Draft Silverdale West Dairy Flat Industrial Area Structure Plan

Landscape Report

FINAL

February 2019

Prepared for Auckland Council by

bridgetgilbert
landscape architecture

Contents

Appendices

1.0 Introduction

1.1 Auckland Council's strategic direction for growth in Auckland includes the urbanisation of the Future Urban zone at Wainui, Silverdale, and Dairy Flat. Preparing a structure plan is the first stage to enable and guide urban development. It is a non-statutory high-level plan that shows how an area of land can be urbanised, taking into account constraints and opportunities. It shows the arrangement of various land uses and infrastructure. It also shows how the area connects to adjacent urban areas and wider infrastructure networks. Important natural features and heritage values will also be identified.

1.2 Council has prepared a **Background Report** (December 2017) which broadly outlines opportunities and constraints in the Silverdale West Dairy Flat Business structure plan area. The content of the Background Report is underpinned by a series of technical reports covering a range of topic areas, including landscape (referred to hereafter as the **Landscape Topic Report**).

1.3 Section 5.7 of the Background Report includes a summary of the Landscape Topic Report and identifies constraints and opportunities in relation to natural character, landscape, and visual qualities of the structure plan area. The constraints and opportunities identified are based on the Auckland Council Rural Urban Boundary Investigations[1] (referred to hereafter as the **RUB Landscape Report**); and landscape analysis undertaken by the former Rodney District Council in association with the draft Silverdale West Structure Plan (referred to hereafter as **Silverdale West Landscape Report**).

1.4 The Auckland Council Rural Urban Boundary Investigations constraints and opportunities analysis covers the whole of the structure plan area but are high-level. The landscape analysis by the former Rodney District Council is limited to the Silverdale West Area. For these reasons, landscape analysis for that part of the structure plan that lies south of Wilks Road and north of Dairy Flat Highway around Pine Valley Road is necessary to provide a complete picture.

1.5 Auckland Council engaged Bridget Gilbert Landscape Architecture Limited (BGLA) in February 2018 to:

a. review the landscape component of the December 2017 Background Report;

b. undertake a more detailed assessment of the land outside of the Silverdale West area, (i.e. the Pine Valley area north of the Dairy Flat Highway, and the land south of Wilks Road);

c. suggest overarching development principles that would guide appropriate development within the structure plan area (from a landscape perspective);

d. make recommendations with respect to landscape mitigation that are appropriate at a structure plan level; and,

e. identify suitable mechanisms for the appropriate management of landscape and visual amenity considerations; for example, in relation to development/lot layout, earthworks, streams restoration, and public open space networks.

1.6 For the purposes of this report, the Study Area is as defined in **Appendix 1**.

1.7 Further, given that the landscape component of the Background Report drew from two landscape studies (described shortly), one of which addressed the entire Study Area, Items a) and b) above have been combined in this report as Landscape Analysis of the Study Area (i.e. Section 2 overleaf).

[1] *Rural Urban Boundary (North and Northwest) Option Area Landscape Evaluations Report* (August 2013, prepared by Environmental Planning and Design Ltd)

1.8 I have visited the study area on a number of occasions, including most recently on 5 March 2018. I am familiar with the wider area and have been involved in numerous resource consent applications within the wider area, assisting both private landowners and Auckland Council (in a peer review capacity).

2.0 Landscape Analysis of the Study Area

Background Report December 2017

2.1 The Natural Character, Landscape and Visual section of the Background Report (and the Landscape Topic Report) advises that it draws from the RUB Landscape Report and the landscape analysis that was undertaken as part of the Draft Silverdale West Structure Plan (2010).

2.2 The Landscape Topic Report includes extracts from the RUB Landscape Report of relevance to the study area, excepting the Silverdale Constraints, Character, Sensitivity, and Landscape Capacity mapping. For completeness, the Silverdale RUB Landscape Report mapping is attached as **Appendix 2** to this report.

2.3 The Landscape Topic Report does not include any detail with respect to the Silverdale West Landscape Report. Again, for completeness, the 'Silverdale West Landscape Report' prepared by Brown Environments (2009) is attached as **Appendix 3** to this report. The Silverdale West Structure Plan related to the triangular portion of land enclosed by Dairy Flat Highway to the west, Wilks Road to the south, and State Highway 1 (**SH1**) to the east (referred to hereafter as the **Silverdale West Triangle**).

2.4 The Background Report makes the following key observations with respect to the landscape character of the Study Area:

a. The existing land use is predominantly lifestyle with blocks ranging in size between 2 and 5ha, and houses concentrated along the (relatively shallow) ridgelines coinciding with Dairy Flat Highway and Wilks Road. Scattered commercial businesses are evident.

b. The complex patterning of watercourses throughout the Study Area including John Creek and upper catchment tributaries of the Rangitopuni and Dairy Streams.

c. Key vegetation features include: exotic hedgerows; scattered exotic shade trees and shelterbelts; a riparian remnant bordering the Weiti Stream (SEA); two small stands of kanuka (in northern portion of the Study Area); and one wetland in the north eastern quadrant.

d. The high visibility of the Silverdale West Triangle in views from the elevated SH1 corridor and the rural residential properties on the ridgeline to the east, roughly coinciding with East Coast Road, and the importance of the views 'through the site' from these locations to the bush-clad hills to the north west (Lloyds Hill environs).

e. The importance of the view from SH1 immediately north of the Wilks Road overbridge, out over the Silverdale West Triangle to the hills beyond.

f. The sensitivity of the rural residential properties on the ridgeline to the east to urban change throughout the Silverdale West Triangle.

g. The variable visibility of the Silverdale West Triangle in views from Wilks Road as a consequence of more fragmented vegetation patterns (largely limited to amenity plantings around dwellings).

h. The relatively limited visibility of the Silverdale West Triangle in views from Dairy Flat Highway as a consequence of the (predominantly) exotic and unprotected vegetation patterns along property boundaries.

i. The importance of the SH1 and Dairy Flat Highway as a 'visual gateway' to the Hibiscus Coast, noting that the precinct approach applied for Silverdale 2 and Silverdale 3 which targets the need to protect, maintain, and enhance the visual amenity of the entrance to the Hibiscus Coast may be appropriate for the Study Area.

j. The strong capability of the majority of the Study Area to accommodate urban development, excepting the highly sensitive margins of SH1 in the south eastern portion of the Study Area (to the east of the North Shore Airport and in the vicinity of the SH1 service centre) which is highly visible from SH1.

2.5 I confirm that I concur with these observations.

Additional Landscape Character Considerations

2.6 In addition to these aspects, I also note the following landscape elements and patterns that contribute to the landscape character of the Study Area.

2.7 These points draw from the Silverdale RUB Report, the Silverdale West Landscape Report, and the author's field survey and review of relevant mapping (including **Appendix 4: Elevation** mapping, **Appendix 5: Slope Analysis** mapping, **Appendix 6: Topographic Plans**, **Appendix 7: Vegetation** mapping and **Appendix 8: Watercourses and Floodplain** mapping.

a. Despite the relatively low-lying nature of the Study Area as a whole, the landform patterning is such that the area effectively straddles five broad landscape character areas as follows:

   i. The north-facing undulating slopes to the north of Dairy Flat Highway that drain to the Weiti Stream.

   ii. The Silverdale West Triangle defined by the shallow 'ridgelines' associated with Dairy Flat Highway to the west, Wilks Road to the south and SH1 to the east, draining to John Creek.

   iii. The shallow west-facing slopes roughly between Postman Road and Dairy Flat Highway, draining to Rangitopuni Stream.

   iv. The more undulating south-facing slopes to the south of the North Shore Airport and east of Postman Road, draining to Dairy Stream (described as Rolling Hills and Valleys landscape character type in the Silverdale RUB Report).

   v. The low-lying and west-facing slopes adjacent the SH1 corridor in the vicinity of the (northbound) service centre (referred to as the **Redvale Corridor**).

   The **Elevation** mapping attached as **Appendix 4** assists an understanding of this spatial arrangement.

b. In addition to the watercourses mentioned above, two tributaries of the Weiti Stream coincide with the small portion of the Study Area to the north of Dairy Flat Highway.

c. The generally easy contour of the Study Area, making it relatively well suited to accommodating urban development (and industrial land uses more specifically) from a landform modification perspective – refer **Appendix 5: Slope Analysis**.

d. The variable visibility of the balance of the Study Area to the south of the Silverdale West Triangle (excluding the land adjacent SH1) as a consequence of the patterning of predominantly exotic and unprotected shelterbelt, roadside, and amenity plantings.

e. The relatively exposed nature of the small portion of the Study Area to the north of the Silverdale West Triangle in views from Dairy Flat Highway and the western portion of the SH1 Silverdale Interchange as a consequence of the absence of vegetation.

f. The proximity of the Study Area to the SH1 Silverdale interchange.

g. Extent of floodplain patterning.

h. The Dairy Flat 'commercial node' located approximately midway along the western edge of the Study Area (on Dairy Flat Highway). NB area zoned Business-Light Industry under AUP (OP).

i. The somewhat diminished importance of the portion of the Structure Plan area coinciding with the Redvale Corridor to the scenic and amenity values of the SH1 Road user and the impression of a greenbelt between the North Shore and Hibiscus Coast urban areas given that the land to the west side and east side of this stretch of the highway has been upzoned to Future Urban Zone (FUZ) in the AUP (OP).

j. The utilitarian character and associated building height (and noise) constraints associated with the North Shore Airport.

k. The AUP(OP) Mixed Rural zoning of the land to the west of Dairy Flat Highway, south of Wilks Road, i.e. Horseshoe Bush Road, Kahikatea Flat Road environs and the potential for a change to industrial land use in the Study Area to influence the rural residential amenity enjoyed in that location. It should, however, be noted that the busy highway of Dairy Flat Highway (and coinciding with the AUP(OP) RUB) is considered to form a robust and defensible edge from a landscape perspective.

l. The Future Urban zoning of the land to the south, northwest (i.e. west of Dairy Flat Highway and to the north of Wilks Road) suggesting a compatible 'edge' to industrial land use throughout the Study Area in these locations.

m. The influence of the highly visible, large-scale Business and Recreation based development throughout the elevated slopes on the eastern side of SH1 adjacent the northern portion of the Silverdale West Triangle on the character and amenity of the wider visual catchment extending between SH1 and Dairy Flat Highway (e.g. Snowplanet etc.).

n. The proposed North Shore Busway extension anticipates a route along the western side of the highway with a Busway Station near the Silverdale SH1 interchange.

o. An new arterial east – west road network is anticipated linking between Wainui East and Dairy Flat that traverse the Structure Plan area (Postman Road Road).

