

**BEFORE A COMMISSIONER APPOINTED BY THE SELWYN
DISTRICT COUNCIL**

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF applications by KeaX Limited for
resource consent to establish a solar
array at 150 Buckleys Road,
Brookside.

**STATEMENT OF EVIDENCE OF AMANDA LEIGH ANTHONY
ON BEHALF OF THE APPLICANT
(LANDSCAPE PLANNING)**

Dated: 9 February 2023

KeaX Limited
Applicant
Campbell McMath
(campbell@keaenergy.nz)

Applicant
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1 INTRODUCTION

- 1.1 My full name is Amanda Leigh Anthony. I am employed as a Senior Landscape Architect with Boffa Miskell Limited, a national firm of consulting landscape architects, planners, ecologists and urban designers. I hold a Bachelor of Landscape Architecture (BLA) qualification from Louisiana State University in the USA. I am a Registered member of the New Zealand Institute of Landscape Architects (NZILA).
- 1.1 I have practised as a landscape architect in New Zealand for over 12 years on a wide range of projects with working experience in the USA and Australia as well. I have worked with a wide range of clients around New Zealand including local authorities, land developers, and the infrastructure and renewable energy sectors.
- 1.2 My experience includes carrying out landscape and visual effects assessments, natural character assessments, territorial landscape studies and coastal natural character studies. I have also undertaken peer reviews of landscape assessments on behalf of Tasman District Council, Marlborough District Council and Queenstown District Council for various resource consent applications and activities.
- 1.3 Recently, I have prepared several landscape and visual effects assessments for proposed solar developments across New Zealand with one granted consent in December 2022 in Whitianga (approximately 54 hectares in area) on the eastern Coromandel Peninsula with capacity to produce approximately 23 MW.
- 1.4 In this matter, I was engaged by KeaX Limited (KeaX) in November 2021 to undertake a Landscape and Visual Effects Assessment (LVA) of a proposed 258 hectare (ha) solar farm located at 150 Buckleys Road, Brookside (the Site), approximately 10km north of Leeston in mid-Canterbury.
- 1.5 My evidence is in respect of the resource consent application (RC225180) by KeaX to construct a new solar array (or solar farm) on the 258ha Site in three stages over three years (the Application).
- 1.6 I am the principal author of the LVA for the Brookside Solar Farm dated 9 March 2022, which was Appendix 13 to the Application.

2 **CODE OF CONDUCT**

- 2.1 Whilst this is a Council hearing, I acknowledge that I have read and agree to comply with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court Practice Note 2014. My qualifications as an expert are set out above. Other than where I state that I am relying on the advice of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

3 **EXECUTIVE SUMMARY**

- 3.1 The proposal consists of the construction and operation of a 258ha solar farm at 150 Buckleys Road, Brookside near Leeston that will be staged throughout three years. The Site has a flat topography and is currently used as a dairy farm. Numerous shelterbelts and fences delineate the Site into paddocks, which is a typical characteristic of the rural Canterbury landscape.
- 3.2 The methodology used to assess the level and nature of effects of the proposal on the landscape character and values is consistent with *Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*¹.
- 3.3 Following the review of submissions and the s42a report, a revised landscape mitigation strategy is proposed to address matters raised, and is outlined below:
- (a) An additional row of evergreen, exotic plant species will be planted along the shared southern Site boundary with 324 Branch Drain Road;
 - (b) Due to the Council requiring the existing planting along Branch Drain Road (western Site boundary) to be removed, the proposed mitigation planting will be setback 10m from the road reserve. However in the short term the existing planting will be

¹ 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.

retained to provide screening of Stage 1 until such time that the proposed mitigation planting reaches 2m in height (expected to be between 2-4 years depending on the plant species). Where there are 'gaps' in the existing planting, larger grade, 2m tall native plants, spaced closely, will be planted to ensure filtered views and visual softening are achieved prior to the construction of Stage 1. The same approach will be applied to the 'gaps' along Buckleys Road.

- (c) Based on the revised mitigation strategy, the adverse visual effects from Branch Drain Road and Buckleys Road would be in the **low-moderate** range initially (as concluded in the LVA) however, the length of time for the level of effects to reduce to **very low**, would be shortened (by potentially one year) due to the implementation of more mature plant species in the 'gaps' that would reduce the visual impact from the beginning and soften/filter the view of the solar arrays.

