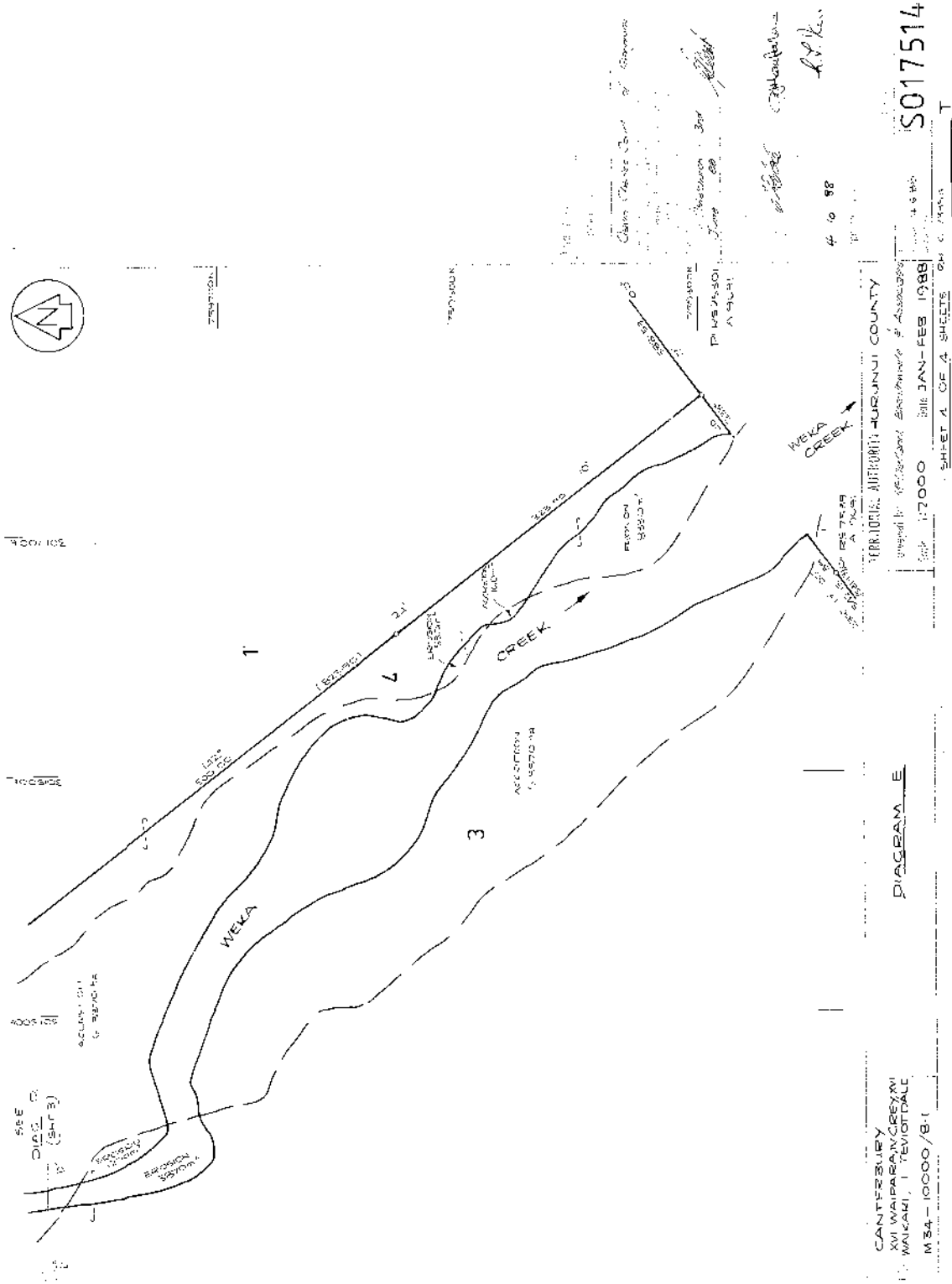
Estate Fee Simple
Area 201.6000 hectares more or less
Legal Description Section 3-4 Survey Office Plan 17514
Registered Owners
Northgreen Arable Limited

Interests
Subject to Section 8 Mining Act 1971
Subject to Section 168A Coal Mines Act 1925
Subject to a right (in gross) to convey electricity over parts marked A and B on DP 359430 in favour of Transpower New Zealand Limited created by Easement Instrument 6649262.2 - 16.11.2005 at 9:00 am
12677542.3 Mortgage to Rabobank New Zealand Limited - 16.3.2023 at 12:54 pm











**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD**

**Guaranteed Search Copy issued under Section 60 of the Land
Transfer Act 2017**




R.W. Muir
Registrar-General
of Land

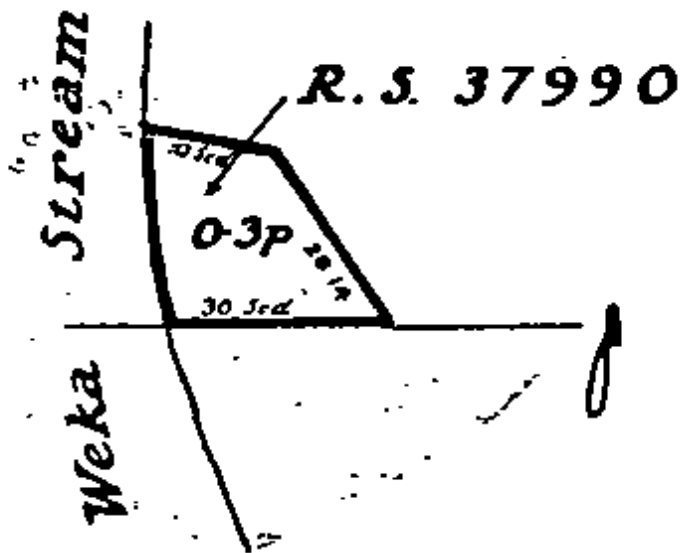
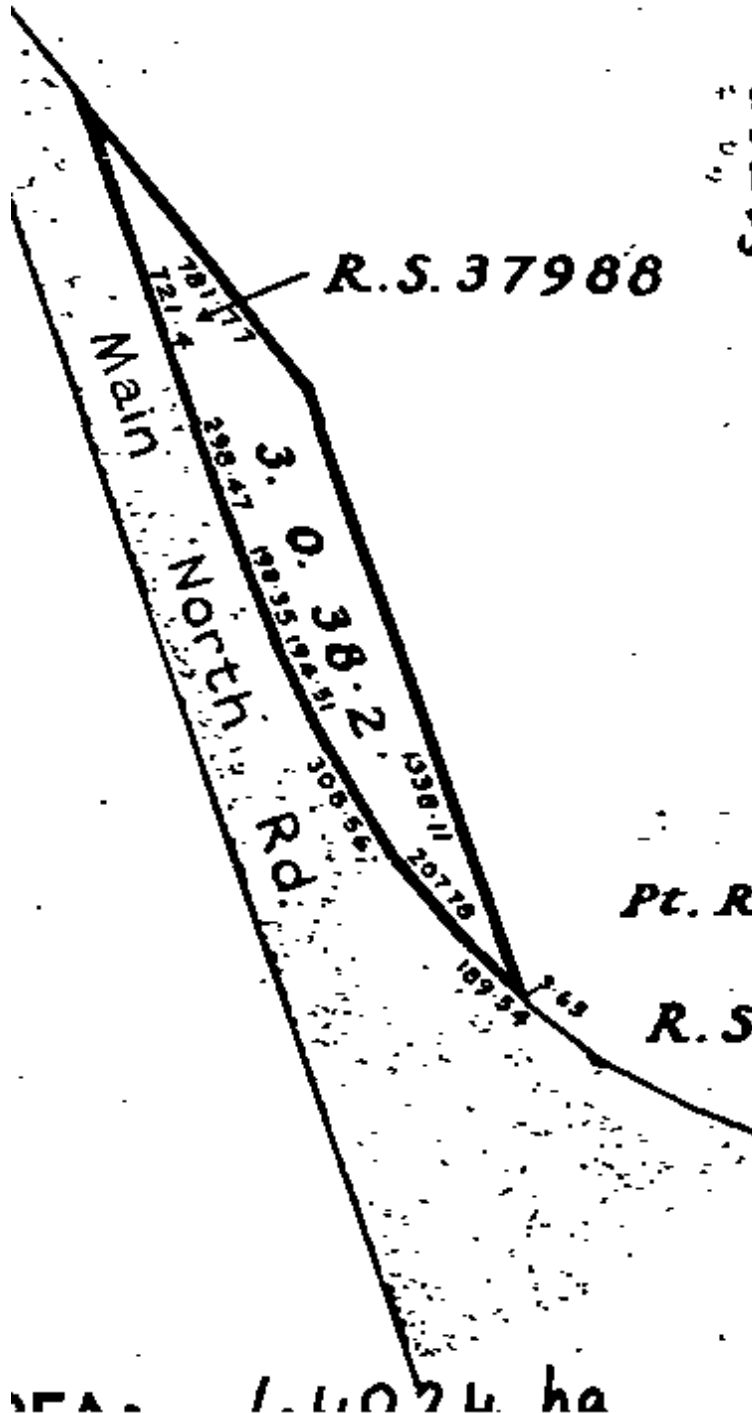
Identifier **CB571/26**
Land Registration District **Canterbury**
Date Issued 11 February 1953

Prior References
WA 6C/212

Estate Fee Simple
Area 1.4025 hectares more or less
Legal Description Rural Section 37988, Rural Section 37989
and Rural Section 37990

Registered Owners
Northgreen Arable Limited

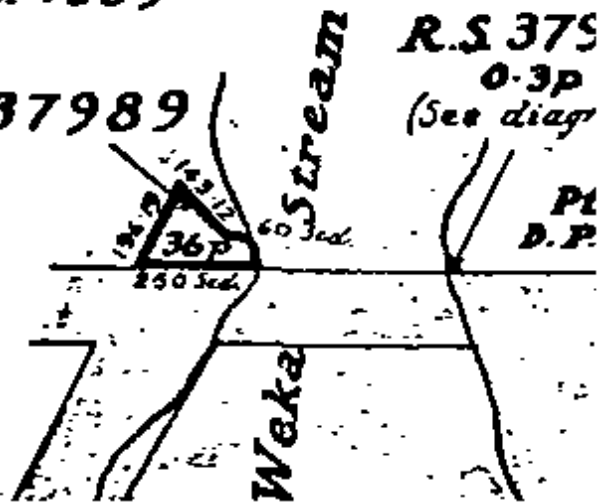
Interests
Subject to Section 8 Coal Mines Amendment Act 1950
Subject to a right (in gross) to convey electric power over parts marked E and F on DP 418186 in favour of MainPower
New Zealand Limited created by Easement Instrument 8139734.1 - 1.5.2009 at 2:57 pm
Land Covenant in Easement Instrument 9085090.2 - 11.6.2012 at 10:45 am
12677542.3 Mortgage to Rabobank New Zealand Limited - 16.3.2023 at 12:54 pm



(Diagram not to Scale)

Pt. R.S. 7539

R.S. 37989



Appendix B. Application Forms

FOR OFFICE USE ONLY

CON060: APPLICATION FOR RESOURCE CONSENT

TO DISCHARGE STORMWATER INTO LAND

Please note that if the discharge will be into a stormwater network operated by a city or district council which discharges into surface water, the application form for discharge into surface water should be used.

If you need help in filling out this form, please contact our Customer Services staff on (03) 353 9007 or toll free on 0800 324 636. They will be able to provide some general assistance.

Email the completed application to: ecinfo@ecan.govt.nz
Or send to Environment Canterbury, PO Box 345, Christchurch 8140

Receipt number:

Charges paid:

CRC:

Information

Section 88 of the Resource Management Act 1991 specifies the requirements for applications for resource consents and requires that each application includes a description of the activity, a planning assessment, and an assessment of the actual and potential effects of the activity on the environment, amongst other things. We recommend you read [Section 88](#) and [Schedule 4](#) of the RMA prior to completing this form.

Completing all the questions in this application form in full:

- May satisfy the requirements of the Resource Management Act 1991 for an application for resource consent. Environment Canterbury will inform you if further information is required.
- Will assist with the prompt processing of your application. Any omissions in this form may result in your application being returned (under Section 88(3) of the RMA) and may result in additional costs while the required information is obtained.

Charges

Your application must be accompanied with the initial fixed charge specified [here](#) on Environment Canterbury's website page "How much will my consent cost?" The initial fixed charge may not cover all charges related to the auditing of the application. The applicant may be invoiced for additional charges. If an application is declined, all charges must still be paid.

PLEASE TICK WHICH FEE BELOW IS APPLICABLE

Variable Initial Fixed Fee applications	High	Initial fixed fee (incl GST)	Medium	Initial fixed fee (incl GST)	Low	Initial fixed fee (incl GST)
Discharge of stormwater to land	>4 hectares, anything on hill slopes	\$9,400 	Medium = 0.4 – 4 hectares	\$6,000 	<0.5 hectares	\$2,500

All accounts are payable by the 20th day of the month following the date of invoice. If the account is not paid within 30 days after the due date, our debt collection agent may charge you a fee equal to 25% of the unpaid portion of the account, but no less than \$25.00. Where the total debt collection costs, legal and other costs arising from the collection of any amount owing exceeds the debt collection fee charged, our debt collection agent is also entitled to recover such additional costs. All Environment Canterbury charges must be met by the applicant. This may include time spent discussing issues with the applicant and any other parties involved in the process.

Name of person/company/organisation that is paying the initial fixed charge	Far North Solar Farm Ltd
Method of payment: internet banking/paid in person at Environment Canterbury office	
Date payment is made	
Payment reference e.g. applicant name	

Please complete all questions and sign and date the form.

1. APPLICATION DETAILS

1.1 Applicant(s) details

Surname:		First names (in full):	
Surname:		First names (in full):	
OR Registered Company name and number: Far North Solar Farm Ltd			

Postal address: 1/10 Putaki Drive, Kumeu, Auckland	Postcode:	s 9(2)(a)
Billing address (if different):	Postcode:	
Phone (home):	Phone (work):	
Cell phone:	Email address:	
Contact person:		

Are you an Environment Canterbury staff member, an Environment Canterbury Councillor, or a family member of either?

☐ Yes ☐ No

1.2 Consultant/Agents details (if applicable)

Contact person:	s 9(2)(a)	Company:	Williamson Water and Land Advisory
Postal address:		Postcode:	s 9(2)(a)
Phone (work):	s 9(2)(a)	Cell phone:	
Email address:			

1.2.1 During the processing of your application who will be the contact person for making decisions?

☐ Applicant ☒ Consultant / Agent

Note: All correspondence during the consent application process will be directed to this contact person, unless instructed otherwise. Final decision documents will be sent to the applicant.

Who will be the contact person for compliance monitoring matters?

☒ Applicant ☐ Consultant / Agent

1.3 Names and addresses of the owner and occupier of the site to which this application relates

(You only need to include this information if it is **different** to that of the applicant(s). If you do not own the land to which this application relates to, you will need to provide written approval from the landowner, or they may be considered an affected party.)

Owner:	Refer to Table 1 of the attached AEE.	Phone:
Postal address:		Postcode:
Occupier:		Phone:
Postal address:		Postcode:

1.4 Location of the proposed activity

Site address:	Refer to Table 1 of the attached AEE		
Locality (City/District):		Map reference NZTopo50:	
Area of property (ha):		Legal description:	

Note: The legal description can be found on the certificate of title, valuation notice, subdivision plan or rate demand for the site. Please include a copy of one of these with your application.

1.5 Consents from local authorities

1.5.1 Under which territorial authority is the land situated:

- | | | | |
|--|---------------------------------------|---|-------------------------------------|
| ☐ Ashburton DC | ☐ Kaikōura DC | ☐ Timaru DC | ☐ Waitaki DC |
| ☐ Christchurch CC | ☐ Mackenzie DC | ☐ Waimakariri DC | |
| ☒ Hurunui DC | ☐ Selwyn DC | ☐ Waimate DC | |

Do you require consent from the local authority for this proposal?

Note: You may need to consult with the relevant local authority to determine this.

☒ Yes ☐ No

If yes, please list:

If a consent is required from the District or City Council, have you applied for it?

☒ Yes ☐ No

If yes, what is the consent number and status?

Please list any permitted activities under the District or City Plan that are part of the proposal to which the application relates:

1.6 Current or previous consents

1.6.1 Do you hold, or have you held any previous consents at this site for this activity or any related activities?

☐ Yes ☒ No

If yes, please provide details of the existing consents:
(e.g. CRC111000, discharge of dairy effluent etc.)