2.8 A number of these landscape elements are depicted in the photographs attached in **Appendix 9**.

Recommended Overarching Development Principles and Mitigation

2.9 Based on the preceding analysis of the landscape character of the Study Area and wider context, it is recommended that the following landscape related development principles should underpin industrial land use development within the Study Area (listed in no particular order of priority) to ensure that landscape related effects are appropriately managed:

a. Establishment of a landscape buffer to the portion of the Study Area that abuts Mixed Rural zoned land.

b. Consideration of a landscape buffer to the portions of the Study Area that adjoin FUZ land, given that the latter may comprise residential and/or open space land uses in the future.

c. Establishment of a landscape buffer along the SH1 boundary of the Study Area.

d. Restoration of riparian margins.

e. Integration of floodplain and riparian areas into a cohesive landscape framework that provides for stormwater management, provides open space and landscape amenity for the industrial area itself, and serves to break up the perception of a mass of buildings in elevated views from the surrounding area.

f. Retention of existing native vegetation features throughout the Study Area.

g. Maintenance of key viewshafts out over the site from SH1 to the hills beyond (Lloyds Hill environs) as shown on the mapping in **Appendix 10**.

h. Maintenance of a degree of visual amenity in views out over the site from the East Coast Road properties (via the planning mechanisms suggested below).

i. Reinforcement of the SH1 corridor, Dairy Flat Highway and SH1 Silverdale interchange as an attractive entrance to the Hibiscus Coast.

j. Integration of the development with the neighbouring North Shore Airport (and associated rural residential development) and Dairy Flat commercial node.

2.10 It should be noted that some of these recommended development principles are interrelated and/or overlap. For example, the establishment of a landscape buffer along the SH1 corridor is likely to assist with the creation of an attractive entrance to the Hibiscus Coast (item i. above).

2.11 The above recommended development principles are illustrated on the plan attached in **Appendix 10: Landscape Development Principles**.

Suggested Planning Mechanisms

2.12 To secure the landscape development principles set out in the preceding section, the following planning mechanisms are recommended for the Silverdale West Dairy Flat Industrial Area Structure Plan (in no order of priority):

a. The requirement of a minimum 20m width landscape buffer along the Silverdale West Dairy Flat Industrial Area Structure Plan boundary opposite Mixed Rural zoned land that is designed to mitigate the adverse effects of industrial land use on the rural character and visual amenity of the neighbouring mixed rural / rural residential area (Mixed Rural zone) .

b. A requirement that where a lot within the Silverdale West Dairy Flat Industrial Area Structure Plan adjoins FUZ land, consideration is given to the need to futureproof connectivity and the potential integration of a landscape buffer on the industrial zoned land.

c. The requirement of a minimum 40m landscape buffer along the SH1 boundary of the Silverdale West Dairy Flat Industrial Area Structure Plan area.

d. The requirement of a minimum 10m width landscape buffer along the Dairy Flat Highway frontage adjoining FUZ or Structure Plan areas.

e. The protection of existing stands of native bush and wetland features.

f. The requirement for a cohesive landscape framework/open space network throughout the Silverdale West Dairy Flat Industrial Area Structure Plan area that:

    i. Integrates the riparian restoration of all watercourses.

    ii. Includes all of the floodplain areas.

    iii. Integrates stormwater management in a manner that benefits the amenity of the open space area.

    iv. Creates a cohesive walkway/cycleway network for the use of the local working population and the wider community.

    v. Uses locally appropriate eco-sourced vegetation that is of a scale and character that:

        - assists the integration of industrial development in close-range views and long-range views from Dairy Flat Highway, SH1 and the rural residential properties along East Coast Road; and

        - promotes safe use of the walkway / cycleway network by enabling clear sight lines along routes and using low plantings adjacent routes.

    vi. Considers the use of green links along streets within the Structure Plan area to create a cohesive ecological and open space network.

    vii. Includes green corridors along all arterial and connector roads that enable a continuous patterning of large scale specimen tree planting on both sides of the carriageway.

    viii. Is designed to accommodate North Shore Airport approach height constraints.

g. The development of appropriate Plant Schedules for each category of planting.

h. Require development adjacent the open space network where walkways/cycleways are located to minimise adverse amenity effects on the adjacent open space and optimise opportunities for passive surveillance.

i. For lots located within the viewshaft from SH1 north-westwards north westwards across the Structure Plan area, consider the effects of proposed buildings and plantings on the character and quality of the outlook. In this view, planting along the highway frontage, along the road network and potentially, alongside and rear yards should be used to avoid the perception of a continuous mass of buildings in the outlook. Other devices to consider in the managing the character of the outlook from the highway include assessment criterion addressing building materials, finishes/colours, roof profiles and planting design.

j. Require development in the portion of the Silverdale West Dairy Flat Industrial Area Structure Plan area north of Wilks Road to use roof colours that have a maximum LRV of 40%.

k. Require the design of the new arterial road entry points to create a legible gateway to the Silverdale West Dairy Flat Industrial Area Structure Plan area.

l. Require all development to establish a front yard landscape treatment: minimum 3m width with security fencing set behind the landscape treatment and coloured black.

m. Require any noise attenuation walls to be fully screened by planting in views from the motorway.

n. For lots located adjacent the Silverdale Interchange consider how buildings and planting are designed to contribute to the creation of an attractive gateway to Silverdale and the Hibiscus Coast.

o. For lots located along the Dairy Flat Highway frontage opposite FUZ land consider how buildings and planting are designed to contribute to the creation of an attractive gateway to Silverdale and the Hibiscus Coast.

p. For lots located adjacent the existing Dairy Flat commercial node consider how buildings and planting are designed to contribute positively to the existing node.

q. For lots located adjacent the North Shore Airport consider how buildings and planting are designed to contribute positively to the neighbouring land use (including the rural residential land uses around the airport).

r. Consider the location, scale and character of signage to ensure that this aspect of industrial (and commercial) development contributes positively to the urban character of the Structure Plan area.

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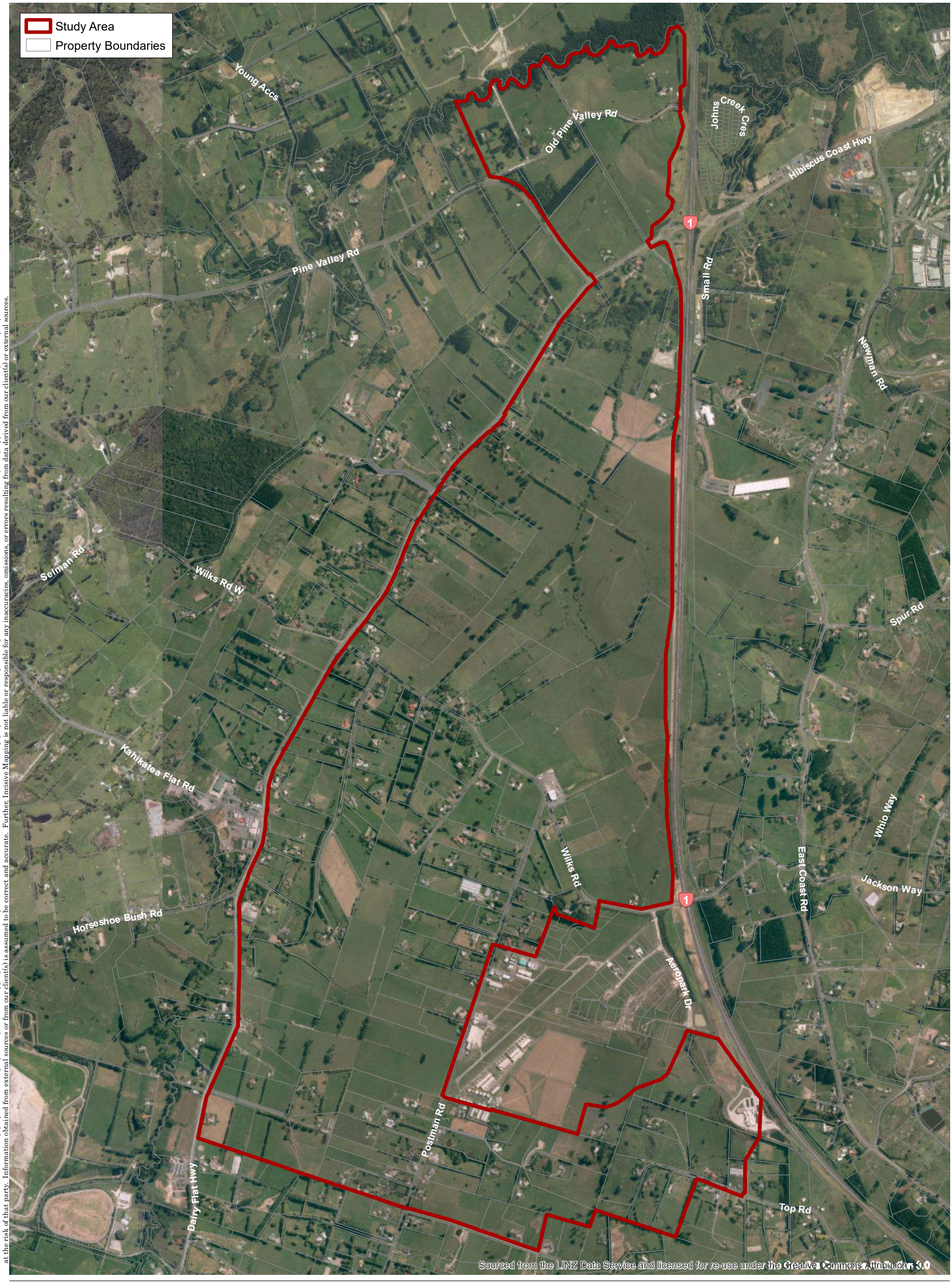
Appendix 1: Study Area