3.4 The proposed Landscape Mitigation Plan has been appended to my evidence as **Figure 1**. As illustrated on **Figure 1**, there is existing planting to be retained and proposed planting along the Site boundaries to provide visual screening of the proposal. All proposed planting will be implemented as part of the Stage 1 works to ensure plants are established prior to the implementation of Stages 2 and 3.

3.5 Further to this, a Landscape Management Plan is proposed as a condition of consent to ensure the mitigation planting is successful and maintained to achieve visual screening as set out in the LVA. This, along with other proposed condition of consent, are intended to address Mr Aimer's and the submitter's concerns.

4 **SCOPE OF EVIDENCE**

4.1 My evidence relates to the landscape and visual effects of the Application and addresses the following matters:

- (a) The proposed activity (the Proposal);
- (b) The Site and existing environment;
- (c) Statutory Provisions;

- (d) Assessment of Landscape and Visual Effects (including a response to Selwyn District Council's section 42A Planning Report regarding landscape and visual effects);
- (e) Response to the submissions in relation to landscape and visual effects;
- (f) The proposed conditions of consent and
- (g) Conclusion.

4.2 In preparing this evidence, I have read and considered the following documents:

- (a) The resource consent application for the Proposal (including the AEE);
- (b) The evidence of Campbell McMath (applicant);
- (c) The submissions on the application from (Clark Casey, Liz Casey, Robyn Casey, Donna Kewish, Dave Kewish and Ann Williams);
- (d) Selwyn District Council's s42A Planning Report regarding landscape and visual effects;
- (e) Peer review undertaken by Graham Densem² and
- (f) The proposed conditions of consent prepared by Ms Claire Kelly.

4.3 My evidence is consistent with the concepts and principles outlined in *Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines*³. A precis of my approach is contained within **Appendix 1** of my evidence.

4.4 A Site visit was undertaken on 17th November 2021 during sunny weather conditions to understand the Site, its context, and nature of available views. Prior to the hearing, an additional Site visit will be undertaken to ground truth issues raised by the submitters. This is likely to be the day before the hearing.

² *Landscape Review prepared by Graham Densem Landscape Architect, dated 8 July 2022.*

³ *'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.*

5 THE PROPOSED ACTIVITY

- 5.1 KeaX proposes to construct a 258ha solar farm on the Site in three stages over three years. The Site is located directly south of an existing Orion substation that will facilitate connections into the local lines network. The overall capacity of the solar farm will be able to generate energy for approximately 22,000 homes in Canterbury annually, equating to 160 MW on completion.
- 5.2 Each stage will approximately take between 3-4 months to construct. Construction activities are defined and addressed in the evidence of Ms Kelly (Planner) but are understood to be earthworks, the piling and establishment of the panels and buildings. There will be two vehicle entrances into the Site: one from Buckleys Road, north of the Site that will be used for Stage 1 and 2 and the other from Caldwells Road, east of the Site that will be used for Stage 3. Access roads will also be located throughout the Site for construction and maintenance purposes. During construction it is expected there will be a series of Site preparation works, earthworks, and the construction of buildings (inverters, site office, on-site storage, etc.) within the Site.
- 5.3 Each table of panels will be set to a maximum height of 3.02m from ground level to the top of the solar panels, whilst the lowest point will be 700mm above ground level. It is proposed to ensure that there is sufficient space between the tables to accommodate internal roading within the Site to allow access for construction and maintenance. It is proposed that sheep will graze underneath the panels to maintain the grassy land cover.
- 5.4 Further details of the proposal are outlined within the AEE and LVA.

6 THE SITE AND EXISTING ENVIRONMENT

- 6.1 A description of the broader landscape and the Site can be found in the LVA on pages 7-8.⁴
- 6.2 In summary, the Site is located within a highly modified, flat rural landscape currently used for dairy farming which is characterised by several forms of linearity including shelterbelts and paddocks. The Site

⁴ Refer to Appendix 13: Landscape and Visual Effects Assessment to the Application.

is not located in an Outstanding Natural Landscape (ONL) or in a Visual Amenity Landscape (VAL) in either the District or Regional Plans. Rural amenity values that relate to the Site include the following:

- Expansive areas of open pasture which creates a sense of spaciousness and openness;
- There is a general lack of structures and buildings, aside from the pivot irrigators and two dwellings; and
- A distinct linearity, provided by established shelter belts and fenced paddocks.

