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Land Use Consent Application

prepared for

SOUTHERN PARALLEL EQUINE CENTRE LIMITED

279 Stranges Road, Ashburton

November 2023

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279 Stranges Road, Ashburton

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

TO: The Ashburton District Council

We: Southern Parallel Equine Centre Limited ('the applicant'), apply for the Land Use Consent described below.

1. The activity to which the application relates (the proposed activity) is as follows:

   Land use consent is sought to establish an equine stud, with associated built and outdoor facilities, parking and earthworks as described in the attached assessment of effects.

   The proposed activities for which consent is sought will be undertaken in accordance with the details, information and plans that accompany and form part of the application, including the Assessment of Effects on the Environment attached.

2. The site at which the proposed activity is to occur is as follows:

   The application site is located on 279 Stranges Road, Ashburton, and known as Lot 1 DP 43334. The Record of Title is included in **Appendix 1.**

   The natural and physical characteristics of the site and any adjacent uses that may be relevant to the consideration of the application is set out in further detail within the details, information and plans that accompany and form part of the application, including the attached Assessment of Effects on the Environment (**'AEE'**).

3. The full name and address of each owner or occupier (other than the applicant) of the site to which the application relates are as follows:

   Owner: Elizabeth Jane Small and Graeme Walter John Small

   Occupier: The applicants (cultivating the land), and tenants (the dwelling, names unable to be confirmed).

4. There are no other activities that are part of the proposal to which this application relates.

5. The following resource consents will be required from Environment Canterbury and will be applied for separately:

   Earthworks and vegetation clearance within a riparian margin

   Excavation of land over an unconfined or semi-confined aquifer

   Deposition of materials & earthworks within riparian land

   Operational and construction phase stormwater discharge (possibly permitted)

   Construction of bridges

   Water permit to take and discharge water for dewatering purposes

Wastewater discharge

6. I attach an assessment of the proposed activity's effect on the environment that—

   (a) includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and

   (b) addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and

   (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

7. I attach an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

8. I attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

9. I attach an assessment of the proposed activity against the resource management matters set out in the relevant planning documents.

10. I attach all necessary further information required to be included in this application by the district plan, the regional plan, the Resource Management Act 1991, or any regulations made under that Act.

Kim Seaton, Principal Planner

DATED: 6 November 2023

(Signature of applicant or person authorised to sign on behalf)

Address for service:

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Assessment of Effects on the Environment (AEE)

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Appendices

Introduction

1. Resource consent is sought under the Ashburton District Plan to establish an equine stud, with associated built and outdoor facilities, including a selling centre, veterinary clinic, stabling, grazing pasture, training arenas and associated parking. The stud is referred to as the Southern Parallel Equine Centre (SPEC) and is intended to provide a world class equine stud, with the full range of facilities that are typically associated with that class of stud.

2. Section 88 of the Resource Management Act 1991 ('the Act') sets out the particular requirements for persons making an application to a local authority for a resource consent. Section 88(2)(b) states that:

> *"an application must be made in the prescribed form and manner; and include, in accordance with Schedule 4 of the Act, an assessment of environmental effects in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment".*

3. The following assessment is made in accordance with these requirements.

The Site and Surrounding Environment

4. The site is located at 279 Stranges Road, Ashburton, Lot 1 DP 43334. The site is approximately 65ha in area and is indicated in **Figure 1** below. The site is predominantly flat, other than where a north-south stream (Lagmhor Creek main stem and the ephemeral northern branch) steeply incises the land through the centre of the site. Lagmhor Creek main stem is also located centrally within the site, oriented west-east, between Stranges Road and the main stream of Lagmhor Creek. An explanation of the Creek locations is shown in **Figure 2** below. A water race is located along the western edge of the site, adjacent Stranges Road.

5. The site contains a one x single storey, four bedroom house, with access from Stranges Road. That dwelling is currently tenanted. The site otherwise comprises farm land that is grazed and cultivated for vegetables.

6. The surrounding area to the west/southeast/south is rural in character. To the east of the site is Lake Hood and a golf course, while to the north/northeast are established and developing residential areas associated with the Lake Hood community. Ashburton River/Hakatere is located to the east of Lake Hood.

7. The site is zoned Rural B under the Operative District Plan. Stranges Road and Huntingdon Avenue are classified as Local Roads in the Operative District Plan.

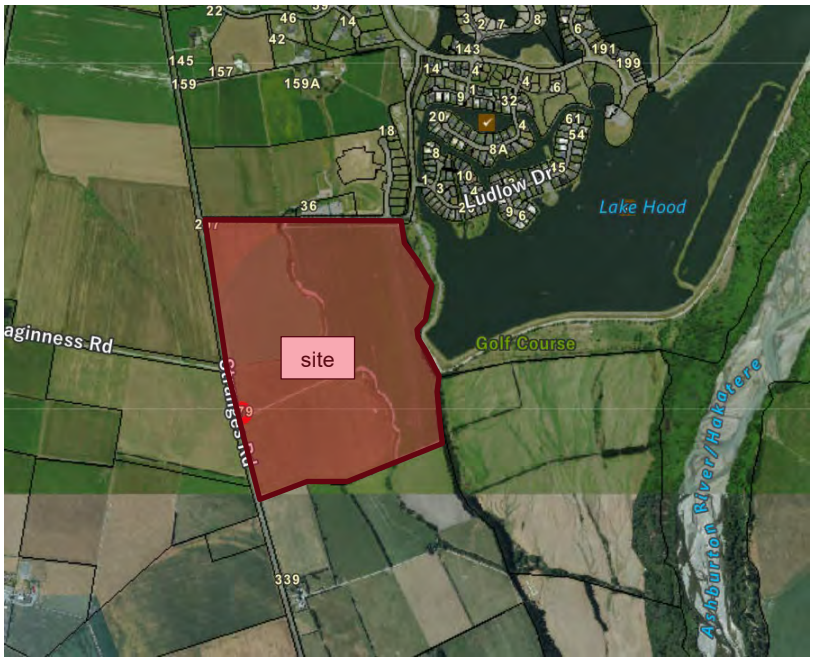


Figure 1: Aerial photograph of site (Source: Canterbury Maps)

Figure 2: Waterways within Site (Source: Boffa Miskell Ecology Memorandum, 2022)

The Proposal

8. The applicant proposes to establish a farming business encompassing a world-class equine centre. The SPEC will encompass a range of outdoor and indoor facilities that are integral to establishing a high quality equine stud breeding facility to support and help advance the equestrian and polo sport sectors in New Zealand. Specifically, the SPEC will include the facilities set out below.

9. A site plan and building elevations are included in **Appendix 2**, illustrating the site layout and proposed buildings.

Outdoor facilities

Pasture/Grazing

10. The highly productive soils underlying the site will enable good quality pasture to be grown, vital for raising thoroughbred yearlings and keeping breeding stock in peak condition. Insufficient and incorrect pasture can be the difference between a problem horse and a calm and responsive animal. Inadequate pasture can be responsible for head-flicking, wind-sucking, inflammations (including laminitis), reproduction issues and a range of other behavioural and health issues. In contrast, well-established pasture has a cooling, calming effect on a horse's temperament. The supply of balanced nutritional ration for broodmares is also important as inadequate nutrition can lead to reduced fertility. The quality of pasture is directly related to the quality of the underlying soils, and the nutrients available in those soils.

Arenas and Training Fields

11. The grazing areas will serve the dual purpose of providing training arenas, and fields for horses being bred at the SPEC. Training arenas are integral to high quality equine studs as they enable horses to be trained prior to sale. The arenas and fields will be for the purposes of show jumping, dressage, hunter class and polo training and showing to prospective purchasers.

12. Use of the arenas and fields will include provision for competitive events. Those events will only be open to prospective purchasers of horses bred at the SPEC. It is common practice at high quality studs for purchasers to bring their existing horses to the site, to test prospective horses against in competition.

Parking and Access

13. Parking areas will be provided on site for horse coaches, horse floats and cars, as indicated on the site plan in **Appendix 2**.

14. For the most part parking will be informal (gravel, unmarked), as the facility will not be accessible to the general public and parking requirements will be relatively low. The exception will be the parking area adjacent the selling centre, which will be formed and marked to provide for 45 car parking spaces, inclusive of two mobility spaces.

15. Any additional parking required for the annual sales event, for example, will be informal within grassed areas on the site.

16. The principal access to the site will be from Stranges Road, centrally within the site. A sealed route will be provided from this entrance to the selling centre. The route from the selling centre onwards to the main parking area adjacent to the selling centre will also be sealed. Remaining vehicle, horse and pedestrian routes or paths on the site will be gravelled.

17. A second vehicle access will be provided to the site from Huntingdon Avenue. That access will be for staff and emergency access only. The first 10m of that access (as measured from Huntingdon Avenue) will be sealed.

18. Construction traffic will principally utilise the existing entry to the site off Stranges Road until the new Stranges Road main entry is constructed. An entrance off Huntingdon Avenue may also be utilised to a lesser degree during construction.

19. Further detail on parking and access is provided in the Transport Assessment in **Appendix 3**.

Indoor facilities

Stables

20. Six stable blocks are proposed (100 stables per block), providing stabling for stud stallions, brood mares and foals (those not located within the Breeding Services Centre), yearlings, and horses in training. These stables will have a total footprint of approximately 21,392m^2 and will have a maximum height of 9.54m to the top of the ventilation shafts.

21. An additional 50 stables will be provided within the Breeding Services Centre and a further eight stables for the Equine Veterinary Clinic.

22. The buildings will be clad in a mixture of dressed shiplap weatherboards, dark tray roofing, dark aluminium joinery, concrete panels and bagged schist cladding, as indicated on the building plans in **Appendix 2**.

23. All stabling will be for SPEC use only, i.e. it will not provide stabling for general community use.

Equine Veterinary Clinic/Equine Breeding Services Centre

24. A single building will accommodate the Equine Veterinary Clinic, Equine Breeding Services Centre and 58 associated breeding and veterinary care stables.

25. The Equine Breeding Services Centre will comprise a world class breeding and research facility utilising the latest techniques in: ultrasonography; treatment; specialised reproductive techniques; frozen embryo and embryo implanting; harvesting, storage, artificial semination; semen catalogue.

26. A fully equipped Equine Veterinary Clinic is proposed to manage the health and care of breeding stock within the stud. The Clinic will not be open to the general public. The Clinic

will be equipped with the latest equine health technologies, including MRI, cat scan, ultrasound, full equipped operating theatre, chiropractic services, horse solariums, treatment stables with air mattresses and equine stud recovery services.

27. The building will be approximately 3,070m^2 in floor area with a maximum height of 11.8m to the top of the ventilation shafts. Cladding will the same as for the stable blocks (see **Appendix 2**).

Stud Selling Centre

28. A key building for the stud will be the Stud Selling Centre. The building will encompass a large barn-style facility that will accommodate an arena for demonstration and training; client seating; stud offices; meeting rooms; and a client-only entertainment area. The building will have a footprint of approximately 6,066m^2 and a maximum height of 12m to the gable ridgeline. Two chimneys (which will exceed a dimension of 1m) will protrude an additional 2.75m above this. Cladding will the same as for the stable blocks (see **Appendix 2**).

29. The selling centre will be solely for uses associated with the development and sale of horses bred on the SPEC, though the main annual sales event may involve the bringing of stock to the site for sale from off-site, in the same way that typically occurs at sheep and cattle sales on other farms, for example.

Walking Circle

30. A covered horse walking circle of approximately 1000m^2 will be established. The walking circle is a basic unfloored structure with a roof and peripheral fencing or walls.

Staff Accommodation

31. The existing dwelling on site will be retained and utilised for staff accommodation purposes.

Other

Services

32. The site will be serviced as follows:

    i. Wastewater - a BioGill system will be installed to treat onsite wastewater. The system will comprise the BioGill Ultra Unit, being two Biogill Ultra Units for secondary Biological Treatment, and one BioGill Anoxic Ultra Unit for denitrification. The system is described by BioGill as follows:

        The BioGill Ultra is an attached-growth bioreactor for secondary wastewater treatment. The largest bioreactor in the BioGill product range, the Ultra is a compact design ideal for facilities seeking a simple, robust and highly efficient biological treatment system or to boost capacity of an existing treatment process.

        BioGill bioreactors operate, with minimal maintenance requirements and low lifecycle costs. At the core of the BioGill Ultra is patented Nano-ceramic

media, known as Gills. The unique design of the Gills provides the ideal habitat for microorganisms to rapidly establish into a robust biomass.

Wastewater is dispersed at the top by the patented non-clog HydroSwirl™ system and gravity fed down the Gills. The Gills are permeable, allowing microorganisms to grow throughout the Gill media with simultaneous access to both oxygen entering on the air side and nutrients on the water side.

Oxygen diffuses within the biomass from the air side to the liquid side. At the same time, nutrients diffuse through the biomass from the liquid side to the air side. The process is known as counter diffusion and works 4 to 5 times faster than oxygen diffusion. This means BioGill systems can be online, achieving treatment goals within days after start-up or system restart. The BioGill media fosters a biomass that is remarkably tolerant of fluctuations in wastewater flow and organic (BOD & COD) loadings. This is a key benefit for facilities with variations in wastewater-producing activities over the course of the week or throughout the year, making the bioreactors equally well suited to -year-round or seasonal use.

The Gills achieve higher BOD & COD removal capacity through faster microbial community startup which is up to 7 times faster than conventional bioreactor technology. As such, substantial biomass re-establishment can occur within 24 hours after a system shock, upset or system shutdown and restart following a dormant period. BioGill technology can also treat a wide range of influent BOD & COD concentrations and tolerate levels of Fat, Oil and Grease (FOG) that challenge or disrupt alternative biological treatment systems.

As the Ultra is passively-aerated with natural convection moving air from vents located at the bottom through to vents at the top, there is no need for energy intensive blowers or aeration as used in conventional technologies. This delivers significant savings in energy and operating costs and a reduced carbon emissions footprint.

The applicant advises that they also intend to install a UV unit to provide final deactivation of pathogens.

One of the benefits of the BioGill system is that it is very compact and self-contained. As such, the above-ground parts of the system are able to fit within the space of half of a single garage. The final location of the BioGill system has not yet been confirmed but it will be located centrally, a minimum of 50m from any waterbody and not within any area of contaminated land.

Discharge consent for the treatment and discharge of wastewater is being applied for separately from Environment Canterbury. Further detail on the system, treatment and discharge quality and methods will be available in that application document.

ii. Water supply - The property has a single dwelling that is supplied with water from an offsite bore across Stranges Road, pumped into a water storage tank. An

existing bore sited under the house is not used and closed off. The Ashburton District Council has previously advised the applicant that potable water can be supplied from the District Council network, which would require a new pipeline to be installed to the site at the applicant's cost. In respect of firefighting water supply, the applicant expects to capture some roof stormwater for storage, or otherwise provide on-site storage of town water supply, sufficient to generate the volumes of water required for up to FW6 firefighting storage volume. Confirmation of the adequacy of the supply for firefighting purposes prior to construction of buildings commencing, can be required as a condition of consent.

iii. Stormwater discharge – stormwater will be discharged to land from each of the built facilities via soakage. Soakage may be to one or more soakpits, depending on the size of the structure or building. Discharge from sealed roads and the sealed car park within the site will be to swales running parallel to the sealed areas. Stormwater discharge consent is being sought from Environment Canterbury for both construction and operational discharges.

Earthworks

33. An estimated 37,360m^3 of earthworks (excavation) will be required on the site, exclusive of aggregate/concrete for foundations for buildings and paved surfaces, and of aggregate for gravel paths. All topsoil will be respread within the site, with minimal cartage required off site. Most works are assumed to be shallow (generally not more than 400mm deep), with the exception of the 3m deep excavation required to bury the BioGill system (tanks), trenching for servicing pipes, and works for the bridge abutments (approximately 1.5m deep).

34. The estimated earthworks are shown in the Earthworks Plan in **Appendix 4**. All earthworks will be subject to a sediment and erosion control plan (ESCP), which can be prepared and provided as a condition of consent and in accordance with the Canterbury Toolbox. The physical extent of works will also require a dust management plan (DMP) to be prepared under the Canterbury Air Regional Plan, prior to construction commencing. The DMP will also inform the ESCP.

35. Earthworks will be required in proximity to the waterways, only insofar as foundations for bridges will be required to be established in the riparian areas, and with roads or paths leading to the bridges. Further details of the waterway crossings are provided below.

Waterways

36. The waterways will be enhanced and restored. This will include the removal of pest species such as blackberry, and replanting of riparian areas. Works near the waterways will be restricted to these vegetation works (the subject of a resource consent application to Environment Canterbury) and the creation of six new crossings. The crossings will comprise one bridge over Laghmor Creek south of the junction with the northern branch; one bridge over the northern branch; three over the section of Laghmor Creek between Stranges Road and the northern branch junction; and a relocated and extended culvert over the water race adjoining the main entrance to the site (relocated from its existing crossing that services the existing dwelling on site). The location of the bridges is noted in **Figure 3** below.

37. Bridge piles will be installed at least 2m from waterway edges. There will be no changes to waterway profile and therefore no effect on existing flows through the waterways.

38. Construction of the bridges will involve the following works:

    i. Construction of stabilised entrance and construction platforms for bridge works.

    ii. Installation of the erosion and sediment devices - silt fences along edge of the watercourses.

    iii. Installation of the bridge piles – drill pile holes and either stockpile material or remove directly offsite. Install reinforcing cages and pour concrete piles.

    iv. Construction of the bridge abutments.

    v. Installation of the precast bridge beams and topping slab.

39. The applicant proposes to use the Hynds Landspan Bridge System whose technical specifications are provided in **Appendix 5**.

40. The following are some of the proposed specifications for each bridge:

    i. Bridges 1, 3 and 5 will be single lane vehicle crossings and so they will be 4.2 m wide (i.e. 1 x 4.2 m wide beams).

    ii. Bridge 4 will be a two laned crossing and will be comprised of 2 x 4.2 m wide beams.

    iii. Bridge 2 will be a walkway bridge for horses and riders providing a link between the service centre and the stables. This will be comprised of a 2 x 1.05 m wide beams.

41. All existing culverts within Laghmor Creek and its northern branch will be removed.

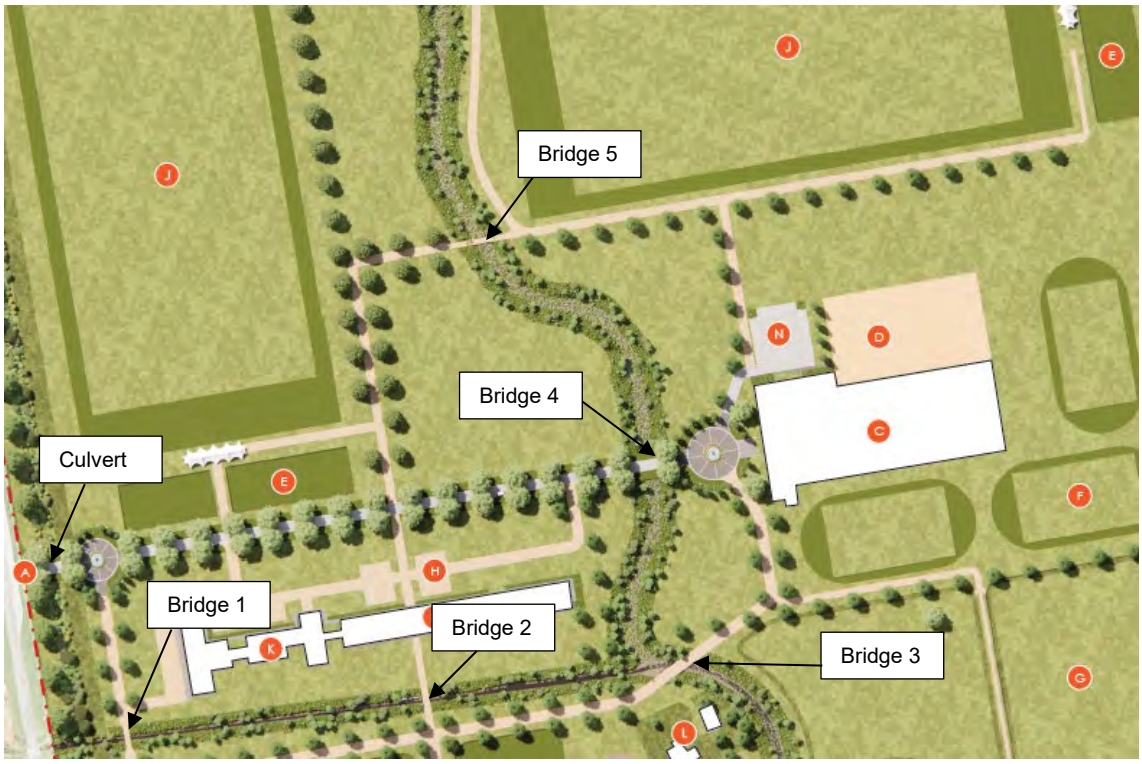


Figure 3: Proposed bridge locations

Landscaping and Fencing

42. A comprehensive landscape plan has been prepared, including planting palettes and is attached in **Appendix 6**.

43. A deer-style fence 1.6m-2m in height will be established on the southern boundary of the site, at the request of the neighbours to the south. Fencing on other boundaries is not yet confirmed but will be rural in character.

Staff and Visitors, Events

44. On a day to day basis, between 20-40 staff will be present on the site, with visitors typically anticipated to be less than 10 per day and by appointment only.

45. An annual sales event is anticipated to cater for up to 500 prospective purchasers and their support persons. A small number of event contractors will also be present to run the sales, such as auctioneers.

Signage

46. At this stage, no signage details have been prepared. Any signage is anticipated to be low key and related to the equine use of the site only. If signage is unable to comply with the provisions of the District Plan, it will be the subject of a separate resource consent application.

Statutory Context

NES for Contaminants in Soil

47. A preliminary site investigation has previously been undertaken on the site, which indicated the site may contain historic HAIL activities. A Detailed Site Investigation (DSI) has subsequently been undertaken and is contained in **Appendix 7**. The DSI confirms that contamination levels are in some locations above background levels but below guideline levels. The DSI has been prepared to inform development of the site and stormwater/wastewater discharge locations.

48. As the use of the site will continue to be productive, and soils in the immediate vicinity of the dwelling will not be disturbed as part of the redevelopment of the site, in accordance with Clause 5(8) of the NES, the NES does not apply.

Ashburton District Plan

49. The site is zoned *Rural B Zone* in the District Plan.

50. A compliance assessment is contained in **Appendix 8**. Resource consent is required pursuant to the following rules:

- *Rule 3.8.4 Restricted discretionary activities – earthworks in excess of the permitted volumes and within 20m of a stream.*
- *Rule 3.8.5 Discretionary activities – farm buildings in excess of 500m^2 in area.*
- *Rule 3.8.6 Non-complying activities – the proposal will not comply with Zone Standard 3.10.7 Intensive farming as the stables will be within 1500m of a Residential C zone.*
- *Rule 14.7.4 Discretionary activities – utilities that are otherwise permitted that are on land within the bed of any waterbody or within 20m of a stream. The proposal will require pipes for the conveyance of sewer, water and stormwater within 20m of the stream, though the pipes will be attached to the underside of the proposed bridges, not within the bed of any waterbody.*

51. The following site standard is additionally not complied with but not does affect activity status:

- *Site Standard 3.9.2 site coverage – the total site coverage of buildings and impervious surfaces will be approximately 3.7800ha, exceeding the permitted 3.25ha for the site.*

Activity Status

52. Overall, land use consent is required for the proposal as a **non-complying activity** under the District Plan.

Resource Management Act 1991- s95-95E and s104-104D

53. In terms of notification considerations in sections 95A-95E of the Act the following matters are noted:

    i. public notification is not requested by the applicant;

    ii. there are no special circumstances necessitating public notification.

54. As a non-complying activity, the provisions in sections 104, 104B and 104D direct the substantive determination of applications and the following sections of this AEE have regard to the relevant provisions referred to therein.

Assessment of Actual or Potential Effects on the Environment

55. As a non-complying activity, Council's discretion is unrestricted. The relevant environmental effects are considered to relate to the following:

- transport effects;
- visual, landscape and natural character effects;
- amenity and character effects;
- effects of intensive farming;
- ecological effects;
- cultural effects;
- earthworks and servicing effects; and
- positive effects.

Transport Effects

56. An integrated transport assessment (ITA) has been prepared by Lisa Williams of Novo Group and is attached in **Appendix 3**. That assessment confirms no non-compliances with District Plan transport rules. The assessment confirms that the site will be self-sufficient for car parking and loading with no parking or loading occurring on frontage roads. The report further concludes:

> *The Main Access to Stranges Road is appropriate for all intended use including day to day traffic, sales event traffic, horse float / truck access and any other service vehicles visiting the site. This access will be sealed and the vehicle crossing will have a 15m radius with acceleration and deceleration lanes provided.*
>
> *The secondary access to Huntingdon Avenue is appropriately formed and located for the intended safe and service use, this access is not anticipated to cater for trucks / heavy vehicles.*

> *Connections from the site to the wider road network are direct and convenient and suitable for the site related traffic. For the annual sales event and any smaller sales events, a temporary traffic management plan should be provided to Council for approval a minimum of two weeks prior to the event. This should include any event signage and temporary traffic management that is required at the site access and along the route to SH1. The traffic management proposed should reflect the size and operation of the particular event.*
>
> *Based on the assessment undertaken above, we consider that the proposed development can be supported from a transport perspective.*

57. That assessment is accepted and the potential adverse transport effects of the proposal are therefore considered to be less than minor and acceptable.

Visual, Landscape and Natural Character Effects

58. A landscape and visual assessment (LVA) has been undertaken by Dave Compton-Moen of DCM Urban Design Limited and is attached in **Appendix 9**. That assessment also considers effects on natural character.

59. The LVA describes the existing character of the site and surrounding area as modified and rural (in respect of the rural areas), with the Lake Hood settlement to the north and northeast of the site. It concludes the description as:

> *Overall, the receiving environment has a rural, semi-open character on the outskirts of a small suburban development with some areas exhibiting a high level of compartmentalisation. The existing environment has various structures including dwellings, auxiliary structures, power lines and exotic vegetation clustered throughout the landscape, typical of rural landscapes within Canterbury.*

60. In respect of the natural character of the waterways on site, the LVA notes they are of relatively low value presently, with a low sensitivity to change[1].

61. In respect of the effects of the proposed buildings on landscape character, the report states:

> *The proposed buildings are of a scale and form which is consistent with rural developments on a large scale. The potential for 12m high buildings is not considered to have an effect on the character of the wider area as they are largely internalised, and their form is consistent with farm and utility sheds in rural areas, albeit somewhat larger in accumulated scale.*

62. In respect of landscape values, the LVA considers that although there will be higher than permitted building coverage and scale, the provision of open space will remain high, retaining an open, rural character with a degree of compartmentalisation occurring due to landscape planting. The report notes the extensive landscape plantings proposed and peripheral plantings in particular, are designed to soften views of the proposed buildings and carpark areas while retaining a high level of amenity. The report concludes that '*the design is considered consistent with the surrounding area in that a high level of stewardship*

[1] Lake Hood itself is an artificial waterbody and explicitly excluded from the definition of lakes within the Ashburton District Plan.

and visual coherence is anticipated'. The landscape treatment is also described as being positive in respect of effects on landscape values.

63. Regarding effects on natural character, the report indicates that provided care is taken to minimise earthworks in the riparian margin, natural character is expected to be enhanced by the proposal, considering the degraded state of the waterways within the site at present.

64. In regard visual amenity effects, the LVA describes effects on residents living nearby on Stranges Road and Huntingdon Road as less than minor, due to distance and intervening vegetation and roads, with a high level of amenity retained.

65. In regard road users, the effects of the proposal are considered to be less than minor, noting the retention of a rural, visually coherent, character on the site and extensive plantings.

66. In regard effects on lake users, the LVA describes little change in rural character and amenity of the site as viewed from Lake Hood, noting the distance of buildings from the lake and its margins, and retention of existing trees along the lake margins.

67. Overall, the LVA concludes:

> *In terms of landscape character (including natural character) and values of the area, subject to the mitigation measures proposed, the proposal will result in an acceptable magnitude of change on the existing rural landscape character and values. The existing character of the site is already highly modified and with the proposed mitigation measures both protecting and enhancing existing waterways, the proposal will retain existing natural features.*
>
> *In terms of visual amenity, the adjacent rural properties will experience a small change in the openness of views across the space. Nearby residential properties, current and future, overlooking the site have a mix of open, partial, and screened views of future development. The changes in the landscape experienced by these residents are considered Very Low (less than minor effects) given the nature of the proposal is rural, albeit with a larger scale of rural building than is found in the immediate area at present.*

68. That assessment is accepted and the potential adverse effects of the proposal in respect of character, visual amenity and natural character, are considered to be less than minor, including for residents living nearby on Stranges Road and Huntingdon Road.

Amenity Effects

69. The RMA defines amenity values as being:

> *'…those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes'.*

70. The LVA has described the visual character and amenity of the site and surrounds as being open and rural but settlement-edge in respect of the Lake Hood settlement, changing to a more compartmentalised character post-development but still strongly rural. The site itself

has no recreational attributes, given it is currently utilised for productive purposes without public access. Adjoining recreational areas (Lake Hood) will be unaffected. The site has no known notable cultural values, other than those typically ascribed to waterways. Given the low quality of the waterways on site presently, the proposal to enhance riparian plantings and remove pest weed species is generally considered to be a positive effect in respect of cultural values, as discussed further below.

71. In regard pleasantness, the site is generally reasonably quiet at present, albeit farm machinery operates intermittently for planting, cultivating and harvesting purposes, and noise from motorised craft on Lake Hood is likely to be discernible. The proposed breeding stud use will continue to be a quiet use, with the exception of some construction noise that will necessarily arise temporarily during the construction period for the facility. Lighting will be low level and signage kept to a minimum, consistent with the rural character of the site.

72. Overall, amenity values of the site will change through the introduction of new building scale and vehicle routes on the site, but the change is not considered to be adverse and rural character will be maintained. The amenity values of adjoining areas (including the Lake Hood settlement) are considered to be generally maintained, such that the effects of the proposal on amenity values will be less than minor and acceptable.

Effects of Intensive Farming

73. The District Plan definition of intensive farming includes the boarding of animals, but excludes buildings used for housing or sheltering animals that are giving birth or raising juvenile stock, where no individual animal is housed or sheltered for more than 3 months in any calendar year. The housing of stud stallions, yearlings and stock older than foals will fall within the definition of intensive farming. All of the six blocks of stabling at the southern extent of the development therefore fall to be intensive farming, with a smaller proportion of stables within the breeding services/main building potentially also falling periodically within this definition, for example when stallions are accommodated there.

74. The proposed stabling is located well in excess of the 400m distance from any residential unit on another site, as required by the Rural B Zone rules of the District Plan. The stables will however be located within 1500m of a Residential C Zone (to the north adjacent the Lake Hood settlement). The District Plan lists potential adverse effects with respect to intensive farming proximity as including odour (stocking rates, effluent disposal), crop spray, noise, visual impact and dust nuisance. Noise and visual impacts are addressed above and are not considered to be notably adverse. Dust nuisance is not expected to arise to any degree that cannot be adequately managed, noting the potential for dust nuisance is considerably lower in a quality stabling establishment than in a chicken broiler shed or free-range piggery. Crop spraying will reduce as a result of the conversion from vegetable cultivation to horse breeding and grazing pasture. Stocking rates are similarly not an issue for an equine stud in the way that it may be for an intensive dairying, piggery or chicken farm operation. The greater potential for adverse effects therefore remains odour. This could arise if horse manure were piled for extended periods of time on the site. The applicant undertakes to remove all cleaned out stable material from the site on a daily basis. As such, no adverse odour effects are anticipated to be discernible at adjoining properties from the stable activity.

75. Overall, the potential adverse effects of the intensive farming activity on adjoining persons are considered to be negligible.

Ecological Effects

76. The large majority of the site has been actively cultivated for cropping purposes for years and constitutes improved pasture and therefore is understood to have little ecological value. Potential ecological value is primarily associated with the waterways on the site.

77. An ecological assessment in support of the proposal including a survey of the waterways with a particular focus on potential waterway crossing locations, was undertaken by Aquatic Ecology Ltd (AEL) and is attached in **Appendix 10**. The report includes findings from a bird survey undertaken on the site. That report supersedes in part an earlier ecological report prepared by Boffa Miskell (also included in **Appendix 10**). The AEL report should be taken to supersede the Boffa Miskell report in respect of bird survey on the site, and aquatic survey/assessment. The Boffa Miskell report is nevertheless useful for a broader overview of the ecological values of the site, including confirming that the majority of the site is of little ecological value, with such value as there potentially is being focused on the waterways and peripheral rank grass areas. The Boffa Miskell report recommended further, more detailed survey, work be undertaken and it is this work that AEL has focused on.

78. The AEL report confirms that there are no areas of ecological significance near the bridging sites. They note the presence of some indigenous vegetation, including flax that could potentially be habitat for skink. All indigenous vegetation in the waterways and riparian areas is to be retained, consistent with the AEL recommendation. The AEL report does note that the presence of skink habitat around the flax was not able to be determined in spring, however the undertaking to ensure the flax is undisturbed should ensure habitat is protected in any case.

79. In regard potential habitat in peripheral areas of site, peripheral areas will be disturbed only to the extent required to undertake additional planting/landscaping, and for the creation of the Huntingdon Avenue access. In other words, disturbance will primarily be associated with the creation of new habitat.

80. No wetlands have been identified on the site.

81. The AEL report makes the following recommendations:

    i. *In summer, a herpetologist survey bridge locations for lizards and consider mitigation options if found.*

    ii. *Haul Road and bridge placement be undertaken after the bird breeding season (i.e., February to June).*

    iii. *Paired TSS/turbidity recording both upstream and downstream of the construction site and a maximum construction water discharge of 50 gm/m^3 would be suitable for this receiving environment.*

    iv. *Should construction works extend beyond June, that a survey be conducted to locate any nesting birds around the bridge construction sites.*

v. *Stormwater runoff from the Haul Road and vehicle car park areas, be treated before discharge to waterways, possibly by ground infiltration.*

vi. *Dust suppression methods be used to control wind-borne dust off the Haul Road.*

vii. *Haul Road and bridge placement between February to June.*

82. Those recommendations are accepted and form part of this application (though recommendation (iii) is relevant to the Environment Canterbury resource consent application only).

83. Overall, subject to the implementation of the above recommendations, the potential adverse ecological effects are considered to be less than minor, with potentially positive effects arising from new planting initiatives near the waterways in particular.

Cultural Effects

84. The applicant has initiated engagement with Te Rūnanga o Arowhenua via Aoraki Environmental Consultancy Limited. The Rūnanga has not had sufficient time to review the application prior to lodgement to enable comments to be provided and as such the Rūnanga feedback will be provided separately. However, it is noted that, to the applicant's knowledge, there are no particular Takata Whenua values ascribed to the site such as waahi taoka or waahi tapu. The principal matters of concern to Rūnanga are anticipated to be the well-being and mauri of the waterways and the land.

85. In regard the waterways and as discussed in this AEE, all discharges of water and wastewater will be to ground and will be well treated prior to discharge. The waterways are currently in a somewhat degraded state, with low ecological values and, in the case of the northern branch of Laghmor Creek in particular, considerable weeds. The proposal to remove weed species and improve indigenous planting in the vicinity of the drain will assist with improving the overall quality of the waterways and riparian areas.

86. In regard the mauri of the land, the requirement to establish buildings to accommodate the equine stud will result in those parts of the site where farm buildings are required to be established, being removed from productive use. However, the remainder of the site will move from cultivation to pasture, with an accompanying transition to organic fertilisers and a reduction in soil disturbance in the future. Overseer modelling (for Environment Canterbury) for the proposed use has demonstrated that nutrient loss from the site is anticipated to reduce as a result of moving from the current farming practices to an equine stud, with accompanying benefits for water quality on the site.

Earthworks and Servicing Effects

87. Earthworks will be restricted to that required to establish the internal transport routes and building foundations, together with minor disturbance for landscaping purposes. Whilst the volume of anticipated earthworks is high, it is not significant in the context of a 65ha site. All earthworks will be undertaken in accordance with a sediment and erosion control plan prepared in accordance with the Environment Canterbury Toolbox. The requirement for that ESCP is volunteered as a condition of consent. A dust management plan will also be required to be prepared prior to site works commencing, in accordance with the Canterbury Air Regional Plan. The site is relatively flat, ensuring that land stability will be maintained.