INCISIVE MAPPING

Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | *Reviewed:* Bridget Gilbert

Data Sources: LINZ / Eagle (2011 Aerials), LINZ (Parcels, Roads), Incisive Mapping (Study Area)

File Ref: 2018-03_Silverdale_West_Dairy_Flat_Aerial.mxd

0 1 km

1:15,000 @ A3

Silverdale West - Dairy Flat Structure Plan Aerial

Date: 14 March 2018

Appendix 2: Silverdale RUB Landscape Report Mapping

Extent of Main View

0 0.45 0.9 km

N

Date: 30 May 2013

1:30,000 @ A1

- Railway
- Building Footprints
- Major Road
- Indigenous Forest
- Exotic Forest
- > 20° (steep slope)
- 16° - 20°
- 0° - 15° (flat land)
- Floodplains
- High Coastal Natural Character
- Outstanding Coastal Natural Character
- Significant Ecological Areas
- Outstanding Natural Features
- Outstanding Natural Landscapes
- Public Open Space Zoning
- Geological Fault
- Puhoi_-_Wellsford extension

Elevation

- 0 - 5
- 6 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100
- 101 - 140
- 141 - 722

Silverdale Constraints Map

Auckland Council

File ref:

Landscape Character Areas

Uplands
Steep forested hill country (bush and exotic forestry) which frames the adjoining downland areas - key visual landscape patterns; includes large areas of outstanding natural landscape.

Coastal Headland Hills
Steep to moderately steep harbour hill county margins. Frames coastal margins. Important areas in regard to Natural Character

Inland Hill Country
Strongly rolling rural hill country that defines a number of extensive valley systems and key visually containing secondary ridgelines

Downland Valleys
Generally broad open flat to rolling valleys

Moderate Hill Slope Margins
Toe slope margins which transition between lowland valleys and steeper upland hills

Coastal Hill Margins
Steep to moderate coastal margin hill areas in proximity to existing settlement

Contained Valleys
Visually enclosed valley and stream corridors

Gentle Hill Slope Margins & Flats
Undulating slopes and areas of flat terrain adjoining steeper inland hills

Lowland Flats
Gently undulating flats adjoining steeper inland hills

Rolling Hills & Valleys
Transitional moderately sloping hills and minor valleys - includes clustered and disbursed areas of rural residential settlement

Existing Settlements
Existing areas of settlement existing urban built development

Containing Spur System
Steep spurs and slopes that define lower adjoining valleys, flats and stream corridors

Open Lowland Valley
Moderately sloping contained open valley

Partially Settled Hills
Moderate Hill slope areas with partial and emerging patterns of urban built development

Transport Corridor
"Corridor" landscape defined by steep immediately adjoining rural hill slopes

Road "Gateway"
Visual landscape transitional node

Extent of Main View

Orewa
Silverdale
Whangaparaoa
Stillwater
Riverhead Forest

0 0.45 0.9 km

N

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Date: 30 May 2013
1:30,000 @ A1

Railway
Building Footprints
Major Road
25m contour

Landscape Character Area Framework

Silverdale - RUB Options Work in Progress 20 June 2013
INTERNAL USE ONLY

Auckland Council

File ref:

1. Orewa River Hill Slopes
- Strongly rolling lower toe slope hills and terraces
- Framed to the north by steeper hill country
- Adjoins and frames lower river valley (area 3)
- General southerly aspect – likely views with good amenity to the SE
- Moderate capacity to accommodate urban built form

2. Upper Orewa River Valley
- Tightly contained upper valleys with numerous stream systems
- Strongly framed by surrounding steep hill country
- Includes main access road (Wainui Rd) corridor
- Moderate to low capacity to accommodate urban development

3. Orewa River Valley
- Flat to undulating narrow river valley and terraces
- Includes main stream channel (Orewa River)
- Strongly contained by surrounding hill terrain
- Defined to the south by Wainui Road spur
- Strong capacity to accommodate urban development

4. Waterloo Creek Valley
- Broad rolling east facing down land valley
- Strongly defined in the west by Young Access Rd and Cemetery Rd hills (note ONL to the west). Defined to the east by SH1
- Strong visual connection to Silverdale
- Good aspect and likely amenity (views)
- Well contained to the south (Weiti Stream terrace)
- Strong capacity to accommodate urban development

5. Upper Pine Valley Road
- Visually contained narrow east/west running valley
- Well defined by steep hills to north and south (ONL area to the north)
- Includes flat river terrace / valley floor
- Opens to the east at Young Access Rd
- Moderate to low capacity to accommodate urban development

6. Lower Pine Valley Road
- Well defined downland valley
- Relatively visually discrete exposed to Dairy Flat Highway to the south
- Includes a number of more elevated flatter terrace areas and vegetated Weiti Stream corridor
- Strong proximity to Silverdale interchange / business areas
- Strong capacity to accommodate urban development

7. South Wainui Road Hill
- Strong vegetated hillslope pattern
- Key defining landscape element for existing Silverdale business area
- Includes areas of indigenous vegetation
- Strong landscape sensitivity

8. Silverdale & Western Gateway
- Existing "hillside" & Valley business areas
- Includes western gateway area about SH1 interchange
- Gateway area strongly defined by East Coast Bays (ECB) Rd ridge and South Wainui Rd Hill
- Minor spur separates from western ECB Rd slopes
- Strong capacity to accommodate urban form consistent with existing development patterns

9. Upper Weiti River Headlands
- Defined, moderately sloping coastal headland landforms
- Includes existing rural residential settlement – limited existing road access
- Spatial proximity to existing areas of urban development
- High potential amenity / 'liveability'
- Strong capacity to accommodate urban form

10. Newman Road Valleys
- Steep tightly constrained NE facing valley complex
- Defined by very steep adjoining hill spurs
- Includes numerous stream systems/channels
- Proximate to Silverdale – limited existing access
- Limited capacity to accommodate urban development

11. Duck Creek Valleys
- Well defined and visually contained moderately sloping valley system
- Predominately N to NE facing slopes and broad toe slope spurs
- Includes numerous branching stream channels
- Also includes electricity infrastructure (220 KV pylons)
- High potential landscape amenity / 'liveability'
- Moderate to high capacity to accommodate urban development

12. East Coast Bays Rd & Duck Creek Spurs
- Steep to very steep narrow spur system
- Local roading patterns aligned with this landform pattern (as well as proposed "Penlink")
- Also includes rural residential settlement on more easy slope areas
- Key landscape pattern that defines major lowland valley in the west (area 18) and eastern more contained valley complex in the east (area 11)
- Limited capacity to accommodate urban development

13. Weiti Coastal Hills
- Steep NE facing coastal hills
- Includes large areas of indigenous vegetation to the north
- High Natural Character / ecological notations for adjoining River
- Frames Stillwater urban settlement
- Strong landscape sensitivity

14. Weiti Hills
- Predominately steep coastal forestry hill country
- Includes cleared spur slopes and coastal flat (Karepiro Bay)
- Inland areas visually discrete
- Small areas of indigenous vegetation
- Includes limited future development cluster areas
- Strong landscape sensitivity

15. Okura River Hills
- Steep south facing hills and broad moderately sloping forestry valley (Haighs Rd)
- Incudes DoC Scenic reserve
- High adjoining landscape and natural character values (ONL) – Okura River
- Includes south facing Haighs Access Rd slopes which are a key natural landscape pattern of the scenic amenity of SH1 northbound
- Strong landscape sensitivity

16. Okura Road Valley
- Small contained moderately sloping pastoral valley
- Strongly visually aligned with East Coast Bays Road and SH1
- Likely to be strongly influenced by Penlink roadway
- Moderate capacity for urban development

17. Worsnop Way Valley
- Visually contained broad moderately sloping pastoral valley
- Good road access and aspect
- West draining – not part of Okura System
- Discrete from SH1
- Strong capacity to accommodate urban development

18. Redvale Corridor
- Narrow SH corridor defined by immediately adjoining hill slope features
- Key rural landscape which contributes to the scenic and amenity values of the SH1 driver experience
- Defined by Redvale hills in the south and Bawden Rd overbridge in the north
- Strong landscape sensitivity

19. Diary Flat East
- Flat to gently undulating terrain including Aerodrome
- Defined by Postman Rd to the west, Wilks Rd and valley to the north, rising terrain of Redvale Corridor in the east and more rolling terrain of upper Dairy Stream catchment
- Strong landform connection with wider flats west of Postman Rd
- Screened from SH1 by Redvale Corridor
- Strong capacity to accommodate urban development