6.3 Mr Densem and Mr Aimer (s42a Reporting Officer) generally agree with the above description, but under Paragraph 73 of the s42a report also add an additional value being a *"sense of relative naturalness from predominant green of grass sward and trees."*⁵

6.4 In my opinion this relates to a "perception of naturalness" rather than representing actual natural character⁶ values. The term 'natural character' should be reserved to its application under the RMA⁷. Each of the places in which natural character applies under s6(a) of the RMA relates to a water body (including the sea). Neither of which apply to the Site.

As described in *Te Tangi a te Manu*, paragraph 9.57, *NZCPS Policy 13(2) states that natural character is not the same as natural features and landscapes or amenity values. They are different categories of things:*

- *Natural features and landscapes are places (or areas) while natural character is an aspect of such places or areas.*
- *Amenity values relate to pleasantness, aesthetic coherence, and cultural and recreational attributes, whereas natural character is an overall character derived from natural characteristics and qualities. The former is a value, the latter a character type.*

⁵ Refer to paragraph 16 in the Landscape Review prepared by Graham Densem.

⁶ Refer to paragraph 17 in the Landscape Review prepared by Graham Densem.

⁷ *Te Tangi a te Manu*, paragraph 9.58.

- *Natural character in the context of s6(a) of the RMA is also focused on only certain parts of the landscape (i.e. the coastal environment, wetlands, and lakes and rivers and their margins).*

7 STATUTORY PROVISIONS

- 7.1 Under the Operative District Plan, the Site is zoned Outer Plains and includes Wāhi Taonga Site C29 relating to Ovens/Middens. The proposal is defined as a 'utility' in the ODP and has been assessed as a Discretionary activity.
- 7.2 Under the PDP, the Site is zoned General Rural Zone. Key objectives relate to maintaining or enhancing rural character and amenity values of the rural area.

8 ASSESSMENT OF LANDSCAPE EFFECTS

- 8.1 A full assessment of effects on the existing landscape, rural character and visual amenity can be found in Section 6.0 of my LVA.
- 8.2 My LVA was independently peer reviewed by Mr Graham Densem, a Canterbury based Landscape Architect. Mr Densem generally agrees with the methodology, visual catchment/viewing audiences identified and visual assessment.
- 8.3 Below, I address the matters raised by submitter's and addressed in the s42 report by Mr Aimer.
- 8.4 Mr Aimer at Paragraph 81 of his s42a report concludes that the Proposal will result in adverse landscape and rural character effects, but that these effects will be mitigated over time through the establishment of the boundary vegetation, to the extent that any adverse effects will be largely experienced within the Site. Within the Site, he considers that these adverse effects are mitigated to a degree by:
- (a) the use of sheep to graze the site which retains the rural productive use of the site and ground cover that characterises the Rural Outer Plains Zone and

- (b) A requirement that the solar array be returned to pastoral uses at the end of the solar array's operational life.

8.5 I consider that we are generally in agreement on the nature and extent of adverse effects on the physical landscape and rural character, and that these will reduce over time (as the landscaping establishes) and given the 18m setback of the solar arrays from the road reserves.

9 **VISUAL EFFECTS**

9.1 The following submitters (Clark Casey, Liz Casey, Robyn Casey, Donna Kewish, Dave Kewish and Ann Williams) raised concerns about temporary adverse effects during construction and the initial operation of the solar farm. This is addressed at paragraphs 82-89 of the s42a report by Mr Aimer.

9.2 The submitters have sought that construction of the solar farm should not commence until all landscaping reaches 2m in height. Mr Aimer supports this approach.

9.3 Below I summarise my conclusions on **temporary visual effects** for each stage and respond to Mr Aimer's approach and the concerns of the submitters. An illustration of the project stages is provided on **Figure 1**.

9.4 **Stage 1**

- Of the 840m length of Branch Drain Road that borders the western Site boundary, approximately 130m allows partial to glimpsed views (where there are gaps in the existing vegetation) into the Site as a majority of this boundary is lined in established native planting that is nearly 2m in height.
- However as I understand it, the existing vegetation that is almost 2m in height along the western Site boundary with Branch Drain Road is to be removed due to Council concerns regarding shading over the road. As a result, the proposed mitigation planting will be setback 10m within the Site as shown in **Image 1** below.



