

View to the north from Mason Heighs, Warkworth towards Dome Forest uplands.

Rural / Urban Boundary (North & Northwest)

Warkworth / Silverdale / Whenuapai - Riverhead / Kumeu-Huapai

Preliminary Landscape Investigation Explanatory Note August 2013

Environmental Planning & Design Ltd
For:
Auckland Council
Spatial and infrastructure Strategy
Regional Strategy, Community & Cultural Policy

PART I: Introduction and Background:

This explanatory note sets out the key findings and methodology for preliminary landscape investigations of previously identified areas to the north and northwest of Auckland as part of the wider Greenfield Investigations project for the Auckland Unitary Plan. This background work contributes to a range of integrated landuse planning information provided to Auckland Council to assist future landuse planning and decision making regarding the proposed Rural / Urban Boundary.

The purpose of these preliminary landscape investigations is to help Council better *spatially* understand landscape capacity for areas that are more or less suitable for residential and business related urban uses in view of broad landscape considerations.

This preliminary landscape investigation provides:

- · A general indication of underlying landscape character;
- An indication of landscape sensitivity to urban development
- An indication of landscape capacity to urban development

The outputs of these investigations are maps that show (See **appendix 1. Landscape Mapping**):

- A general framework of landscape character areas
- A general framework of landscape sensitivity and capacity.

Landscape Investigation Limitations:

The focus of this work is the preliminary landscape investigation of pre-determined areas and fundamental landscape change of "greenfield" areas to urban areas. The primary purpose of this work is to provide Council strategic planners with a general understanding of landscape character and a general spatial indication of areas of likely landscape sensitivity and landscape capacity. This work is not a detailed landscape evaluation of Investigation Areas. This work is not an Auckland wide evaluation of landscape sensitivity or capacity for future urban development. This report does not include public / community consultation on wider landscape values or landscape change. This report does not specifically address cultural landscape values. This report provides general sub-regional strategic landscape planning guidance in relation to the purposes listed above, it specifically addresses landscape matters, and does not include technical and operational constraints of landuse change. Field work was undertaken from publicly accessible land only (local road network).



Methodology

This landscape investigation work is based on a landscape characterisation methodology that considers an integrated spatial framework of areas as a means of understanding landscape complexity and diversity. (See *appendix 2: Key Terms*)

The investigation method applied involved a three step process:

- The collation of general geospatial (GIS) information to understand basic landscape structure (natural and physical resources)
- The consideration of landscape matters in relation to urban development potential.
- Field survey from the local roading network to inform perceptual understanding of landscape character and landscape sensitivity/capacity.

Step 1: GIS information: Landscape Structure and Pattern.

An initial landscape mapping framework was established in order to understand core underlying landscape patterns. These maps include:

- Topography (landform and slope)
- Hydrology (natural drainage patterns)
- Natural Hazards (Geological faults and floodplains)
- Vegetation Patterns (Landcover Data Base)
- Patterns of existing settlement (urban areas, buildings and roads)
- Landscape (Outstanding Natural Landscape) and Natural Character notations (source: Auckland Council)
- Public Open Space

These existing map data sets were sourced by Auckland Council and have been captured at varying scales and accuracies. These maps provide a means of understanding broad contextual landscape structure such as underlying landform and drainage, patterns of landcover, existing settlement and infrastructure patterns. This relatively objective information has been used to inform professional judgements about landscape sensitivity and capacity and may also serve as a useful basis for further understanding of more detailed landuse planning such as structure planning.

A composite – or 'summary' GIS base resource map is provided for each Investigation Area at appendix 1.



Step 2: Landscape matters for consideration

A number of matters were considered to help guide subsequent landscape investigation field work.

These matters were derived from previous landscape evaluations of Option Areas for the Southern Rural / Urban Boundary. However unlike the Southern RUB evaluations, the following matters were not required to be specifically recorded (e.g. through evaluation worksheets). Nevertheless these matters influenced considerations to guide professional judgements regarding landscape sensitivity and capacity for urban development which were also informed by the GIS mapping of Step 1.

