

## Attachment 2: Peer reviews and recommended conditions



# Memorandum

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Attention: Nick Pollard, Planner

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Company: Boffa Miskell

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Date: 6 September 2023

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From: Emma McRae, Principal Landscape Architect

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Message Ref: Review of Landscape and Visual Impacts Assessment, and subsequent further information for Far North Solar Farm, 415 Moroa Road, Greytown

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Project No: BM220982

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## Introduction

Boffa Miskell has been engaged by South Wairarapa District Council (SWDC) to review the application for a proposed 175MW solar farm at 415 Moroa Road, Greytown. The application included an assessment of landscape effects prepared by Simon Cocker Landscape Architecture Ltd (8 December 2022) which was reviewed as part of the application documents. While this assessment provided some understanding of the site and its surroundings and the potential landscape and visual effects associated with the proposed development, a section 92 Further Information Request was made to provide further understanding of the proposal and its potential effects, including landscape and visual effects. Further information was received in February 2023 from the applicant, including visual simulations prepared by Virtual View. Following this, a site visit was carried out on 6 March 2023 to view the site and its surroundings, and to provide an understanding of potentially affected parties. The weather for this visit was fine and clear, with light winds.

The below review has been carried out by Emma McRae, a NZILA Registered Landscape Architect, in accordance with Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines<sup>1</sup>.

## The Proposal

The proposal is described in section 3 of the assessment of landscape effects. It notes that the site covers an area of 237ha, with the proposed solar panels covering 66ha of the site. The proposed site straddles Moroa Road, occupying an area to the north of the road covering an area of 170ha, extending around 2km in length along Moroa Road. To the south of the road two discrete areas are proposed, bound by Moroa Road on the north boundary, one area to the west of 44ha and another to the east of 24ha.

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<sup>1</sup> Te Tangi a Te Manu: Aotearoa New Zealand Landscape Assessment Guidelines, Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.

The site will comprise of 4,270 arrays, covered with 321,160 solar panels, together with 32 centrally located inverters. The panels will be mounted on tracking tables, mounted in portrait format, which rotate on a single axis 2.2m above the ground, with a maximum full tilt height of 4m above ground. The project will also involve a connection (and improvements to) the existing substation located at the corner of Morora Road and Bidwills Cuttings Road.

The development will involve the removal of all shelterbelts and vegetation within the site footprint, with shelterbelts on the site boundary being either trimmed to a height of 4m or removed where trimming would not provide the required screening.

The applicant proposes screen planting of *Cryptomeria japonica* (Japanese cedar) hedging planted in double staggered rows at a spacing of 1.5m, as illustrated on Figure 2a in the assessment of landscape effects. A 2m high security fence is also proposed around the site boundary, similar to the fencing at the existing substation. A 3m wide spacing will be provided between the existing fence line and the security fence line in which the proposed planting will be located. Larger grade plants are proposed for the sections of the boundary identified as being more visually sensitive to the proposed development. Planting is expected to occur in August 2024 with commissioning of the solar farm planned for December 2025. The assessment of landscape effects states that the proposed larger grade plants are expected to reach 2.5-3m in height, and others 2-2.5m in height by the date of commissioning.

## Existing Environment

The existing environment is well described in section 4 of the assessment of landscape effects. The site is located 4km to the south west of Greytown, within the Wairarapa Valley and forms a part of the Palins and Lowlands landscape type, as identified in the Wairarapa Landscape Study. The Remutaka Range to the west and Aorangi Range to the east dominate views from the valley, with the Ruamahanga River and its tributaries are also a dominant feature of the plain. The plains are intensively grazed, with areas of horticulture declining.

It is noted that the site is positioned within the Central Plains character area, as defined in the Wairarapa Landscape Study. Within this area, land use is diversified, including dairy, sheep and beef farming, scattered areas of market gardens and orchards. Land parcels follow a regular linear pattern, with drainage ditches and shelterbelts creating a distinctive patchwork landscape. Not noted within the landscape character description in the assessment (although mentioned in the visual catchment discussion) and observed during the site visit, was that there are also two areas where rural lifestyle development dominates within the vicinity of the site. There is one such area to the northeast of the site on Bidwills Cutting Road, and another to the south along Battersea Road/ Settlement Road.

The site itself is not described within the assessment, but it is typical of this landscape, being comprised of pastoral fields used for sheep grazing, with several mature shelterbelts throughout which form part of the characteristic linear patchwork of the plains. An existing transmission line also crosses the site from the

substation to the east of the site towards State Highway 2 to the west. There are also a number of existing sheds and farm buildings located within the site.

## Discussion

Having reviewed the application package, including the assessment of landscape effects dated December 2022, along with the further information provided in February 2023 by the applicant (including the visual simulations prepared by Virtual View) and following the site visit of 6 March 2023, I have drawn the following conclusions in relation to the landscape and visual effects of the proposed development.

### Landscape Effects

The assessment of landscape effects considers the proposal against both the physical and perceptual aspects of the landscape and concludes that “any landscape effects would be limited to an area that has been previously modified (cleared of vegetation). The proposal will result in very limited localised change in the abiotic and biotic attributes of the site, but the landform and vegetation character of the site will be maintained and will reflect the character of the surrounding area.” It is concluded in Section 8 of the assessment of landscape effects that the landscape effects as described above will be low.

While I agree that the proposal will have limited change in terms of the abiotic attributes of the site (i.e. the proposal involves minimal earthworks) and the underlying plains landscape remains, there will be a change to the biotic attributes of the site with the wholesale removal of shelterbelts within the site and trimming of shelterbelts to a height of 4m at the site boundaries. While this vegetation removal and trimming is a permitted activity, there will still be a perceptual landscape change, as there will be a change with the proposed hedging of the entire site boundary with Japanese cedar. While this proposed screen planting uses a shelterbelt species found within the local area, the wholesale removal of shelterbelts within the site and proposed hedging of the site perimeter will contribute to eroding the existing smaller scale patchwork landscape pattern which is characteristic of the area. There will also be a landscape change within the site itself, from an open, rural pastoral landscape to a built landscape of energy infrastructure. While this may be somewhat comparable to nearby orchard shelter structures as asserted in the assessment, the built intensity of the proposed development is much greater than these structures. For these reasons I consider the landscape effects to be moderate adverse.

### Visual Effects

The visual catchment of the site is described in Section 4.3 of the assessment of landscape effects, and Table 1 in the report provides a list of potentially affected private properties with Table 2 providing an assessment of effects on these properties. I generally agree with the broader findings of the assessment of visual effects, that effects for users of Moroa Road will be low-moderate initially, diminishing to low within 5 years due to the establishment and growth of the proposed screen planting. I consider the effects for users of State Highway 2 to be low, given the speed of traffic, distance from the site, and angle of view towards the site in relation to the road. I agree with the findings for road users of Bidwills Cutting Road and other roads in the assessment. Visual effects for users of Pharazyn’s Road, to the south of Bidwills Cutting Road, on the eastern side of the southern land parcel of the site have not been considered in the assessment. As this road

lies similarly on a site boundary, I consider the effects for users of this road would be similar to that of users of Bidwills Cutting Road, that is low-moderate adverse.