1.6.2 List any other consents required from the Canterbury Regional Council and indicate whether they have been applied for:

1.6.3 Is this application for a:

☒ New activity ☐ Existing Activity

☐ Change of conditions for an existing consent

1.6.4 If it is a change of conditions to an existing consent, please supply the consent reference number(s) or consent holder's name (if different from current applicant's name) and which conditions you wish to change:

2 PRE-APPLICATION ADVICE

2.1 Have you received any advice from Environment Canterbury prior to lodging this application?

☒ Yes ☐ No

2.2 If yes, please list the pre-application number if known:

E.g. RMA165897. This number should be provided to you by the Consents Planner or Customer Services.

2.3 Please list any pre-application meetings or advice (verbal and/or written) you have had with Environment Canterbury below:

Type of advice	Brief details, including who provided the advice and the date
☐ Meeting(s)	
☐ Verbal advice	
☒ Written advice	Refer to the attached.
☐ Other (e.g. submitted draft application / AEE)	

Please describe fully the proposal for which consent(s) are being sought, for example "workshop where cars will be repaired" or "supermarket with car parking area". If there are commercial or industrial activities on your site, please describe them in detail. Include details of activities associated with the proposal to which this application relates. Attach additional information as necessary – for example plans, diagrams etc. that will help to describe the activity.

3 DESCRIPTION OF THE PROPOSAL

This application is for an: ☐ Industrial property ☐ Residential property ☐ Commercial property

3.1 Site details:

(circle or highlight metres or hectares to specify)

Total area of site: **Refer to Section 3** Square metres/hectares
 Total roof area: **of the attached** Square metres/hectares
 Area of roads: **AEE.** Square metres/hectares
 Hardstand area on lots: Square metres/hectares
 Other hardstand areas: Square metres/hectares
 (including rights-of-way)

3.1.1 Is the application for a subdivision or a single lot?

Subdivision ☐ Single lot ☐

3.1.2 If the discharge is from a subdivision, what is the total number of lots?

Note: Every lot, including reserves, for all stages of the development must be included in your total.

3.1.3 Will separate resource consents be required to authorise stormwater from each individual lot?

Yes ☐ No ☐

Note: If 'Yes', please supply a map reference for each individual lot in the NZ Topo50 Map reference format e.g. AS21:1234-5678.

3.1.4 Is your site listed on the Listed Land Use Register database?

Yes, the Site number is:

No

The historical/current activities (for example "above ground storage tank for petrol" or "vineyard where pesticides are used") are:

Note: A formal contaminated land request can be ordered from Customer Services free of charge. Please note there is a 10-working day turnaround time for this service.

3.1.5 Please attach (i) a map showing the location of the site and (ii) a plan showing the following details:

- Total contributing stormwater catchment for each outfall/discharge point;
- All mitigation measures and features of the stormwater treatment and disposal system;
- Stormwater discharge points;
- Property boundaries and any watercourses within or near the site;
- Directional stormwater flow arrows;
- Secondary flow paths; and
- Erosion and sediment control features/components (if applicable)

The map and plan should be no larger than A3 and have a scale, legend and north point.

3.2 Treatment and capacity of the stormwater system

3.2.1 Please fully describe the stormwater treatment system:

Roofs

- 3.2.2 Will the stormwater be discharged via a subsurface drainage system located in the soil layer? ☐ Yes ☐ No
- 3.2.3 Will the stormwater system be designed to prevent the entry of all other surface runoff? ☐ Yes ☐ No
- 3.2.4 If no, please describe:
- 3.2.5

Roads, hardstand areas on individual lots, rights-of-way, and roofs (if not treated separately)

- 3.2.6 How will stormwater be treated prior to discharge? Please tick those which apply.
- by an infiltration system, e.g. infiltration swales, infiltration basins, etc.? ☐
- by a filtration system, e.g. swales? ☐
- by a proprietary device? ☐
- by settling, e.g. detention pond, etc.? ☐
- 3.2.7 Will the first flush of stormwater be treated separately from the rest of the stormwater? ☐ Yes ☐ No
- If yes, from which surfaces? ☐ Roads ☐ Hardstand areas on lots ☐ Other hardstand areas
- If yes, which depth will be treated? ☐ 15 mm ☐ 20 mm ☐ 25 mm ☐ Other:
- If yes, what volume will be treated? cubic metres
- If yes, will a splitter box be used? ☐ Yes ☐ No, other:
- 3.2.8 What is the capacity of the stormwater system(s) in terms of treatment and storage:
- Storm event(s)?

Duration:

Volumes (m³):

Flow rate (l/s):

If the different stormwater system components have a variety of capacities, provide details of all, including total capacity with your application.

3.2.9 What are the secondary flow paths for stormwater that exceeds the capacity of the stormwater system?

Conveyance to the stormwater system:

In excess of the capacity of the treatment devices:

Note: You need to supply defined secondary flow paths for all stormwater discharges flows from rain events up to and including 2% AEP 24-hour rainfall event that exceed the capacity of the stormwater treatment device and discharge off-site. You will need permission to discharge stormwater onto another person's property, including the road reserve. A copy of this written permission should be supplied with your application.

3.2.10 Have you used any published guidelines or specifications to design the stormwater system?

☐ No

☐ Yes, they are:

Note: Please ensure that you provide all calculations that support the sizing of the treatment systems and capacities given above. This should include a description of the methodology used, and all assumptions and data used in assessing runoff volumes and the capacity of the treatment system.

Please supply design plans for each component of the stormwater system and mitigation measure proposed (e.g. swales, sumps, oil-water interceptors, proprietary device, detention/retention ponds, infiltration basins or wetlands). The design plans should include all relevant sizing/capacity measurements, i.e. length, width, side slopes, gradient, etc.

3.3 Design details of the stormwater system

3.3.1 Do any / all the sumps have submerged outlets?

☐ No

☐ N/A

☐ Yes, the following:

3.4 Infiltration systems - please answer these questions if you are installing an infiltration system. Otherwise please go to (3.5).

3.4.1 What will the volume of the device be?

cubic metres

3.4.2 What will the base area of the device be?

square metres

3.4.3 Will the infiltration system be lined with at least 200 mm of sandy loam topsoil?

☐ Yes

☐ No, other:

3.4.4 Will the infiltration system be vegetated with grass or plants?

☐ No

☐ Yes, as follows:

3.4.5 Will the infiltration system have a design infiltration rate between 12 and 75 mm/hr?

☐ Yes

☐ No

- 3.4.6 Will the infiltration system be fitted with an underdrain(s)? No
- Yes, they will discharge into:
- 3.4.7 Will the rain garden be designed with at least 1000 mm of topsoil? Yes No
- No
- 3.4.8 Will the rain garden be vegetated with water tolerant plant species? Yes, as follows:
- No
- 3.4.9 Will the rain garden have a media mix in accordance with section 8 of New Zealand Transport Agency Document 'Stormwater Treatment for State Highway Infrastructure' 2010? Yes, as follows:
- 3.4.10 Will there be a minimum of one metre of undisturbed soil between the base(s) of the infiltration device component(s) and the highest recorded groundwater level? No
- Yes, the separation distance will be at least:
- No
- 3.4.11 Will the base(s) of any soak pits extend into free-draining gravels? Yes, to a depth of:

3.5 **Swales – please answer these questions if you are installing a swale. Otherwise please go to (3.6).**

- 3.5.1 Swale dimensions:
- Length (m):
- Base width (m):
- Side slope: 1
- Longitudinal slope (metres per metre):
- 3.5.2 Swale grass length:
- What will the swale grass length be maintained at? mm to mm
- 3.5.3 Will the swale have an average residence time of at least 9 minutes? ☐ Yes ☐ No ☐ N/A

3.6 **Proprietary devices – please answer these questions if you are installing a proprietary device. Otherwise please go to (3.7).**

- 3.6.1 Which device will be used?
- 3.6.2 What flow is the device capable of treating before flows bypass?
- Note: If a Hynds Up-Flo Filter or similar proprietary device will be used please provide the sizing sheet produced by the manufacturer.*

3.7 **Settling devices – please answer these questions if you will be installing a detention device. Otherwise please go to (3.8).**

- 3.7.1 Volume of the device:
- 3.7.2 Detention time in the device – at least: ☐ 24 hours ☐ 48 hours ☐ other:
- 3.7.3 Discharge rate from the device:

3.8 Soak pits – please answer these questions if you will be installing a soak pit(s).

- 3.8.1 What will the dimensions of the soak pit be? m x m base and m height
- 3.8.2 What rainfall event will the soak pit be sized for? year minute/hour event

3.8.3	Will there be at least one metre between the base(s) of the soak pit(s) and the highest recorded groundwater level?	Yes	No, there will be
3.8.4	Please describe any other components of the stormwater system, including all relevant design specifications, treatment capabilities, and capacities.		
3.8.5	At least one month prior to the construction of the stormwater system, will you submit to Environment Canterbury, Attention: RMA Monitoring and Compliance Manager, design plans of the stormwater system to be installed?	Yes	No
3.8.6	Will you submit a certificate signed by a Chartered Professional Engineer with stormwater system construction experience to Environment Canterbury, Attention: RMA Monitoring and Compliance Manager, to certify that the stormwater system has been constructed in accordance with the design plans?	Yes No because	

Please supply design plans for each of the treatment devices and mitigation measures used, e.g. swales, sumps, oil-water interceptors, detention/retention ponds, infiltration basins or wetlands.

3.9 Nature of the discharge

- 3.9.1 List all potential sources of contaminants at the site. Include those which may result from accidental spills.

N/A - rainwater
soakage to ground

- 3.9.2 In the table below (extend it as required to include all contaminants that may be discharged from the site), please list:
- All contaminants that could be washed off surfaces during rainfall events;
 - The concentrations of these contaminants in stormwater prior to and after any treatment proposed;
 - The contaminant removal efficiency of the stormwater system; and
 - Any appropriate guideline value that you may have used in your assessment to evaluate the effect of the discharge.

Contaminant	Concentration (pre-treatment) (mg/L)	Efficiency of stormwater treatment device (% Contaminant Removal)	Concentration (Post-treatment) (mg/L)	Guideline Value (mg/L)

Describe the source of the information (i.e. technical publication, monitoring data) and the assumptions used to determine the types and concentrations of contaminants listed above. Also provide an explanation regarding why these guideline values were selected below:



Performance of mitigation measures

- 3.9.3 Will any potential contaminants NOT be treated by the stormwater system? ☐ Yes

N/A



N/A Please detail:

- 3.9.3 Provide information and/or calculations to support the treatment efficiencies used in the analysis of residual contaminant concentrations.

3.10 Inspections, maintenance and monitoring of the stormwater system

3.10.1 Who will be responsible for maintaining the stormwater system for the duration of the consent?

☐ The lot owner(s) ☐ The Territorial Authority (TA) ☐ A body corporate ☐ Other:

N/A - No storm

Note: water
treatment
applied

uncils, please provide their written confirmation/approval/acceptance with this

Note: proposed.

please provide details of who will hold responsibility for operating and maintaining the stormwater system, and the organisational structure which will support this process. Please advise measures in place to prevent dissolution of the body corporate or steps that will be taken if dissolution occurs.

3.10.2 If the TA will be responsible for the maintenance of the system: will the maintenance be carried out in accordance with the TA's maintenance schedule

☐ Yes ☐ No

3.10.3 If the TA will not be responsible for the maintenance, or the maintenance will not be in accordance with the TA's maintenance schedule:

3.10.4 How often will the stormwater system be inspected?

☐ Annually ☐ 6-monthly ☐ 4-monthly ☐ Other:

3.10.5 Will maintenance of the system include:

(i) Removal of litter, visible layers of hydrocarbons and accumulated sediment?

☐ Yes ☐ No

(ii) Maintaining a healthy and continuous vegetative cover?

☐ Yes ☐ No ☐ N/A

(iii) Repairing erosion and scour at inlets and outlets?

☐ Yes ☐ No

(iv) Removal of sediment from sumps when it occupies more than one quarter of the capacity of the sump below the outlet?

☐ Yes ☐ No

3.10.6 Will you monitor contaminant concentrations in the soil of any infiltration devices?

☐ No

☐ Yes, every 2 or 5 or 10 or years.

The following contaminants will be monitored:

The proposed trigger levels are:

Trigger levels determined using:

What soil testing methodology will be undertaken to assess contaminant concentrations in the soil of infiltration devices?

Will the contaminated soil be removed and replaced with uncontaminated soil?

☐ Yes ☐ No

3.10.7 Will you dispose of any material removed from the stormwater system at a facility authorised to receive it and provide Environment Canterbury written confirmation of this disposal?

☐ Yes ☐ No

- 3.10.8 Will you retain the records of services carried out on the stormwater system and make these available to Environment Canterbury on request? ☐ Yes ☐ No
- 3.10.9 Is there a management plan or do you propose to develop one for the site that sets out how the stormwater system will be operated and maintained? ☐ Yes ☐ No
- 3.10.10 Please describe any additional inspections, maintenance and monitoring proposed.
- 3.10.11 Please describe any emergency response procedures that will be undertaken in the event of a spill of fuel or any other contaminant to ensure that the spill is contained, cleaned up and does not result in any adverse effects on the receiving environment or the effectiveness of the stormwater system.

3.11 Construction Phase

- 3.11.1 Does the discharge include sediment-laden water from the construction phase of the site?
☒ No ☐ Yes, the following mitigation is proposed:

Note: Please ensure that you provide a plan that clearly shows and/or describes the type and location of all proposed mitigation measures.

- 3.11.11 Where will the sediment-laden water discharge to?
☐ into land ☐ into surface water, in this waterway(s):

- 3.11.12 Will best practice guidelines be used? No ☐ Yes, these:

Our expectation is that a maximum concentration of total suspended solids (TSS) in any discharge leaving the site should not exceed 100gTSS/m³ of discharge and an Erosion and Sediment Control Plan, including dust mitigation measures, is supplied with your application. This can usually be modified later in discussion with your contractor and Regional Leader Compliance and Enforcement Canterbury Regional Council

Note: Please ensure that you provide all calculations that support the sizing and capacities of the proposed mitigation measures described above.

4 LEGAL AND PLANNING MATTERS

Section 15 of the Resource Management Act 1991 provides for regulation of activities in relation to the discharge of contaminants into air, into or onto land or into water.

4.1 Please classify the proposal against the relevant rule(s) in the relevant regional plan

- 4.1.1 Which regional plan does this activity fall under? Refer to section 4 of the attached AEE.
- 4.1.2 Please list the relevant rule(s) of this plan:
- 4.1.3 What is the status of this activity?
- | | | | |
|---------------|------------|--------------------------|---------------|
| Permitted | Controlled | Restricted discretionary | Discretionary |
| Non-complying | | | |

- 4.2** Please provide a full assessment of the proposal against the above rule(s), including an assessment against each condition of the rule(s)
- 4.3** If you consider part of the proposal is a permitted activity, please provide a full assessment against the conditions of that rule
- 4.4** Please provide an assessment of the proposal against any relevant objectives, policies or other provisions of any National Policy Statements, Coastal Policy Statements, National Environmental Standards, the Canterbury Regional Policy Statement, Iwi Management Plan, and any other relevant plan or proposed plan. A list of policies and objectives relevant to this proposal may be found in the planning assessment sheet which accompanies this form.

4.5 The purpose of the Resource Management Act (1991) is to promote the sustainable management of natural and physical resources.

Does your proposal meet the requirements of Part 2, Section 5 (view [here](#))?

☐ Yes ☐ No

PRINCIPLES

4.6 Matters of National Importance (section 6 - view [here](#))

Do you consider your proposed activity considers the Matters of National Importance?

☐ Yes ☐ No

4.7 Other Matters (section 7 - view [here](#))

Do you consider your proposed activity considers Other Matters?

☐ Yes ☐ No

4.8 Treaty of Waitangi (section 8 - view [here](#))

Do you consider your proposed activity consider the principles of the Treaty of Waitangi?

☐ Yes ☐ No

5 CONSULTATION AND WRITTEN APPROVAL OF AFFECTED PERSONS

Consultation with all persons potentially affected by your activity prior to lodging your application may result in considerable time and cost savings.

Ngāi Tahu in Canterbury

Refer to Section 7 of the attached AEE

Te Rūnanga o Ngāi Tahu is the statutory authority representing iwi members and includes ten local rūnanga within Canterbury, known as Papatipu Rūnanga. 'Papatipu' refers to ancestral land. Local rūnanga have the status of mana whenua with kaitiaki status (guardianship) over land and water within their takiwā (territory).

Depending on where the activity is to occur within Canterbury, the values of one or more Papatipu Rūnanga may be affected. Iwi interests as a whole may also be affected where an activity is to occur within, adjacent to, or affecting an area recognised in the Ngāi Tahu Claims Settlement Act 1998 as a Statutory Acknowledgement area. In those circumstances, Te Rūnanga o Ngāi Tahu will be involved in management of the area.

