Head Office
20 Troup Drive
Tower Junction
PO Box 9339
Christchurch 8149
+64 3 379 4014
eliotsinclair.co.nz

08 July 2024

Waimakariri District Council
215 High Street
Rangiora

Our reference: 521286

Attention: Nirosha Seelaratne

Dear Nirosha,

Solar Farm - 87 Upper Sefton Road, Sefton

RC 235259 Application for Resource Consent

Following preliminary discussions with Waimakariri District Council, I reviewed the following documentation with respect to an application for a Solar Farm at 87 Upper Sefton Road, in the week of the 13th May.

- Landscape Assessment and Plans, prepared by Rough Milne and Mitchell Ltd

Following this initial review I then undertook a site visit to understand site context and review the assessments findings in this context.

Following this, I have also been asked to review amended documentation and an RFI response, triggered by a s92 notice, which I received 28th May 2024:

- Revised Landscape Assessment and Plans, prepare by Rough Milne and Mitchell Ltd
- Rough Milne and Mitchell (RMM) RFI Response

While not forming part of my formal assessment (outside my area of expertise) I have also considered further information in related to the application, with regards to visual effects and landscape character respectfully, being:

- Glint & Glare assessment
- Cultural Assessment

In response, I summarise the following from my analysis of the above documentation, with regards to the Application.

1. Landscape Assessment Peer Review

1.1. Intro

1. An application has been received for resource consent to develop a solar farm – including a limited but retained working farm use, in Sefton, North Canterbury. The site in question is located at 87 Upper Sefton Road, is legally described as PT RS2588 and RS2732, and is 79.92ha in area.

2. The methodology outlined as the basis for the landscape assessment reviewed (Rough Milne Mitchell Landscape Architects Limited, 11 October 2023), referred to in this review as 'The Assessment' is stated as being informed by the NZILA[1] Te Tangi a te Manu document.

3. I have reviewed this assessment against this NZILA document, which is, at June 2024, industry standard methodology and appropriate tool to assess potential effects by the Applicant. The seven-point landscape and visual effects rating scale, and the comparative scale of degree of effects (Figure 2 and 3 of the report) are both appropriate tools from this document that are used for indicating magnitude and sensitivity of effects.

4. Given I am not formally assessing but 'considering' other reports such as the Glint and Glare assessment and the cultural assessment, I refer to these where appropriate and where relevant when assessing the landscape assessment- given there are findings from these documents that affect both the landscape assessment and the follow on RFI response and amendments to that report.

5. I have undertaken this review in the order the landscape assessment has been prepared, being:

    a. The Proposal
    b. Relevant Policy Provisions
    c. Landscape Description
    d. Assessment of Landscape and Visual Effects
    e. Assessment against the ODP and PDP Provisions
    f. Conclusion

1.2. The Proposal

6. I acknowledge the statement in Section 2.1 of the assessment that highlights the adjacent Ashely Substation (Transpower operated), given that this infrastructure relates to existing use and character in the vicinity of the site - which is relevant to this assessment.

7. It is outlined that site coverage will be 19%. This appears to be a lower number than anticipated, but the applicant has confirmed this figure in a meeting following the site visit. For the purposes of this assessment, it is understood this site coverage figure would be a condition of consent by WDC to ensure that the level of effects would not increase in future if this percentage increased.

[1] New Zealand Institute of Landscape Architects

8. The construction of the solar panels, supports, and infrastructure (inverters, tracks etc) outlined, including dimensions in their various states of array, are acknowledged- for both fixed and the tracking options.

9. The earthworks outlined, including servicing infrastructure and tracks are understood and clearly illustrated, and following a meeting with RMM, it has been clarified that very minimal 'bulk earthworks' are proposed, only specific earthworks related to the installation of structures/ tracks (ie, no levelling of large-scale areas is proposed).

10. Landscape mitigation includes planting of Leyland Cypress *(Cupressus Leylandii)* along the majority of the site's boundary. Clarification was sought in a meeting with RMM following the site visit, and it was confirmed by RMM the proposal was for a single road of these trees, to be planted as a shelterbelt.

11. The main reason understood for proposing this exotic species was that it has a fast growth rate and thereby would mitigate visual effects at a more rapid rate than other species. From my experience with shelterbelts in Canterbury, I can confirm this species is fast growing and commonly used along property boundaries typically for the purpose of providing shelter for stock- where they are typically maintained at a height of around 4m in height and 1-3m in width (approximately the size of the proposed although noting no minimum maintained width is proposed).

