

# Waitakere Ranges Foothills Background Report



*A discussion paper on the Waitakere Ranges Foothills  
looking at history, planning and heritage features.*

31 July 2009  
Version 1



# Table of Contents

<b>1. Introduction .....</b>	<b>4</b>
<b>2. Planning Context.....</b>	<b>5</b>
2.1 <i>National Context</i> .....	5
2.1.1 Waitakere Ranges Heritage Area Act 2008 .....	5
2.1.2 Local Area Plans .....	6
2.1.3 Hauraki Gulf Maritime Parks Act 2000 (HGMPA) .....	7
2.2 <i>Regional Context</i> .....	7
2.2.1 Auckland Regional Policy Statement .....	7
2.2.2 Auckland Regional Growth Strategy .....	8
2.2.3 Regional Parks Management Plan.....	9
2.2.4 Proposed Auckland Regional Plan: Air, Land and Water (ALW Plan) .....	10
2.3 <i>Waitakere City</i> .....	10
2.3.1 The Long Term Council Community Plan for Waitakere .....	10
2.3.2 Development of District Planning in the Foothills.....	11
2.3.4 The Waitakere District Plan.....	12
2.3.5 Subdivision.....	14
2.3.6 Waitakere Growth Management Strategy .....	15
2.3.7 Rural Capacity Projections.....	15
2.3.8 Countryside and Foothills Stormwater Management Code of Practice.....	18
2.3.9 Transportation .....	18
<b>3. Heritage Features in the Foothills .....</b>	<b>20</b>
3.1 <i>Human Culture</i> .....	20
3.1.1 History .....	20
3.1.2 Cultural Heritage Sites .....	21
3.1.3 Community .....	22
3.2 <i>Landscape and Landform Features</i> .....	22
3.3 <i>Ecological Features</i> .....	25
3.4 <i>Recreation and Parkland</i> .....	27
<b>4. The Foothills – Conclusion .....</b>	<b>28</b>
<b>5. Figures .....</b>	<b>31</b>
Figure 1: Waitakere Ranges Heritage Area.....	31
Figure 2: Waitakere Ranges Regional Park – Park Development and Management Proposals.....	31
Figure 3: Waitakere District Plan zonings in the Foothills.....	31
Figure 4: Waitakere City Structure Plan Areas .....	31
Figure 5: Subdivision Potential for existing lots in the Foothills area.....	31
Figure 6: Waitakere City Growth Management Strategy Concept.....	31
Figure 7: 2006 Census Area Units in the Foothills .....	31
Figure 8: Population Projections for the Foothills .....	31
Figure 9: Dwelling Projections for the Foothills.....	31
Figure 10: Growth Projections for the Foothills.....	31
Figure 11: Key Transport and Access Infrastructure within the Foothills.....	31
Figure 12: Cultural Heritage sites in the Waitakere Ranges foothills.....	31
Figure 13: Auckland Regional Policy Statement: Significant Natural Heritage Areas and Landscape Quality .....	31
Figure 14: Proposed Plan Change 8 to the ARPS: Outstanding Natural Landscapes .	31
Figure 15: Landscape Heritage Features in the Waitakere Ranges Foothills .....	31

Figure 16:	ARPS: Land Use Capability.....	31
Figure 17:	Natural Environment Features in the Waitakere Ranges Foothills.....	31
Figure 18:	Streams in the Waitakere Ranges Foothills .....	31
Figure 19	Waitakere City Parks and Reserves in the Waitakere Ranges Foothills .....	31
Figure 20:	Foothills Heritage Features, Opportunities and Services .....	31

**6. Appendices.....32**

APPENDIX A:	Waitakere Ranges Heritage Area Q&A .....	32
APPENDIX B:	Local Area Plans Q&A.....	32
APPENDIX C:	Planning Maps from Waitemata District Scheme 1973 .....	32
APPENDIX D:	Planning Maps from the Waitemata City District Plan 1984.....	32
APPENDIX E:	Maori History (Heritage Area Information Pack).....	32
APPENDIX F:	Maori History (District Plan) .....	32
APPENDIX G:	Local Area Plan Heritage Assessments .....	32
APPENDIX H:	NZ Archaeological Association Site Recording Scheme Upgrade .....	32
APPENDIX I:	ARC Cultural Heritage Inventory Sites in the Foothills.....	32
APPENDIX J:	WCC Cultural Heritage Inventory Sites in the Foothills.....	32
APPENDIX K:	Landscape Heritage Features Map – Description of Features .....	32
APPENDIX L:	Landscape Units in the Foothills .....	32
APPENDIX M:	Natural Environment Features Map – Description of Features .....	32

# 1. Introduction

The purpose of this background report is to inform the development of Local Area Plans (LAPs) for the foothills of the Waitakere Ranges.

The report is divided into chapters. Chapters 1 -3 describe the foothills area as a whole, so that the individual local areas can be seen in that context. Subsequent reports will describe the local areas of Oratia, Waiatarua, Opanuku, Swanson and Anzac Valley in greater detail.

A LAP must identify the heritage features that exist in the local area. Section 3 of each of the local area reports describe the heritage features which include the human culture, the ecological features, landscapes and landforms, recreation and regional park. Many of the objectives of the Act, which a LAP must promote, relate to the protection, restoration and enhancement of these heritage features.

A LAP is required to identify the amenity of the local area, which derives from the natural, cultural and physical characteristics of the area. The identification and description of the heritage features in this report help to identify those features that contribute to the area's amenity.

The Act's objectives include the recognition of the heritage area's limited capacity to absorb further subdivision, recognition and avoidance of adverse cumulative effects and precautionary approach. Information on the capacity of the area for further development is included in Section 2 of this Foothills report.

This report also looks at current provision for services such as transport and utilities in the foothills. The Act provides that a LAP may identify issues relating to future service provision and this section informs decisions on what kind of future services may be required.

The conclusion of this report looks at the foothills in their context and the opportunities for rural activities and visitor experiences. The foothills contain 'gateways' to the Ranges in Oratia, Swanson and Waitakere but also have the potential to divert visitors and relieve pressure on the regional park.

## 2. Planning Context

This section outlines local and regional planning documents relevant to local area planning in the Waitakere Ranges foothills including the Waitakere Ranges Heritage Area Act 2008, Hauraki Gulf Marine Park Act 2000, Auckland Regional Policy Statement, Auckland Regional Growth Strategy, Regional Parks Management Plan, Waitakere District Plan, Long Term Council Community Plan 2009-19 for Waitakere, Waitakere Growth Management Strategy and Rural Capacity Projections.

### 2.1 National Context

#### 2.1.1 Waitakere Ranges Heritage Area Act 2008

The purpose of the Waitakere Ranges Heritage Area Act 2008 (the Act) is to recognise the national, regional and local importance of the Waitakere Ranges, foothills and coastal areas and to promote long-term protection and enhancement of this area and its important heritage features for present and future generations while enabling the area to be lived and worked in.

**Figure 1 Waitakere Ranges Heritage Area** shows the area covered by the Act. The Act elaborates and particularises Part II of the Resource Management Act which identifies matters of national importance including the natural character of the coast and rivers, ecosystems, outstanding natural features and landscapes, and historical heritage – all of which are present in the heritage area.

The Act was developed to meet growing concerns about the adverse cumulative effects that urban growth was having on the natural, rural and coastal landscape and the ecological, historical, and cultural heritage of the area, and the difficulties in managing such effects under the previous regulatory framework. The heritage area is under unprecedented pressure from urban growth and development, largely due to its location immediately adjoining metropolitan Auckland. The Auckland metropolitan area is growing rapidly and land values are escalating. This results in unique pressures being placed on peripheral lands, such as the Waitakere Ranges and foothills, for further subdivision and development.

The objectives from section 8 of the Act are outlined below. All of these objectives relate to the foothills to some degree. Features from section 7 of the Act that relate to the foothills are outlined in section 3 of this report:

- (a) *to protect, restore, and enhance the area and its heritage features:*
- (b) *to ensure that impacts on the area as a whole are considered when decisions are made affecting any part of it:*
- (c) *to adopt the following approach when considering decisions that threaten serious or irreversible damage to a heritage feature:*
  - (i) *carefully consider the risks and uncertainties associated with any particular course of action; and*
  - (ii) *take into account the best information available; and*
  - (iii) *endeavour to protect the heritage feature:*
- (d) *to recognise and avoid adverse potential, or adverse cumulative, effects of activities on the area's environment (including its amenity) or its heritage features:*
- (e) *to recognise that, in protecting the heritage features, the area has little capacity to absorb further subdivision:*
- (f) *to ensure that any subdivision (or development in the area, of itself or in respect of its cumulative effect,—*
  - (i) *is of an appropriate character, scale, and intensity; and*
  - (ii) *does not adversely affect the heritage features; and*
  - (iii) *does not contribute to urban sprawl:*
- (g) *to maintain the quality and diversity of landscapes in the area by—*

- (i) protecting landscapes of local, regional, or national significance; and*
- (ii) restoring and enhancing degraded landscapes; and*
- (iii) managing change within a landscape in an integrated way, including managing change in a rural landscape to retain a rural character:*
- (h) to manage aquatic and terrestrial ecosystems in the area to protect and enhance indigenous habitat values, landscape values, and amenity values:*
- (i) to recognise that people live and work in the area in distinct communities, and to enable those people to provide for their social, economic, environmental, and cultural well-being:*
- (j) to provide for future uses of rural land in order to retain a rural character in the area:*
- (k) to protect those features of the area that relate to its water catchment and supply functions:*
- (l) to protect in perpetuity the natural and historic resources of the Waitakere Ranges Regional Park for their intrinsic worth and for the benefit, use, and enjoyment of the people and communities of the Auckland region and New Zealand.*

More information on the Act can be found in **Appendix A: Waitakere Ranges Heritage Area Questions and Answers**.