With regard to effects from private properties, the assessment of landscape effects finds that visual effects for all dwellings in the vicinity of the site are either low or very low, with the exception of the two-storey dwelling at 268 Bidwills Cuttings Road which is considered to have low to moderate adverse effects during construction, following completion and into the longer term. I agree with this finding for the property at 268 Bidwills Cutting Road. However, after undertaking the site visit, I consider there are several other properties which will experience a greater level of effect than that defined in the assessment, as outlined in the following table:

			Applicant's LVA			BML Assessment		
Address	Distance from site boundary	Nature of view	Construction effects	Short term effects	Long Term effects	Construction effects	Short term effects	Long Term effects
489 Moroa Road <sup>2</sup>	50m	House located on corner next to substation. Will experience near, oblique views of solar farm construction and near views of substation improvements. Proposed planting will screen views once established.	Low	Low	Nil	Low-moderate adverse, due to distance from site and angle of view, with some existing screening	Low-moderate adverse	Low adverse, due to establishment of proposed screening
Lot 2/3 DP57088  New dwelling, corner Battersea and Moroa Road	90-100m approx	New Dwelling with side winds which face out towards gap in shelterbelt with view through to site. View from upper storey into site. Views of construction activity and the solar farm will be visible. Once established planting will screen from lower windows	Not assessed	Not assessed	Not assessed	Low-moderate adverse, due to proximity to site and direct, open views through gap in shelterbelt	Low-moderate adverse	Low adverse, due to establishment of proposed screening
286 Moroa Road	160m	Views towards site from front windows of dwelling, through gap in the shelterbelt. Removal of road boundary shelterbelt within site will open up views into the site from this dwelling. Proposed planting will screen views once established.	Low	Low	Very Low	Low-moderate adverse, due to distance to site and open views through gap in shelterbelt, with views into site opening up further due to removal of shelterbelt on site boundary	Low-moderate adverse	Very Low adverse, c
56 Settlement Road	90m	Open views from front of house and verandah directly towards site.	Low	Low	Nil	Moderate adverse, due to near distance, open views from	Low Moderate adverse, with screening provided by	Low adverse, as views of development reduced due to

<sup>2</sup> Listed as 489 Bidwills Cutting Road in Applicant's assessment

			Applicant's LVA			BML Assessment		
Address	Distance from site boundary	Nature of view	Construction effects	Short term effects	Long Term effects	Construction effects	Short term effects	Long Term effects
(verandah house)						front windows of dwelling which view directly towards the site.	advanced grade planting	establishment of proposed screening
76 Settlement Road	270m	Oblique views from north and east windows towards site	Very Low	Very Low	Nil	Low adverse, due to oblique nature of view and distance	Low adverse	Very Low adverse
90 Settlement Road	300m	Oblique views from north and east windows towards site	Very Low	Very Low	Nil	Low adverse, due to oblique nature of view and distance	Low adverse	Very Low adverse
96 Settlement Road (black house)	Approx 100m	Open, oblique views from dwelling towards site.	Low	Low	Very Low	Moderate adverse, due to near distance, oblique views from front windows of dwelling	Low-Moderate adverse, with screening provided by advanced grade planting	Low adverse, once planting has fully established
97 Settlement Road (white house)	370m	Oblique, but open views from dwelling toward site	Low	Low	Nil	Low-Moderate adverse, due to open nature of oblique views towards site	Low adverse, with screening provided by advanced grade planting	Very Low adverse, once planting has fully established



## Summary of submissions in relation to landscape matters

When the submission period ended, a total of 46 submissions were received. and at the time of writing no late submissions had been received.

Of the submissions received:

3 support in whole      4 support in part      39 oppose in whole      0 oppose in part

36 of the submissions received raise issues related to rural amenity and landscape character and 39 of the submissions raise issues related to the proposed planting. Issues raised by submitters in relation to landscape and visual matters have been summarised as follows:

### Rural Amenity/ Landscape character issues

- The openness and expansiveness of the landscape makes the region an outstanding natural feature, therefore it should not be disturbed, altered, or modified.
- Notable trees located on the site which add to the beauty of the landscape, along with historic and cultural values.
- Proposed mitigations will block views into the site, changing the existing character of the area. May also risk blocking views of distant ridgelines.
- Industrial development covering hundreds of hectares is more than minor change to the landscape.
- The District Plan specifically acknowledges natural character and seeks to protect it – open farmland is part of the natural character of the area.
- The proposal is not keeping with the amenity and character of the area.
- Density of the proposed structures will dominate the landscape.
- The proposal will result in significant changes to the natural character of the site.
- The proposal will alter the visual nature of current farmland and will result in an industrial looking area.
- The historic nature of Greytown is protected, and surrounding farmland should have the same protections to protect visual and historical value.
- Re-O3 Character of the Rural Environment – screening trees are unlikely to hide the impact of this proposal.
- Visual impact on the neighbouring residents, with tall solar panels and shipping containers in view from adjacent properties until the hedging grows.
- Proposal is inconsistent with the local character, heritage, and features of Greytown.
- Concerns for the character of the area and change to the existing rural landscape.
- A solar farm will destroy the visual beauty of the area.
- Impact on rural character and amenity values of the environment.
- Amenity values of the rural environment would be adversely impacted.
- Loss of landscape with introduction of hedges along Moroa Road.
- Concerns regarding losing rural views.
- Rural characteristics of the environment which attracts residents and visitors.
- Loss of amenity for local residents, which is understated.
- Blocking views into the site with hedgerows will change the character of the area.
- Significantly changes the existing natural character, more than minor.
- Concerns regarding the degradation of rural, scenic views that are associated with the district.
- Visual impact would change the character of the area.
- Landscaping will not be immediate.
- The proposal will alter the open pastoral landscape which is currently present, and result in more than minor effects.
- Concerns for the rural landscape, heritage town, and rural corridors being changed forever.
- Concerns for the loss of clean, green pastures.
- It is unclear from the application whether the screening will be sufficient to block views of the substation switching area.



- Loss of sight of the ranges and sunsets on the western side.
- Visual simulations and virtual views do not take into account the effect on surrounding properties and neighbours experience of the environment.
- Neighbouring properties planted fast-growing shelterbelts to dampen the extremes of wind and rainfall and to encourage the establishment of production trees and plants. They are planned to be cut down in ~2 years.
- Concerns that the views from One Tree Hill in Featherston and Mount Dick in Carterton will be ruined by solar panels.
- Concern that the “glimpse views” 500-700m from SH2 referenced in the applicant’s landscaping assessment are not appropriately mitigated.