With adherence to the requirements of these two plans, potential adverse effects of earthworks can be appropriately managed, including where works to establish vehicle routes are undertaken in riparian areas.

88. In regard servicing and as noted above, all stormwater will be treated and discharged to ground, and subject to a discharge consent from Environment Canterbury. Any adverse effects associated with stormwater discharges are anticipated to be less than minor and acceptable.

89. In regard the BioGill wastewater discharges, those discharges will similarly be subject to Environment Canterbury scrutiny via a wastewater discharge consent application. It is anticipated that through that process, any potential adverse effects from the discharges will be confirmed as having less than minor and acceptable adverse effects. In regard potential odour discharges, a report has previous been prepared by WSP on the potential odour effects of the BioGill system. That report is attached in **Appendix 11**. It should be noted that the odour assessment related to an earlier development proposal that involved more development and of a different nature than what is now proposed. Nevertheless, the findings of the report in terms of potential odour discharges remains relevant.

90. The odour report concludes as follows:

> *It is concluded that the potential for any odour effects beyond the site boundary of SPSC due to its proposed WWTP facility are very likely to be negligible given the large separation distances to sensitive locations beyond the site boundary, the scale of the BioGill design facility, its location within the site, and given the implementation of the proposed mitigation measures by SPSC and as recommended in this report.*

91. In respect of location, the odour report assumes a relatively central location. Mitigation measures recommended/proposed are:

    i. *The above ground components of the BioGill system will be located within an enclosed building that has passive treatment of ventilate air via carbon filters.*

    ii. *The system will be located centrally within the site.*

    iii. *The first settling tank have an air bubble injection system within the tank.*

92. Based on the adoption of those recommendations and the advice of the WSP report, odour from the system is not anticipated to create any adverse effects on adjoining sites.

Positive Effects

93. Potential positive effects of the proposal are considered to be those arising from increased biodiversity (removal of pest species such as blackberry, indigenous planting and improved habitat) within the site, potential improvements in surface water quality arising from more comprehensive planting in riparian areas and reduced nutrient losses, and economic benefits for the District and Region from the introduction of a high-end equine breeding facility into the local economy. The latter will introduce job creation through both the construction and operation phases, as well as economic benefits arising from potential customers visiting the district to attend the stud.

Summary of Effects

94. In summary, the potential adverse effects of the proposal are considered to be less than minor and acceptable, with effects able to be avoided or appropriately mitigated. In regard Section 104 of the Act, notable positive effects have the potential to arise from the proposal.

Relevant Provisions of Planning Instruments

95. The planning documents of relevance to this application and the provisions therein are listed and assessed in turn below:

Ashburton District Plan

96. Relevant objectives and policies of the Ashburton District Plan are contained in Takata Whenua Values, Rural, Transport, Noise, Signs and Utilities Energy and Designations sections.

97. With regard to Takata Whenua (Section 2), the objectives of this section seek:

The recognition, understanding and promotion of the Treaty of Waitangi relationship between the Council and Kati Huirapa in the management of the District's natural and physical resources. (Objective 2.1)

The management of the District's natural and physical resources in such a way as to maintain and protect the relationship of Kati Huirapa and their culture and traditions with their ancestral lands, waters, sites, waahi tapu and other taoka. (Objective 2.2)

The recognition of the Maori World View (namely the interconnectedness of all aspects of the natural world, including people) in decision making and management of the District's natural and physical resources. (Objective 2.3)

98. Supporting policies variously reference consultation with and involvement of Takata Whenua in Council decision making processes, education and information, and identification of areas of value to Takata Whenua within the District. The proposal is consistent with these objectives and policies, insofar as the site is not within or adjoining a Statutory Acknowledgement Area, nor otherwise known to be a site of particular value and significance to Takata Whenua. Waterways within the site are to be enhanced as part of the proposal, consistent with maintaining and enhancing the values and Mauri of the water. Engagement with Te Rūnanga o Arowhenua has been initiated to further support the cultural assessment of the proposal.

99. Section 3: Rural Zone contains the objectives and policies of most relevance to this proposal. Objective 3.1 seeks to '…*enable primary production to function efficiently and effectively in Rural A and B Zones, through the protection and use of highly versatile and/or productive soils and the management of potential adverse effects*.'. Supporting Policy 3.1A seeks to '*Provide for the continued productive use through farming activities and protection of highly productive and/or versatile soils, and their associated irrigation resources, by ensuring that such land is not developed for intensive residential activity and/or non-rural activities and the extent of coverage by structures or hard surfaces is limited*.' Policy 3.1E seeks to '*Protect highly productive and/or versatile soils by discouraging activities such as*

earthworks and extractive processes that significantly deplete the topsoil or the subsoil'. The proposal is consistent with this objective and policies in that while some topsoil will be removed to allow for the construction of the breeding, stabling and training facilities that are required to support a high-end equine stud, the large majority of the site soils will be retained as high quality pasture and remain in productive use. While the buildings will require soil removal, the use of the buildings similarly will be productive. Non-rural uses will not be established on the site.

100. Objective 3.2 addresses biodiversity, seeking to '*Protect, maintain and/or enhance indigenous biodiversity and ecosystems by controlling and managing activities that have the potential to affect the life supporting capacity of soils, and water quality in the lakes, rivers and wetlands and significant nature conservation values*.' Supporting policies seek to achieve this through protecting, maintaining and enhancing indigenous biodiversity and ecosystems (particularly areas of significant nature conservation values) (Policy 3.2A), encouraging effective effluent treatment and disposal (Policy 3.2E), and managing and encouraging land uses on land adjoining lakes, rivers and wetlands to maintain or improve water quality and maintain and/or enhance indigenous biodiversity and ecological values (Policy 3.2F). The site does not contain any significant nature conservation values, with the limited extent of values identified being primarily within the waterways. A highly effective on-site effluent treatment and disposal system is proposed, to protect ground and surface water quality, and waterways on the site are to be enhanced, including with indigenous planting. Overall, the biodiversity and ecosystem values of the site are anticipated to improve, even with the proposed built and hard surfacing elements of the proposal. Any potential adverse ecological effects, for example on fauna that have not yet been specifically identified, will be managed and either avoided or mitigated. Overall, the proposal is considered to be consistent with this objective and policies.

101. Objective 3.3 pertains to Outstanding Natural Features and Landscapes and is not relevant to this proposal.

102. Objective 3.4 seeks to '*preserve the natural character of the District's coastal environment, rivers, lakes, wetlands and their margins, and protect such areas from inappropriate subdivision, land use and development*.' The site is not located within the coastal environment and the adjoining Lake Hood is man made and therefore excluded from the Plan's definition of a 'lake'. The site does however contain streams, albeit highly modified. Supporting policies include Policy 3.4B, which seeks to '*Maintain and, where possible, enhance the naturalness, indigenous biodiversity and nature conservation values of lakes, rivers, wetlands and their margins with the restoration of contours and indigenous planting*.' The proposal includes enhancement of waterways (the stream and existing open drains) within the site. Those waterbodies have been heavily modified for farming purposes historically and therefore have limited natural character and natural values at present. The proposal will therefore result in improved outcomes for indigenous biodiversity and naturalness, consistent with this objective and relevant policies.

103. Objective 3.5 addresses rural character and amenity. Objective 3.5 seeks to '*protect and maintain the character and amenity values of the District's rural areas, considering its productive uses whilst providing for non-rural activities that meet the needs of local and regional communities and the nation*'. The proposal supports this objective by providing for productive use of the site as an equine stud whilst maintaining the character and amenity values of the area, albeit with some change to that character as discussed in the

AEE above. In particular, potential adverse effects on character and amenity will be managed through maintenance of extensive areas of open space, clustering of built development centrally within the site and provision for extensive areas of landscaping and landscape mitigation. The proposal is therefore consistent with this objective.

104. Supporting 3.5A seeks to '*…maintain clear distinctions between urban and rural areas and avoid the dispersal of residential activities throughout the rural areas…*' The proposal will achieve this policy with the clustering of farm buildings centrally within the site and maintenance of pasture elsewhere on the site, including adjoining the Lake Hood settlement boundary. No new residential units are being introduced to the site.

105. Policy 3.5B relates to non-rural activities and is not relevant to this proposal.

106. Policy 3.5D relates to protecting the visual qualities of the surrounding environment from any adverse effects of night lighting of recreational and business activities. The proposal will involve only low levels of lighting and does not involve recreational or business activities. The proposal is therefore consistent with this policy.

107. Policy 3.5E seeks to '*Retain an open and spacious character to the rural areas of the District, with a dominance of open space and plantings over buildings*.' This is to be achieved by ensuring that the scale and siting of farm buildings:

- will not unreasonably detract from the privacy or outlook of neighbouring properties;
- will be clustered such that the site overall will remain open and with a rural character as viewed from roads and other publicly accessible places; and
- the character and scale of buildings is compatible with the surrounding rural area.

108. Objective 3.6 Extractive Activities and Objective 3.8 High Voltage Transmissions Lines are not relevant to this proposal. Objective 3.7 pertains to Natural Hazards in Rural Areas and seeks to '*Minimise loss of life or serious injury, damage to assets or infrastructure, or disruption to the community from natural hazards*.' Supporting policy 3.7A seeks to ensure that buildings are located and constructed to mitigate flood hazard. The site is not subject to any notable flood hazard, such that the proposal will be able to achieve consistency with this objective and policy.

109. Overall, although the proposal is considered to be consistent with the Rural Zone objectives and policies.

110. Section 10 contains objectives and policies relating to transport, which broadly seek to maintain and enhance the sustainability of the District's transport system, mitigate adverse effects from its use and prove for safe accesses and movement. The Transport Assessment for this proposal has confirmed that the proposal is supportable, that access and parking will be safe and effective. Overall, the proposal is consistent with the objectives and policies of this section.

111. The objectives and policies of Section 13 Signs broadly seek to provide for signs that convey necessary information, whilst avoiding, remedying or mitigating adverse effects of the signs. Signage for the proposal will be limited to that necessary to advertise the presence of the site and is intended to be visible but not obtrusive, and will not distract or confuse traffic. Overall, the proposal will not be contrary to the objectives and policies of this section.

112. Section 11 addresses Noise. Objective 11.1 seeks to '*Minimise the potential for conflict between noise emissions from land use activities and other more sensitive land uses*.' Supporting policies include Policy 11.1B that seeks to '*To avoid or mitigate effects of noise on residential uses, by ensuring all activities meet standards in respect of noise measured on or near the property boundary, which will not compromise the qualities of the residential environments, and by discouraging residential uses from locating close to land zoned or used for noisy activities*.' As the stud is a relatively quiet rural activity, no adverse noise effects are anticipated from the operation of the site, consistent with this objective and policies and what is typically found at an equine breeding stud in the rural environment.

113. Section 14 addresses Utilities, Energy and Designations. In regard to the objectives and policies pertinent to utilities, they seek to provide for utilities where adverse effects on amenity and the surrounding environment can be avoided, remedied or mitigated (Objective 14.1), and to maintain and protect the economic and social well-being of communities through the establishment, use and maintenance of utilities (Objective 14.2). The proposal is consistent with the objectives and policies of this section, insofar as sewer and stormwater will be treated and disposed of to a high quality to mitigate potential adverse effects on the surrounding environment. Water will be supplied to the site via pipe, with minimal effects on the environment following installation and rehabilitation of affected land.

Conclusion

114. Overall, it is considered that the proposal is consistent with the objectives and policies of the Ashburton District Plan.

Canterbury Regional Policy Statement

115. The Canterbury Regional Policy Statement seeks to manage the location and integration of development in the Canterbury region, with consolidated and sustainable growth, and the avoidance, remediation or mitigation of adverse effects.

116. The most relevant objectives and policies of the RPS are those contained in Chapters 5 (land use and infrastructure), 7 (freshwater), 9 (ecosystems and indigenous biodiversity), 10 (beds of rivers, lakes and their margins), and 17 (contaminated land).

117. Regarding Chapter 5, Objective 5.2.1 seeks to achieve consolidated and sustainable growth, enabling people and communities to provide for their social, economic and cultural well-being and health and safety. Relevant to this proposal, it also seeks to maintain and where appropriate enhance the overall quality of the natural environment, to encourage sustainable economic development, to enable rural activities that support the rural environment and avoiding conflict between incompatible activities. For the reasons set out in the AEE above, including the proposal being for a productive rural use, improvements to

biodiversity through new indigenous planting, positive economic benefits and careful management of the stabling to avoid potential odour issues, the proposal is consistent with this objective and related policies (including policies 5.3.3 and 5.3.5/5.3.6).

118. Objective 5.2.2 addresses integration of land use and regional significant infrastructure. The proposal will not adversely affect any regionally significant infrastructure.

119. Objective 5.2.3 and supporting policies address the safe, efficient and effective transport system. As set out above and in the transport section, the proposal is consistent with these provisions.

120. Policy 5.3.12 specifically addresses rural production, seeking to:

Maintain and enhance natural and physical resources contributing to Canterbury's overall rural productive economy in areas which are valued for existing or foreseeable future primary production, by:

1. avoiding development, and/or fragmentation which;

a. forecloses the ability to make appropriate use of that land for primary production; and/or

b. results in reverse sensitivity effects that limit or precludes primary production.

2. enabling tourism, employment and recreational development in rural areas, provided that it:

a. is consistent and compatible with rural character, activities, and an open rural environment;

b. has a direct relationship with or is dependent upon rural activities, rural resources or raw material inputs sourced from within the rural area;

c. is not likely to result in proliferation of employment (including that associated with industrial activities) that is not linked to activities or raw material inputs sourced from within the rural areas; and

d. is of a scale that would not compromise the primary focus for accommodating growth in consolidate, well designed and more sustainable development patterns.

and

3. ensuring that rural land use intensification does not contribute to significant cumulative adverse effects on water quality and quantity.

121. The proposal will ensure the site continues to be utilised for primary production and will not result in reverse sensitivity effects. Clause (2) is not relevant, insofar as the proposal is for a primary production activity, albeit it will also create employment opportunities. In regard clause (3), as set out in the AEE above, water quality and quantity on and around the site will be protected by appropriate treatment of discharges and planting of riparian areas. The proposal is therefore consistent with this policy.

122. Regarding Chapter 7, the objectives and policies of this chapter seek to enable sustainable use of freshwater resources whilst providing for the life-supporting capacity of ecosystem processes, indigenous species and habitat, the mauri of freshwater and preserving the natural character of rivers and their margins is protected. No new groundwater takes are proposed within the site (potable water will be piped from elsewhere), waterways within the site are to be enhanced and improved, and all discharges will be treated to a high quality. Overall, the proposal is considered to be consistent with the provisions of this chapter.

123. Regarding Chapter 9, the objectives and policies of this chapter seek to halt the decline of Canterbury's ecosystems and indigenous biodiversity, with restoration or enhancement in appropriate locations. For the reasons set out above in respect of the low ecological values currently, the proposal to retain what indigenous vegetation there is and enhance with further planting, the proposal is consistent with the provisions of this chapter.

124. Regarding Chapter 10, the objectives and policies of this chapter address the management, protection and enhancement of bed and riparian zone values. As discussed above, the waterways and riparian areas will be disturbed only to the extent necessary to remove weed species and undertake riparian planting, and to establish waterway crossings. The bed of the waterways will be left undisturbed. The proposal is consistent with these provisions.

125. Regarding Chapter 17, the objectives of this chapter address the identification of contaminated land and protection from adverse effects of contaminated land. A DSI has been undertaken on the property and identified low levels of contamination in specific areas. Disturbance in those areas will generally be avoided, with all building and earthwork activity occurring away from contaminated areas, consistent with this chapter.

126. Overall, the proposal is consistent with the objectives and policies of the RPS.

National Policy Statement on Highly Productive Land[2]

127. The site is considered to be highly productive land under the National Policy Statement on Highly Productive Land (NPS-HPL) (at least on an interim basis until mapping occurs under Clause 3.5) because at the NPS-HPL commencement date (17 October 2022), the site:

    a. was zoned Rural B under the Ashburton District Plan (the District Plan);

    b. was LUC 1, 2, or 3 land (the site being a mixture of all three but predominantly LUC 1);

    c. was not identified for future urban development; and

    d. was not subject to a Council initiated, or an adopted, notified plan change to rezone it to rural lifestyle.

128. The NPS-HPL seeks to protect highly productive land for use in land-based primary production, both for now and for future generations. Specifically:

[2] The text for this section was provided by Jo Appleyard (Partner) and Lucy Forrester (Senior Solicitor) of Chapman Tripp.

a. Policy 4 provides that the use of highly productive land for land-based primary production is "prioritised and supported".

b. Policy 8 provides that highly productive land is protected from inappropriate use and development.

129. Key definitions are:

a. 'Land-based primary production' "*means production, from agricultural, pastoral, horticultural, or forestry activities, that is reliant on the soil resource of the land*"; and

b. 'Supporting activities' means those activities reasonably necessary to support land-based primary production on that land (such as on-site processing and packing, equipment storage, and animal housing).

130. The only sensible interpretation of Policies 4 and 8 read together leads to the conclusion that land-based primary production (together with supporting activities[3]) are appropriate uses of highly productive land.

131. This interpretation is confirmed by clause 3.9(1) which provides for only use or development that is "not land-based primary production" to be avoided on highly productive land, and clause 3.9(2)(a) which provides that the use or development of highly productive land which "provides for supporting activities on the land" is not inappropriate.

132. The application is for land-based primary production and supporting activities as provided for in Policy 4. In particular:

a. The proposed activity is an equine centre which involves the rearing, keeping, breeding, and grazing of livestock. The proposed activity is therefore production from either an agricultural or pastoral activity.[4] The 'production' aspect of the activity is thoroughbred horses.

b. The rearing, keeping, breeding, and grazing of horses (which are livestock) is completely reliant on the soil resource of the land as good quality pasture is an essential component of these activities:

1. Horses have particular nutritional needs that must be carefully managed in order to ensure they are healthy and viable;

2. Insufficient and incorrect pasture can be the difference between a problem horse and a calm and responsive animal. Inadequate pasture can be responsible for head-flicking, wind-sucking, inflammations (including laminitis), reproduction issues and a range of other behavioural and health issues. In contrast, good pasture has a cooling, calming effect on a horse's temperament.

[3] With respect to 'supporting activities' refer, in particular, toclause 3.9(2)(a).
[4] While not defined in the NPS-HPL, generally agricultural activities relate to the practice of cultivating soil, producing crops, and raising livestock, while pastoral activities generally encompass the production of livestock rather than crops. In this respect, a pastoral activity is a subset of agricultural activity.

3. The supply of balanced nutritional ration for broodmares is particularly important as inadequate nutrition can lead to reduced fertility.

4. Good quality pasture is dependent on the productive capacity of the underlying land.

c. Activities which support the livestock production of the proposal comprise of parking, stables, an equine veterinary clinic/equine breeding services centre, and a stud selling centre. These supporting activities:

1. are exclusively for the purposes of supporting the equine stud centre and will not be used for any other purpose (i.e. for other rural industries not reliant on soil resource);

2. are all necessary to support the land-based primary production of thoroughbred horses, and are common, essential, and integrated components to any successful equine stud centre; and

3. enable the production of thoroughbred horses entirely on-site right up to the point of sale. The stud centre could and would not viably establish on the site without these supporting activities.

133. Given the proposed activity comes within the definition of 'land-based primary production' and 'supporting activities', the NPS-HPL requires the activity to be "prioritised and supported". The proposed activity is the very type of activity the NPS-HPL seeks to encourage on the site.

Canterbury Land and Water Regional Plan

134. The provisions of the Land and Water Regional Plan (LWRP) will be addressed in detail in the resource consent applications to Environment Canterbury. Those applications will demonstrate that with the proposed discharge treatments (stormwater, BioGill) and erosion and sediment control measures in place, the proposal will be consistent with the objectives and policies of the LWRP.

National Policy Statement on Freshwater Management

135. The NPS-FM came into effect on 3 September 2020 and was subsequently amended in February 2023. The following assessment is made in respect of the NPS-FM.

Objective

136. The objective of the NPS-FM seeks to ensure that natural and physical resources are managed in a way that prioritises:

(a) first, the health and well-being of water bodies and freshwater ecosystems

(b) second, the health needs of people (such as drinking water)

(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

137. As set out above, the proposal is anticipated to have a generally positive effect on waterbodies and freshwater ecosystems, through improvements to the waterways on the site, a high degree of treatment of the proposed stormwater and wastewater discharges, and a reduction in nutrient loss through the change in farming practices. The health needs of people will be unaffected and there will be no adverse effect on the matters listed in clause (c). The proposal is consistent with this objective.

Policies

138. Supporting policies include Policy 1, that freshwater is managed in a way that effects effect to Te Mana o te Wai. The proposal is consistent with this policy, and the principles of Te Mana o te Wai, for the following reasons:

a. The proposal will ensure that discharges are appropriately treated and managed before disposal, to protect the quality of, and mauri of, the wai;

b. Earthworks will be managed to ensure sediment does not reach surface waterbodies;

c. Improved riparian planting will support improved water quality in the water bodies; and

d. The change in farming practice to an equine stud will reduce nutrient loss on the site.

139. In regard other policies, the proposal is considered to be generally consistent with them, including no adverse effects on habitats of indigenous freshwater species (Policy 9), the health and well-being of the existing waterbodies on site will be maintained (Policy 5), and no loss of wetland area (Policy 6) or river extent (Policy 7).

National Policy Statement for Indigenous Biodiversity

140. The NPS-IB came into force on 4 August 2023. It requires district councils to assess significant natural areas (SNA), and also contains provisions that require consideration of adverse effects on indigenous biodiversity prior to any district plan changes occurring. The ecology assessments undertaken by Boffa Miskell and AEL for this site indicate the site does not contain an SNA. Objective 1 seeks that there is at least no overall loss in indigenous biodiversity after the commencement date, this will be achieved for this proposal.

141. Significant adverse effects of new subdivision, use, or development on indigenous biodiversity outside of SNAs are also required to be managed by applying the effects management hierarchy included in the NPS-IB (Clause 3.16). This involves managing the adverse effects of an activity on indigenous biodiversity so that:

- adverse effects are avoided where practicable; then
- where adverse effects cannot be avoided, they are minimised where practicable; then
- where adverse effects cannot be minimised, they are remedied where practicable; then
- where more than minor residual adverse effects cannot be avoided, minimised, or remedied, biodiversity offsetting is provided where possible; then
- where biodiversity offsetting of more than minor residual adverse effects is not possible, biodiversity compensation is provided; then
- if biodiversity compensation is not appropriate, the activity itself is avoided.

142. As discussed above and in the ecology reports in **Appendix 10**, the site is considered to have little ecological value. What values can be ascribed are generally restricted to the waterways, where adverse effects will be avoided as far as practicable, with minimal disturbance (other than for weed removal) and enhanced riparian planting. Limited adverse effects may occur where bridge footings are established, however those footings will be located at least 2m from the stream edge and all works will be subject to a sediment and erosion control plan. Lizard surveys will be required prior to construction commencing, to ensure appropriate management of lizards and skinks. Similarly, nesting surveys will be undertaken. Overall, no significant adverse effects are anticipated on the biodiversity and ecological values of the site, with effects generally being positive in this regard.

143. Overall, the proposal is considered to be consistent with the outcomes sought in the NPS-IB.

Iwi Management Plan

144. The applicable Iwi Management Plan (IMP) for the site is understood to be the IMP of Kati Huirapa for the Area Rakaia to Waitaki, dated July 1992. The Mahaanui IMP applies as far south as the Hakatere/Ashburton River boundary and therefore excludes the application site.

145. The IMP of Kati Huirapa seeks to clean up all rivers, lakes, waterways and coastal waters. The proposal provides for this by the enhancement of the waterway margins within the site with indigenous planting, and removal of weed species. Nutrient losses on the site will reduce, further supporting water quality improvement. No grazing will occur within the waterways.

146. The IMP seeks that all discharges of harmful contaminants to air that threaten the life supporting capacity of air, land and water should cease. No harmful contaminants will be discharged under this proposal, noting that dust will be effectively controlled during construction.

147. Overall, the proposal supports the objectives and aspirations expressed in the IMP.

Relevant Other Matters

Consultation

148. Extensive consultation has been undertaken by the applicant during the preparation of this resource consent application. This includes with equestrian interests locally, nationally and internationally (including Ashburton Show Jumping and Equestrian Association, South Island Polo Association, and Equestrian Sport New Zealand), to help inform the requirements for the stud facilities. Consultation has been undertaken pre-application with Ian Hyde, Ashburton District Council planning manager, and Nick Boyes, consultant planner for Ashburton District Council. Their feedback, notably on District Plan interpretation questions and the location of built development within the site (and preference for development to be centralised as much as possible), has helped shape the final proposal. Consultation has been undertaken also with the District Council in respect of servicing proposals (notably water supply options), and economic development opportunities. Consultation has also been undertaken with some immediate neighbours, including:

- Graeme Small – part-owner of the site and land to the northwest, Graeme's written approval is attached in **Appendix 12**;
- Craig Reid – owner to the southwest, supportive of the proposal;
- Mark Lash - owner to the south, supportive in principle, subject to understanding further detail of the application. Desire to see culverts removed from waterways on the site (now proposed) and deer fencing on the shared southern boundary (deer-style fencing is also now proposed on that boundary).

149. As noted above, consultation has been initiated with Te Rūnanga o Arowhenua and any feedback will be forwarded separately.

Mitigation Measures

150. A range of mitigation measures are proposed and discussed above. In summary, they are:

a. The BioGill system will be located centrally, at least 50m from any waterway and not within an area of contaminated land (as identified in the DSI);

b. The above ground components of the BioGill system will be located within an enclosed building that has passive treatment of ventilate air via carbon filters.

c. The first BioGill settling tank shall have an air bubble injection system within the tank;

d. An ESCP will be prepared prior to earthworks and construction work commencing;

e. A DMP will be prepared prior to earthworks commencing;

f. Earthworks will be minimised in the riparian margin;

g. Indigenous planting will be undertaken in the riparian margin, and on the site periphery as indicated on the landscape plan in **Appendix 6**;

h. All horse manure cleaned out from stable areas will be removed from site on a daily basis;

i. In summer, a herpetologist shall survey bridge locations for lizards and consider mitigation options if found;

j. Construction of the main access route from Stranges Road, and bridge placement, shall be undertaken after the bird breeding season (i.e., February to June);

k. Should construction works extend beyond June, a survey shall be conducted to locate any nesting birds around the bridge construction sites.

l. Stormwater runoff from the sealed surfaces shall be treated by discharge to swales.

Consideration of Alternatives

151. The preceding assessment of effects shows that the proposal will not have any significant adverse effects on the environment. Therefore, an assessment of alternatives is not required.

Particular Restrictions for Non-Complying Activities (s.104D)

152. Under s104D of the Act:

> *'…a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—*
>
> *(a) the adverse effects of the activity on the environment (other than any effect to which applies) will be minor; or*
>
> *(b) the application is for an activity that will not be contrary to the objectives and policies of—*
>
> *(i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
>
> *(ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or*
>
> *(iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*

153. The adverse effects of the proposed subdivision on the environment are considered to be not more than minor, thus meeting the test under s104(a). The proposal is not otherwise

contrary to the relevant objectives and policies of the Plan and consent may therefore be granted.

Resource Management Act 1991

Part 2 (sections 5-8)

154. The Operative District Plan is considered a valid, complete and certain planning document. It has already given substance to the principles in Part 2 of the RMA as the plan was prepared in a manner that reflects Part 2, therefore no further assessment against Part 2 matters are required for this application (*R J Davidson Family Trust v Marlborough District Council* [2018] NZCA 316).

155. Regardless, the proposed development is considered to recognise and provide for the relevant matters of Sections 6, 7 and 8 and to represent a sustainable management of the land resource and achieve the purpose of the RMA, as well as give substance to Part 2 of the RMA.

Conclusion

156. In conclusion, the proposal is consistent with the purpose and principles of the RMA in that it enables people to provide for their economic and social well-being, whilst maintaining and enhancing the quality and amenity of the local environment and avoiding adverse effects.

157. In terms of section 104, the proposal will be not contrary to the relevant provisions of the District Plan, and will have actual or potential effects on the environment which are no more than minor and consistent with the environmental outcomes envisaged by the relevant statutory planning framework.

158. Accordingly, it is concluded that the Council should grant consent to the activity in accordance with Sections 104, 104B, 104D and Part 2 of the RMA, subject to appropriate conditions.

Appendix 1

Record of Title

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

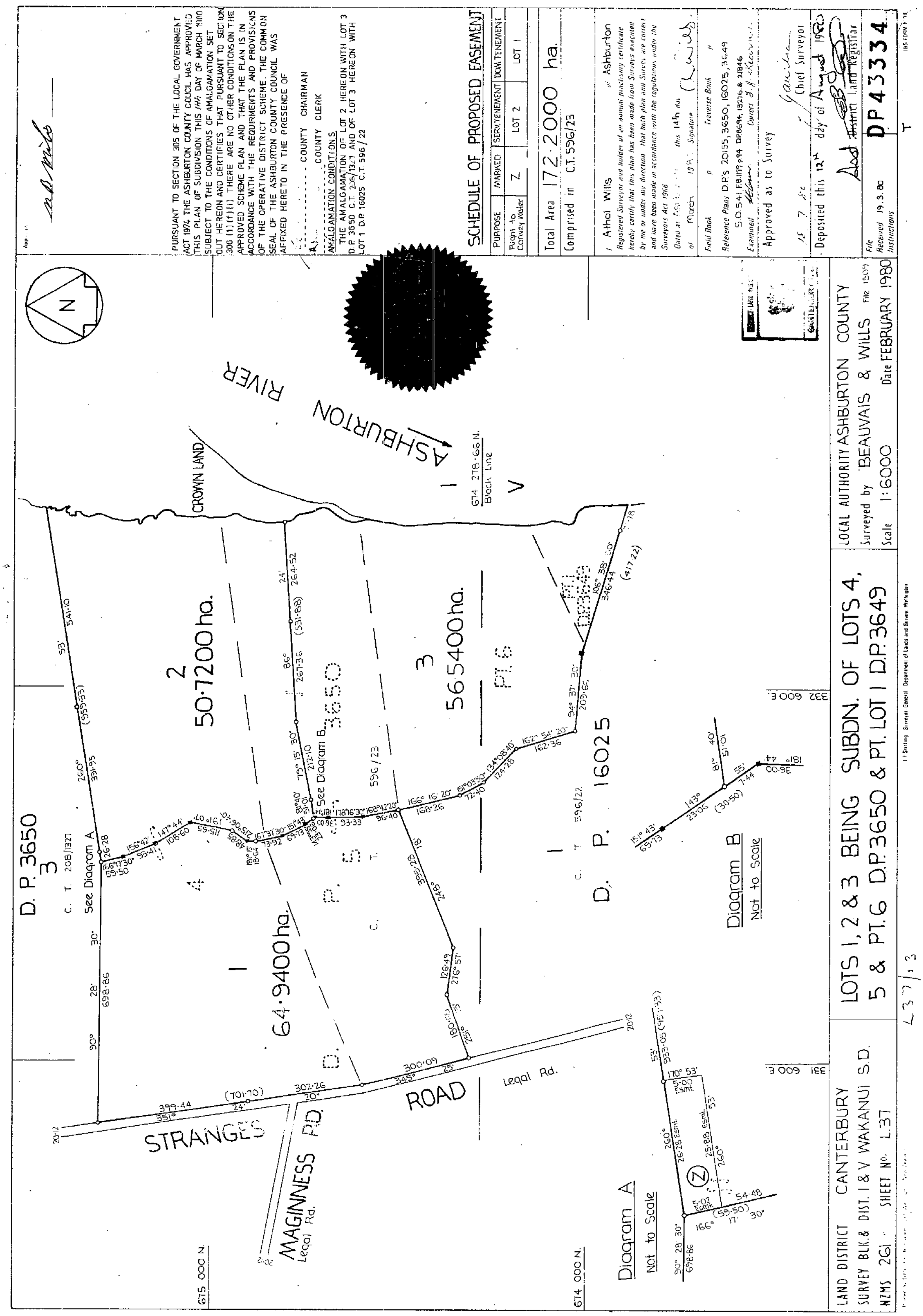
Identifier **CB21F/859**
Land Registration District **Canterbury**
Date Issued 12 August 1980

Prior References
CB596/23

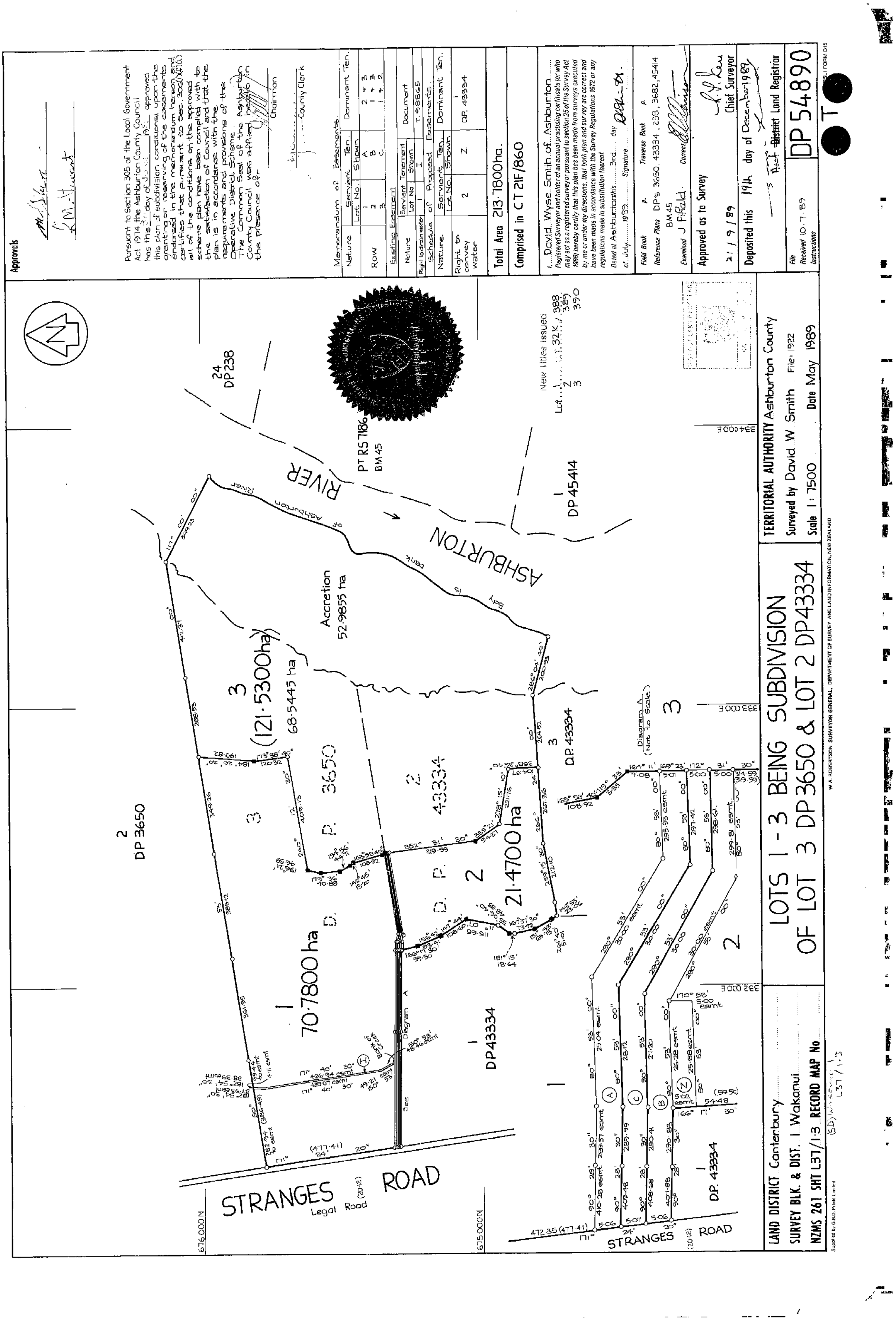
Estate Fee Simple
Area 64.9400 hectares more or less
Legal Description Lot 1 Deposited Plan 43334
Registered Owners
Graeme Walter John Small and Elizabeth Jane Small