### **2.1.2 Local Area Plans**

#### What is a Local Area Plan?

The Act provides for a council to prepare and adopt a local area plan (LAP) for a local area that is within its district and the heritage area. The purpose of the LAP is to:

- Promote the purpose of the Act and its objectives;
- Provide objectives, particularly long-term objectives, relating to the future amenity, character and environment of the local area; and the wellbeing (including social and economic) of the local community; and
- Inform decision-making processes.

A LAP must:

- Define the local area;
- Identify the heritage features;
- Localise and promote the objectives;
- Identify the distinctive natural, cultural, or physical qualities or characteristics of the local area that contribute to the local area's long-term pleasantness or aesthetic coherence or cultural or recreational attributes;
- Establish objectives and policies in relation to amenity, character and the environment.

A LAP may also identify issues associated with the provision of future services. More information on LAPs is found in **Appendix B: Local Area Plans Questions and Answers**.

#### Consultation

Development of a LAP must:

- Encourage interested or affected persons to participate and contribute;
- Comply with the principles of consultation in section 82 of the Local Government Act 2002;
- Have regard to the current Management Plan for the Waitakere Regional Park where it includes parkland or adjoins the park; and
- Consult with Tangata Whenua.

#### Implementation

A LAP may be included in a district plan through a plan change and would be subject to normal district plan amendment processes and timeframes (i.e. the District Plan has a 'life' of 10 years). A LAP does not have a set duration and may be reviewed, amended or revoked.

A LAP is intended to be an integrated community planning tool identifying local, social, economic, cultural and environmental futures. The responsibility for achieving different parts of the LAP may sit with various groups including the community and/or the council. Where responsibility sits with the council the LAP may form part of the District Plan, Annual Plan, asset management or Long Term Council Community Plan and would need to go through the necessary statutory processes to be included in these documents.

### **2.1.3 Hauraki Gulf Marine Park Act 2000 (HGMPA)**

The purpose of the HGMPA is to:

- Integrate the management of the Hauraki Gulf, its islands and catchments;
- Establish the Hauraki Gulf Marine Park;
- Establish management objectives;
- Recognise the relationship of tangata whenua with the Gulf and its islands; and
- Establish the Hauraki Gulf Forum.

By establishing overall objectives for the Gulf, its islands and catchments, the Hauraki Gulf Marine Park Act looks to achieve integrated management across land and sea. This ensures the effects of urban and rural land use are given proper attention and the life supporting capacity of the Gulf is protected.

The Waitakere Ranges foothills are in a catchment which drains to the Hauraki Gulf and therefore actions in this area need to consider this relationship.

## **2.2 Regional Context**

### **2.2.1 Auckland Regional Policy Statement**

The Auckland Regional Policy Statement (ARPS) is a statement about managing the use, development and protection of the natural and physical resources of the region. It sets in place the policy for promoting the sustainable management of these resources. It also clarifies the respective roles of the agencies with responsibilities under the Resource Management Act in the Auckland region. The aim of the document is to achieve integrated, consistent and co-ordinated management of the region's resources. It also provides greater certainty over the way natural and physical resources are to be managed, and creates awareness of the constraints and opportunities in the Auckland region. The ARPS became operative on 31 August 1999 and is currently under review.

The ARPS specifically refers to the Waitakere foothills as an important visual foreground to the bush clad hills. The ARPS recognises that rural resources enable people and communities to provide for the social, economic and cultural wellbeing and for their health and safety. However, the effects of some activities on the resources and the environment of rural areas, including cumulative effects can be significantly adverse.

Specific Strategic Objectives of the ARPS state:

*To protect the soil resources, amenity values, rural character, landscape values, and mineral resources of rural areas, from the regionally significant effects of inappropriate subdivision, use or development.*

*To protect the intrinsic values of the Region's natural resource base, and to make appropriate provision for the avoidance, remediation or mitigation of adverse effects on the Region's environment, including the identification of significant natural features and landscapes, and areas of significant indigenous vegetation and habitat, and protection of these from inappropriate subdivision use and development.*

*To manage the Region's natural and physical resources in an integrated manner.*

Policies relating to rural issues are specifically addressed in the Water Quality, Air Quality, Soil Conservation, Water Conservation and Allocation, Heritage, Pests and Minerals chapters.

## **2.2.2 Auckland Regional Growth Strategy**

The Auckland Regional Growth Strategy 1999 (RGS) is a single snapshot of how the region could develop to 2050 focussing anticipated population growth into quality compact urban environments and ensuring the majority of growth occurs within the MUL and identified Future Urban Areas. Growth will be directed away from areas of high ecological and landscape values, including the Waitakere Ranges.

In terms of the Waitakere Ranges the RGS states that

*“more intense development can exacerbate water pollution and have other effects on the environment through the concentration of people and activities. It is vital more intensive development is managed in a manner that minimises or mitigates such effects. Taking this approach, together with the consideration of the other desired regional outcomes, the Growth concept does not anticipate further development in the Waitakere or Hunua Ranges. These areas are highly valued as high quality native forest, important terrestrial ecological resources and recreational reserves. They are protected regional parks or local reserves. The foothills in Waitakere City are also a valuable buffer and foreground to the Waitakere Ranges... The Growth Concept recognises the value of streams as an important urban amenity which is highly susceptible to degradation by stormwater runoff from impervious urban surfaces.”*

The RGS re-enforces urban containment, limited growth in rural areas and the avoidance of development in highly valued and sensitive natural areas (including the Waitakere Ranges). Under the RGS, development outside the current MUL should only occur where environmental, accessibility and community principles can be met, and that development of the most highly valued and sensitive natural areas is avoided.

The RGS identifies that the foothills are a countryside living area, and are a valuable foreground and buffer to the Waitakere Ranges. It states that the foothills are 'significantly constrained' in terms of their ability to accommodate further growth. The Foothills make up part of the 'greenbelt' that surrounds urban Auckland.

As part of monitoring the RGS and RPS, and for the purpose of managing urban containment, the Auckland Regional Council undertakes 5 yearly Capacity for Growth surveys, undertaken in 1998, 2003 and 2008, using data from 1996, 2001 and 2006 (census year data).

The 2008 Study<sup>1</sup> identified that across the rural areas of the Auckland Region there was sufficient residential capacity (through subdivision potential and vacant sites as at March 2006) for at least 30 years supply (at current take up rates), with over 95% if this supply in

---

<sup>1</sup> Auckland Regional Council, Capacity for Growth Study May 2008 (interim Report) Technical Publication 369, available from <http://www.arc.govt.nz/plans/technical-publications/technical-publications/technical-publications-351-373.cfm> Note that these figures do not include residential capacity in the Rural and Coastal settlements, meaning the final residential capacity figure will be considerably higher.

'countryside living'<sup>2</sup> zones, split approximately 40:60 between vacant and occupied sites with subdivision potential.

Potential for approximately 1600 additional dwellings have been identified in rural Waitakere (excluding the rural and coastal settlements<sup>3</sup>), which is more than sufficient to accommodate 5% of Waitakere's expected population growth to 2021, as identified in the Waitakere City Council Growth Management Strategy.

Statistical analysis shows that over the period 1996-2006, approximately 6.2% of all dwelling growth has been in the rural area of the city, but population growth was 4.9% of the total growth in the City. This reflects generally lower dwelling occupancy rates and a higher proportion of holiday homes in the rural area, than across the City as a whole.

Section 2.3.5 includes more information on the existing subdivision potential in the foothills area from this report, updated where possible to reflect recent Environment Court decisions.

Section 2.3.7 includes more detail on census data for the Foothills area of the City.

### **2.2.3 Regional Parks Management Plan**

The Regional Parks Management Plan (RPMP) sets out how the ARC intends to manage the majority of parks that form part of the Auckland regional parks network over the next five years. The Plan guides the ARC's day-to-day and long-term management of these parks and sets a context for their future use and the conservation of the natural and cultural resources found within them.

**Figure 2** shows the Waitakere Ranges Regional Park (WRRP). For the Ranges area the WRRP is part of this regional parks network. Section 26(c) of the Act requires that in preparing a LAP the territorial authority must, *"if the LAP is for a local area that is adjacent to or includes a part of the Waitakere Ranges Regional Park, have regard to the current management plan for the Park..."*.

Section 16 of the RPMP sets out objectives and policies on the interaction between park land and private land, with an emphasis on encouraging cooperation between ARC and its neighbours on public access, pest control and maintenance of ecological corridors, amenity values and landscapes.

The general management approach for regional parks is set out in Parts III, IV and V of the RPMP while provisions specific to individual parks are set out in Part VI. Parks are classified and zoned to ensure that levels of development including visitor services are appropriate to the type of park. Indigenous habitat, ecosystems, landscape values and cultural heritage are required to be protected restored and enhanced and pest plants and animals managed according to the Regional Pest Management Strategy. A network of walking tracks is maintained to provide diverse recreational experiences.

Part VI of the RPMP shows how the general management approach is applied at the individual park level. Section 55 applies to the Waitakere Ranges Regional Park and specifies that the entire park will be managed as Class 1 parkland, in accordance with section 22 of the Plan. Class 1 parkland is managed as a remote visitor experience with minimal infrastructure, constrained visitor numbers and an emphasis on protection of natural and cultural resources.