These matters included:

Key Physical Landscape Elements and Patterns:

Natural Geo-physical and Bio-Physical Attributes such as:

- Underlying landform and drainage
- Indigenous landcover
- Expressions of dynamic natural systems and processes where evident

Modified & Physical (Human) Attributes such as:

- Elements and patterns of built form and settlement
- Patterns of landuse
- Modified natural systems
- Patterns of exotic vegetation

Perceptual Landscape Attributes:

Legibility

- Area is able to be readily defined and is distinct.
- Patterns of modification and landuse that is complementary with the underlying natural elements, patterns and processes.
- Expression of natural and human processes in the landscape

Coherence

 Natural systems and modified patterns are perceived of as aesthetically coherent and display recognisable patterns of human influence and modification

Context and Setting

- Value of area in relationship with adjoining landscape setting
- Contribution and value to wider landscape context

Scenic Amenity

 Natural and modified landscape characteristics are recognizable, distinct and memorable. These characteristics



- combine to represent attributes that can be readily interpreted as scenic qualities.
- Visually intact and aesthetically pleasant and appreciable landscape qualities

Visibility

Key views, view corridors and viewing audiences

Landscape Change: Consideration of Urban Development Potential

Landscape attributes most sensitive to change

- Landscape structure and function. Physical landscape change.
- Perceptual landscape change.
- Likely changes of landscape values

Visual Landscape effects

- Relative visibility and prominence/recessiveness of the area both locally and in the wider visual catchment
- General visibility
- Visibility controlled by landcover
- Visibility controlled by landform
- Potential for management of visual effects

Scenic Amenity

 Change in attributes that could be interpreted as effecting scenic qualities such as legibility, coherence and intactness which may detract from appreciable landscape qualities

Likely effects of change and rural context

 Likely effect of urban landuse change on the local and wider landscape character and setting and the broader pattern of settlement.

Existing Settlement Form and boundaries

 Likely effect of development on existing settlement form and boundaries

Opportunities for Environmental Enhancement

 Potential role of existing or additional landscape elements and patterns (such as stream restoration) in integrating development within the local and wider landscape.

Possible Mitigating / Design Opportunities

Key considerations in relation to the landscape integration of any potential urban development.

Urban Structure Considerations

Movement & Connectivity



- Basic Form/ Blocks
- Uses & possible patterns of development
- Amenity / Livability

In general terms these matters helped to guide overall professional judgements of urban development sensitivity and capacity from a landscape perspective and influenced and informed a series of maps which outlined both a general framework of landscape character areas as well as areas of landscape sensitivity and capacity.

The above matters generally informed an understanding of the concepts of landscape character, sensitivity and capacity (See *appendix 2: Key Terms*): aligned in the following way

Landscape Character	Natural Geo-physical and Bio-Physical Attributes Modified & Physical (Human) Attributes Legibility Coherence Context and Setting Scenic Amenity Visibility
Landscape Sensitivity	Landscape attributes most sensitive to change Visual Landscape effects Scenic Amenity Likely effects of change and rural context Existing Settlement Form and boundaries
Landscape Capacity	Opportunities for Environmental Enhancement Possible Mitigating / Design Opportunities Urban Structure Considerations



Step 3: Field Survey

Each Investigation Area was visited between May and June 2013 using the local roading network. Observational fieldwork also involved the interpretation of objective underlying GIS maps and more subjective field observation as a means of understanding wider landscape context in the course of forming professional judgements about perceptual landscape attributes and landscape sensitivity and capacity.

This field work then informed the landscape mapping process which was specifically targeted at providing Council strategic planners with a better understanding of the spatial attributes of Investigation Areas. In some instances rudimentary 3D terrain modelling was used using Google Earth to both aid in the interpretation of GIS maps and to generate imagery to assist Council. An example of this modelling is included below.



Screen shot image of Google Earth terrain model (Snells Beach looking to the north) and preliminary mapping overlay used to supplement understanding of basic landform and landscape sensitivity and capacity.