Image 1: Indicative section at Branch Drain Road at Year 2.

- The setback shown above provides for the solar arrays to be setback approximately 18m from Branch Drain Road, allowing for some 'open space' consisting of pastoral grasses backed by proposed native plantings.
- In the interim, existing planting along Branch Drain Road is to be retained until the proposed planting reaches 2m in height, noting that the existing planting could shade the road in the short term.
- In relation to the existing 'gaps' in the vegetation along Branch Drain Road, it is proposed to plant 2m tall native plants in the proposed mitigation planting area to reduce the visual impact from the beginning and filter the views of Stage 1 as sought by the submitters. The larger bag sizes of plants would be more mature and planted in staggered rows, closely spaced to soften and filter views of Stage 1 from Branch Drain Road in the 'gap' areas. Refer to **Image 2** below for an indicative scenario on how this would apply.



Image 2: Indicative diagram of proposed 2m tall mitigation planting in the 'gap' areas within the existing planting along Branch Drain Road.

- The alternative would be to implement an exotic shelterbelt species along this boundary, which would provide a quicker growing screen. It is not economic or sustainable to fill the gaps

in the existing planting as this will be removed in a few years' time.

- The details of this planting scheme are to be included in the Landscape Management Plan (LMP) recommended by Mr Aimer. As part of the LMP, irrigation will be implemented and the soil prepared to ensure the growing conditions on the Site will enable successful plant growth and establishment over time to achieve screening as intended.
- The remainder of the existing planting within the Site and on the eastern edges of Stage 1 will provide screening from northern and eastern views, prior to Stage 2 being built, as all internal vegetation will be retained the first year following construction of Stage 1.
- Based on the above, in my opinion, the temporary adverse visual effects are expected to be **low-moderate** following construction of Stage 1, then reducing to **low - very low (adverse)** over time as the planting establishes to a height of 3-4m.

9.5 Stage 2

- Existing internal shelterbelts between Stages 1 and 2 will be removed, however established shelterbelts between Stages 2 and 3 will be retained in the short-term. This will provide an additional layer of screening for Stage 2 while the proposed mitigation planting along Hanmer/Caldwells Road establishes.
- As with Stage 1, a similar 18m setback will apply to Stage 2 along Buckleys Road. The setback allows for more 'open space' in the foreground and space for the planting to establish over time.
- I acknowledge that gaps in vegetation equating to approximately 100m in length along the 615m length of shared boundary will enable views into the Site until such time as infill planting becomes established. However, a similar approach is proposed as within Stage 1. Where there are 'gaps' in the existing vegetation along Buckleys Road, 2m tall and closely

spaced (or slightly lower in height larger grade species, to ensure the plants reach 2m in height prior to the construction of Stage 2) native planting is proposed to be planted to enable screening of the solar arrays. The remaining portion of Buckleys Road is predominately lined in established native vegetation that is >2m in height that will be retained.

- Based on the above, a temporary, very localised **low-moderate** adverse visual effect is anticipated following the construction of Stage 2, which will reduce to **very low** over time as the boundary planting grows and establishes to an approximate height of 3-4m along the 100m 'open' stretch of Buckleys Road.

9.6 **Stage 3**

- I understand that Mr Aimer is less concerned about Stage 3, given that proposed planting will have 2 years to grow between establishment and construction activities. I agree with his findings.

9.7 I summarise my conclusions on **views of the proposal from 324 Branch Drain Road** below:

9.8 In their submission, Donna and David Kewish and Ann Williams raised concerns that the solar panels will be directly visible from their house at 324 Branch Drain Road, noting that the hedge on the northern boundary of their property will not entirely block out views of the Site, and that the applicants have not proposed any additional planting to screen these views.

9.9 I have not visited the Kewish's property but when viewed from the Site itself, I considered it unlikely that panels will be visible through the existing shelterbelt located north of their boundary. Refer to **Image 3** below. However, I acknowledge, that should there be gaps in the shelterbelt, glimpses of the proposal to the north may be apparent.



Image 3: View from within the Site, looking south towards 324 Branch Drain Road, source, Campbell McMath.

9.10 However, I understand that, whilst not strictly required to mitigate an effect, the applicant agrees, as a good neighbour, to establish an additional row of exotic planting adjacent to the southern boundary of the Site with 324 Branch Drain Road. This additional row of exotic planting will be included within the proposed LMP.