---

<sup>2</sup> Countryside Living is defined in this study as areas where the minimum or average lot size is permitted to be less than 8Ha (or approx 20 acres), below which the site is expected to be used primarily for residential purposes, over and above a productive rural use. This also ensures consistency with other measures of rural productivity and previous capacity studies. By this measure all of Waitakere's rural areas are countryside living, as the minimum site size is generally 4Ha or less.

<sup>3</sup> At the time of writing the Auckland Regional Council has not released details of the Capacity for Growth Study in the Rural and Coastal Villages, which would add further potential to this figure

The ARC's vision for the Waitakere Ranges Regional Park, set out in section 55.1 is:

*A regional conservation and scenic park that is managed to protect and enhance its natural and historic values, to provide a place of respite for the people of Auckland, to provide for a range of compatible recreational activities in natural settings, and to cultivate an ethic of stewardship (kaitiakitanga).*

Section 55.5 includes information on activity management nodes. These are locations where visitors can access the parkland. Activity management nodes relating to specific areas are outlined in the background reports relating to those areas.

ARC works with WCC over matters of mutual interest, such as local community relationships, visitor management issues, reserve management issues and beach management issues. They also liaise with other agencies with responsibilities for the provision of public open space to ensure that, where practicable, regional parks link with other public open space and facilities in the area.

## **2.2.4 Proposed Auckland Regional Plan: Air, Land and Water (ALW Plan)**

The ALW Plan applies to the management of air, land and water resources in the Auckland region including air, soil, rivers and streams, lakes, groundwater, wetlands and geothermal water. Chapter 2: values addresses the management of natural resources valued by the Auckland regional community including rural land, air, rivers and streams, lakes, wetlands, groundwater and geothermal resources. Objectives and policies in the Plan of relevance to the foothills include:

- Sustainable management of natural values
- Protection of significant indigenous vegetation and fauna habitat
- Management of stream and river quality
- Protection of cultural heritage
- Efficient land use (including maintenance of rural character)
- Enablement of rural activities while avoiding, remedying or mitigating adverse effects
- Involvement of tangata whenua in resource management processes
- Protection of rural air quality.

## **2.3 Waitakere City**

### **2.3.1 The Long Term Council Community Plan for Waitakere**

The 2009-2019 Long Term Council Community Plan (LTCCP) provides a framework for Council's planning of activities and infrastructure investment in the City over a period of 10 years. The LTCCP outlines 7 key strategies to achieve the vision for Waitakere. The key strategies relating to preparing a LAP in the Waitakere Ranges are:

- Environment: Network of green, clear air, clean water and nothing wasted. ;
- Growth Management: A self-sustaining dynamic network of vibrant town centres and neighbourhoods with a social, physical and natural fabric providing housing choice and employment opportunities for all. This includes protecting, restoring and enhancing highly valued and sensitive natural areas and landscapes, particularly by locating growth away from the Ranges.
- Transport: A sustainable multi-nodal transport system that is integrated with land use and contributes to Waitakere as an eco city; and
- Economic Wellbeing: A catalytic environment for a flourishing and resilient economy. This includes identifying and promoting appropriate rural economic activity through a Rural Economic Activities Plan and developing a Tourism Action Plan.

- Social: strong skilled and connected communities and neighbourhoods
- Cultural wellbeing: feeling of belonging, treasuring diversity, creativity, culture and heritage
- Governance: a strong democracy where people felt they can make a difference. Participation and respect for diverse and creative views. LAPs contribute to this by encouraging communities to take part in long-term planning for their local area.

### 2.3.2 Development of District Planning in the Foothills

The following information applies to the foothills area, comprising the area east of the ridge along which Scenic Drive runs, and west of the present MUL/Ranges area boundary.

1959 County of Waitemata Extra Urban Planning Scheme: Zones in the foothills area were Rural Zones A and C.

1961 Waitemata County District Scheme: Zones in the area were Rural Zones A and C.

1973 County of Waitemata District Scheme: See maps in **Appendix C: Planning maps from County of Waitemata District Scheme 1973**. Information for specific areas of the foothills is found in the section relating to each area. Zones included:

- Rural A Zone: Permitted farming uses associated with the rural environment as well as limited development where the rural character was not changed. Minimum subdivision standard of 50 acres although Council had wide powers of dispensation where subdivision was required to provide for appropriate rural development.
- Rural C Zone: Used to encourage the retention of native bush. Land was relatively unproductive for general farming. Intended to provide an area of extensive open space where urban development was subordinate to the amenities of the area.

1984 Waitemata City District Plan: See maps in **Appendix D: Planning maps from Waitemata City District Plan 1984**. Information for specific areas of the foothills is found in the section relating to each area. Zones in the area included:

- Landscape Protection 2 Zone: Permitted subdivision to 4 ha.
- Non-Urban Residential 1 Zone: Permitted subdivision to 4000m<sup>2</sup>.
- Non-Urban Residential 3 Zone: To allow existing settlement on the periphery of the urban area to become and remain viable settlements that serve the surrounding rural area.
- Recreation 1 Zone: Playground and amenity. Used by local population in easy walking distance.
- Recreation 3 Zone: Regional Protection Zone to protect and preserve these areas in recognition of scenic and ecological value.
- Residential deferred: Intended to be provided with urban services in future.
- Rural-Residential Zone: To provide for large rural residential lots and small “hobby” farms in areas close to the urban area on lower quality soils.
- Rural 3 Zone: Allowed agricultural uses. Minimum subdivision size of 5 ha.

1995 Plan Change 70: This proposed minimum lot sizes of 4ha in Non Urban Residential 1, 2 and 4 zones. The change was withdrawn in October 1995 when the District Plan was notified.

2003 Waitakere City Council District Plan: Notified in 1995. Information for specific areas of the foothills study area is found in the section relating to each zone. Zones include:

- Waitakere Ranges: bush covered areas of the Ranges where natural elements/wilderness characteristics dominate.
- Foothills: The predominantly rural area between the urban area and Waitakere Ranges

- Bush living: intensively settled areas within the Ranges where natural features dominate but settlement has substantially fragmented bush. These zonings are shown in **Figure 3**.

### 2.3.4 The Waitakere District Plan

The Waitakere District Plan (District Plan) seeks to extend further the community's vision of sustainable management of natural and physical resources for the future.

Two types of management area form the basis for policies and methods in the District Plan as outlined below:

1. Natural Areas – There are several types of natural areas identified in the Foothills area. These are:
  - General – areas without significant or outstanding native vegetation or natural features;
  - Managed – areas of significant and outstanding native fauna habitat;
  - Protected – contain outstanding native vegetation and/or natural features;
  - Riparian Margins – areas adjacent to waterways, streams, lakes and rivers, varying distances depending on a combination of flooding, erosion, ecological and landscape values;
  - Restoration – areas of native vegetation with between 20% to 50% native vegetation cover that are over 300 m<sup>2</sup> in area;
  - Ecological linkage opportunity – overlays other areas and identifies areas that would link fragments of native vegetation to improve the sustainability of the fragments or create wildlife corridors;
2. Landscape Elements – the District Plan also identifies a number of landscape elements that require particular management approaches to avoid adverse effects. These include
  - Visually Sensitive Ridgelines – broad, moderate and steep ridges; and
  - Scarps and Cliffs
3. A number of other landscape, heritage and ecological items are also identified in the Policy Section of the Plan including
  - Notable Viewpoints,
  - Geological Features,
  - Outstanding Landscapes,
  - Outstanding Natural Features,
  - Outstanding and Significant Native Vegetation and Faunal Habitats, and
  - Tangata Whenua Heritage Areas
4. Human Environments – There are several types of human environments (zones) identified in the Foothills area. These are:
  - Waitakere Ranges – bush covered areas of the Ranges where natural elements/wilderness characteristics dominate..;

- Foothills – mixed landscapes of the eastern foothills..;
- Open space – publicly owned open space; and
- Bush living – intensively settled areas within the Ranges where natural features dominate but settlement has substantially fragmented bush.

The Human Environments and Natural Areas work in conjunction to manage the effects of land use and development on existing and future residents and visitors, and the on the natural environment, including through subdivision controls. (Further information on existing subdivision potential is contained within s 2.3.7). Subdivision controls are set out in full in the Subdivision Rules Chapter of the District Plan, but a brief summary<sup>4</sup> is included below:

Human Environment	Lowest consent category	Minimum Site Size (after subdivision)	Conditional upon
Bush Living <sup>5</sup>	Discretionary	(i) 4000m <sup>2</sup> average (2000m <sup>2</sup> minimum), or  (ii) 8000m <sup>2</sup> , or  (iii) 4Ha	Building platform able to be provided in General or Restoration Natural Area  no more than one new site, and Building Platform able to be provided in Managed Natural Area  In all other situations provided no development in Protected, Coastal or Riparian Margins Natural Areas
Waitakere Ranges	Discretionary	4Ha average (2Ha minimum)	No roads created, and no development in Protected, Coastal or Riparian Margins Natural Areas
Foothills	Controlled  Limited Discretionary	4Ha, or  In accordance with an approved structure plan	Meeting the protection and enhancement planting and minimum site requirements of the Structure Plan

Objectives and policies in the district plan relevant to the development of LAPs include;

- Containment of the majority of the City's growth within the urban area to protect the Ranges and foothills (Objective 0).
- Managing the effects of land use to protect water quality (Objective 1);
- Protection of native vegetation and fauna habitat through limiting settlement in the Ranges and foothills area (Objective 2);
- Managing the effects of land use on air quality through facilitating cycling and walking as an alternative to motor vehicle use (Objective 4);

<sup>4</sup> Subdivision is a complex and often expensive legal process. As with any transaction involving land or property, obtain competent independent professional advice before proceeding. The table is only a summary of the general provisions applying to all subdivisions, and the detailed provisions for each zone in the District Plan, all of which must be met prior to subdivision being granted.