12. The implementation and techniques are appropriate (grade, visually permeable fencing, irrigation for establishment, height and replacement).

13. A planting plan within one year of obtaining consent is proposed for the riparian vegetation areas. This plan, and the statement that a subsequent planting plan for riparian areas will provide species name, size, spacings and a maintenance schedule is appropriate.

1.3. Relevant Policy Provisions

14. It is acknowledged that the assessment highlights the PDP is still not operative, and that they have responded to this more broadly in section 1.6 below, given it has been assessed under the ODP as a discretionary activity. Section 1.6 also covers the PDP given the land zoning is proposed to be changed to Rural Lifestyle.

1.4. Landscape Description

15. From the undertaking of the site visit, I generally concur with the sites description of landform as well as the receiving environment at the time of year I undertook the visit. I acknowledge that given the ephemeral nature of the two streams on site, I could not accurately gauge what these identified water bodies would appear like in other seasons- for example in a high rainfall event or in winter/ spring where there may be more surface water present. There appeared very little surface water when I undertook my site visit and the two identified ephemeral waterbodies running north to south were relatively dry. I note that this was somewhat typical in the area given my visit was in Autumn before seasonal wetness of soil (an assumption I make).

16. The description of the properties and land use in the area by RMM is accurate was confirmed in my site visit. I agree that the settlement pattern is rural residential to the west and north, and that intensive agriculture (pig farm), utility (sub-station), and

industrial (wood processing plant) all contribute to a mixed sense of character- particularly with the noise overlay identified, that was apparent during the site visit.

17. It is acknowledged and agreed with respect to landscape values in the receiving environment that the two streams, while ephemeral, are significant enough to have a level of restoration from their current grazed state, and that this would offset the change in use of the land to a degree.

18. It is also acknowledged that proposed district plan rezoning from rural, to rural lifestyle, is in itself an acknowledgement of the finer grain properties already existing in the area, and that the site- being within a 'proposed' rural residential zone, is anticipated to have use in future that would not be aligned to a general rural zone with more open character/ views.

19. I understand that the landscape assessment undertaken by RMM has not specifically addressed any cultural overlays in detail however the enhancement measurements proposed align well with direction given in the Cultural Impact Assessment contained in the application- primarily where is relates to establishment of natives and protection of waterways, although I did note that the extensive and homogenous nature of utilising a single cypress species for the shelterbelt lessens the effectiveness of this somewhat- I cover this in later sections.

20. The residential lifestyle activities to the north and west are typical of the area of northern Rangiora/ Loburn/ Sefton- where these types of lifestyle properties are common along the lower slopes of the Mt Grey foothills.

1.5. Assessment of Landscape and Visual Effects

21. The application outlines Potential Issues. I concur with the assessment that states there are viewpoints and dwellings in the immediate adjacent vicinity of the site which will have their views altered with the change in use of the land. If views of the proposal were not mitigated or mitigation was inadequate, then these dwellings in the surrounding landscape would likely be negatively affected by the proposal- potentially leading to a moderate to high adverse effect.

22. With regards to the assessment of visual affects, my review has considered the following from the RMM Assessment (Section 5.2).

1.5.1. Road Views

Upper Sefton Road – Viewpoint Location Photographs 1-4

23. The photographs taken by RMM are accurate in representation with the existing use of the site as a working farm that is grazed by stock, as well as the modified uses being present in the surrounding adjacent properties (Industrial and intensive agricultural pig farm activities) being visible from this location.

24. It mentions views of the distant mountains are intermittently gained however given the use of this road is at high speeds and by motor vehicles only, views of the more significant mountains in the wider landscape are at an angle to the north- an unlikely viewshaft experienced on my site visit due to it being perpendicular to travel direction.

25. I also concur that while there will likely only be intermittent visibility through the immature 2m high vegetation when the panels are installed, this visibility will only be afforded for several years only, as opposed to a permanent viewshaft. It is considered however due to the higher use of this road, these trees could be combined with additional mitigation to reduce visibility. This could include additional landscape buffers or site specific locations of earth mounding for height on the sites south west and south east corners for example, which, from the site visit, was clearly the two viewshafts from this road that will have visual amenity affected to a degree as vehicles approach the site (as opposed to 'side on' glimpse views directly adjacent to the site, which are unlikely as above to require further mitigation).