## Planting/vegetation matters

- No detailed planting plans have been provided in the application. The site is challenging to plant on due to strong winds and low horizons resulting in high sunlight hours. The el-nino weather pattern predicated for the next few years will impact growing of plants.
- The proposal will change the character of the area and block views of the rural environment and mountains.
- Rows of hard infrastructure is not what you would expect to see in a rural setting – more than minor change.
- The applicant hasn’t provided realistic graphic representations of how the site will appear.
- Proposed mitigations will block views into the site, changing the existing character of the area. May also risk blocking views of distant ridgelines.
- The feeling of openness and expansivity is what brings people to the area.
- The application is unclear as to what height the hedges will be kept, and trees can die so there is no assurance that it will screen the proposed development.
- Screening blocks the views to the plains, mountains, and hillsides.
- Japanese Cedar does not mitigate the visual impacts.
- The landscape assessment (not reviewed by a second person) included in the application underestimates the visual screening of existing windbreaks. Cars on SH2 can be seen from the property, and the time it takes for trees to be planted will have impact.
- Screening heights are inconsistent throughout the application (3m vs 4m tall).
- The application only offers for the loss of character (with planting to screen panels). The current environment has open fields and windbreaks, which will change under this proposal and has not been addressed.
- Screening should be at full height before construction of the structures to hide the effects (year 5).
- Surrounding properties would lose their view to the Tararua’s.
- Concerns regarding loss of the character of the area with the development of a solar farm.
- Power infrastructure, transmission lines, and substations could detract from the aesthetics of the community.
- Ongoing professional management, irrigation, and husbandry of plantings has not been addressed in the application.
- A diverse polyculture hedge of native trees and shrub species could achieve a higher biodiversity restoration value than the proposed monoculture of Japanese Cedar. This would achieve the same screening function.
- Virtually no native insect eats any part of Japanese Cedar and this species provides no nectar or fruit for native birds.
- Screen planting will reduce the visual change.
- Disappointing to see the use of Japanese Cedar rather than native trees.
- Concerns about the length of time it takes for the trees to grow and the disruption of character during that time.
- Planting will use additional water from the neighbouring farmers existing bore. A water meter would be required
- Until the plantings grow tall enough, they will not disguise the visual effects on the landscape (potentially five years).
- The proposed planting is not fast growing and will not mitigate the impact on neighbours.

- Given the discrepancies in the information provided, Transpower is unable to confirm the maximum height of shelter belt planting on Site at maturity, particularly in proximity to the National Grid.
- Sufficient clearance is provided for planting of vegetation of 2.5 m in height along the western boundary of the Site. However, the proposed vegetation shall not be closer to the NGY than the existing rows of vegetation and no vegetation is permitted in the NGY.
- Vegetation planted along the eastern boundary of the Site between span MST-UHT-A0198 and 0199 shall not impede access to Transpower's National Grid assets, noting that shelter belt planting is proposed continuously around the eastern site boundary through to Transpower's substation to the east of the Site, including within the NGY. Transpower request that the shelter belt in this area is located so as to maintain vehicle access between Transpower's substation and the National Grid assets.
- The expertise of a lighting assessor was sought to comment on any potential adverse effects which may arise from the proposed solar farm, who noted in areas within 500-600m of SH2 "appropriate planting should be implemented to eliminate any possibility of glint/glare". In this case an extension of the 2m high planting along the north and north-eastern boundary of 'PLOT 3' would adequately mitigate any glint/glare effects resulting from this proposal.
- Supports the inclusion of conditions ensuring the proposed screening vegetation is appropriately maintained and monitored supporting the planting to reach and retain the height and depth proposed within the application.

## Response to submissions

It is clear that landscape and visual related matters are a key issue with submitters. Many of the submissions have recurrent themes, which I have summarised and addressed below.

### Rural amenity/ landscape character issues

A large number of submitters raise concerns in relation to the proposed solar farm and its potential to create a change in the rural/landscape character of the area which they value. Several submitters mention "natural character" which in this context I understand to be the perceived "naturalness" of the landscape character, rather than natural character as defined by Te Tangi a te Manu "An area's distinct combination of natural characteristics and qualities, including degree of naturalness".. A number of submitters believe that the rural landscape should be afforded landscape protection for visual and historical reasons. The Wairarapa Landscape Study – Evaluation (Boffa Miskell Ltd, 2011) identifies the Outstanding Natural Landscapes and Features (ONFL) and Special Amenity Landscapes (SAL) of the District. The evaluation factors with which these landscapes are defined is described in the study, and the site and its immediate surroundings are not defined as either an ONFL or SAL. The nearest areas to the site are the Remutaka and Tararua Ranges ONFL (around 6km to the west) and Lake Wairarapa ONFL (around 8.7km southwest).

Submitters state that there will be a change in the character of the site due to the removal of internal shelterbelts and the planting of the shelterbelt around the site boundary. I acknowledge these concerns. As discussed earlier, I note that while vegetation removal and trimming of the existing shelterbelts within the site is a permitted activity, there will still be a perceptual landscape change, as there will be a change with the proposed hedging of the entire site boundary with Japanese cedar, and the introduction of the built elements of the solar panels, inverters and other associated structures into an otherwise unbuilt pastoral landscape. While this proposed screen planting uses a shelterbelt species found within the local area, the wholesale removal of shelterbelts within the site and proposed hedging of the site perimeter will contribute to eroding the existing smaller scale patchwork landscape pattern which is characteristic of the area. There will also be a landscape change within the site itself, from an open, rural pastoral landscape to a built landscape of

energy infrastructure. While this may be somewhat comparable to nearby orchard shelter structures as asserted in the assessment, the built intensity of the proposed development is much greater than these structures. For these reasons I consider the landscape effects to be moderate adverse, rather than the low adverse as asserted in the landscape assessment.

The effects of the proposed development will be well contained within the local landscape, firstly due to the proposed shelterbelt planting, but also due to the nature of the existing landscape surrounding the site. The Wairarapa Landscape Study notes that within the area of the site land use is diversified, and includes dairy, sheep and beef farming, scattered areas of market gardens and orchards. Land parcels follow a regular linear pattern, with drainage ditches and shelterbelts creating a distinctive patchwork landscape. The proposed solar farm, while larger in scale than the current “patchwork” nevertheless would be absorbed into the existing character of the surrounding landscape once the proposed planting has established. The initial moderate adverse effect would have an influence on the immediate surrounding landscape of the site within 500m, but beyond this, landscape effects would reduce to low adverse, as the site would be absorbed into this surrounding patchwork landscape, filtered by the proposed planting.

A change in views, and in particular views towards the surrounding hills and views towards the site from significant higher landforms such as the Tararua Ranges were also recurrent issues raised by submitters. With regard to a change in view, Te Tangi a te Manu Aotearoa Landscape Assessment Guidelines notes that “Visibility and change are not effects in and of themselves”<sup>3</sup>. In the case of views towards higher landforms, these views could also be obscured by permitted development such as shelterbelts or agricultural buildings. With regard to views towards the site from higher landforms, views from the Remetaka and Tararua Ranges are some 6km away at their nearest point and would be difficult to obtain due to the thick vegetation cover, the oblique angle of view and the various shelterbelts and features in the surrounding landscape. Other specified viewpoints mentioned (One Tree Hill in Featherston and Mount Dick near Carterton) would be difficult to obtain for the same reasons.

With regard to effects on individual properties, I am generally in agreement with the findings of the landscape assessment, with the exception of those properties outlined in Table 1 above, where I have outlined my reasoning for differing level of effects. I consider that with mitigation planting in place, this will suitably reduce the effects on these properties.