Interests

5537121.2 Mortgage to ASB Bank Limited - 31.3.2003 at 9:00 am



SCHEDULE OF PROPOSED EASEMENT
PURPOSE | MARKED | SERVIENT TENEMENT | DOMINANT TENEMENT
Right to Convey Water | Z | LOT 2 | LOT 1
Total Area 172·2000 ha.
Comprised in C.T. 596/23
AMALGAMATION CONDITIONS
COUNTY CHAIRMAN
COUNTY CLERK
Approved as to Survey
Chief Surveyor
District Land Registrar
DP 43334
ASHBURTON RIVER
CROWN LAND
STRANGES ROAD
MAGINNESS RD.
Legal Rd.
D. P. 3650
C. T. 596/23
C. T. 596/22
D. P. 16025
2
50·7200 ha.
3
56·5400 ha.
1
64·9400 ha.
Diagram A
Not to Scale
Diagram B
Not to Scale
LAND DISTRICT CANTERBURY
SURVEY BLK.& DIST. I & V WAKANUI S.D.
NZMS 261 SHEET No. L37
LOTS 1, 2 & 3 BEING SUBDN. OF LOTS 4, 5 & PT. 6 D.P. 3650 & PT. LOT 1 D.P. 3649
LOCAL AUTHORITY ASHBURTON COUNTY
Surveyed by BEAUVAIS & WILLS
Scale 1:6000
Date FEBRUARY 1980


LOTS 1 - 3 BEING SUBDIVISION
OF LOT 3 DP 3650 & LOT 2 DP43334
DP 54890
TERRITORIAL AUTHORITY Ashburton County
Surveyed by David W Smith
Scale 1: 7500
Date May 1989
LAND DISTRICT Canterbury
STRANGES ROAD
Legal Road
ASHBURTON RIVER
Accretion 52·9855 ha
70·7800 ha
21·4700 ha
68·5445 ha
(121·5300 ha)
Total Area 213·1800 ha.
Comprised in CT 21F/860
Memorandum of Easements
Approvals
Deposited this 19th day of December 1989
Chief Surveyor
Land Registrar

Appendix 2

Site and Building Plans

SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN

FOR SOUTHERN PARALLEL CAMPUS

31 OCTOBER 2023
PROJECT NO. 2023_146
REVISION H

dcm URBAN

SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN | 279 STRANGES ROAD, HUNTINGDON, ASHBURTON

Project no: 2023_130
Document title: URBAN DESIGN GRAPHIC SUPPLEMENT
Revision: H
Date: 31 OCTOBER 2023
Client name: SOUTHERN PARALLEL CAMPUS

Author: David Compton - Moen | Becky Darragh | Anca Belu
File name: 2023_146 SPC Lake Hood Equestrian - Residential Master Plan_H

DOCUMENT HISTORY AND STATUS

REVISION	DATE	DESCRIPTION	BY	REVIEW	APPROVED
A	25/09/2023	Issue For Comment	AB	DCM	DCM
B	28/09/2023	Design Refinement	AB	DCM	DCM
C	11/10/2023	Alignment Change	AB	DCM	DCM
D	12/10/2023	Minor Changes	AB	DCM	DCM
E	31/12/2023	Road Type Changes	AB	DCM	DCM
F	31/12/2023	Carpark Details	AB	DCM	DCM
G	31/10/2023	Minor Changes	AB	DCM	DCM
H	2/11/2023	Road Alignment Change	AB	DCM	DCM

DCM URBAN DESIGN LIMITED

10/245 St Asaph Street
Christchurch, 8011

CONTENTS

LEGEND

- A Main Entry
- B Stables
- C Selling Centre
- D Sand Arena
- E Excercise / Grazing
- F Training / Grazing
- G Grazing
- H Informal Parking
- I Horse Walker
- J Polo Field
- K Vet / Research
- L Existing House (Staff Accomodation)
- M 10m Landscape Strip to be planted along Stranges Road and Huntingdon Avenue frontages and southern boundary
- N Paved formal parking (45 spaces including 2 accessible spaces)
- Site Boundary

A. MASTER PLAN

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **MASTER PLAN**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:5000

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
D	Minor Changes	DCM	12/10/2023
E	Road Type Changes	DCM	31/10/2023
F	Carpark Details	DCM	31/10/2023
G	Minor Changes	DCM	31/10/2023
H	Road Alignment Change	DCM	2/11/2023

REGISTERED LANDSCAPE ARCHITECT
DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

project no / drawing no: **2023_146/001**

N

revision: **H**

LEGEND

- Site
- Paved Road
- Gravel Road
- Gravel Pedestrian / Horse Path
- Indicative Location of Farm Gate
- Formed Entry
- Main Entry

A. MASTER PLAN

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **MASTER PLAN - CIRCULATION**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:5000

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
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F	Carpark Details	DCM	31/10/2023
G	Minor Changes	DCM	31/10/2023
H	Road Alignment Change	DCM	2/11/2023

REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

project no / drawing no: **2023_146/002**

N

revision: **H**

LEGEND

- A Main Entry
- B Stables
- C Selling Centre
- D Sand Arena
- E Excercise / Grazing
- F Training / Grazing
- G Grazing
- H Informal Parking
- I Horse Walker
- J Polo Field
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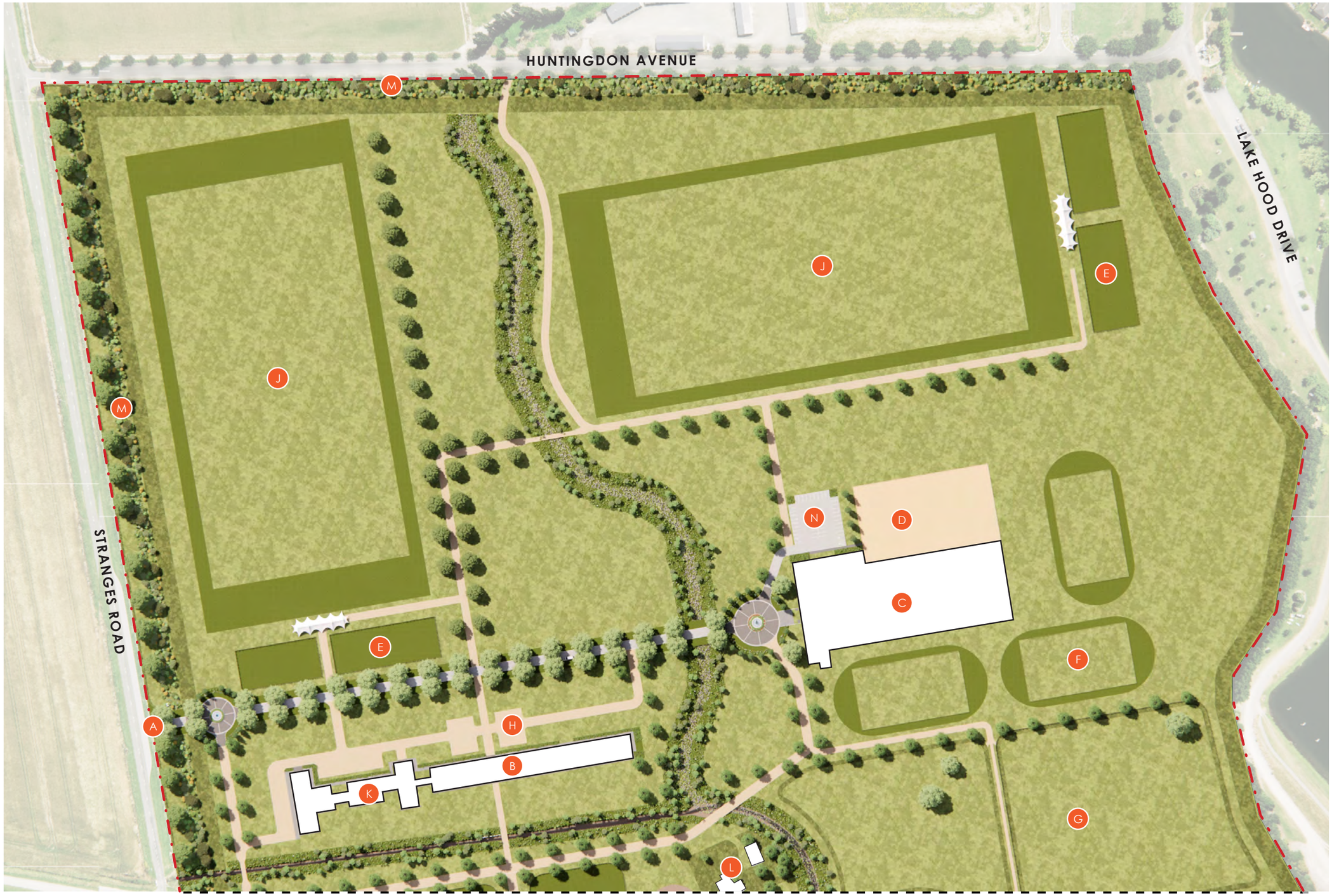
- L Existing House (Staff Accomodation)
- M 10m Landscape Strip to be planted along Stranges Road and Huntingdon Avenue frontages and southern boundary
- N Paved formal parking (45 spaces including 2 accessible spaces)
- Site Boundary



JOIN LINE 2023_146 004

A. MASTER PLAN - NORTHERN HALF

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **MASTER PLAN - NORTH**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:2500

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
D	Minor Changes	DCM	12/10/2023
E	Road Type Changes	DCM	31/10/2023
F	Carpark Details	DCM	31/10/2023
G	Minor Changes	DCM	31/10/2023
H	Road Alignment Change	DCM	2/11/2023

REGISTERED LANDSCAPE ARCHITECT
DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

project no / drawing no: **2023_146/003**

N

revision: **H**

LEGEND

- A Main Entry
- B Stables
- C Selling Centre
- D Sand Arena
- E Excercise / Grazing
- F Training / Grazing
- G Grazing
- H Informal Parking
- I Horse Walker
- J Polo Field
- K Vet / Research
- L Existing House (Staff Accomodation)
- M 10m Landscape Strip to be planted along Stranges Road and Huntingdon Avenue frontages and southern boundary
- N Paved formal parking (45 spaces including 2 accessible spaces)
- Site Boundary

JOIN LINE 2023_146 003

A. MASTER PLAN - SOUTHERN HALF

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **MASTER PLAN - SOUTH**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:2500

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
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E	Road Type Changes	DCM	31/10/2023
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G	Minor Changes	DCM	31/10/2023
H	Road Alignment Change	DCM	2/11/2023

REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

project no / drawing no: **2023_146/004**

N

revision: **H**

LEGEND

- A 45 carparks (including 2 mobiliy parking spaces) with a asphalt surface and line marking.
- B Plant Mix 3 - low amenity planting (see planting pallete document for species)
- C Selling Centre
- D Pedestrian path connectin selling centre and sand arena

JOIN LINE 2023_146 001

A. CARPARK PLAN (1:200 @ A3)

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **CARPARK PLAN**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:200

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
D	Minor Changes	DCM	12/10/2023
E	Road Type Changes	DCM	31/10/2023
F	Carpark Details	DCM	31/10/2023
G	Minor Changes	DCM	31/10/2023
H	Road Alignment Change	DCM	2/11/2023

REGISTERED LANDSCAPE ARCHITECT
DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

N

project no / drawing no: **2023_146/005**

revision: **H**

SOUTHERN PARALLEL EQUINE CENTRE

ASHBURTON

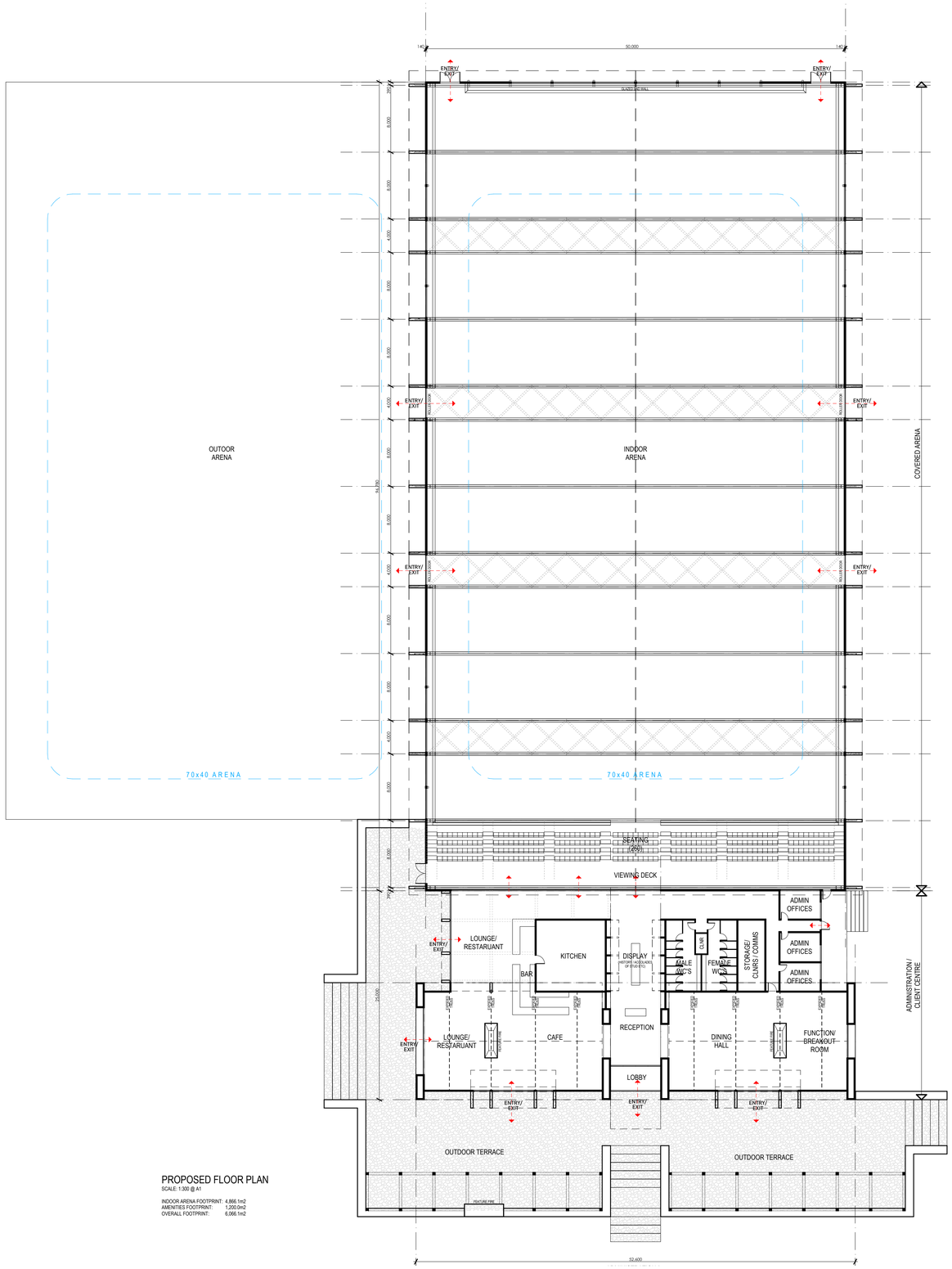
2023

CHILTON + MAYNE
ARCHITECTURE

CONCEPT DRAWINGS

31.10.2023

CHILTON + MAYNE
ARCHITECTURE



PROPOSED FLOOR PLAN

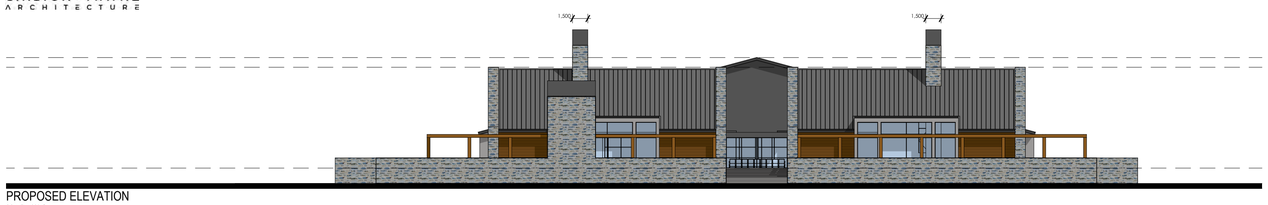
SCALE: 1:300 @ A1

INDOOR ARENA FOOTPRINT:	4,866.1m2
AMENITIES FOOTPRINT:	1,200.0m2
OVERALL FOOTPRINT:	6,066.1m2

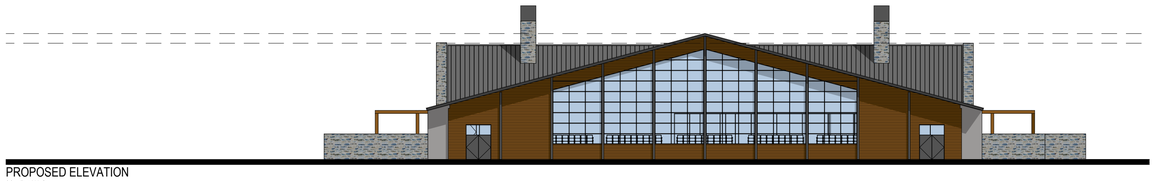
SOUTHERN PARALLEL EQUINE CENTRE

SELLING CENTRE

CHILTON + MAYNE
ARCHITECTURE



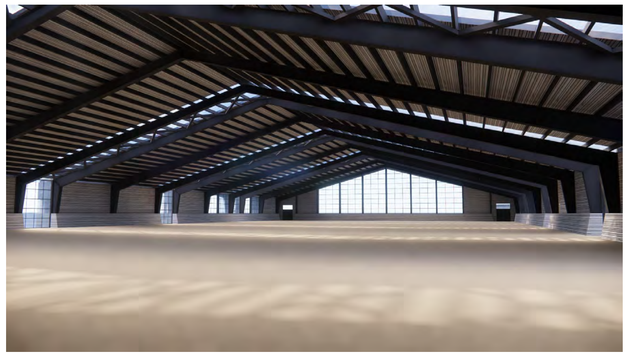
PROPOSED ELEVATION
SCALE: 1:300 @ A1

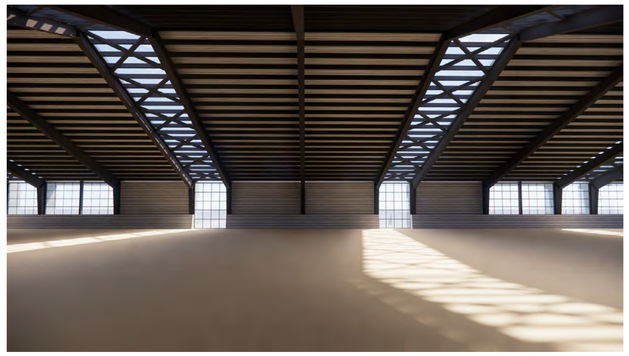


PROPOSED ELEVATION
SCALE: 1:300 @ A1

PROPOSED ELEVATION
SCALE: 1:300 @ A1

PROPOSED ELEVATION
SCALE: 1:300 @ A1





1/2 ROUND SPOUTING WITH EXPOSED BRACKETS

DRESSED SHIPLAP WEATHBOARDS
COLOUR: T.B.C

DARK TRAY ROOFING
COLOUR: T.B.C

DARK ALUMINIUM JOINERY
COLOUR: T.B.C

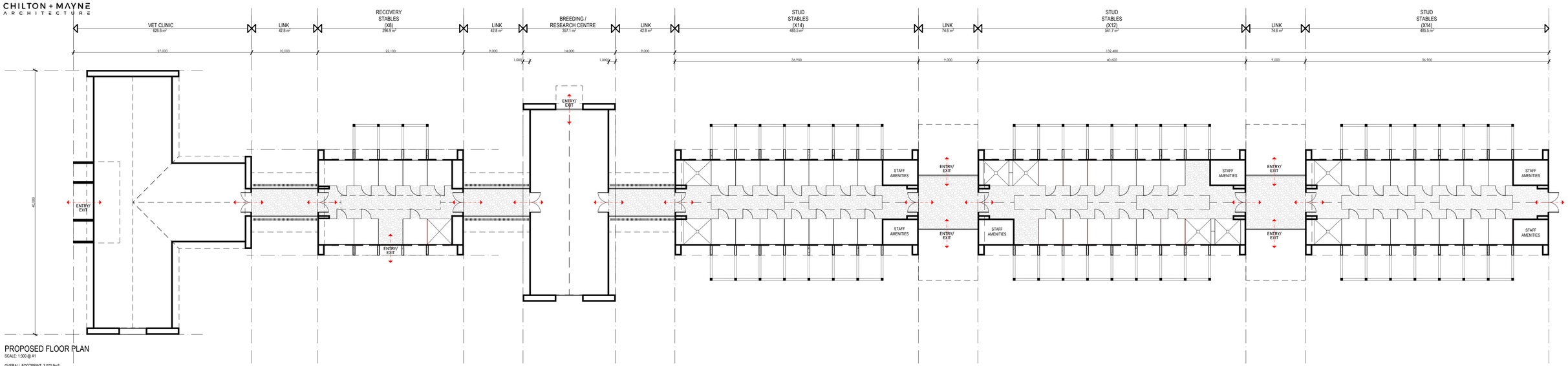
150mm BAGGED SCHIST CLADDING

OFF THE SHUTTER FINISH TO EXTERIOR FACE OF PC PANELS

SOUTHERN PARALLEL EQUINE CENTRE

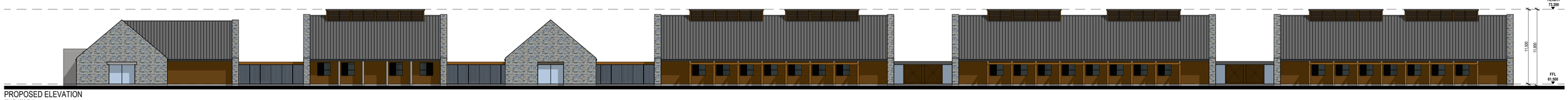
SELLING CENTRE

CHILTON + MAYNE
ARCHITECTURE



PROPOSED FLOOR PLAN
SCALE: 1:300 @ A1

OVERALL FOOTPRINT: 3,070.9m2



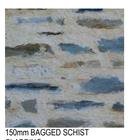
PROPOSED ELEVATION
SCALE: 1:300 @ A1

1/2 ROUND SPOUTING WITH EXPOSED BRACKETS

DRESSED SHIPLAP WEATHBOARDS
COLOUR: T.B.C

DARK TRAY ROOFING
COLOUR: T.B.C

DARK ALUMINIUM JOINERY
COLOUR: T.B.C



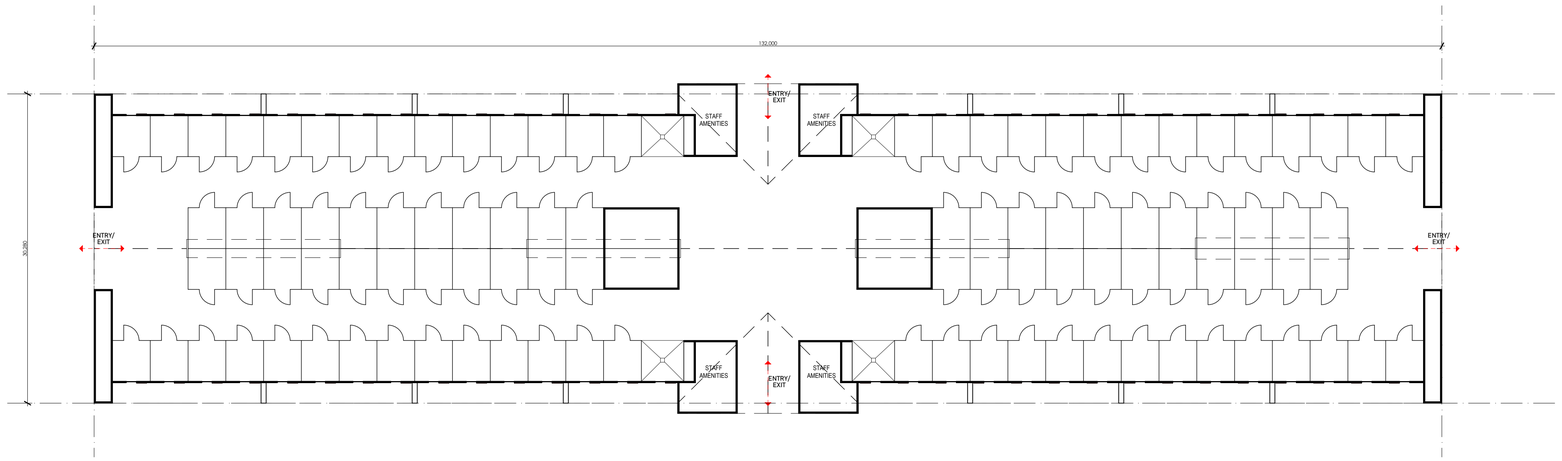
150mm BAGGED SCHIST
CLADDING

OFF THE SHUTTER FINISH TO EXTERIOR FACE OF PC PANELS

SOUTHERN PARALLEL EQUINE CENTRE

MAIN BUILDINGS

CHILTON + MAYNE
ARCHITECTURE

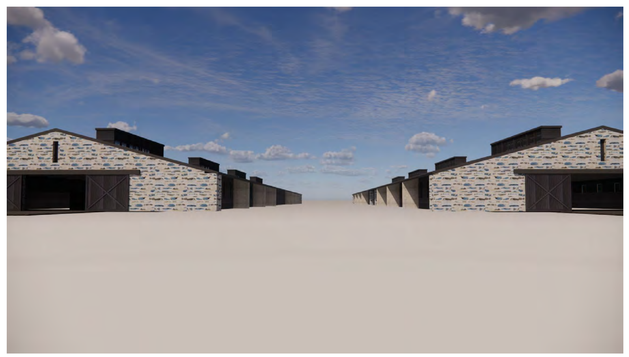


PROPOSED FLOOR PLAN
SCALE: 1:200 @ A1

OVERALL FOOTPRINT: 3,565.4m2 (x6 BUILDINGS = 21,392.4m2)

PROPOSED ELEVATION
SCALE: 1:300 @ A1

PROPOSED ELEVATION
SCALE: 1:300 @ A1



1/2 ROUND SPOUTING WITH EXPOSED BRACKETS

DRESSED SHIPLAP WEATHBOARDS
COLOUR: T.B.C

DARK TRAY ROOFING
COLOUR: T.B.C

DARK ALUMINIUM JOINERY
COLOUR: T.B.C

150mm BAGGED SCHIST CLADDING

OFF THE SHUTTER FINISH TO EXTERIOR FACE OF PC PANELS

SOUTHERN PARALLEL EQUINE CENTRE

STABLE BUILDING (x6)

Appendix 3

Transport Assessment

novo group
Planning. Traffic. Development.

Integrated Transport Assessment

prepared for

SOUTHERN PARALLEL EQUINE CENTRE LIMITED

279 Stranges Road, Lake Hood

October 2023

Integrated Transport Assessment

prepared for

Southern Parallel Equine Centre Limited

279 Stranges Road, Lake Hood

Novo Group Ltd
Level 1, 279 Montreal Street
PO Box 365, Christchurch 8140
P: (03) 365 5570
E: info@novogroup.co.nz
W: www.novogroup.co.nz

Document Date:	30/10/2023
Document Version/Status:	Final
Project Reference:	1124001
Project Manager:	Kim Seaton
Prepared by:	Lisa Williams, Senior Transport Engineer and Planner
Reviewed by	Nick Fuller, Principal Transport Engineer

Table of Contents

List of Figures and Tables

Appendices

Introduction

1. Southern Parallel Equine Centre Limited has commissioned Novo Group to prepare an Integrated Transport Assessment (ITA) for the development at 279 Stranges Road, Lake Hood.

2. This report provides an assessment of the transport aspects of the proposed development. It also describes the transport environment in the vicinity of the site, describes the transport related components of the proposal and identifies compliance issues with the transport provisions in the District Plan. It has been prepared broadly in accordance with the Integrated Transportation Assessment Guidelines specified in New Zealand Transport Agency Research report 422, November 2010.

3. The applicant proposes to establish a world-class equine centre (known as SPEC). The SPEC will encompass a range of outdoor and indoor facilities that are integral to establishing a high quality equine stud breeding facility to support and help advance the equestrian and polo sport sectors in New Zealand. This includes an annual sales event and occasional smaller sales events where prospective purchasers of SPEC horses can watch horses for sale and / or bring their existing horses to the site, to test prospective horses against in a competition like environment and for sale. An on-site equine vet and breeding clinic is also provided, but this will not be open to outside clients. The SPEC will not be open to the public.

4. Parking areas will be provided on site for horse coaches, horse floats and staff and visitor vehicles, as indicated on the site plan in **Appendix 1.** Un-marked overflow grass parking will also be provided on-site for the sales events.

5. The main vehicle access is to Stranges Road. A secondary access to Huntingdon Avenue is also provided for staff / operational use and as an additional emergency evacuation route. All other accesses will be limited to farm gates for livestock / paddock access only.

6. The site location is illustrated in **Figure 1** and a copy of the proposed site layout is contained in **Appendix 1**.

Figure 1: Site Location [Source: Canterbury Maps]

Transport Environment

Road Network

7. The site has frontage to both Stranges Road and Huntingdon Avenue. Access to the wider road network is primarily occurring along Grahams Road, Graham Street and via the 'T' intersection with Archibald Street (State Highway 1).

Stranges Road

8. Stranges Road is a Collector Road north of Huntingdon Avenue and a Local Road to the south. The speed limit near the site is 100km/h although this reduces to 60km/h for a short section either side of the intersection with Lake Hood Drive.

9. The mobile road[1] traffic volume estimate (2020) suggests around 125 vehicles per day on Stranges Road near the application site, increasing to 1,640 vehicles per day at the northern end, near Grahams Road.

10. **Figure 2** is a typical view of Stranges Road near the application site, which includes an approximately 6m sealed width with one traffic lane in each direction and wide flush grass berms. There is a culvert water course running to the eastern side which passes under the road near the intersection with Maginness Road.

[1] https://mobileroad.org/desktop.html

Figure 2: Stranges Road, near the application site

11. North of the intersection with Lake Hood Road a shared path is provided along the eastern side, this varies in formation and width, particularly in some gravelled sections where the edges have been over-grown by grass.

Huntingdon Avenue

12. Huntingdon Avenue is a Local Road. The speed limit is 60km/h near the application site and 50km/h through the residential area near the lakeside.

13. The mobile road[2] estimate is 75 vehicles per day (2019) although this is expected to increase as additional residential subdivision is underway.

14. Huntingdon Avenue has a 6.8m wide sealed carriageway with flush grass / gravel shoulders as shown in **Figure 3.**

[2] https://mobileroad.org/desktop.html

Figure 3: Huntingdon Avenue, near the application site.

Grahams Road and Graham Street

15. Graham Street turns into Grahams Road south of the township, both are classified as Principal Roads.

16. Graham Street, through the township has a 50km/h speed limit. It is formed to an urban standard with a sealed carriageway, kerb and channel and provides for one traffic lane in each direction and marked kerb-side parking spaces. There are footpaths provided on each side. Graham Street forms a stop-controlled 'T' Intersection with State Highway 1 (SH1) as shown below.

Figure 4: Graham Street intersection with SH1

17. The speed limit is 80km/h south of the township until the intersection with Gartartan Road where it increases to 100km/h.

18. Grahams Road has a generally rural formation with a generally 7m wide sealed carriageway and flat, wide grass berms. A shared path is provided along the eastern side.

Figure 5: Grahams Road

Archibald Street / State Highway 1 (SH1)

19. Archibald Street forms part of the SH1 road network and, through the township, provides for one traffic lane in each direction with a footpath along the southern side and parts of the northern side. Kerb side parking is provided in some locations within dedicated parking lanes or marked parking bays. A zebra crossing east of the intersection with Graham Street has been removed.

20. Archibald Street has a 50km/h speed limit through the township including at the intersection with Graham Street. The speed limit on SH1 increases to 70km/h west of Jane Street.

21. The Waka Kotahi, New Zealand Transport Agency are currently constructing various upgrades as part of a project called the SH1 Tinwald Corridor Improvements. The upgrades include:

    a. signalising the Agnes Road, SH1, Lagmhor Road intersection;

    b. a right turn bay at the Graham Street, SH1 intersection; and

    c. new / upgraded facilities for cyclists.

22. Of particularly note, the Waka Kotahi proposals include signage to direct Lake Hood traffic from SH1 through the intersection of Agnes Street, along Mc Murdo Street and onto

Graham Street. More detail regarding the changes being undertaken are detailed on their website[3].

Crash History

23. The NZ Transport Agency Crash Analysis System (CAS) has been reviewed to identify reported crashes over the previous 5 year period (2017- October 2023 inclusive). The search area included the frontage of Huntingdon Avenue and Stranges Road, Grahams Road, Graham Street up to and including the intersection with McMurdo Street. Noting the upgrades underway at the SH1 intersections, these intersections were not included in the search area as existing safety concerns are already being addressed.

24. The search identified eight reported crashes which are summarised below and further details are provided in the crash report in **Appendix 2.**

Table 1: Summary of Reported Crashes

Crash Location	Crash Type / Factors	Injury	Notes
Stranges Road near Lake Hood Drive	Loss of Control, driver may have fallen asleep.	Minor	
Stranges Road / Grahams Road – Boundary Road Intersection	Failure to giveway on Boundary Road to through traffic on Stranges Road / Grahams Road.	Non-injury	
Grahams Road mid-block Three Crashes	Approx.. 900m South of Grove Farm Road – 3x crashes due to loss of control south-bound at corner. One due to road surface under construction.	1 crashes minor injury 1 crash non-injury	During a site visit, it was noted that advance warning signage and chevron arrows were provided. The Council could consider whether the speed limit should be reduced.
Grahams Road intersection with Grove Farm Road	North-bound vehicle overtook vehicle turning right into Grove Farm Road.	1 serious and three minor injuries	Better intersection advisory signage could be provided. The 80km/h speed limit[4] could be moved south of Grove Farm Road.
Grahams Rd intersection with Gartartan Rd	Loss of control, medical event and swerving to avoid an animal on the road.	Minor	
Grahams Rd 89m from Stranges Rd	Loss of control, driver has fallen asleep and failed to take bend in the road.	1 serious	

[3] https://www.nzta.govt.nz/projects/sh1-tinwald/
[4] Currently approximately 260m north of the intersection.

25. It is understood that a speed limit review is already underway for Grahams Road which is identified within the urban fringe speed area[5] where 60-80km/h speed limits are being considered.

The Proposal

26. It is proposed to develop a world-class equine centre on the site. The centre will encompass a range of outdoor and indoor facilities that are integral to establishing a high quality equine stud breeding facility to support and help advance the equestrian and polo sport sectors in New Zealand. This includes an on-site equine vet and breeding centre.

27. Day to day activities include equine care, training and breeding including the private vet clinic (not open to the public) and horse viewings by prospective buyers (by arrangement). In addition, some sales events are proposed where prospective purchasers of SPEC horses may watch the horses and or bring their existing horses to test prospective horses against in a competition-like environment and for sale. There is no general public / spectator entry.

28. There are a variety of on-site grazing, stabling, training and other ancillary facilities as shown on the site plan in **Appendix 1** which provide for the operation of the centre**.**

29. Day to day, approximately 20-40 staff will work from the site and a small number of visitors are anticipated (typically less than 10 per day). A single existing dwelling will be retained on the site for staff accommodation.

30. The annual sales events can cater for up to 500 prospective purchasers and their support persons and not more than 50 horses (to create a competition like environment to test SPEC horses against and for sale). A small number of event contractors will also be present to run the sales, such as auctioneers. A few smaller sales events may also be held throughout the year.

31. 45 marked and sealed car parks are proposed which will include a minimum of 2 accessible spaces. 30 horse float / truck parking areas are provided for SPEC vehicles and prospective purchasers horses. Overflow parking for sales events would be provided in grass areas around the site.

32. The Main Access is proposed to Stranges Road and will cater for most trips to and from the site. This access will have a minimum sealed width of 6.0m and the vehicle crossing will allow for a 15m radius and acceleration and deceleration lanes. The access provides for 30m queueing space and connections to all the main parking areas, buildings and facilities to provide good circulation within the site.

33. A secondary access to Huntingdon Avenue will primarily cater for staff and service access and a secondary emergency access route. This access will be metalled except for the first 10m from the edge of Huntingdon Avenue that will be sealed.

[5] Appendix-B-Urban-Fringe-Zones.pdf (ashburtondc.govt.nz)

34. Any other access points are farm gate / stock type access to paddocks which would receive only occasional use and remain as grass.

Traffic Generation and Parking Demand Estimates

35. The traffic generation of the proposed development has been considered for both the typical day to day use (Table 2) and also for the annual sale event (Table 3). The smaller sales events would have a lower demand than the annual sale event and as such that represents the most robust estimate for the purposes of the effects assessment.