26. I don't consider 'visual intrigue' to offset or be a positive outcome to any detraction or visual amenity as inferred.

27. It states in the Glint & Glare Assessment that yellow glare has a moderate impact, with the landscape assessment acknowledging this on page 17, and stating that the proposed shelterbelt (mostly when mature) will assist with mitigation of visual effects. As my assessment does not review technical aspects such as an assessment of Glint and Glare, but considers its findings and how they have been addressed in the Landscape Assessment, I draw the conclusion the RMM report addresses this assessment through mitigation however this could be strengthened with additional screening in specific locations.

28. It states in the Glint & Glare Assessment that green glare has low impact. I have assumed this report has accurately assessed this phenomenon with regards to green glare being of a nature that does not require mitigation.

29. The conclusion I have reached with regards to effects of the proposal from this road as per paragraphs 5 & 6 of page 17, with regards to adverse visual effects, and considering the glint and glare assessment, is the following:

    a. 2m newly planted – 4m= Moderate

    b. 2.5m-3m= Moderate

    c. 4m+= Low-moderate initially, Low after 6+ years of growth

30. From viewpoints along this road, for the effects to be reduced to be low-moderate in the years 0-4, and low in years 4+, the following recommendations are suggested:

    a. Recommendation: To help reduce effects on users of this road, which is a strategic road with relatively high volumes of traffic as stated in the assessment, consider a secondary row of planting that can more immediate establish in key areas such as a the south west and south east corners of the site - given these are the dominant viewshaft along the road when approaching the site.

    b. Localised earth mounding could also be explored using any spoil gained from the minor excavation works on site that could be placed in these corner locations- to lift the screening for more immediate impact/ mitigation of the visual impact of the panels- especially while the proposed screening is at a juvenile stage of growth. This

would also help curtail views of the security fence that forms part of the works but is not assessed with regards to visual impact.

Beatties Road – Viewpoint Location Photographs 4-9

31. I agree with the description of the views and amenity outlined on Page 17, including the modified features of intensive farming, the substation, and the end point view of the timber mill diminishing the natural qualities of this landscape. These activities combined with a more residential aesthetic in this area due to the higher number of lifestyle properties at the northern end of Beatties Road, reduce open and natural character from this location.

32. It is acknowledged that beyond the northeast corner of the site, there is very limited views of the site or the proposed development from this road due to intervening vegetation. The visual effects are described in the applicant's assessment as being similarly to Upper Sefton Road.

33. I agree with the effects as described on page 18-19 for this road, for users of this road.

Marshmans Road – Viewpoint Location Photograph 10

34. I agree with the description of the views and amenity outlined in page 19.

35. There is a greater proximity to the site from this location, with the site being perpendicular to road users, and these road users generally travelling at speed and not focusing on the site to the south. I agree that any effects from road users would be no more than a 'low' adverse effect in the initial stages of development and agree with the anticipated effect being 'nil' once the shelterbelt reaches 6m in height.

1.5.2. Residence Views

36. It is acknowledged and confirmed from the site visit that the RMM assessment has identified that various dwellings in the area surrounding the site will have varying degrees of effects regarding the current proposal and different stages of mitigation, with these summarised below.

Upper Sefton Road Properties

37. While the properties at 47 and 53 Upper Sefton have some mitigating vegetation between the dwellings and the site, as acknowledged, open rural views are currently afforded from these gaps, and the driveway, to the east overlooking the site, and these views will be curtailed. This, in my opinion, given the proximity of only being 20m and 50m respectively, would more likely mean the proposal would have a moderate visual effect on these properties in with the current levels of mitigation proposed.

    a. Recommendation: For the level of adverse effects from these two properties to be low- low moderate (as described in the assessment), a second line of vegetation of varied native species, should be proposed to extend along the site boundary in localised areas that strengthen the mitigation against visual effects. (see Figure 1).

b. Recommendation: A buffer of 40m between any solar panel and an existing dwelling should be imposed as a condition of consent. (see Figure 1)

38. 52 and 92 Upper Ashley Road has not been reviewed as dwellings of interest when undertaking this assessment. I am not sure of the reasons for their exclusion as they are with close proximity to the site and the have partial views from parts of both properties, directly to the site's south western corner. Perhaps it is due to views being curtailed by existing vegetation within these properties.