PART II: Landscape Investigation Findings:

The general extent of Investigation Areas was pre-determined by Council and included the following areas:

- Warkworth
- Silverdale
- Whenuapai Riverhead
- Kumeu-Huapai

The following findings reflect the matters and methodology listed above in the preliminary landscape investigation of these areas.

Maps to accompany these findings can be found at **appendix 1: Landscape Mapping.** Each area is represented by:

- Map 1: A map showing underlying landscape structure and pattern from GIS mapped layers
- Map 2: A general framework of landscape character areas
- Map 3: A map showing indicative areas of landscape sensitivity and capacity.

. Landscape Character Maps and indicative Landscape Sensitivity / Capacity Maps were discussed with Council strategic planning staff once developed and contributed to the general understanding of each Investigation Area. These maps also included an indication of key visual containment and topographical boundaries to help inform wider boundary decision making. These maps are graphically represented in appendix 1 as they were applied, that is as working technical maps for internal use.

The landscape character areas listed in these maps, general descriptions and broad summary indications of landscape capacity and sensitivity are listed below:



Warkworth

Landscape Character Framework (refer to Warkworth - map 2)

The following landscape character areas were identified across the investigation area:

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

<u>Harbour Headland Systems and Hills</u>: Steep to moderately steep harbour hill county margins. Frames coastal margins. Important areas in regard to Natural Character

<u>Inland Hill Country</u>: Strongly rolling pastoral hill country including a number of extensive valley systems and key visually containing secondary ridgelines

Downland Valleys: Generally broad open flat valleys

<u>Hill Slope Margins</u>: Toe slope margins which transition between lowland valleys and steeping upland systems

<u>Coastal Hill Margins</u>: moderate coastal margin areas in proximity to existing settlement

<u>Contained Valleys</u>: Visually enclosed valley and stream corridor systems

<u>Isolated Hill Fragments</u>: Prominent hill features including steep scarps and gullies - visually define a number of discrete lowland valley areas

These character areas describe a generic landscape typology within the Investigation Area and include the mapping of a number of "place specific" locations where this landscape character is evident.

Indicative Landscape Sensitivity and landscape Capacity (refer to Warkworth - map 3)

Landscape sensitivity and capacity mapping was undertaken based on the broad landscape character area framework above. The following brief descriptions suggest particular attributes of each "place specific" area as well as a general summary indication of landscape sensitivity / capacity.



1. Matakana Valley

- Contained flat pastoral valley
- Strongly framed by surrounding bush hills to the east and north
- Connected to Matakana Village and open spaces
- Framed to the west by moderate pastoral hill slopes
- Strong capacity to accommodate urban built form

2. Matakana Hills North

- Moderate rolling hill toe slopes
- Associated with surrounding bush / forest uplands
- Visually exposed from Matakana Valley
- Limited capacity to accommodate urban built form

3. Matakana Hills South

- Large strongly rolling hill slope complex
- Number of visually contained valleys
- Good outlook views from elevated areas
- Limited capacity to accommodate built form

4. Sandspit Road Valley West

- Contained inland hill country valley
- Moderate sloping
- Limited visual connection to Warkworth
- Strong natural drainage patterns with vegetation
- Moderate capacity to accommodate urban built form

5. Western Sharp Road Hills

- Expansive inland hill country area
- Strongly rolling terrain
- Strong natural drainage patterns
- Visually exposed from road network
- Strong pastoral rural character
- Limited capacity to accommodate built form

6. Hamilton Road Hills & River Scarp

- Bush river edge and surrounding hills
- Includes outstanding natural landscape area
- Strong pastoral rural character
- Strong natural boundaries (coast line ridgelines)
- Road /valley boundary to the north



- Strong landscape sensitivity
- Limited capacity to accommodate built form

7. Sandspit Hills

- Coastal bush residential settlement
- Steep bush terrain
- Area of existing settlement
- Limited further urban development

8. Sandspit Hills South

- Steep predominately bush covered hill slopes
- Includes reserve areas
- Forms strong hill boundary to Snell's Beach to the south
- Strong landscape sensitivity.