### Planting issues

Submitters have raised a number of issues in relation to the proposed planting of Japanese cypress (*Cryptomeria japonica*) around the site boundary for screening of the solar panels. Some submitters are concerned about temporary effects while planting establishes, which the landscape assessment acknowledges, and I have also acknowledged in my review above. Other submitters are concerned that the planting features only an exotic species, with no native planting proposed. Given the concerns around visibility of the site, it is understandable that the applicant is proposing a quick growing evergreen exotic species to provide for screening in the shortest possible timeframe. The landscape assessment states that the proposed planting is expected to occur in June-August 2024, with areas of the site with greater effects

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<sup>3</sup> Te Tangi a Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, p.245.

identified being planted with specimens of 2m tall plants. Other planting proposed is 60cm tall at the time of planting. Installation of the proposed panels is proposed over the summer period 2024/2025, with commissioning in December 2025 which gives some 4-6 months for plant establishment as before construction of the solar farm begins. The assessment of landscape effects states that the proposed larger grade plants are expected to reach 2.5-3m in height, and others 2-2.5m in height by the date of commissioning. If the applicant is to achieve this rapid establishment, the implementation of irrigation is recommended, as a dry spring could adversely affect tree establishment.

Phasing of the site development site could assist further with this by installing the panels in the northern area of the site first, as these panels are at a greater distance from the nearest dwellings than panels to the south of the site adjoining Moroa Rd. The areas of panels to the south of Moroa Road is also very open and it would make sense to install this area last, giving that planting some time to establish before panels are installed in this area.

Establishment and maintenance of the proposed planting for the life of the solar farm is also a concern of many submitters. To address this matter, I have suggested conditions are included in relation to plant establishment and maintenance for the life of the solar farm and I have outlined these proposed conditions in the recommendations below.

Following the close of submissions, to address the concerns of submitters, further information was subsequently sought from the Applicant regarding the effects of the proposed planting on electricity transmission lines, and the effects of potential glint and glare on State Highway 2.

An issue was raised by Transpower in their submission regarding access to transmission lines, the heights of shelter belts, and the safe separation of mechanical plant during the construction phase and other construction effects. Transpower provided a suite of recommended conditions to be imposed on the application. It was considered that limitations set out in those conditions on shelterbelts may be incompatible with the landscape mitigation strategy in that the planting heights proposed would need to be reduced and therefore may not achieve the required screening. Further comment was sought from the applicant with the regards to the effect that this reduction in height would have on the proposed visual effects of the proposal from Bidwill's Cuttings Road. This was supplied in the memorandum from Simon Cocker on 28 August 2023. An Updated Landscape Plan (Figure 2a) was supplied along with this memo, along with a revised version of the landscape assessment which incorporates the reduction in height for the proposed planting in these areas. The memo confirms that the change in planting height will not result in a change in effects for the residents of 489 Bidwills Cuttings Rd or users of Bidwills Cuttings Rd, as views towards this portion of the site are blocked by the existing substation and screened by existing vegetation. I am satisfied that as described this would not result in a change in visual effects, and I support the Conditions proposed by Transpower. The Applicant's landscape plan should be updated to reflect the location of planting implemented at the shorter height of 1,5m, as outlined in the landscape memorandum.

The Applicant is now proposing a double staggered row of flax (*Phormium tenax*), planted as 1L grade plants where the boundary is within 12 metres either side of the centreline of the MST-UHT A National Grid

transmission line. It is suggested that this planting could comprise a further mix of low growing native species (such as hebe?) as this would provide some additional variety and enhance planting success and canopy cover over planting a single species.

In relation to the effect of glint and glare on users of State Highway 2, the Applicant has prepared a Glint and Glare Assessment which finds that there will be up to 3 minutes of green glare between 5-6am from late January to early February and up to 3 minutes of green glare between 4:30 am and 5:30 am from late October to mid-November on users of State Highway 2. Overall, the impact of this is assessed as being very low (negligible) and no mitigation is required. The report notes that these analysis results are considered conservative as the model assumes there is no screening. I concur with the findings of the assessment and note also that views towards any potential glare would be oblique (i.e. not in the line of sight of drivers), fleeting in nature and further limited by surrounding vegetation not included in the model.

Waka Kotahi's submission seeks that the potential effects of this glare are appropriately mitigated on the State Highway, and that this could be achieved "through an extension of 2m high screening vegetation of the north and northeastern boundary of 'PLOT 3' identified on the applicant's landscaping plan". I would note that the State Highway is to the west of the site, so assume this statement meant to refer to the north-western rather than north-eastern side of the site. I agree this would avoid any potential effects from the identified green glare. Given the status of the road as a State Highway, I support this additional mitigation proposed to avoid any potential glare effects on the State Highway. For absence of doubt as to the location, I illustrate the area in question below. The applicant's landscape plan should be updated to reflect the location of this planting.



*Figure 1 - proposed location of 2m height planting at implementation to mitigate potential effects of glare on State Highway*

#### Landscape and visual effects summary

In conclusion, I consider the landscape effects of the proposal to be moderate adverse due to the scale of change in the existing landscape pattern of the area and the introduction of built electricity infrastructure into

a currently open pastoral landscape. This effect would be apparent within 250m of the site at completion, gradually reducing to low beyond 250m of the site boundary where the site would be absorbed into the patchwork of the surrounding landscape. Once planting has established the moderate adverse landscape effects would be contained to within the site boundary.

I consider that the visual effects for private dwellings at 489 Moroa Road, the corner of Settlement/ Battersea Roads and 286 Moroa Road to be Low-moderate adverse, decreasing to low adverse once planting has established.

The properties at 56 and 96 Settlement Road have the most open, near views towards the site and I consider the effects on these dwellings to be moderate adverse during construction, gradually decreasing to low-moderate adverse once planting starts to become established, with low adverse effects once this planting has established.

#### Proposed conditions

To address the matters raised above, the following conditions, or amendments to conditions, are proposed:

#### Landscape Management Conditions

1. At least 30 working days prior to the commencement of landscaping, the Consent Holder shall submit to S W D C for certification a Landscape Management Plan (LMP). The objective of the LMP is to direct the details of planting around the external boundaries of the site such that, once established, the boundary planting is maintained to:
  - 1.1 a minimum of three (3) metres in height and three (3) metres in width, except within 12 m of the centreline of the MST-UHT A National Grid transmission line, where no trees or vegetation greater than 2m in height shall be proposed and along the eastern boundary of the Site between span MST-UHT-A0198 and 0199. Any proposed new trees or vegetation planted outside of 12 metres either side of the centreline of the transmission line must be setback sufficiently to ensure that trees cannot fall within 4 metres of the transmission lines.
2. The boundary planting shall screen the solar array when viewed externally to the site; and prevent any glare from the solar array from escaping onto neighbouring properties or roads.
3. The boundary planting shall include the implementation of 2m high specimens along the north and north-western boundary of 'PLOT 3' as identified on Figure 2a of the Landscape and Visual Assessment dated September 2023 to mitigate potential effects of glare on users of State Highway 2All vegetation must comply with the Electricity (Hazards from Trees) Regulations 2003, or any subsequent revision of the regulations.
4. The LMP shall include (but not be limited to):
  - 4.1 Identification of planting zones in accordance with the approved Site Plan (Dated xxxx), Figure 2a of the Landscape and Visual Assessment dated September 2023 and the recommendations in the Landscape Assessment (dated 28 August 2023) and to address Conditions 1.1 and 2];
  - 4.2 Identification of planting zones planting zones on a clear and concise plan which illustrates

the location of the following:

- a) areas of existing shelterbelt to be trimmed to 3m in height
  - b) Proposed Planting with 60cm high plants at the time of planting
  - c) Proposed Planting with 2m high plants at the time of planting,
  - d) Proposed Planting with 1.5m high plants at the time of planting in locations underneath or within 12m of of the centreline of the MST-UHT A National Grid transmission line
  - e) Proposed planting of native screen planting not to exceed 2m in height
- 4.3 For each planting zone with new planting, details of layout, species, grades, numbers, spacing, heights and locations of planting at implementation, irrigation installation and maintenance and a programme and specification for implementation and maintenance of all plants.
- 4.4 Details of the existing mature trees/existing vegetation at locations that are to remain, or are be trimmed or removed (as shown on the approved plan xxx).
- 4.5 Timeline for planting works;
- 4.6 Details of site preparation and maintenance required for plant establishment including the nature, duration and extent of irrigation;
- 4.7 The location and design of fencing of the Site;
- 4.8 Details of ongoing maintenance including weed control management and monitoring;
- 4.9 Details of the method and frequency of monitoring the health of the plants to ensure their health and survival.
5. All landscaping shall be implemented and maintained in accordance with the certified management plan required under Condition x.
6. All planting shall be irrigated (as required) for the entire time the solar farm is operating.
7. The Consent Holder shall retain all existing and proposed Site boundary shelterbelts and vegetation for the life of the solar farm.
8. The consent holder shall implement the landscape mitigation planting within the LMP within the first planting season (April/May, September/October) following the issue of consent. Photographic evidence of the established planting shall be provided to xxx Manager, South Wairarapa District Council within one month of the planting being implemented along with evidence of a contract for the landscape planting services and maintenance for the following 12 month period.
9. All plantings as referred to in the application and LMP above shall be nurtured and maintained to ensure their long-term survival. Any plants that become diseased or die shall be replanted in the subsequent planting season (April – September) following their loss.
10. The perimeter security fencing shall be located internally and screened from outside views by the existing and proposed planting.

#### Installation conditions

11. In order to minimise effects on local residents during construction, solar panels should be installed

in stages, starting in the northern end of the site before extending to the south.

With the above conditions in place, I consider that the landscape and visual effects of the application are suitably mitigated, and the application should be approved.

Emma McRae

Principal, NZILA Registered Landscape Architect

Boffa Miskell Ltd.



12 September 2023

Nick Pollard  
Boffa Miskell

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Dear Nick,

### **Far North Solar Farms- Greytown solar farm: Acoustic review**

South Wairarapa District Council have engaged Styles Group to review the construction and operational noise effects from the resource consent application to establish and operate a 175-megawatt (peak) solar farm at 415 Moroa Road, Greytown (the **Site**). We understand that the application is subject to a request for Direct Referral and has been publicly notified.

We have reviewed the Assessment of Noise Effects prepared by Marshall Day Acoustics (the **MDA Report**) dated 17 August 2023. The MDA Report has been provided in response to a Section 92 request.

We understand the overall activity status of the application is restricted discretionary. The application proposes to comply with the noise standards of the Operative Combined Wairarapa District Plan (the **District Plan**). Non-compliance for noise reasons is not identified as a reason for consent.

This advice comprises a review of the operational and construction noise effects of the proposal.

## **1.0 General comment on solar farm noise in Rural Zones**

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The proposal is to establish a solar farm in the Rural (Primary Production) Zone of the District Plan. The mechanical plant noise associated with solar farms operates on a relatively constant basis<sup>1</sup> and differs from the character, duration and timing of noise sources that are typically associated with rural production activities. The Primary Production Zone is typically dominated by the seasonal and intermittent noise effects of production activities, such as those described in Section 4.3.6 of the District Plan:

*“residents living in the rural environment need to recognise the accepted management practices of these activities, including agricultural spraying, the use of farm machinery, the seasonal operation of birdscarers, frost protection devices, odour, and night harvesting that may occur”*

In this case, we understand that the District Plan provides for the establishment and operation of renewable energy facilities. Section 4.2(11) of the District Plan recognises that large scale

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<sup>1</sup> In this case, we understand that the proposed noise sources will operate during sunshine hours only and that the proposal does not include any battery storage infrastructure or plant that will generate noise overnight

connected facilities “*need to locate in the rural environment because of their land area and siting requirements*”.

We consider that the District Plan provides a reasonable expectation to the community that noise associated with large scale connected renewable energy facilities should be expected in the rural zone, along with the noise from traditional primary production activities.

We therefore consider that the permitted noise standards are generally appropriate to control the noise levels from the solar farm.

However, we also note that noise at levels up to the permitted noise standards would be likely to generate a significant level of adverse noise effect. Noise levels at a notional boundary at a constant level of 55 dB  $L_{A10}$  during the day or 45 dB  $L_{A10}$  during the night time would be likely to be experienced as annoying and intrusive and would likely be the dominant noise above all other noise sources.

In this case, the highest predicted<sup>2</sup> noise level at an existing notional boundary is 39 dB  $L_{A10}$ , and well below the permitted daytime and nighttime<sup>3</sup> noise standards. We note that the District Plan’s prescribed timeframe for night time commences at 7:00pm and extends until 7:00am. The lower night time noise limits provide the rural receivers with a higher level of noise amenity during the evening and night-time periods.

We recommend that mechanical plant should be selected, designed and located to minimise noise emissions to the adjacent receivers to the greatest extent possible. We agree with the approach identified in the AEE that states “*the inverters will be placed as centrally as possible within the site to minimise any potential disruption to neighbours.*”

## 2.0 Operational noise sources and predictions

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We generally agree with the inputs and assumptions adopted by MDA in their noise modelling.

MDA have predicted the noise levels of 39 central inverters distributed across the array, with two transformers located in the switchyards. The rating level predictions in Table 6.3 include a +5dB special audible character adjustment for tonality, with no adjustment for duration.

MDA’s statements regarding the low level of noise from tracker motors is consistent with our findings. We agree that noise from tracking motors will have a negligible contribution to the overall noise emissions from the Site.

### 2.1 Noise emissions from selected plant

The MDA Report confirms that the applicant has not confirmed the exact plant that will be used. It is our experience that there can be considerable variation in the sound power levels of transformers and inverters. If the applicant seeks flexibility for the plant to be selected after consent is granted, we recommend a condition of consent is included to ensure that the noise

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<sup>2</sup> The predictions assume that the plant is operating at full load. The facility is not expected to generate during typical sleeping hours.

<sup>3</sup> The prescribed timeframe for nighttime commences at 7:00pm and extends until 7:00am

emissions from the selected plant are no greater than those considered in the MDA Assessment. Our recommended condition is provided in Section 5.0.

### 3.0 Operational noise effects

The AEE states that operational noise effects will not be noticeable from the boundary of the Site. This statement conflicts with MDA's overall findings that:

*“Solar farm noise levels at dwellings on Moroa Road, Settlement Road and Battersea Road would be in the order of 27 to 39 dB  $L_{A10}$  at times of solar generation. As the Moroa, Settlement and Battersea Road area is further removed from State Highway 2, it is subject to generally lower noise levels (noting that background noise levels in this area vary depending on local activity). Noise from the solar farm generation is expected to be above the existing background ( $L_{A90}$ ) noise level at times, but generally similar to or quieter than the existing ambient ( $L_{A10}$ ) noise level. In this area on settled weather days, the solar farm would be audible at times as a low-level constant noise source”*

We do not expect that that the noise levels will be audible inside dwellings.