a. Recommendation: The sites were excluded from the assessment but it is in my review deemed that they will have a similar level of effects to 47 and 53 Upper Sefton Road above, and therefore, additional landscape mitigation should be proposed in the south west corner of the site to mitigate visual effects and glare. A secondary native landscape strip and corner mass planting area is anticipated would reduce any adverse effects to be low. (see Figure 1)

Marshmans Road

39. 159, 167, 200 and 204 are parcels of land with dwellings, however, are not directly adjacent the site, as described in the assessment. While they have higher elevation, from inspection of aerials I concur with the assessment that their outdoor living areas face north- away from the site, and therefore the visual effect will be less from a sensitivity perspective. Existing landscape treatment on the southern side of these properties appears from aerial photos to curtail views to the site from the dwellings- which will be the most frequented place for views over the wider landscape/ site.

40. Screening will be achieved as outlined in the assessment, however there will be a delay in this while the shelterbelt grows.

41. Sensitivity is low due to the curtailed views in the direction of the site. Therefore, I RMM assessment.

42. I agree that properties at 152 and 224 Marshmans Road will have less sensitivity due to low/continual use- but rather for intermittent agricultural use.

Beatties Road

43. I agree with the description and assessment of effects on residents of the property at 178 Beatties Road, being moderate, with the outdoor living areas and most of the glazing is facing north. While the mature growth will conceal or curtail the majority of views into the solar farm, it is considered that additional mitigation should be proposed directly adjacent to this property within the site to reduce this level of adverse effects to being able to achieve 'low' in years 4+.

a. Recommendation: Additional mass native planting within the northeast corner of the site to combine with the proposed shelterbelt opposite this properties legal frontage (see figure 2).

44. The dwelling at 189 appears to be on a localised hill however this is only understood, from the contour plan, to be 3-4m above the GL of the shelterbelt. In lieu of an accurate

cross section it is difficult to determine the view from the 2nd storey windows. While outlined and agreed these southern windows may be associated with non-living spaces, such as bathrooms or bedrooms, it is not clear due to lack of cross section ior visual simulation whether the 6m shelterbelt proposed will adequately screen the soalr farm.

a. Prepare a cross section, using the latest contours (liDAR) to show the views from a second floor over the site, with the 6m shelterbelt, to illustrate 100% screening in this location as assessed. If it is not 100% screened when at 6m mature maintained height, further mitigation should be proposed including a native shelterbelt line to combine with the exotic shelterbelt, as well as potentially some localised earth mounding under the shelterbelt in this location (40m in length), to reduce effects to low at maturity. (see figure 2 for cross section location and mitigation)

45. While agreeing with the assessment of affects on 190 and 196 Beatties Road, being the same as users of Beatties Road in general, 196 will be affected more similarly to 178, with its entranceway directly point towards the road, as opposed to the perpendicular/ at speed glimpse views afforded by other users of Beatties Road.

a. Recommendation: A similar treatment to property 178 should be proposed, with additional native screening. I note that this private driveway exits onto Beatties Road adjacent a major and minor power pylons which will have restrictions on trees underneath them. This area would likely be better shown as a mass planted native shrub area extending under the edge of the outer wires, and be shrubs that achieve a height of max 6m (subject to obstacle limitations under the transmission line assessment). (see Figure 3).

Glint and Glare – external assessment considerations

46. It is acknowledged that while I am not an expert in assessing Glint & Glare, the applicant appears to have considered this, and I agree with the approach taken to mitigate effects using landscape treatment and retention of existing shelterbelts as outlined, for this purpose.

a. Recommendation: A condition of consent is proposed that states all existing shelterbelts bordering the sites boundary, in private properties, are to be retained, and vegetation within the site on the boundary is also to be retained where practicable and where not in conflict with the new Shelterbelt(s).

Assessment of Landscape Effects

47. I agree with the description of the site, the receiving environment and character, and that while the use interior to the site will change, it will both be in keeping with some of the utilitarian uses (such as the substation) in the adjacent properties, but also, when

the shelterbelts are mature, this new interface will be viewed as 'typical' of a Canterbury plains landscape.