20. John Creek Valley
- Broad open moderately sloping well defined pastoral lowland valley
- Visually exposed to SH1 in the south interspersed with landform screening from highway cuttings through three NW aligned gentle spur landforms
- Strong visual connection with west facing slopes of ECB Rd spur and lower eastern valley margins
- Includes very strong natural drainage pattern and associated floodplain areas
- Strong existing rural vegetation patterns and structure of field enclosure / partition
- Strong capacity to accommodate urban built form

21. Wilkes Road East
- Two broad subtle south sloping spurs – part of the upper eastern branch of the Rangitopuni Stream system. Slightly elevated particularly in the north.
- Pastoral land cover predominates
- Moderate rural residential settlement mostly aligned with surrounding road corridors – lineal cadastral boundaries and field enclosure
- Strongly defined by adjoining road network
- Strong capacity to accommodate urban development

22. Wilkes Road West
- Well defined hill slope margin and valley area strongly framed by upper Horseshoe Bush Road terrain and surrounding roads
- Characterised by branching mid Rangitopuni Stream system – predominately west facing
- Bisected by Kahikatea Flat Road – good potential access
- Includes existing Dairy Flat commercial area
- Strong to moderate capacity to accommodate urban development

23. Rangitopuni Stream Corridor
- Moderate hill slope margins easing from steeper terrain in the west rolling down to major stream corridor area
- Extensive vegetation patterns aligned with stream corridor – provides strong visual element aligned with Dairy Flat Highway in the east
- Excludes but adjoins extensive landfill – clearly defined potential buffer area for landfill from Horseshoe Bush Rd in the north to Richards Rd in the south
- Moderate capacity to accommodate urban development (business recommended)

24. Dairy Flat
- Extensive area of flat to undulating terrain between Rangitopuni Stream and Dairy Stream Systems
- Predominately characterised by pastoral landcover
- Includes established and extensive patterns of rural residential settlement as well as larger areas of open pasture, some glass housing and the Dairy Flat School
- Strongly defined to the west by Dairy Flat highway and to the east by Postman Rd
- Strong capacity for urban development

25. Dairy Stream North
- Undulating to rolling upper stream catchment characterised by two gentle south draining open valleys divided by moderately elevated minor hills
- Includes existing patterns of rural residential settlement that are loosely clustered about more elevated terrain and the Postman Rd corridor
- Defined to the south by Bawden Rd which generally follows sub-catchment boundary
- Pastoral landcover predominates with strong natural drainage patterns
- Strong capacity to accommodate urban development

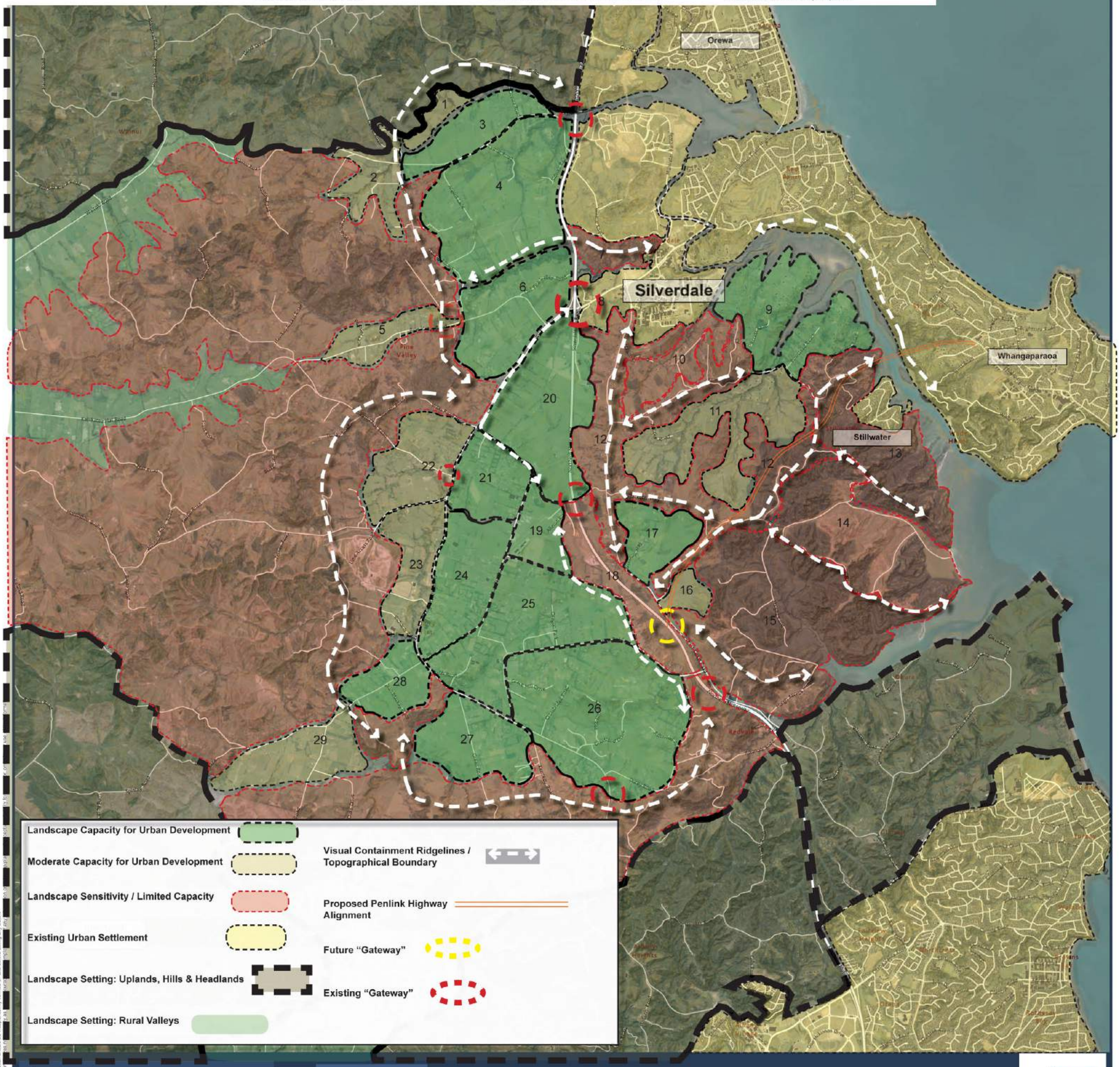
26. Dairy Stream East
- Rolling hill spur and valley terrain of the upper eastern Dairy Stream catchment
- Defined to the north by Bawden Rd and to the east and south by steeper hill country (Durey Rd and SH17)
- Characterised by areas of clustered rural residential development particularly about more elevated spurs and knolls – lower valleys generally less developed
- Includes electricity infrastructure corridor (220Kv) to Silverdale
- Strong natural drainage pattern (vegetated) strong organising landscape pattern aligned with hill spur terrain
- Strong urban development potential – limited about existing rural residential clustered areas

27. Green Rd Valley and Flats
- Well defined north facing area of relatively flat terrain framed to the south by steeper hill country, to the west by steep bush hill feature (ONL), to the north by SH17 corridor and to the east by Kennedy Rd
- Limited existing rural residential development with pastoral land cover predominating – strong natural stream corridor to the west; vegetated
- High potential amenity and 'livability'
- Strong urban development potential

28. Blackridge Rd East
- Slightly elevated open terrace flat strongly defined by Rangitopuni Stream corridor and associated steeper hill country in the north and more isolated hill feature to the south east (ONL)
- Includes limited areas of rural residential settlement south of Blackridge Rd – more settled to the north of Blackridge Rd
- Good aspect – generally to the north and north east
- Includes two minor stream tributaries
- Strong urban development potential

29. Escott Rd Valley
- Enclosed upper rural valley area strongly defined by steep surrounding hill country to the north, south and west and isolated hill feature to the east (ONL)
- Moderately sloping terrain – good aspect
- Limited spatial connection to other potential development areas to the east (one road in/out)
- High rural amenity / "liveability"
- Limited to moderate urban development potential

Extent of Main View



0 0.45 0.9 km

N

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Date: 30 May 2013

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Railw[ay]

Building Foot[print]