9.11 Donna and David Kewish and Ann Williams also note in their submission that Stage 2 of the solar farm will be visible along the eastern boundary of their property until the proposed mitigation planting grows to a reasonable height.

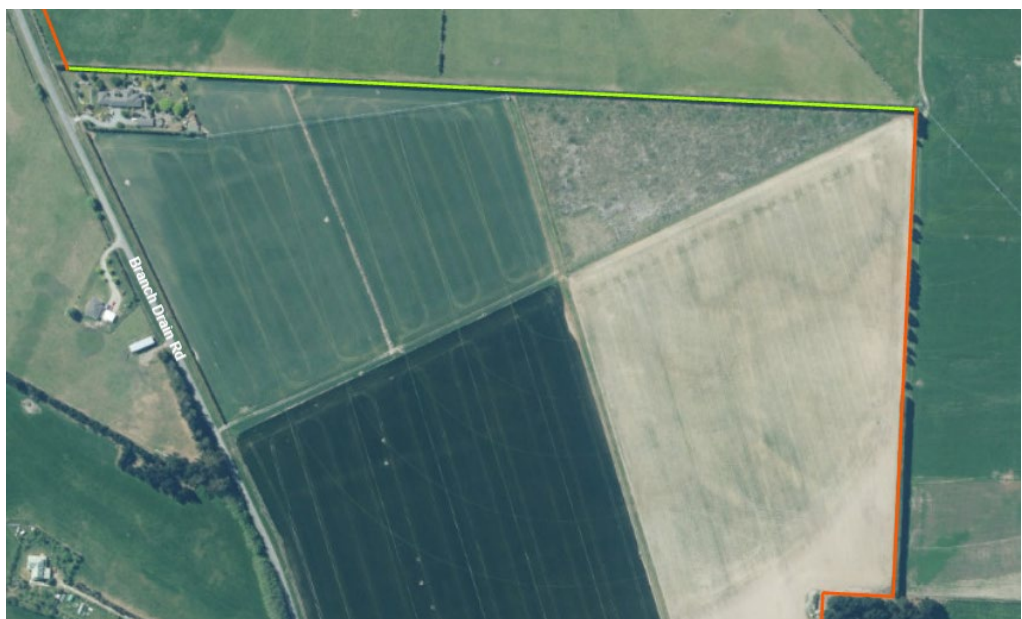


Image 4: 324 Branch Drain Road is located at the top left corner and the existing eastern Site boundary planting is shown on the right along the red line.

9.12 The Kewish's eastern boundary is approximately 600m from Stage 2 as shown in **Image 4** above. While there are a few gaps in the existing

shelterbelt planting to the east, a majority of this boundary has existing vegetation. Furthermore, there will be an internal road located between the proposed mitigation planting and the solar arrays.

9.13 Based on the distance between the dwelling, existing intervening planting and the proposed mitigation planting, the visual effects are considered to be low or less than minor. The proposed mitigation planting will have at least 1 year of growth prior to the construction of Stage 2. The existing shelterbelt will be retained until the proposed native plantings establish to a height of at least 2m.

9.14 An alternative to the proposed native planting is to implement exotic shelterbelt plant species along this stretch of the Site. However during engagement with the landowners of 180 Grahams Road, native planting was preferred and the removal of the existing exotic shelterbelt was sought.

10 **SUBMISSIONS**

10.1 A total of 5 submissions have been received in relation to the application. All oppose the application and all wish to be heard.

10.2 All 5 submissions have raised similar matters in relation to landscape and visual effects.

The following points have been addressed above:

- (a) Temporary adverse visual effects of the proposal (within the first 4 years following construction); and
- (b) Views of the proposal from 324 Branch Drain Road.

I address the following submission points below:

- (c) Plant growth rates and establishing plants to 2m tall before construction commences;
- (d) Plant replacement and maintenance; and
- (e) Proposed landscape character change.