<sup>5</sup> Note that different provisions apply in the Bush Living and Waitakere Ranges Human Environments falling within the Titirangi/Laingholm Subdivision Areas (outside of the Foothills) – refer Subdivision Rule 10A: Titirangi-Laingholm

- Managing effects on ecosystem stability by promoting regeneration and establishing or maintaining ecological linkages (Objective 5) ;
- Protecting outstanding landscapes and outstanding natural features including landforms and geological sites. The plan contains specific requirements for structure plans in the foothills to protect and enhance landscape qualities and conservation of values of landforms (Objective 6);
- Protection of the natural character of rivers and wetlands (Objective 7);
- Protection of aspects of the environment of significance to tangata whenua (Objective 8) ;
- Protection of amenity values including the complex, mixed landscape of the foothills (Objective 9);
- Maintenance and protection of the City's heritage (Objective 12).

The rural Structure Plans (Oratia, Birdwood (both operative), Swanson, and Dilworth (under appeal)) form part of the District Plan and provide further guidance about what can occur on land within their boundaries, usually by indicating where and how subdivision can be undertaken within its boundaries following a comprehensive assessment of the carrying capacity of the area. Subdivision in accordance with a Structure Plan is generally of a lower consent category than would otherwise be enabled, but subdivision beyond the provisions of the Structure Plan or where the preconditions of the Structure Plan are not met, is generally more stringent. **Figure 4** is a map which shows the structure plan areas.

Policy 0.11 in the Managing City Growth chapter of the District Plan relates to settlement in rural areas and states that "*further intensive settlement within rural areas should not occur in order to accommodate population growth prior to 2021. Growth thresholds established by existing rural subdivision standards should be maintained in order to permanently protect the Waitakere Ranges and their foothills and the remaining rural area.*" The explanation to this policy notes that opportunities available through structure plans already in place (such as in Oratia, Birdwood, Swanson and Dilworth) provide for a substantial amount of population growth within the Foothills, and along with a mix of vacant sites and development provided through the District Plan subdivision provisions, this will satisfy lifestyle choices and anticipated population growth until at least 2021, and possibly later.

As noted above however, the existing potential for development may be altered for reasons other than provision for growth, such as if the uptake of existing provisions results in unacceptable environmental impacts, to achieve a net environmental gain, or to facilitate rural economic wellbeing.

### **2.3.5 Subdivision**

**Figure 5** shows subdivision potential for the foothills including the Oratia Structure Plan area and the Swanson Structure Plan area. Rural structure plans have been developed for two of the stream catchments, Oratia (operative) and Swanson (subject to interim decision from the Environment Court) within the foothills study area. The Council has also been involved in the development of a rural structure plan within a part of the Dilworth catchment as part of the process of achieving the resolution of an appeal against the District Plan. The other operative rural structure plan, Birdwood, is outside the Waitakere Ranges Heritage Area, to the west of Don Buck Road, Massey. Further information on subdivision is found in the background reports on the different areas within the foothills study area. This data is taken from the Auckland Regional Council Capacity for Growth Study 2008; a desktop GIS-based study determining capacity as provided for by operative District Plan provisions as at March 2006. In the Swanson Structure Plan area, this data has been superseded by recent Environment Court Decisions, resulting in a total of 62 additional lots within the structure plan area, 31 of which fall within the WRHA.

### 2.3.6 Waitakere Growth Management Strategy

The vision for the GMS is

*“Urban Waitakere will be transformed from a collection of dormitory suburbs to a more complete and sustainable urban form. Urban Waitakere will be focused on three regional centres at Henderson, New Lynn and Westgate, servicing diverse residential neighbourhoods, with a rich social, physical, economic and natural fabric. Waitakere will provide a contained, compact urban form, housing choice, employment opportunities, and attractiveness to business. Urban Waitakere sits within a framework of protected natural areas, notably the Ranges and Coast and productive rural lands and landscapes.”*

The GMS is consistent with and gives effect to the ARPS and the RGS, reflecting the more detailed planning and investigation work undertaken at the local level.

The future growth estimates for the identified urban growth areas are based on a high level planning assumptions for specific focus areas, which will be given effect to by more detailed concept planning undertaken for each area prior to redevelopment of existing areas or prior to the movement of the MUL to encompass future urban areas.

Overall, **Figure 6** shows that 95% of the City's growth to 2021 is expected to be accommodated within existing and identified future urban areas.

For the rural areas of the City, the remaining limited growth (5%) is able to be accommodated through the uptake of existing development opportunities under the District Plan (vacant sites, existing structure plans, latent subdivision capacity, redevelopment and minor household units).

Waitakere does not need to provide more development opportunities in the rural areas to provide for expected *population* growth.

However, there are other reasons why the existing development opportunities may be altered, such as to provide for net environmental gain, or where the uptake of existing opportunities would result in unacceptable adverse effects.

### 2.3.7 Rural Capacity Projections

#### Waitakere Growth Management Strategy (GMS)

The Waitakere GMS (**Figure 6**) envisions that only a small proportion (approximately 5%) of the expected population growth between 2001 and 2021 is to occur in the rural area (that part of the city outside the existing urban area and identified future urban areas).

The rural area encompasses some 78% of the city's land area; however some 70% of this non-urban area (about 50% of the area of the City) is managed by the Waitakere City Council, Auckland Regional Council and the Department of Conservation as public reserve and for water supply purposes, collectively known as the Waitakere Ranges Regional Parkland<sup>6</sup>.

The area outside the many reserves include the Waitakere Ranges and associated foothills areas (such as Oratia, Swanson, Opanuku, Waiatarua, Bethells Valley) and coastal villages

---

<sup>6</sup> Not all reserves land in the WRHA are within the Regional Park, or are contiguous with it. There are also a number of private reserves, and the majority of the private land in the area is managed by the owners in a manner that is totally complementary to the objectives of the parkland. The actual cadastral boundary between private land and adjoining public reserve land is also unclear 'on the ground' in most cases.

(Bethells Beach/Te Henga, Anawhata, Piha, Karekare, Whatipu, Huia, Cornwallis and Parau); and the rural villages of Waitakere, Whenuapai and Herald Island; and the Whenuapai countryside, including the Airbase.

A portion of the urban area is also within the Heritage Area, being the Titirangi/Laingholm area, which is extensively bush covered and contains a number of significant environmental and heritage features, but is also highly settled and serviced by reticulated infrastructure.

The limited additional growth that occurs in the rural area prior to 2021 can be accommodated through a combination of uptake of existing vacant sites, development in accordance with the existing structure plans (Oratia, Swanson, Birdwood and Dilworth (west of Waitakere Village) and the remaining subdivision, redevelopment and development potential available under the existing District Plan.

Projections for rural growth beyond 2021 are difficult, not only due to the long timeframes involved, but also as the planning framework for the majority of the rural area will fall within the Waitakere Ranges Heritage Area, and will be guided by the Act, which clearly states the potential for this area to absorb further growth is limited.

#### Statistics New Zealand:

Statistics New Zealand publish population projections at a national and sub-national levels based mainly on consideration of a variety of assumptions at a national level of migration and natural increase, with small variations made at a local level to account for local demographics, as well as discussions with local authorities regarding future growth areas and assumptions. However, these local variations are subject to conformance with the national projections, being broken down from the national to the sub-national in ever decreasing sized areas, rather than the 'bottom up' land use capacity approach used in the Growth Management Strategy.

These two approaches can be considered complementary:

- the SNZ demographic based approach, based on a total pool of existing and future 'people' and Households to spread around,
- the 'capacity' based approach based on land use potential for existing and future 'dwelling' opportunities (identified in the current planning framework) for that projected pool of people to live in.

The smallest geographic unit for which SNZ publish population projections<sup>7</sup> is the Census Area Unit (CAU), with these projections being made to 2031 (25 years from last census in 2006). Data from the last 3 Census can be supplied at smaller Meshblock (MB) level, but to preserve anonymity of responses, much of the more interesting and useful data is suppressed, and no future projections are made at this geographic level.<sup>8</sup>

**Figure 7** shows the locations and names of the CAUs that approximate the Foothills, with the tables and graph at **Figures 8 to 10** showing the population projections from 2006-2031 for these areas. Note that the CAU's are very large, and in some cases a proportion of their area includes urban zones and/or rural areas outside of the heritage area. Swanson CAU in particular is impacted by this as it includes both a portion of Swanson Village as well as Penihana Future Urban Area.

---

<sup>7</sup> Census Area Units are an agglomeration of 'Meshblocks' the smallest geographic unit for which Statistics NZ publish statistics collected in the Census. Due to privacy concerns, considerable rounding and/or suppressed information gaps may be present in the Meshblock level. Projections are not made at the Meshblock level due to the considerable 'averaging' used to develop future projections, would conflict with the apparent accuracy that such projections would appear to have. 'Split' projections for smaller geographies (as has been done to compare 'Rural' projections with capacity) should be treated as approximate and indicative only.