Major Road

25m contour

Landscape Sensitivity & Landscape Capacity for Urban Development - 20/6/13

Silverdale - RUB Options Work in Progress 20 June 2013

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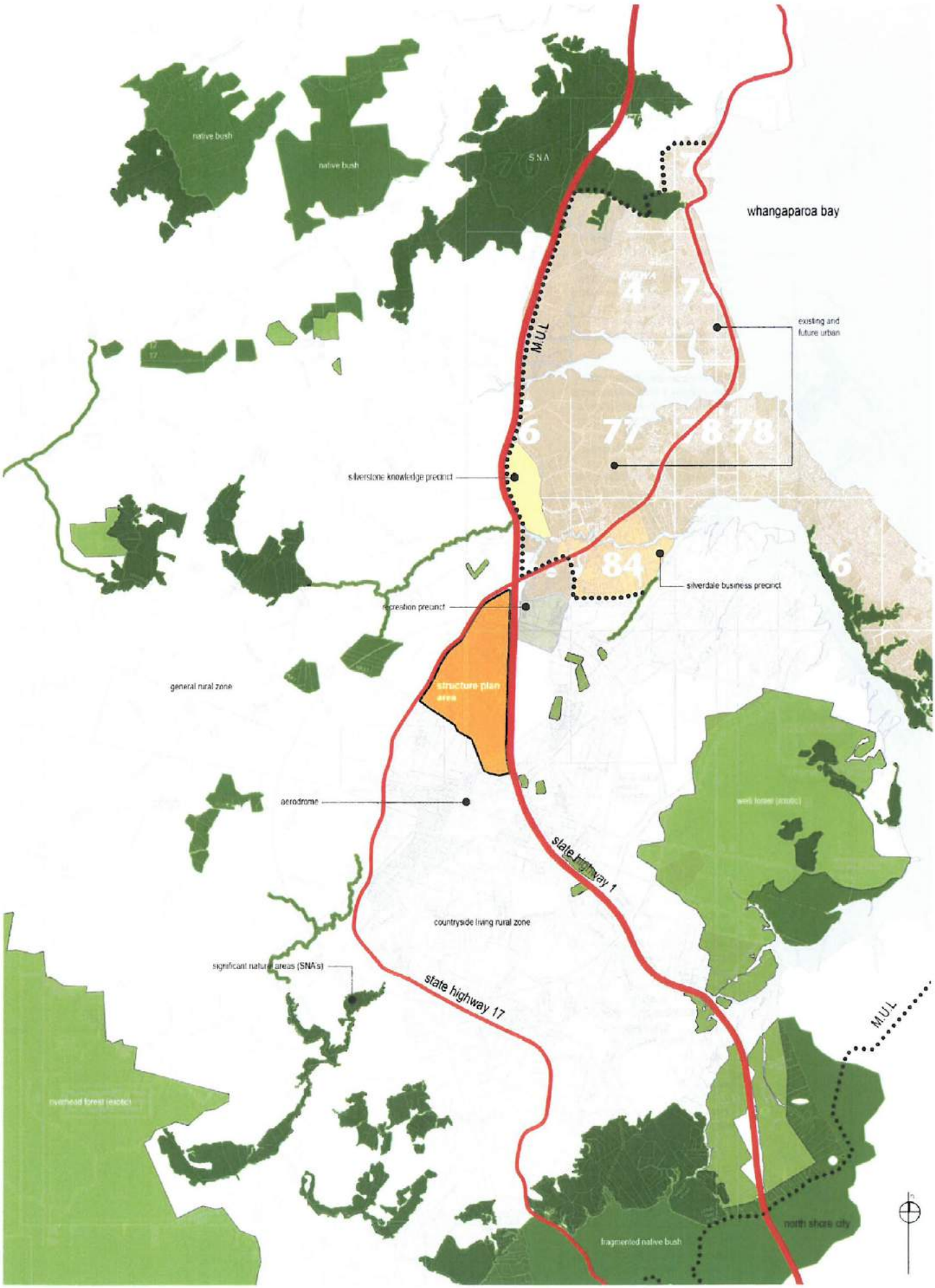
File ref:

Appendix 3: Silverdale West Landscape Report



Context Plan

Silverdale West Structure Plan

Landscape Analysis

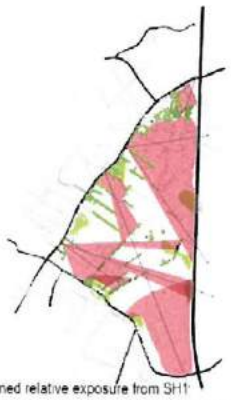
significant viewpoints and visual catchments

viewpoint 25

viewpoint 9

viewpoint 11

viewpoint 12



combined relative exposure from SH1
darker areas exposed from more viewpoints

Like Wilks Rd and SH1, SH17 sits elevated, above the majority of the site along one of its defining ridgelines. However with dense roadside plantings fronting the majority of the highway, very few opportunities for views into and across the site are created.

Although this visual barrier significantly reduces views from the road itself, the elevated rural properties east of this boundary retain extensive views into and over the interior of the site.

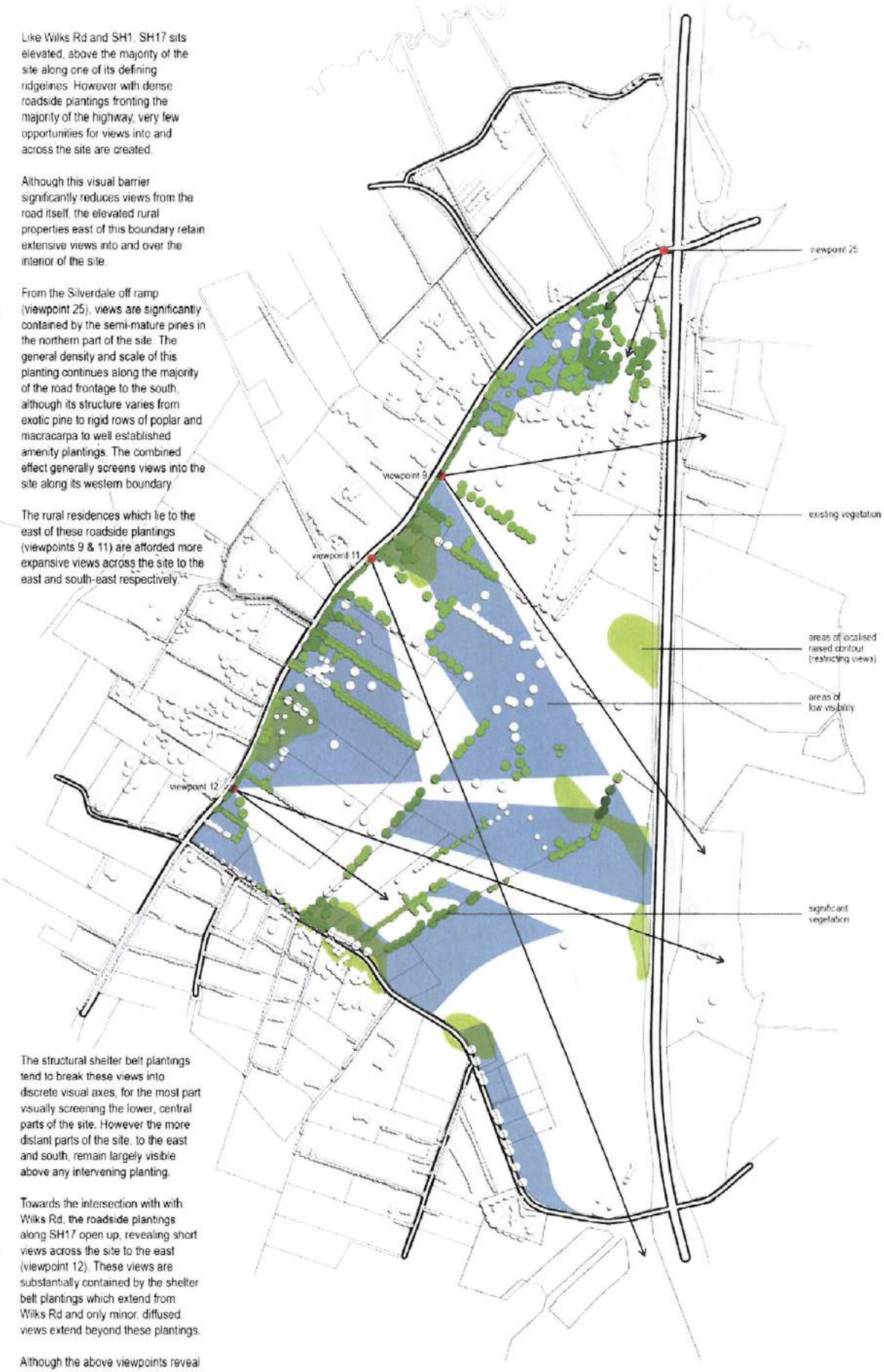
From the Silverdale off ramp (viewpoint 25), views are significantly contained by the semi-mature pines in the northern part of the site. The general density and scale of this planting continues along the majority of the road frontage to the south, although its structure varies from exotic pine to rigid rows of poplar and macracarpa to well established amenity plantings. The combined effect generally screens views into the site along its western boundary.

The rural residences which lie to the east of these roadside plantings (viewpoints 9 & 11) are afforded more expansive views across the site to the east and south-east respectively.

The structural shelter belt plantings tend to break these views into discrete visual axes, for the most part visually screening the lower, central parts of the site. However the more distant parts of the site, to the east and south, remain largely visible above any intervening planting.

Towards the intersection with with Wilks Rd, the roadside plantings along SH17 open up, revealing short views across the site to the east (viewpoint 12). These views are substantially contained by the shelter belt plantings which extend from Wilks Rd and only minor, diffused views extend beyond these plantings.

Although the above viewpoints reveal a significant amount of the site to potential views from the west, the majority of this exposure is directly contributed to internal views proximate to this boundary. As such the existing roadside planting clearly indicates the potential to mitigate these views by further enhancement of these plantings. This would effectively reduce the visual exposure of the northern half of the site.



State Highway 17.

08.1463 Silverdale West Structure Plan

Visual Exposure

Wilks Rd. - links to the more intimate matrix of shelter belt plantings associated with the countryside living rural areas to the south

Perpendicular plantings of macracarpa and poplar shelter belts extend across the site from Wilks Rd. Effectively seperating the site into three, these shelter belts confine exposed open views to the southern part of the site, while structuring longer, thin views through the sparsely vegetated central areas.

These patterns are also important in the restriction of views from SH1 while travelling north and combine with the lienal plantings that roll off the SH17 ridge to defuse and break up views throughout the northern two thirds of the site.

SH17 - shelterbelt plantings structure and restrict views across the rural landscape to the north and west

More extensive than those perpendicular plantings on Wilks Rd, those which fall off the ridgeline to the north-west create a far more regimented, and confined field of view proximate to SH17.

Although such views are very fleeting and marginal at best from SH17 itself, the lineal nature of these views stretch across the full length of the site to the south-east but are horizontally throttled due to the closeness of the shelter belts, creating short, concise snapshots across the site. The plantings also terminate shorter views from Wilks Rd and oblique views from SH1 near the Silverdale off ramp.

SH17 & SH1 - roadside plantings substantially screen views from the state highways

Significantly reducing visual access into the site from SH17 in particular, the roadside plantings along the western margins of the site combine with localised high points to effectively screen the site from the west.