10.3 **Plant growth rates and establishing plants to 2m tall before construction commences**

- (a) As setout in the LVA, the visual effects assessment has established the highest level of effects (temporary and very localised) will be within the first 4-5 years following construction of the proposal. However as the infill 'gap' planting will be approximately 2m in height at the time of construction, views of the proposal will likely be softened and screened in less time. Refer to **Image 2** above. This is also dependant on the spacings of the plants to enable filtered views from the beginning. Details of specimen size at planting and plant spacing to establish a suitable screen will be captured in the LMP.
- (b) The proposed plant species all have varying growth rates. Of the proposed species, larger bag sizes are proposed in the mitigation planting areas where there are 'gaps' in the existing vegetation along the Site boundaries. The 'gap' planting would consist of the faster growing, bushy, species, such as Ribbonwood, Kanuka and Hoheria. Coupled with proposed irrigation and ground preparation, the proposed mitigation planting will be given a good head start and maintained to ensure survival rates are high.
- (c) The alternative to implementing native plant species is introducing an exotic shelterbelt species which is faster growing and can reach 4m in height in a shorter time frame than native plant species. However during initial consultation with the adjacent landowners and the local iwi, native planting was preferred. While the use of exotic plant species would not result in an adverse landscape effect, this alternative would not contribute to enhancing biodiversity in the area.
- (d) Furthermore, whilst not strictly a landscape matter, I understand that Dr Jaz Morris (ecologist) recommended⁸ the planting of indigenous plants as it will also benefit biodiversity in the area and support the work of 'Te Ara Kakiriki' (an organization who are establishing green dots of native vegetation across the Canterbury landscape) in an attempt to create a corridor for wildlife from the Alps to Banks Peninsula.

⁸ Refer to the Ecological Impact Assessment Memo, prepared by Dr Jaz Morris of Boffa Miskell, dated 14 December 2021.

10.4 **Plant replacement and maintenance**

- (a) A Landscape Management Plan has been recommended as a condition of consent to ensure the existing and proposed planting identified on the Landscape Mitigation Plan is maintained to achieve its visual screening/containment purpose over the life of the solar farm.
- (b) I understand that a specific condition has been included in the draft conditions attached to the Planning Evidence of Ms Kelly.

10.5 **Proposed landscape character change**

- (a) Whilst, there is agreement between Mr Aimer and myself regarding change to the landscape, and I reiterate that while the Site will transition from an open rural landscape to a landscape of energy infrastructure, in my opinion, the proposed mitigation planting along the Site boundaries will visually contain the proposal within the confines of the Site and screen it from neighbouring views over time, therefore limiting the character change to the immediate Site area.
- (b) I am informed by Ms Kelly that as of right, the Site could be converted into a forestry block or be covered with tunnel houses without consent. I consider that both of these options would be visually prominent and in contrast to the local landscape but would not require mitigation planting or screening to maintain or enhance the rural character and amenity values of the rural area.
- (c) The proposal, albeit a change in the character of the landscape, will not be visually prominent in the long-term and will, in time, enhance the rural character and amenity of the area by way of the proposed native planting along the road corridors. It would also contribute to increasing biodiversity in the area, which is generally lacking due to dominant agricultural land uses.

11 **CONSENT CONDITIONS**

- 11.1 I have reviewed the draft proposed consent conditions to be attached to the planning evidence of Ms Claire Kelly and confirm that they reflect my recommendations.

11.2 It is recommended that a Landscape Management Plan (**LMP**) is prepared for the Site which details the proposed mitigation planting areas required for the Proposal. The LMP would include a planting plan with details of the layout, species, grades, heights, numbers, spacing, requirements for eco-sourcing; alongside a detailed programme and specification for implementation and maintenance of this planting to ensure effective establishment for the life of the solar farm (i.e. replacement of dead plants, irrigation, etc).