For assistance with answering the below questions, please refer to our webpage [Ngāi Tahu and the consent process](#)

Have you consulted with the Papatipu Rūnanga and/or Te Rūnanga o Ngāi Tahu? ☒ Yes ☐ No

If 'Yes', please state who you have consulted with and attach any evidence of your consultation, including any written approvals for this application:

Note: Ngāi Tahu as an iwi, and specifically Papatipu Rūnanga representing mana whenua, are considered an affected party where effects on cultural values are minor or more than minor, in accordance with Section 95E of the RMA. Environment Canterbury MUST notify an application if the adverse effects of your proposed activity on cultural values are determined to be minor or more than minor unless you have obtained the written approval of Papatipu Rūnanga and/or Ngāi Tahu for your proposal. Consultation before lodging your application is one of the best ways of identifying adverse effects.

Non-notified applications

Non-notified consents are for activities which have minor adverse effects on the environment. For your activity to be considered on a non-notified basis you must determine whether there are any persons potentially affected by your proposed activity and if there are, you must consult them and obtain their written approval (e.g., Iwi, Fish and Game Council, Department of Conservation, Land Information New Zealand, Owners of nearby structures/infrastructure (e.g. NZTA), Other consent holders, Neighbouring land owners and occupiers, Environment Canterbury River Engineering). If you are unsure who may be an affected party, please call us. Non-notified consents are significantly cheaper and quicker to process.

Limited notified and fully notified applications

Notified consents (either limited notified or fully notified consents) are for activities which do not meet requirements in the RMA for processing on a non-notified basis.

If your assessment of effects has shown that adverse effects on the environment are likely to be more than minor and/or there are people who may be adversely affected from whom you are unable to obtain written approval, you may wish to request that your application be publicly notified. This will avoid possible delays in the processing of your application.

The final decision to notify or not notify an application will still be made by Environment Canterbury.

Please note that an application cannot be notified unless there is sufficient information for the notice that makes it clear what is being applied for, and how it might affect the environment (including people).

I request that my application is notified. (check box) ☐

Please provide any consultation details and written approvals obtained in the space provided below.

5.1 Consultation details

5.1.1 Have you consulted with iwi?

Refer to Section 7
of the attached
AEE.

☒ Yes ☐ No

5.1.2 If yes, who did you consult?

5.1.3 Who else have you consulted?

5.1.4 What was their response?

5.1.5 How have you addressed any concerns they may have had?

5.1.6 Written approval of affected parties

If you have obtained the signature of affected persons, please give their details below. **If yes**, please give their details below. Please note that for us to accept the approvals they must each complete and sign the Written Approval of Persons Likely Affected – FORM8A, found [here](#). Please attach the completed forms to this application.

Name	Address	Contact details (phone, email etc.)

Note: The City/District Council or Environment Canterbury River Engineers may be responsible for maintaining drains and water races. As owners and operators, they may be an adversely affected party.

6 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This information is **essential** for the processing of this application. Please fill out in as much detail as possible and attach all evidence or documentation you have that supports your descriptions.

6.1 DESCRIPTION OF THE AFFECTED ENVIRONMENT Refer to Section 3

6.1.1 Describe the topography of the land, the history of the **of the attached** and surrounding land-use(s).
AEE.

6.2 Soils and groundwater

Soil

- 6.2.1 What are the soil and subsoil types at the site?
- 6.2.2 Is the soil below the base of your proposed stormwater system free draining? ☒ Yes ☐ No
- 6.2.3 What is the infiltration rate beneath the stormwater system?
- 6.2.4 How was the infiltration rate beneath the stormwater system determined?
- 6.2.5 Was a test pit used to identify the underlying soils? ☐ Yes, records are included with application ☒ No.

Groundwater

- 6.2.6 Groundwater is: ☐ Confined ☐ Semi-confined/Unconfined
- 6.1.1 What is the direction of groundwater flow (i.e., northwest to southeast)?
- 6.1.2 What is the highest seasonal groundwater level beneath the site or near the site (in metres)?
- 6.1.3 How was the highest groundwater level determined?
- 6.1.4 How many wells are located within 1 kilometre down-gradient of the discharge?
- 6.1.5 What depths are the down-gradient wells screened to? to metres
- 6.1.6 How many are active?

They are used for: ☐ Domestic Supply ☐ Irrigation ☐ Stock water
☐ Monitoring ☐ Commercial ☐ Other

Will the discharge occur within a Community Drinking Water Supply Protection Zone?

☐ No ☐ Yes, for the following well(s):

6.1.7 Will the discharge occur within the Christchurch Groundwater Protection Zone?

☐ No Yes: ☐ Zone 1 ☐ Sub-zone 1A ☐ Sub-zone 1B
☐ Sub-zone 1C ☐ Sub-zone 1D ☐ Zone 2 ☐ Zone 3

6.1.8 Are there any NES drinking water sites located within a 1-kilometre radius down-gradient of the discharge?

☐ No

☐ Yes, they are:

6.1.9 What are the following contaminant levels at the nearest groundwater monitoring sites?

Copper:	(min to)	(max)
Zinc:	(min to)	(max)
Lead:	(min to)	(max)

Hydrocarbons	(min to)	(max)
Faecal:	(min to)	(max)
Other	(min to)	(max)

Note: Please provide details of the wells used, when sampling began, and, if applicable, when sampling ceased.

6.2 Surface Water

6.2.1 Are there any water bodies (including lakes, wetlands, rivers, streams, springs, drains and stock water races) within, or immediately adjacent to, the site and the stormwater system? *(Note: If yes, what is the distance and direction to the surface water body?)*

☐ Yes, name(s):

(if known)

☐ No

6.3 Other discharge consents

6.3.1 Are there any other authorised discharges into land within 1-kilometre radius of your site?

☒ No

☐ Yes, there are:

Please detail consent numbers and associated activities.

7 ASSESSMENT OF ACTUAL & POTENTIAL EFFECTS OF THE PROPOSAL ON THE ENVIRONMENT

You must include an assessment of the effects of your proposal on the environment in this part of your application.

[Section 88](#) of the Resource Management Act 1991 requires that each application includes an assessment of the actual and potential effects of the activity on the environment. This assessment must be prepared in accordance with the [Fourth Schedule](#) of the Resource Management Act. A copy of this schedule is available [online](#) or from Customer Services.

The assessment of effects will differ for each application depending on the type and scale of the activity. Consultation is one of the best ways of identifying adverse effects. Please contact Customer Services with any questions on ecinfo@ecan.govt.nz or via phone on (03) 353 9007 or 0800 324 636 (0800 EC INFO).

For further assistance in preparing this assessment, you may find the Ministry for the Environment Publication "[A guide to preparing a basic assessment of environmental effects](#)" useful.

Refer to Section 5 of the attached AEE.

7.1 Adverse effects of the discharge of contaminants on groundwater quality

7.1.1 What effects will the expected concentrations of contaminants in the stormwater after treatment have on groundwater quality? Explain.

7.1.2 If the site is on the Listed Land Use Register (LLUR) are there likely to be effects on groundwater quality due to the discharge mobilising existing contamination? Explain.

7.2 Adverse effects from slow entry of stormwater into groundwater (ponding)

7.2.1 Are there any likely adverse effects due to stormwater overflowing from, or 'backing up', in the stormwater system?

☐ Yes ☐ No

7.2.2 Describe or explain:

7.3 Adverse effects of localised changes in groundwater levels

7.3.1 Is it likely that groundwater levels beneath your stormwater system will be increased due to the discharges from your site?

☐ Yes ☐ No

7.3.2 Describe or explain:

7.3.3 Is there obvious hydraulic connectivity between groundwater under the site and any surface water bodies within, or immediately adjacent to, the site?

☐ Yes ☐ No

7.3.4 Describe or explain:

7.3.5 Are there any anticipated effects on the surface water courses that may occur as a result of the change in land-use and discharge of stormwater, i.e. will the discharge affect base flows?

☐ Yes ☐ No

7.3.6 Describe or explain:

7.4 Adverse effects on the accumulation of contaminants in soil

7.4.1 If you have proposed to discharge stormwater via an infiltration system(s), have you proposed mitigation to ensure that contaminants do not cause adverse effects on soil and water quality?

☐ Yes ☐ No

7.4.2 Describe or explain:

7.1 Adverse effects of sediment laden discharges

7.5.1 Will the discharge affect groundwater or surface water quality?

☐ Yes ☐ No

7.5.2 Describe or explain:

7.5.3 Will the discharge affect groundwater or surface water quantity?

☐ Yes ☐ No

7.5.4 Describe or explain:

7.2 Effects on Amenity Values, People and Communities

7.2.1 What hours of work will works occur? Between am and pm inclusive

7.2.2 Will works be carried out on weekends or public holidays? ☐ Saturdays ☐ Sundays ☐ Public holidays

7.3 Adverse effects of the discharge of contaminants on groundwater quality

7.7.1 What effects will the expected concentrations of contaminants in the stormwater after treatment have on groundwater quality? Explain.

7.7.2 If the site is on the Listed Land Use Register (LLUR) are there likely to be effects on groundwater quality due to the discharge mobilising existing contamination? Explain.

7.4 Adverse effects from slow entry of stormwater into groundwater (ponding)

7.8.1 Are there any likely adverse effects due to stormwater overflowing from, or 'backing up', in the stormwater system?

☐ Yes ☐ No

7.8.2 Describe or explain:

7.5 Adverse effects of localised changes in groundwater levels

7.9.1 Is it likely that groundwater levels beneath your stormwater system will be increased due to the discharges from your site?

☐ Yes ☐ No

7.9.2 Describe or explain:

7.9.3 Is there obvious hydraulic connectivity between groundwater under the site and any surface water bodies within, or immediately adjacent to, the site?

☐ Yes ☐ No

7.9.4 Describe or explain:

7.9.5 Are there any anticipated effects on the surface water courses that may occur as a result of the change in land-use and discharge of stormwater, i.e. will the discharge affect base flows?

☐ Yes ☐ No

7.9.6 Describe or explain:

7.6 Adverse effects on the accumulation of contaminants in soil

7.10.1 If you have proposed to discharge stormwater via an infiltration system(s), have you proposed mitigation to ensure that contaminants do not cause adverse effects on soil and water quality?

☐ Yes ☐ No

7.10.2 Describe or explain:

7.1 Adverse effects of sediment laden discharges

7.11.1 Will the discharge affect groundwater or surface water quality?

☐ Yes ☐ No

7.11.2 Describe or explain:

7.11.3 Will the discharge affect groundwater or surface water quantity?

☐ Yes ☐ No

7.11.4 Describe or explain:

7.2 Effects on Amenity Values, People and Communities

7.2.1 What hours of work will works occur? Between am and pm inclusive

7.2.2 Will works be carried out on weekends or public holidays? ☐ Saturdays ☐ Sundays ☐ Public holidays

7.3 Effects on Ngāi Tahu Values

For assistance with answering the below questions, please refer to our webpage [Ngāi Tahu and the consent process](#). [Iwi Management Plans](#) are available to help applicants identify matters of importance to iwi. These plans also provide direction on how best to avoid, remedy or mitigate effects on cultural values.

- 7.3.1 Which Papatipu Rūnanga cover(s) the site where the proposed activity is to occur?
- 7.3.2 Is the proposed activity occurring within, adjacent to, or likely to affect a Statutory Acknowledgement Area?
- 7.3.3 Is the proposed activity within a silent file area?
- 7.3.4 Please provide an assessment of the effects of the proposed activity on Ngāi Tahu values. To do this you will need to reference the relevant policies in the [Iwi Management Plans](#). Where appropriate, this assessment may include detail on the effects of the proposed activity on: sites of historic or cultural significance, surface water and groundwater quality, flora and fauna of cultural significance, areas of historical or spiritual importance, areas of significant landscape value, and waterways and wetlands.
- 7.3.5 Please provide details on the steps that you will take to ensure effects on Ngāi Tahu values are avoided, mitigated or remedied
- 7.3.6 If you are proposing to excavate some of your site, will you accept an accidental discovery condition, such as the condition below?

☐ Yes ☐ No

☐ Yes ☐ No

☐ Yes ☐ No

Accidental Discovery Protocol Condition

In the event of any discovery of archaeological material:

- a) The consent holder shall immediately:
 - i. Cease earthmoving operations in the affected area and mark off the affected area; and
 - ii. Advise the Canterbury Regional Council of the disturbance; and
 - iii. Advise Heritage New Zealand Pouhere Taonga of the disturbance.
- b) If the archaeological material is determined to be Kōiwi Tangata (human bones) or taonga (treasured artefacts) by Heritage New Zealand Pouhere Taonga, the consent holder shall immediately advise the office of the appropriate rūnanga (office contact information can be obtained from the Canterbury Regional Council) of the discovery.
- c) If the archaeological material is determined to be Kōiwi Tangata (human bones) by Heritage New Zealand Pouhere Taonga, the consent holder shall immediately advise the New Zealand Police of the disturbance.

Work may recommence if Heritage New Zealand Pouhere Taonga Trust (following consultation with rūnanga if the site is of Maori origin) provides a statement in writing to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager that appropriate action has been undertaken in relation to the archaeological material discovered. The Canterbury Regional Council shall advise the consent holder on written receipt from Heritage New Zealand Pouhere Taonga that work can recommence.

Advice Note:

This may be in addition to any agreements that are in place between the consent holder and the Papatipu Rūnanga. (Cultural Site Accidental Discovery Protocol).

Advice Note:

Under the Heritage New Zealand Pouhere Taonga Act 2014 an archaeological site is defined as any place associated with pre-1900 human activity, where there is material evidence relating to the history of New Zealand. For sites solely of Maori origin, this evidence may be in the form of accumulations of shell, bone, charcoal, burnt stones, etc. In later sites, artefacts such as bottles or broken glass, ceramics, metals, etc., may be found or evidence of old foundations, wells, drains, tailings, races or other structures. Human remains/koiwi may date to any historic period.

It is unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site without the prior authority of the Heritage New Zealand Pouhere Taonga. This is the case regardless of the legal status of the land on which the site is located, whether the activity is permitted under the District or Regional Plan or whether a resource or building consent has been granted. The Historic Places Act provides for substantial penalties for unauthorised damage or destruction.

7.4 Cumulative effects

- 7.4.1 Please provide an assessment of the expected cumulative effects of your stormwater discharges with regards to the matters discussed above:

7.5 Other

- 7.5.1 Will you provide a copy of the resource consent to any person exercising your consent and explain to them how to comply with the conditions of the consent? ☐ Yes ☐ No
- 7.5.2 Will you notify Environment Canterbury at least two days before starting works? Yes ☐ No ☐
- 7.5.3 If you answered "No" to any of the questions above, please explain why.

8 ADDITIONAL MITIGATION MEASURES

- 8.1 Please provide details of any mitigation measures proposed that have not been included elsewhere in this application.

8.2 Consideration of alternatives

- 8.2.1 Were any alternative locations or treatment options considered?

☒ Yes ☐ No

- 8.2.2 If yes, what were they and why were they rejected? Refer to Section 3.4 of the attached AEE.

9 OTHER INFORMATION

9.1 Duration requested

- 9.1.1 Please specify the duration sought for your consent(s):

35 years months.

Note: The maximum duration allowed under the Act is 35 years.

9.2 Start date

Note: Resource consents lapse five years after their commencement date unless the consent has been given effect to or an application is made to Environment Canterbury to extend this period.

- 9.2.1 When do you propose to start the activity?

(date/month/year)

Within the next 12 months

9.3 Additional notes to applicants

- Your application must be publicly notified unless Environment Canterbury is satisfied that the adverse effects on the environment will be minor and written approval has been obtained from every person Environment Canterbury considers may be adversely affected by the granting of your application (unless Environment Canterbury considers it unreasonable to require the obtaining of every such approval).
- Section 128 of the Resource Management Act 1991 sets out the circumstances in which Environment Canterbury may review the conditions of a resource consent. Under Section 128(c) Environment Canterbury may undertake a review at any time if the application contained any inaccuracies which materially influenced the decision made.
- The information you provide with your application, which includes all associated reports and attachments, is official information. It will be used to process your application and, together with other official information, assist in the management of the region's natural and physical resources. Access to information held by Environment Canterbury is administered in accordance with the Local Government Official Information and Meetings Act 1987, and Privacy Act 1993. Your information may be disclosed in accordance with the terms of these Acts. Public access is also provided to consent information via Environment Canterbury's website. *Environment Canterbury may withhold access to information in certain circumstances.* It is therefore important you advise Environment Canterbury about any concern you may have about disclosure of any of the information, which includes all associated reports and attachments, you have provided in this application (e.g. protection of personal information, trade secrets, commercially sensitive material, information which, if released, may cause serious offence to tikanga Maori, or any other information you consider should not be disclosed. While Environment Canterbury may still have to disclose information under the above legislation, it can consider any concern you wish to raise.