Despite the semi-permeable nature of the deciduous and lighter foliaged shelter belts along this edge, the roadside plantings are further reinforced by those onsite shelter belts, allowing only very short, transient, views from SH17.

A similar density of planting alongside the Silverdale off ramp orthotics views from SH1 into the northern parts of the site.

natural patterns - limited to the alignment of John Creek and the intersection of SH1 and SH17

Natural vegetation patterns are substantially limited on the site. Mixed plantings of poplar and willow trace John Creek through the centre of the site as it joins the mature grove of pine trees on the corner of SH1 and SH17.

Although the plantings along the creek alignment sit very low in the site, the more substantial pine tree plantings in the north screen views and introduce a more organic and natural pattern of vegetation, quite different to the rest of the site.

Vegetation Patterns.

Silverdale West Structure Plan

VIEWPOINT 1: SH1 looking east

VIEWPOINT 2: SH1 looking east

VIEWPOINT 5: Small Rd looking south-west and west to the northern part of the site

VIEWPOINT 6: SH1 looking north-west to the northern part of the site

VIEWPOINT 9: SH17 looking east to the indoor go-karts and Snow Planet

VIEWPOINT 10: SH17 shelter belt planting

VIEWPOINT 13: Wilks Road looking north-east

VIEWPOINT 14: Wilks Road looking north-east

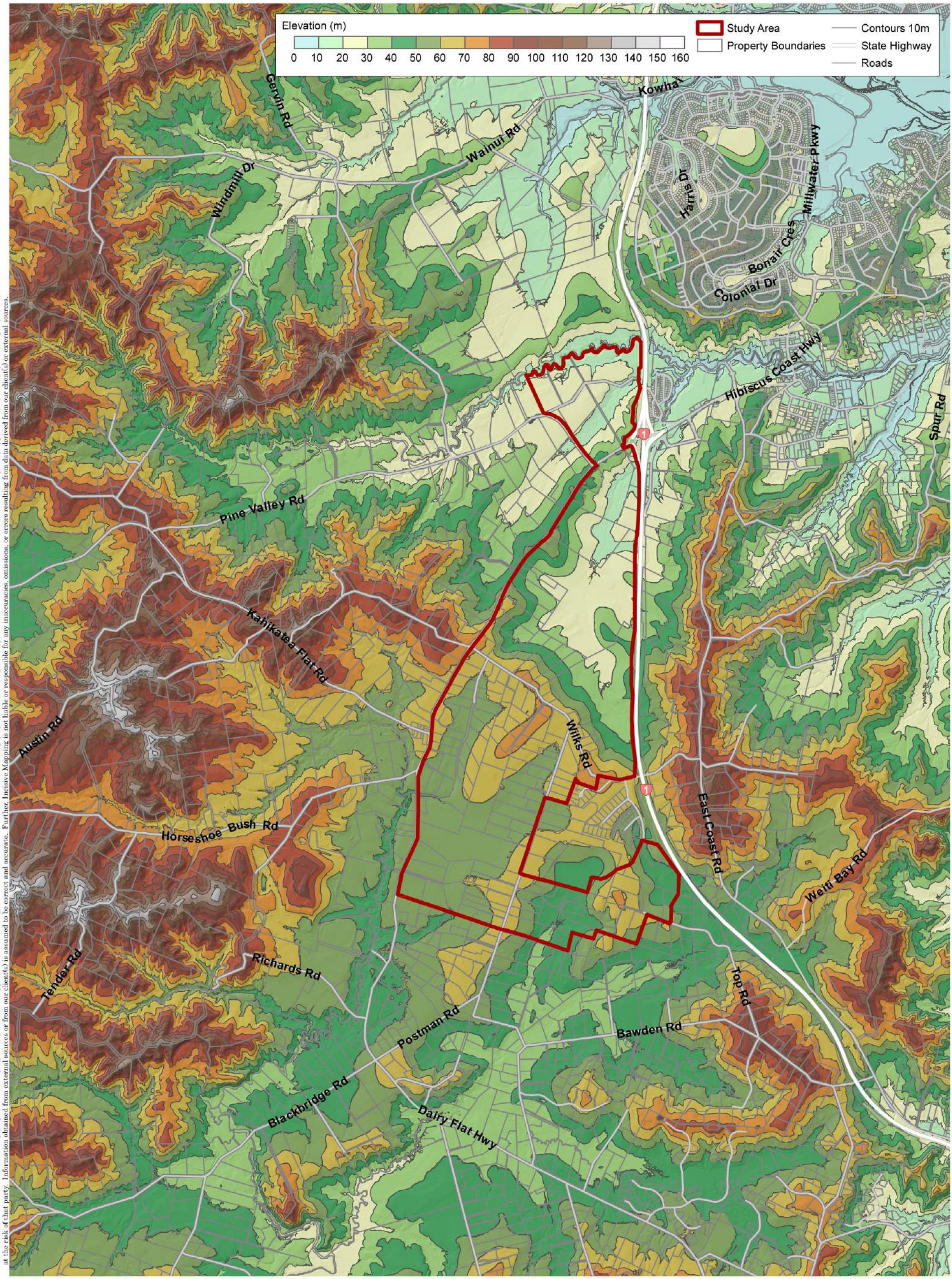
VIEWPOINT 17: Wilks Road looking north

VIEWPOINT 18: Wilks Road looking north-east

VIEWPOINT 21: East Coast Road near Wilks Road intersection looking west

VIEWPOINT 22: East Coast Road near Spur Road looking west

Appendix 4: Elevation Mapping



INCISIVE MAPPING

Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | *Reviewed:* Bridget Gilbert

Data Sources: Auckland Council (LiDAR 2013, 2008), LINZ (Parcels, Roads), Incisive Mapping (Elevation, Study Area)

File Ref: 2018-03_Silverdale_West_Dairy_Flat_Elevation.mxd

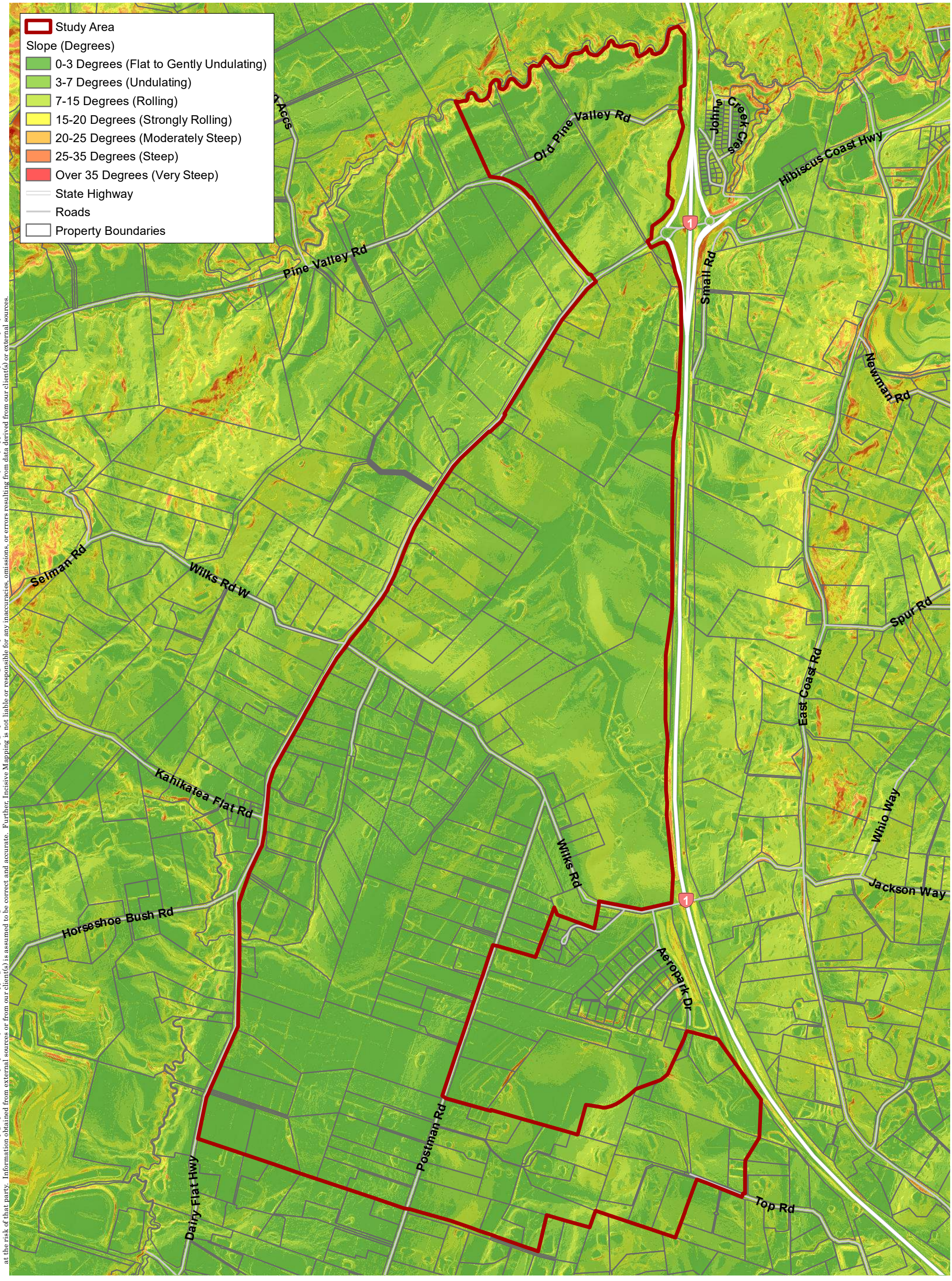
0 1 km

1:30,000 @ A3

Silverdale West - Dairy Flat Structure Plan Elevation

Date: 15 March 2018

Appendix 5: Slope Analysis



INCISIVE MAPPING

Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | *Reviewed:* Bridget Gilbert