Table 2: Day to Day Traffic Generation

	Generation Rates	Daily Trips	Peak Hour Trips	Parking Demand
Staff (up to. 40 per day)	1.8 trips per staff per day (assumes some car pooling) 0.75 per staff in the peak hour (noting varying start and finish times)	72	30	36 car parks
Day to day trips, e.g., horses going off-site for training etc.	5 vehicles, 2 trips per vehicle	10	N/A – during the day.	SPEC horse floats / trucks will have dedicated parking / storage areas
Visitors (<10 per day)	2 trips per vehicle	20	4	2
Service vehicles (<5 per day)	2 trips per vehicle	10	1	1
Total		112	35	39

Table 3: Sales Event Traffic Generation

	Generation Rates	Daily Traffic Generation	Peak Hour Traffic Generation (60% either arrive or depart in one hour)	Parking Demand
Sales Events 500 prospective purchasers and support persons (Max 50 horses).	Based on traffic generation surveys undertaken by Traffic Engineering & Management Ltd, at a weekend event at the Woodhill Sands Equestrian Centre: Average of 2.1 horses per truck/float;	48 horse float / truck trips (horses + 48 people[7]) 452 other vehicle trips[8]	14 horse float / truck trips 137 other trips	24 float / truck spaces 226 car spaces

[6] Assumes an overly conservative estimate based on all vehicles being parked on-site at the same time.
[7] 50 horses / 2.1 per vehicle = 24 horse float/ truck trips. Average of 2 people per vehicle = 48 people in the horse float / truck vehicles.
[8] Excluding those arriving in horse trucks / floats i.e., 500-48 = 452 people. 2 people per car = 226 cars. Two trips per day per car = 452 trips.

	Average of 2.0 people per vehicle (including all spectators, competitors grooms, coaches and staff) Two trips per vehicle.			
<10 event staff (coming in to run the event e.g., auctioneers)	2.5 people per vehicle, two trips per vehicle.	8	4	4

District Plan

36. The site is located in the *Rural B Zone* in the District Plan and SPEC is classified as a farming activity. An assessment of compliance against the transport rules of the District Plan has indicated that the proposal complies with all transport rules as outlined in **Appendix 3**.

37. It is understood that the overall activity status will be non-complying in respect of other District Plan rules and as such all effects must be considered.

Assessment of Effects

38. The **non-complying** nature of the proposal means that all transport matters need to be assessed. The key matters for assessment are considered to be:

    (a) Parking & Loading;

    (b) Site Access; and

    (c) Wider Network Effects:

Parking & Loading

Car Parking

39. It is proposed to have a mixture of permanent car parks and some grass parking available for events.

40. 45 permanent car parks will be sealed, marked and signed to comply with the layout requirements of the District Plan. This includes spaces for the staff, and day to day visitors. A minimum of two accessible spaces will be marked on-site in accordance with the District Plan and NZS 4121: 2001. Some informal staff parking may also occur on grass or gravel areas near the other buildings, to suit the operational needs.

41. 30 horse float and truck spaces will be formed with a mixture of heavy duty grass parks with grass or gavelled aisles / accessways. These will be available for regular use of horse floats and trucks by SPEC and also for any horses coming to the site during sales events.

42. Overflow parking demand for some 226 spaces may be needed for the annual sales events, assuming a moderately efficient parking layout this would require around 5,000- 5,500m^2.

Noting the size of the site, this can be readily accommodated in 2-3 of the grass paddocks or similar grass areas around the site. Cones, signs and marshals can be used to ensure appropriate use of the grass parks during sales events enabling a safe and efficient parking layout and identifying separate pedestrian routes.

43. Overall, the proposal will be self-sufficient for car parking and an event management plan will be in place for any sales events to ensure no parking of vehicles occurs on road sides.

Loading

44. Loading for the equestrian facilities, including associated services such as the veterinary clinic, will be undertaken within the on-site float / truck parking area and in the various spaces provided for this near the stables and other facilities.

45. Deliveries will be directed to the relevant part of the site where goods are to be unloaded. All delivery vehicles and their manoeuvring can and will be readily accommodated on-site.

Site Access

46. The site has two vehicle accesses. The Main Access is located on Stranges Road near the middle of the site, approximately 100m north of the intersection with Maginness Road. A second access is provided to Huntingdon Avenue, primarily for staff and service access.

47. There are a variety of gravelled and or grass internal accesses that provide connections between different areas of the site. There are also some grass / gravel stock / farm gates for access to paddocks. These internal and informal access points also ensure alternative routes for site egress in the event of an emergency.

Main Access

48. The Main Access is proposed to be 6m wide and sealed along its length. It will provide the primary access point for both day to day use and also provide for sales event access. The access provides some 30m queuing space.

49. The Main Access location provides good visibility (at least 300m) in both directions on Stranges Road.

50. The vehicle crossing will be formed with a 15m radius and seal widening as shown in **Figure 6** below to accommodate all turning movements and minimise impacts on through traffic on Stranges Road.

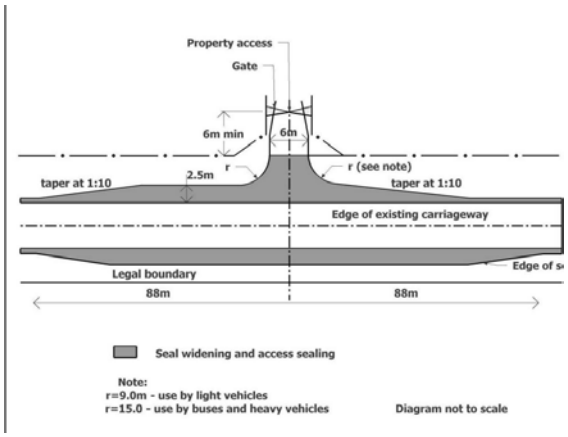


Figure 6: Stranges Road vehicle crossing seal widening.

51. The access is on the opposite side of and separated from the from Maginness Road intersection by some 100m. Therefore, there will be no confusion regarding turning movements between the access and the intersection for which they would be signalling in the opposite direction.

52. Lighting is best considered by others, however it is envisaged that lighting will be provided at the main access to ensure safe use of the access during periods of darkness.

53. Given the relatively low existing traffic volumes on Stranges Road south of the site and on this section of Maginness Road, and the anticipated day to day traffic volumes, capacity of access is not anticipated to be an issue with very little if any delay anticipated for turning vehicles.

54. Sales events will include a temporary traffic management plan. The traffic management required will depend on the size of the sales, for the larger annual sales events it could include temporary reduced speed limits, cones for managing any queues and event signage. Smaller sales events may only require some event related signage. It is recommended that a Traffic Management Plan be submitted to Council a minimum of two weeks prior to sales events and this be controlled by way of a consent condition.

Huntingdon Avenue Access

55. A vehicle access is also proposed to Huntingdon Avenue which will primarily provide for staff and service access. This is expected to have a relatively low use. The access is 5.0m wide with a metalled surface, except for the first 10m from Huntingdon Avenue which will be sealed to avoid mud / debris being deposited on Huntingdon Avenue by vehicle tyres.

56. There is good visibility in both directions at the access and it is well separated from the nearest intersections such that it can accommodate vehicles turning into and out of the site in a safe and efficient manner.

57. Noting the low volume of traffic using this access and the 60km/h speed limit on Huntingdon Avenue, a basic vehicle crossing with a 6m sealed width is proposed. It is not anticipated that this would cater for trucks or heavy vehicle movements as these would all occur via the Main Access.

Access Summary

58. Overall, the proposed accesses are to Local Roads and have been designed to cater for the anticipated volume of traffic using these accesses. They provide good visibility and will be constructed to provide for safe and efficient access to the site.

59. For the above reasons, the proposed accesses are considered to be appropriate for the proposed activity and provide for safe and efficient access to the local road network.

Wider Network Effects

60. Most trips to and from the site are anticipated to occur via Stranges Road, north towards Tinwald and State Highway 1. Travel will primarily therefore be via Stranges Road to Grahams Road and Graham Street. This provides a reasonably direct route and convenient access to the site from the existing residential areas of Tinwald and Ashburton as well as connections to the wider road network via State Highway 1.

61. As outlined above, a number of upgrades are currently being constructed for the nearby sections of State Highway 1 which will further assist in providing safe connections to the wider road network.

62. The frontage roads are sealed and generally appropriate for traffic to and from the site. The main vehicular route via Stranges Road to Grahams Road and Graham Street is sealed and provides for two way traffic flow, a site visit and review of the existing crash record indicates that this route is generally fit for purpose and operating appropriately, particularly noting that Council is reviewing the speed limit on Grahams Road where there have been several crashes.

63. The connection from the site to SH1 generally has priority except at the intersection of Stranges Road and Lake Hood Drive. That intersection is formed to a high standard with the southern section of Stranges Road being give-way controlled and traffic priority between the northern section of Stranges Road and Lake Hood Drive. This means vehicles travelling to the site (south-bound) will need to turn right to continue along Stranges Road and will need to turn left at the give-way controlled intersection when returning toward the north. There is good visibility in both directions from the limit line and the right turn lane on the northern arm of Stranges Lane is some 170m including tapers. This will provide ample capacity for general use and sales events.

64. As outlined above, it is expected that for annual sales events, an event management plan would include any temporary traffic management that may be required along these routes from SH1 to the site. This could include signage and temporary traffic management at key intersections as required based on the size and operation of the particular event.

65. In summary therefore the key road network connections are generally appropriate for access to the site and are anticipated to offer sufficient capacity for typical / day to day use and for sales events..

Summary & Conclusion

66. The proposed SPEC is a farming activity and generally anticipated in the rural zone, albeit resource consent is required for the scale of built development. The proposal complies with all of the relevant transport rules however is non-complying in respect of other rules and as such an assessment of all transport effects has been undertaken.

67. The site provides some permanent car parking, horse float / truck parking and overflow grass parking for events. This will ensure that the site will be self-sufficient for car parking and loading with no parking or loading occurring on frontage roads.

68. The Main Access to Stranges Road is appropriate for all intended use including day to day traffic, sales event traffic, horse float / truck access and any other service vehicles visiting the site. This access will be sealed and the vehicle crossing will have a 15m radius with acceleration and deceleration lanes provided.

69. The secondary access to Huntingdon Avenue is appropriately formed and located for the intended safe and service use, this access is not anticipated to cater for trucks / heavy vehicles.

70. Connections from the site to the wider road network are direct and convenient and suitable for the site related traffic. For the annual sales event and any smaller sales events, a temporary traffic management plan should be provided to Council for approval a minimum of two weeks prior to the event. This should include any event signage and temporary traffic management that is required at the site access and along the route to SH1. The traffic management proposed should reflect the size and operation of the particular event.

71. Based on the assessment undertaken above, we consider that the proposed development can be supported from a transport perspective.

Appendix 1

Application Plans

LEGEND

- A Main Entry
- B Stables
- C Selling Centre
- D Sand Arena
- E Excercise / Grazing
- F Training / Grazing
- G Grazing
- H Informal Parking
- I Horse Walker
- J Polo Field
- K Vet / Research
- L Existing House (Staff Accomodation)
- M 10m Landscape Strip to be planted along Stranges Road and Huntingdon Avenue frontages and southern boundary
- N Paved formal parking (45 spaces including 2 accessible spaces)
- Site Boundary

A. MASTER PLAN

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **MASTER PLAN**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:5000

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
D	Minor Changes	DCM	12/10/2023
E	Road Type Changes	DCM	31/10/2023
F	Carpark Details	DCM	31/10/2023

REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

project no / drawing no: **2023_146/001**

N

revision: **F**

LEGEND

- Site
- Paved Road
- Gravel Road
- Gravel Pedestrian / Horse Path
- Indicative Location of Farm Gate
- Formed Entry
- Main Entry

A. MASTER PLAN

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **MASTER PLAN - CIRCULATION**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:5000

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
D	Minor Changes	DCM	12/10/2023
E	Road Type Changes	DCM	31/10/2023
F	Carpark Details	DCM	31/10/2023

REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

project no / drawing no: **2023_146/002**

N

revision: **F**

LEGEND

- A 45 carparks (including 2 mobiliy parking spaces) with a asphalt surface and line marking.
- B Plant Mix 4 - low amenity planting (see planting pallete document for species)
- C Selling Centre
- D Pedestrian path connectin selling centre and sand arena

JOIN LINE 2023_146 001

A. CARPARK PLAN (1:200 @ A3)

client / project name: SOUTHERN PARALLEL EQUINE CENTRE - MASTER PLAN
drawing name: **CARPARK PLAN**
designed by: DAVID COMPTON-MOEN | ANCA BELU
drawn by: ANCA BELU
original issue date: 25 SEPTEMBER 2023
scale: 1:200

revision no:	amendment:	approved	date
A	Issue for Comment	DCM	25/09/2023
B	Design Refinement	DCM	28/09/2023
C	Alignment Change	DCM	11/10/2023
D	Minor Changes	DCM	12/10/2023
E	Road Type Changes	DCM	31/10/2023
F	Carpark Details	DCM	31/10/2023

REGISTERED LANDSCAPE ARCHITECT
DCM URBAN DESIGN LIMITED
10/245 ST ASAPH STREET
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WWW.DCMURBAN.COM

N

project no / drawing no: **2023_146/005**

revision: **F**

Appendix 2

NZTA CAS Data

Untitled query

Saved sites

Lakehood SPEC

Crash year

2017 — 2023

Plain English report

8 results from your query.

1-8 of 8

Site Centre: Midpoint	Crash road	Side road	Feature	Distance from side road/feature	Direction	Reference station	Route position	Easting	Northing	Longitude	Latitude	ID	Date	Day of week	Time	Description of events	Crash factors	Surface condition	Natural light	Weather	Junction	Control	Casualty count fatal	Casualty count serious	Casualty count minor	Social cost $(m)
1498267-5134805	**GRAHAMS ROAD**	GARTARTAN ROAD			I			1498260	5134815	171.732448	-43.932745	2022243908	26/11/2022	Sat	04:40	Car/Wagon1 SDB on GRAHAMS ROAD lost control; went off road to left, Car/Wagon1 hit substantial vegetation (causing vehicle damage or stopping the vehicle), traffic sign, house,	CAR/WAGON1, alcohol suspected, lost control avoiding another party, medical illness (not sudden), new driver/under instruction	Dry	Dark	Fine	T Junction	Nil	0	0	1	0.11
1498441-5134605	**GRAHAMS ROAD**	GROVE FARM ROAD			I			1498443	5134607	171.734680	-43.934654	201711090	06/02/2017	Mon	17:30	Car/Wagon1 NDB on Grahams Road overtaking hit Car/Wagon2 NDB on Grahams Road turning right, Car/Wagon1 hit non specific fence	CAR/WAGON1, overtaking at a junction	Dry	Bright sun	Fine	T Junction	Nil	0	1	3	1.26
1499035-5133918	**GRAHAMS ROAD**	GROVE FARM ROAD		903m	S			1499028	5133923	171.741844	-43.940881	2020148647	17/03/2020	Tue	18:50	Car/Wagon1 SDB on GRAHAMS ROAD lost control turning right; went off road to left	CAR/WAGON1, alcohol test below limit, other inexperience, while returning to seal from unsealed shoulder CAR/WAGON2, alcohol test below limit	Dry	Twilight	Fine	Nil (Default)	Nil	0	0	1	0.11
1499035-5133918	**GRAHAMS ROAD**	GROVE FARM ROAD		907m	S			1499038	5133909	171.741968	-43.941008	2023265138	20/08/2023	Sun	09:45	Ute1 SDB on GRAHAMS ROAD lost control turning right; went off road to left, Ute1 hit fence	UTE1, alcohol suspected, drugs suspected, lost control when turning, speed entering corner/curve	Dry	Overcast	Fine	Nil (Default)	Nil	0	0	2	0.11
1499035-5133918	**GRAHAMS ROAD**	GROVE FARM ROAD		910m	S			1499040	5133920	171.741989	-43.940918	201755485	01/12/2017	Fri	14:56	Car/Wagon1 SDB on Grahams Road lost control turning right, Car/Wagon1 hit non specific tree	CAR/WAGON1, lost control - road conditions, speed entering corner/curve, ENV: road under construction or maintenance	Dry	Bright sun	Fine	Nil (Default)	Unknown	0	0	0	0.04
1499465-5132669	**GRAHAMS ROAD**	STRANGES ROAD		89m	S			1499465	5132668	171.747051	-43.952240	2021188975	26/04/2021	Mon	04:20	Car/Wagon1 NDB on GRAHAMS ROAD lost control turning right; went off road to left, Car/Wagon1 hit bank	CAR/WAGON1, alcohol test below limit, other fatigue, too far left	Dry	Dark	Fine	Nil (Default)	Nil	0	1	0	1.26
1499480-5132851	**STRANGES ROAD**	BOUNDARY ROAD			I			1499481	5132854	171.747284	-43.950573	201740146	02/06/2017	Fri	13:40	SUV1 NDB on Grahams hit Truck2 crossing at right angle from right	TRUCK2, did not check/notice another party from other dirn, failed to give way at priority traffic control	Dry	Overcast	Fine	Crossroads	Give way	0	0	0	0.04
1499747-5131825	**STRANGES ROAD**	LAKE HOOD DRIVE		101m	S			1499746	5131825	171.750396	-43.959867	2022237812	12/10/2022	Wed	21:11	Car/Wagon1 NDB on STRANGES ROAD lost control turning right; went off road to left, Car/Wagon1 hit traffic sign, tree	CAR/WAGON1, alcohol test below limit, fatigue due to lack of sleep, lost control when turning, speed entering corner/curve	Dry	Dark	Fine	Nil (Default)	Nil	0	0	1	0.11

1-8 of 8

Appendix 3

Transport Compliance Assessment

RULE	COMMENT	COMPLIES?
10.7 Rules – Transport		
10.7.1 Permitted Activities Any activity, which complies with all of the following Site Standards below and all relevant Zone and District-Wide Rules, shall be a permitted activity.		Permitted
10.7.2 Restricted Discretionary Activities a) Any activity, which does not comply with any one or more of the following Site Standards, shall be a restricted discretionary activity, with the exercise of the Council's discretion being restricted to the matter(s) specified in the applicable assessment matters in 10.10. b) Any Activity which complies with all of the relevant Site and Zone Standards, shall where the Site Standards specify, be a Restricted Discretionary Activity with the exercise of the Council's discretion being restricted to the matter(s) specified in the applicable assessment matters in 10.10.		N/A
10.8 Site Standards – Parking and Loading		
10.8.1 High Traffic Generating Activities (PC5, rule not yet operative) a) Any new subdivision or land use activity, or changes in use that exceed thresholds set out in Table 10-1 shall be classified as a High Traffic Generator and a restricted discretionary activity. [Mixed use or other activities not otherwise listed in this table 50 vehicles per peak hour. 'Peak hour' means any hour when the greatest number of vehicle movements occurs. 120 vehicles per peak hour] b) A Basic Integrated Transport Assessment shall be undertaken for activities that exceed the threshold for a Basic Assessment in Table 10-1 below. The relevant assessment matters shall be restricted to those set out in 10.10.1 a. to c. (Safety and efficiency, Design and Layout, and ITA requirements). c) A Full Integrated Transport Assessment shall be undertaken for activities that exceed the threshold for a Full Assessment in Table 10-1 below. The relevant assessment matters shall be restricted to those set out in 10.10.1 a. to e. (Safety and efficiency, Design and layout, ITA requirements, Heavy vehicles, and Network effects). d) Where an Integrated Transport Assessment has already been approved for the site as part of a granted resource consent, then these rules do not apply to any development that is within scope of that Integrated Transport Assessment and in accordance with the resource consent, unless the resource consent has lapsed.		N/A rule is subject to appeal through the PC5 process
10.8.2 Car Parking Spaces in the Business A Zone	The site is not in this zone.	N/A

a) In the Business A Zone of Ashburton where on-site car parking for the convenience of persons working or living on-site is proposed, it shall be provided to the rear of any building(s) on the site and all required loading spaces shall be provided at the rear of building(s) on the site.

10.8.3 Mobility Parking Spaces a) The minimum number of mobility parking spaces provided shall be as specified in Table 10-2: Table 10-2: [1 – 20 spaces requires 1 mobility park; 21-50 spaces requires 2 mobility parks; every additional 50 spaces, or part thereof 1 space] b) Mobility parking spaces shall be: on the same site as the activity, located as close as practicable via the most direct route to the accessible entrance to the activity to which they are associated, on a level surface, and clearly marked and designed & constructed in accordance with NZS 4121: 2001 Design for access and mobility: Buildings and associated facilities.	45 formed car parks are proposed and two accessible spaces are provided - A complying number of accessible spaces are provided.	Yes
10.8.4 Size of Parking Spaces a) All parking spaces, other than for residential units, shall be designed to accommodate a 90 percentile design motor car (refer Appendix 10-2) and shall be laid out in accordance with the minimum dimensions specified within Table 10-1 below and as illustrated within Appendix 10-2:	All formal / sealed car parks to comply	Yes

Type of User	Parking Angle	Stall Width	Aisle Width	Stall Depth[5]
Class 1 [1]	90°	2.5	6.2	5.0
Class 2 [2]	90°	2.6	7.0	5.0
~~People with disabilities~~ Mobility Parking	90°	3.6	6.2	5.0
All	0° (parallel)	2.1	3.3[3] 6.5[4]	6.1
All	30°	2.5	3.5	4.4
All	45°	2.6	4.2	5.2
All	60°	2.6	5.1	5.7

Notes for Table 10-1:

1. Class 1: medium to long term parking including areas such as employee and commuter parking, long-term town centre parking, sporting facilities, entertainment centres and hotels and motels.

2. Class 2: short term, high turnover parking at retail / commercial activities and where goods can be expected to be loaded into vehicles.

3. One-way aisle only.

4. Two-way aisle.

5. Stall depth may be reduced by 600mm where there is sufficient overhang space in front of the space, provided such space is not required for another parking space, pedestrian path or similar purpose

6. Spaces adjacent to walls or columns shall be 300mm wider than specified within Table 10-1. 7. All dimensions are in metres

10.8.5 Residential Parking Spaces a) Where residential car parking spaces are provided within a garage, the minimum internal dimensions shall be as set out in Table 10-2: **Table 10-2: Residential Parking Space Dimensions** |	Width	Depth
Single	3.1m	5.5m
Double	5.6m	5.6m | b) The minimum width of the entrance to a single garage shall be no less that 2.4 m.	The residential dwelling and associated parking is existing	Existing
10.8.6 Cycle Parking a) All developments, in the Business A Zone are to provide long term cycle parking on the same site as the activity to at least the minimum numbers specified in Table 10-5. b) In other zones, all developments other than farming activities are to provide Visitor and Long Term cycle parking on the same site as the activity to at least the minimum numbers specified in Table 10-5 c) Where the calculation of the number of cycle parks results in a fractional number, any fraction under one half shall be disregarded and any fraction of one half or more shall be counted as one space. d) Where a land use corresponds with two or more similar activities in Table 10-5, the activity with the higher cycle parking rate shall apply. Where there are two or more separate activities on a site, the total requirement for the site shall be the sum of the cycle parking requirements for each activity. e) All required visitor cycle parking shall be provided as follows: • in cycle stands and laid out in accordance with Appendix 10-3 and securely anchored to an immovable object; • on the same site and conveniently located to the activity it serves; • clearly visible to cyclists entering the site or appropriately signposted; and • well lit. f) All required long term cycle parking shall be provided as follows: • provided in cycle stands and laid out in accordance with Appendix 10-3; • on the same site as the activity; • well lit and covered;	Farming Activities are not required to provide cycle parking. No cycle parking is required for residential activities with less than 20 units.	Yes

• located in a secure area, unless located in an area where access by the general public is generally excluded; and • where a cycle stand is provided, it shall be laid out in accordance with Appendix 10-3.		
10.8.7 On-site Manoeuvring a) The manoeuvring area from the road transport network boundary to any parking space shall be designed to accommodate a 90 percentile car (refer Appendix 10-4). b) Onsite manoeuvring for a 90 percentile car (refer Appendix 10-4) shall be provided to ensure that no vehicle is required to reverse either onto or off a site where: • any activity has vehicle access and/or vehicle crossings to an arterial road; • any activity provides 4 or more parking spaces having vehicle access and/or vehicle crossings onto a principal or collector road; • any activity provides 10 or more parking spaces; • three or more residential units share a common vehicle access.	On-site manoeuvring is provided for a 90 percentile car and no vehicles will be required to reverse off the site.	Yes
10.8.8 Loading Space Provisions a) Every site in the Business Zones and in the Commercial Area of the Aquatic Park Zone, except for the Business A Zone, shall provide one loading space and associated manoeuvring area.	The site is not in these zones.	N/A
10.8.9 Loading Areas a) Every loading space provided shall be of a useable shape and in accordance with the following minimum dimensions: • 9m deep • 3.5m wide • 4.5m high Except for: activities not involving the trading of goods (e.g. offices), where the gross floor area is less than 1500m², and on street space is available for occasional servicing by larger vehicles, then loading space dimensions shall be in accordance with the following minimum dimensions: • 6.4m deep • 3.5m wide • 3.5m high b) The manoeuvring area from the road boundary to any loading space shall be designed to accommodate a 90 percentile two axle truck (refer Appendix 10-5). c) Onsite manoeuvring for a 90 percentile two axle truck shall be provided to ensure that no truck is required to reverse onto or off a site where any development provides loading areas or trade vehicle storage having vehicle access and/or a vehicle crossing onto an arterial, principal or a collector road. d) If parking or servicing by a large heavy vehicle, such as an articulated truck, is anticipated to occur on a site, then both b) and c) from above apply for the manoeuvring requirements of the vehicle. e) All loading spaces/areas shall be provided in a location that does not impede any through traffic, or manoeuvring areas, or any pedestrian or cycle access.	Horse truck loading areas are provided which meet these minimum dimensions. The site is not anticipated to need articulated trucks	Yes
10.8.10 Surface of Parking and Loading Areas a) The surface of all parking, loading and trade vehicle storage areas in the Residential Zone, Business A, B, and C Zones, and the Aquatic Park Zone (except parking areas within the Recreational Area of the Aquatic Park Zone), shall be formed to provide an all weather surface.	The site is not in any of these zones	N/A

b) The first 3m of all such areas (as measured from the road boundary) shall be formed and sealed for the full width of the vehicle crossing, to ensure that material such as mud, stone chips or gravel is not carried onto any footpath, road transport network or service lane.

c) Parking and loading areas in the Recreational Area of the Aquatic Park Zone shall be formed and oversown with grass so as to maintain the character and appearance of the surrounding recreational area.

10.8.11 Tree Planting within Car Parking Areas a) Where a car parking area has central parking rows, which do not abut a site boundary or building, trees shall be planted at least 7.5m apart adjacent to the central car parking spaces. The trees shall be protected from damage by vehicles.	N/A	N/A
10.8.12 Queuing Requirements a) Where car parking is provided within a site, a minimum queuing length shall be provided in accordance with Table 10-3 below for vehicles entering the site:	Both accesses have at least 30m queuing space.	Yes

Table 10-3: Queuing Length

Car Parking Spaces Provided	Queuing Length (m)
less than 20	6
21-50	12
51-75	18
76-100	24
100+	30

b) The required queuing length shall be measured from the road boundary at the car park entrance to the nearest vehicle control point or the point where entering cars could conflict with vehicles already on the site.

c) Where more than one vehicle crossing is provided to a site, the required queuing length may be assessed for each access point individually, with each parking space allocated to the nearest entry vehicle crossing for the purpose of the assessment

d) Where the following facilities are provided within a site, minimum queuing spaces shall be provided in accordance with Table 10-7 below: [only applicable to Drive through facilities and Service Stations]

10.9 Site Standards – Accessibility and Safety

10.9.1 Roading, Access and Vehicle Crossings All new roads shall be laid out and vested in the Council, in accordance with Standard NZS4404:2010, other than as specified below:	No roads are proposed	N/A

Table 10-4: New Road Standards

Road Hierarchy	Typical Daily Traffic Volumes (vpd)	Road Width (metres)		Carriageway Width (metres)		Footpath
		Min	Max	Min	Max	
Arterial – urban	>5,000	27	-	15	-	Both Sides
Arterial – rural	>1,000	20	-	8	-	-

a) Where a new road transport network is proposed that is located in a manner that makes it capable of being extended in the future to service additional land, the future potential daily traffic volume for the extended road shall be used to determine the minimum and maximum widths required in Table 10-4 above. This determination shall be based on the greater of the actual number of allotments served or the potential number of allotments that could be served as a permitted or controlled activity.

b) The carriageway of all new road transport networks laid out and vested in accordance with a) above shall be formed and sealed.

c) Footpaths shall be constructed as a sealed strip of 1.5m width within the berm.

d) All areas of berms not sealed in footpath are to be formed in grass.

e) Cul-de-sac shall be constructed with turning heads of the following radii, measured from the centre of the turning head to the kerb face: • Residential zones and the Residential and Rural-Residential Areas of the Aquatic Park Zone – 9.5m • All other zones – 15m

f) If the corner lot is included in any subdivision, the corner at the road intersection shall be splayed with a diagonal line reducing each boundary by at least 4 metres from the corner, except that in a Business or Rural Zone or if the highest speed limit on either frontage road is greater than 50km/h, then the diagonal line reducing each boundary shall be at least 6 metres from the corner. The corner rounding or splay shall be vested in the Council.

g) Within any new subdivision, provision shall be made for pedestrian and cycle access links, to a level appropriate to the scale and location of the development.

h) Where a subdivision adjoins land not yet subdivided, provision shall be made for pedestrian, cyclist and vehicle access linkages between the areas, including vesting of land for future road transport network reserves for the purpose of facilitating connections to future roading extensions to serve surrounding land, or planned road links that may need to pass through the subdivision

10.9.2 Vehicular Access	a) Both accesses exceed 4.0m formed width. b) The 4.5m height clearance is readily met.	Yes

a) All vehicular access to fee simple title allotments, cross leases, unit titles or leased premises shall be in accordance with the standards set out in Table 10-5 below. This rule shall not apply to vehicle crossings directly on to individual sites, which do not involve an access (refer to the definition of "access"). The following standards in Table 10-5 are minimum standards:

Table 10-5: Vehicular Access

Zone	Potential No of Sites	Length (m)	Legal Width (m)	Carriage-way Width (m)	Turning Area	Passing Bay	Foot-paths
Residential and Aquatic Park	1-2	All	3.5	3.0	Optional	Optional	Optional
Residential and Aquatic Park	3-6	0-50	4.0	3.5	Required	Required	Optional
Residential and Aquatic Park	3-6	50+	4.5	4.0	Required	Required	Required
Rural	Any	All	10.0	4.0	Optional	Optional	Optional
All Other Zones	Any	All	8.0	7.0	Required	Optional	Optional

b) The minimum height clearance for all vehicular accesses shall be 4.5m.

c) Access to allotments with the potential to accommodate more than 6 residential units shall be provided by way of a road and not by a private way or access lot.

d) All vehicle crossings from sealed roads to vehicular accesses shall be sealed for the full berm width of the adjoining road. In the case of the Rural A, B and C Zones, if the access slopes up from the road, the crossing shall be sealed to a minimum distance of 10m from the edge of the carriageway.

e) Where an allotment being created by subdivision or a new land use activity establishes on an existing site that has frontage to a state highway as well as to another road, vehicle access and vehicle crossings to the allotment shall be from the other road transport network, rather than the State Highway.

f) No activity in the lower density area of the Residential C Zone as shown on the Lochhead Outline Development Plan shall have a vehicle access or vehicle crossing to State Highway 77.

Note: For the purposes of this rule, an access shall be taken to slope up from the road if the access has an average gradient of 1:20 or steeper within 10m of the edge of the carriageway.

c) N/A

d) Both accesses will be sealed a minimum 10m from the road edge.

e) N/A

f) N/A

10.9.3 Distances of Vehicle Crossings from Intersections

a) No part of any vehicle crossing shall be located closer to the intersection of any roads than the minimum distances specified in Table 10-6 below:

Both accesses are more than 50m from nearby intersections.

Yes

Table 10-6: Minimum Distance of Vehicle Crossings from Intersections

Frontage Road	Intersecting Road Type (distances in metres)					
	Urban			Rural		
	Arterial	Principal / Collector	Local	Arterial	Principal / Collector	Local
Arterial	30	30	30	200	200	200
Principal / Collector	20	20	15	60	50	50
Local	20	15	10	60	50	50

b) Distances shall be measured from the point at which the legal boundary lines of the two road frontages intersect.

c) Where the boundaries of the site do not allow the provision of any vehicle crossing whatsoever in conformity with the above distances, a single vehicle crossing may be constructed provided it is located in the position which most nearly complies with the provisions of these rules.

10.9.4 Spacing Between Vehicle Crossings a) On Principal and Arterial Roads where the legal speed limit is 100km/hr, the minimum spacing between successive vehicle crossings (regardless of the side of the road on which they are located) shall not be less than 200m. This rule shall not apply to vehicle crossings to farming activities, which do not provide access or a driveway to buildings (other than haysheds). b) On Principal and Arterial Roads where the legal speed limit is less than 100km/hr, the minimum spacing between successive vehicle crossings (either single or combined) on the same side of the road, shall not be less than 15m. This rule shall not apply to vehicle crossings which serve residential activities only. c) The separation distances shall be measured from the centre of one vehicle crossing to the centre of the succeeding vehicle crossing, parallel to the centreline of the transport network. d) Where the boundaries of the site do not allow the provision of any vehicle crossing whatsoever in conformity with the above distances a single vehicle crossing may be constructed in the position which most nearly complies with the provisions of this rule.	The site does not front any Principal or Arterial Roads	N/A
10.9.5 Maximum Number of Vehicle Crossings a) The maximum number of vehicle crossings to a site per road frontage shall be in accordance with Table 10-7 below:	One formed vehicle crossing is proposed per site frontage	Yes

Table 10-7: Maximum Number of Vehicle Crossings

Road Hierarchy	Legal Speed Limit for Road (km/hr)	Frontage Length (m)			
		0-20	21-60	61-100	101+
Local & Collector	Any	1	2	2	3
Principal & Arterial	<100	1	1	2	2
Principal & Arterial	100	1	1	1	1

10.9.6 Sight Distances from Vehicle Crossings a) Unobstructed sight distances shall be available from all vehicle crossings, in accordance with the minimum sight distances specified in Table 10-8 below:

More than 160m sight distance is provided

Yes

Table 10-8: Minimum Sight Distances from Vehicle Crossings

Legal Speed Limit for Road (km/hr)	Minimum Sight Distance (m)
0-50	45
51-60	65
61-70	85
71-80	105
81-100	160

b) All sight distance measurements shall be undertaken in accordance with the diagram in Appendix 10-6.

10.9.7 Design and Construction of Vehicle Crossings onto Arterial Roads

N/A

N/A

a) The length of any vehicle crossing shall be in accordance with dimensions set out in Table 10-9 below:

Table 10-9: Vehicle Crossing Length

	Minimum	Maximum
Residential	3m	7.5m
Other	4m	9m

b) The vehicle crossing length shall be measured along the property boundary.

c) All vehicle crossings on to arterial and principal roads where the speed limit exceeds 50km/hr shall be designed and constructed in accordance with the diagrams included in Appendices 10-7 – 10-8, except for vehicle crossings to farming activities in Rural Zones; this standard shall only apply where a vehicle crossing provides access or a driveway to building(s).

10.9.8 Vehicle Oriented Commercial Activities — N/A — N/A

a) Notwithstanding rules 10.9.3-10.9.6 above, all: • service stations; • truck stops; • commercial activities (or groups of retail activities using common vehicle crossings) containing a total gross floor area of more than 500m²; shall comply with the following additional rules: • No part of any vehicle crossing on to an arterial road shall be located closer than: - 60m to the departure side of any intersection; or - 30m to the approach side of any intersection. • Distance shall be measured from the point at which the legal boundary lines of the two road frontages intersect. Unobstructed sight distances shall be available from all vehicle crossings, in accordance with the minimum sight distances specified in Table 10-10 below:

Table 10-10: Minimum Sight Distances for Vehicle Oriented Commercial Activities

Legal Speed Limit for Road (km/hr)	Minimum Sight Distance (m)
0-50	110
51-60	140
61-70	170
71-80	200
81-100	280

Where the legal road speed limit is 50km/hr, the above rule shall only apply to Arterial and Principal roads. • All sight distance measurements shall be undertaken in accordance with the relevant diagram in Appendix 10-6.

10.9.9 State Highway Access — N/A — N/A

a) Any new subdivision or land use activity that would require direct access to a state highway at a location where there is currently no such direct access, or would require any alteration to, or increase in the use of an existing direct access to such a state highway, shall be a restricted discretionary activity.