Please describe any concerns here:

9.4 Errors and omissions

9.4.1 When you receive your Resource Consent Documents please check that the details are correct. You have a 15 working day period after the decision is notified to allow you to object or advise of errors or omissions without cost.

10 APPLICANT SIGNATURE AND DATE

I/we **have read** all of the information on this application form and I understand all of the notes and I understand that I am liable to pay all actual and reasonable charges relating to the processing of this application.

I/we **also understand** that if the application is granted, I will be liable to pay all actual and reasonable charges related to compliance monitoring of the consent.

Signature of applicant

Date

Full name of person signing – please print

or Duly Authorised Person

Signature of applicant

Date

Full name of person signing – please print

or Duly Authorised Person

Note: Environment Canterbury must have written authorisation to process your consent application. Both the consultant (if used) and the applicant must sign this section.

- Where there are multiple people applying for consent, all persons must sign this form.
- If a company is the applicant, at least one director must sign this form.
- Anyone else who is applying for consent on behalf of another person, group of people or a company (e.g. a manager applying on behalf of a company) can sign this form and submit the application. However, written authorisation from the persons or company on behalf of which the consent is being applied for must be supplied with this application.

11 CONSULTANT SIGNATURE AND DATE

Laila Alkamil

Signature of consultant

15/03/2024

Date

Laila Alkamil

Full name of person signing – please print

LIST OF ATTACHMENTS THAT MUST BE INCLUDED WITH THE APPLICATION

- ☐ Map showing location of the site.
- ☐ A list or table of map references for each individual lot (if applicable).
- ☐ Plan showing the layout of the site and stormwater system.
- ☐ A plan(s) indicating the dimensions of the key features of the stormwater system.
- ☐ A cross-section plan of key features of the stormwater treatment system.
- ☐ Calculations for the design of the stormwater system and mitigation during the construction phase.
- ☐ Evidence of the proposed maintenance arrangement.
- ☐ A map that indicates the properties of people who have provided their written approval (if applicable).
- ☐ The contaminated land request response (if applicable).
- ☐ A detailed erosion and sediment control plan (if applicable).

CHECKLIST

Please ensure you:

- ☐ Complete all parts of this application form.
- ☐ Include an assessment of effects of the activity on the environment, set out in Section 7 of this application form.
- ☐ Include a site plan.
- ☐ Include a copy of the certificate of title, rates demand, subdivision plan or valuation notice for the site your application relates to.
- ☐ Sign and date this application form (both applicant and consultant if one is used).
- ☐ Include the appropriate initial fixed charge as set out [here](#)

Consider consulting local Rūnanga: If your proposed activity occurs:

- (a) Within a statutory acknowledgement area
- (b) Within a silent file area
- (c) Close to a site of cultural significance, or
- (d) Otherwise affects a site of cultural significance.



Form 9
Under Section 88 of the Resource Management Act 1991
Application for Resource Consent

To: Hurunui District Council
PO Box 13
Amberley 7441

Phone: 033148816
Email: planning@hurunui.govt.nz

-
1. I (full name) _____ apply for the following resource consent: Land use consent and/or Subdivision consent
 2. Describe the activity to which the application relates: *(i.e. explain the proposal referring to the District Plan issues of non-compliance)*
 3. The names and addresses of the owner and occupier (other than the applicant) of any land to which the application relates are as follows: *(give names and addresses)*
 4. The location of the proposed activity is as follows:

Address: _____

Legal Description: _____

Valuation Number: _____
 5. Are any additional resource consents required from Canterbury Regional Council for the proposed activity? If the answer is yes, please list:

Have these been applied for? _____

6. **I attach** in accordance with the Fourth Schedule of the Resource Management Act 1991, an assessment of environmental effects in sufficient detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment.
7. **I attach** the information required on the attached check sheet for land use or subdivision.
8. On 1 January 2012 the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) came into effect. Is the site currently, or previously, or more likely than not to have been used for an activity on the Hazardous Activities and Industries List (HAIL) as attached to this form? In order to help determine whether the NES applies, please answer the following questions:

Is an activity described on the HAIL currently being undertaken on the piece of land to which this application applies?	Yes ☐ No ☐
Has an activity described on the HAIL ever been undertaken on the piece of land to which this application applies to the best of your knowledge?	Yes ☐ No ☐
Is it more likely than not that an activity described on the HAIL is being or has been undertaken on the piece of land to which this application applies?	Yes ☐ No ☐
If 'Yes' to any of the above, then the NES for Assessing and Managing Contaminants in Soil to Protect Human Health may apply. Check the five activities to which the NES applies:	
Is the activity you propose to undertake removing or replacing a fuel storage system or parts of it?	Yes ☐ No ☐
Is the activity you propose to undertake sampling soil?	Yes ☐ No ☐
Is the activity you propose to undertake disturbing soil?	Yes ☐ No ☐
Is the activity you propose to undertake subdividing land?	Yes ☐ No ☐
Is the activity you propose to undertake changing the use of the land?	Yes ☐ No ☐
If 'Yes' to any of the above activities, then the NES for Assessing and Managing Contaminants in Soil to Protect Human Health is likely to apply and you are required to provide an assessment in relation to the NES.	

9. I enclose \$_____ being the relevant application fee.

10. _____ Date _____
Signature of applicant (or person authorised to sign on behalf of applicant)

11. Address for service of applicant:

Contact person: _____

(Name and designation)

Phone No: _____

Mobile No: _____

Email: _____

Note to applicant

You may apply for 2 or more resource consents that are needed for the same activity on the same form. You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Hazardous Activities and Industries List (HAIL)

October 2011



A Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
3. Commercial analytical laboratory sites
4. Corrosives including formulation or bulk storage
5. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
6. Fertiliser manufacture or bulk storage
7. Gasworks including the manufacture of gas from coal or oil feedstocks
8. Livestock dip or spray race operations
9. Paint manufacture or formulation (excluding retail paint stores)
10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
11. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
12. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
13. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
15. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
16. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
17. Storage tanks or drums for fuel, chemicals or liquid waste
18. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)
2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging
2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D Metal extraction, refining and reprocessing, storage and use

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E Mineral extraction, refining and reprocessing, storage and use

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F Vehicle refuelling, service and repair

1. Airports including fuel storage, workshops, washdown areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities
6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G Cemeteries and waste recycling, treatment and disposal

1. Cemeteries
2. Drum or tank reconditioning or recycling
3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

H Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment**I Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment**

Land use consent checklist

	Included	N/A
Completed application form (Form 9) i.e. all questions have been answered.		
Application fee enclosed or paid on-line. HDC Bank Account: 03-0802-0946666-00 – Ref: RC<Applicant name>		
A detailed description of the proposal.		
An assessment of the activity against the relevant rules, objectives and policies of the Hurunui District Plan.		
An assessment of environmental effects with details of any mitigation measures proposed. You may wish to refer to the assessment matters in the relevant chapter(s) of the Hurunui District Plan. This assessment may include specialist reports on matters such as traffic, heritage, noise or landscape.		
Record of title (less than 6 months old and relevant).		
If the application site is located within the Rural Zone and has a Land Use Capability of 1-3, as mapped by the New Zealand Land Resource Inventory, an assessment of the relevant provisions of the National Policy Statement for Highly Productive Land has been provided.		
Address the NES for Assessing and Managing Contaminants in Soil to Protect Human Health.		
Site plan to a metric scale (1:100, 1:200, 1:250, 1:500, 1:1000, 1:2000) showing (where relevant):		
Location and use of all existing buildings in relation to legal and internal boundaries.		
Location of any waterway and dimensions from its banks to any new buildings and/or earthworks.		
Vehicle access, manoeuvring, parking areas and driveway gradients, including stormwater treatment and disposal methods.		
Landscape plan showing location, species and height of all existing and proposed plants.		
Location of any conservation, heritage features or protected trees on the site or adjoining sites.		
Location of street trees on road reserve adjoining application site.		
Areas of proposed filling or excavation, retaining walls and existing and proposed.		

• Ground levels.		
• Building coverage (proposed and existing) in square metres.		
• Surveyed ground and finished floor levels.		
Floor plan to a metric scale (1:50, 1:100, 1:200) showing (where relevant):		
• Proposed uses.		
• Gross floor areas for each use.		
• Location of all kitchen facilities.		
• Doors and windows.		
• Overall dimensions of all buildings.		
Elevations to a metric scale (1:50, 1:100, 1:200) showing (where relevant):		
• Recession planes from accurate levels.		
• Maximum height.		
• Doors and windows.		
• Type of cladding.		
• Roof, wall and trim colours (British standard reference).		
Relocated buildings		
• Address where the building can be inspected and contact details to organise inspection.		
• Photos of elevations of the building.		
• Explanation of remedial works proposed (e.g. roofing, painting or replacing damaged cladding).		
Signage		
• Location plan (for both free standing and on-building signage).		
• Elevation showing height and dimensions of display area and stand.		
• Lettering and proposed colours.		
• Details of illumination and whether the sign has moving parts.		
Business activities		
• Estimated number of vehicle movements to and from the site.		
• Scale of activity e.g. number of persons to be employed or visitor design capacity.		
• Hours of operation.		

Appendix C. Form 8A

**FORM8A: WRITTEN APPROVAL OF
PERSON(S) LIKELY TO BE AFFECTED**

SECTION 95E RESOURCE MANAGEMENT ACT (RMA) 1991

TO: Consents Section
Environment Canterbury
PO Box 345
Christchurch 8140

Ph: (03) 353 9007
Fax: (03) 365 3194

FOR OFFICE USE ONLY

Application No:

A. Information for consent applicant

- In accordance with s95E of the RMA, an application need not be notified if the adverse effects on the environment are minor and if written approval has been obtained from every person who, in the opinion of the consent authority, may be adversely affected by the granting of the resource consent (An exception is if, in the Council's opinion, it is reasonable to require the obtaining of every such approval).
- The Council provides this form to help obtain such approvals. The documented approval of persons who could be adversely affected by any proposed activity could assist the processing of the application.
- A copy of the application should be made available with this form. Please include a list of documents provided in Part B over page.

The following is to be completed by the applicant prior to this form being completed by the person(s) or organisation(s) giving approval.

Surname: First names:

Surname: First names:

OR

Registered company name and number:

Property to which the application relates:

Contact person:

Phone/email:

Description of proposed activity for which application is made: (CRC number if known)

B. Information for person(s) or organisation(s) giving approval

Please ensure that you have read and understood the following notes before deciding whether or not to sign this form.

- The person(s), organisation(s) and/or property listed below are those which the applicant considers could be adversely affected by the proposed activity described above. The applicant may seek approval before lodging the application, but it is the Council which must decide which persons, organisations or properties may be adversely affected.
- You may wish to seek legal advice before you sign this form.
- If there is a hearing, you may withdraw your written approval before the date of the hearing (s104(4) RMA).
- If there is no hearing, you may withdraw your written approval any time before the consent is decided (s104(4) RMA).
- Conditional written approvals cannot be accepted.
- There is no obligation to sign this form, and no reasons need to be given.
- If this form is not signed, the application may be notified with an opportunity for submissions if Council deems there are affected persons, organisations or properties.
- If signing on behalf of a trust or company, please provide additional written evidence that you have signing authority.
- Contact Environment Canterbury Customer Services on 0800 324 636 if you have any questions or concerns.

The following is to be completed by person(s) or organisation(s) giving approval.

Surname: Kidner First names: Thomas
Phone: 027 749 5314 Email address: thomas.kidner@gmail.com
Property address: 380 Waipara Flat Road.
CRC or bore number likely to be affected:

My interest in the above property is as:

☒ Owner ☐ Occupier

I have authority to sign on behalf of all other owner(s)/occupier(s) of the above property:

☒ Yes ☐ No

This is written approval for a resource consent application for the following activity:

Solar Farming

I have read the full application for resource consent, the Assessment of Environmental Effects and have viewed any site plans (please list all document names and dates below):

☐ Yes ☐ No

In signing this written approval, I understand that the Council must then decide that I am no longer an affected person, and the Council must not have regard to any adverse effects on me.

☒ Yes ☐ No

TKidner
Signature

01/03/24
Date

Thomas Henry Kidner
Full name of person signing – please print

Appendix D. Landscape and Visual Assessment

FAR NORTH SOLAR FARM Ltd.

**Proposed Solar Farm
380 SH 7, Waipara, Canterbury**

landscape assessment

12 March 2024

23039_01

FINAL



Document Quality Assurance

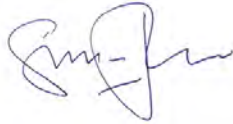
Bibliographic reference for citation: Simon Cocker Landscape Architecture Limited. 2024. <i>Proposed Waipara Solar Farm –380 Waipara Flat Road: Assessment of Landscape Effects</i> .		
Prepared by	Simon Cocker Landscape Architect Principal SCLA	
Reviewed by	Simon Cocker Landscape Architect Principal SCLA	
Ref.	23039_01	
Status: [FINAL]	Revision / version -	Issue Date: 12 March 2024
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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.

The proposed development involves minor earthworks to establish the appropriate contours and foundations for a solar farm, to establish a 143.8MWdc solar farm at 380 Waipara Flat Road, Waipara (refer to [Figure 1](#)). The property is described as LOT 2 DP 19025, LOT 1 DP 320376, SECS 3-4 SO 17514, RS 37988 RS 37989 and RS 37990. The area of the property is 242.4ha.

This document will focus on 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 publication¹ which includes guidance for the assessment of landscape and visual effects associated with ground-mounted solar PV systems.

The site is located within the Rural zone (Hurunui District Plan), and the Waipara Wine Zone.

It is understood that the activity status of the application is a discretionary activity under the Hurunui District Plan (2022).

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. July 2022)². 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 Conduct³. 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 Operative Hurunui District Plan (2022);
- Plan titled 'Module General Arrangement Layout – [143.8 MWp], Rev G';
- AEE prepared by WWLA Ltd., December 2023;
- Haigh Workman. Stormwater Assessment. 21 November 2023;
- Hanmore Land Management. Waipara Solar Farm. Expert Statement on Highly Productive Land. 9 September 2023;
- M.A.Harding. Canterbury Land Protection Strategy. June 2009;
- Waipara River Working Party. Waipara River Management Strategy. 2012;
- Boffa Miskell. Canterbury Regional Landscape Study. 14 May 2010;
- Lucas Associates. Landscapes of the Hurunui District. 1995;
- Jo Burzynska. Greening Waipara. Article in NZ Wine Grower Feb/March 2013;
- Pike Brown. Quantifying visual preferences in Canterbury. Landcare Research Manaaki Whenua. 2012.

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

² https://nzila.co.nz/media/uploads/2022_09/Te_Tangi_a_te_Manu_Version_01_2022_.pdf

³ Contained in Appendix 1 of: http://www.nzila.co.nz/media/50906/registered_membership_guide_final.pdf

- Aerial photography, Canterbury Regional Council GIS mapping, Bing Maps (aerial photography), and Google Earth.

A visit was undertaken on the morning of 23 May 2023. The weather conditions during the visit were drizzly with limited visibility and with light winds.

Visual simulations

Visual simulations of the proposal were prepared by Virtual View. These are included as [Appendix 4](#). The proposal was modelled based on the following:

- Solar panels created as per plan (230919-Gens-WPR-GA 143.8MWp_JA 570_Tr_2P_Tree-parcel.pdf)
- Panel tables spaced with a 10m pitch, giving a 4.5m minimum gap (clear space when panels are flat).
- Two x table layouts in portrait format. One table layout with 2 x 26 panels and one table layout with 2 x 13 panels.
- Panels will be fixed to tables rotating 55 degrees.
- Panel dimensions 2.27m x 1.13m, mounted in double portrait format (4.5m edge to edge)
- Angle of panels is noted on the simulations and corresponds to the time of day.
- Inverter are the size of a 20ft shipping container(6m by 2.4m, 2.9m high) , mounted on a small concrete strips. External finish of inverter building will be dark and natural;
- Gravel roads, 3m wide.
- Fence dimensions are a deer fence security fence. 2m high, plus three rows of barbed wire above.
- Landscaping mitigation is shown in [Figure 2a](#). This includes native plantings on unused slopes, and the boundary screen strip of mostly Japanese Cedar (*Cryptomeria Japonica*), with some strips replaced by native planting at the request of the immediate neighbor.
- Grape vines spaced as [Figure 2a](#) and maintained at approximately 2m tall.
- Boundary *Cryptomeria Japonica* planted in double staggered row at 1m centres. Max height varies from 3-5m
- Native vegetation planted within areas indicated on the plan. A range of species with a max height of 2-4m (as [Figure 2a](#)).