<sup>8</sup> For more on Census data integrity and use, privacy issues, projections, assumptions' used and the geographic basis of it all, please visit the Statistics New Zealand website: [www.statistics.govt.nz](http://www.statistics.govt.nz)

These population projections have been manually modified to convert this population (or persons) growth into dwelling or household projections (**Figure 9**) using assumed household occupancy rates, and to also remove the portion of growth expected to occur within the area of the CAUs falling outside the WRHA. These modified 'Foothills CAUs: ranges area only' *projections* are compared with the *capacity* for growth based on analysis of the vacant sites and subdivision potential in the same area, as at March 2006<sup>9</sup>. This analysis shows that there is sufficient capacity across the foothills to accommodate expected population (as represented by dwellings) growth to around 2031 even under the 'high' growth scenario. Under lower growth rate scenarios, this capacity could last much longer.

Council's policy position on Rural Growth reflects the objectives and principles of the Regional Growth Strategy, the District Plan and the Act, in noting that the potential for the area to absorb growth and subdivision in areas of high environmental value is limited.

The District Plan does allow for growth to occur, through subdivision, redevelopment and minor household units, subject to the management of environmental effects. There is also a significant latent capacity for development of existing vacant sites, upon which it would be expected a dwelling and associated buildings and development could be constructed at some stage.

However a key reason for the passing of the Act, is that the Resource Management Act 1991 does not have a suitably robust or forward looking framework for the consideration of cumulative effects – 'death by a thousand cuts' – the many small impacts which considered individually and in isolation against the existing environment are minor, but taken together and across a sensitive area like the Ranges, may be considerable.

It is therefore anticipated that the local area planning process may identify new opportunities for growth in certain areas where a net environmental gain is enabled, or the specific characteristics of an area facilitate further development, or where the transfer of existing development opportunities may achieve a more sustainable outcome.

On the other hand, the LAP process may also identify that the uptake of existing development opportunities in certain areas (such as the development of existing vacant sites) will cause significant cumulative effects, and will need to be managed carefully.

It is expected that the rural population post-2021 will continue to grow though natural increase (the difference between births and deaths – the rate and nature of this is very dependent on demographic makeup of the households in the area and may therefore remain static or even decline, based on current demographics) but potential for migration (the difference between the number of people moving in and those moving out) will be limited to that enabled via the sale and purchase of the relatively fixed number of dwellings or buildable sites, once existing capacity is exhausted.

The amenity benefits of a rural or bush setting relative to a highly urbanised metropolitan area may also be tempered by the increasingly prohibitive financial and time costs of long distance commuter travel in the future, meaning the people who live in the rural area are also more likely to work there, or at least close by. (The rural areas of the foothills are also in relative proximity to the Rapid Transit Network of the Western Rail Line – see also s2.3.9).

To achieve increased local employment will require increases in the opportunities for rural based employment, from improved opportunities for home based work (such as through

---

<sup>9</sup> This capacity figure has also been modified to reflect recent Environment Court decisions in relation to the Swanson Structure Plan, which has reduced the total number of potential new sites compared with the councils' Decision Version originally used to determine rural capacity. Source: <\\KAURI\SHARED\Projects\GTI\01 Strategic\Strategic advice\Research\City Capacity\Ranges\2006 Census\CAUs and MBs 2006 Census.xls>. The 'kink' from 2006 to 2011 is due to the city wide average HH occupancy figure used, (the only one available) which as noted elsewhere, has been historically higher than in the Ranges.

improved internet capability) to increased rural based activities including rural production and processing, and/or increase in activities that require or leverage off a rural setting and landscape, such as cellar door/farm gate sales, bed and breakfasts, and so on.

### **2.3.8 Countryside and Foothills Stormwater Management Code of Practice**

Version 3 of the Countryside and Foothills Stormwater Management Code of Practice (CFCOP) was published on 29 June 2005. It seeks to provide guidance in management of stormwater infrastructure for residential sites with lot sizes no smaller than 4000m<sup>2</sup>. The CFCOP looks at why stormwater must be managed, the adverse effects that it may cause and design objectives. It limits the total amount of new impervious surface that can be constructed to 600 m<sup>2</sup> per lot including driveways, shared accessways, roof areas and other hardstand areas. It includes information on the following areas:

- Minimising impervious areas;
- Access roads and driveways;
- Planting of bush vegetation;
- Rain water tanks;
- Rain gardens;
- Dispersal devices;
- Swales; and
- Green roofs.

The entire CFCOP can be found at [www.waitakere.govt.nz/CnlSer/wtr/stormwater.asp#cop](http://www.waitakere.govt.nz/CnlSer/wtr/stormwater.asp#cop) .

The Code of Practice for City Infrastructure and Land Development (found at <http://www.waitakere.govt.nz/abtcnl/cop-cityservices.asp>) sets out the design and construction requirements for all land development and new infrastructure projects within Waitakere City. It is under review and needs to be aligned with the CFCOP

### **2.3.9 Transportation**

**Figure 11** shows bus, train and bicycle routes within the foothills.

**Trains:** There are three train stations close to the foothills area, Waitakere (with train frequency of 30 minutes at peak times and hourly trains off-peak and 17 park and ride spaces), Sunnyvale (peak services every 15 minutes with park and ride spaces for 109 cars), and Swanson (peak services Swanson every 15 minutes and every 30 minutes off-peak, park and ride 34 spaces).

**Road traffic:** Traffic counts for West Coast Rd (near Glengarry Rd) currently average 7,000 per day. Based on the city average increase of 2% p.a. this could increase to 11,500 vehicles per day by 2031. Parrs Cross Rd presently carries around 14,000 vehicles a day (2008 figures), Henderson Valley Rd (measured outside the school) averages 1500 a day. Swanson Rd (near the junction with Birdwood Rd) averages around 5000 vehicles a day and Scenic Drive at the junction with Shaw Rd in Oratia carries 1500 vehicles a day.

**Buses:** The foothills area is poorly served by buses. The 167 Waiatarua feeder bus service between Waiatarua and Henderson via West Coast and Forest Hill Rd has been deleted by ARTA because of low patronage and funding cuts. The only other bus route that links the foothills to the urban area is a service that runs from Henderson Valley Rd and Candia Rd along Sturges Rd and then downtown. Two or three private buses a day take visitors to the Arataki Visitors Centre, using Shaw Rd in Oratia. A bylaw forbids passage of heavy vehicles (including buses) on Scenic Drive between Shaw Rd and Woodlands Park Rd, due to the narrow and windy nature of this portion of the road.

**Cycle and walkways:** There are no formal cycle ways within the foothills although there are connections to the foothills area via urban walk and cycleways. Cyclists are of course provided for as 'vehicles' on all public roads, however the roads are generally winding and narrow nature, have limited width shoulders combined with high vehicle speeds, raising safety concerns. An informal on-road route is indicated along Scenic Drive, reflecting the popularity of this route for road cycling. Mountain biking is not currently permitted within the Auckland Regional Council managed Waitakere Ranges Regional Parkland. A Project Twin Streams off-road walk/cycleway connects Henderson Valley Road to Border Road and connects to the [Lower Opanuku Walk and Cycleway](#). The Oratia walk/cycleway connects Parrs Cross Rd to Millbrook Rd and provides a connection to Sunnyvale Station. There is a walkable connection from Oratia village to Arataki Visitors Centre from the end of the formed portion of Parker Rd along the 'paper road' though the Regional Parkland to Arataki on Scenic Drive.

The Auckland Regional Council is currently planning a 'Long Trail' which starts at Titirangi (accessible by bus from downtown), then Arataki Centre, Huia, Whatipu and Piha, ending at Swanson railway station.

## 3. Heritage Features in the Foothills

### 3.1 Human Culture

#### 3.1.1 History

The Waitakere Ranges Heritage Area Act identifies several features that relate to history and are applicable to the foothills area. These are:

- 7(2)(j) the historical, traditional, and cultural relationships of people, communities, and tangata whenua with the area and their exercise of kaitiakitanga and stewardship.
- 7(2)(k) the evidence of past human activities in the area, including those in relation to timber extraction, gum-digging, flax milling, mineral extraction, quarrying, extensive farming, and water impoundment and supply.
- 7(2)(m) the Waitakere Ranges Regional Park and its importance as an accessible public place with significant natural, historical, and recreational resources.

Both Te Kawerau a Maki and Ngati Whatua identify mana whenua status in the Waitakere Ranges. Iwi groups established themselves throughout the Waitakere Ranges from around 900AD onward through settlement, conquest and intermarriage. In 1854 as European settlers moved into the Waitakere Ranges, the Crown purchased land from Ngati Whatua in the south and north of the ranges and from Te Kawerau in the central hills. An account of Maori history in the ranges is given in **Appendix E: Waitakere Ranges Heritage Area Information Pack – Maori History** and **Appendix F: District Plan Maori History for Waitakere**.

Waitakere City Council works closely with Kawerau a Maki and Ngati Whatua as well as with urban Maori groups. The Act makes specific provision for establishment and maintenance of processes to provide for the two iwi to contribute to the Council's decision-making processes. **Appendix E** provides information on key concerns in relation to the Waitakere Ranges for both Te Kawerau a Maki and Ngati Whatua. '*Waitakere Ranges: Nature, History, Culture*' by the Waitakere Ranges Protection Society is a useful source of information on both the Maori and European history of the Ranges.

European occupation of the foothills area began in the early 1800s and followed a pattern of extraction of natural resources which began with logging the native forest, gum digging and flax milling. Pit-sawing stations were set up in the foothills and Henderson's Mill was constructed in the mid 1840's. In the 1850s and 60's as the timber on the flats was quickly exhausted, trip dams were used to drive kauri logs down the Henderson and Swanson streams via the mills to the upper reaches of the Waitemata Harbour and other areas of the foothills around 1845. Small creeks were dammed to float logs to the mills downstream to Falls Park in Henderson. Flax mills were also a significant industry of the same period and gum digging was carried out on a small scale, mainly by individuals or small gangs, with the gum sold for use in varnish, linoleum, dentistry and firelighters.