Data Sources: Auckland Council (LiDAR 2013), LINZ (Parcels, Roads), Incisive Mapping (Slope, Study Area)

File Ref: 2018-03_Silverdale_West_Dairy_Flat_Slope.mxd

0 1 km

1:15,000 @ A3

Silverdale West - Dairy Flat Structure Plan Slope

Date: 14 March 2018

Appendix 6: Topographic Plan

INCISIVE MAPPING

Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | *Reviewed:* Bridget Gilbert

Data Sources: LINZ / Eagle (Topo50. Crown Copyright Reserved), Incisive Mapping (Study Area)

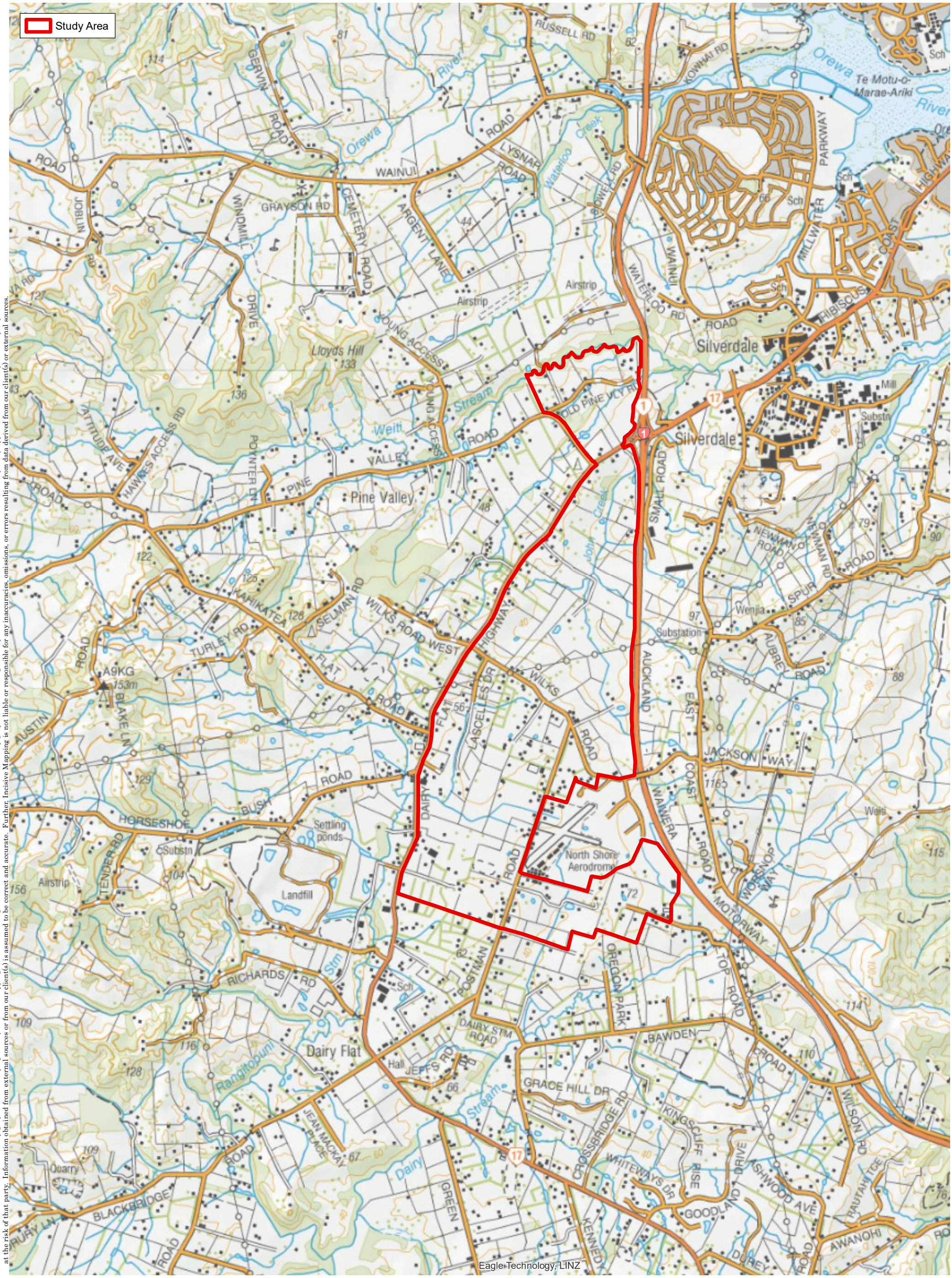
File Ref: 2018-03_Silverdale_West_Dairy_Flat_Topo.mxd

0 1 km

1:15,000 @ A3

Silverdale West - Dairy Flat Structure Plan Topographic

Date: 14 March 2018



INCISIVE MAPPING

Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | *Reviewed:* Bridget Gilbert
Data Sources: *LINZ / Eagle (Topo50. Crown Copyright Reserved), Incisive Mapping (Study Area)*

File Ref: 2018-03_Silverdale_West_Dairy_Flat_Topo_Context.mxd

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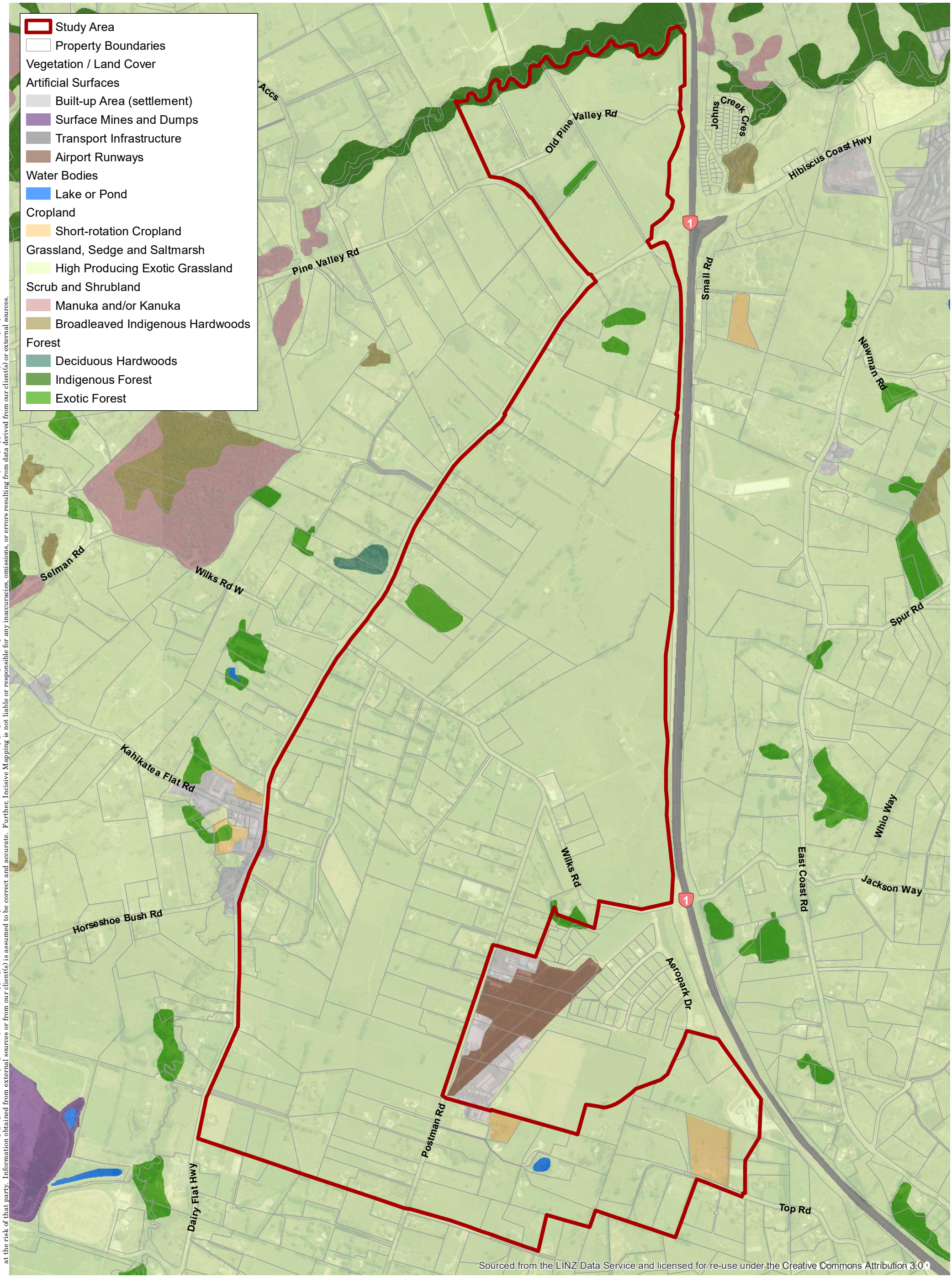
1:30,000 @ A3

Silverdale West - Dairy Flat Structure Plan Topograhic Context

Date: 16 March 2018

Appendix 7: Vegetation



INCISIVE MAPPING

Author: Matt Daniels (matt.daniels@incisivemapping.co.nz) | *Reviewed:* Bridget Gilbert

Data Sources: *LINZ / Eagle (2011 Aerials), Landcare Research (LCDB4), LINZ (Parcels, Roads), Incisive Mapping (Study Area)*