3.0 THE PROPOSAL

Far North Solar Farm Ltd seeks consent to construct photovoltaic solar farm, with solar panels contained within an area of around 180.8ha (78%) of the subject property. These will generate some 143,873kWp. The proposal is illustrated in [Figure 2a](#), and in [Plates 1 and 2](#) below. The panels will cover 64ha and therefore 28% of the ground will be in covered by panels.

The entire site (excluding vines, native planting areas and the boundary screening trees) will be grazed by sheep as it is currently, without cropping.

The project will utilise a single axis tracking system arranged in 1-module in portrait configuration. The arrangement includes 26 and 13 modules in series, corresponding to a 2 x 26 and 2 x 13 table arrangement. At maximum 'tilt' (this being the maximum height of the structures) the panels will be 4.5 m above the ground and the ground clearance height will be approximately 300 mm above ground (see Figure 2). When tilted down, the height will be approximately 1.55 m above ground.

The supporting piles will be 50mm wide with a maximum cross section height of 150mm and will be driven 2m into the ground. It is proposed that there will be 34,000 piles across the whole site.

The panels have 10m pitch (edge to edge) and spacing between the rows of 5.5m when lying flat.

The extent and location of the proposed solar panels will be influenced by existing infrastructure within, or crossing the site. The Site is bisected by four transmission lines and a gas pipeline, and this infrastructure requires mandatory setbacks. These setbacks, maintained under grass, will consequently serve to fragment the coverage of solar panels.

An MV room is proposed near to the road boundary with SH7. Thirty inverter stations (each the size of a 20' shipping container), are proposed at regular intervals along the road boundary of the site adjacent to the access tracks proposed. The external surfaces of the containers will be painted a dark and recessive colour.

A hardstand area will be created for the set down of hardware to the site, plus parking during construction. This will be a gravel area of less than 50m x 40m. A further area will be gravelled for the control room and switch yard onsite, of less than 20m x 30m, located near the existing transmission lines, but central to the site

An area in the south eastern corner of the site adjacent to Weka Creek and the road boundary will be planted in grape vines for productive purposes.

An exclusion zone is proposed around the existing house and buildings located on the site adjacent to the eastern boundary. No solar panels or any other works are proposed in this area.

The site is to be surrounded by a deer fence, 2m in height, topped with 3 strands of barbed wire

Site Preparation

Some internal shelterbelts will be removed to facilitate the proposed development. Because the mounting structures are piled, establishing the solar farm requires minimal earthworks. Earthworks are required for the following:

- Upgrade of existing accessways/construction of internal accessways;
- Creating a temporary compound for loading, unloading and turning (the hardstand area);
- Foundation strips for the inverters;
- Foundation blocks for the MV room, and;
- Perimeter security fencing.

Infrastructure Establishment and Construction

All access to the site during construction will be via the existing access off Waipara Flat Road (State Highway 7).

Construction activities will take place over a 12 month period, with construction and primary electrical works being carried out in the first few months of construction. Deliveries will be on a strict schedule during the regular working week with an average of 3 truck deliveries per day during the construction period.



Plate 1. Example images of proposed infrastructure

Landscape mitigation

Figure 2a illustrates how vegetation will be used to screen, soften or fragment views of the proposed structures.

Where existing vegetation is present and will not detract from the operational requirements of the Farm, this will be retained.

Screen planting along the boundaries of the Site is proposed for the purpose of precluding, or reducing the visibility of the Farm from specific areas or locations. Thus, it is proposed that the north western and south western (the latter being the boundary with Waipara Flat Road), and southern boundaries will be planted with a double staggered row of *Cryptomeria japonica* (planted as a shelterbelt at 1.2m centres). These plantings will be maintained to a height of some 5m so that screening is afforded to the proposed structures from external locations, but also avoiding shading on the solar arrays. This approach has been adopted in recognition of the fact that shelterbelts are a characterising feature of the plains landscape.

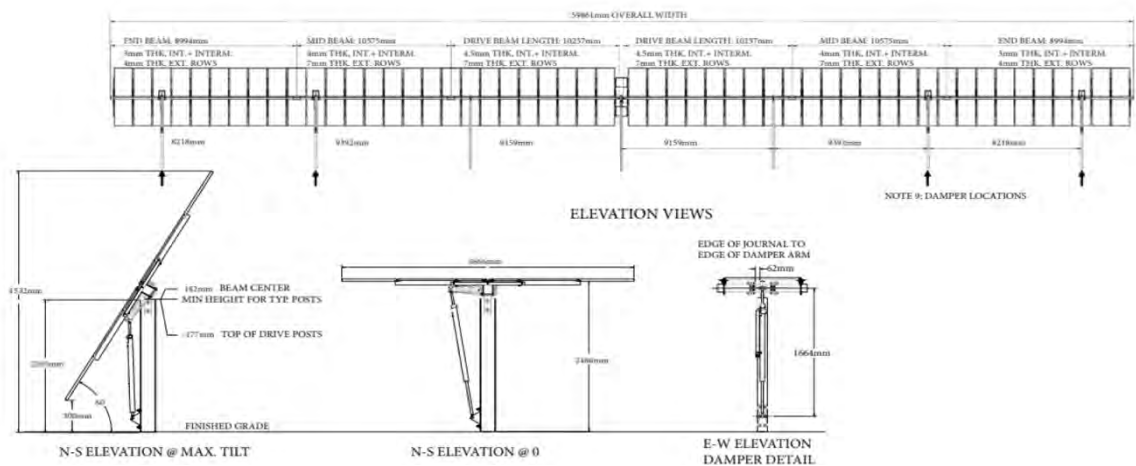


Plate 2. Sections and elevation of proposed solar array

Where existing shelterbelts currently define the external boundary, these shall be removed or trimmed if they will survive heavy pruning.

Mitigation planting along the north eastern (Weka Creek) boundary, and within the body of the Site will be undertaken as shown on Figure 2a, and on the steep inter-terrace slopes. Figure 3 illustrates how the property is patterned by a number of north western – south easterly aligned, and meandering inter-terrace slopes (refer to photos 1 and 2). These run approximately parallel to the river and separate the terraces on which the solar panels will be constructed.

In places, the eastern property boundary follows the lower inter-terrace slope, but in places, it is aligned along the crest of the slope, or on the river bed. The planting along the eastern boundary – a strip of some 10m in width – will comprise a mix of locally appropriate native species that occur on braided river terraces (River terrace – restoration mix), or will also include (where neighbours have indicated a preference), a shelterbelt screen of *Cryptomeria* along the eastern edge of this planting area.

Within the Site, the inter-terrace slopes will be planted with a reliable and fast growing native revegetation mix (Native revegetation screen mix), which also includes elements of the River terrace – restoration mix.

The cryptomeria will be planted as 60cm tall trees in a double staggered row (at 1.2m spacings, with the rows 1.0m apart), The planting screens will be maintained to a minimum height of 4.0m,.

Operational activities

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. The area planted in grapes will be implemented and managed by a local contractor. Water is already provisioned for this.

4.0 EXISTING ENVIRONMENT

4.1 The site context and character

Geology, topography, hydrology and vegetation

Figure 1 illustrates the location of the Site. It is situated on the western edge of Waipara, and is bounded by Waipara Flat Road on its south western edge, and adjoins Weka Creek to the north east.

Canterbury is frequently observed as a series of bands of landscape more or less parallel to the coast, with plains, downs, foothills, ranges, basins and alps. Hurunui district does not however, display such a simple stepped pattern, having fragmented plains and a complex of hills right to the coast.

The landscape has a north-east – south-west "grain" imparted by the mountains, hills and valleys. But that this grain is crossed by rivers – the Hurunui, the Waiau below Ferry Bridge, and the Waipara – flowing at right angles to this grain, to reach the sea through a series of gorges through the hills. A number of landscape assessment have described and evaluated the Canterbury landscape, including the 1995 Lucas Associates study and the Canterbury Regional Landscape Study. The former grouped the landscape into four broad landscape types but noted that these groupings do not adequately demonstrate local complexity or distinctiveness. The district does not consist of the simple bands of plains, downs, hills and ranges of much of the rest of Canterbury. Sub-groupings were therefore used, separating lowland plains from basins, hills from downs, and, high country ranges from basins.



Plate 3: Topography

The Lucas Associates study described the low-lying landscape within which Waipara was situated as forming a part of the 'Plains' landscape type, contained to the north / north west and south east by landscape types described as the Soft rock downlands. The plains landscape type was described as being broadly characterised by floodplains, wide riverbeds, terraces, fans and wetlands.

The Canterbury Regional Landscape Study broadly confirmed the Lucas Associates study with regard to delineating landscape types and land types. It determined that the subject Site was located within the Low Altitude Plains landscape type, and within the Lower Plains Land Type. This land type extends south to include the plains on which Amberley and Rangiora are situated, and the plains to the north of the Waimakariri River. The land type is described as being defined by broad, very low angle coalescing outwash fans and associated low terraces of the major rivers (Waimakariri, Rakaia, Rangitata and Waitaki Rivers), comprising Pleistocene glacial outwash gravels with variable loess cover, and extensive Holocene alluvium, coastal swamp deposits and minor inland dune belts. It describes the elevation as ranging from 0m to 150m, and the rainfall as being between 600 – 800mm/A.

These landforms are evident in the landscape around Waipara where, to the south of the Waipara township, Weka Creek converges with the Waipara River (refer to [Plate 3](#) above). These two watercourses have cut into the alluvial deposits to form a series of terraces, separated by inter-terrace slopes – some subtle, but others more substantial and some 4 or 5m in height (refer to [Figure 3](#) and [photos 1 and 2](#)). These inter-terrace slopes contain the braided watercourses which meander across broad, gravel flats (refer to [Plate 4](#) below).

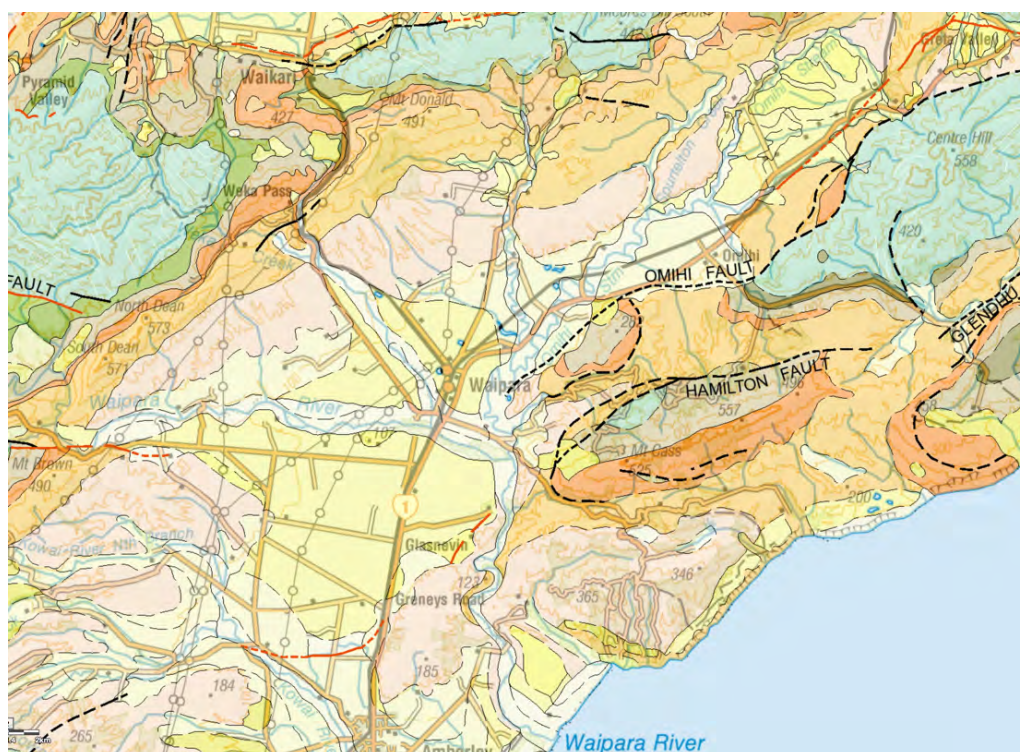


Plate 4: Geology

To the north and north west, the contour continues to rise where the downlands, and Weka Pass, contain this edge of the plain (refer to [photo 3](#)). Within this landscape of large skies and distant views across a flat landscape, the attention tends to be drawn to this elevated terrain.

As described above, the subject property comprises a series of terraces. The most extensive of these adjoins Waipara Flats Road on its north eastern side and slopes gradually from some 124m at its northern end, to around 80m at its southern end. Within the northern half of the property, a complex sequence of terraces and subtle inter-terrace slopes is evident, whilst within the southern half, the Creek is contained on its south western side by a single terrace and dominant inter-terrace slope.

As is evident from Plate 6 above and Figure 4, the subject property occupies a rural landscape characterised by large land holdings. To the north east, between MacKenzie Road and Weka Creek, a series of rectangular lots have been created and share a commonality with regard to their focus on (primarily) viticultural production. A number of the dwellings associated with these rural residential lots are located along the western edge of the terrace above the river and offer views to the west and south west across the river (refer to photos 4, 5, and 7).

To the east, dwellings located along the western edge of the Waipara township offer views to the west, across and along the river bed to the subject property (refer to photos 8 and 9).

In pre European times, within the wider Canterbury region, tangata whenua made regular annual movements, in the period from late spring through summer to autumn, to exploit seasonal flushes in food availability, and to preserve the produce for subsequent use. In the course of this annual dispersal, wide areas of coastal and inland territory were utilised for supplies such as fish, birds, and plant foods. The associated settlement pattern, of permanent base settlements where the population spent much of the winter, and seasonal specialised activity sites to which they dispersed at other times, appears to have been typical of the whole of New Zealand however, archaeological evidence of patterns of pre-European Maori settlement and seasonality in Canterbury is sparse.

Maori occupation sites in Canterbury were concentrated in the coastal zone, where food resources were most varied and abundant and where the climate was more benign. Horomaka (Banks Peninsula) provided the most extensive estuarine systems and the widest array of shellfish and fish resources. Such river and stream mouths were favoured early settlement locations, both on the steep coastlines north of the Waipara River, and on the low gravel coasts of Tai O Arai Te Uru (south Canterbury). The sites at the mouths of the north Canterbury rivers (the Waipara, Hurunui and Waiau) and smaller streams (such as the Motunau and Jed) have been explained as seasonal transit camps relating to inland bird exploitation.

Weka Pass Historic Reserve (some 15km to the north west of Waipara), contains a limestone rock shelter with examples of rock art. It is understood that the feature was used as an overnight shelter.

The name Waipara translates as 'muddy water'. The township had its origins as a railway town, at the junction of the main trunk line, and services heading west⁴ and now the town lies at one of the points on the Alpine Pacific Triangle⁵, with SH7 forming the recommended route to / from Hamner Springs.

The Weka Pass Railway has its base in Waipara (Glenmark station), and runs on 12km of track, running parallel to the Weka Creek on its northern side. The rail line follows the former route of the Waiau Branch, which diverged from the Main North Line and ran to Waiau.

Grapes were first planted in the Waipara valley in the 1980s and now, there are some 14 wineries within the surrounding area. Recently, the town and its wineries have been the focus of the 'Greening Waipara' movement which seeks:

"...to recognise the history of the land and to use this as a symbol of their regional identity and commitment to 'clean green New Zealand'."

And recognises the desire to protect 'our species and heritage':

"...where 150 years of development has enhanced the productive capacity of the land, but eliminated or displaced much of the original character. Consequently there is this groundswell, expressed most recently in the Waipara Valley, to do something and repair the damage or restore some of the heritage to its rightful and prominent place. Furthermore, there

⁴ <https://www.hurunui.govt.nz/community/about-the-district/our-towns>

⁵ <https://www.newzealand.com/int/feature/alpine-pacific-triangle/#map>

is a commercial opportunity to project a clean green image for Waipara to satisfy the demand for quality and sustainability from an increasingly discerning market – quality in the bottle and in the vineyard.”

The Waipara River Management Strategy explains that the Statutory Acknowledgement under the Ngāi Tahu Claims Settlement Act 1998. Summarises the history that Ngāi Tahu Whānui and include the following tikanga:

“There are a number of Ngāti Wairaki, Ngāti Māmoë and Ngai Tahu urupā and wāhi tapu along the river and associated coastline. Urupā are the resting places of Ngāi Tahu 11upuna and, as such, are the focus for whanau traditions Urupā and wāhi tapu are places holding the memories, traditions, victories and defeats of Ngāi Tahu 11upuna, and are frequently protected by secret locations.