48. While the open views afforded will be lost across the site, I agree that the site coverage of the panels, at 20-30%, does not appear to be something that will completely alter the natural systems on site, due to the already modified agricultural aesthetic of the site in its current state (pastoral grazing).

49. It is acknowledged the steps taken to protect the riparian corridor are important and appropriate, given the iwi management plan within the cultural assessment. Steps taken to give effect to that document are planting, fencing off stock, and maintaining these areas in perpetuity.

    a. Recommendation: A condition of consent should be proposed detailed riparian corridor planting requirement with a minimum riparian width set. These riparian areas are to be enhanced, planted with natives, and protected from stock, with a planting plan, fence design, and maintenance schedule for approval by Council.

50. I agree that with the above condition regarding protection of riparian corridors for the ephemeral streams, combined with the native planting outlined in the visual assessment potion above (recommendations), the proposal will have a low degree of adverse effects on the landscape values of the site and its receiving environment, when taking into account its current state, and further, it is my opinion that there will be positive effects / benefits with the introduction of species and protections on flora.

Other non-location specific considerations

51. As per page 8, a minimum height is proposed (4m all boundaries except 6m along northern boundaries. It is appropriate in m y opinion to ensure the desired effect of the screening, a minimum width should also be proposed to allow for adequate screening upon maturity to provide the mitigation level sought to bring the visual effects to that of low, low moderate.

    a. Recommendation: Include a condition on a minimum width for the shelterbelts per row of planting. For areas that have more planting than the single exotic shelterbelt, these areas should have a planting plan prepared at the same time as the riparian corridor, highlighting extent and species appropriate for those areas- if the recommended planting is adopted to reduce effects.

52. As per page 8, fencing is proposed to prevent stock from damaging plants during establishment period. Given that the fencing could have a significant visual effect if established while plants are small, and this fence has not been assessed specifically as part of this proposal (as the panels have been) it is recommended that the security fence is only installed at the same time as installation of the panels – not prior.

    a. Recommendation: A condition should be proposed that ties the construction of the security fence, given its visual effects, to the construction of the solar panels (when the shelterbelt is a minimum of 2m tall)

53. As per page 8, the native riparian planting proposed is appropriate as is the implementation sequence and timing outlined, which should form a condition.

    a. Recommendation: A condition should be proposed that outlines that the planting plan, schedule, maintenance (with inspection from council after a 2-year defects liability period) for the native riparian areas. The plan should be as per a plan for 'engineering approval' (detailed design). As per the Applicants assessment, this should be submitted to Council within one year of obtaining resource consent and planted within two years of obtaining resource consent- to be planted within the planting season (May – September).

54. Removal of the exotic species should be an endeavour when establishing any broad area of native regeneration.

    a. Recommendation: A condition should be included in the above native riparian planting above to include the removal of any exotic species that are within 20m of the two ephemeral watercourses, at the time of planting of the natives. This is to ensure the successful establishment of the native restoration but also to reduce the competition over time and spreading of these exotic trees which would be to the detriment of the native species- particularly given pines, for example, acidify the soil and make establishing natives difficult.

1.6. Assessment against the ODP and PDP Provisions

55. While noting and agreeing that the proposal will detract somewhat from the openness currently occurring on site, the proposed activity in this location appears from a landscape and visual assessment perspective to not be that of an appropriate use. While not rural residential as proposed in the PDP, it is outlined as a light activity development with minimal vehicles, site coverage (impermeability) or nuisance activity (from a visual and landscape perspective) anticipated. This will be similar to activities associated with farming or a mix of farming and lifestyle properties which the site otherwise would likely end up being.

56. There appear to be no areas of significant native vegetation or natural environments aside from the barren landforms that locate the ephemeral streams (to be enhance through planting in this development).

57. I generally agree that effects are mitigated, however not always to the level stated with regards to visual effects. To be low-moderate in many cases it is considered additional landscape treatment, bunding and additional conditions as outlined above should be proposed.

1.7. Conclusion

58. I agree with the conclusion for the most part, particularly that the effects will be low once the shelterbelt matures (the assessment says 'nil' however the large size and prominence of the new shelterbelt will have an ongoing effect to openness from the status quo- so low has been assessed as a more appropriate measure. In any case, low

for the purposes of consent stipulates that the activity is appropriately mitigated, and that the shelterbelt, once mature, is a typical feature of this type of landscape.