File Ref: 2018-03_Silverdale_West_Dairy_Flat_Vegetation_Landcover.mxd

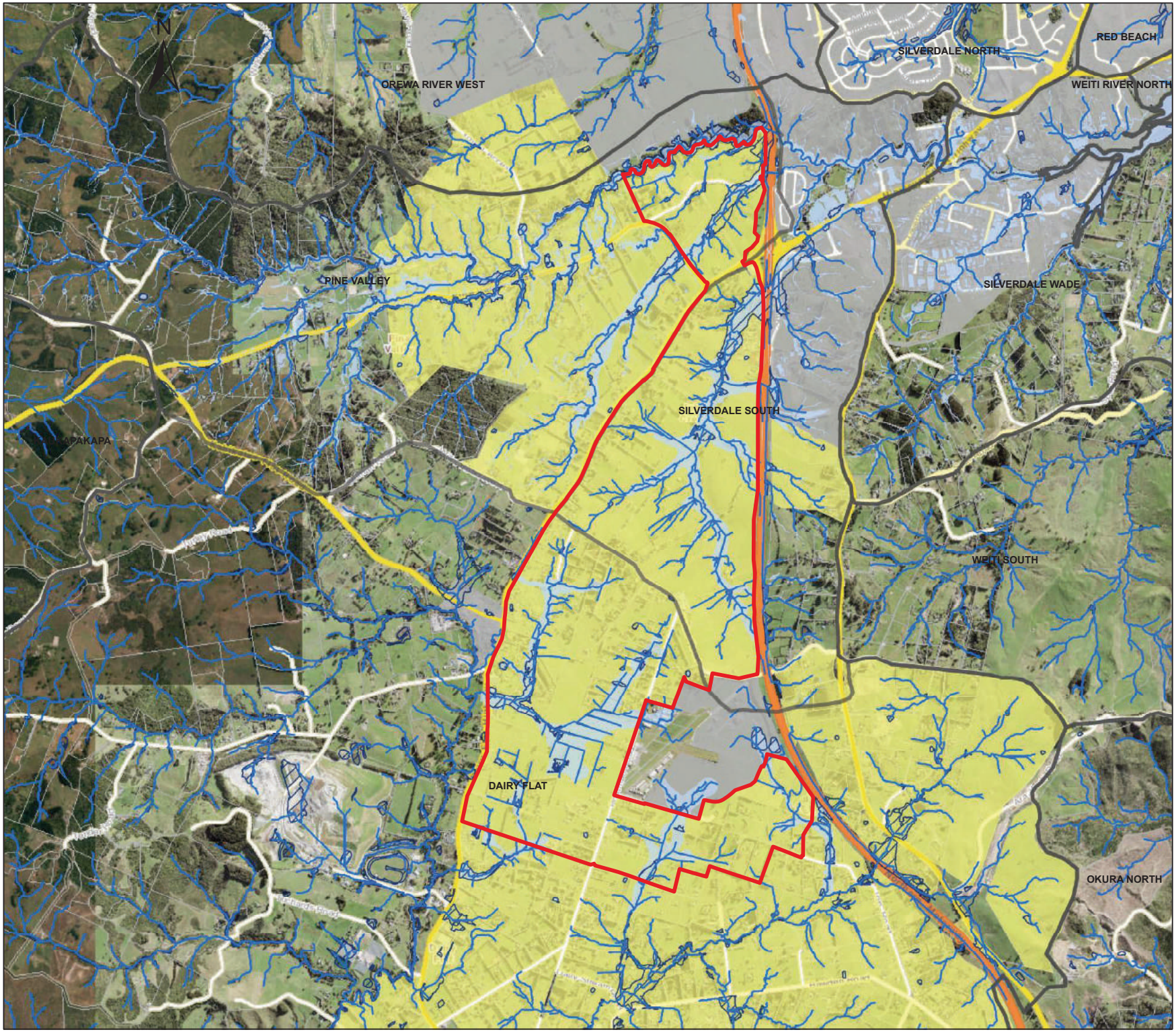
0 1 km

1:15,000 @ A3

Silverdale West - Dairy Flat Structure Plan Vegetation / Land Cover

Date: 16 March 2018

Appendix 8: Silverdale West Stormwater Management Plan



Auckland Council | wsp | OPUS

Silverdale West Stormwater Management Plan

Figure 2.6 Flooding

0 0.25 0.5 1 Kilometers

1:25,000 @A3

29/11/2018
DRAFT

Drawn: NY
Checked: JR

Legend

- Overland Flow Path
- Flood Prone Areas
- Silverdale Flood Plain
- Furture Urban Zone
- Existing Urban Zone
- Silverdale Dairy Flat Business Area Structure Plan
- Stormwater Catchments Boundaries

Note:

The modelled flood extents within the Silverdale Dairy Flat Business Area Stucture Plan have been edited to confirm with the AUP(OiP) flood Plain definition. The flood extent shown outside the structure plan area is incomplete and has not undergone this editing. Therefore where shown the flood extent outside the structure plan area should be treated as indicative only.

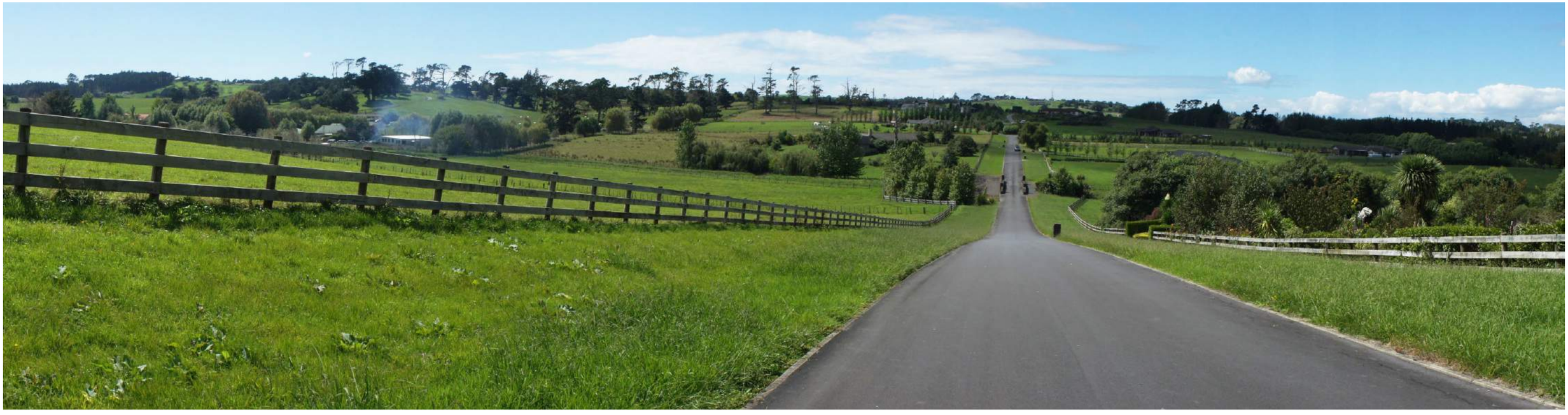
Appendix 9: Site Photographs

Photograph 1: North Shore Airport - Postman Road frontage


Photograph 2: North Shore Airport

Photograph 3: Outlook westwards from Postman Road near the North Shore Airport

Photograph 4: Typical character of outlook looking northwards from Wilks Road. SH1 to right of view



Photograph 5: Typical character of rural residential development in southern portion of Structure Plan area

Photograph 6: Typical character of rural residential development in the vicinity of North Shore Airport

Photograph 7: Typical character of the southern portion of the Structure Plan area in views from Dairy Flat Highway

Photograph 8: Typical character of rural residential development along Postman Road

Photograph 9: Typical character of rural residential development along Postman Road

Photograph 10: Typical character of the outlook over the Structure Plan area from East Coast Road

Photograph 11: Typical character of the view out over the Structure Plan area from East Coast Road

Photograph 12: Typical outlook from Wilks Road looking eastwards to East Coast Road (SH1 in midground of view)

Appendix 10: Landscape Development Principles

LEGEND

STRUCTURE PLAN AREA

LANDSCAPE FRAMEWORK
(EXTENT DRIVEN BY FLOODPLAIN, 20M RIPARIAN SETBACKS, MINIMUM WIDTH AS SPECIFIED ON THE PLAN OR EXISTING VEGETATION / WETLAND FEATURES TO BE RETAINED AND PROTECTED)

SH17 GATEWAY LANDSCAPE
(MINIMUM WIDTH 10M)

REINFORCE SILVERDALE GATEWAY

INTEGRATE WITH DAIRY FLAT COMMERCIAL NODE

CONSIDER CONNECTIVITY AND NEED FOR BUFFER TO FUZ LAND

CONSIDER RELATIONSHIP TO NORTH SHORE AIRPORT AND ADJACENT RURAL RESIDENTIAL AREA

VIEWSHAFT FROM SH1 TO HILLS (LIOYDS HILL)

CONSIDER GREEN LINK

DAIRY FLAT HIGHWAY (SH17)

EAST COAST ROAD

LANDSCAPE FRAMEWORK
MINIMUM 40M WIDTH
ALONG SH1 BOUNDARY

LANDSCAPE FRAMEWORK
MINIMUM 20M WIDTH
ALONG CSL BOUNDARY

STATE HIGHWAY 1

KAHIKATEA FLAT ROAD

HORSESHOE BUSH ROAD

LANDSCAPE FRAMEWORK
MINIMUM 20M WIDTH
ALONG CSL BOUNDARY

DRAWING TITLE	LANDSCAPE CONCEPT
DRAWING SCALE	1:15,000@A3
DATE	23-03-2018
REVISION	A
DRAWN BY	KH
APPROVED BY	BG

SILVERDALE WEST DAIRY FLAT STRUCTURE PLAN

LANDSCAPE DEVELOPMENT PRINCIPLES DIAGRAM

Sheet Number 01

Drawing Number LP.01

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