The [Waipara] river and associated coastline was a significant mahinga kai, with kai moana [sea food], particularly paua, being taken at the mouth. The 11upuna had considerable knowledge of whakapapa [genealogy], traditional trails and tūranga waka [places for gathering food and taonga], ways in which to use the resources of the river, the relationship of people with the river and their dependence on it and tikanga [customs] for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today. The mauri of the Waipara River represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the river.”⁶

As a main tributary of the Waipara River, the values described above are also likely to apply (to some degree) to Weka Creek.

4.2 Statutory Matters

Hurunui Operative District Plan (2022)

It is understood that the proposal requires resource consent for the following matters:

- Rule 7.4.5(2) *Any energy activity that is not otherwise specified as a permitted, restricted discretionary or non-complying activity. Consent is sought as a discretionary activity for the establishment and operation of a solar farm on the application site.*
- Rule 13.4.3 *The removal of indigenous vegetation up to 5000m² within any site in any 5 year continuous period as a restricted discretionary activity, except where it is otherwise listed as permitted, restricted discretionary or non-complying activity.*

With regard to the second of the bullet points above, it is considered that the proposal will not infringe this rule. Vegetation within the Site comprises primarily exotic species and pasture grasses, with only limited and isolated examples of indigenous vegetation.

The Site is situated within the Rural Zone. This document describes the rural character as follows:

“The rural areas of the district have qualities, characteristics and amenity values that differ from those of settlements, in particular a sense of open space and the predominance of what is perceived to be a ‘natural’ landscape.

However the rural area is also a working environment, with a predominance of land-based activities such as farming, forestry, extractive industries and other forms of primary production and associated rural industries, and a living environment for residents. It is also a popular area for both residents and visitors to enjoy outdoor recreational pursuits.

⁶ Schedule 74 Ngāi Tahu Claims Settlement Act 1998

Other non-primary production land uses such as infrastructure and renewable electricity generation activities also have a functional and locational need to be located in the rural area.

By their nature, rural activities often generate effects such as noise, dust, traffic generation, and odour. Provided these effects do not constitute a genuine nuisance or health and safety risk, they must be accepted as anticipated components of rural amenity values.....”

Relevant objectives and policies relating to the Rural Zone are as follows:

Objective 3.1

The character and amenity values of rural areas of the district are maintained while providing for a variety of activities including those associated with primary production.

Policy 3.1

To ensure that rural areas remain productive by recognising that some primary production activities lead to a range of effects including noise, dust, odour, traffic and visual effects.

Policy 3.2

To protect highly productive soils by discouraging activities that will have adverse effects on their continued productive use and life-supporting characteristics that are difficult to reverse.

Policy 3.5

To enable a variety of activities to occur within rural areas while managing adverse effects on character and amenity values by seeking that the scale and siting of development.

- 1. Maintains a dominance of open space and plantings over buildings, especially when viewed from public places such as roads;*
- 2. Maintains privacy and rural outlook for residential activities;*
- 3. Protects access to light for sensitive activities and primary production;*
- 4. Achieves an appropriate level of compatibility with existing development within the surrounding area;*
- 5. Avoids unduly affecting the amenity of existing sensitive activities being exposed to noise and adverse light emissions at night;*
- 6. Avoids, mitigates or remedies adverse visual effects if sited on prominent ridges or immediately adjacent to strategic arterial roads, district arterial roads and collector roads, or to Lake Sumner Road; and*
- 7. Is appropriate to the location, including recognising the need for activities reliant on a natural resource to be located where the resource is available.*

Policy 3.6

To manage potential conflict between incompatible activities in the rural environment so that:

- 1. Residential and other sensitive activities are located away from incompatible rural, and rural based industrial activities and other activities that have a functional or locational need to locate in the Rural Zone;*
- 2. The continued use and development of existing primary production activities, rural based industrial activities and other activities that have a functional or locational need to locate in the Rural Zone are not unreasonably inhibited by the establishment of new sensitive activities; and*
- 3. The location of activities likely to generate effects beyond the property boundary are controlled.*

Policy 3.7

To avoid, remedy or mitigate the detrimental effects of signs on public safety and amenity values.

Chapter 7 – Energy, contains the following objectives and policies of relevance:

Policy 7.5

To manage renewable energy activities to minimise adverse effects by:

- 1. Managing cumulative effects;*
- 2. Requiring setbacks from sensitive activities;*
- 3. Controlling noise emissions;*
- 4. Managing construction activities including vehicle movements; and*
- 5. Maintaining amenity values and character.*

Policy 7.7

To consider environmental compensation or offsetting measures, including measures or compensation which benefits the local environment and community affected, where any residual environmental effects of renewable energy generation activities cannot be avoided, remedied or mitigated.

Permitted Baseline

It is my understanding that the proposed solar farm is defined as any ‘energy activity that is not otherwise specified as a permitted, restricted discretionary or non-complying activity’ (rule 7.4.5(2)) in the Hurunui District Plan. Given that consent is required as a discretionary activity for the establishment and operation of a solar farm on the application site it is not considered that a permitted baseline applies to this proposal.

4.3 Visual Catchment

The subject property is bounded by Waipara Flat Road (SH7) on its western side. As is evidenced by [photos 10 and 11](#), views from this road across the upper terrace within the Site are possible. When approaching the property from the south, heading north, views into the Site are screened by the low inter-terrace slope that runs parallel to the curve of the road (refer to [photo 12](#)). From further along the State Highway to the east however, views ‘along’ the river bed to the north to the eastern edge of the Site (and its south eastern corner) are possible (refer to [photo 7](#)).

Similarly, the ribbon of dwellings located along the western side of the Glenmark Drive within the Waipara township offer views over a distance of between 400m – 1.km, across the River bed to the eastern edge of the Site. This includes number 55 Glenmark Drive which is located to the west of the aforementioned ‘ribbon’ of dwellings, and elevated on the terrace edge above the River bed. The dwelling within this property is separated by a minimum of some 400m from the Site.

Around the junction of the State Highway and MacKenzie Road views across the River bed to the Site are possible from a number of dwellings and the Glenmark Railway Station.

The Site is largely hidden from Mackenzie Road, screened by landform or vegetation, but a number of rural residential properties along MacKenzie Road contain dwellings which have been located close to a subtle inter-terrace slope closer to the River bed, and between 200m and 600m from the Site. These dwellings offer views across the River bed to the Site.

Transitory views to the Site are possible from the Weka Pass Railway, which sidles up the rising landform to the north west of MacKenzie Road and offers slightly elevated views to the south to the Site.

A detailed analysis of the potentially affected individuals is provided in [Table 1](#) below.

Address	Legal desc.	Comment	Distance
Users of Waipara Flat Road Photo ref: 3			
			440m at southern end, 800m at northern end.
Occupants of dwellings located on the northern side of Glenmark Drive			
Dwellings at the southern end of Glenmark Drive (#5-47)		A ribbon of dwellings located on (approx.) 2,000m ² sections which offer views to the west and north west across the river bed to the Site. The angle of orientation of the lots directs views to the Site. The lots appear to be relatively recent and gardens are in the early stages of establishment.	400m – 600m
Dwellings at the northern end of Glenmark Drive (#63-115)		A ribbon of dwellings located on (approx.) 2,000m ² sections which offer limited views to the west and north west across the river bed to the Site. The orientation of the lots, and vegetation planting on the side boundaries precludes direct westerly views to the Site where it is closest. Instead, views are focused to the north west. Views from #55 – 77 are blocked by vegetation within #55. Views from #79 – 111 are largely blocked by garden vegetation and buildings. #115 contains the Glenmark Station. Long views to the west and the Site are possible from the car park and station building. No dwelling?	700m – 1.1km
55 Glenmark Drive	LOT 1 DP 510020	Single storey dwelling located close to the crest of an inter-terrace slope. Accessed via a long driveway which runs parallel to the slope crest, but views from the drive are screened by shelterbelt trees. Outdoor living surrounds the eastern, northern and north western sides of the house. Views to the south west are screened by vegetation, and the garden is contained in its north western corner by a hedge.	400m – 800m
Occupants of dwellings accessed from MacKenzie Road.			
#59 MacKenzie Rd	LOT 1 DP 66006	No dwelling?	300m
#73 MacKenzie Rd	LOT 2 DP 66006	Single storey dwelling located close to the crest of an inter-terrace slope. The building curtilage on the south western and south eastern sides is fenced, and this contains the outdoor living spaces. These comprise a paved area on the western side of the dwelling, and a garden / pool on the south eastern side.	450m
#97 MacKenzie Rd	LOT 3 DP 66006	Single storey dwelling separated from the crest of an inter-terrace slope by an amenity pond. The area to the south west, south and south east of the building are paved (parking and manoeuvring), but views possible in these directions to the Site. Views to the west appear to be screened by a shelterbelt on the north western boundary.	400m
#119 MacKenzie Rd	LOT 4 DP 66006	Small single storey dwelling located close to the crest of an inter-terrace slope. Views to the west inhibited by vines, but views possible to the south and south west.	500m
#139 MacKenzie Rd	LOT 5 DP 66006	No dwelling?	560m
#155 MacKenzie Rd	LOT 6 DP 66006	See #161	600m
#161 MacKenzie Rd	LOT 6 DP 66006	Two storey dwelling located close to the crest of an inter-terrace slope and set within an established garden. Outdoor living afforded to the west and south east. Garden contained to the north west, west, north east, east, south east and south. Views appear to be available to the west and south west over / through vegetation on the slope. These views overlook vines and the river with the Site beyond.	600m
#163 MacKenzie Rd	LOT 2 DP 511382	See #167	1.4km
#165 MacKenzie Rd	LOT 3 DP 511382	Single storey dwelling screened from views to the north west, west, south west and south by vegetation.	180m
#167 MacKenzie Rd	LOT 2 DP 511382	Single storey house oriented to north, but with outdoor living and pool facing to the west. Direct views to the nearest part of the Site are screened by buildings within #165, but longer views are possible to the south from the southern façade of the dwelling and the pool area.	250m – 520m
#169 MacKenzie Rd	LOT 2 DP 507839	Two storey dwelling set within landscaped grounds with an outdoor living area and pool situated on the north west side of the dwelling. Views from the dwelling and garden are internalised by vegetation on the northern, western, and southern sides of the curtilage.	600m
#247 MacKenzie Rd	LOT 1 DP 530756	Single storey dwelling located close to the crest of an inter-terrace slope. Oriented to the north, north west and north east.	180m
#249 MacKenzie Rd	LOT 2 DP 530756	Single storey dwelling set within vines (on its northern and western sides). Oriented to the north, north west and north east. Views to south west screened by vegetation.	160m

#251 MacKenzies Rd	LOTS 4 & 14 DP 83717	See #253	-
#253 MacKenzies Rd	LOTS 4 & 14 DP 83717	Single storey dwelling located close to the crest of an inter-terrace slope. Dwelling appears to offer views to the south west, west, north west, north and north east. Views to south and south east blocked by shed and vegetation	290m
#255 MacKenzies Rd	LOTS 4 & 14 DP 83717	Two storey building primarily oriented to north and north east. Views to the north and north west are screened by vegetation on the edge of the building curtilage. Views to the south and south west (from the ground floor) are screened by garden vegetation. The south and eastern sides of the dwelling are occupied by infrastructural elements, although views from the dwelling are possible in these directions.	500m
#257 MacKenzies Rd	LOTS 4 & 14 DP 83717	No dwelling?	530m
Visitors to the Weka Valley Railway			
-	LOTS 2-3 DP 488217	Views possible from the car park and station across the river bed. Elevated, but long views possible from the line where it sidles up the south easterly trending ridge to the north west and north of the Site. These views include the river bed and grape vines as a foreground context.	600m – 1.2km

Table 1: Potentially affected properties / individuals

5.0 IDENTIFIED LANDSCAPE VALUES

The existing landscape and visual amenity values form the baseline, (taking into account the relevant policy provisions), for an assessment of landscape effects. The values can be described against three broad categories of landscape attributes focussing on:

Physical

[the natural and human-derived features, and the interaction of natural and human processes over time. Typical physical factors include geological, ecological, and biological elements within the landscape.]

The receiving environment is a flat expansive rural working landscape punctuated with pockets of rural residential settlement, sometimes associated with viticultural production. Electrical infrastructure also forms an element of this landscape. These values are enhanced by the associated values of openness, expansiveness and huge sky. Due to the paucity of structures and the flat and monocultural expanse associated with the Site and its immediate context, the absorption capability of this landscape for uncharacteristic development is low.

The main natural feature of this site is the Waipara River and its tributary (Weka Creek). The main river environment has high natural character values however the vegetation lining the river in this vicinity is heavily modified and now dominated by invasive willow and other weed species. The natural character values of the Weka Creek are lower.

Perceptual

[Sensory experience and interpretation. Sensory appreciation typically occurs simultaneously with interpretation, knowledge, and memory. Typical perceptual factors relate to experiential and aesthetic qualities such as naturalness, visual coherence, legibility as well as transient aspects.]

The downland hills to the west, the flat open plains, the pasture, the grazing animals and shelterbelt plantings combine to create an attractive, productive, aesthetically high and locally typical working rural landscape for this area.

Contrasting with the flatness of the plains landscape, the meandering terraces associated with the watercourses lends a high level of legibility to this landscape. The dominance of pasture and the absence of many visual interruptions, creates a monocultural impression, alleviated to some degree by the plantations of grape vines. Views are contained by shelterbelts and these elements lend a rectilinear patterning on the landscape. .

With the exception of the viticultural plantings, this working landscape is not unique to this area, it is a relatively generic rural landscape commonly experienced in this part of the Canterbury Plains. Nevertheless, the expansive views across

the flat pastures to the surrounding hills conveys a visually coherent outlook that while typical, has high amenity and aesthetic value.

Transient values are associated with weather systems and light effects, which at times of the day / year emphasise the rolling landforms and distant hills. Deciduous vegetation within the Waipara River and Weka Creek provides some seasonal interest however due to the incised nature of the river effects are not prominent.

Associative

[the intangible things that influence how places are perceived – such as history, identity, customs, laws, narratives, creation stories, and activities specifically associated with a landscape. Typical Associative factors includes cultural (tangata whenua) and historic values as well as shared and recognised attributes such as recreational opportunities.]

There are no cultural or historic sites of significance within the Site listed in the District Plan and the applicant is not aware of any sensitive sites. It is understood that the applicant has been informed by Ngāi Tahu that Ngāi Tūāhuriri hold mana whenua status over the site. Attempts have been made to seek engagement with Ngāi Tūāhuriri and is ongoing.

The Weka Creek Railway is a well-known recreational resource which is based in Waipara, and passes to the east of the Site.

Measured against the criteria contained in [Appendix 3](#), the landscape value of the Site and its context is determined to be 'Ordinary'.

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 – derived from its alluvial formative processes – and spaciousness, albeit contained, punctuated and structured by hedge / shelterbelt plantings, and by riparian vegetation.

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, or exotic (pine) vegetation within the Site. Conversely, the proposal includes the planting of a significant area of native revegetation planting. Areas of planting closest to the river will comprise locally appropriate vegetation that is characteristic of the braided river environment. In addition, planting is proposed on the inter-terrace slopes within the Site and (in addition to providing a biophysical benefit), this planting will also serve to strengthen the legibility of the riverine landscape.

Overall the anticipated change to the biotic attributes resulting from the proposal is expected to be slightly positive.

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 rural residential settlement to the north east of the Site, across the river. In addition, the western ‘edge’ of Waipara is defined by a ribbon of dwellings, situated some 400 – 800m to the east and south east of the Site.

The Site itself inhabits a flat pastoral landscape which clearly expresses its alluvial formative process. The Site itself, like the surrounding landscape, is structured by shelterbelts / hedges.

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 extent of panels will be fragmented by existing infrastructure – transmission lines and gas pipelines – which require setbacks. In addition, the inter-terrace slope landform features will be revegetated and these natural elements will also serve to fragment and soften the appearance of the proposed structures. This will result in the apparent scale of the panel coverage being fragment and consequently diminished in scale.

Furthest to this, the proposal seeks to visually screen the structures from potential external locations through the retention of existing vegetation, and from proximate viewpoints by planting 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.

Whilst noting that, from the most proximate locations, the Site will be screened, it will assume a character that is influenced by structures and this will replace the existing pastoral openness. The productive capacity of the land will however, be maintained.

6.4 Physical – archaeology and cultural attributes

There are no cultural or historic sites of significance within the Site listed in the District Plan and the applicant is not aware of any sensitive sites. It is understood that the applicant has been informed by Ngāi Tahu that Ngāi Tūāhuriri hold mana whenua status over the site. Attempts have been made to seek engagement with Ngāi Tūāhuriri and are ongoing.

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 the northern limit of the vast alluvial plains which extend from Amberley in the north to Timaru in the south. They are crossed by three major rivers - the Waimakariri, Rangitata and Rakaia which flow across the plains from the foothills and downlands to the coast. The Waipara, and its tributary Weka Creek, form a part of this extensive landscape, a landscape that is characterised by long views controlled and punctuated by shelterbelts, and large skies.