59. I differ from the assessment of the interim effects from years 1-4, albeit slightly, where I believe effects will be moderate given the scale of the proposal, the proximity of some of the dwellings adjacent the site boundary, and the fact that some viewpoints and dwellings will experience Glare (predominantly yellow) combined with the thin permeable nature of the shelterbelt while it is at a juvenile stage of growth. While reaching certain heights, such as 2m for example, this species by itself if no other screening proposed will still be relatively permeable.

60. Given the above statements on effects for longer term and interim timeframes, if the recommendations above are adopted I would consider the effects to be low-moderate for years 0-4 and low for years 4+. I note that these additional mitigation measures and conditions have both been raised and generally agreed with the Applicants Landscape Architect in a meeting, as has use and reference to ECANs practical guide on shelterbelts "Shelter and Nature Conservation in Canterbury – a Practical Guide". Refer to Appendix for images taken from this document that are relevant in indicating the type of shelterbelt or mass planting areas that could be applied to this site to mitigate adverse visual effects and enhance natural character (a positive effect).

61. Bellow are illustrations that cover the above recommendations in visual form:

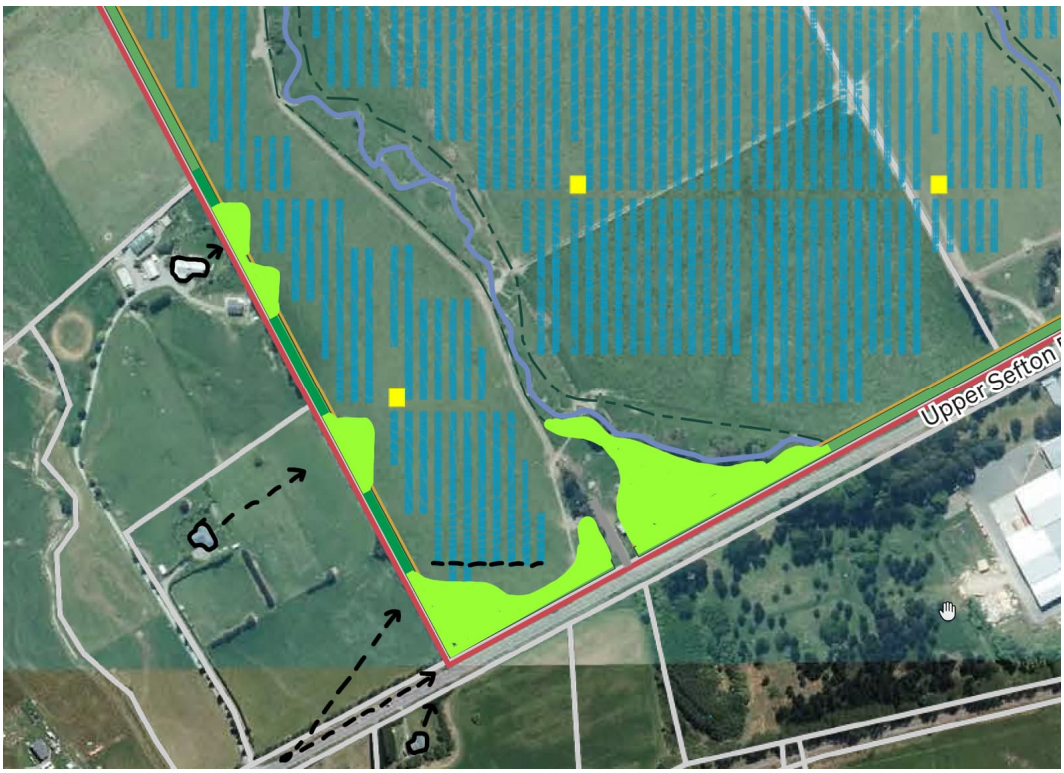


Figure 1. Southwest corner recommended further mitigation. Dark Green=shelterbelt, Light green= shelterbelt + mass native planting (indicative) to mitigate views, Black dashed line extent of panels.

Figure 2. Properties 178 and 189 Beatties Road recommended further mitigation. Dark Green=shelterbelt, Light green= shelterbelt + mass native planting (indicative) to mitigate views. Pink= cross section to show extent of mitigation and enable final confirmation of assessment.