10.9.10 Minimum Sight Distances from Intersections — No roads are proposed — N/A

a) Unobstructed sight distances shall be available from all intersections, in accordance with the minimum sight distances specified in Table 10-11 below:

Table 10-11: Minimum Sight Distances from Intersections

Legal Speed Limit for Road (km/h)	Minimum Sight Distance (m)
0-50	110
51-60	140
61-70	170
71-80	200
81-100	280

b) All sight distance measurements shall be undertaken in accordance with the relevant diagram in Appendix 10-6.

10.9.11 Spacing between Intersections a) All intersections shall be designed and located such that the minimum spacing between successive intersections is not less than the minimum distance specified in Table 10-12 below:

No roads are proposed

N/A

Table 10-12: Minimum Spacing Between Intersections

Legal Speed Limit for Road (km/h)	Minimum Distance (m)
0-50	125
51-60	160
61-70	220
71-80	550
81-100	800

b) The distance shall be measured from the centre of one intersection to the centre of the succeeding intersection, parallel to the centreline of the road.

c) In Rural Zones where the legal speed limit for the road is 100km/hr, the above standard shall apply regardless of the side of the road on which the intersections are located.

d) On roads in other zones, the above standard shall apply to intersections on the same side of the road only.

10.9.12 Tree Planting – Shading and Intersection Visibility

Assessed by others

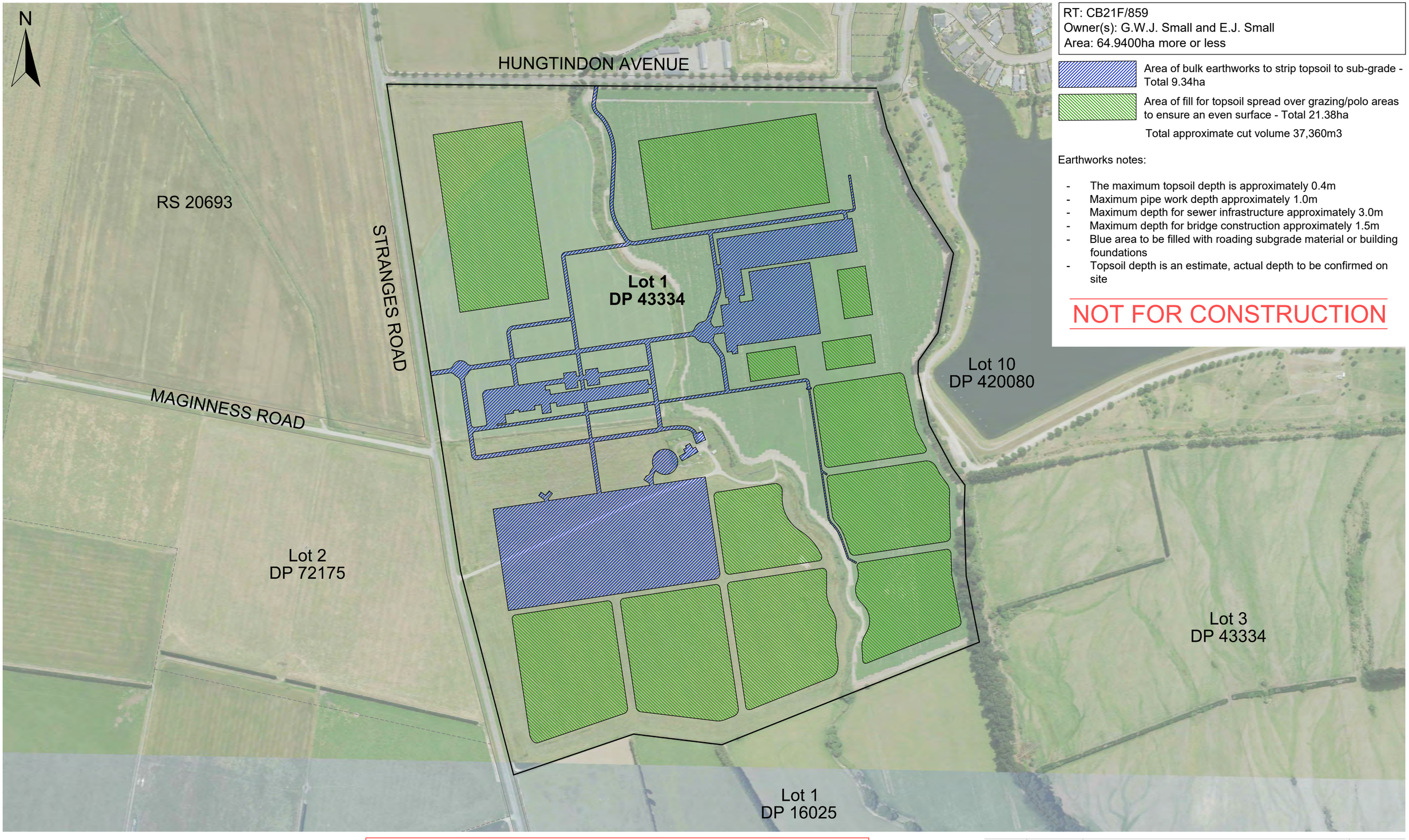
Yes

a) No tree shall be allowed to grow such that it shades the carriageway of a road throughout the hours of 10am and 2pm on the shortest day of the year.

b) No tree shall be planted within 30m of a road intersection, measured to the point at which the legal boundary lines of the two road frontages intersect.		
10.9.13 Direct Access via Railway Level Crossings a) Any new subdivision or land use activity that would require direct access over a railway level crossing at a location where there is currently no such direct access, and where no alternative access is provided, or would require any alteration to or increase in use of an existing direct access over a railway level crossing, shall be a restricted discretionary activity. b) Any new accessway shall be located a minimum of 30 metres from a road/rail level crossing. The 30 metres shall be measured from the closest rail track to the edge of seal on the proposed accessway.	N/A	N/A
10.9.14 Railway Level Crossings – Vehicle Accessway Location and Minimum Sight Distances a) Any new vehicle accessway onto a road shall be located a minimum of 30 metres from a railway level crossing, measured from the closest railway track to the edge of seal of the proposed accessway. b) No obstruction shall be located such that it fails to comply with the railway level crossing approach sight triangles determined in accordance with Appendix 10-9. Notes: • The above controls apply to established level crossings. Sightlines are also a factor in the development of the design of new level crossings: however further technical assessment against rail and road design standards, and formal statutory approvals under the Railways Act 2005, are also required from the railway operator (Kiwirail). • The rail operator (Kiwirail) also has the authority to require the removal of vegetation, walls, fences, and other obstructions from these sightlines under Section 77 of the Railways Act 2005. The inclusion of the above sightline control standard ensures that development and road/rail safety standards are well integrated, and reduce the (later) risk of a landowner being required to remove obstructions.	N/A	N/A

Appendix 4

Earthworks Plan



RT: CB21F/859
Owner(s): G.W.J. Small and E.J. Small
Area: 64.9400ha more or less

Area of bulk earthworks to strip topsoil to sub-grade - Total 9.34ha

Area of fill for topsoil spread over grazing/polo areas to ensure an even surface - Total 21.38ha

Total approximate cut volume 37,360m3

Earthworks notes:

- The maximum topsoil depth is approximately 0.4m
- Maximum pipe work depth approximately 1.0m
- Maximum depth for sewer infrastructure approximately 3.0m
- Maximum depth for bridge construction approximately 1.5m
- Blue area to be filled with roading subgrade material or building foundations
- Topsoil depth is an estimate, actual depth to be confirmed on site

NOT FOR CONSTRUCTION

Not to be used for Construction - Plan identifies conceptual earthworks volumes and areas. Final volumes and areas to be confirmed at the detailed design stage.

/ issue	/ date	/ reason	/ approved
A	10/23	Areas Diagram	RB

CAD ref: 40424 - Earthworks Diagram (300a).dwg

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Proposed Earthworks for Southern Parallel Equine Centre
Stranges Road. Huntingdon, Ashburton

/ design	/ drawn	/ QA check	/ dwg
RB/BL	BL	RB	300
/ scale @A3	/ date	/ file	/ issue
1:5000	10/23	40424	A

Appendix 5

Hynds Landspan Bridge System

Hynds Landspan Bridge System

Technical Guide R4.1

Hynds bridge units simplify the construction process, allowing for the rapid completion of works and offering a more cost effective option than the in-situ construction process.

UNDER REVIEW

Applications

- Stock and farm vehicle crossings
- Rural and commercial

Product Attributes

- Purpose designed
- Precast and pre-stressed
- Low cost, quick installation
- Simplifies preparation and consent of site plans or council approval

Approvals/Standards

- Bridge Design Load 0.9HN(HPMV) Rural Bridge in accordance with the NZTA Bridge Manual (Appendix D)
- Seismic zone factor = 0.45(max). Elastic design

Hynds bridge units simplify the construction process, allowing for the rapid completion of works and offering a more cost effective option than the in-situ construction process.

Design Specifications

- 50 years design life.
- Bridges are available in various spans to suit beam lengths ranging from 10 to 16 m (refer to Table 1 for options).
- Other sizes may be available subject to specific design.

TABLE 1 Bridge Beam Units

Land span	BR10ØTBC	BR12ØTBC	BR14ØTBC	BR16ØTBC
Beam Length(m)	10	12	14	16
Beam width	1.05	1.05	1.05	0.840
Bridge width	4.2	4.2	4.2	4.2
Beams	4	4	4	5

Lightly trafficked rural bridge loading

The design load covers all the loads expected to 0.9 HN loading used by NZ road legal vehicles or trucks.

- The following restrictions apply:
  - Bridge is used for single lane traffic
  - Speed limit is below 70 km/hr
  - Maximum axle and axle set limits for Class 1 roads are complied with or the structure can be bypassed
  - Use of route by logging trucks unlikely
  - Low traffic volume (<100 VPD)
  - Road cannot become a through route

Abutment Options

There are two standard abutment options from 300mm to 2300mm high. Other heights may be available subject to specific design.

Handrail

- Hynds supply a light duty handrail system and side kerbs (type LD) suitable for farm applications.
- A medium duty handrail system and side kerbs (Type PR) is also available to meet AS/NZS1170.1 pedestrian barrier requirements.

Deck finish

- The Hynds Landspan Bridge beams have a broomed finish to the top surface providing a non-slip surface to the bridge deck.
- Differential camber between the pre-stressed beams and manufacturing and installation tolerances may result in a small step varying between 5 and 15 mm between the precast concrete beams. This variation is purely cosmetic and has no effect on the structural integrity of the deck.

Multi-span options

Multi-span options are also available. Contact Hynds for more information.

Installation Requirements

- Hynds provide PS1 and PS4 producer statements for the design and manufacture of the precast and pre-stressed concrete bridge components.
- The asset owner/contractor is responsible for arranging and providing the PS1 – Design and PS4 – Construction Producer Statements, for the site selection and installation design, and construction supervision respectively.
- The asset owner/contractor is responsible for obtaining all the necessary resource and building consents as determined by the local authorities.
- Site selection and installation includes determining the bridge span and height to suit hydraulic requirements, foundation investigation and specification of erosion protection requirements. This work should be undertaken by a consulting engineer familiar with local conditions at the proposed bridge site. Contact Hynds for suggestions in your area.

FIG. 1 Typical Landspan Bridge

FIG. 2 LD Handrail

Abutment Bridge
Showing Standard 4 beam design

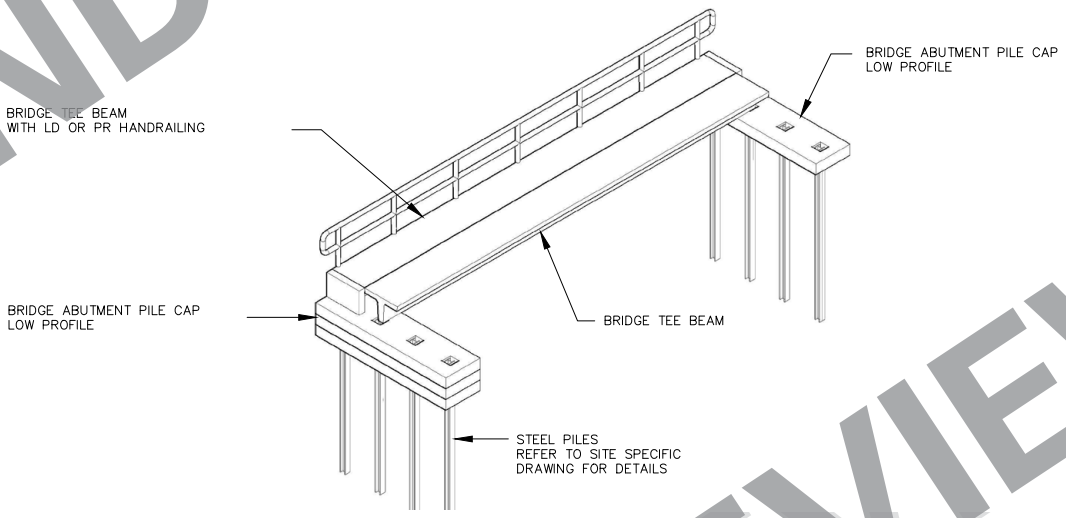


FIG. 3 Landspan Low Profile

Abutment Bridge
Showing Standard 4 beam design

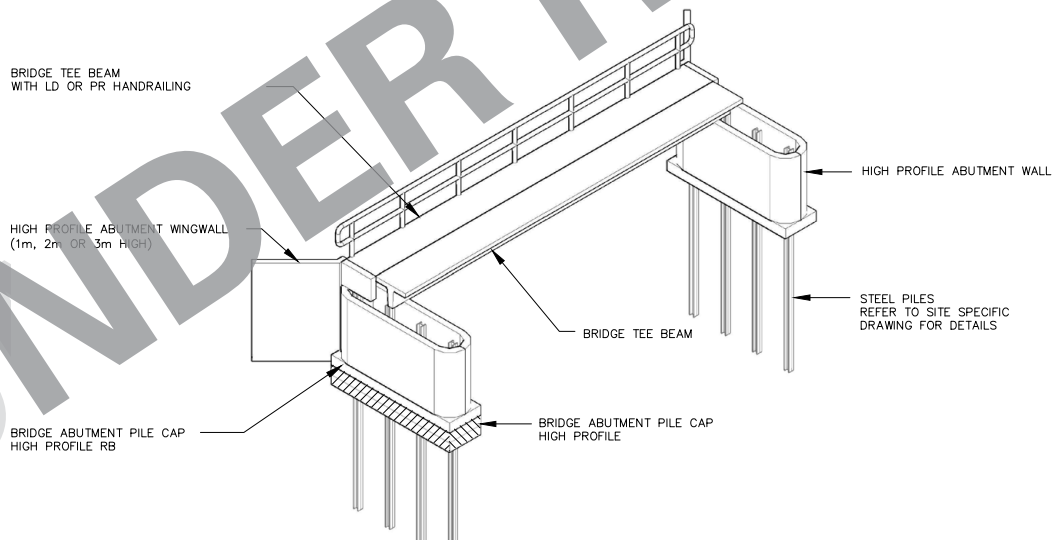


FIG. 4 Landspan High Profile

Lifting and Handling

All Hynds Landspan Bridge Systems incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch.

Hynds Pipe Systems has designed and manufactured Landspan Bridge Systems with a minimum dynamic factor of 1.2. This dynamic factor requires that all the following conditions are observed when lifting, moving or placing the systems:

1. Lifting with mobile plant *(such as an excavator or similar)* where equipment is specifically exempt from the requirements of the PECPR Regulations 1999, subject to the conditions outlined in the New Zealand Gazette, No. 104, September 2015 and
2. Lifting, travelling and placing over rough or uneven ground where anchor failure is not anticipated to cause harm or injury, by adopting procedures such as:
   a. Transporting the element as close as practical to ground level (300mm recommended)
   b. Establishing and maintaining exclusion zones
   c. Transporting only precast concrete elements that are unlikely to topple if they were to hit the ground
   d. Inspecting lifting anchors both after transportation and before final lifting into place

Refer to "Safe work with precast concrete - Handling, transportation and erection of precast concrete elements" published by Worksafe New Zealand (October 2018)

Shock loads resulting from travelling with suspended Landspan Bridge Systems over rough terrain and uneven ground may exceed design, dynamic and safety factors of the lifting systems. It is essential that care is taken during lifting and transporting as additional stresses could result in anchor failure.

Appendix 6

Landscape Plan

SOUTHERN PARALLEL EQUINE CENTRE - CONCEPT PLANTING PLAN

FOR SOUTHERN PARALLEL CAMPUS

31 OCTOBER 2023
PROJECT NO. 2023_146
REVISION C

dcm URBAN

LEGEND

- Plant Mix 1 (boundary planting)
- Plant Mix 2 (border planting)
- Plant Mix 3 (low amenity planting)
- Site boundary

A. MASTER PLAN

SOUTHERN PARALLEL EQUINE CENTRE

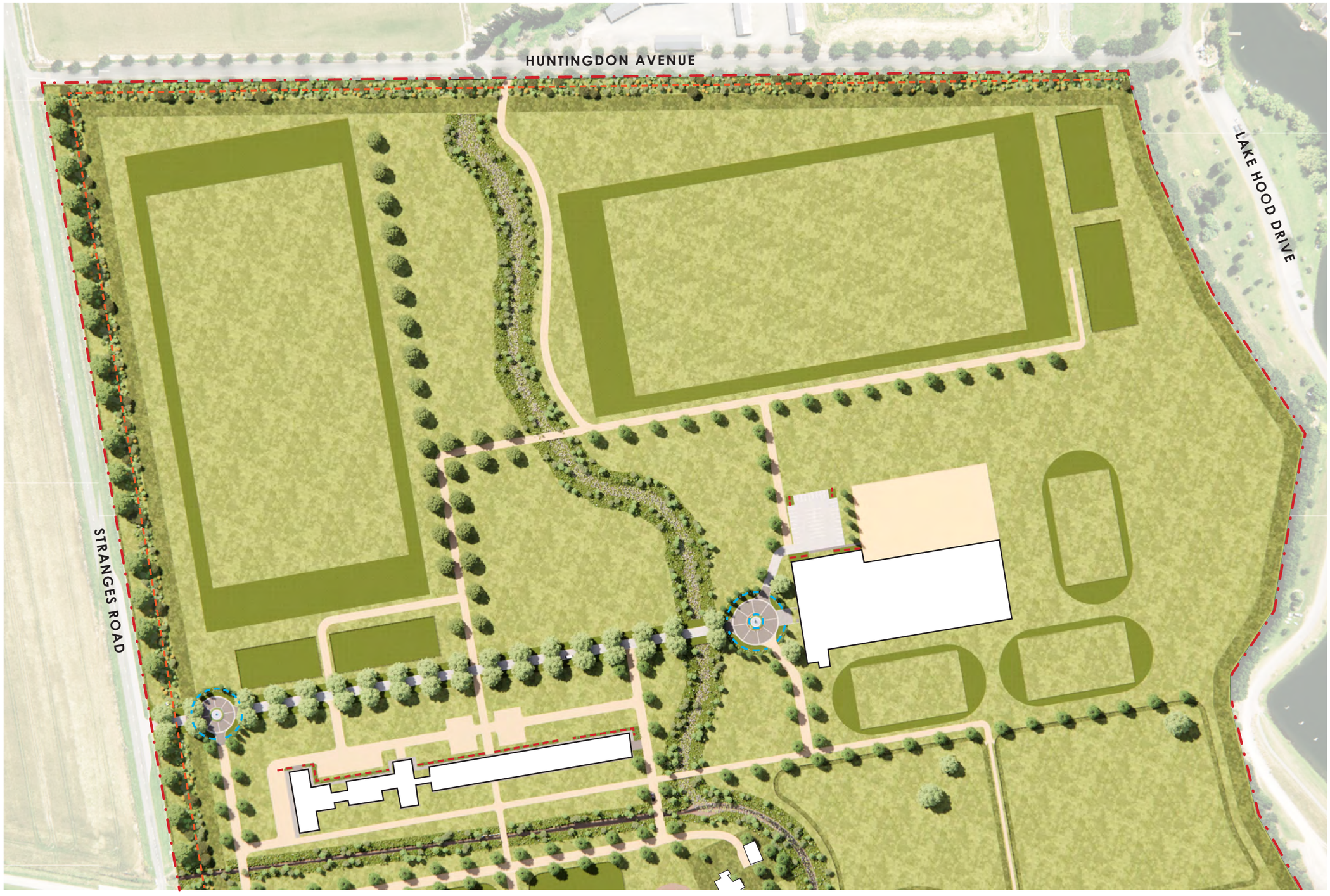
CONCEPT MASTER PLAN 1:5000

FOR SOUTHERN PARALLEL CAMPUS

CONCEPTUAL ONLY AND SUBJECT TO CHANGE

LEGEND

- Plant Mix 1 (boundary planting)
- Plant Mix 2 (border planting)
- Plant Mix 3 (low amenity planting)
- Site boundary



SOUTHERN PARALLEL EQUINE CENTRE

CONCEPT MASTER PLAN NORTH 1:2500

FOR SOUTHERN PARALLEL CAMPUS

CONCEPTUAL ONLY AND SUBJECT TO CHANGE

LEGEND

- Plant Mix 1 (boundary planting)
- Plant Mix 2 (border planting)
- Plant Mix 3 (low amenity planting)
- Site boundary

SOUTHERN PARALLEL EQUINE CENTRE

CONCEPT MASTER PLAN SOUTH 1:2500

FOR SOUTHERN PARALLEL CAMPUS

CONCEPTUAL ONLY AND SUBJECT TO CHANGE

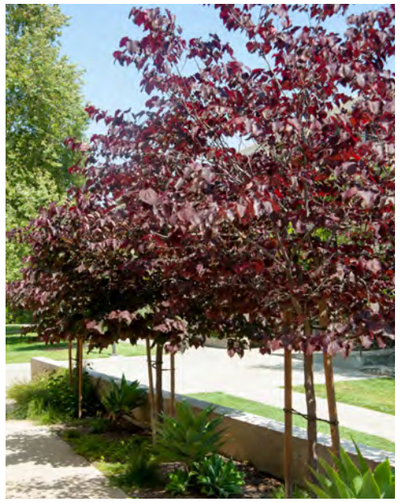
WATERWAY SETBACK CROSS SECTION 1:25 @ A3

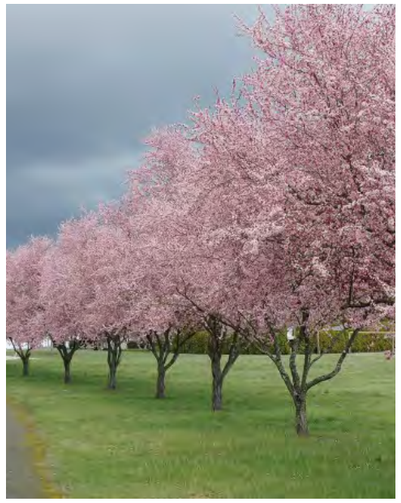
SOUTHERN PARALLEL EQUINE CENTRE

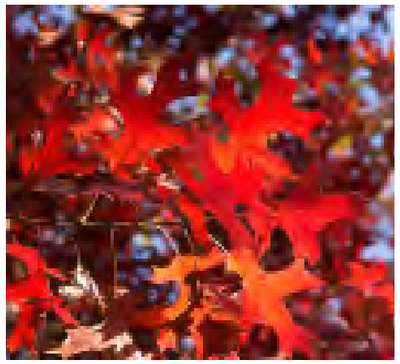
CONCEPT WATERWAY CROSS SECTION

FOR SOUTHERN PARALLEL CAMPUS

CONCEPTUAL ONLY AND SUBJECT TO CHANGE






Scarlet Oak (*Quercus coccinea*)

- Deciduous
- Green foliage
- Red in autumn before losing its leaves

Approx. height after 5 years: 4m
Approx. mature height: 20m

Nothern Pin Oak (*Quercus ellipsoidalis*)

- Deciduous
- Dark green foliage
- Deep-crimson/purple in autumn

Approx. height after 5 years: 4m
Approx. mature height: 15m

Cork Oak (*Quercus suber*)

- Evergreen
- Green foliage
- Rough, spongy, decorative bark

Approx. height after 5 years: 4m
Approx. mature height: 15m

Forest Pansy (*Cercis canadensis*)

- Deciduous
- Reddish-purple foliage
- Deep pink flowers

Approx. height after 5 years: 3m
Approx. mature height: 5m

Ribbonwood (*Plagianthus regius*)

- Semi-deciduous
- Green foliage
- Fast-growing

Approx. height after 5 years: 4m
Approx. mature height: 12m

European / Common Ash (*Fraxinus excelsior*)

- Deciduous
- Green foliage with bright-yellow autumn foliage
- Cold hardy

Approx. height after 5 years: 5m
Approx. mature height: 30m

Flowering Plum (*Prunus 'Thundercloud'*)

- Deciduous
- Dark purple, bordering on black, leaves
- Soft-pink prolific flowers early spring on bare stems

Approx. height after 5 years: 4m
Approx. mature height: 8m

Fruiting Olive (*Olea europaea spp.*)

- Evergreen
- Produces olives

Approx. height after 5 years: 4m
Approx. mature height: 10m
(height varies depending on species)

PLANT MIX 1 - BOUNDARY PLANTING

Hebe
(Veronica salicifolia)

Ti Kōuka / cabbage tree
(Cordyline australis)

Kowhai
(Sophora microphylla)

Prostrate kowhai
(Sophora prostrata)

Toetoe
(Astroderia richardii)

Kanuka
(Kunzea robusta)

Pittosporum
(Pittosporum tenuifolium)

Harakeke / flax
(Phormium tenax)

Lemonwood (Tarata)
(Pittosporum eugenioides)

Shrub pohuehue
(Muehlenbeckia astonii)

Kapuka, broadleaf
(Griselinia littoralis)

Miki Miki
(Coprosma Virescens)

PLANT MIX 2 - RIVER / DRAIN PLANTING

Emerald gem hebe
(Hebe 'Emerald Gem')

NZ daphne
(Pimelia prostrata)

Cabbage tree
(Cordyline australis)

Weeping Mapou
(Myrsine divaricata)

NZ Flax - Harekeke
(Phormium tenax)

NZ Iris
(Libertia ixiodes)

Silver tussock
(Poa cita)

Miniature toetoe
(Chionochloa flavicans)

NZ Iris
(Libertia grandiflora)

Grass / sedge
(Carex comans)

Edgars Rush / Wiwi
(Juncus edgariae)

Oioi
(Apodasmia similis)

Lomandra
(Lomanda Tanika)

Orange sedge
(Carex testacea)

Wind Grass
(Anemanthele lessoniana)

Toetoe
(Astroderia fulvida)

Groundcover coprosma
(Coprosma acerosa 'Hawera')

Red tussock
(Chionochloa rubra)

Broadleaf (Kapuka)
(Griselinia littoralis)

PLANT MIX 3 - BORDER PLANTING

Amber Carpet Rose
(Rose Flower Carpet Amber)

Sunset Carpet Rose
(Rose Flower Carpet Sunset)

Azalea 'Mrs Kint' (White)
(Coprosma virescens)

Yellow Daylily
(Hemerocallis lilioaspho-delus)

English Lavender
(*Lavandula angustifolia 'Hidcote'*)

Pink Carpet Rose
(Rose Flower Carpet Pink)

Tulip 'White Dream'
(Tulipa)

PLANT MIX 4 - LOW AMENITY PLANTING

SHRUBS, GRASSES, PERENNIALS AND GROUNDCOVERS

Emerald gem hebe
(Hebe 'Emerald Gem')

NZ daphne
(Pimelia prostrata)

'Midget'
(Pittosporum 'Midget')

Mingimingi
(Coprosma virescens)

Pohuehue
(Muehlenbeckia axillaris)

Groundcover coprosma
(Coprosma acerosa 'Hawera'*)*

NZ Iris
(Libertia ixiodes)

Silver tussock
(Poa cita)

Miniature toetoe
(Chionochloa flavicans)

NZ Iris
(Libertia grandiflora)

Grass / sedge
(Carex comans)

Red tussock
(Chionochloa rubra)

Phormium Sweet Mist
(Phormium tenax 'Sweet Mist')

Tasmanian Flax-Lily
(Dianella 'Little Rev')

NZ Iris
(Libertia peregrinans)

Lomandra
(Lomanda Tanika)

Orange sedge
(Carex testacea)

Scabweed
(Raoulia hookeri)

Broadleaf (Kapuka)
(*Griselinia littoralis*)

Toetoe
(Astroderia fulvida)

Wind Grass
(Anemanthele lessoniana)

Azalea 'Mrs Kint' (White)
(Coprosma virescens)

Yellow Daylily
(Hemerocallis lilioaspho-delus)

English Lavender
(*Lavandula angustifolia 'Hidcote'*)

Appendix 7

Detailed Site Investigation

Appendix 8

Compliance Assessment

Rule	Comment	Complies
3.8.2 Permitted Activities: Farming Activities[5]	Equine studs fall within the definition of Farming Activities. All facilities described in the proposal above are integral to a high quality equine stud. The total area of buildings associated with the equine stud will exceed 500m^2 and those buildings are therefore not permitted.	Yes
3.8.2 Permitted Activities: Intensive Farming[6]	The definition of intensive farming includes boarding of animals, but excludes buildings used for housing or sheltering animals that are giving birth or raising juvenile stock, where no individual animal is housed or sheltered for more than 3 months in any calendar year. The housing of stud stallions, yearlings and stock older than foals will fall within the definition of intensive farming.	Yes
3.8.2 Permitted Activities: Residential Activities	One existing residential unit is on site and will be retained for staff accommodation.	Yes
3.8.2 Permitted Activities: Earthworks	Earthworks will be required to establish the buildings on site.	Yes (but refer Rule 3.8.4)
3.8.4 Restricted Discretionary Activities: earthworks that exceed the permitted volumes specified in Site Standard 3.9.13.	Earthworks are likely to exceed 5,000m^3 over an area greater than 2,000m^2 per annum and will occur within 20m of a stream.	Restricted Discretionary
3.8.5 Discretionary Activities: 3.8.5 (i) Any other activity which is not listed as a Permitted, Restricted Discretionary, Non-Complying or Prohibited Activity.	>500m^2 of farm buildings will be established.	Discretionary

[5] means the use of land and buildings for the primary purpose of the production of vegetative matter and/or commercial livestock. Farming activity includes the packing, storage, and/or processing of the vegetative matter and/or commercial livestock produced on/in that land or on other land owned or managed by the same person(s). Buildings for this purpose are permitted up to an area of 500m² per site, where they meet all other rules. Farming activity excludes residential activity, home occupations, intensive livestock management, and forestry activity.
Commercial livestock means livestock bred, reared and/or kept on a property either primarily or partly for the purpose of commercial gain, but excludes domestic livestock.

[6] means the use of land and/or buildings for the production of commercial livestock, including where the regular feed source for such livestock is substantially provided other than from the site concerned, and includes: • the farming of pigs outdoors at a stocking rate exceeding 15 pigs per hectare. (Stocking rate in relation to pig farming, means the number of pigs(excluding progeny up to weaner stage) carried per hectare of land, where the area of land fenced, available and used for pig farming shall only include that area on which the pigs are regularly run.); • herd houses, feed pads, or any building providing shelter to stock where stock are confined within the building for any continuous period exceeding 2 weeks; • boarding of animals; • mushroom farming; • fish farming; • the disposal of effluent from any of the above, whether on the same site as the intensive livestock management activity or not. Intensive livestock management excludes: • buildings used for housing or sheltering animals that are giving birth or raising juvenile stock, where no individual animal is housed or sheltered for more than 3 months in any calendar year.

3.8.6 Non-complying activities The following activities shall be Non-Complying Activities, provided that they are not listed as a Prohibited Activity: a) Any Activity which does not comply with any one or more of the relevant Zone Standards.	The proposal will not comply with Zone Standard 3.10.7 Intensive Farming.	Non-complying
Rural Site Standards		
3.9.1 Residential Density	Workers accommodation shall only be provided in the Rural B and Rural C zones, on sites of greater than 10 hectares. *The site is greater than 10 hectares and will include some workers accommodation in the existing dwelling on site.*	Yes
3.9.2 Site coverage	Maximum percentage/area of the net area of any site covered by buildings and impervious surfaces shall be: Rural B and C 5% of net site area. *The total site coverage inclusive of buildings and impervious surfaces will be approximately 3.7800ha (0.5925m^2 of asphalt and approximately 31,857m^2 of buildings), which exceeds the 3.25ha permitted under this site standard.*	No
3.9.3 Height of buildings	Maximum height of any building shall be: • 10m in Rural A and B for buildings used other than for the purposes of undertaking a farming activity; • 20m in Rural A and B for buildings for the purposes of undertaking a farming activity; • 15m in Rural C for all buildings, including silos. *Maximum height of all buildings will be 12m, all buildings are associated with the farming activity. The existing dwelling is single story and considerably less than 10m in height.*	Yes
3.9.4 Setback from roads	a) The minimum setback of buildings from road boundaries shall be 10m; except that:	Yes

	• buildings less than 5m² in gross floor area may be located within the above setbacks from road boundaries; • for buildings used for retail sales the setback shall be 30m; • in relation to State Highway 1 and State Highway 77, any residential unit or additions or alterations to the same shall be set back 20m from the left edge of the nearest traffic lane. b) Notwithstanding the above, the following activities shall be setback 50 metres from road boundaries: • feedpads; • dairy/milking sheds; • buildings (over 100m² in area) designed and/or used for the housing and/or shelter of stock; or • buildings designed and/or used for the housing and/or shelter of livestock as part of any intensive farming activity. *All buildings will meet these setback requirements.*	
3.9.5 Setback from neighbours	Minimum setback of buildings from internal boundaries of any site held in separate ownership shall be: Residential units - 20m Buildings designed and/or used for the housing and/or shelter of livestock as part of any intensive farming activity Buildings (over 100m2 in area) designed and/or used for the housing and/or shelter of stock – 80m Buildings designed and/or used for the housing of any other animals. – 30m All other buildings greater than 5m² in gross floor area. – 3m *All buildings will comply with these setbacks.*	Yes
3.9.9 Flood risk	All new structures, buildings or extensions to existing buildings that are to be constructed on a site identified as being at risk from flooding, shall have a minimum floor height of 150mm above	Yes

	the level of the 1 in 200 year flood event, except for: • new buildings or extensions to buildings with a gross floor area up to, and including 60m²; or • any building with an unsealed or permeable floor. *The site is understood not to be subject to any notable flood hazard, according to the Canterbury Maps Ashburton Flood Hazard layer.*	
3.9.13 Earthworks	Earthworks in the Rural A and B zones (excluding dig and fill for drainage works), shall not exceed a maximum volume of 5000m³ over an area no greater than 2000m² on any one site per annum. *Approximately 37,360m³ of earthworks are proposed.*	No
3.9.14 Buildings	…no buildings shall be erected: • in any Area of Significant Nature Conservation Value as identified on the Planning Maps; • in or within 20m of any naturally-occurring wetland; and/or within 100m of any lake, or 20m of any river or stream; • above the Altitudinal Land Use Line shown on the Planning Maps (except within the Mt Hutt ski-field area); • in the Inland Mountain Outstanding Natural Landscape. *No buildings will be erected within 20m of a stream and will otherwise comply with this rule.*	Yes
Rural Zone Standards		
3.10.1 Residential density	Minimum net area for any one residential unit shall be: • 8ha Rural A • 50ha Rural B and Rural C	Yes

	One workers accommodation unit[7] will be provided on the site, which is 65ha.	
3.10.2 Setback of Residential Units from Intensive Farming Activities and similar activities	The minimum setback for new residential units from the following activities shall be 400m: • existing feedpads; • existing dairy/milking sheds; • existing buildings designed and/or used for the housing and/or shelter stock; • existing buildings designed and/or used for any intensive farming activity; and • existing areas used for farm-related effluent storage or disposal. Note: The standard does not apply to buildings on the same site. *There are no existing intensive farming activities near the site.*	Yes
3.10.3 Setback of Buildings from Residential Units	The following activities shall be setback at least 400m from existing residential units on a site held in a separate title: • feedpads; • dairy/milking sheds; • buildings (over 100m² in area) designed and/or used for the housing and/or shelter of stock; • buildings designed and/or used for any intensive farming activity; • areas used for farm-related effluent storage or disposal. Note: The standard does not apply to buildings on the same site. *The stables will be in excess of 400m from any existing residential unit on a separate site. The nearest residential unit to the stables will be approximately 630m to the south.*	Yes
3.10.7 Intensive Farming and Disposal or Storage of Effluent	There shall be no intensive farming and/or disposal or storage of any farm-related effluent: • within 1500m of Residential A, B and C Zones and/or • within 1200m of the Residential D Zone and/or • within 20 metres of any water body or an Area of Significant Nature Conservation Value. *The stables will be less than 1500m from a Residential C Zone (approximately 680m). Farm-related effluent will not be stored or disposed of on site. All stables will be more than 20m from a waterbody.*	No

[7] means a residential unit for the use of farm workers or family members, additional to the first residential unit on a site, provided they are to be constructed on a farming unit to provide accommodation for persons employed on that farm and that no further subdivision is involved. Workers accommodation shall be legally encumbered to ensure that they are not separately subdivided from the main farming unit.