#### 3.1 Noise effects across adjacent land

The MDA Assessment identifies that the surrounding land is used for a combination of rural farming and rural lifestyle purposes. Table 1 and Figure 1 of the MDA Assessment identifies the sites where there is an existing dwelling (notional boundary). Table 5 includes noise level predictions at each notional boundary.

Figure 1 shows that the receiving environment *may* include vacant sites on which a residential dwelling has yet to be constructed. The MDA Report does not describe or assess the potential noise effects across vacant sites. The MDA Assessment is not accompanied by noise contours that would enable the level and extent of noise emissions across potentially vacant sites to be better understood.

Where a noise maker is unable to internalise noise effects within site boundaries and proposes to generate noise effects across adjacent vacant land, we recommend that the noise effects on the permitted use and development of that land are clearly understood in the decision-making process. The assessment should inform an assessment of the following matters:

1. The extent of the daytime and nighttime noise levels across the vacant land. Noise contours should be provided to illustrate the extent of the 55 dB  $L_{A10}$  (daytime) or 45 dB  $L_{A10}$  (night time) contours across the adjacent land parcels.
2. If the noise contours show that the area of vacant land inside the 55 dB  $L_{A10}$  (daytime) or 45 dB  $L_{A10}$  (night time) contour is highly unlikely to be developed for a noise sensitive activity, the noise effects may potentially be acceptable. This determination would require consideration of the underlying zoning, the permitted use of that land and the associated outdoor amenity expectations in that zone.
3. If the noise contours show that the area of vacant land inside the 55 dB  $L_{A10}$  (daytime) or 45 dB  $L_{A10}$  (night time) contour is likely to include a building platform

for a future notional boundary<sup>4</sup>, the noise effects should be considered in the decision making process. We understand that the District Plan anticipates and provides for the establishment of a residential dwelling on each site, and it is reasonable to assume that landowners may seek to exercise this permitted development right and receive protection from the District Plan noise limits that control the noise levels that can be generated and received between rural zoned sites.

4. If a future notional boundary is likely to be exposed to noise levels greater than the permitted noise standards, non-compliance with the noise standards should be identified as a reason for consent. Notification may be required where the noise contours demonstrate the future permitted use and development of the vacant land may be constrained by the noise effects that the activity seeks to authorise. The notification/ submission process would typically enable the landowner to have input on how the noise effects may affect the use and development of their land. If the application is not notified to the landowner, the landowner may have no knowledge of the application, or the noise effects the activity seeks to authorise. The landowner may have no knowledge of the noise effects across their land until a residential dwelling is established. The noise effects may give rise to noise related conflict and complaint between the landowner and the noise generating activity.

In this case, it would appear that some adjacent sites may be vacant, however we note that rural land ownership can be complex, with parcels often held together. We recommend that noise contours are provided by the applicant, and the planners determine the likelihood of any notional boundaries being established on vacant land that is inside the 55 dB L<sub>A10</sub> and 45 dB L<sub>A10</sub> noise contours.

### 3.2 Proposed date-stamp in Condition 1

Our initial review raised concerns regarding the proposed “date-stamp” in Condition 1. The date-stamp would require the solar farm to only comply with the District Plan noise limits at the “*notional boundary of dwellings existing at the time of consent*”. Condition 1 would mean that no noise limits apply at any dwelling constructed after consent is granted, creating a “first-in, first-served” arrangement.

Our initial review set out the reasons why we fundamentally disagree with the inclusion of a date-stamp in Condition 1. These reasons include:

1. **The District Plan noise limits apply at any notional boundary in the Rural Zone:** We are not aware of any acoustical basis for recommending that no noise limits should apply to dwellings constructed after resource consent is granted. The District Plan noise limits are designed to ensure that all notional boundaries in the Rural Zone are provided with an adequate level of daytime and night time noise amenity. An activity that does not require resource consent must comply with the noise limits at all notional boundaries. An activity that requires a resource consent

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<sup>4</sup> This may require a planner to identify the likely permitted building platform, taking into account access, services and compliance with permitted activity standards

is therefore also required to comply with the noise limits at all notional boundaries, unless the application identifies non-compliance with the noise standards as a reason for consent, and consent is granted to authorise those noise limits.

2. **The proposal is to comply with the District Plan noise limits:** The date-stamp would authorise potentially non-compliant noise levels at future notional boundaries. The District Plan noise standards require noise levels to be complied with at any notional boundary. Condition 1 should therefore ensure compliance is achieved on an ongoing basis, at all notional boundaries.
3. **Date-stamping can give rise to noise conflict and legal argument:** Landowners are likely to have a reasonable expectation that they can exercise their development rights to a) construct a dwelling on their vacant site and b) be protected by the District Plan noise limits. Condition 1 would exempt the noise maker from any noise limit on land that was vacant at the time of consent. If a noise sensitive activity is established on land exposed to noise levels that are incompatible with residential activity, it is likely that noise-related complaint and conflict will occur in the future. Council may be required to moderate the noise conflict, with this process often resulting in significant time and cost to all parties involved and potentially legal or enforcement action. In this case, there is no way for a landowner to understand the noise effects that could potentially be generated across their land. The noise effects are not visible on District Plan maps, and would not be disclosed as part of a LIM.
4. **The date-stamp does not require the applicant to manage their noise effects across adjacent land in the future:** We recommend that the noise effects across adjacent land and the potential for encroachment are clearly understood by the noise-maker as part of the design and consenting stage. This enables the noise maker to have a clear understanding of whether there is likely to be a current or future need to reduce, mitigate or otherwise internalise noise emissions to achieve compliance and compatibility with permitted land use activities on adjacent sites. In its current form, Condition 1 seeks to exempt the activity from compliance with any noise limits on sites that are currently vacant. If consent is granted, the noise maker will have no requirement to manage their noise effects across the sites that are currently vacant.
5. **The use of a date-stamp relates to complex legal/ planning considerations that are generally beyond the expertise of an acoustics expert:** The use of a date-stamp condition may potentially authorise non-compliant noise levels at a future notional boundary. The legal and planning implications of date-stamping is outside the expertise of an acoustic expert. We recommend the planning and legal implications of the date-stamp are considered by the relevant experts, taking into account the permitted use and development of that land. The acoustics experts can assist to interpret the noise contours in terms of effects, when the permitted use and development of any vacant land is confirmed.

We understand that the applicant has obtained legal advice and has confirmed their agreement to the removal of the date-stamp in Condition 1.

## 4.0 Construction noise

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We generally agree with MDA's assessment of construction noise effects.

Our key area of disagreement relates to MDA's determination that the "typical duration" noise limits in NZS6803:1999 will apply to the project. The "typical duration" noise limits in NZS6803:1999 apply to a project that can be completed in more than 14 calendar days and less than 20 weeks.

The AEE states that construction activities will take place over a 6-9 month period. The construction phase may therefore exceed 20 weeks. If the total duration of the construction phase exceeds 20 weeks, the long-term construction noise limits in NZS6803:1999 apply. These noise limits are lower than the noise limits applying to typical duration projects.

We expect that the construction timeframe will be confirmed as part of the detailed design phase. The CNMP proposed in Condition 3 will use this information to confirm the applicable construction noise standards based on the expected duration of the project.