Figure 3. Property at 196 Beatties Road and sites southeast corner recommended further mitigation. Dark Green=shelterbelt, Light green= shelterbelt + mass native planting (indicative) to mitigate views from driveway and for users of Upper Sefton Road. Pink= cross section to show extent of mitigation and enable final confirmation of assessment.

Yours sincerely

Jade McFarlane

Urban Designer/Landscape Architect | Associate

MUrbDes BLA(Hons) NZILA Reg.

jade.mcfarlane@eliotsinclair.co.nz

Attachments

- Disclaimer
- Shelterbelt Guide excerpts to guide planting

Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as a Landscape Assessment Peer Review.

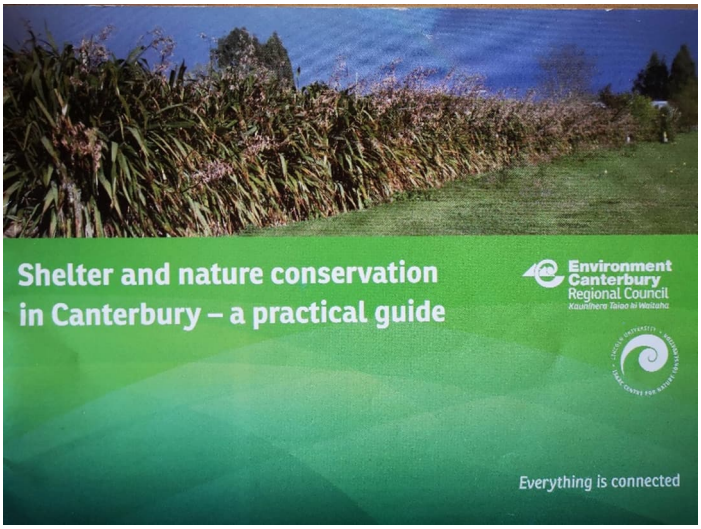
The report is based on:

- Desktop review
- Site visit
- Assessment of original documents and plans, and RFI response by applicant
- Canterbury Maps

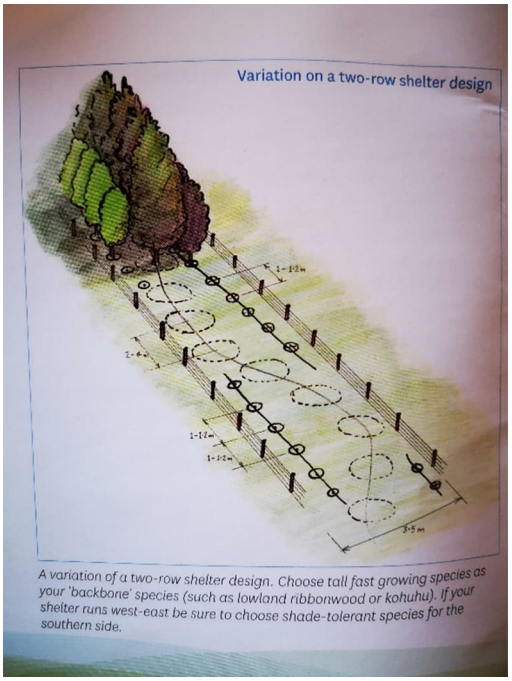
Where data supplied by Waimakariri District Council or other external sources, including previously issued resource consents, drawings, or reports have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

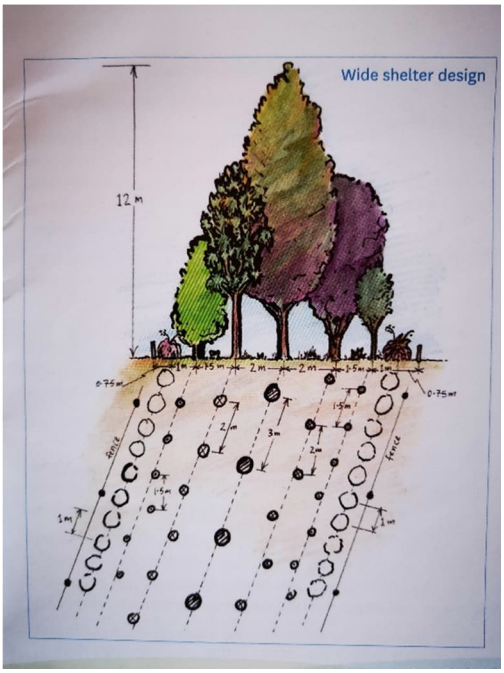
This report has been prepared for the benefit of Waimakariri District Council for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