9. Lawrie Road South Headland

- Moderately sloping coastal hills
- Strong hill backdrop to the northwest
- Visual connection with existing residential areas
- Includes enclosed and exposed coastal margins
- Strong capacity to accommodate urban built form

10. West Snells Beach

- Undulating to moderately sloping terrain
- Inner harbour headlands and slopes
- Contained southern basin framed by hill slopes to the south
- Defined headland contained by river to the eat
- Strong visual and physical connection to existing residential areas
- Strong capacity to accommodate urban built form

11. Clayden Road Hills

- Steep toe slope ridge
- Visually prominent from settled areas to the south
- Contributes to existing pastoral rural character of Warkworth township
- Strong landscape sensitivity

12. Clayden Road Valley

- Moderately sloping basin landform
- Visually contained and discreet



- Strongly defined by surrounding hill ridges
- Proximate to existing settlement pattern
- Moderate capacity to accommodate urban built form

13. SH1 Hills North

- Broad lower toe slope terrain
- Moderately elevated
- Includes areas of current open space
- Includes current Puhoi-Wellsford alignment
- Proximate to existing areas of settlement
- Strong capacity to accommodate urban built form

14. SH1 Flats North

- Flat terrain
- Adjoins existing SH1
- Defined by surrounding hill slopes
- Adjoins existing industrial area
- Moderate capacity to accommodate urban built form

15. Falls Road Hills North

- North facing hill toe slope
- Good aspect and terrain
- Framed by steeped hillslopes to the south and surrounding rural valley
- Proximate to existing settlement patterns
- Strong capacity to accommodate urban built form

16. Kaipara Flats Road Hills

- Steep isolated hill slope
- Areas of indigenous vegetation
- Defined by surrounding rural valleys
- Contributes to northern rural hill "gateway"
- Strong landscape sensitivity

17. Carran Raod Hills

- Strongly defined hill slope area
- Includes steep ridgeline feature to the north
- Eases to more moderate slopes to the south
- Limited capacity to accommodate built development



18. Streamlands Valley

- Broad expansive open rural valley
- Flat terrain
- Farm drains and stream areas (flood plain areas)
- Industrial scale horticultural activity (glasshouses)
- Strongly defined by roading patterns and streams
- Contained by surrounding uplands and isolated hills
- Strong capacity to accommodate urban built form

19. Wyllie Road Hill Slopes North

- North facing moderate toe slopes
- Good aspect
- Moderate elevation
- Strongly defined by steep hills to the south and stream corridor to the east
- Proximate to main road corridor
- Strong capacity to accommodate urban built form

20. Falls Road Hills

- Isolated hill fragment
- Steep gullies and scarps
- Visually prominent ridgeline
- Contains and frames adjoining areas to the south east
- Limited capacity for further built development

21. Hudson Road Hills

- West facing hill slopes
- Adjoins existing residential area
- Includes prominent hill 'top' feature
- Strongly defined by surrounding stream corridors and road networks
- Strong capacity to accommodate urban built form

22. Woodcocks Road East

- North facing Gentle hill slope area
- Defined by steep hill terrain to the south and;
- Major stream corridor to the north
- Adjoins existing commercial / urban area to the immediate east
- Strong capacity to accommodate urban built form



23. Valerie Close Valley

- Visually contained flat valley
- Strong physical boundaries
- Potential for wider connections to the west and east
- Strong capacity to accommodate urban built form

24. Mason Heights Hills

- Steep visually prominent hill slope area
- Contributes to wider pastoral rural character
- Frames development areas to the north
- Strong landscape sensitivity

25. Thompson Road Hills

- Prominent ridge feature and valley divide
- Includes Outstanding Natural landscape
- Frames and moderate hill slopes and valleys to the north
- Includes current southern SH1 alignment
- Strong landscape sensitivity

26. McKinney Road South

- Moderate hill slopes
- NW Aspect and views
- Strong ridge line boundary to the east
- Series of contained & connected valleys
- Moderate capacity to accommodate urban built form

27. McKinney Road North

- Moderate hill slopes
- S to NW Aspect
- Strong ridge line boundary to the south east
- Visually connected to existing residential areas
- Strong development potential

28. Wilson Road East

- Moderately steep river edge hills
- Strong natural eastern boundary
- Proximate to existing residential areas
- Limited development potential



Silverdale

Landscape Character Framework (refer to Silverdale - Map 2)

The following landscape character areas were identified across the investigation area:

<u>Uplands:</u> 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.