Within the vicinity of the rivers, the broad and flat braided flood plains, contained on either side by a sequence of terraces separated by steep banks, or slopes are a characteristic landscape element.

The character of the landscape is most strongly influenced by land use. In the immediate vicinity of the Site, this includes cropping and viticulture, but in the wider area it also includes dairy production. A study undertaken by Landcare Research / Manaaki Whenua⁷ has indicated that land use change is regarded in a variety of ways by the community, with dairy conversion viewed unfavourably. The study concluded that there was a dislike of the visual elements of production – irrigators, silage bales and the cows themselves, whilst there was a more favourable response to sheep production and shelterbelts. In addition, the study determined that native shelterbelts were preferred over exotic species, and a preference was expressed for 'biodiversity'.

The response to land use change, particularly when it entails a perceived increase in built character, has the potential to be perceived negatively. Conversely, 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 source⁸. 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.

The proposal will result in a change in landscape character by introducing a large area of built forms and when experienced from within the visual catchment to the north east, east and south east, the solar farm will become a noticeable, eye-catching, and unique element of the wider landscape. Views from the west, including from Waipara Flat Road will be precluded within some 3 years by the proposed hedge / shelterbelt.

However, such a change is not necessarily considered adverse or inappropriate. The wider landscape is a modified landscape that is extensively used for primary production and contains built forms such as sheds and houses, and electricity infrastructure in the form of the switchyard on MacKenzies Road and various overhead lines.

At a conceptual level, the proposal represents an additional type of primary production activity that features built forms and electricity infrastructure. But rather than using the land and soil for productive use, the proposal uses the sky and

⁷ Pike Brown. Quantifying visual preferences in Canterbury. Landcare Research Manaaki Whenua. 2012

⁸ http://www.windenergy.org.nz/store/doc/Wind_Energy_and_Public_Opinion.pdf

climate – a defining and integral element of this landscape – so, rather than farming food, the proposal farms energy. The difference is that the solar farm will diminish the undeveloped nature of the site, introducing extensive built form. Whilst the site will continue to be grazed with sheep, ultimately the pastoral character will be impacted.

The presence of shelterbelts within the wider landscape enables the appropriate use of shelter screening along the Waipara Flat Road boundary of the Site. This will screen views of the Farm from the road. Screening views from the eastern aspect, where receptors are offered views from the elevated terraces across the river bed to the Site is not possible, although the proposed revegetation planting of the inter-terrace slopes will both strengthen, and increase the legibility of the natural patterns of the landscape, as well as fragmenting and softening views of the structures.

In addition, the panels are generally low in height. For most of the day they will be less than 3m in height, meaning that longer views across the site can be maintained.

The site office and other ancillary buildings will be relatively insignificant to the whole development, and in character with both the wider rural character and the new activity of the site such as not to draw specific attention.

The perimeter deer fencing will have a distinctly rural character, although it is the intention that this be screened by the perimeter plantings. Electrical hazard signage will, unfortunately, detract from the more open views but it is understood that this is required. The actual design, including size and colour, of the signage will be confirmed through detailed design to meet Health and Safety requirements.

The opportunity to enhance the Weka Creek is a positive landscape outcome. This will be fully fenced to prevent stock access to the waterway, with low-level and locally appropriate riparian planting providing shade cover and habitat (taller trees are included in the mix, but where these have the potential to impact on the efficiency of the solar panels they will be height controlled to some 4m).

As noted above, research has indicated a support for ‘sustainable’ energy forms and the uniqueness of the proposal, and its renewable energy credentials, will likely help people more readily accept its presence. It is anticipated that people will take an interest in the farm.

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 author is not aware of any specific social or associative attributes linked with the Site.

It is understood that the applicant has been informed by Ngāi Tahu that Ngāi Tūāhuriri hold mana whenua status over the site. Attempts have been made to seek engagement with Ngāi Tūāhuriri and is ongoing.

Based on the information to date, it is the opinion of the author that the potential impact on social and associative attributes will be very small.

6.7 Potential visual amenity effects

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

1. **Road users on Waipara Flats Road:** High number of individuals with a low to moderate sensitivity to change.
2. **Visitors to the Weka Valley Railway.** Medium number of individuals with a low to moderate sensitivity to change.

Those associated with private viewpoints are as follows:

1. **Occupants of dwellings located on the northern side of Glenmark Drive:** Medium number of individuals with a high sensitivity to change
2. **Occupants of dwellings accessed from MacKenzies Road.** Low to medium number of individuals with a high sensitivity to change.

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:

3. **Road users on Waipara Flats Road:** High number of individuals with a low to moderate sensitivity to change.
4. **Occupants of dwellings located on the northern side of Glenmark Drive:** Medium number of individuals with a high sensitivity to change
5. **Occupants of dwellings accessed from MacKenzies Road.** Low to medium number of individuals with a high sensitivity to change.
6. **Visitors to the Weka Valley Railway.** Medium number of individuals with a low to moderate sensitivity to change.

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

Address	Legal desc.	Mitigation	Distance	Construc effect	Short term	Med to long term
Users of Waipara Flat Road Visual Simulation ref: 01, 02, 03 and 04.						
		Shelterbelt / hedge screen planting is proposed along the northern, western (roadside) and a portion of the southern boundaries of the Site. Although the majority of the road views into the Site will be substantially curtailed Within 3 years. Within 5 years, the Site will be fully screened. Visual simulation 4 illustrates a view from Waipara Flat Road close to the south western corner of the Site. From here, the viewer will experience a change in the foreground landscape character with the pasture being converted to viticultural production. Glimpses of the panels will be possible where these occupy the lower terrace within the south eastern corner of the Site.	20m – 120m	Moderate	Moderate	Very low
Occupants of dwellings located on the northern side of Glenmark Drive. Visual Simulation ref: 05, 06, and 07						
Dwellings at the southern end of Glenmark Drive (#5-47)		The primary visual change that will be experienced by this viewer group is the shift in vegetated character within the midground where the lower terrace will be planted with grape vines, and the inter-terrace slope is vegetated with native shrub and tree species. The panels will be visible as narrow dark strips framed by the vegetation, but these elements will be subservient to the vegetation. Views to the distant hills will not be affected.	400m – 600m	Low to moderate	Low	Very low
Dwellings at the northern end of Glenmark Drive (#63-115)		Views from these properties tend to be largely screened by existing vegetation, but where views are afforded, then the appearance of the proposal will be as described above for #5 – 47.	700m – 1.1km	Low	Low	Very low
55 Glenmark Drive	LOT 1 DP 510020	Occupants of the dwelling within this property will recognise a change in the	400m – 800m	Moderate	Moderate	Low

		landscape character of the midground view. As is evidenced by visual simulation 5, the Site is seen as a narrow pastured strip between the foreground and extensive grape vines, and the distant views of hills. The pastured character of this midground will change. The proposed panels will be visible as a series of dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and 'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip, and will not intrude on, or detract from the longer views to the hills.				
Occupants of dwellings accessed from MacKenzies Road. Visual Simulation ref: Viewpoint 247						
#59 MacKenzies Rd	LOT 1 DP 66006	No dwelling?	300m			
#73 MacKenzies Rd	LOT 2 DP 66006	Occupants of the dwelling within this property will recognise a change in the landscape character of the midground view. As is indicated by representative visual simulation 247, the Site is seen as a narrow pastured strip between the foreground and extensive grape vines, and the distant views of hills. The pastured character of this midground will change. The proposed panels will be visible as a series of narrow dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and 'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip, and will not intrude on, or detract from the longer views to the hills.	450m	Low to moderate	Low to moderate	Very low
#97 MacKenzies Rd	LOT 3 DP 66006	Occupants of the dwelling within this property will recognise a change in the landscape character of the midground view. As is indicated by representative visual simulation 247, the Site is seen as a narrow pastured strip between the foreground and extensive grape vines, and the distant views of hills. The pastured character of this midground will change. The proposed panels will be visible as a series of narrow dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and 'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip, and will not intrude on, or detract from the longer views to the hills.	400m	Low to moderate	Low to moderate	Very low
#119 MacKenzies Rd	LOT 4 DP 66006	Occupants of the dwelling within this property will recognise a change in the landscape character of the midground view. As is indicated by representative visual simulation 247 the Site is seen as a narrow pastured strip between the foreground and extensive grape vines, and the distant views of hills. The pastured character of this midground will change. The proposed panels will be visible as a series of narrow dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and	500m	Low to moderate	Low to moderate	Very low

		'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip, and will not intrude on, or detract from the longer views to the hills.				
#139 MacKenzies Rd	LOT 5 DP 66006	No dwelling?	560m			
#155 MacKenzies Rd	LOT 6 DP 66006	See #161	600m			
#161 MacKenzies Rd	LOT 6 DP 66006	Occupants of the dwelling within this property will recognise a change in the landscape character of the midground view. The Site is seen as a narrow pastured strip between the foreground and extensive grape vines, and the distant views of hills. The pastured character of this midground will change. The proposed panels will be visible as a series of dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and 'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip, and will not intrude on, or detract from the longer views to the hills.	600m	Low to moderate	Low to moderate	Very low
#163 MacKenzies Rd	LOT 2 DP 511382	See #167	1.4km			
#165 MacKenzies Rd	LOT 3 DP 511382	Views to the north west, west, south west and south are screened by vegetation.	180m	Very low	Very low	Very low
#167 MacKenzies Rd	LOT 2 DP 511382	Direct views to the nearest part of the Site are screened by buildings within #165, but longer views are possible to the south from the southern façade of the dwelling and the pool area. The Site is seen as a narrow pastured strip with a foreground and extensive grape vines. The pastured character of this midground will change. The proposed panels will be visible as a series of dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and 'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip.	250m – 520m	Low	Low	Very low
#169 MacKenzies Rd	LOT 2 DP 507839	Two storey dwelling set within landscaped grounds with an outdoor living area and pool situated on the north west side of the dwelling. Views from the dwelling and garden are internalised by vegetation on the northern, western, and southern sides of the curtilage.	600m	Very low	Very low	Very low
#247 MacKenzies Rd	LOT 1 DP 530756	Occupants of the dwelling within this property will recognise a marked change in the landscape character of the midground view. As is evidenced by visual simulation 247, the Site is seen as a low lying pastured area strip between the foreground river bed, and the distant views of hills. The pastured character of this midground will change. Within the short term (0 – 5 years), the proposed panels will be visible as a series of dark 'islands', separated by swathes of vegetation. The closest edge of the panels will be obscured by the proposed mitigation planting, whilst the revegetated inter-terrace slopes will serve to soften	180m	High	High	Low

		the prominence and 'hard edges' of the panels. Within the medium to long term (5 – 10 years), the mitigation planting will develop to a scale that it largely obscures views of the panels. At no time will the proposal intrude on, or detract from the longer views to the hills.				
#249 MacKenzie Rd	LOT 2 DP 530756	Occupants of the dwelling within this property will recognise a marked change in the landscape character of the midground view. The Site is seen as a low lying pastured area strip between the foreground river bed, and the distant views of hills. The pastured character of this midground will change. Within the short term (0 – 5 years), the proposed panels will be visible as a series of dark 'islands', separated by swathes of vegetation. The closest edge of the panels will be obscured by the proposed mitigation planting, whilst the revegetated inter-terrace slopes will serve to soften the prominence and 'hard edges' of the panels. Within the medium to long term (5 – 10 years), the mitigation planting will develop to a scale that it largely obscures views of the panels. At no time will the proposal intrude on, or detract from the longer views to the hills.	390m	Moderate to high	Moderate to high	Low
#251 MacKenzie Rd	LOTS 4 & 14 DP 83717	See #253	-			
#253 MacKenzie Rd	LOTS 4 & 14 DP 83717	Occupants of the dwelling within this property will recognise a marked change in the landscape character of the midground view. The Site is seen as a low lying pastured area strip between the foreground river bed, and the distant views of hills. The pastured character of this midground will change. Within the short term (0 – 5 years), the proposed panels will be visible as a series of dark 'island', separated by swathes of vegetation. The closest edge of the panels will be obscured by the proposed mitigation planting, whilst the revegetated inter-terrace slopes will serve to soften the prominence and 'hard edges' of the panels. Within the medium to long term (5 – 10 years), the mitigation planting will develop to a scale that it largely obscures views of the panels. At no time will the proposal intrude on, or detract from the longer views to the hills.	230m	High	High	Low
#255 MacKenzie Rd	LOTS 4 & 14 DP 83717	Occupants of the dwelling within this property will recognise a change in the landscape character of the midground view. The Site is seen as a narrow pastured strip between the foreground and extensive grape vines, and the distant views of hills. The pastured character of this midground will change. The proposed panels will be visible as a series of narrow dark 'ribbons', separated by swathes of vegetation. The vegetation will serve to soften the prominence and 'hard edges' of the panels, and will provide a unified foil against which the panels will 'recede'. Whilst visible, the panels will not form a dominant element within this midground strip, and will not intrude on, or detract from the longer views to the hills.	500m	Low	Low	Very low
#257 MacKenzie Rd	LOTS 4 & 14 DP 83717	No dwelling	530m			

Visitors to the Weka Valley Railway						
-	LOTS 2-3 DP 488217	Distant views possible from the car park (refer to visual simulation 07) and station across the river bed. Elevated, but long views possible from the line where it sidles up the south easterly trending ridge to the north west and north of the Site. These transient views include the river bed and grape vines as a foreground context, but with an increasingly broad panorama as the train travels to the north west. The panels will be visible as a series of dark 'islands', separated by swathes of vegetation. The closest edge of the panels will be obscured by the proposed mitigation planting, whilst the revegetated inter-terrace slopes will serve to soften the prominence and 'hard edges' of the panels. The Site will, as the elevation increases, but experienced within a broad panorama of the plain landscape.	600m – 1.2km	Low	Low	Very low

Table 2: Visual amenity effects summary

6.8 Summary of landscape effects

In summary, any landscape effects would be limited to an existing area that has been previously modified as a result of productive land uses. The proposal will result a very limited localised change in the abiotic and (slightly positive) 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 or the construction of horticultural glass houses, or other buildings associated with rural production.

Therefore, overall, it is considered that the landscape effects will be Low-Moderate, which can be translated to minor. The farm represents a change in the activity and character of the site and will certainly be perceived as different and unique. It contains built form that will diminish the pastoral character of the site. However, it is located in an expansive, flat rural landscape that has been highly modified to achieve optimised production. At its core, it is no different to other farming activity, utilising the environmental resource as efficiently as possible, with the exception of the retention of grass under the panels to help retain a pastoral connection. The proposal also contains various positive landscape outcomes, including restoration of the riparian margins of the river.

6.9 Potential natural character effects

Natural character has been interpreted as:

- the naturalness or degree of modification of an area
- an area's distinct combination of natural characteristics and qualities.

The former is a quantitative attribute—a condition. The latter is a character specific to each area. This assessment has adopted the interpretation that natural character is a type of character—the distinct combination of an area's natural characteristics and qualities, and that naturalness is one attribute of that natural character.

Weka Creek, where it adjoins the subject Site, meanders across a braided gravel flood plain which is punctuated with patches of exotic and native vegetation and has been modified as a result of gravel extraction, and stock access.

The edge of the flood plan and river bed is clearly defined by the inter-terrace slopes, and the extent of the proposed structures within the proposed solar farm will be separated from the river bed by the slope, and buffered by a proposed revegetation planting strip.

As discussed in sections 6.1 – 6.7, the proposal will not diminish affect those attributes that make up the natural character of the river and its margins, these being:

- a. *natural elements, processes and patterns;*
- b. *biophysical, ecological, geological and geomorphological aspects;*
- c. *natural landforms such as headlands, peninsulas, cliffs,, wetlands,, freshwater springs and*
- d. *the natural movement of water and sediment;*
- e. *the natural darkness of the night sky;*
- f. *places or areas that are wild or scenic;*
- g. *a range of natural character from pristine to modified; and*
- h. *experiential attributes....*

It is the opinion of the author that the potential adverse effect on the natural character of the Waipara River will be very low.

6.10 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 received⁹), 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 at 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 the dwelling, so any glare will not affect primary views from these properties.

7.0 AFFECT ON THE STATUTORY FRAMEWORK

Under Rule 3.4.6 in the Hurunui District Plan, the construction and operation of a solar farm (including construction of ancillary buildings) is a *discretionary activity*, as it is a permitted activity which does not meet one or more of the standards for permitted activities and is not otherwise specified as a controlled activity, a restricted discretionary activity or a non-complying activity. The proposal does not meet the following standards of relevance to this assessment:

⁹ Spaven Consulting, 2011, Solar Photovoltaic Energy Facilities: Assessment of potential for impact on aviation , report prepared January 2011, for RPS Planning and Development.