In 1860 the railway was built, initially as a means of transporting timber, but also to connect the long narrow country and as a more reliable and safer alternative to the coastal trading ship. Once the forests had been logged the settlers' attention turned to agriculture and viticulture, with Henderson becoming the centre of the new agricultural district.

Waitakere City Council has commissioned heritage assessments of sites in the foothills that appear in the Cultural Heritage Inventory (that contains information on archaeological sites, historical buildings and botanical sites) but not in the District Plan, to determine whether those sites warrant inclusion in the District Plan in future. The assessments cover heritage buildings and heritage vegetation and are attached at **Appendix G**. Archaeological sites are not

included in the assessments but were covered in the New Zealand Archaeological Association's Site Recording Scheme Update Project carried out in Waitakere City in 2007 (attached as **Appendix H**).

### 3.1.2 Cultural Heritage Sites

Known cultural and historic heritage sites (as distinct from the 'heritage features' under the Act) in the Waitakere Ranges Foothills, as identified in the Waitakere District Plan and the Auckland Regional Council Cultural Heritage Inventory, are shown in **Figure 12** (only Waitakere District Plan sites have been labelled).

Sites on the Cultural Heritage Inventory maintained by the Auckland Regional Council (**Appendix I**) include archaeological sites, botanical heritage items, maritime heritage (such as shipwrecks), and historic structures.

Sites listed in the Waitakere City Council District Plan (**Appendix J**) include archaeological sites, botanical heritage sites (or notable trees) and historic structures.

Sites are included in each listing for a variety of reasons, and there is some overlap between the two listings.

Sites in the Waitakere City Council Heritage Appendix are protected by the District Plan, and resource consent is required for modification (other than minor repair) or destruction of the site or item.

Sites in the Auckland Regional Council Cultural Heritage Appendix are not generally protected, unless they are also listed in the District Plan, and/or are archaeological sites. They may however be considered as a matter for consideration when a resource consent or subdivision is applied for, given that the protection of historic heritage from inappropriate use and development is a matter of national importance under the Resource Management Act 1991 and the Act.

Evidence of human occupation prior to 1900 (archaeological sites) is automatically protected by the Historic Places Act 1992, even sites that are not listed or noted, and approval is required from the Historic Places Trust (in addition to any resource consent requirements), generally supported by a report from a registered archaeologist to modify or destroy such sites or evidence.

Given the long history of human occupation of Waitakere and limited resources applied to date to identify and protect historic heritage, particularly archaeological sites, the known sites are considered to be the 'tip of the iceberg'. Earlier evidence of Maori and European settlement also tended to leave little permanent evidence of its presence with small structures or workings generally swallowed fairly quickly by the bush from which they were formed— hence it is generally only the most obvious sites, or those which have been accidentally uncovered (and recognised) that have been noted.

**Figure 12** indicates a broad spread of known sites across the foothills study area, but with obvious clusters of sites in Oratia around West Coast Road, Henderson Valley around Henderson Valley Road, and Swanson between Tram Valley Road and Scenic Drive North. Most of these sites are associated with early European occupation and extractive industries such as logging, railways and horticulture; though these roads also followed older and established māori trails.

Some archaeological evidence relating to pre-European māori occupation is also evident, but this is not as concentrated as it is around the coast, as the foothills was generally a place for

passing through to elsewhere, or a temporary refuge, rather than a place of permanent occupation or settlement.

Further details on the sites are found in **Figure 12** and in **Appendix I: ARC Cultural Heritage Inventory Sites in the Foothills** and **Appendix J: WCC Cultural Heritage Sites in the Foothills**.

### 3.1.3 Community

Section 7(2)(l) of the Act identifies the “distinctive local communities” of the Heritage Area as an important feature. Distinctive communities relate to an individual’s or community’s sense of belonging to an area or locality, can be readily identified and typically have;

- A dependence on shared facilities in an area, including schools, recreational, and cultural facilities; and
- A physical and topographical coherence; and
- Local history; and
- Common amenity and landscape.

The demographics for the communities of the foothills study area<sup>10</sup> differ from those for Waitakere City as a whole:

- Foothills residents are more highly educated, more likely to own their own homes and more likely to describe their ethnicity as European.
- Age distribution is also significantly different from the City as a whole, with a higher proportion of people in the 10-19 and 40-65 year age groups.
- More people work from home than in the City as a whole and there are lower levels of unemployment. Residents have higher levels of educational achievement compared to the City as a whole. Foothills residents earn comparatively high incomes, with median income for the foothills residents being over \$80,000 compared to \$58,500 across the City
- Foothills residents stay longer in the same residence. Around 50% of foothills residents had lived in the same residence for the previous 5 years compared to 37.5% for the City as a whole.
- Within the foothills the largest occupation is that of property and business services (around 900 employees). Construction is the second largest category of employment with around 450 employees.

Detailed information on the individual areas of the foothills is provided in the local area background reports.

## 3.2 Landscape and Landform Features

The Act identifies the following features relating to landscape and landform in the Waitakere Ranges and foothills:

- 7(2)(b) Different classes of natural landforms and landscapes that contrast and connect with each other, and collectively give the area its distinctive character;
- 7(2)(f) The dramatic landform of the Ranges and foothills which is the visual backdrop to Auckland City, forming its western skyline;
- 7(2)(e) The quietness and darkness of the Ranges;
- 7(2)(h) The eastern foothills which (i) act as a buffer, and provide a transition, between metropolitan Auckland and the forested ranges and coast; and (ii) provide a transition from metropolitan Auckland to the forested ranges and coast;

---

<sup>10</sup> A variety of different geographical approximations for the Foothills Study Area have been used to extract usable statistics from available data, which is provided by Statistics NZ at varying resolutions and levels of accuracy.

- 7(2)(i) The way natural and rural landscapes are dominant over built development. This is seen in:
  - (ii) The distinctive harmony, pleasantness, and coherence of buildings located in regenerating, and increasingly dominant, forest settings; and
  - (iii) The rural character of the foothills and their intricate pattern of farmland, orchards, vineyards, uncultivated areas, indigenous vegetation, and dispersed low-density development with few urban-scale activities.

The Regional Policy Statement (**Figure 13**) defines the majority of the Waitakere Ranges as an area of significant natural landscape quality. The core ranges, upper slopes of the foothills and some of the lower slopes (including the Opanuku Stream corridor) are denoted as Outstanding Landscapes (quality rating of 6 and 7). Parts of the lower foothills are denoted Regionally Outstanding Landscapes (quality rating of 5).

Proposed Plan Change 8 (**Figure 14**) to the Regional Policy Statement describes the area as Outstanding Natural Landscape. The Waitakere Ranges (Landscape Unit 73) are described as *“coastal and inland ranges landforms with largely intact remnant indigenous vegetation reinforcing topography”*.

Landscape and landform information for the foothills area is shown in **Figure 15**. **Appendix K** provides an explanation of the information shown on the map at **Figure 15**. Based on the report *Waitakere Ranges Landscape Study: Stage 1* (Melean Absolum Ltd, 2004, attached as **Appendix L**) the area can be divided into areas which include:

- Core Ranges: Those areas where native vegetation is extensive and markedly dominant.
- Upper foothills: Similar characteristics to the Core Ranges but development is more extensive. These areas display a strong connection to the Ranges behind. The middle catchment has rolling ridgelines and valleys. Grazing and horticultural land uses in the past saw extensive clearance, particularly of the flatter ridge tops. The area includes broad expanses of native forest with some residential development and moderate to steep slopes. The landscape is strongly influenced by native vegetation with horticultural crops and grazing in some areas.
- Lower foothills: Less obvious connection to the Ranges, with scattered pockets of remnant vegetation. Generally lower and more undulating topography. Generally east facing with horticultural activity dominating the character including vineyards, shelterbelts and orchards. The area is also increasingly characterised by countryside-living style development.

This report also identified three broad landscape types:

- Bush living: Native vegetation dominant with development nestled amongst the vegetation.
- Pastoral: Grazing land with pattern of rolling hillsides, shelterbelts and pockets of native vegetation, particularly in steeper gullies.
- Horticultural: Land used for horticultural uses, primarily orchards and vineyards.

The 19 landscape units within the foothills (refer **Figure 15**) include:

#### Upper Foothills

- **UF1:** Anzac Valley area. Steep slopes topped with vegetation. Exotic forestry. Sensitive to large buildings and prominent access ways.
- **UF 2.** Tram Valley Rd area. Gentle forested slopes with residential development along roads. Sensitive to breaks in the canopy and intrusive design/colour
- **UF 3.** Tram Valley Rd area. Gentle slopes, rolling pasture with some bush. Sensitive to development because of lack of screening.

- **UF 4.** Welsh Hills Rd area. Bush clad, steep valleys with residential development on ridges and Mountain Rd. Sensitive to any further development because of visual intrusion.
- **UF 5:** Grassmere/Forest Hill Rd area. Rolling landform with bush on higher slopes and pockets of residential development. Landscape sensitive to inappropriate development on prominent landforms.
- **UF6:** West Coast Rd area. Native forest with ridge top roads. Sensitive to inappropriate urban development (such as Bendalls Land).
- **UF 7:** Shaw/Parker Rd area. Parallel steep to moderate stream valleys. Native bush in valleys and residential/horticultural areas on ridge tops. Mixture of uses create attractive mix of open space, enclosure and connection to the Ranges. Complex patterns enable accommodation of careful development.