3.10.9 Lighting	a) All fixed exterior lighting shall be directed away from adjacent properties, roads, and railways and angled below the horizontal. b) No lighting from any activity shall result in a greater than 3 lux spill (horizontal and vertical) of light onto any adjoining property within a Residential Zone, measured at any point more than 2m inside the boundary of the adjoining property. *The proposal will comply.*	Yes
Rule	**Comment**	**Complies**
14.7.4 Discretionary Activities - Utilities	Clause (e) of this standard specifies that any otherwise permitted utilities that are on land within the bed of any waterbody or within 20m of a stream will require resource consent as a discretionary activity. *Pipes for conveying sewer, water and stormwater will be established within 20m of waterways, though the pipes will be attached to the underside of the proposed bridges, not within the bed of any waterbody.*	Discretionary

See Integrated Transport Assessment for transport rule compliance.

Appendix 9

Landscape and Visual Assessment

279 STRANGES ROAD, LAKE HOOD – EQUINE CENTRE

SOUTHERN PARALLEL EQUINE CENTRE

Landscape and Visual Impact Assessment

Project No. 2023_146 | C

279 Stranges Road RESOURCE CONSENT LVIA

Project no: 2023_146
Document title: Landscape and Visual Impact Assessment

Revision: C
Date: 31 October 2023
Client name: Southern Parallel Equine Centre

Author: Dave Compton-Moen
File name: 2023_146 SPEC Stranges Road Equine Centre Proposal_LVIA_C

DOCUMENT HISTORY AND STATUS

REVISION	DATE	DESCRIPTION	BY	REVIEW	APPROVED
A	30/10/2023	LVIA for comment	DCM	KS	
B	31/10/2023	Final	DCM		
C	6/11/2023	Clarification of 'Acceptable'	DCM		

DCM URBAN DESIGN LIMITED

10/ 245 St Asaph Street

Christchurch 8011

1. INTRODUCTION AND PROPOSAL

DCM Urban has been commissioned by Southern Parallel Equine Centre to prepare a Landscape and Visual Impact Assessment for a proposed Equine Centre near Lake Hood, Ashburton District. The proposal seeks to create an equine centre which consists of buildings up to 12m in height (above finished floor level), and arena, horse related sports fields, grazing fields, horse jumps, and landscaping. The proposal, covering an approximate area of 65ha, is currently zoned Rural B under the Ashburton District Plan. The extent of the proposal is shown in the Master Plan, Revision G dated 31st October 2023, attached as Appendix 2 and in the aerial photo below.

Figure 1 - Location Map (NTS)

2. METHODOLOGY

See Appendix 1 for Methodology

2.1 STATUTORY DOCUMENTS

Relevant statutory documents in terms of Landscape Values and Visual Amenity are referred to below are the Resource Management Act 1991, and the Ashburton District Plan.

2.1.1 Resource Management Act 1991

Matters of national importance are included in Section 6, including 6(a):

> *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*

Other matters are included under Section 7:

> *"In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to-*

(c) The maintenance and enhancement of amenity values."

2.1.2 Ashburton District Plan

Under the Ashburton District Plan, the proposal site is zoned Rural B.

The proposal is not located in an Outstanding Natural Landscape (ONL). There are several policies in the Rural Objectives and Policies of the Ashburton District Plan which relate to Landscape Values and amenity which have been addressed in 3.3 below.

3. ASSESSMENT OF EFFECTS

3.1 WIDER EXISTING SITE CHARACTER

The receiving environment of the Lower Canterbury Plains is characterised by large open paddocks, with boundaries often delineated by well-established shelter belts of exotic species and rural dwellings surrounded by large trees. The relatively flat landforms flow from the base of the Southern Alps to the coast in an assortment of agricultural fields, criss-crossed with roadways and shelterbelts. The existing site is bound by Stranges Road to the west, Huntingdon Road to the north and Lake Hood to the east. The northeast of the site borders onto the edge of Lake Hood settlement with a typical rural character. Two existing drains run through the site. The wider site has relatively flat topography and has typical rural characteristics found within the Canterbury Plains including shelterbelts, auxiliary structures, and rural residential dwellings. Overall, the topographical attributes of the receiving environment are relatively low with no other defining features to note.

The existing land type of the Lower Canterbury Plains was acknowledged by Boffa Miskell in the Canterbury Regional Landscape Study Review (2010) as forming part of the L2 – Lower Plains Land Type. A landscape formed from low angle coalescing outwash fans and associated low terraces of the major rivers that slice through the plains, comprising Pleistocene glacial outwash gravels and minor inland dune belts.

Indigenous vegetation has been identified in the Canterbury Regional Landscape Study as being reduced to small, isolated, and scattered remnants because of the large-scale land use changes seen throughout the plains.

This has resulted in 0.5% of the plains supporting native vegetation. This is seen in the existing vegetation patterns found on site, comprising largely of exotic species, which have been used for their ability to fulfil a role as fast growing shelterbelts.

In terms of sensory qualities, the flat open geometric fields are back dropped by the Southern Alps to the west. Views are possible intermittently, being screened by existing development and shelterbelts. The infrastructure and shelter belts, though disrupting the continual views, have become integral to the rural aesthetic and identity. The natural characteristic of the environment is considered to be modified, with a rural character as opposed to a natural character. The land surrounding the proposed site mirrors the overall character of the wider Canterbury region.

3.2 LOCAL EXISTING SITE CHARACTER

Vegetation types in the receiving environment are predominantly exotic species, with a very small number of native species located near drains, Lake Hood and paddock boundaries. Vegetation is used predominantly for shelter belts running along the paddock boundaries and includes species such as Pinus radiata, Cupressus macrocarpa, poplar, and Eucalyptus. The shelter belts primarily located to delineate property boundaries, and along small parts of the roads noting that the road frontage along both sides of Stranges Road is clear of any vegetation. The site is open grass fields and has two drains running across the site. This is typical of the rural setting surrounding the site. Overall, the vegetation cover in the area has a low sensitivity to change, given the high level of fast growing introduced exotic species.

In terms of built form, dwellings and farm structures are common throughout the area. There is an existing farmhouse on the site which will be retained. The scale, character, form, and materiality of these structures vary throughout the receiving environment. There are a number of existing dwellings adjacent to the proposal along Huntingdon Road. Dwellings are of typical rural residential character, having irregular bulk and location which are often supported by additional infrastructure and are separated by large fields and exotic vegetation. The proposal site is directly adjacent to the existing Lake Hood settlement which is a mix of residential C development (suburban) and a small commercial area. Buildings in the Lake Hood settlement are typically of a high visual quality and there is a high level of stewardship. Most gardens are well-landscaped.

Overall, the receiving environment has a rural, semi-open character on the outskirts of a small suburban development with some areas exhibiting a high level of compartmentalisation. The existing environment has various structures including dwellings, auxiliary structures, power lines and exotic vegetation clustered throughout the landscape, typical of rural landscapes within Canterbury.

NATURAL CHARACTER

There are two drains which run through the proposal site but are of relatively low value presently. The drains are typically open with minimal vegetation or weed species present. Large portions of the waterways are open with no shade. The waterways have soil banks with a small degree of modification noted but in general the channels are somewhat naturalised with soft, as opposed, to hard edges visible. No timber or concrete structures were noted. Some localised signs of erosion were visible, highlighting natural processes, but not to a degree where they influenced the character of the waterways.

Figure 2 – One of the two drains in the proposal site. No native species of note were identified but weed species were, noting the willow seedlings starting to establish on the water's edge.

No indigenous species of note were identified along the drains. There is the potential for the waterways to become native corridors through the block but presently the waterways are considered to have a low sensitivity to change.

3.3 EFFECTS ON LANDSCAPE CHARACTER

Landscape character is the combination and composition of biophysical elements such as topography, vegetation, built form and sensory qualities perceived by humans. Landscape character is also spiritual, cultural, and social associations.

The character of the receiving environment is open due to the use of the site for crop or grazing purposes. With the development the character will become more enclosed due to landscape planting but will still retain a rural character. The proposed buildings are of a scale and form which is consistent with rural developments on a large scale. The potential for 12m high buildings is not considered to have an effect on the character of the wider area as they are largely internalised, and their form is consistent with farm and utility sheds in rural areas, albeit somewhat larger in accumulated scale.

A single vehicle access way is proposed onto Stranges Road, designed have a 'rural' feel and is not considered different from many entranceways into rural properties. Any proposed signage would be designed to met District Plan standards for the Rural B zone. Extensive planting is proposed along the northern and western boundaries of the site while the existing poplar shelter belts on the boundary bordering Lake Hood are to be retained. The planting on the road boundary is designed to soften views of the proposed buildings and carpark areas while retaining a high level of amenity. The design is considered consistent with the surrounding area in that a high level of stewardship and visual coherence is anticipated.

EFFECTS ON NATURAL CHARACTER

The natural character of the Site is highly modified, having been cleared for agricultural use but retains some natural features being the two drains. The applicant is understood to intend to enhance and restore these waterways as a separate phase of development, as detailed plans for their restoration are not yet available, therefore no works are proposed to the stream banks except where crossing points are located. Riparian planting strips will be proposed along the waterway corridors (native planting and weed management) to create ecological corridors through the site. Where crossing points are proposed, care will be taken to ensure any earthworks within the riparian margin are minimised. The waterways current conditions reflect the existing agricultural practices with the lack of native riparian vegetation present, an aspect which will be improved with the proposed Master Plan. Existing amenity of the natural landscape is to be enhanced and retained through the planting.

OVERALL LANDSCAPE CHARACTER EFFECTS

Overall, the character of the area will shift from open to a more compartmentalised character, retaining a strong rural character resulting in a Low magnitude of change (Less than Minor Effects).

3.4 EFFECTS ON LANDSCAPE VALUES

ASHBURTON DISTRICT PLAN – RURAL ZONES

The proposed application site is zoned Rural B. The Ashburton District Plan has identified Outstanding Natural Landscapes and Features. The site is not located within a Landscape of value. The Objectives and Policies which are considered relevant to this Resource Consent from a Landscape perspective follow:

Objective 3.2 Biodiversity

Objective 3.4 Natural Character

Objective 3.5 Rural Character and Amenity

As stated above, the Master Plan has carefully considered the importance of the existing rural character in the receiving environment. Biodiversity of the site will be improved through the planting of riparian species along the edges of waterways/drains within the site, noting that the current state of the drains is in a relatively poor condition. No removal of indigenous species is proposed. The proposal is sufficiently removed from Lake Hood to avoid any effects on this waterbody from a Landscape or Visual Amenity perspective.

The outlook for existing nearby Residential C Zones will remain one that is open and rural in character. The proposal retains the character and amenity values of the receiving rural environment and retains a clear distinction between urban and rural areas with a standard of amenity which is consistent with what would be anticipated in a rural level, noting that a high level of stewardship is proposed. The proposal is considered a rural activity. The building coverage proposed is low in the context of the overall site, though higher than permitted in the District Plan, and the provision of open space is high, retaining an open, rural character with a degree of compartmentalisation occurring due to landscape planting. The landscape treatment of the site is considered positive.

3.5 EFFECTS ON VISUAL AMENITY

The visual context of the receiving environment is considered to be a 1.5km offset from the edge of the proposed development. This distance has been used due to the receiving environment's flat topography, resulting in views from further away either not being possible or being indiscernible at distance. A series of key viewpoints were selected to show a representative sample of the likely visual effects which could result from the proposal. Viewpoints are generally located on public land, and where possible located as close as possible to existing or proposed residential dwellings. In assessing the potential effect of a proposal, the quality and openness of the view is considered. In assessing the potential effects on visually sensitive receptors, the key viewpoints outlined above have been used as a reference point where it is considered that the effects are likely to be similar to the viewpoint and for a group of viewers. The viewpoint is a representative view, as close as possible to the view likely to be experienced from a private residence or property but obtained from a public location.

The following summary outlines the potential visual effects Visually Sensitive Receptor might receive. The effects take into account the likely sensitivity of the receptor (based on type), combined with the likely magnitude of effects (a combination of distance from the proposal and degree of change) to determine what the likely residual effects from the proposal will be.

Effects on nearby residents

The bulk and density of the proposal is consistent with the character of a rural activity, albeit with an equine focus. With the inclusion of the proposed mitigation measures outlined below a high level of amenity can be retained, noting there will be a change but the effects are not considered adverse. Given the scale, form and design of the proposal, most residents will, due to their separation from the proposed development by distance, existing roads and fields, experience a Very Low level of change (Less than Minor).

Overall Effects experienced by residents living nearby on Stranges Road and Huntingdon Road will be Less than Minor.

Effects on road users

Views of the proposal are generally semi-open or open from the surrounding roads. Given the scale and character of the proposed development, when compared with the existing rural character, and combined with the lower sensitivity to change, adverse effects for road users are likely to be less than minor. For the sections along either Stranges or Huntingdon Road, where potential adverse effects could result from the long stretch of development, vehicle access is limited, and building placement is designed to be well setback from roads and positioned behind planting to retain a rural, visually coherent, character.

Effects on Lake and users

For those viewing from public environments like Lake Hood, the proposal would result in very little change in character, maintaining a rural character and amenity. Visual amenity is retained by the placement of fields along the edge and the placement of the main buildings internally within the site. The proposed poplars along this boundary are to be retained, noting the majority of these trees appear to be outside of the property boundary.

4. MITIGATION MEASURES

The following mitigation measures are suggested to either avoid, remedy, or mitigate any potential effects on Landscape Character, Landscape Values and/or Visual Amenity from the proposal:

MM1	Landscape Treatment is designed to retain a rural character along Huntingdon and Stranges Road as shown on the Master Plan. The landscape treatment is proposed as a 10m wide strip of native species.
MM2	Planting of the waterway banks with appropriate native riparian species. Restoration of the waterway will be guided by an Ecologist and subject to a separate resource consent appliction.

5. C O N C L U S I O N S

In terms of landscape character (including natural character) and values of the area, subject to the mitigation measures proposed, the proposal will result in a Very Low magnitude of change (Less than Minor Effects) on the existing rural landscape character and values. The existing character of the site is already highly modified and with the proposed mitigation measures both protecting and enhancing existing waterways, the proposal will retain existing natural features.

In terms of visual amenity, the adjacent rural properties will experience a Very Low magnitude of change in the openness of views across the space. Nearby residential properties, current and future, overlooking the site have a mix of open, partial, and screened views of future development. The changes in the landscape experienced by these residents are considered Very Low (Less than Minor effects) given the nature of the proposal is rural, albeit with a larger scale of rural building than is found in the immediate area at present.

APPENDIX 1: LANDSCAPE AND VISUAL IMPACT ASSESSMENT METHODOLOGY

The landscape and visual impact assessment considers the likely effects of the proposal in a holistic sense. There are three components to the assessment:

1. Identification of the receiving environment and a description of the existing landscape character, including natural character;
2. The landscape assessment is an assessment of the proposal against the existing landscape values;
3. The visual impact assessment is primarily concerned with the effects of the proposal on visual amenity and people, evaluated against the character and quality of the existing visual catchment.

The methodology is based on the Te Tangi a Te Manu - Aotearoa New Zealand Landscape Assessment Guides (May 2021)

1.0 LANDSCAPE ASSESSMENT

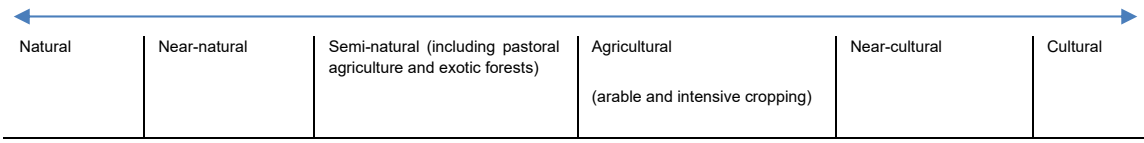
1.1 Landscape Description and Characterisation

Landscape attributes fall into 3 broad categories: biophysical features, patterns and processes; sensory qualities; and spiritual, cultural and social associations, including both activities and meanings.

- Biophysical features, patterns and processes may be natural and/or cultural in origin and range from the geology and landform that shape a landscape to the physical artefacts such as roads that mark human settlement and livelihood.
- Sensory qualities are landscape phenomena as directly perceived and experienced by humans, such as the view of a scenic landscape, or the distinctive smell and sound of the foreshore.
- Associated meanings are spiritual, cultural, or social associations with particular landscape elements, features, or areas, such as tupuna awa and waahi tapu, and the tikanga appropriate to them, or sites of historic events or heritage. Associative activities are patterns of social activity that occur in particular parts of a landscape, for example, popular walking routes or fishing spots. Associative meanings and activities engender a sense of attachment and belonging.

Describing the landscape character is a process of interpreting the composite and cumulative character of a landscape, i.e. how attributes come together to create a landscape that can be distinguished from other landscapes. International best practice in characterisation has two dimensions of classification: the identification of distinctive types of landscape based on their distinctive patterns of natural and cultural features, processes and influences; and their geographical delineation. The characterisation of a landscape is not to rank or rate a landscape, as all landscapes have character, but determine what landscape attributes combine to give an area its identity, and importantly to determine an area's sensitivity, resilience or capacity for change.

Table 1: Continuum of Natural Character



Natural	Near-natural	Semi-natural (including pastoral agriculture and exotic forests)	Agricultural (arable and intensive cropping)	Near-cultural	Cultural

Very high-pristine	High	Moderate High	Moderate	Moderate-low	Low	Very Low-nil

1.2 Landscape Values

Following the descriptive phase of landscape assessment, an evaluative phase is undertaken whereby values or significance is ascribed to the landscape.

Where Planning Documents have identified Outstanding Natural Features or Landscapes, the objectives, policies and rules contained within the plan are used as the basis for landscape significance or value, and it is these values which the proposal is assessed against. Where there is some uncertainty of the landscape value, such as when the District Plan has a broad description of an Outstanding Natural Landscape (ONL), but it is not site specific, or the site neighbours an ONL, it is often necessary to complete an assessment against the values of the District Plan for completeness sake. Most district plans have policies or objectives which are relevant to Landscape and Natural Character if proposed in a rural or sensitive environment.

An accepted approach, where the landscape value of the site is not identified in the District Plan under Section 6(b) of the RMA, is to use criteria identified in Wakatipu Environmental Society Inc. & Ors v QLDC [2000] NZRMA 59 (generally referred to as the Amended Pigeon Bay criteria). The assessment criteria have been grouped into 3 broad categories or 'landscape attributes' which are to be considered:

1. Biophysical elements, patterns and processes;
2. Associative meaning and values including spiritual, cultural or social associations; and
3. Sensory or perceptual qualities.

2.0 VISUAL ASSESSMENT METHODOLOGY

In response to section 7(c) of the RMA, an evaluation is undertaken to define and describe visual amenity values. As with aesthetic values, with which amenity values share considerable overlap, this evaluation was professionally-based using current and accepted good practice. Amenity values are defined in the Act as *"those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes."* The visual assessment looks at the sensitivity of receptors to changes in their visual amenity through the analysis of selected representative viewpoints and wider visibility analysis. It identifies the potential sources for visual effect resulting from the Proposal and describes the existing character of the area in terms of openness, prominence, compatibility of the project with the existing visual context, viewing distances and the potential for obstruction of views.[1]

The visual impact assessment involves the following procedures:

- Identification of key viewpoints: A selection of key viewpoints is identified and verified for selection during the site visit. The viewpoints are considered representative of the various viewing audiences within the

[1] Reference: NZILA Education Foundation - Best Practice Guide – Landscape Assessment and Sustainable Management/ Best Practice Guide – Visual Simulations (2.11.2010)

receiving catchment, being taken from public locations where views of the proposal were possible, some of which would be very similar to views from nearby houses. The identification of the visual catchment is prepared as a desktop study in the first instance using Council GIS for aerials and contours. This information is then ground-truthed to determine the key viewpoints and potential audience. Depending on the complexity of the project a 'viewshed' may be prepared which highlights the 'Theoretical Zone of Visual Influence' (TZVI) from where a proposal will theoretically be visible from. It is theoretical as the mapping does not take into account existing structures or vegetation so is conservative in its results.

- Assessment of the degree of sensitivity of receptors to changes in visual amenity resulting from the proposal: Factors affecting the sensitivity of receptors for evaluation of visual effects include the value and quality of existing views, the type of receiver, duration or frequency of view, distance from the proposal and the degree of visibility. For example, those who view the change from their homes may be considered highly sensitive. The attractiveness or otherwise of the outlook from their home will have a significant effect on their perception of the quality and acceptability of their home environment and their general quality of life. Those who view the change from their workplace may be considered to be only moderately sensitive as the attractiveness or otherwise of the outlook will have a less important, although still material, effect on their perception of their quality of life. The degree to which this applies also depends on factors such as whether the workplace is industrial, retail or commercial. Those who view the change whilst taking part in an outdoor leisure activity may display varying sensitivity depending on the type of leisure activity and a greater sensitivity to those commuting. For example, walkers or horse riders in open country on a long-distance trip may be considered to be highly sensitive to change while other walkers may not be so focused on the surrounding landscape. Those who view the change whilst travelling on a public thoroughfare will also display varying sensitivity depending on the speed and direction of travel and whether the view is continuous or occasionally glimpsed.
- Identification of potential mitigation measures: These may take the form of revisions/refinements to the engineering and architectural design to minimise potential effects, and/or the implementation of landscape design measures (e.g. screen tree planting, colour design of hard landscape features etc.) to alleviate adverse visual effects and generate potentially beneficial long-term effects.
- Prediction and identification of the effects during operation without mitigation and the residual effects after the implementation of the mitigation measures.

3.0 EFFECTS METHODOLOGY

Analysis of the existing landscape and visual environment is focused upon understanding the functioning of how an environment is likely to respond to external change (the proposal). In terms of the receiving environment, this is the environment upon which a proposed activity might have effects. It is permissible (and often desirable or necessary) to consider the future state of the environment upon which effects will occur, including:

- the future state of the environment as it might be modified by the utilisation of rights to carry out permitted activities
- the environment as it might be modified by implementing resource consents that have been granted at the time a particular application is considered, where it appears likely that those resource consents will be implemented.

The assessment evaluates the resilience of the existing character, values or views and determines their capacity to absorb change. The proposal is assessed in its 'unmitigated' form and then in its mitigated form to determine the likely residual effects. The analysis identifies opportunities, risks, threats, costs and benefits arising from the potential change.

Assessing the magnitude of change (from the proposal) is based on the Aotearoa New Zealand Landscape Assessment Guidelines (May 2021)[2] with a seven-point scale, being:

VERY LOW / LOW / MODERATE-LOW / MODERATE / MODERATE-HIGH / HIGH / VERY HIGH

The guidelines provide the following table which is a useful comparison for analysis of the magnitude of change (NZILA) with the likely effects (RMA).

The Aotearoa New Zealand Landscape Guidelines however do not quantify 'what' the Magnitude of Change is. Below is a guide to how we have assessed the Magnitude of Change for this proposal:

[2] https://nzila.co.nz/media/uploads/2021_07/210505_Te_Tangi_a_te_Manu_Revised_Final_Draft_as_approved_5_May_2021.pdf

(a) Very Low – the change is negligible or are not readily discernible. For example the proposal may not be visible to the receptor or the change in character is negligible when compared to the permitted baseline and/or receiving environment.

(b) Low – the change is discernible but do not adversely affect the viewer experience. For example it may be possible for the receptor to see the proposal but the effects are not considered adverse due to the quality of the current view or the oblique nature of the view.

(c) Moderate – Low – the change is discernible and start to adversely affect viewer experience.

(d) Moderate – the change is discernible and have an effect on the quality of the view but with the main 'view qualities' still intact.

(e) Moderate-High – the change is discernible and changes the quality of the existing view, potentially with the loss of views.

(f) High – the change is discernible and there is a loss of views or the changes greatly affect the quality of the view so that the character of existing view is fundamentally changed.

(g) Very High – the change is discernible and there is a total loss of views or the changes significantly affect the quality of the view so that the character of existing view is fundamentally changed.

In determining the extent of adverse effects. taking into account the sensitivity of the landscape or receptor combined with the Magnitude of Change proposed, the level of effects is along a continuum to ensure that each effect has been considered consistently and in turn cumulatively. This continuum may include the following effects (based on the descriptions provided on the Quality Planning website – Determining the Extent of Adverse Effects[3]):

- **Indiscernible Effects** No effects at all or are too small to register.
- **Less than Minor Adverse Effects** Adverse effects that are discernible day-to-day effects, but too small to adversely affect other persons.
- **Minor Adverse Effects** Adverse effects that are noticeable but will not cause any significant adverse impacts.
- **More than Minor Adverse Effects** Adverse effects that are noticeable that may cause an adverse impact but could be potentially mitigated or remedied.
- **Significant Adverse Effects that could be remedied or mitigated** An effect that is noticeable and will have a serious adverse impact on the environment but could potentially be mitigated or remedied.
- **Unacceptable Adverse Effects** Extensive adverse effects that cannot be avoided, remedied or mitigated.

[3] https://www.qualityplanning.org.nz/node/837

4.0 PHOTOGRAPHY METHODOLOGY

All photos are taken using a SONY ALPHA A7 II digital camera with a focal length of 50mm. No zoom was used. In the case of stitched photos used as the viewpoint images, a series of 4 portrait photos were taken from the same position to create a panorama. The photos were stitched together automatically in Adobe Photoshop to create the panorama presented in the figures.

Reference: NZILA Education Foundation - Best Practice Guide – Landscape Assessment and Sustainable Management/ Best Practice Guide – Visual Simulations (2.11.10)

5.0 STATUTORY DOCUMENTS

Relevant statutory documents in terms of Landscape Values and Visual Amenity are referred to in the LVIA.

Appendix 10

Ecology Assessments

Southern Parallel Equine Centre; Assessment of effects

Aquatic ecology, and assessment of bridging works

Prepared for:

Southern Parallel Campus Limited

AEL Report No. 208

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Final

November 2023

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Contents

1 Executive Summary

Southern Parallel Campus Limited propose to develop the Southern Parallel Equine Centre, an Equine Stud and Training Centre in mid-Canterbury, south of Lake Hood and the Ashburton River.

AEL was engaged to undertake a limited-scope investigation of the aquatic ecology in the area to consider the assessment of environmental effects (AEE) of early works to establish bridges and any associated haul roads. In addition, a CRPS assessment was undertaken on the instream and riparian flora and fauna.

In reaches with near-permanent flow, we recorded sedimented habitats with a sparse flora of introduced water plants with no native representatives. In the ephemeral northern reach, neither water nor aquatic plants were recorded. The macroinvertebrate fauna was reflective of a habitat in poor stream health. Fishing near the proposed bridge sites yielded a low catch of two fish (a European perch, and an upland bully), after 25 minutes of electric fishing. Neither of these species has a conservation status (i.e., the former introduced, the latter an unthreatened native). The lack of migratory fish, eels particularly, suggests that the waterways may have poor sea access, compromising fish biodiversity regardless of waterway quality.

A total of 13 bird species were observed, of which 4 species were native and another 3 endemics. Notably, a single endemic South Island pied oystercatcher (At Risk, declining), and an endemic black fronted tern observed in the area but not nesting (Endangered). Several endemic paradise shelducks were also observed in the area.

Several recommendations are made in respect to mitigating ecological effects, including seasonality of construction work away from the bird breeding season, sedimentation, and wind-blown dust. Many of the effects will be considered and mitigated with the respective dust management and sediment/ erosion control plans.

2 Introduction

AEL (Aquatic Ecology Limited) was engaged by Southern Parallel Campus Limited (SPCL) to prepare a report on aspects of the ecology in a block of rural land to the west of Lake Hood, mid-Canterbury (App. I, Fig. i). The report is to supplement a resource consent application for land use change from cultivated rural land, currently as cropping, to one of an equine stud involving open grassland and associated activities (vet clinic and stables), and car parking. It is proposed that a significant proportion of the land will remain as pervious grassland and landscaped waterways.

This short report is to consider an Assessment of Effects in respect to haul road and bridging construction for foot traffic and vehicles.

3 Proposed Bridgeworks

Firstly, it may be necessary for haul roads, suitable for trunks and mobile cranes/hiabs, to be constructed over flat land to each of the proposed bridge sites. Early works will be ring-fenced with a filter fence as per ECan's Sediment and Erosion Control procedures (Environment Canterbury 2007) and ECan's website (Sediment and Erosion and Sediment Control toolbox (www.esccanterbury.co.nz).

It is proposed to use a bridging system termed the Hynds Landspan Bridge System, which is under design review (App. II, Fig. i.). This design is based on using pre-fabricated components to minimise ground disturbance and minimising the requirement of toxic wet-pour concrete near the waterways. All existing culverts will be removed by crane. Piles for the bridges will be installed at least 2 m from waterway edges. There will be no changes to existing waterway profiles during bridge installations (Victor Mthamo, Reeftide, pers. comm.). A total of 5 bridges are proposed in the development area (App. I, Fig. i). Bridges 1, 3, and 5 are proposed to be single land vehicle crossings, 4.2 m wide. Bridge 4 will be a two-lane land vehicle crossing, 8.4 m wide. Bridge 2 will be a footbridge for pedestrian and horse traffic only, and 2.1 m wide. One culvert will be relocated to the new entranceway.

4 Objectives

To provide an assessment of effects of bridge placements as part of the early development of the Southern Parallel Equine Centre.

5 Methods

5.1 Field methods

5.1.1 Macroinvertebrates

A sample of the macroinvertebrate community was collected from Lagmhor Creek using a standard 0.3 m wide, 500-micron kicknet, using standard macroinvertebrate sampling protocols outlined by Stark *et al.* (2001). The location is depicted in App. I, Fig. i. Due to the lack of sampleable hard substrate, soft substrate sampling (protocol C2) was used. This involved japing along the macrophytes with the kicknet for 1 m, then sweeping the kicknet through the disturbed section twice. This process was repeated 10 times to create a composite sample (total sample area = 0.3 m x 1 m x 10 m = 3 m^2). The sample was field-preserved in iso-propyl alcohol and transported to the Christchurch laboratory for identification using the standard identification keys (Chapman *et al.* 2011; Winterbourn 1973; Winterbourn *et al.* 2006). The sample was analysed, using the 'first 100' method, in which the first 100 macroinvertebrates are identified and counted, followed by a scan of the remaining sample for any rare taxa.

5.1.2 Electric fishing at proposed bridge sites

To assess the fish community in the vicinity of the proposed bridge installations, electric fishing was conducted, under AEL's electric fishing permits (MPI Permit 749, DOC 70754-FAU and under authority from NCFGC). Four reaches along Lagmhor Creek, one reach in Tributary, and one reach in Roadside Drain, were fished on 24/10/2023 using a Kainga EFM300 electric fishing machine (locations App. I, Fig. i). Electric fishing serves to briefly (approx. 3 seconds) render fish unconscious to facilitate their capture in nets for identification. The machine incorporates a timer, allowing the effective fishing time to be recorded. The total sample time (i.e., the total time that the machine was actively electrifying the water) for these reaches was 27 minutes, at an operating voltage of 100-200 V. D.C. Overall conditions for fish capture using electric fishing were adequate, with high water conductivity and acceptable water clarity. Captured fish were anaesthetised, identified, measured, and upon recovery from anaesthesia, released back into their resident habitats.

5.1.3 Bird Survey Methods

On the 24/10/2023, conditions were suitable for the bird survey, with fine weather, with only light wind and no rain.

Along the Lagmhor Creek Tributary, the nesting environment (i.e., trees and ground) was surveyed for the presence of nests, eggs, and nesting birds. Every prospective nest site was examined.

The remaining areas of interest were surveyed using the Line Transect sampling technique (Gregory *et al.* 2004). This method involves the observer travelling along a predetermined line and recording the number of birds, nests of other objects of relevance (footprints, burrows, or droppings). Counting all birds and relevant objects along the line gives a good indication of population abundance. There were 5 transects (~1.81km) surveyed on the 24/10/23, undertaken by two observers. All birds and survey times were recorded for each transect.

6 Results

6.1.1 Macroinvertebrates near bridge sites

The macroinvertebrate community index (MCI) estimates health by using the macroinvertebrate community. The invertebrate sample collected from Lagmhor Creek scored an MCI value of 71 which is indicative of “poor” water and habitat quality. The dominant macroinvertebrate taxa was Ostracoda (seed shrimp). Ostracods have an MCI of 1.9 in soft substrate, indicating that it has a high tolerance for contaminated aquatic habitats.

The macroinvertebrate taxa list in presented in App. III. No rare taxa were identified.

6.1.2 Fish near proposed bridge sites

Following extensive fishing effort, a total of two fish species were identified within the property boundary at 249 Stranges Road. These were the upland bully (*Gobiomorphus breviceps*) and redfin perch (*Perca fluviatilis*). The upland bully is native to New Zealand, and has a conservation status of “Not Threatened”. Upland bullies were considered rare in Lagmhor Creek, but highly abundant in Roadside Drain. The redfin perch is introduced, and therefore does not have a conservation status in New Zealand. A single perch was identified during the survey, a juvenile (75 mm) caught in Lagmhor Creek, downstream of the confluence with the tributary. The majority of the tributary was dry at the time of survey, with a short reach of ponded backwater near the Lagmhor Creek confluence. No fish were caught or observed in this ponded backwater. It was notable that no sea-migratory fish were caught, especially eels.

Table 1. Results of fish survey, 24/10/2023.

Scientific name	Common name	Lagmhor Creek	Roadside Drain	Total
Upland bully	*Gobiomorphus breviceps*	1	21	22
Redfin perch	*Perca fluviatilis*	1		1
Total		**2**	**21**	**23**

6.1.3 Avifauna

During an extensive survey effort, ~76 birds were observed, and 13 bird species were identified. Six of the identified species were introduced birds. The most abundant species was the Welcome Swallow, making up 39.5% of the recorded birds. Of the observed birds, only 15.8% were endemic. No nesting birds were found.

One South Island Pied Oystercatcher was found. This species has a conservation status of At Risk: Declining (Robertson *et al.* 2016). A small group of Black-Fronted Tern were observed, which has a conservation status of Endangered. These birds are likely to have travelled from the Ashburton River, which is only 1.3km away. Several endemic paradise shelduck, were also observed.

There were 4 native species observed, all of which do not have a significant conservation status. The species found were pukeko, spur-winged plover, grey heron, and the Australasian harrier.

Table 2. Results of bird survey in area of proposed land use change

Scientific name	Common name	Origin	Approximate frequency	Abundance (rare, common, abundant, very abundant)	Habitat/Notes
Passer domesticus	House Sparrow	Exotic	6	Common	Exotic trees and in flight
Gymnorhina tibicen	Australian Magpie	Exotic	5	Rare	In trees and pasture
Porphyrio melanotus	Pukeko	Native	7	Common	In trees and pasture
Turdus merula	Common Blackbird	Exotic	3	Rare	In trees and pasture
Tadorna variegata	Paradise Shelduck	Endemic	5	Rare	Sitting in pasture
Anas platyrhynchos	Mallard	Exotic	9	Common	Sitting in pasture
Turdus philomelos	Song Thrush	Exotic	4	Rare	In flight, pasture and trees
Sturnus vulgaris	Common Starling	Exotic	26	Abundant	Large group
Vanellus miles	Spur-Winged Plover	Native	2	Rare	No nest
Circus approximans	Australasian Harrier	Native	1	Rare	Across Stranges Rd
Chlidonias albostriatus	Black-Fronted Tern	Endemic	6	Common	Flying, feeding
Haematopus finschi	South Island Pied Oystercatcher	Endemic	1	Rare	Single Bird, no nest
Ardea cinerea	Grey Heron	Native	1	Rare	Flying near boundary

7 Assessment of Environmental Effects - bridgeworks

7.1 Descriptions of existing environment

7.1.1 Seasonally intermittent reach (Bridge 1 – Bridge 3)

At the time of survey, upper Lagmhor Creek (upstream of the confluence with the tributary) was a flowing waterway (App. IV, Figs. i, ii). It entered the property across the west boundary, after flowing through a culvert under Stranges Road. The reach was linear, with a consistent wetted width and riparian buffer width. Surface water in this reach was previously observed to be seasonally intermittent (Catherine Stuart, pers. comms.), and therefore may dry during warmer months. This was consistent with the physical properties of this reach at the time of survey. Substrate in this reach consisted of soft sediment, with a high clay concentration. No macrophyte species were observed upstream of the tributary confluence. Riparian vegetation was a combination of mature gorse (*Ulex europaeus*), broad-leaf dock (*Rumex obtusifolius*), creeping buttercup (*Ranunculus repens*) and exotic pasture grass species. The waterway was fenced on both sides to exclude stock, with a riparian buffer width of approximately 2 m on each bank. Numerous small culverts were present along the upper Lagmhor Creek, for the existing pivot sprayer to cross.