We recommend that the reference to "typical duration limits" in Condition 2 is deleted. Condition 2 is reproduced below, along with our suggested amendments:

Noise from construction activities shall not exceed the ~~typical duration~~ limits recommended in, and shall be measured and assessed in accordance with, New Zealand Standard NZS 6803: 1999 "Acoustics – Construction Noise".

We support the wording of Condition 3.

## 5.0 MDA's Recommended noise conditions

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This section sets out our recommended amendments to the applicant's proposed noise conditions.

### 5.1 Condition 1 – operational noise limits

Condition 1 controls the noise levels that may be generated from the solar farm and received at any notional boundary on an adjacent site. Our recommended changes to Condition 1 are identified as **additions** and **deletions**:

1. The noise level from operation of the solar farm shall meet the following noise limits at the notional boundary of dwellings ~~existing at the time of consent~~ on any other site (excluding ~~these~~ **the sites at [insert addresses]** where written approval has been obtained):

Daytime 7:00am to 7:00pm 55 dB LA10

Night-time 7:00pm to 7:00pm 45 dB LA10

9:00pm to 7:00pm 75 dB LAfmax

Noise levels shall be measured and assessed in accordance with NZS 6801:~~2008~~**1999** Acoustics – Measurement of Environmental Sound and NZS 6802:~~2008~~**1991** Acoustics – Environmental Noise.

The recommended changes to Condition 1 are designed to:



1. Remove the date-stamp, for the reasons discussed earlier in this advice. We understand that the applicant has confirmed their agreement to the removal of the date-stamp.
2. Ensure that the site(s) where written approval have been provided are identified in the condition. This enables the condition to be administered efficiently and effectively.
3. Ensure that the noise measurement metrics and standards align. The application is based on compliance with the Operative District Plan noise limits that refer to the  $L_{10}$  descriptor. While we support the use of up-to-date acoustical standards, the use of the  $L_{10}$  descriptor in the relevant plan rule will require measurement and assessment to be undertaken in accordance with the standards referenced in the District Plan as the  $L_{10}$  descriptor is not used in the 2008 versions of NZS6801 and NZS6802. There is no material change in the level of effect that would arise from this change.

## 5.2 Recommended new condition

The MDA Report confirms that no specific model of inverter has been selected. MDA recommends that “*suppliers confirm that the final equipment selected can operate accordingly*” and “*the final determination of inverter selection can inform if any further noise mitigation package is required*”. MDA have not recommended conditions that would ensure these outcomes are delivered.

We recommend that the following condition is included. This condition is designed to ensure that the noise emissions of the final plant arrangements are considered in the detailed design process.

The consent holder shall provide [insert delegation] with an acoustic assessment from a suitably qualified and experienced acoustic expert that demonstrates the proposed plant and layout will achieve compliance with the noise limits in Condition 1. The report shall be provided to the Council a minimum of 6 weeks prior to construction of the solar farm.

## 5.3 Condition 2

We have recommended minor changes to Condition 2, as detailed in the previous section.

## 6.0 Key findings of this review

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1. We understand that the District Plan anticipates and provides for solar farms in rural zones. On this basis, we consider that mechanical plant noise from solar plant is a noise source that could be reasonably expected in the zone. We consider that the District Plan noise standards are appropriate to control the noise effects from the proposal.
2. We generally agree with the inputs and assumptions used by MDA to predict the noise levels from the solar farm. As the applicant has not confirmed the final plant that will be used, we have recommended a new condition to ensure that the noise emissions from the final plant arrangements are consistent with those considered in the MDA Report.
3. The MDA Report confirms that the solar farm is able to comply with the noise limits at any physically existing notional boundary. The highest predicted noise level at an existing notional boundary is 39 dB  $L_{A10}$ , and well below the permitted daytime and night time noise

standards. The facility is expected to generate noise during evenings during the warmer months but is not expected to generate noise overnight.

4. We agree that the noise levels from the solar farm are likely to be audible at the closest receivers. The noise levels are likely to be clearly audible to the receivers when they are outdoors, during calm meteorological conditions and in periods when background noise levels are low. These periods may coincide with times when expectations for outdoor amenity are greatest.
5. The MDA Report does not include an assessment of noise effects across vacant land and includes a recommended condition that would exempt the activity from complying with any noise limits at future dwellings established after consent is granted. We are unable to determine whether the noise emissions across vacant land are likely to result in non-compliance with the noise standards at future notional boundaries. We recommend that noise contours are provided by the applicant, and the planners determine the likelihood of any notional boundaries being established inside the 55 dB  $L_{A10}$  and 45 dB  $L_{A10}$  noise contours.
6. The applicant has since confirmed the proposed date-stamp in Condition 1 will be removed. We agree with this approach.
7. We have not reviewed the submissions relating to noise effects. We can provide further comment on specific submissions if required.

Please contact me if you require any further information.

Yours sincerely,



Jon Styles, MASNZ  
Director and Principal



## Water Services Resource Consent Conditions – Assessment of Application

Date: 28 August 2022

220103 – 415 Moroa Road

### Understanding of Application

The applicant is proposing to install a solar farm at the above address (Pt Lot 6 DP 8803, Pt Lot 7 DP 8803, Pt Lot 10 DP 3106 and Section 27 Moroa Sett.) via a Land Use Consent.