#### **Lower Foothills**

- **LF 1:** Waitakere. Open, pastoral area, gentle slopes with remnant shelterbelts and pockets of bush, influenced by rail corridor and residential development. Sensitive landscape because of high visibility with potential for residential development to threaten rural character.
- **LF 2:** Anzac Valley. Enclosed pastoral character with remnant shelterbelts. Sensitive to removal of shelterbelts and large developments.
- **LF3:** Candia Rd area. Three sunny sheltered valleys, enclosed land given over to grazing with remnant bush and shelterbelts. Sensitive to removal of shelterbelts and reduction in screening of development.
- **LF 4:** Simpson Rd area. Flat topped ridge with east and west facing slopes. Strongly influenced by proximity to urban Auckland.
- **LF 5:** Siebel and Vineyard Rd area. Secluded, quiet, enclosed valley floor. Scattered trees in lower parts. Sensitive to residential development on elevated areas and to removal of shelterbelts.
- **LF 6:** Henderson Valley Rd/Opanuku Rd area. Flat valley floor with strong sense of enclosure. Horticultural uses and shelterbelts. Sensitive to denser development and loss of screening vegetation.
- **LF 7:** Opanuku and Anamata Stream valleys. Bush remnants and ribbon residential development. Open, sunny slopes with scattered bush. Sensitive to residential development due to high visibility.
- **LF 8:** Holdens Rd area. Horticultural character, plentiful trees and residential development along roads. Sensitive to removal of vegetation, especially shelterbelts.
- **LF 9:** Lower Oratia valley in Shaw/Carter Rd area. Gentle slopes with scattered orchards, shelterbelts and remnant bush and sense of enclosure. Sensitive to removal of shelterbelts and orchards.

#### **Land Use Capability**

The Auckland Regional Policy Statement Land Use Capability map (refer **Figure 16**) show the foothills area as an area containing predominantly Class 3 soils (indicated in red, moderate limitations for arable use) and Class 4 soils (indicated in blue, severe limitations to arable use) with smaller area of Class 2 soils (indicated in green, very good soils) within the Holdens Rd area and another in the Henderson Valley Rd area.

There are also increasing areas of LU Class 6 (Light blue) and 7 (black) in the upper foothills and Ranges proper, which are considered 'non-arable'.

Interestingly no LU Class 8 (Protected) are indicated, as this class is reserved for Department of Conservation owned land or National Parks, however the Waitakere Ranges Regional

Parkland including the WaterCare Water Supply Catchment Areas could be considered to be under a comparable level of protection and management regime.

More information on the individual areas of the foothills is provided in the local area background reports.

### 3.3 Ecological Features

Ecological features identified in the Act relevant to the foothills area are:

- 7(2)(a) Terrestrial and aquatic ecosystems of prominent indigenous character that:
  - include large continuous areas of primary and regenerating lowland and coastal rainforest, wetland, and dune systems with intact ecological sequences;
  - have intrinsic value;
  - provide a diversity of habitats for indigenous flora and fauna;
  - provide opportunities for ecological restoration;
  - are of cultural, scientific, or educational interest;
  - have landscape qualities of regional and national significance; and
  - have natural scenic beauty.

The streams of the eastern foothills, also heritage features (s7(2)(d)), are dealt with in section 3.3.2 below.

The foothills play a vital role in providing a visual and ecological buffer between urban Auckland and the heavily forested Regional Park and upper foothills. 'Fingers' of bush comprising stream margins, reserves and private property also provide connections and corridors for wildlife and ecological processes connecting the Ranges to the sea through the more modified rural foothills and urban areas.

#### 3.3.1 Flora and Fauna

The Waitakere Ranges are noted in Appendix B of the Auckland Regional Policy Statement as a Significant Natural Heritage Area, considered both nationally and internationally important.

Although only 20% of the forested area has been 'unmodified' by logging or farming, the Waitakere Ranges are botanically rich containing 20% of all New Zealand's flowering plant species and 60% of all native fern species. The Ranges are home to 542 known species of native plant, many species of nationally and regionally threatened plant species, 50 species of native bird, 11 species of native freshwater fish, and 5 species of native reptile, and both species of native bat, being the only mammalian species endemic to New Zealand.

The Waitakere District Plan denotes parts of the foothills as outstanding native fauna habitat (Policy Map 3.5B) and much of the area is described as significant vegetation with some pockets of outstanding vegetation (Policy Map 3.5A).

The foothills of the Waitakere Ranges are defined in the Waitakere City Biodiversity Report 2007 as 'warm lowlands ecosystem', consisting of kauri on the ridges, rainforest on the slopes and kahikatea and nikau groves in the valley bottoms. Those parts of the foothills that have undergone urbanisation or remain pastoral, retain remnant native bush patches, exhibiting lower biodiversity values but are still locally and regionally important.

Department of Conservation 'Recommended Areas for Protection' within the foothills include University Forest – Oratia (RAP#17), Opanuku-Fairy Falls Forest (RAP#18), Upper Waitakere

River Valley (RAP #19), and Bendalls Bluff (RAP #20).

The *Ecology of Waitakere's Rural Areas Report* (Kingett Mitchell Ltd, 2007) provides more detailed information on the forest composition in the foothills. A summary of this information on the ecology of the various settlements in the foothills is provided in subsequent reports.

**Figure 17** provides information on ecological features in the foothills area. **Appendix M** provides an explanation of the information shown on this map. This map includes information from the District Plan on significant and outstanding vegetation in the area and identifies bush protection areas, streamside restoration area and revegetation areas.

### 3.3.2 Streams

Section 7(2)(d) of the Act states that “the naturally functioning streams that rise in the eastern foothills and contribute positively to downstream urban character, stormwater management, and flood protection” are a heritage feature of the area. This section refers directly to the streams of the eastern foothills.

The Proposed Auckland Regional Plan: Air, Land and Water includes the headwaters of the Oratia and Opanuku Streams within its Natural Stream Management Areas, meaning that these reaches retain significant natural character through retention of significant, indigenous riparian vegetation.

**Figure 18** shows the location and nature of the streams in the foothills area, which are generally clear running and stony bottomed in the upper reaches, becoming more turbid and muddy in the lower reaches. This is a natural progression, but has been exacerbated by human activities, particularly logging in the 19<sup>th</sup> century (and especially the use of trip dams for transportation of logs in combination with the removal of the binding properties of the vegetative cover), more recent horticultural and pastoral activities, and land development related earthworks, all of which have increased the sediment load in the stream systems. This sediment load has in turn been deposited in the harbours, particularly the low energy upper and mid Waitemata, smothering sandy and rocky fish, shellfish and invertebrate habitat and increasing the scale and extent of mudflats and mangroves.

The forested upper reaches of streams in the foothills (for example the Oratia and Opanuku Stream headwaters) have high water quality with plentiful macro-invertebrates and fish including banded kokopu, long and short-finned eels and bullies. Freshwater crabs and koura are also reported. Downstream in the pastoral areas, streams have lower biodiversity, suffering from lack of riparian vegetation, increased water temperature and turbidity, and nutrient enrichment.

The *Ecology of Waitakere's Rural Areas Report* (Kingett Mitchell Ltd, 2007) recommends riparian restoration to attenuate stormwater flows and improve in-stream habitat for the Swanson Structure Plan area, the Opanuku headwaters, the lower reaches of the Opanuku and the Oratia Stream and its tributaries.

The Waitakere Freshwater Fisheries Monitoring Programme 2007 was established in 1997 and carried out annual stream sampling on 13 streams in the City from 2002. Within the foothills, sampling sites include the Oratia, Cochrane, Opanuku and Swanson Streams. Fish abundance tended to be lower in the downstream sites and higher in the upstream areas. A summary of the results of that monitoring is included in Appendices R and S.

WaiCare monitoring provides further information on the abundance and diversity of freshwater macro invertebrates, regular monitoring being carried out by a variety of community organisations in a number of sites in the foothills. WaiCare groups in the foothills include

Project Twin Streams Opanuku, Henderson Valley School, Carey Christian Camp and Swanson School.

More information on streams in the individual areas of the foothills is provided in the local area background reports.

### 3.4 Recreation and Parkland

Features identified in the Act relating to recreation include:

- 7(2)(g) Opportunities that the area provides for wilderness experiences, recreation, and relaxation in close proximity to metropolitan Auckland; and
- 7(2)(m) The Waitakere Ranges Regional Park and its importance as an accessible public place with significant natural, historical, cultural and recreational resources.

The Waitakere Ranges Regional Park received 467,000 visitors in 2007/8. Visitors use the Park for a variety of mainly informal activities. Walking and jogging are the most popular activities (80% of visitors), followed by picnicking, sightseeing and relaxing. Socialising with friends and walking the dog are also popular activities. Arataki Visitors Centre in the upper foothills provides information about the parkland to individuals and groups, including schools, serving around 155,000 visitors in 2007/2008. Refer to section 2.2.3 for more information on the Regional Park.

Waitakere City Council manages a number of reserves and parks in the foothills area while land close to the Scenic Drive is managed by the Auckland Regional Council as part of the Waitakere Ranges Regional Park. This is shown in **Figure 19**. A Reserve Management Plan (RMP) for the 69 local reserves in the Waitakere Ward is currently being drafted and includes many of the foothills local reserves. The majority of these reserves are bush reserves; a few have community halls and facilities. They are generally undeveloped but some have very high potential recreational and environmental values.