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

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

<u>Downland Valleys</u>: Generally broad open flat to rolling valleys

<u>Moderate Hill Slope Margins</u>: Toe slope margins which transition between lowland valleys and steeper upland hills

<u>Coastal Hill Margins</u>: Steep to moderate coastal margin hill areas in proximity to existing settlement

<u>Contained Valleys</u>: 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

<u>Containing Spur System</u>: Steep spurs and slopes that define lower adjoining valleys, flats and stream corridors

Open Lowland Valley: Moderately sloping contained open valley

<u>Partially Settled Hills</u>: Moderate Hill slope areas with partial and emerging patterns of urban built development



<u>Transport Corridor</u>: "Corridor" landscape defined by steep immediately adjoining rural hill slopes.

These character areas describe a generic landscape typology within the Investigation Area and include the mapping of a number of "place specific" locations where this landscape character is evident.

Indicative Landscape Sensitivity and landscape Capacity (refer to Silverdale – Map 3)

Landscape sensitivity and capacity mapping was undertaken based on the broad landscape character area framework above. The following brief descriptions suggest particular attributes of each "place specific" area as well as a general summary indication of landscape sensitivity / capacity.

1. Orewa River toe 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 Horeshoe 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 subcatchment 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

Whenuapai - Riverhead

Landscape Character Framework (refer to Whenuapi-Riverhead - Map 2)

The following landscape character areas were identified across the investigation area:

<u>Uplands:</u> Steep forested hill country (bush and exotic forestry)

<u>Moderate to Steep Hill Slope Margins:</u> Toe slope margins that transition between lowland valleys and steeper upland hills

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

<u>Coastal Hills</u>: Steep to moderately steep harbour hill county margins. Important areas in regard to Natural Character

<u>Upper Harbour Headland Margins</u>: Minor rolling coastal margins and headland landforms that drain to the Upper Waitemata Harbour



<u>Upper Harbour Lowlands</u>: Flat to undulating partially settled lowlands

<u>Lowland Flats</u>: Flat to undulating partially settled upper harbour lowlands

<u>Inland Hill Country</u>: 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

Floodplain Flats: Undulating to flat lowland "plain" terrain

<u>Contained Valleys</u>: Enclosed valley and stream corridors

Open Lowland Valleys: Moderately sloping contained open valleys

These character areas describe a generic landscape typology within the Investigation Area and include the mapping of a number of "place specific" locations where this landscape character is evident.

Indicative Landscape Sensitivity and landscape Capacity (refer to Whenuapi-Riverhead - Map 3)

Landscape sensitivity and capacity mapping was undertaken based on the broad landscape character area framework above. The following brief descriptions suggest particular attributes of each "place specific" area as well as a general summary indication of landscape sensitivity / capacity.

1. Coatesville-Riverhead Valley

- Lower Rangitopuni Stream valley
- Pastoral landcover predominates
- Largely settled rural residential
- Framed to the north by Riverhead Forest
- Moderate to Strong landscape sensitivity

2. Riverhead - Barrett Road

- Elevated gently undulating pastoral river terrace
- Strongly framed by upper harbour/river margins and uplands
- Adjoins rural settled valley to the east
- Proximate to urban development to the west restricted access (bridge)
- Moderate capacity to accommodate urban development



3. Riverhead Southeast

- Undulating upper harbour headland margin
- Significant areas currently under residential development
- Defined to the south by stream and gully landform
- Strong capacity to accommodate urban development