The dry tributary of Lagmhor Creek and the northern paddock were surveyed for birds. Endemic and native birds such as paradise shelduck, pukeko and Australian Harrier were observed, along with exotic birds such as the blackbird, starling, and mallards. No birds were nesting in the riparian vegetation or in the adjacent paddock.

One fish, an upland bully individual, was caught at the downstream end of this reach, in the vicinity of Bridge 3. No other fish were caught or observed in this waterway, despite extensive fishing effort in the vicinity of Bridges 1 and 3. The low fish abundance and biodiversity may be due to the seasonally intermittent nature of this reach. Upper Lagmhor Creek did not provide fish cover or suitable breeding habitat for upland bullies, or any other native or introduced fish species.

7.1.2 Roadside Water Race (Culvert 1)

The Roadside Water Race had flowing surface water at the time of survey (App. IV, Fig. vi). The water race was linear, with a combination of gravel and soft sediment substrate. Surface water depths varied between 5-20cm. Hydraulic habitat consisted of a mixture of run and riffle reaches. This waterway was piped under the Lagmhor Creek bed *via* a siphon pipe, and is unconnected to the flow in Lagmhor Creek. The true left (east) bank was vegetated with exotic pasture grasses, likely grazed when stock was present. This bank did not exhibit any riparian fencing, buffer strips or mature vegetation. The true right (west) bank, near the road, was fenced within approximately 30 cm of the water margin. This bank was considered roadside reserve, and was void of all riparian vegetation. vegetation may have been sprayed with herbicide recently. The roadside reserve consisted of mown grass, with bare bank within approximately 1 m of the waterway. The true right bank was actively eroding due to a lack of vegetative cover and was vertical or undercut in some areas.

Birds that were observed in the vicinity of the proposed relocated culvert site was a pukeko, welcome swallow, song thrush and paradise shelduck. No signs of nesting were observed.

One fish species, the upland bully, was abundant in this waterway. A total of 21 individuals, ranging in length from 39-75 mm, were caught from two minutes of active electric fishing immediately downstream of the siphon culvert under Lagmhor Creek. The upland bully is abundant throughout New Zealand. This species reproduces in cobble and gravel habitats, and is therefore likely reproducing in the Roadside Drain. Their abundance in this waterway indicates perennial surface water flow.

7.1.3 Ephemeral reach (Bridges 4 - 5)

The ephemeral reach (Tributary in App. I, Fig. i) was a dry swale at the time of survey (App. IV, Figs. iii-v). The swale did not have any permanent or seasonally intermittent source of surface water, and likely only flowed during periods of rainfall. A short (c. 30 m) reach of standing backwater was observed at the downstream end, near the confluence with Lagmhor Creek. Firm sediment substrate was recorded in the backwater reach, along with terrestrial plant species such as nightshade (Clarkson *et al.* 2021). North of the backwater, the dry swale was dominated by grazed pasture grass, with stands of mature native and exotic plant species. The only native vegetation species observed in the swale was NZ flax (*Phormium tenax*). Mature exotic vegetation was limited to blackberry (*Rubus fruticosus*), willow (*Salix* sp.), and poplar (*Populus* sp.). No wetland vegetation was recorded upstream of the backwater reach. There was no riparian fencing present on either side of the swale. Evidence of prior sheep grazing within the swale was prominent.

Lagmhor Creek and the southern paddock were surveyed for birds. Endemic and native birds such as black-fronted tern, South Island oystercatcher and spur-winged plover were observed, along with exotic birds such as the welcome swallow, magpie, and starling. No nests, eggs or nesting birds were observed in the riparian vegetation or in the adjacent paddock. Most of the above species were observed on the adjacent paddock and had flown to the survey area to feed.

Despite significant fishing effort, no fish were caught or observed in the short reach of standing water near the Lagmhor Creek confluence. This, combined with the observed firm substrate, indicates this area may be ephemeral and dry during summer.

7.1.4 Lower Lagmhor Creek

The lower section of Lagmhor Creek, downstream of the tributary confluence, was a natural meandering channel. Substrate in this section was dominated by soft sediment, with some short cobble reaches observed. Waterway hydraulics consisted of homogenous run habitat. Macrophytic growth was present within the wetted margin in this section, with species including, but not limited to, curly pondweed (*Potamogeton crispus*), watercress (*Nasturtium officinale*) and monkey musk (*Erythranthe guttata*). Riparian boundaries were fenced throughout this section. Multiple small culverts, for vehicles and pivot sprayer wheels, were observed in the downstream reach.

A macroinvertebrate sample was taken below the proposed bridge sites on Lagmhor Creek. The site was soft-bottomed and had an MCI score indicative of “poor” stream health (Stark & Maxted 2007). This result is consistent with the poor habitat quality assessed in this waterway. This waterway had a soft sediment bottom and small patches of macrophytes and overhanging bank vegetation that the invertebrates could utilise. Ostracoda was the most abundant taxa and are tolerant of low water quality and habitat. The highest scoring taxa was Hydraenidae, with an MCI score of 6.7.

In the south-east corner of the southern paddock, a grey heron, paradise shelduck, and mallards were observed. No signs of nesting were observed.

One fish, a juvenile redfin perch individual, was caught in this reach. It is currently not known how perch dispersed into this waterway. While perch are known to exist in Lake Hood (Mark Taylor, pers. comms.), a dispersal route from this waterbody has not yet been determined. Perch eggs may have been carried from nearby Lake Hood, where they are known to have a fishery to the waterway.

7.2 Assessing ecological significance

The scale of assessment is the Lower Plains Ecological District and the Canterbury Region. This assessment follows the guidelines for applying the ecological significance criteria for the assessment of ecological significance required in the Canterbury Regional Policy Statement (Lloyd *et al.* 2013).

Significance, with respect to ecosystems and indigenous biodiversity, is to be determined by assessment of areas and habitats against four matters:

a) Representativeness
b) Rarity or distinctive features
c) Diversity and pattern
d) Ecological context

The sites are described here In terms of the criteria of representativeness described by Lloyd *et al.* (2013), following the numbering in their Table 2.

7.2.1 Ecological values near bridging sites

Representativeness:

1. **Indigenous flora and fauna** - Only the "Ephemeral Reach (Bridge 4 – Bridge 5)" appeared to have indigenous botanical value, in that the bridging reach was partially vegetated with mature New Zealand flax (harakeke, *Phormium tenax*), one of the few native plants identified from the development area. However, it lacked other indigenous plant species to form any form of Lower Plains indigenous community or assemblage and was effectively a monoculture. It also contained a number of introduced adventive plant species (blackberry and willow) which fits into the "low representative value, does not meet threshold" of Lloyd et al. (2013). Riparian plant communities near the bridging sites along Lagmhor Creek (Bridge 1 – Bridge 3) were entirely introduced, and ubiquitous in the Lower Plains Ecological District. In contrast, the Roadside Drain vegetation was composed of pasture grass on one bank, with its counterpart denuded of all vegetation and consisted of bare earth. The native fish upland bully has a conservation status of "not threatened" (Dunn *et al.* 2017), and is common in lowland Canterbury waterways. Endemic, native and introduced bird species (Table 2.) were observed near the bridging sites along the "Ephemeral Reach (Bridge 4 – Bridge 5)". Only common introduced bird species such as song thrush, blackbird, house sparrow and common starling were observed using the riparian vegetation as a place of refuge. The native and endemic species were in the adjacent paddock resting or feeding. There were no species of significance, all of which you would expect to see in the Lower Plains. Endemic, native and introduced bird species (Table 2.) were observed in the vicinity of the bridging sites along Lagmhor Creek (Bridge 1 – Bridge 3). Due to the lack of suitable riparian vegetation, all birds were observed in the adjacent, recently sown paddock feeding and resting. A species of interest was the endangered Black-Fronted Tern which flew in from the direction of the Ashburton River. **In summary, in terms or representativeness, the flora and fauna fall (easily) into "low representative value, does not meet threshold".**

2. Example of relatively large indigenous vegetation or faunal habitat within ecological district: The site is not a large example of indigenous vegetation habitat within the Lower Plains Ecological District, with many examples of lowland flax communities around Te Waihora and elsewhere. Numbers of upland bullies were found in the roadside water race, especially in sections with cobbles upon which they spawn. However, the potential habitat for upland bully spawning in roadside water races in the Lower Plains ecological district, and elsewhere, is large, as these non-migrants are not restricted to habitats with sea access. There was a lack of large indigenous vegetation or faunal habitat, which made this area unsuitable for most endemic or native birds at this site. The significant birds found were black-fronted tern and South Island pied oystercatcher, both of which breed on riverbeds or raised up sand, soil or gravel. This area is likely only used as a temporary feeding habitat for the significant bird species. **There is very little indigenous vegetation or indigenous faunal habitat, with larger examples elsewhere in the Ecological District, including braided river habitat nearby. This situation "does not meet threshold".**

3. Indigenous vegetation or faunal habitat reduced to less than 20% of its former extent. The bridge reaches are not comprised of indigenous vegetation or habitat of indigenous fauna that has been reduced to less than 20% of its former extent in the Lower Plains Ecological District or Canterbury Region. The modified waterway habitat, composed of a mixture of dryland scrubland, and flax/exotic plant mixes developing over a coastal alluvial plain, are common in riparian areas of coastal Canterbury. The area does not comprise of indigenous habitat for the upland bully. The area also provides little feeding and nesting habitat for indigenous birds. **In summary, habitat of the fauna and flora has very little indigenous elements, and what remains is widespread in the Ecological Region and Lower Plains District. The lack of indigenous habitat remnants aligns to "does not meet threshold".**

4. Indigenous vegetation or habitat of indigenous fauna that supports an indigenous species that is threatened, at risk, or uncommon. Flax, while endemic, is not threatened in the Lower Plains Ecological District, or nationally (De Lange *et al.* 2017). The flax did not appear to support other native plants, but may act as a nursery plant for introduced adventives around it. It is possible that some indigenous skinks may feed on flax flower nectar, and if skink are present, some mitigation may be required, including incorporation into landscape design. A herpetological survey is recommended. To summarise, the status of this criterion **cannot be determined** without further knowledge of skink distribution around the flaxes. Such a survey is seasonal, and should take place during the summer months.

5. Indigenous vegetation or fauna at its regional or national distribution limit; New Zealand Flax does not approach its regional or national distributional limit in this development area, and extends well south and north. Upland bullies have a broad national distribution well north and south of the proposed development site. The site is not near the regional or national distribution limit for any bird species observed. **Does not meet threshold, no known, or expected species would be near their regional or national distribution limits.**

6. Indigenous vegetation or an association of indigenous species that is distinctive, of restricted occurrence occurs within an originally rare ecosystem, or has developed as a result of an unusual environmental factor or combination of factors**. Situation not present, and therefore this assessment criteria does not meet threshold.**

Diversity and Pattern:

7. Indigenous vegetation or habitat of indigenous fauna that contains a high diversity of indigenous ecosystem or habitat types. Existing environment has a low diversity of indigenous flora, fauna and physical habitats compared to those in the Lower Plains District and Canterbury Region. There were only three endemic and four native bird species observed on the property. Two significant species, the South Island pied oystercatcher and black-fronted tern had likely travelled from the Ashburton River to feed on the recently sown field. The lack of indigenous fauna is likely due to the lack of indigenous vegetation and appropriate habitat**, and therefore this assessment criteria does not meet threshold.**

8. Indigenous vegetation or habitat of indigenous fauna that provides or contributes to an important ecological linkages or networks. It is unlikely that this site is an important location in a larger network for the observed indigenous birds. **Indigenous vegetation provides little contributing role in local ecological networks and therefore this assessment criteria does not meet threshold.**

9. A wetland which plays an important hydrological, biological or ecological role in the natural functioning of a river or coastal system. This modified river system is not a wetland and does not contribute a significant ecological or hydrological contribution to the lower Ashburton River. The Ashburton River does not possess an estuary. **Assessment criteria does not meet threshold.**

10. Indigenous vegetation or habitat of indigenous fauna that provides important habitat (including refuges from predation, or key habitat for feeding, breeding, or resting) for indigenous species, either seasonally or permanently. Due to the lack of indigenous vegetation and appropriate nesting areas, it is unlikely that any significant fauna would spend extended periods of time at this site. The South Island pied oystercatcher and black-fronted tern were observed flying in from the direction of the Ashburton River to feed in the recently sown field. These fields only provide a temporary food source, so are unlikely to be a key habitat for feeding for the observed indigenous birds. **Assessment criteria does not meet threshold.**

8 Assessment of effects on waterways

8.1 Onsite effects

With mitigation, especially sediment control, onsite effects will be localised and ecologically minor. It was clear from our site visit that the waterway base contains a significant amount of clay, which is prone to resuspension after mechanical disturbance.

No macroinvertebrate taxa of conservation significance were found in Lagmhor Creek during the ecological survey. Most of the taxa found are tolerant to poor water quality and habitat. In the natural pre-existing environment, the creek waters are subject to periods of elevated TSS, it is unlikely that the observed macroinvertebrates will be impacted or affected due to the nature of the existing environment.

Turbidity can reduce clarity for visual-feeding fish, for example perch, which are resident, although this species appears rare in this habitat with only one juvenile specimen recorded. However, in practice, using sediment control devices commonly used in Canterbury, sediment inputs can be controlled with a combination of filter fences, sediment tanks, sediment detention basins, and if necessary for runoff from large surfaces containing clay, a flocculant dosing system. Construction water discharge to land may be an inexpensive option, if an area of suitable land can be found. All treated construction water TSS discharges should be held to a maximum TSS of 50 gm/L (50 g/m^3). Due to the apparent scarcity of perch, and the known effectiveness of sediment mitigation techniques, we are confident that perch will not be unduly affected by localised construction impacts. Further, we are mindful that perch, like other visual feeders often forage at dusk and dawn, when construction activity is not taking place. Further, during the day, the receiving environment gains respite from perturbation during lunch and tea breaks.

Impacts on upland bully are also considered minor. Like other bullies, the females deposit their eggs on hard surfaces and the male tend the eggs, aerating them with their fins, and removing sediment from their surfaces (Hamilton *et al.* 1997; McDowall & Eldon 1997). This behaviour is effective at retaining egg health in environments exposed to sporadic higher TSS, for example, in water ways exposed to construction effects. In this regard, upland bullies may be found in environments with reaches with sediment, although they are more abundant in waterways with stony reaches, as the hard surfaces provide an egg deposition substrate, and areas where they can hide. Should stony reaches become silted, upland bully abundance can initially fall, but increase again when the sediment is removed or flushed from the environment, as experimentally determined by Jowett and Boustead (2001). This is particularly relevant to the roadside water race, where these fish were abundant and associated with patches of stony substrate. However, despite the recorded reversibility of siltation effects on upland bully habitat, we recommend that during riparian site works, silt and dust ingress is minimised to maintain stony substrate in this, and other, waterways.

We note that no sea-migratory fish were recorded from the site, despite quite significant fishing effort. We consider it possible that the flow from Carters Creek filters through the alluvial gravels of Ashburton River (there seems to be a soak hole on the alluvial bed near the end of Carters Creek), and fish access into Carters Creek from the Ashburton River may not be possible. Fish impediments to fish passage within the existing environment also serve to reduce ecological impacts to non-migratory fish.

However, for minor bridge placements like those proposed in this development, under the observed baseflow (c. 15-30 L/s) standard sediment controls outlined in Environment Canterbury (2007) and ECan's online toolbox should be quite adequate. This is firstly because of the likely volume of disturbed sediment near the waterways is likely to be minimal, because bank cuttings to accommodate the bridge supports should not be required as bridge piles c. 2m away from the water's edge. Secondly, the local receiving environment and ecology is not particularly sensitive to sedimentation effects, because the existing bed at all the bridge sites is already silted (App. IV, Figs. i-vi). The existing unstable banks along sections of Lagmhor Creek may be the source of some bed sediment (App. IV, Fig. ii). The unvegetated bank of the roadside water race along Stranges Road is eroding, but that water does not enter the development area. The Lagmhor Creek flow is derived from cultivated land on the west side of Stranges Road which would be subject to wind-blown sediment.

There were few birds observed near the proposed bridge sites. The observed bird species were pukeko, blackbird, mallard, song thrush and starling. Construction noise may temporarily perturb these birds. It is likely that resident birds will return after the noise ceases. Vibration can impact nesting birds. No nests were observed during the survey, but we recommend avoiding the nesting season (July – January inclusive). Should bridge and haul road construction continue after June, we recommend that a nesting survey be conducted on the 1st July to identify early breeding birds.

Bridging waterways is environmentally more preferable than culverting because the former option provides for the free passage of fish and invertebrates as they undertake natural movements along the channel. Most existing culverts will be removed from the site during development which will be an environmental improvement in removing potential impediments to passage for biota. However, the relocation of an existing culvert to the entranceway in the vicinity of 207 Strange Road may be subject to an assessment of the fish passage in the NES-F 2020 and may require discretionary consent, or a permitted activity, depending on design. Moreover, this old culvert may also be too short in length for the intended two-lane access way at the new entry point.

8.2 Off-site effects

With effective sediment on-site control (e.g., sediment fences around bridge support cuttings), sediment transfer off site should be minimal. Downstream of the development area, Lagmhor Creek joins with Carters Creek before discharging onto the Ashburton River braid plain (App. I, Fig. ii). The closest water path distance between the bridge sites and the braid plan is c. 1800 m, and we regard the risk of transported construction fines to the Ashburton River as low. Given the Ashburton River is a waterway of high ecological value, there is merit in monitoring TSS/turbidity at the Lagmhor Creek exit from the construction site. These recordings should be paired with counterparts taken from where Lagmhor Creek water enters the site at Stranges Road.

There have been 48 bird species observed on and around Lake Hood (eBird). Four of these species have a significant conservation status, black-billed gull, double-banded plover, black-fronted tern and the South Island pied oystercatcher (Robertson *et al.* 2016). If the nesting season is avoided (July-January), it is unlikely that the construction noise will impact these birds. There are tall trees (poplars and macrocarpa), between the lake and the property. These are likely to absorb some of the construction noise, therefore decreasing any disturbance of birds on and around the lake.

Windborne soil and dust from arable land has the potential to export nutrient, especially phosphorous, into neighbouring waterbodies, Lake Hood. However, wind-blown dust from the construction or use of the haul road is easily mitigated. Most contractors use tanker trucks with a sprayer boom to control wind-borne dust. Mitigation measures for the control of construction dust will be detailed in a dust management plan (DMP).

9 Monitoring and recommendations

AEL recommends that:

- In summer, a herpetologist survey bridge locations for lizards and consider mitigation options if found.
- Haul Road and bridge placement be undertaken after the bird breeding season (i.e., February to June).
- Paired TSS/turbidity recording both upstream and downstream of the construction site and a maximum construction water discharge of 50 gm/m^3 would be suitable for this receiving environment.
- Should construction works extend beyond June, that a survey be conducted to locate any nesting birds around the bridge construction sites.
- Stormwater runoff from the Haul Road and vehicle car park areas, be treated before discharge to waterways, possibly by ground infiltration.
- Dust suppression methods be used to control wind-borne dust off the Haul Road.
- Haul Road and bridge placement between February to June.

10 Acknowledgements

We thank Catherine Stuart for providing background information, field meeting and reviewing the first draft.

11 References

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12 Appendix I. Site Map

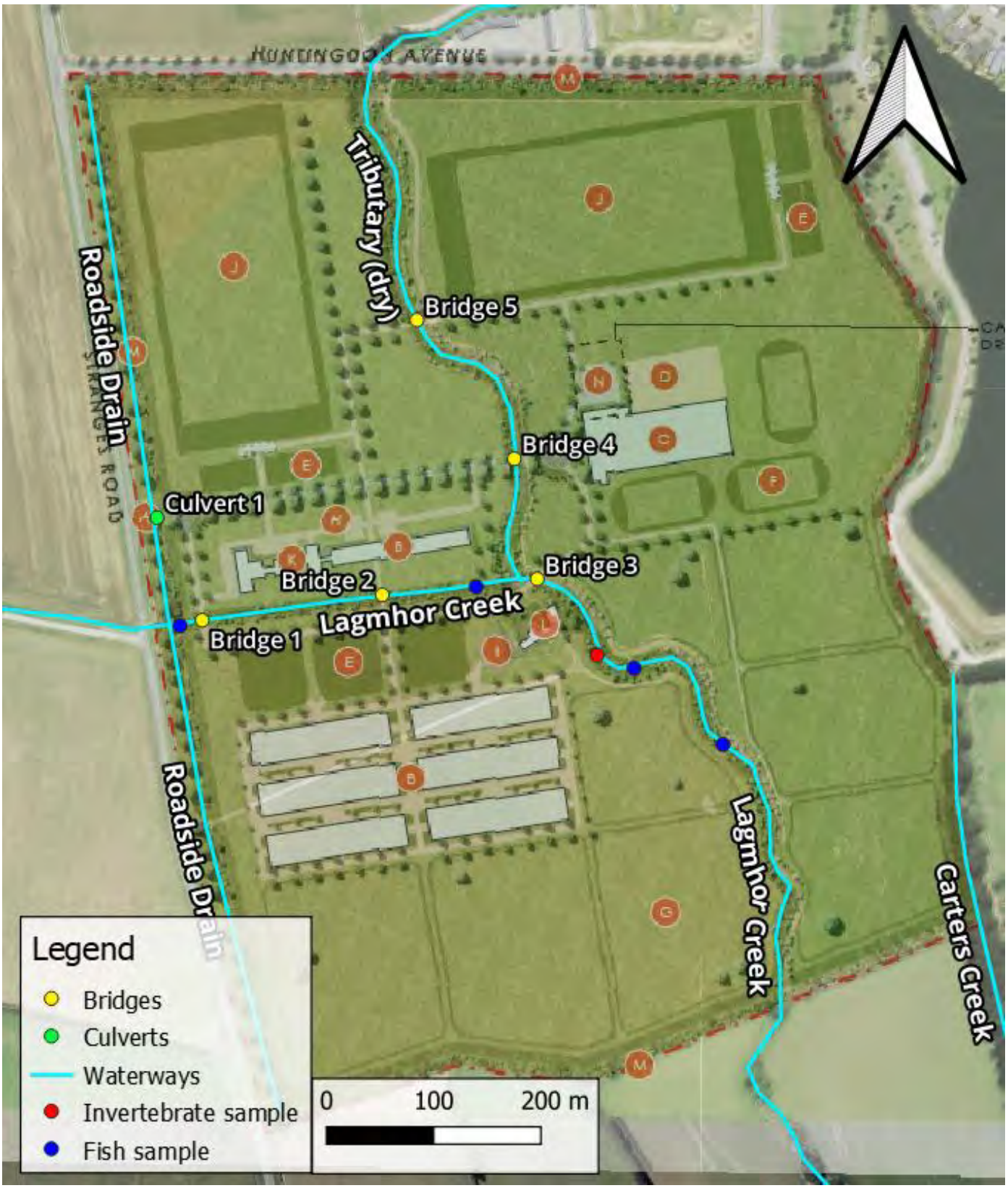

Figure i. Locations of all proposed bridges within the 249 Stranges Road property boundary, overlying the draft development plan.

12 Appendix I (cotd). Waterways downstream of proposed development area.

Figure ii. The orientation of the proposed development area in relation to Lake Hood and the Ashburton River.

13 Appendix II. Hynds Landspan Bridge System

Hynds Landspan Bridge System

Technical Guide R4.1

Hynds bridge units simplify the construction process, allowing for the rapid completion of works and offering a more cost effective option than the in-situ construction process.

Applications	Product Attributes	Approvals/Standards
Stock and farm vehicle crossings	Purpose designed	Bridge Design Load 0.9HN(HPMV) Rural Bridge in accordance with the NZTA Bridge Manual (Appendix D)
Rural and commercial	Precast and pre-stressed	Seismic zone factor = 0.45(max). Elastic design
	Low cost, quick installation	
	Simplifies preparation and consent of site plans or council approval	

14 Appendix III. Identified macroinvertebrate taxa from the study area

		Frequency	MCI-sb	QMCI-sb
PLATYHELMINTHES		1	0.9	0.9
ANNELIDA				
Oligochaeta		4	3.8	15.2
CRUSTACEA				
Ostracoda		35	2.4	84
INSECTA				
Odonata				
Zygoptera	*Xanthocnemis*	1	1.2	1.2
Diptera				
Chironomidae				0
Orthocladiinae		25	3.2	80
Tanypodinae		1	6.5	6.5
Simuliidae	*Austrosimulium*	1	3.9	3.9
Ephemeroptera				
Leptophlebiidae	*Deleatidium*	2	5.6	11.2
Trichoptera				
Leptoceridae	*Hudsonema amabile*	1	6.5	6.5
	Triplectides	1	5.7	5.7
Hydroptilidae	*Oxyethira*	1	1.2	1.2
Hemiptera				
Corixidae	*Sigara*	1	2.4	2.4
Veliidae	*Microvelia*	3	4.6	13.8
Coleoptera				
Dytiscidae	*Liodessus*	5	4.9	24.5
Hydraenidae		1	6.7	6.7
ARACHNID	*Acari*	1	5.2	5.2
MOLLUSCA				
Gastropoda				
Hydrobiidae	*Potamopyrgus antipodarum*	7	2.1	14.7
Physidae	*Physa acuta*	14	0.1	1.4
Lymnaeidae	*Austropeplea*	1	1.2	1.2
Bivalvia				
Sphaeridae	*Sphaerium novaezelandiae*	3	2.9	8.7
No. Scoring taxa		20		
TOTAL No. of animals		108		
Total indice score		71		
MCI		71.0		
QMCI		2.7		

15 Appendix IV. Site Photographs

Figure i. Looking downstream along Lagmhor Creek in the approximate vicinity of Bridge 1, 24/10/2023.

Figure ii. Looking upstream along Lagmhor Creek, in the approximate vicinity of Bridge 3. 24/10/2023.

Figure iii. Looking south along the ephemeral tributary, in the approximate vicinity of Bridge 4. 24/10/2023.

Figure iv. Looking north along the ephemeral tributary, in the approximate vicinity of Bridge 5. 24/10/2023.

Figure v. Looking south along the ephemeral tributary, featuring standing backwater near the Lagmhor Creek confluence. 24/10/2023.

Figure vi. Looking downstream along the roadside water race, in the approximate vicinity of Culvert 1, 24/10/2023. Note the collapsing bank on the race. The water race is not connected to Lagmhor Creek.

Memorandum

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Attention:	Catherine Stuart
Company:	Southern Parallel Sports Campus
Date:	8 November 2022
From:	Tanya Blakely, Jessica Schofield
Message Ref:	Re: SPSC Ecological Constraints and Opportunities
Project No:	BM220807A

Introduction

Boffa Miskell Limited (BML) has been engaged by Southern Parallel Sports Campus (SPSC) to prepare a high-level ecological assessment for the proposed Southern Parallel Sports and Equestrian Centre to inform the application for a fast-track consent.

The proposed Southern Parallel Sports and Equestrian Centre (referred to hereafter as 'the Site') is a 65-hectare joint venture located at 279 Stranges Road, approximately 7 kilometres south-west of Ashburton (refer Figure 1). This property is bounded by Huntingdon Avenue (northern boundary), Lake Hood and associated residential area (east), rural properties (south), and Stranges Road (west).

The project masterplan comprises a sports campus in the north of the Site, and an equestrian centre in the south (refer to the Campus Landscape Masterplan[1] for plan design of campus). The sports campus contains two large indoor sports facilities alongside several sports fields. The equestrian centre contains a large indoor arena, motel and cafeteria buildings, a parking area, and polo fields. Additionally, 32 four-bedroom townhouses are proposed within the north-east portion of the Site to be accessed from Huntingdon Avenue. These are to be used as accommodation for the participants in the sports campus programme. To the west of the townhouses a storage pond is proposed, which will capture the stormwater and wastewater from services utilised on site and is proposed to be treated by a BioGill Ultra treatment system[2]. A formed embankment alongside Stranges Road in the northern portion of the Site and near the equestrian arena in the southern portion is proposed to provide shielding from the road. Substantial planting is planned to enhance the amenity of the Site, including native riparian planting along the length of the central waterway on Site allowing for the development of an ecological corridor.

[1] Boffa Miskell, 2022. *Southern Parallel Sports Campus Landscape Masterplan.* Report by Boffa Miskell Limited for Southern Parallel Sports Campus Ltd. Dated 30 September 2022.
[2] BioGill Ultra. https://biogill.com/products/biogill-ultra/.

Scope

This assessment has been prepared to provide a high-level description of the existing ecological values at the Site along with potential ecological constraints and opportunities for enhancement. Detailed design information specifying the construction footprint and methodology were not available at the time of this assessment. Additional assessments may be required once specific detailed design information is available to understand the potential effects of the SPSC on the ecological values.

The objectives of this high-level ecological assessment are to:

- describe the existing environment, including ecological features and values of the site and surrounding environment;
- identify potential constraints and effects on the ecological values of the area that may be impacted by the proposed SPSC development, and
- identify opportunities for potential additional assessments or surveys required to complete a detailed ecological impact assessment.

Methodology

Desktop Review

A desktop review was undertaken to gather the existing ecological information available:

- GIS (spatial) databases and aerials, including:
    - Waterways (river centre lines) shown on New Zealand Topographical Maps;
    - Environment Canterbury Maps: rating units, historic 'black maps', LWRP – Water Quality Management Units, wetlands of representative importance, and historic aerial imagery layers;
    - Ashburton District Council online District Plan maps and 3 Waters Utilities map viewer.
- Existing information on freshwater fish species within or nearby the proposed development:
    - The NIWA-administered New Zealand Freshwater Fish database (NZFFD). This database holds records of freshwater fish distributions and occurrences based on previous surveys. The conservation status of fish species found in the NZFFD records was assessed based on the most recent conservation threat status for New Zealand's freshwater fish (Dunn et al., 2018).
- Existing information on avifauna / bird species within or nearby the proposed development:
    - Data from the Ornithological Society of New Zealand's (OSNZ) atlas was collated from the 10 x 10 km grid square, which encompasses the proposed development;
    - Further literature and website searches were undertaken to obtain additional information regarding bird species know to occur within the surrounding habitats. This included the eBird and iNaturalist citizen science databases;
    - Tonkin & Taylor Limited (2008). Lake Hood extension project joint venture: Assessment of Environmental Effects. Report prepared by Tonkin & Taylor Limited for Lake Hood extension project joint venture, December 2008.

File Ref: BM220807_004_A3P_Waterways.mxd

Boffa Miskell

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Data Sources:
Cadastre sourced from LINZ data service

Projection: NZGD 2000 New Zealand Transverse Mercator

SOUTHERN PARALLEL SPORTS CAMPUS

Waterways

Date: 04 November 2022 | Revision: 0

Plan prepared for Southern Parallel Sports Campus by Boffa Miskell Limited

Project Manager: katie.chilton@boffamiskell.co.nz | Drawn: BMc | Checked: JSc

Figure 1

Site investigation

Dr Tanya Blakely (Senior Principal Ecologist), Cara-Lisa Schloots, and Jessica Schofield (Ecologists) visited the site on the 4th of October 2022, to record the existing ecological condition and readily observable values at the site. This information has been used to assess (at a high level) the terrestrial, riparian, wetland, and in-stream ecological features and conditions present. Refer to Appendix 1 for a series of images from the site visit.

There had been no (0 mm) rain in the 48 hours prior to the site visit, but approximately 15 mm in the previous 5 days[3]. Other than 11 mm on 13 September 2022, very little rain had fallen in the preceding month.

Watercourse classification

It is important to determine whether a watercourse is "artificial" or "natural" because Section 13 of the Resource Management Act restricts certain uses of the beds of lakes and rivers, which only applies to natural watercourses. This includes 'modified natural' watercourses, but does not apply to artificially created or human-made watercourses (such as irrigation canals, water supply races, and farm drainage canals).

In Canterbury, historic wetlands have been drained and natural watercourses straightened and greatly modified. Many natural watercourses now appear to be 'artificial' or human made. However, many are 'modified natural' watercourses.

We used the definitions of 'river', 'artificial watercourse' and 'drain' from the Resource Management Act 1991 and / or Environment Canterbury's Land and Water Regional Plan (LWRP), where:

> ***River*** *means a continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).*
>
> ***Artificial Watercourse*** *means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal channel. It does not include artificial swales, kerb and channelling or other watercourses designed to convey stormwater.*
>
> ***Drain*** *includes any artificial watercourse that has been constructed for the purpose of land drainage of surface or subsurface water and can be a farm drainage channel, an open race or subsurface pipe, tile or mole drain, or culvert.*

We reviewed historic aerial imagery from 1940-1944 as available on Canterbury Maps, for historical evidence of ecological features, such as rivers and wetlands present within and directly surrounding the Site.

We also explored the "LWRP – Water Quality Management Units and Classes – Rivers" mapped information from Environment Canterbury[4], which shows natural watercourses and groups these into classifications based on similarity of physical and hydrological characteristics (i.e., alpine, hill-fed, lake-fed, spring-fed etc.).

Assessing ecological values

In assessing ecological values, we have followed the terminology and methodology of Roper-Lindsay et al. (2018). This approach involves assessing various attributes (representative, rarity/distinctiveness, diversity and pattern, ecological context) and species known, or likely, to be present at a site or in an area.

[3] Environment Canterbury 2022. Rainfall Data Hinds Plains. https://www.ecan.govt.nz/data/rainfall-data/sitedetails/319602

[4] Canterbury Maps 2017. Water Quality Management Units and Classes (Rivers) Layer as shown in the Land and Water Regional Plan. https://gis.ecan.govt.nz/arcgis/rest/services/Public/LWRP/MapServer/7

Once ecological values had been assessed, the potential ecological constraints associated with the proposed masterplan were identified.

Limitations and assumptions

- This memorandum presents a high-level assessment of the existing environment at the potential SPSC site. The information presented is based on a desktop review of existing data and site walkover to inform the ecological values within the potential work area.

- Detailed quantitative surveys (e.g., detailed in-stream / aquatic, lizard, avifauna, or vegetation / botanical surveys) were outside of the scope of this work and, as such, this assessment of the existing ecological features should not be interpreted as an exhaustive list of terrestrial and freshwater species present within the area.

- Our assessment is based on the general proposed Landscape Masterplan supplied to us by Boffa Miskell (30 September 2022). While this Masterplan has been provided, detailed design has not yet been developed.

- We have not been provided with technical information in relation to water quality or quantity effects from the proposed activities, such as the BioGill treatment system, and treatment and / or discharge of stormwater to the existing watercourses. It is understood that stormwater from the site will be discharged into an excavated storage pond, which will be treated prior to discharge into the Lagmhor Creek.

- The recommendations provided in this memorandum are based on high-level ecological information gathered during this desktop phase, and in the absence of detailed design, and proposed construction and operational activities within the Site. Further advice should be sought when finalising details of the design and construction methodology, particularly with regards to potential ecological effects and measures required to avoid, remedy or mitigate adverse ecological effects.

- This high-level assessment is intended to inform the applicant and design team, and highlight if there are any fatal flaws, major constraints, or opportunities (e.g., ecological areas or values that warrant avoidance) and is not intended to be a full Ecological Impact Assessment (EcIA). An EcIA will be required later, to inform resource consent applications to the regional council.

Ecological context and site description

The Site lies within the Canterbury Plains Ecological Region and the Low Plains Ecological District (McEwen, 1987). Historically, the Site would have been a mosaic of grassland, treeland, flaxland, and scrub, with stony soils in the eastern portion of the Site, however only remnants of that cover remains today(Harding, 2009; Landcare Research, 2019).The majority of land across the district has been disturbed for agriculture and settlement, and large portions of the district is intensively farmed (Harding, 2009).