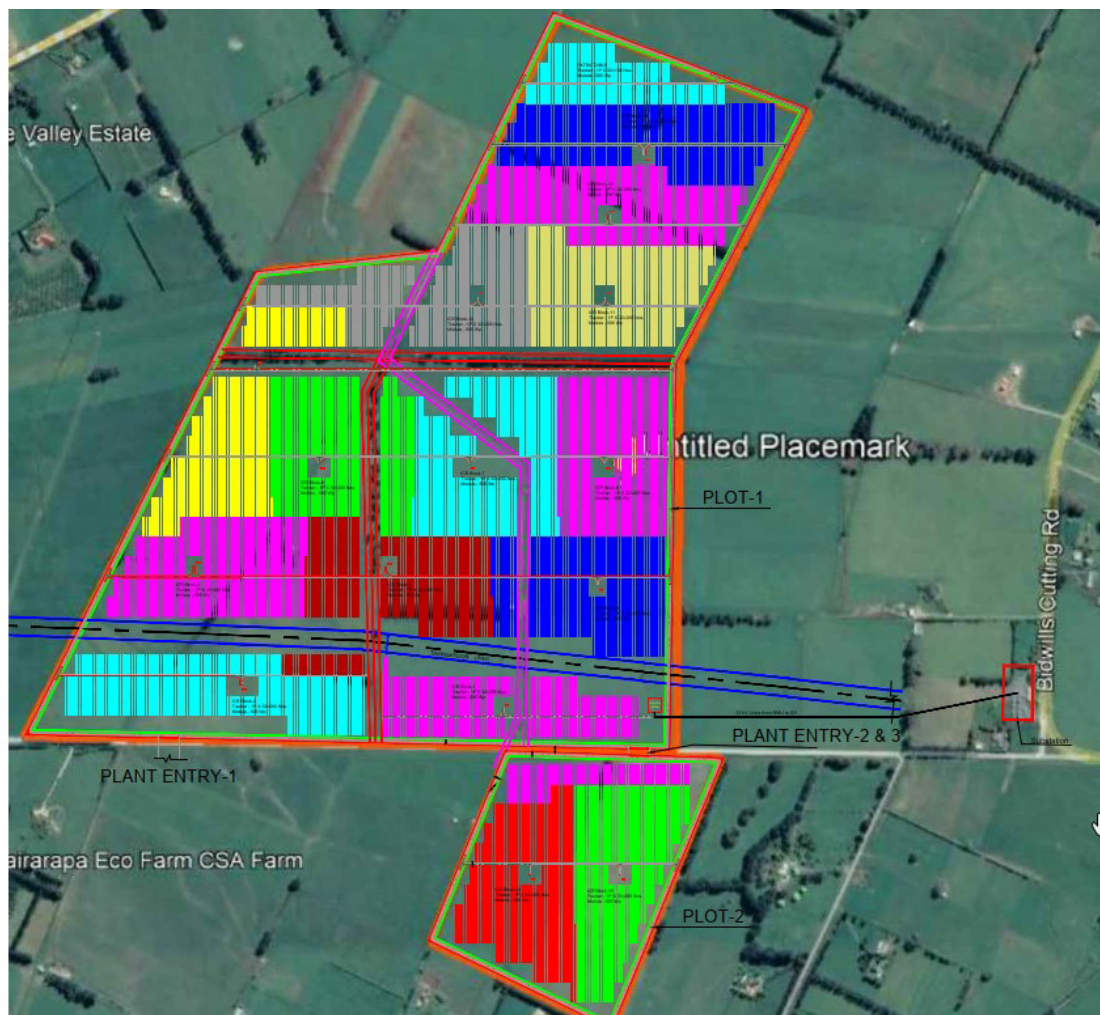


Figure 1 Scheme Plan from application

All access tracks across the site will be constructed as all weather metal tracks, that will remain permeable and not be sealed. These are assumed to be equivalent to farm access routes with any runoff from surfaces discharging across farm land to soak to ground.

All setbacks from existing water-races will be maintained and no cabling will bridge or cross the water races within the site.

### **Servicing**

The development will not result in any subdivision of land or change in landuse.

The applicant has not identified any wastewater or water servicing requirements for the site.

The solar panels will be positioned on posts or structures above the ground with no change in perviousness to the land.

The site has no water supply. The site will need to be self-sufficient for water (for cleaning). The applicant has confirmed that the panels will be washed once a year and not chemicals will be used. They understand that water will not be able to be abstracted from the water race.

Construction will require installation of foundations to support the solar panels and cabling to the various substations and inverters. The layout proposed indicates that cables will be laid across the water races, and some structures may bridge or be in close proximity to the race.

### **Flood Hazard**

Review of the SWDC & GWRC flood maps has not identified any flood hazard within the site and it is not therefore considered necessary to put any conditions on the Land Use in relation to flooding.

### **Moroa Water Race**

A number of branches of the Moroa water race flow through the centre and along the edges of this development. A SWDC bylaw (2007) covers this race to maintain the flow capacity of the race.

Note under the bylaw it is:

*2.3.15 Not permitted to damage, displace, alter or interfere with any bank, dam sluice, flume, bridge, meter, reservoir, pipe or any other work or thing used in supplying and distributing water from any water race without written consent of the Council*

*2.3.17 Not permitted to place any structure over, in or under a water race without written consent of the Council.*

*2.3.20 Erecting any building or structure of any kind or any size within 5m either side of any water race is prohibited without written consent of the Council.*

**Proposed Land Use Conditions & Advice Notes**  
**Water Race**

- a) The Moroa Water Race runs through the proposed solar farm development and:
  - i. The Water Race must be maintained in its current location.
  - ii. No buildings and or structures of any kind (including solar panels and electrical transformers / substations) shall be located within 5 m of either side (tope of bank) of the Moroa Water Race.

***Advice Note: The existing scheme plan is not approved and will require amending to achieve a compliant design.***

- b) The consent holder must obtain Engineering Approval from the Council for any works within 5 m of either side (top of bank) of the Moroa Water Race, including but not limited to:
  - i. Any electrical services crossing of the Moroa Water Race,
  - ii. Any new accesses crossing the Moroa Water Race,
- c) All construction work within 5 m of the Moroa Water Race must be completed in accordance with the Engineering Approval obtained under condition (b).
- d) Upon completion of the works and prior to application for certification, the consent holder must provide as-built plans at sufficient scale to demonstrate compliance with conditions (a), (b) and (c) above.
- e) The consent holder / future owner(s) must be aware of and comply with their responsibilities under the Moroa Water Race Bylaw or its subsequent documents, in particular but not limited to;
  - i. Maintaining Council access requirements,
  - ii. Maintenance, cleaning and fencing responsibilities etc.
  - iii. No installation of infrastructure over, in or under a water race without written authorisation of the Council
  - iv. No planting, building or structures of any kind of any size within 5 m of either side of the water race without written authorisation of the Council.
- f) The site is not serviced for water or wastewater. It will be the consent holder's responsibility to provide the site with onsite water and wastewater appropriate for the nature of the development.

***Advice Note:***

- 1.** The water race water source is to be used principally for farming purposes and is not available as a water source for the solar farm.
- 2.** The work to install the services at development shall be in accordance with the South Wairarapa District Council Code of Practice for Land Development and NZS 4404. All costs associated with this work will be borne by the developer.

**Note:** Upon the issue of the certification or at such earlier time as may be required, a Consent Notice pursuant to section 221 will be issued. The Consent Notice will specify condition (e) and (f) above to be registered

against the Computer Freehold Register of the parent parcels of this development.

**Prepared by:**        **Lindsay Blakie**        **Date: 25.8.2022**  
**Contractor/E2Environmental Consulting Engineers**

**Reviewed by:**        **Zeean Brydon**        **Date: 31.8.2022**  
**Contractor/E2Environmental Consulting Engineers**

1. The consent holder shall obtain written approval for the engineering road designs from Ruamahunga Roads (SWDC Roading) prior construction work commencing.
2. Before starting any construction work, the person responsible for obtaining consent must arrange a meeting with the development engineer from Ruamahunga Road. The purpose of this meeting is to discuss the Work Access Permit, Traffic Management Plan, and any other necessary requirements to ensure that the work is carried out to the specified standards.
3. A permit is required prior to commencing any work in the transport corridor (CAR) to be compliant with the two relevant codes of practice; the 'National Code of Practice for Utility Operators Access to Transport Corridors', and the 'Code of practice for temporary traffic management (COPTTM)'.
4. The existing entranceways shall be assessed and up-graded as necessary to comply with the Wairarapa Combined District Plan Appendix 5 – Requirements for Roads, Access, Parking and Loading and NZS4404. The consent holder shall provide evidence of compliance to the condition as part of the 224-certification process.

Condition 5 is valid only if new accessway is proposed.

5. The new entranceways shall be formed and sealed from the road edge to the property boundary to comply with the Wairarapa Combined District Plan Appendix 5 – Requirements for Roads, Access, Parking and Loading and NZS4404. The consent holder shall provide evidence of compliance to the condition as part of the 224-certification process.
6. Prior to completion, the applicant shall arrange for an inspection of the vehicle crossings and drain to this subdivision by the Development Engineer at SWDC and provide confirmation from them that the work has been completed to the appropriate standard and as per the conditions of this consent.
7. For water races Culvert sizing and locations be undertaken by a suitably qualified person through the Engineering Approval process.