4. Riverhead West

- Flat to gently undulating terrain
- Horticultural landuse predominates
- Proximate to existing settlement and existing grid urban structure
- Defined to the west by hill slope margins
- Less well defined southern boundary Lathrope Rd and eastern stream
- Strong capacity to accommodate urban development

5. Riverhead Southern Production Land

- Extensive area of lowland flats
- Horticultural landuse predominates
- Strong patterns of lineal field enclosure
- Includes numerous glasshouses and disbursed rural dwellings
- Adjoins area to the north of stronger urban influence
- Moderate to strong landscape sensitivity

6. Brigham Creek Western Headlands

- Gently rolling east draining headland slopes
- Pastoral landcover predominates
- Contributes to spatial definition of Riverhead urban areas
- Includes rural residential settlement patterns
- Defined to the west by Coatesville-Riverhead highway
- Includes key transitional gateway to/from Kumeu
- Strong landscape sensitivity

7. Whenuapai Upper Harbour Lowlands

- Flat to gently undulating terrain
- Includes extensive northern coastal margin areas
- Significant areas of existing concentrated residential settlement



- Rural built form glasshouses also feature
- Strongly influenced by defence land and landuse and existing "village" to the south
- Strong capacity for urban development

8. Whenuapai Defense

- Existing defence land airbase and operations
- Includes operational and accommodation areas
- Existing landuse expected to continue
- Generates noise sensativity issues
- Characterises wider Whenuapai area
- Not available for urban development

9. Totara Creek East – Trigg Road

- Undulating to gently rolling northwest draining terrain
- Includes significant areas of horticultural landuse
- Very good aspect slightly elevated
- Strongly defined by surrounding local road network which follows general sub-catchment boundaries
- Influenced by airport noise / use in the north
- Influenced by Westgate expansion and motorway alignment in the south
- Strong capacity for urban development

10. Waiarohia Stream Valley

- Strongly rolling east draining pastoral land steep in part
- Strongly influenced by motorway corridor and adjoining urban development to the south
- Includes strong natural drainage patterns and defined terraced areas – mostly to the south of the motorway
- Strong capacity for urban development

11. Totara Creek West

- East facing moderate slopes of the western Totara Creek subcatchment
- Strongly defined by existing road networks
- Strongly influenced by existing urban development and expansion including motorway



- Currently mostly under development
- Strong capacity for continued urban development

12. Ngongetepara Stream East

- Broad gently rolling west facing valley slopes
- Strongly defined in the east by Fred Taylor drive road corridor
- Transitional landscape including a variety of patterns of existing built form and landuses
- Strong logical existing urban framework roading and site/ potential block size and shape
- Strong capacity for urban development

13. Ngongetepara Stream West

- Moderately dissected broad gently rolling east facing valley slopes
- Numerous defined west draining sub-catchment streams
- More elevated to the south
- Partially defined to the north by Waimuka Stream
- Defined to the west by Nixion Rd less well defined to the north approaching SH16 (Taupaki Rd)
- Includes existing rural residential settlement
- Moderate capacity for urban development

14. Taupaki Road Valley

- Lowland/rural valley flats strongly influenced by Kumeu River floodplain
- Includes rural residential areas influenced by proximity to road access
- Pastoral landcover predominates
- Strong visual connection to wider open valley to the west
- Strong landscape sensitivity



15. Red Hills West

- Northeast facing strongly rolling to steep upper catchment hill slopes
- Includes incised and very steep upper stream gullies and slopes
- Contiguous areas of indigenous vegetation
- Strongly defined catchment boundary and roadway to the south
- Influenced by proximity of existing settlement areas
- Moderate capacity for sensitive urban development

16. Red Hills East

- Strongly rolling upper catchment contained valley
- Strongly defined by catchment boundary to the south and more steep areas to the west
- Influenced by power pylons and lines
- Close proximity to areas of existing settlement strong visual separation from Westgate and surrounds to the east
- Strong natural drainage patterns provide landscape structure
- Strong capacity for urban development