The Site itself represents a 65-ha highly modified arable farm environment, which has been used to grow crops and for animal grazing. At the time of the site visit, the eastern portion of site was tilled bare earth for crops. The Site is predominantly flat, except where the northern branch tributary and Lagmhor Creek have incised the landscape. Exotic deciduous trees and shelterbelts occur on some boundaries. Surrounding land use is predominantly agricultural, and the Lake Hood residential development is present to the north-east of the Site.

Ecological features and values

Vegetation

The terrestrial vegetation present at the site is almost entirely improved pasture (exotic grasses and a range of exotic pasture weeds), shelterbelts of exotic species, and some weeds such as gorse (*Ulex europaeus*), scotch broom (*Cytisus scoparius*) and crack willow (*Salix fragilis*) along waterways. There is a small number of possibly self-established silver tussock (*Poa cita*) along the western boundary, and kohuhu (*Pittosporum tenuifolium*) along the northern boundary. The gully that encloses the northern branch that enters Lagmhor Creek has some remnants of indigenous vegetation, including harakeke / flax (*Phormium tenax*), tī kōuka / cabbage tree (*Cordyline australis*), bracken fern (*Pteridium esculentum*) and a small number of plants of an indigenous sedge (*Carex* sp.) (Figure 2).

Vegetation is visible in the gully in aerial photographs from as early as 1941 (Local Government Geospatial Alliance, n.d.), so it is possible that this vegetation represents remnant or naturally regenerating vegetation that is representative of what would have historically been found in the Low Plains Ecological District. As there is very little remaining indigenous vegetation in the Low Plains Ecological District and the majority of the Canterbury Plains is classified as an 'Acutely Threatened' land environment (Walker et al., 2007), this vegetation would be considered significant under the Environment Canterbury (2013) Regional Policy Statement (RPS) Appendix 3 significance criteria. This vegetation is proposed to be retained and enhanced as part of an improved ecological corridor.

Due to the agricultural modification resulting in the Site being almost entirely comprised of improved pasture with small pockets of indigenous vegetation, terrestrial vegetation across the Site is assessed as having **Low** ecological value. However, some areas within the Site provide habitat for fauna (see following sections).

Figure 2: Vegetation within the gully area along the northern branch of the unnamed tributary of Carters Creek. Image taken during site visit on the 4th of October 2022.

Avifauna

The desktop review provided a base list of 62 species from the Ornithological Society of New Zealand (OSNZ) square and eBird (EBird, n.d.) records that encompass the Site and the broader area surrounding the Site, particularly near to Lake Hood. This includes eight 'Threatened' and nine 'At Risk' species (Robertson et al., 2021). However, most of these species have only been observed in low numbers (Appendix 2), and the Site may not support all of these species. Formal avifauna surveys were not undertaken, however, multiple native and introduced birds were recorded flying over or directly within the Site during the walkover. The gully vegetation provides suitable habitat for both indigenous and exotic species, including pūkeko, welcome swallows, and mallard ducks.

Of particular note, during the site visit / walkover New Zealand pied oystercatcher (*Haematopus finschi*, At Risk – Declining) and black-fronted tern (*Chlidonias albostriatus*, Threatened – Nationally Endangered) were observed feeding within the paddocks on site (Appendix 2). At the confluence of the western and northern branches of the tributary to Carters Creek, a pūkeko (*Porphyrio melanotus melanotus*, Not Threatened) nest was observed (Figure 3).

Based on these observations and information gathered from the OSNZ and eBird, the ecological value of avifauna using the Site is considered to range from **Negligible** to **High**.

Figure 3: Pūkeko eggs observed during site visit on the 4th of October 2022.

Herpetofauna

New Zealand grass skinks (Southern grass skink, *Oligosoma* aff. *Polychroma* Clade 5; At Risk – Declining) have been observed on iNaturalist in the wider landscape, within approximately 5 km of the Site. Southern grass skink is considered of **High** ecological value. All native lizards are protected under the Wildlife Act.

Potential lizard habitat is present in the long grass within the Site, including adjacent to the northern branch and along roadside margins and the perimeter of the Site. These areas of rank grassland may provide small, fragmented areas of habitat for native skink, and as such grass skinks may be present in these areas of the Site. There are substantive areas of the Site that are unlikely to provide suitable habitat for lizards.

Wetlands of representative importance

There were no wetlands overlapping the Site on the Wetlands of Representative Importance or Canterbury Wetlands layers on Environment Canterbury online maps. However, on the Ministry for the Environment

online map layer ‘Prediction of wetlands before humans arrived’, the Site is classified as being a historic swamp wetland[5]. Despite this, no areas of potential wetlands were identified within the Site.

Freshwater habitats and fauna

There are multiple connected waterways within the Site (refer Figure 1). Lagmhor Creek[6] enters the site from the western boundary and is a perennial watercourse that brings the majority of flow. The watercourse that enters the Site from the north (hereafter referred to as the “northern branch”), joins Lagmhor Creek within the Site. Lagmhor Creek joins Carters Creek downstream of the Site, before flowing to Ashburton River. Mt Somers Willowby water race runs along the western boundary of the site, parallel to the road[7]. Refer to Appendix 1 for images of the watercourses.

The waterways appear to have a long history of being managed from a drainage and flood conveyance perspective, with macrophyte (and possibly sediment) removal from the bed and maintenance of riparian vegetation common practice.

Based on our interrogation of historic aerial imagery, Lagmhor Creek and the northern branch are present in similar extent and locality to present day location (Figure 4). Upstream of the Site, historic aerials show Lagmhor Creek had a meandering channel, which has been straightened for agricultural and flood conveyance purposes. In this historic imagery, the braid plain of the Ashburton River extends further than present day to the Site’s eastern most boundary.

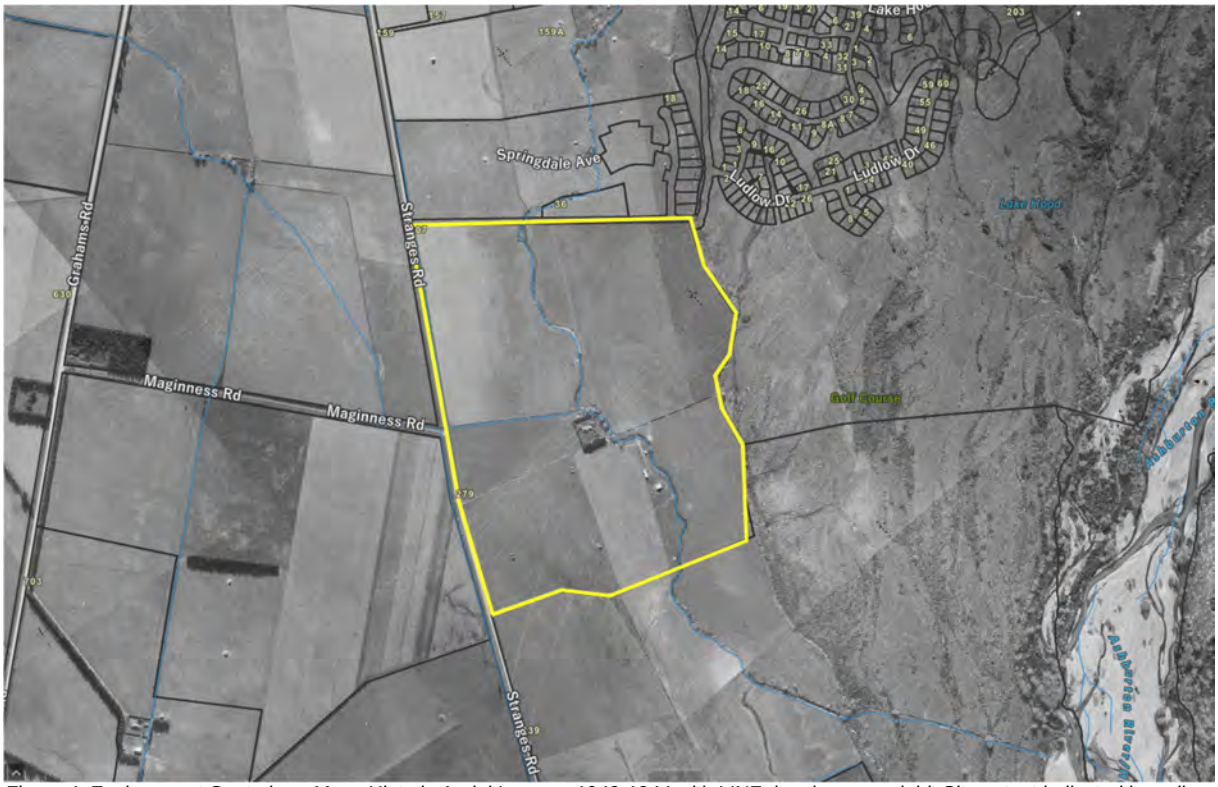

Figure 4: Environment Canterbury Maps Historic Aerial Imagery 1940-1944 with LINZ river layer overlaid. Site extent indicated by yellow line.

In addition to this, both Lagmhor Creek and the northern branch are classified as “spring-fed – plains” natural waterways in the LWRP. Refer to Appendix 3 for the classification of these waterways on Environment Canterbury (2018a) LWRP map.

[5] Ministry for the Environment (2016). Prediction of wetlands before humans arrived. https://data.mfe.govt.nz/layer/52677-prediction-of-wetlands-before-humans-arrived/.
[6] Identified with Environment Canterbury maps layer “Drains and watercourses (Flood Protection and Drainage Bylaw 2013 - amended 2019)”. https://gis.ecan.govt.nz/arcgis/rest/services/Public/PlanningZones/MapServer/3
[7] Identified within Ashburton District Council online 3 Waters Utilities map viewer.

The waterways (including natural and artificial) within the Site are further discussed in the following sections.

Lagmhor Creek

Lagmhor Creek has a wetted width of approximately 1.5 m to 2.5 m wide, with bed substrate comprised of predominantly silt / sand sediment with a few cobbles. The bank angle is nearly 90 degrees, with small sections of undercut bank observable. Lagmhor Creek is classified as a natural, spring-fed – plains waterway. However, it has been highly modified for flood conveyance and drainage.

A section of this waterway, within the Site, has been straightened and appears to be heavily maintained with frequent clearing of macrophytes. However, downstream of the residential property (see Figure 1), the stream form is more natural (it gently meanders) and less obviously managed for drainage / flood water conveyance, with variable flow habitats, fast run and riffle habitats and small pools present. There were two culverts observed in this downstream section of the waterway, which may become perched in low flows and when water velocity within the channel increases during flood events (Figure 5). Similarly, upstream of Stranges Road (and upstream of the Site), the waterway appears to be less regularly maintained and it has more shading (from exotic weeds), with cobbles present in the channel.

A range of macrophyte species are present within the channel including monkey musk (*Erythranthe moschata*), buttercup, watercress (*Nasturtium officinale*), cocksfoot (*Dactylis glomerata*), dock, gorse, water speedwell (*Veronica anagallis-aquatica*), sweetgrass (*Glyceria maxima*), and duckweed (*Lemna* sp.).

Within the section that flows west-east there were five culvert crossings (for a pivot irrigator) each with an approximately 700 mm diameter pipe. These were spaced c.50 m apart and may restrict the flow (and potentially fish passage) at times. The crossing closest to Stranges Road has a pipe of approx. 5 m in length, providing for a vehicle / farm crossing.

Figure 5: Culvert below confluence of the branches of unnamed tributary to Carters Creek.

Northern branch

The northern branch (Figure 1) is wide, with the cross section along most of its length approximately 5 m wide (or greater). This watercourse is also classified as a natural, spring-fed – plains waterway, but, like Lagmhor Creek, it has been highly modified for flood conveyance and drainage. The northern branch appears to have been dug out or periodically managed to control sediment and freshwater plant growth. The waterway may be intermittent, where surface flow may be absent during times of prolonged dry weather. However, it's unlikely to be classified as ephemeral as there was surface water present, with slow flow four days after rainfall (with the most recent substantial rainfall event 3 months prior). This would need to be confirmed by observing the watercourse during different seasons.

On the day of the site visit, water was pooled within the channel and minimal flow was observed. The channel bed has dense cover of freshwater plants (macrophytes) with buttercup (*Ranunculus* sp.*)*, and dock (*Rumex* sp.) present in many areas along the channel. There is limited shading along its length, provided by some remnant indigenous vegetation.

One culvert and one crossing for a pivot irrigator was sighted within the northern branch (within the Site). The pivot irrigator crossing consisted of some concrete pavers that were submerged under water on the day of our site visit.

Mt Somers Willowby water race

The Mt Somers Willowby water race is an artificial waterway, which comprises part of the Ashburton District Council water race network. The channel is straight and forms the western border of the property, immediately adjacent to Stranges Road. Lagmhor Creek and the water race intersect at the western boundary, directly upstream of the large culvert crossing over Lagmhor Creek.

The water race channel has a wetted width of approximately 1.5 m, with bed substrate comprised of predominantly fine materials (silt / sand), and the bank angle is nearly 90 degrees. Bank vegetation was comprised of bare earth and cut grass, shading of the stream channel was nearly entirely absent, but there was minimal macrophyte biomass observed within the channel at the time of the site visit.

Macroinvertebrates

During the site walkover, the ubiquitous mud snail *Potamopyrgus* and backswimmers were observed within the water race. Freshwater macroinvertebrates vary in their tolerances to pollution and contaminants in waterways and can be good indicators of stream health (Clapcott et al., 2017). Comprehensive macroinvertebrate sampling was not within the scope of this site visit, however, based on the high fine sediment load and macrophytes present it is expected that the macroinvertebrate community will be dominated by pollution-tolerant species and the 'clean-water' taxa, such as mayflies, stoneflies and caddisflies are likely absent.

Fish

There are no fish records in New Zealand Freshwater Fish Database (NZFFD) for the waterways that flow through the Site. However, it's important to note that this does not mean that fish are not present, but instead that this waterway has never been surveyed.

Upland bully (*Gobiomorphus breviceps*) (Not Threatened; non-migratory) has been recorded within Carters Creek, with this species found in that waterway approx. 2 km north of the Site. The Threatened, Nationally Critical Canterbury mudfish (*Neochanna burrowsius*) has also been recorded in a side channel near the outlet from Lake Hood.

Survey of the fish communities within the waterways of the Site is recommended if any works are to occur that will require in-stream works or activities near the waterways, such as river diversions, realignment, installation of new crossings, groundwater or surface water abstraction that may affect baseflows. Understanding the fish fauna present would also be useful to provide guidance for any enhancement activities proposed.

The waterways within the Site include both natural perennial waterways (potentially with some intermittent reaches) (i.e., the northern branch) and human-made / artificial watercourses (i.e., the water race).

The habitat conditions within these waterways are variable and, based on initial observations, likely range from **Moderate** to **Low**. This is based on the straightened and / or widened channel nature (particularly in the upstream parts of the western branch), with limited in-stream habitat heterogeneity, and very limited riparian vegetation. However, it is important to note that the ecological value cannot be fully assessed without site-specific records of macroinvertebrate or fish communities and there is a potential for fish species of High (At Risk conservation status) to Very High (Threatened conservation status) ecological value to be present.

Potential ecological constraints

This section discusses the most likely potential ecological constraints of the proposed SPSC development at masterplan stage, based on our current understanding of the proposed activity.

Vegetation and habitats for fauna

The vegetation present in the gully (northern branch) may represent remnant or naturally regenerating vegetation that is representative of what would have historically been found in the Low Plains ED. While this vegetation is of low value (due to its condition), it meets the test of significance in the RPS (under rarity) (Environment Canterbury, 2013).

Based on our understanding of the proposed development and associated activities, no loss of indigenous vegetation within the gully is proposed as part of the SPSC development and, therefore, no constraint identified. Instead, removal of existing weed species and enhancement planting is likely to have a positive impact on indigenous vegetation communities within the Site. We see this as an opportunity for ecological enhancement, as there is extensive native planting proposed in the masterplan around all waterway channels to allow for the creation of native ecological corridors.

- Careful consideration of weed control methods and enhancement planting with ecologically suitable, indigenous species is recommended as proposed by the masterplan to achieve a positive outcome.

Mortality and disturbance of terrestrial fauna

While habitats for lizards are limited within the Site, the areas of rank grassland may support species such as Southern grass skink.

- Construction activities within the site margins and Lagmhor Creek riparian areas where rank grass is present should be avoided.

- If avoidance of construction activities within these areas is not possible, assessment by a suitably qualified DOC-permitted herpetologist is recommended to manage risk of harm. Note lizards are protected under the Wildlife Act 1953. This may involve confirmation of lizard presence / absence, and / or recommendation of a lizard salvage.

The mobile nature of most avifauna species means that the potential for direct mortality associated with construction will likely be confined to birds breeding within the site, if construction activities occur during the species breeding seasons. Species identified that may nest within the site (and thus be affected by development) include pūkeko and New Zealand pied oystercatcher.

- A suitably qualified ornithologist or avifauna expert should provide advice on any effects management measures required, which may include measures to avoid, remedy or mitigate significant adverse effects on avifauna in particular locations on Site, if works are to be undertaken during breeding season.

Disturbance to in-stream habitat and freshwater fauna

Construction activities may require some works within the waterways across the Site. Construction activities may result in discharge of sediment into the waterways across the Site, which can result in smothering of macroinvertebrate and algae communities, clog the gills of freshwater fauna, disrupt fish feeding behaviours, and impede fish migration.

There is also risk of physical in-stream works resulting in harm to fish and other in-stream fauna present through direct physical disturbance and crushing, and risk of impediment to fish passage. In addition, new subsoil drainage may be required to redirect any shallow groundwater present away from the development, which may result in waterways within the Site being susceptible to reduced flows.

- Advice from a suitably qualified and experienced freshwater ecologist should be sought to inform appropriate management techniques during construction, which may include consideration of:
    - Measures to avoid / minimise discharge of contaminants (sediments, other contaminants) in waterways.
    - Management techniques to avoid significant adverse effects of waterway diversions, dewatering, culvert (or other structure) construction and installation, and other works within or adjacent to waterways.
- If in-stream works, or adjacent activities that may have an adverse effect on riparian or in-stream habitat condition were proposed to occur, specific surveys of the freshwater habitats and fauna are recommended between the months of December and April inclusive (recommended survey period by Joy et al., (2013)). The purpose of this is to confirm the species range present in the affected waterway, and identify appropriate management.
- Avoiding potential for loss or changes to stream extent and values (e.g., through loss of flow permanence, reclamation, piping / infilling) is an explicit requirement of the National Policy Statement for Freshwater Management (NPS-FM) 2020 (Policy 7). Where this is not practicable, a clear approach using the effects management hierarchy to manage the adverse effects on the ecology will be necessary.

Risk of impediment to fish passage

Many of New Zealand's freshwater fish are migratory and, therefore, require unimpeded passage between the sea and freshwater habitats to complete their lifecycles. Even for non-migratory species, it is important that their movement within a waterway is not restricted or impeded.

Any waterway crossings for access into or within the Site proposed need to be carefully considered and designed to ensure they do not present a risk of impediment to fish passage. The waterways within the Site may support fish species, which may include those of conservation interest (e.g., At Risk or Threatened species), and / or taonga and mahinga kai species.

There are currently numerous culverts and crossings within the waterways on Site, and these existing structures may impede fish movement. There is the opportunity to enhance fish passage within the Site, by removing existing structures.

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F) sets out the design standards and monitoring requirements for installation of new culverts (subpart 3, regulation 70.2).

- To meet the permitted activity rules, a culvert must provide for the same passage of fish upstream and downstream as would exist without the culvert, for the lifetime of this structure. Any installation or remediation of culverts will be undertaken with reference to fish passage guidelines (Franklin et al., 2018).

Stormwater and wastewater discharge

Increased impervious surfaces

The proposed SPSC will generally increase the area of impervious surfaces present relative to the Site's current landcover, which is almost entirely grassed landcover or tilled cropland, through the construction of large buildings, townhouses, and associated roads, pathways and carparking areas.

Increases in the area of impervious surfaces can reduce natural flow paths (via infiltration) to waterways during rainfall events, resulting in 'flashy' flows. Contaminants and pollutants (e.g., sediments, heavy metals) from the surrounding urban environment also accumulate on these hard surfaces (e.g. roads, footpaths) and enter waterways during rainfall events. Both of these can have adverse effects on the ecology and health of waterways.

Altered water flow and quality from storage pond discharges

The proposed storage pond is anticipated to discharge treated water from the BioGill system to the northern branch of Lagmhor Creek. This discharge is expected to be appropriately treated by the BioGill system; however, this requires investigation by a suitably qualified expert.

Untreated, or inadequately treated, stormwater and wastewater has the potential to alter in-stream water temperature, water quality and habitat quality, and ultimately risks adverse effects to any freshwater fauna if present downstream of discharge.

- An assessment is recommended of the efficacy of treatment by the BioGill system of stormwater and wastewater runoff produced by the Masterplan development and any adverse ecological effects of the residual discharge of treated water on the receiving environment.
- Once this has been completed, advice from a suitably qualified and experienced freshwater ecologist should be included to determine appropriate management measures.

Artificial light disturbance

The presence of artificial lights across the Site will increase as a result of the SPSC development. However, we note the following from the Boffa Miskell Landscape and Visual Effects assessment[8]:

"The darkness of the night sky, otherwise generally expected in the rural environment, has already been compromised. As part of the proposed activities lighting throughout the Site will only be provided on a permanent basis in the form of low down-lights for pedestrian purposes which will avoid light spill beyond the boundary of the Site. The lighting of sports fields would be intermittent and restricted to events. The proposed lighting masts around the sport field in the north-western quadrant can be retracted to minimise their visual effects while they are not in use".

Therefore, we considered that the risk of impact to nocturnal indigenous freshwater fish and insects (the behaviour patterns of, which may be adversely affected by light spilling near waterways) be already appropriately considered in the current design to avoid light spill.

- Advice from a suitably qualified and experienced freshwater ecologist should be included in the Detailed Design to determine the effects of lighting and any impact management measures required to manage any adverse effects.
- Advice may include recommendations such as: avoiding lighting adjacent to the waterways; and where new lighting is needed, it should designed to avoid light spill onto and over the waterways and riparian vegetation (i.e. using angled mounting and rear shielding). It is also recommended that the use of blue LEDs is avoided where possible, however, noting that further research information is pending on this matter.

[8] Boffa Miskell (2022). Landscape Effects Assessment. Report by Boffa Miskell Limited for Southern Parallel Sports Campus Ltd. Dated 29 August 2022.

Summary

As described in the Scope, the objective of this high-level assessment is to identify ecological values, potential ecological constraints and opportunities for enhancement within the Site. It is intended to provide sufficient information to support the fast-track application for the SPSC, while also providing an indication of further / detailed assessment that may be required to prepare an ecological impact assessment at Detailed Design stage.

Based on the information gathered so far (primarily based on desktop and a brief site walkover), there are no terrestrial vegetation values that preclude the SPSC development, but design and construction elements will need to be carefully considered during the Detailed Design phase. However, there may be Threatened and / or At Risk species (birds, lizards, freshwater fauna) present within the site, and potential effects on these species need to be carefully managed.

Specialist ecological surveys, including of the waterways and in-stream fauna, lizard and bird species, may be required to complete a detailed Ecological Impact Assessment, depending on the detailed design process. Any required surveys will confirm ecological values present, which will allow for the identification of the magnitude and level of effects of the proposed activity on these ecological values, and the provision of subsequent recommendations using the effects management hierarchy, i.e. measures to avoid, remedy and mitigate adverse effects.

We have provided recommendations throughout the Potential ecological constraints section, above; these have not been repeated here.

Ecological Enhancement Opportunities

The following provides some potential opportunities to enhance the ecological value and functioning of the Site, to be considered during the Detailed Design phase.

- Remove weeds in the gully riparian area of the northern branch, keeping any indigenous species (i.e., harakeke and tī kōuka). The removal of willows is recommended, via cut and paste or drill and fill techniques, which would allow for roots to be left in situ to avoid affecting bank stability.
- Create buffer plantings around any exotic deciduous trees remaining or proposed to be planted across the Site. This includes trees along the boundaries. This will help to reduce the quantity of leaves being deposited into waterways, which reduces water and habitat quality.
- Plant dense indigenous (or evergreen exotic) species around the storage pond and waterways, including trees and shrubs). This would provide shading of the waterbodies (to reduce fluctuations in water temperature) and control excessive growth of algae and macrophytes, as well as providing habitat and food resources to the freshwater habitats.
- Plant riparian margins with ecologically suitable species, including locally-sourced native species, avoiding exotic and deciduous species, especially close to the waterway. Use plants with flexible and low-density foliage where it's important to maintain flood capacity, but ensure the riparian margin is well vegetated with a variety of height tiers of native plant species.
- Where possible, avoid locating additional impervious surfaces (e.g., carparks, buildings, roads and pathways) adjacent to waterways to manage stormwater runoff. Create habitat for insects, birds, and lizards through use of node planting or pockets of indigenous plantings around the site.
- Create sinuosity in the straight sections of waterways and variation in bank steepness through regrading banks, creating a gently meandering low-flow channel and / or use of wetland floodplains or terraces.

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Appendix 1: Site Photos taken during site visit on 4th October 2022.

Northern branch of unnamed tributary of Carters Creek

Straightened section of the western branch of unnamed tributary of Carters Creek

Unnamed tributary of Carters Creek downstream of the residential dwelling and below the confluence of the northern and western branches

Mt Somers Willowby water race, which runs inside the Site along the western boundary

Northern branch of unnamed tributary, at the upstream extent of the Site near Huntingdon Avenue

Woody debris near Huntingdon Avenue

Tī kōuka / cabbage trees and harakeke / flax present wihtin the Site, including in the gully surrounding the northern branch, which may represent remnant or naturally regenerating vegetation historically present in the Ecological District

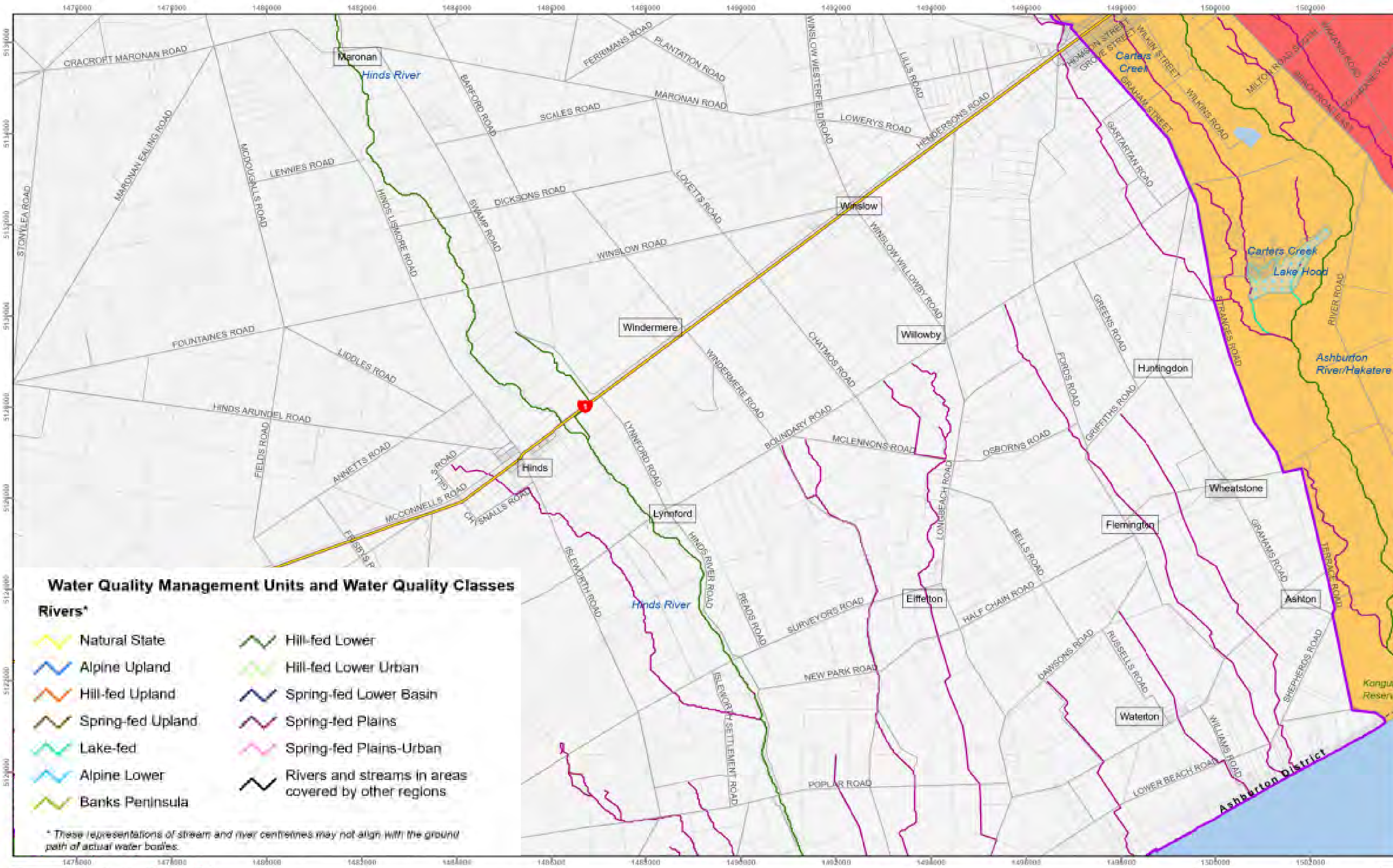
One of the culvert crossings on the western branch

A culvert crossing in the unnamed tributary to Carters Creek, downstream of the confluence of the northern and western branches

Appendix 2: Avifauna species present, or likely to be present

SPECIES		CONSERVATION STATUS			Native forest	Exotic Forest	Scrub / shrubland	Farmland / open country	Freshwater / wetlands	Coastal / Estuary	Oceanic	Urban/Residential	Observed during site visit?	
Black shag	*Phalacrocorax carbo novaehollandiae*	Native	At Risk	Relict										
Pied shag	*Phalacrocorax varius varius*	Endemic	At Risk	Recovering										
Little shag	*Phalacrocorax melanoleucos brevirostris*	Native	At Risk	Relict										
Black-fronted tern	*Chlidonias albostriatus*	Endemic	Threatened	Nationally Endangered									✓	feeding
Australasian crested grebe	*Podiceps cristatus australis*	Native	Threatened	Nationally Vulnerable										
Caspian tern	*Hydroprogne caspia*	Native	Threatened	Nationally Vulnerable										
Eastern falcon	*Falco novaeseelandiae novaeseelandiae*	Endemic	Threatened	Nationally Vulnerable										
Grey duck	*Anas superciliosa*	Native	Threatened	Nationally Vulnerable										
Banded dotterel	*Charadrius bicinctus bicinctus*	Endemic	At Risk	Declining										
White-fronted tern	*Sterna striata striata*	Native	Threatened	Nationally Vulnerable										
Black-fronted dotterel	*Elseyornis melanops*	Native	Threatened	Nationally Endangered										
Grey duck - mallard hybrid	*Anas superciliosa x platyrhynchos*	Hybrid	Not Threatened	Not Threatened										
Rifleman	*Acanthisitta chloris chloris*	Endemic	Not Threatened	Not Threatened										
South Island tomtit	*Petroica macrocephala macrocephala*	Endemic	Not Threatened	Not Threatened										
Black-tailed native-hen	*Gallinula ventralis*	Native	Vagrant	Vagrant										
Australasian little grebe	*Tachybaptus novaehollandiae novaehollan*	Native	Coloniser	Coloniser										
Helmeted guineafowl	*Numida meleagris*	Introduced	Introduced	Introduced & Naturalised										
Peafowl	*Pavo cristatus*	Introduced	Introduced	Introduced & Naturalised										
Muscovy duck (domestic)	*Cairina moschata*	Introduced	Introduced	Not Established										
White-faced heron	*Egretta novaehollandiae*	Native	Not Threatened	Not Threatened									✓	
White heron	*Ardea modesta*	Native	Threatened	Nationally Critical										
Black swan	*Cygnus atratus*	Native	Not Threatened	Not Threatened										
Canada goose	*Branta canadensis*	Introduced	Introduced	Introduced & Naturalised										
Paradise shelduck	*Tadorna variegata*	Endemic	Not Threatened	Not Threatened									✓	
Mallard	*Anas platyrhynchos*	Introduced	Introduced	Introduced & Naturalised									✓	
Grey teal	*Anas gracilis*	Native	Not Threatened	Not Threatened										
Australiasian shoveler	*Anas rhynchotis*	Native	Not Threatened	Not Threatened										
NZ scaup	*Aythya novaeseelandiae*	Endemic	Not Threatened	Not Threatened										
Australiasian harrier	*Circus approximans*	Native	Not Threatened	Not Threatened									✓	
California quail	*Callipepla californica*	Introduced	Introduced	Introduced & Naturalised									✓	
Pheasant	*Phasianus colchicus*	Introduced	Introduced	Introduced & Naturalised										
Pukeko	*Porphyrio m. melanotus*	Native	Not Threatened	Not Threatened									✓	breeding
South Island pied oystercatcher	*Haematopus finschi*	Endemic	At Risk	Declining									✓	feeding
Pied stilt	*Himantopus h. leucocephalus*	Native	Not Threatened	Not Threatened										
Spur-winged plover	*Vanellus miles novaehollandiae*	Native	Not Threatened	Not Threatened										
Black-backed gull	*Larus d. dominicanus*	Native	Not Threatened	Not Threatened									✓	
Red-billed gull	*Larus novaehollandiae scopulinus*	Native	At Risk	Declining										
Black-billed gull	*Larus bulleri*	Endemic	At Risk	Declining										
Rock pigeon	*Columba livia*	Introduced	Introduced	Introduced & Naturalised										
Shining cuckoo	*Chrysococcyx l. lucidus*	Native	Not Threatened	Not Threatened										
Little owl	*Athene noctua*	Introduced	Introduced	Introduced & Naturalised										
Kingfisher	*Todiramphus sanctus vagans*	Native	Not Threatened	Not Threatened										
Skylark	*Alauda arvensis*	Introduced	Introduced	Introduced & Naturalised									✓	
Welcome swallow	*Hirundo n. neoxena*	Native	Not Threatened	Not Threatened									✓	
NZ pipit	*Anthus n. novaeseelandiae*	Native	At Risk	Declining										
Dunnock	*Prunella modularis*	Introduced	Introduced	Introduced & Naturalised										
Blackbird	*Turdus merula*	Introduced	Introduced	Introduced & Naturalised									✓	
Song thrush	*Turdus philomelos*	Introduced	Introduced	Introduced & Naturalised										
Grey warbler	*Gerygone igata*	Endemic	Not Threatened	Not Threatened										
South Island fantail	*Rhipidura fuliginosa fuliginosa*	Endemic	Not Threatened	Not Threatened										
Silvereye	*Zosterops lateralis lateralis*	Native	Not Threatened	Not Threatened										
Bellbird	*Anthornis m. melanura*	Endemic	Not Threatened	Not Threatened										
Yellowhammer	*Emberiza citrinella*	Introduced	Introduced	Introduced & Naturalised										
Chaffinch	*Fringilla coelebs*	Introduced	Introduced	Introduced & Naturalised									✓	
Greenfinch	*Carduelis chloris*	Introduced	Introduced	Introduced & Naturalised										
Goldfinch	*Carduelis carduelis*	Introduced	Introduced	Introduced & Naturalised										
Redpoll	*Carduelis flammea*	Introduced	Introduced	Introduced & Naturalised										
House sparrow	*Passer domesticus*	Introduced	Introduced	Introduced & Naturalised										
Starling	*Sturnus vulgaris*	Introduced	Introduced	Introduced & Naturalised										
Magpie	*Gymnorhina tibicen*	Introduced	Introduced	Introduced & Naturalised									✓	
Australian coot	*Fulica atra australis*	Native	At Risk	Naturally Uncommon										
Cape barren goose	*Cereopsis novaehollandiae*	Introduced	Introduced	Introduced & Naturalised										

Appendix 3: Canterbury Land and Water Regional Plan Map with River Water Quality Classes



MAP
A-084
Canterbury Map Series

A-073	A-074	A-075
A-083	A-084	A-085
A-091	A-092	

Canterbury Land and Water Regional Plan (LWRP)

Canterbury Map Series

Map A-084

Environment Canterbury Regional Council

Scale 0 0.5 1 2 3 Km

Reference

About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Whangarei, Auckland, Hamilton, Tauranga, Wellington, Nelson, Christchurch, Dunedin, and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.

Appendix 11

Odour Assessment

Appendix 11

Written Approval