3.4.3.1 – the proposed inverters will intrude the 25m setback from the State Highway.

3.4.3.16 (b) – the volume of earthworks proposed is greater than 1000m³ of land in any 12 month period for a single project.

Rule 13.4.3 states that *'The removal of indigenous vegetation up to 5000m² within any site in any 5 year continuous period as a restricted discretionary activity, except where it is otherwise listed as permitted, restricted discretionary or non-complying activity'*

Relevant objectives and policies relating to the Rural Zone are as follows:

Objective 3.1

The character and amenity values of rural areas of the district are maintained while providing for a variety of activities including those associated with primary production.

Policy 3.1

To ensure that rural areas remain productive by recognising that some primary production activities lead to a range of effects including noise, dust, odour, traffic and visual effects.

Policy 3.2

To protect highly productive soils by discouraging activities that will have adverse effects on their continued productive use and life-supporting characteristics that are difficult to reverse.

Policy 3.5

To enable a variety of activities to occur within rural areas while managing adverse effects on character and amenity values by seeking that the scale and siting of development.

8. *Maintains a dominance of open space and plantings over buildings, especially when viewed from public places such as roads;*
9. *Maintains privacy and rural outlook for residential activities;*
10. *Protects access to light for sensitive activities and primary production;*
11. *Achieves an appropriate level of compatibility with existing development within the surrounding area;*
12. *Avoids unduly affecting the amenity of existing sensitive activities being exposed to noise and adverse light emissions at night;*
13. *Avoids, mitigates or remedies adverse visual effects if sited on prominent ridges or immediately adjacent to strategic arterial roads, district arterial roads and collector roads, or to Lake Sumner Road; and*
14. *Is appropriate to the location, including recognising the need for activities reliant on a natural resource to be located where the resource is available.*

Policy 3.6

To manage potential conflict between incompatible activities in the rural environment so that:

4. *Residential and other sensitive activities are located away from incompatible rural, and rural based industrial activities and other activities that have a functional or locational need to locate in the Rural Zone;*
5. *The continued use and development of existing primary production activities, rural based industrial activities and other activities that have a functional or locational need to locate in the Rural Zone are not unreasonably inhibited by the establishment of new sensitive activities; and*

6. *The location of activities likely to generate effects beyond the property boundary are controlled.*

Policy 3.7

To avoid, remedy or mitigate the detrimental effects of signs on public safety and amenity values.

Chapter 7 – Energy, contains the following objectives and policies of relevance:

Policy 7.5

To manage renewable energy activities to minimise adverse effects by:

6. *Managing cumulative effects;*
7. *Requiring setbacks from sensitive activities;*
8. *Controlling noise emissions;*
9. *Managing construction activities including vehicle movements; and*
10. *Maintaining amenity values and character.*

Policy 7.7

To consider environmental compensation or offsetting measures, including measures or compensation which benefits the local environment and community affected, where any residual environmental effects of renewable energy generation activities cannot be avoided, remedied or mitigated.

The key themes arising from the objectives and policies relate to rural character and amenity, and the avoidance, mitigation or remedying of adverse visual effects. 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 or the construction of horticultural glass houses, or other buildings associated with rural production.

The direct physical effect on the landscape will be however, limited; the structures being supported on driven piles and earthworks (other than those associated with trenching) being very limited. Essentially, the structures will ‘float’ above the ground surface, and productive activities will be continued beneath.

The proposal includes measures – screening using vegetation to mitigate the potential adverse effect on amenity values (visual amenity effects) on both private and public viewers (including users of the State Highway). Section 6.7 above details how, once the mitigation planting has become established, the level of adverse effect will be very low.

Therefore, overall, it is considered that the landscape effects will be Low-Moderate, which can be translated to minor. The farm represents a change in the activity and character of the site and will certainly be perceived as different and unique. It contains built form that will diminish the pastoral character of the site. However, it is located in an expansive, flat rural landscape that has been highly modified to achieve optimised production

It is the opinion of the author therefore, 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 establish a 143.8MWdc solar farm at 380 Waipara Flat Road, Waipara. The property is described as LOT 2 DP 19025, LOT 1 DP 320376, SECS 3-4 SO 17514, RS 37988 RS 37989 and RS 37990. The area of the property is 242.4ha. The proposed solar farm will be contained within an area of around 180.8ha (78%) of the subject

property. These will generate some 143,873kWp. The panels will cover 64ha and therefore 28% of the ground will be in covered by panels.

The entire site (excluding vines, native planting areas and the boundary screening trees) will be grazed by sheep as it is currently, without cropping.

The site is located within the Rural Zone (ODP) and Rural Production Zone (PDP). It is not affected by any landscape overlays in the statutory documents.

The low-lying and flat landscape is contained within a natural riverine meander feature which is bounded by steep, and partially vegetated escarpment slopes to the north, north west, west and south west. To the east, the river valley, and associated western escarpment slopes offer a sense of containment. Whilst the landscape and associated vegetation provides a measure of visual containment, where visible from elevated locations on the edges of the riverine escarpment slopes, the Farm will appear to be 'set within' – physically and visually contained within the landform and surrounding vegetation.

The proposed facility will be of an extent and character that has the potential to contrast with the existing landscape character, but the containment provided by the terrain and vegetation, and the ability to screen views from the most proximate viewers will ensure that the facility is visually contained and will not be evident from the majority of 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 practices such as the construction of buildings for agricultural production purposes which could potentially result in a greater level of visual intrusion.

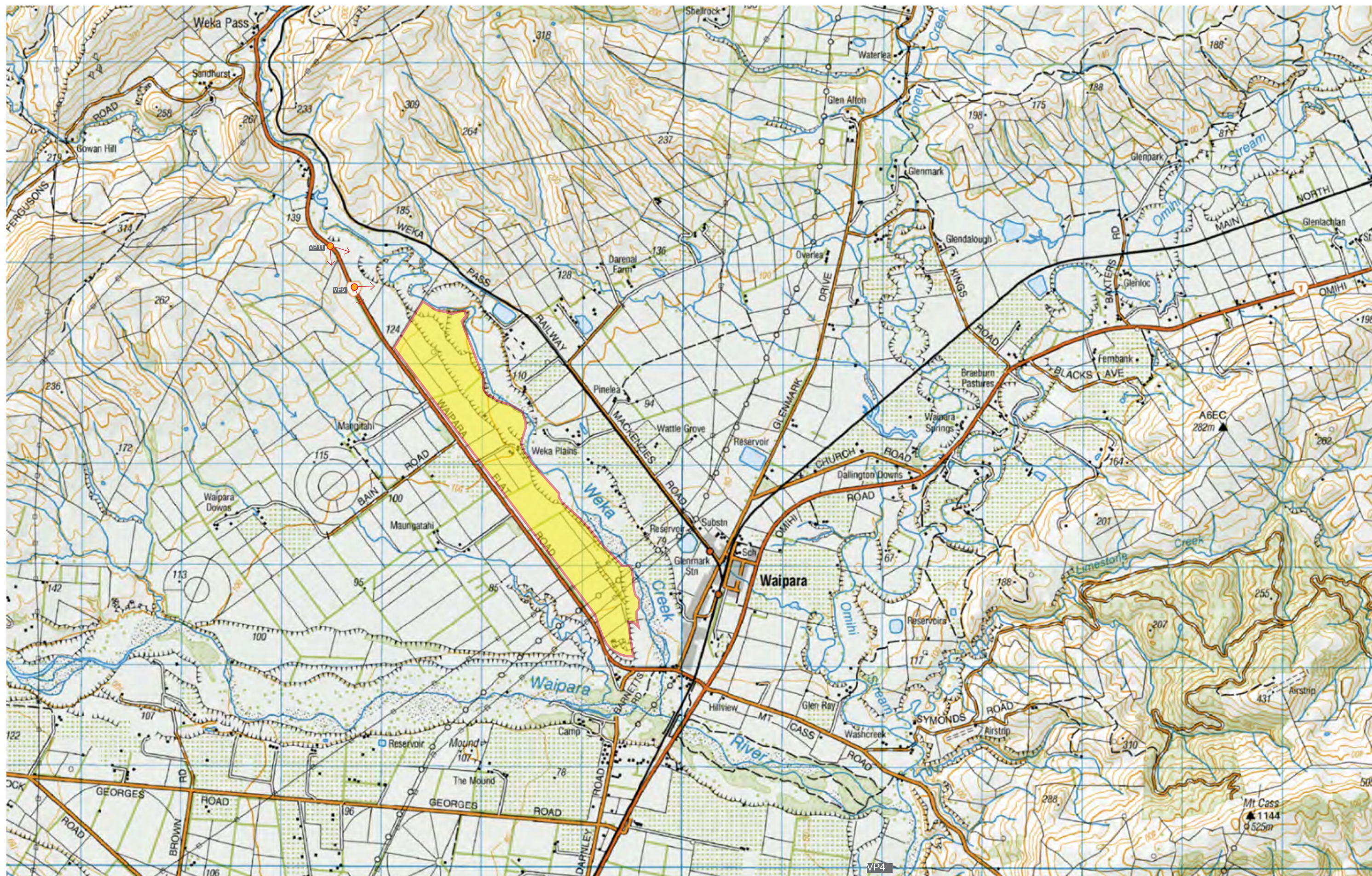
It is the opinion of the author that the resulting landscape effect of the proposal will be low. The potential adverse visual amenity effect will be low for all receptors, with the exception of the occupants of two residential properties who will be affected to a minor level. For these individuals, the potential adverse effects will be mitigated (by proposed mitigation planting) to a level that is less than minor within 3 – 5 years.

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

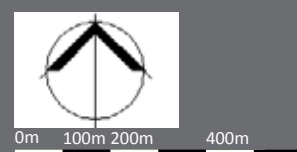


APPENDIX 1: Figures

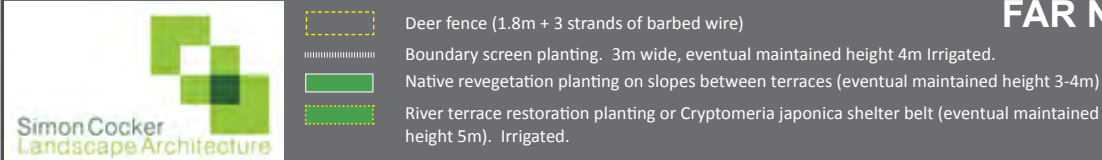


FAR NORTH SOLAR FARM LTD.
Waipara 149.7 MWp

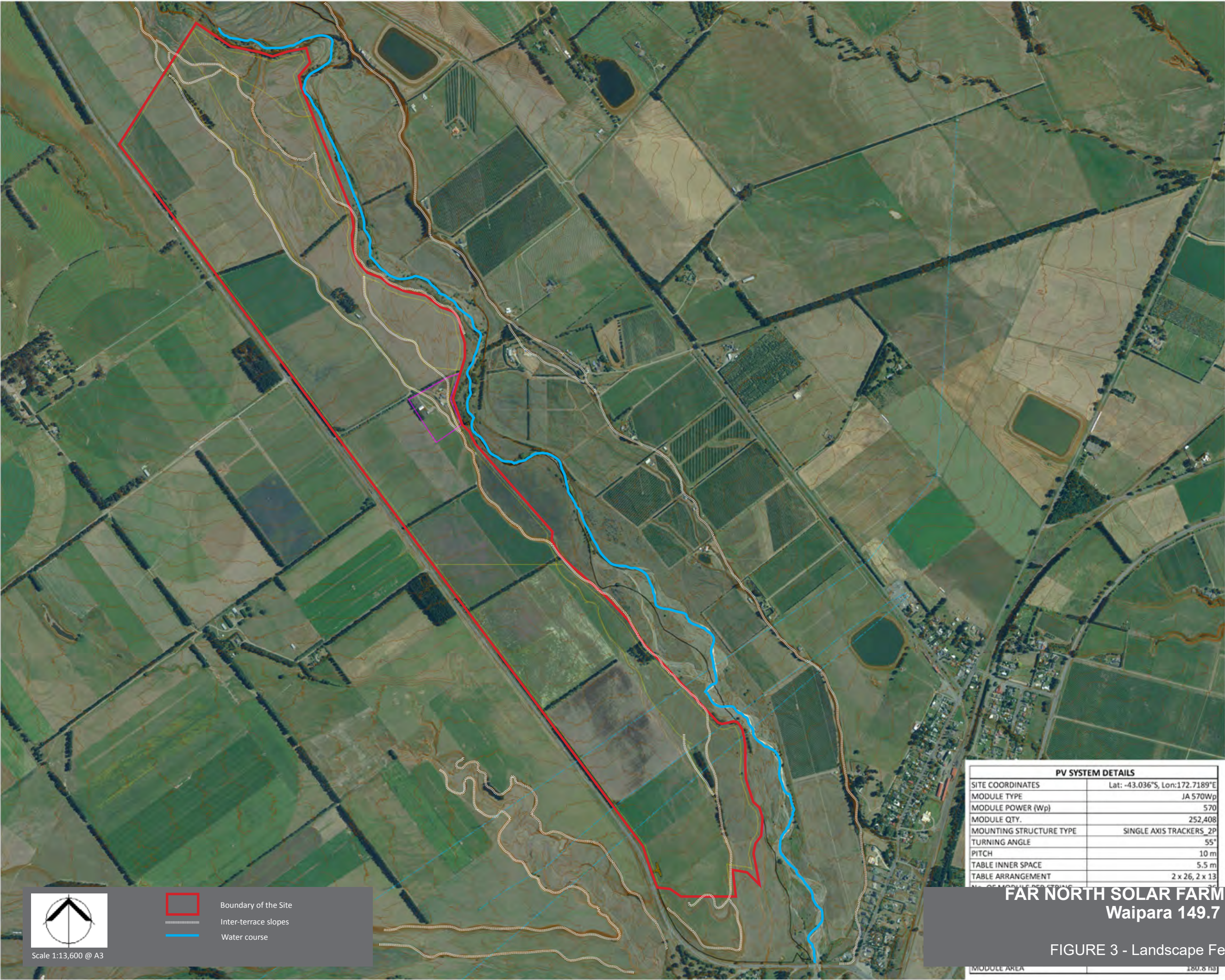
FIGURE 1 - Location of the Site



Boundary of the Site
 Boundary screen planting. 3m wide, 4m tall
 Revegetation planting on slopes between terraces (3 - 5m tall)
 Photo locations



DRAWN BY : HAFI		SIGN : H.S	
DATE : 19-09-2023		TITLE : MODULE GENERAL ARRANGEMENT LAYOUT	
CHECKED BY : AFUA		A.M	
DATE : 19-09-2023		T.K	
APPROVED BY : TRIO			
DATE : 19-09-2023			
DRAWING NO. ACRA-NZD-WP-001			
SHEET SIZE A1		SHEET 1 OF 1	
		SCALE 1:6800	
		REV G	



PV SYSTEM DETAILS	
SITE COORDINATES	Lat: -43.036°S, Lon:172.7189°E
MODULE TYPE	JA 570Wp
MODULE POWER (Wp)	570
MODULE QTY.	252,408
MOUNTING STRUCTURE TYPE	SINGLE AXIS TRACKERS_2P
TURNING ANGLE	55°
PITCH	10 m
TABLE INNER SPACE	5.5 m
TABLE ARRANGEMENT	2 x 26, 2 x 13
NO. OF MODULES PER TRACKING	

FAR NORTH SOLAR FARM LTD.
Waipara 149.7 MWp

FIGURE 3 - Landscape Features

MODULE AREA	180.8 ha
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FIGURE 4 - Photo locations and potentially affected properties



Photo 1: View south east from eastern edge of Site

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Photo date - 20 May 2023

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





Photo 2: View south from eastern edge of Site

Photo date - 20 May 2023

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





Weka Pass rail line

Photo 3: View north from Site

Photo date - 20 May 2023

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





251 MacKenzie's Road

249 Mackenzie's Road

Photo 4: View east from Site

Photo date - 20 May 2023

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





Photo 5: View east from Site

Photo date - 20 May 2023

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





255 MacKenzie Road

Photo 6: View south along Waipara Flat Road

Photo date - 20 May 2023

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



97 MacKenzie Road

73 MacKenzie Road

Photo 7: View north east toward MacKenzie Road

Photo date - 20 May 2023

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Photo 8: View north east from Site to Glenmark Drive

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Photo date - 20 May 2023

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





Photo 9: View north east to Glenmark Drive

Photo date - 20 May 2023

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





277 MacKenzie Road

255 MacKenzie Road

Photo 10: View from Waipara Flat Road across Site

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Photo date - 20 May 2023

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



Photo 11: View from Waipara Flat Road across Site

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Photo date - 20 May 2023

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





Photo 12: View north east from Waipara Flat Road

Photo date - 20 May 2023

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