Kumeu-Huapai

Landscape Character Framework (refer to Kumeu-Huapai map 2)

The following landscape character areas were identified across the investigation area:

<u>Uplands:</u> Steep forested hill country (bush and exotic forestry) includes ONL areas

<u>Moderate to Steep Hill Spurs:</u> Steeper narrow spur landforms that transition from Uplands to lower toe slopes

<u>Rolling Toe Slopes</u>: Lower elevation rolling terrain that transitions from steeper inland spurs to lowland valley areas

Inland Hill Country: Strongly rolling rural hill country

<u>Lowland River Flats</u>: Flat to undulating partially settled lowland river terrace and river margin areas



<u>Open Lowland Valleys</u>: Subtle open north draining valley systems framed by transitional hill terrain to the south and settlement areas and river terraces to the north

Contained Valleys: Enclosed valley and stream corridors

Broad Floodplain Flats: Undulating to flat lowland "plain" terrain

These character areas describe a generic landscape typology within the Investigation Area and include the mapping of a number of "place specific" locations where this landscape character is evident.

Indicative Landscape Sensitivity and landscape Capacity (refer to Kumeu-Huapai map 3)

Landscape sensitivity and capacity mapping was undertaken based on the broad landscape character area framework above. The following brief descriptions suggest particular attributes of each area as well as a general indication of landscape sensitivity / capacity.

1. Oraha Road Hills

- Elevated moderate hill slope and terrace area
- Framed to the north by steeper hill country
- Defined to the south by Kumue River scarp
- Spatial proximity and visual connections to existing areas of settlement
- Strong capacity for urban development

2. Matua Road River Flats

- Lowland River terraces to the south of forested uplands (including Outstanding Natural Landscape areas)
- Flat to gently undulating terrain
- Bisected by numerous small streams
- Includes power pylons, switchyard, and lines
- Increasing sensitivity to the north (flooding and proximity to ONL)
- Close proximity to existing lineal patterns of urban development / urban structure. Includes existing areas of urban margin settlement
- Good existing roading structure and lineal rural block subdivision patterns
- Strong capacity for urban development



3. Kumeu Valley South West

- Gently undulating broad open lowland system that drains to the north- general northerly aspect
- Framed to the north by SH16 alignment, defined to the west by Puke Road eastern toe slopes, defined to the south by Tawa Rd toe slopes and defined to the east by Station Road
- Pastoral and horticultural landuse patters predominate
- Strong natural drainage patterns
- Includes limited areas of existing rural residential settlement
- Strong capacity to accommodate urban development

4. Kumeu Valley South East

- Broad flat to gently undulating open valley system which also drains to the north (Kumeu River southern tributaries) – good general northerly aspect.
- Pastoral landuse predominates with some areas of horticultural landuse
- Strong natural drainage patterns
- Includes southern industrial margins of Kumeu
- Proximate to existing settlement and existing urban structure
- Defined to the west by transitional toe slope margins
- Waitakere Rd forms strong southern boundary aligned with toe slopes and more elevated terrain less contained to the east (flat land which extends eastwards to the rail line)
- Strong capacity to accommodate urban development

5. Eastern Toe Slope Margins and Minor Spurs

- Series of northeast running, elevated toe slope terrain which transitions between north eastern lowlands and the stronger Puke Rd Spur system
- Interspersed with minor contained rural valleys and characterised by areas of relatively steep south facing slopes
- Includes and enables a number of local road alignments with rural residential settlement clustered along those alignments which follow the broader minor spur tops
- Moderate capacity for urban development



6. Puke Road Hill Spur

- Moderately steep prominent hill spur system which generally defines the eastern lowland valleys and transitional toe slopes
- Includes very steep incised gully areas
- Western spur slopes generally steeper and more incised than eastern slopes
- Includes existing patterns of rural residential settlement clustered along road alignment which follows spur tops
- Defines a number of secondary enclosed valley systems limited aspect
- Strong landscape sensitivity