Reserve management plans exist for Parrs Park, Swanson Reserves and the Lower Oratia Stream. A RMP for the entire Oratia and Opanuku Stream corridor, planned for 2009/2010, has now been deferred and it is uncertain when this RMP will be drafted.

## 4. The Foothills – Conclusion

In terms of their local context, the foothills of the Waitakere Ranges Heritage Area are one of the four key areas along with urban Titirangi/Laingholm, the settlements of the West Coast and the Regional Park. The eastern foothills stretch from the settlements of Oratia in the south, through Opanuku and Swanson, to Waitakere in the north. The foothills are the narrow band of land generally bounded by the elevated regional park in the south-east and south-west and the Waitakere Ranges Heritage Area boundary to the north-east and north-west which coincides with the edge of urban Waitakere and the toe of the Waitakere Ranges. The settlements within the foothills are defined by their distinctive communities along with landscape and rural character which is made up of an intricate pattern of farmland, orchards, vineyards, uncultivated areas, indigenous vegetation, and dispersed low density settlement with few urban activities (section 7(i)(iii) of the Act).

The Waitakere foothills also sit in a regional context. More specifically the Foothills form part of Auckland's green belt providing a buffer between urban and rural Auckland. The foothills sit between urban Auckland with a current population of 1.4 million people (anticipated to grow to 2.4 million by 2050) and the Waitakere Ranges Regional Park which currently attracts approximately 467,000 visitors a year (2007/8 figures). The key park destinations that abut the foothills are Arataki Visitor Centre and the Cascades which currently attract 155,000 visitors and 98,000 visitors per year respectively.

A greater number of visitors move through the foothills to other destinations in the regional park and coastal villages at a number of "gateways". By car they travel through West Coast Road, Forest Hill Road, Henderson Valley Road, Swanson Road, and Bethells Road passing through a number of villages at Oratia, Swanson and Waitakere. These villages also form gateways and are in close proximity to rail stations with park and ride facilities that connect to each other across the foothills, to wider Waitakere destinations such as Henderson and New Lynn, and ultimately back to the Auckland's CBD. Likewise there are off road cycle and walkway linkages in Oratia and Opanuku connecting to the foothills to the CBD. The regional park walking network also abuts the foothills at a number of locations (Parker Road, Grassmere, Mountain and Opanuku Roads amongst others) but these do not currently connect through the foothills to the other transport links to the CBD.

These gateways and villages currently have a cluster of community facilities and rural based businesses where they adjoin the urban area or interspersed along their length. These include schools, community halls, medical and emergency services, churches, libraries, cafes, vineyards and recreational facilities. Visitor accommodation sites are more dispersed throughout the foothills taking advantage of the natural setting and range from campgrounds through to high end visitor accommodation such as Waitakere Estate. The foothills are also home to a number of home occupations with a high proportion of property and business services and construction sectors.

The foothills area currently has limited capacity to absorb future subdivision (section 8(e) of the Act) and this is not anticipated to change in the short to medium term future. The Waitakere City Council Growth Management Strategy and Plan Change 16 indicate that rural growth can be accommodated up to 2021 through existing District Plan standards. Across the foothills there is capacity to accommodate another 1200 households which based on Statistics NZ projections will last until at least 2031.

The Act recognises that people live and work in the foothills and these people should be enabled to provide for their wellbeing (section 8(i)). This needs to be managed within the framework of maintaining landscapes (section 8(g)), ecosystems (section 8(h)), rural character (section 8(j)), the natural resources of the Waitakere Ranges Regional Park, and the need to

protect, restore and enhance the area and its heritage features (section 8(a)). Heritage features are mapped and described in section 3 of this report.

Council has commissioned a number of technical studies to identify key heritage features in detail to ensure that people's wellbeing can be provided for in a way that will protect, restore and enhance the areas heritage features. These include:

- *The Ecology of Waitakere's Rural Areas* (Kingett and Mitchell Ltd, 2007). This work was commissioned in order to clarify the environmental context of the rural parts of Waitakere City, including ecological character, quality, constraints and opportunities, as part of the development of a City Growth Strategy. The report includes an analysis of the eastern foothills, divided into ecological units on the basis of water catchments. The report identifies the ecological context of each unit, its features(including flora and fauna), land use constraints and opportunities and restoration potential.
- *Waitakere Ranges Landscape Study* (Melean Absolum Ltd, 2004). This report was commissioned as part of the Waitakere Ranges Protection Project. The report identifies landscape units (including upper foothills and lower foothills units), across the eastern foothills and analyses their rural character, quality and sensitivity to changes in residential density and land use.
- *A Visitor Strategy for the Waitakere Ranges: Information Stocktake* (Jenny Macdonald Consulting 2007). The Stocktake Report was prepared as a preamble to the Visitor Strategy planned by the ARC and WCC. It sets out the information available on visitors to the Waitakere Ranges (including visitor activity and visitor trends), summaries of the individual communities of the heritage area and tools available to manage visitors.
- *Local Area Plan: Heritage Area Assessments* (Opus International Consultants 2009). This document assesses sites listed in the Cultural Heritage Inventory but not listed in the Waitakere District Plan. The report covers built heritage and heritage vegetation in Oratia/Waiatarua, Titirangi, Swanson, Henderson Valley and Anzac Valley.

**Figure 20** shows heritage features, rural economic development and subdivision opportunities, and current and future services, spatially illustrating the connections between the foothills and the City. This helps to identify future opportunities across the wider foothills and place distinctive communities in context as individual Local Area Plans are developed. This will also ensure that long term opportunities are not foreclosed in the short-term. The blue circles indicate train stations at Sunnyvale, Swanson, and Waitakere Village that connect the foothills to the urban area. Black arrows represent the cycle/walk ways along the Oratia and Opanuku streams which also provide off road access back to the CBD.

The red dashed arrows identify gateways proposed as part of the Ranges Economic Wellbeing plan at West Coast, Forest Hill, Henderson Valley, and Swanson Roads which create dynamic entrance points to the Ranges. Yellow circles identify a number of existing attractors in the foothills including schools, business, and accommodation while yellow triangles indicate existing campgrounds at Carey Park, and Karanga Camp. Brown Lines indicate existing walking tracks as part of the Regional Park network and connect Arataki Visitors Centre with Cascades. The black dashed lines indicate future opportunities to link these elements together, based on where opportunities may arise due to subdivision provided for under existing District Plan provisions. They approximately align with walkway plans developed by WCC Parks Planning in Oratia and Swanson.

If these access linkages can be completed this will offer the opportunity to draw visitors away from the Regional parkland (a key concern of the ARC) and out of the CBD for a range of visitor experiences in the foothills (day trips and longer stays).

The foothills are rich in heritage features, and an important buffer, both ecological and visual, between the urban area and the Regional Park. The area needs careful management in order to protect its heritage features and to develop its potential as a gateway for visitors and an attraction in its own right for city dwellers wishing to experience its rural character.

## **5. Figures**

- Figure 1:** Waitakere Ranges Heritage Area
- Figure 2:** Waitakere Ranges Regional Park – Park Development and Management Proposals
- Figure 3:** Waitakere District Plan zonings in the Foothills
- Figure 4:** Waitakere City Structure Plan Areas
- Figure 5:** Subdivision Potential for existing lots in the Foothills area
- Figure 6:** Waitakere City Growth Management Strategy Concept
- Figure 7:** 2006 Census Area Units in the Foothills
- Figure 8:** Population Projections for the Foothills
- Figure 9:** Dwelling Projections for the Foothills
- Figure 10:** Growth Projections for the Foothills
- Figure 11:** Key Transport and Access Infrastructure within the Foothills
- Figure 12:** Cultural Heritage sites in the Waitakere Ranges foothills
- Figure 13:** Auckland Regional Policy Statement: Significant Natural Heritage Areas and Landscape Quality
- Figure 14:** Proposed Plan Change 8 to the ARPS: Outstanding Natural Landscapes
- Figure 15:** Landscape Heritage Features in the Waitakere Ranges Foothills
- Figure 16:** ARPS: Land Use Capability
- Figure 17:** Natural Environment Features in the Waitakere Ranges Foothills
- Figure 18:** Streams in the Waitakere Ranges Foothills
- Figure 19:** Waitakere City Parks and Reserves in the Waitakere Ranges Foothills
- Figure 20:** Foothills Heritage Features, Opportunities and Services

## **6. Appendices**

<b>APPENDIX A:</b>	<b>Waitakere Ranges Heritage Area Q&amp;A</b>
<b>APPENDIX B:</b>	<b>Local Area Plans Q&amp;A</b>
<b>APPENDIX C:</b>	<b>Planning Maps from Waitemata District Scheme 1973</b>
<b>APPENDIX D:</b>	<b>Planning Maps from the Waitemata City District Plan 1984</b>
<b>APPENDIX E:</b>	<b>Maori History (Heritage Area Information Pack)</b>
<b>APPENDIX F:</b>	<b>Maori History (District Plan)</b>
<b>APPENDIX G:</b>	<b>Local Area Plan Heritage Assessments</b>
<b>APPENDIX H:</b>	<b>NZ Archaeological Association Site Recording Scheme Upgrade</b>
<b>APPENDIX I:</b>	<b>ARC Cultural Heritage Inventory Sites in the Foothills</b>
<b>APPENDIX J:</b>	<b>WCC Cultural Heritage Inventory Sites in the Foothills</b>
<b>APPENDIX K:</b>	<b>Landscape Heritage Features Map – Description of Features</b>
<b>APPENDIX L:</b>	<b>Landscape Units in the Foothills</b>
<b>APPENDIX M:</b>	<b>Natural Environment Features Map – Description of Features</b>