ECAN Shelterbelt Guide

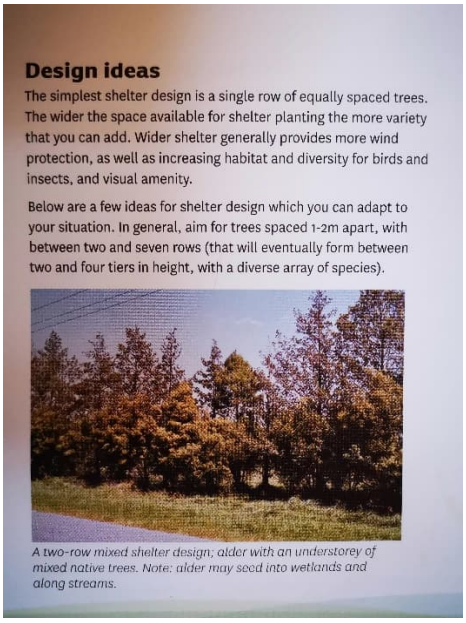


ECAN document





Organic planting patterns helping to break up the visual wall of single species in areas when / if combining with natives (end of ephemeral streams for example). Wider and potentially taller shelterbelts in corners where land is poorly utilised.



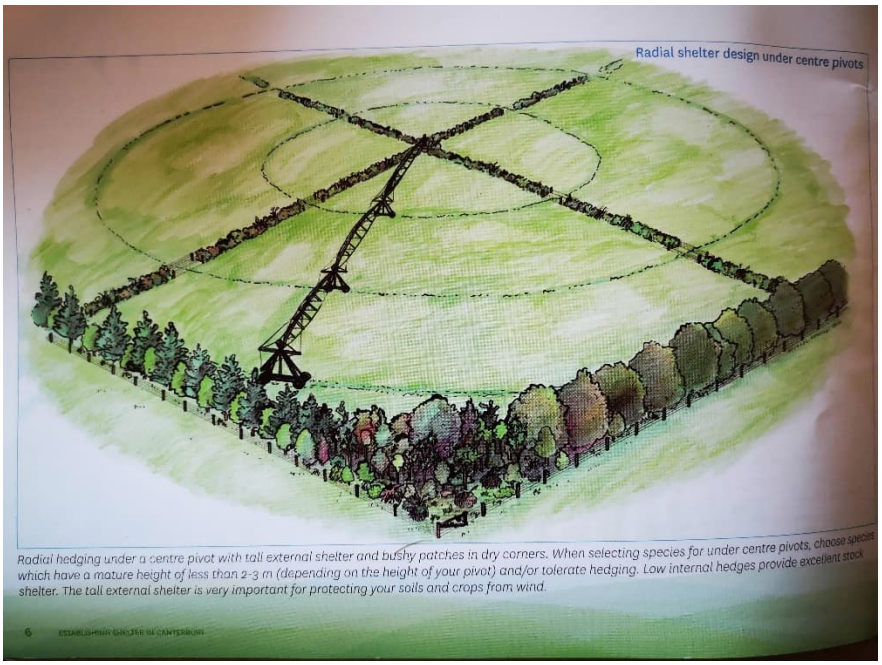
Design ideas

The simplest shelter design is a single row of equally spaced trees. The wider the space available for shelter planting the more variety that you can add. Wider shelter generally provides more wind protection, as well as increasing habitat and diversity for birds and insects, and visual amenity.

Below are a few ideas for shelter design which you can adapt to your situation. In general, aim for trees spaced 1-2m apart, with between two and seven rows (that will eventually form between two and four tiers in height, with a diverse array of species).

A two-row mixed shelter design; alder with an understorey of mixed native trees. Note: alder may seed into wetlands and along streams.

Utilising two row where appropriate with mix of exotic and native where practicable



Radial hedging under a centre pivot with tall external shelter and bushy patches in dry corners. When selecting species for under centre pivots, choose species which have a mature height of less than 2-3 m (depending on the height of your pivot) and/or tolerate hedging. Low internal hedges provide excellent stock shelter. The tall external shelter is very important for protecting your soils and crops from wind.

6

Utilising unused space in corners that are unable to have panels, to mitigate high use road views