7. Contained Eastern Valleys

- Enclosed east draining valleys strongly defined by surrounding hill slope terrain
- Limited aspect incudes strong natural drainage patterns
- Spatially defines adjoining hill spurs
- Strong landscape sensitivity

8. Kumeu River- Taupaki Road Valley

- Lowland/rural valley flats strongly influenced by Kumeu River floodplain
- Includes rural residential areas influenced by proximity to road access
- Pastoral landcover predominates
- Strong visual connection to wider open valley areas to the west
- Northern western margins in close proximity to Waitakere Road and existing areas of industrial / commercial development offer limited opportunities for expansion (floodplain considerations)
- Key spatial element which defines Kumeu in the west from Massey in the east
- Generally strong landscape sensitivity



Appendix 2 Key Terms

Key Terms

Landscape is:

The New Zealand Institute of Landscape Architects defines landscape as follows:

"Landscape reflects the cumulative effects of cultural and physical processes"

Landscape is a physical resource that is the result of natural and cultural processes occurring over time. Landscape results from the way that different parts of our environment – both natural (the influences of geology, soils, climate, flora and fauna) and cultural (historical and current impact of land use, settlement, and other human interventions) – interact together and are perceived by us.

Landscape is fundamentally about the relationship between people and place. Our perceptions turn land into the cultural concept of "landscape".

Landscape in its broadest context incorporates a range of characteristics and attributes including the following:

Geomorphological – underlying geological processes, structure and resultant topography,•

Hydrological – the patterns of water movement and collection, •

Ecological – dynamic organic components and processes,•

Aesthetic - coherence, vividness, naturalness, •

Legal / Economic – patterns of ownership, use and productivity, •

Community/Social - scenic, shared and recognised values,•

Cultural - tangata whenua values and associations, •

Historic – sites, areas, buildings, features, elements and events.

These attributes together contribute to our perception, understanding and appreciation of landscapes.

Landscape Character is defined as:

"A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse"

<u>Landscape Characteristics are:</u>

"Elements, or combinations of elements, which make a particular contribution to distinctive character."

Landscape Character Assessment Guidance (Scottish National Heritage. The Countryside Agency 2002)



Landscape sensitivity:

Landscape sensitivity in the context of this report relates to landscape interactions and the way that those interactions are perceived. Landscape sensitivity refers to a specific type of landscape change and specific change of landscape character.

Landscape capacity:

Landscape capacity is used in the context of this report to refer to the ability of an area to accommodate different amounts of change This should reflect the inherent sensitivity of the landscape itself but more specifically its sensitivity to the particular type of change. This means that capacity will reflect both the sensitivity of the landscape resource as well as its visual sensitivity

(These terms are defined in regard to *Topic paper 6: Techniques and Criteria for Judging Capacity and Sensitivity, Scottish Natural Heritage / The Countryside Agency*)

Urban Development

For the Option Areas both sensitivity and capacity specifically relate to urban development typologies and patterns of landuse including intensive residential and commercial / industrial urban development and associated social, transport and energy infrastructure.



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Rural / Urban Boundary (North & Northwest)

Warkworth / Silverdale / Whenuapai - Riverhead / Kumeu-Huapai

Preliminary Landscape Investigation Explanatory Note August 2013

Appendix 1: Landscape Mapping.

Warkworth

Map 1: Landscape Structure and Pattern

Map 2: Landscape Character Area Framework

Map 3: Indicative Landscape Sensitivity and Landscape Capacity

Silverdale

Map 1: Landscape Structure and Pattern

Map 2: Landscape Character Area Framework

Map 3: Indicative Landscape Sensitivity and Landscape Capacity

Whenuapai-Riverhead

Map 1: Landscape Structure and Pattern

Map 2: Landscape Character Area Framework

Map 3: Indicative Landscape Sensitivity and Landscape Capacity

Kumeu-Huapai

Map 1: Landscape Structure and Pattern

Map 2: Landscape Character Area Framework

Map 3: Indicative Landscape Sensitivity and Landscape Capacity