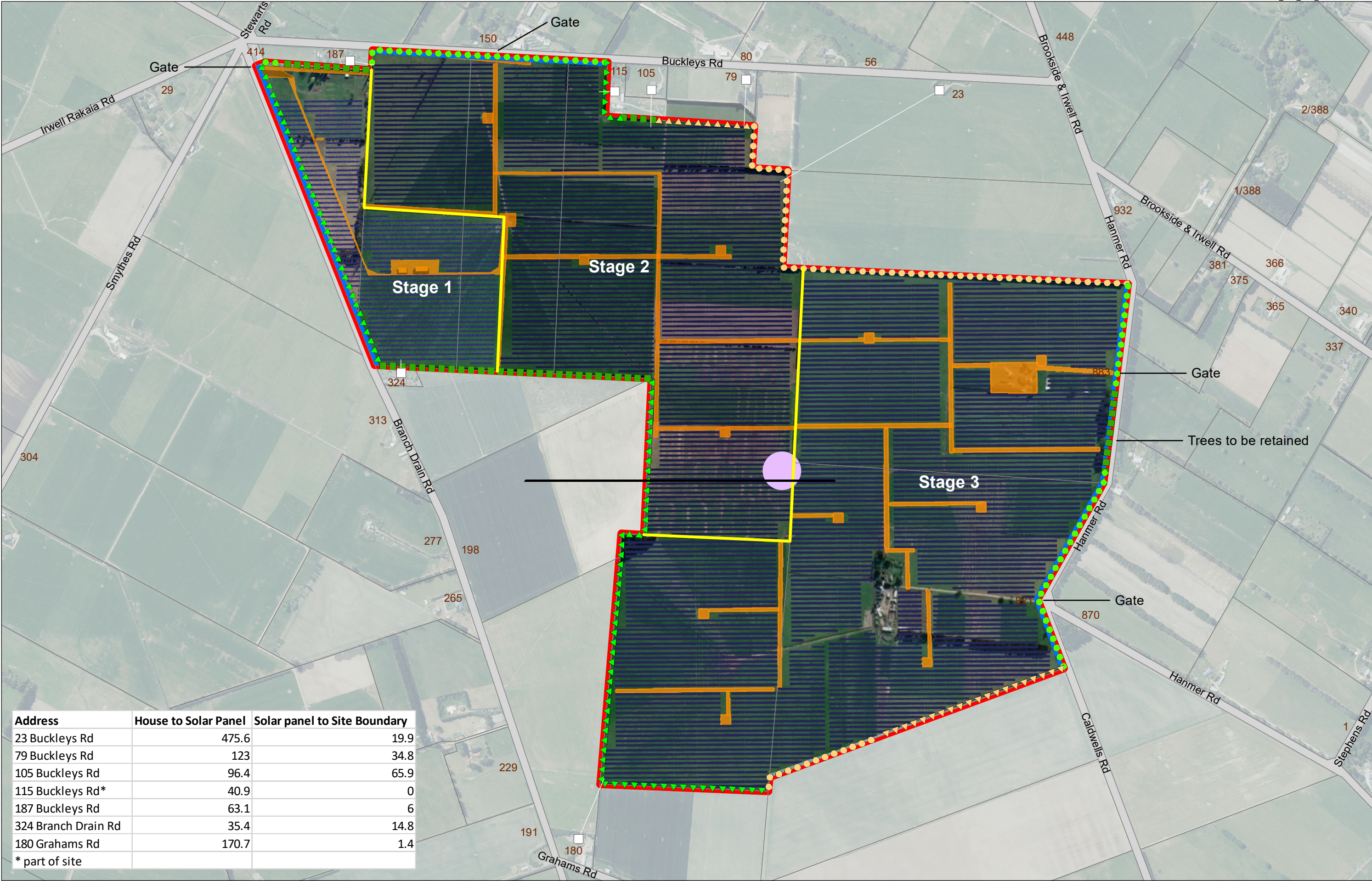
12 **CONCLUSION**

12.1 My key conclusions are as follows:

- (a) The concerns of Mr Aimer in his s42a report and the submitters have been addressed through implementing larger grade plants within areas of 'gaps' in the existing planting and by recommending a Landscape Management Plan be prepared for the Site.
- (b) Furthermore an additional row of evergreen, exotic plant species will be planted along the shared southern Site boundary with 324 Branch Drain Road to ensure the solar arrays are screened over time.
- (c) Based on the revised mitigation strategy, the adverse visual effects from Branch Drain Road and Buckleys Road would be in the **low-moderate** range initially (as concluded in the LVA) however, the length of time for the level of effects to reduce to **very low**, would likely be shortened (by potentially one year) due to the implementation of more mature plant species in the 'gaps' that would reduce the visual impact from the beginning and soften/filter the view of the solar arrays.

Amanda Leigh Anthony

9 February 2023



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- LEGEND**
- Solar Farm Stages
 - Site Boundary
 - Earthworks Buffer**
 - Waterway Buffer (10m)
 - Wāhi Taonga Management Area (50m)
 - Existing vegetation to be retained

- Proposed Planting**
- Fill in the gaps with exotic shelterbelt species
 - 3m wide exotic shelterbelt
 - Fill in the gaps with native plant species
 - 3m wide native landscape buffer planting

Figure 1