

# **PROPOSED PLAN CHANGE 4**

## **BIRDWOOD URBAN CONCEPT PLAN – BACKGROUND REPORT AND SECTION 32 ANALYSIS**

### **1 Introduction**

The purpose of this report is to provide a background to Proposed Plan Change 4: Birdwood Urban Concept Plan, and an analysis in terms of s32 of the Resource Management Act 1991 (the Act).

Section 32 of the Act requires that before adopting any objective, policy, rule or other method, the Council must be satisfied that the proposed provision is both necessary and appropriate in terms of its effectiveness and efficiency. The Council must also consider other means of achieving the purpose of the Act and state the reasons for and against adopting the proposed objective, policy, rule or other method. This requirement has been further defined in case law. In *Nugent v Auckland City Council* (A033/96) referred to as the 'Nugent Test', a proposed rule in a district plan must:

be necessary in achieving the purpose of the Act;

assist the territorial authority to carry out its function of control of actual or potential effects of the use, development or protection of land in order to achieve the purpose of the Act;

- be the most appropriate means of exercising that function; and
- have a purpose of achieving the objectives and policies of the Plan.

This report sets out:

- the Concept Plan objective,
- the background to the Birdwood Urban Concept Plan Area;
- the planning process to develop the draft concept plan;
- the existing natural and physical constraints;
- the environmental outcomes sought and possible options for achieving those outcomes; and
- the necessary plan changes to enable urban residential development to occur within the concept plan area.

### **2 Concept Plan Objective**

The objective of the Birdwood Urban Concept Plan process is to introduce provisions into the Waitakere City District Plan that will enable urban development to occur subject to natural and physical constraints.

### **3 Background**

#### **3.1 Description of the Birdwood Urban Concept Plan Area and Surrounds**

The Birdwood Urban Concept Plan Area is located in the northern part of the existing Waitakere City urban area adjacent to the suburb of Massey. It is approximately 65.2 hectares. A row of urban residential lots fronting Don Buck Road, (all of which are identified as 'Living Environment' in the District Plan) form the eastern boundary. Chamberlain Road, which runs between Don Buck Road and Birdwood Road divides

the concept plan area into two parts. The majority of the concept plan area is located south of Chamberlain Road. The balance is comprised in three lots situated between Chamberlain Road and Massey High School. The western boundary for the lower part of the concept plan area is the Chamberlain Stream, which abuts Te Rangi Hiroa Reserve. Further north, existing property boundaries east and north of Chamberlain Road form the western boundary.

To the east of the Birdwood Urban Concept Plan area is the residential suburb of Massey. To the west lies the "Birdwood Structure Plan Area" and Te Rangi Hiroa Reserve. Don Buck Primary School is situated within the concept plan area and has access from Don Buck Road. Birdwood Primary School is located less than 1 km to the west on Glen Road, with the Massey High School adjacent to the northern boundary.

The topography of the Birdwood Urban Concept Plan area is generally steep, where land slopes to the south and west. Land with a more gentle topography is located immediately west of existing dwellings fronting Don Buck Road in the lower part of the concept plan area and in the northwest above Chamberlain Road. All land within the concept plan area drains into the Chamberlain Stream catchment. The headwaters of the Chamberlain Stream are located above Chamberlain Road. These discharge via an existing culvert under Chamberlain Road to form the main Chamberlain Stream channel. Five minor tributaries discharge to the main stream channel from within the concept plan area.

Existing native vegetation is generally concentrated along the margins of the main Chamberlain Stream channel. These bush areas are interspersed with a variety of exotic trees and weed species. The balance of the concept plan area is generally in pasture with some viticulture located in the central part of the Concept Plan area.

The Birdwood Urban Concept Plan area is currently serviced with reticulated water supply. There are no reticulated stormwater or wastewater services. The capacity of existing wastewater services along Don Buck Road is limited, however provision has been made for future servicing despite the concept plan area being situated outside the Inner Drainage Area. In November 2002, the Environmental Management Committee resolved that an application be made to Watercare Services to include the Birdwood Urban Concept Plan area within the Inner Drainage Area.

### 3.2 Existing Planning Provisions

The Concept Plan area is identified as 'Birdwood Special Area' in the District Plan. This identification reflects its historical zoning as 'deferred residential' that has been in place for the last 30 years. The District Plan provides for a concept plan process for this area to determine an appropriate settlement pattern. The interim District Plan provisions are those for the Foothills Environment, however it is expected that some form of urban development will occur on this land subject to natural and physical constraints. This is reflected in the District Plan's explanation of the strategic direction: policies and methods, which states:

#### ***"Don Buck Road***

*This area, with access from Don Buck Road, lends itself to urban type activities. Wastewater could be provided from Don Buck Road or from an extension of the sewerage network up Chamberlain Road. The key issues are the need to retain native bush, extend the reserve network in the area and integrate the area into the surrounding urban environment. Changes to the*

*landform need to be minimised, and it will be necessary to retain stormwater runoff on-site or within the area as much as possible before it reaches the Swanson stream. Downstream stormwater treatment and detention will also be necessary. It will be necessary to ensure that development relates well to the Don Buck Road area.” (Part 6 – 6.1.1)*

In addition, the District Plan identifies existing ‘Natural Areas’ and an area designated as ‘proposed reserve’. The majority of the concept plan area is identified as ‘General Natural Area’. The existing bush areas bordering the main Chamberlain Stream channel are identified as either ‘Managed Natural Area’ or Restoration Natural Area’. The area designated as ‘proposed reserve’ (WCCOS2) generally follows the bush line along the stream margin.

#### **4 Concept Plan Development Process**

The planning process to develop the Birdwood Urban Concept Plan was initiated in 1998. Technical information gathered in response to submissions on the Proposed Plan specific to the Birdwood Special Area formed the basis of a community workshop in March 1999. This workshop resulted in a draft concept plan that would be subject to a geotechnical and stormwater study to determine its feasibility. The draft concept plan showed a range of densities that included comprehensive, standard and large lot residential areas as well as areas for reserves and a possible road layout.

Further technical studies were commissioned in 1999 to investigate stormwater and geotechnical issues. The geotechnical investigation was carried out by Beca Carter Hollings and Ferner and consisted of a broadbrush assessment that identified ‘geotechnical zones’. A stormwater study was undertaken by Riley Consultants, firstly to identify issues and then to develop a comprehensive management plan that would form the basis of an application to the Auckland Regional Council for a discharge permit. This work also included an instream ecological assessment by Kingett Mitchell.

A report was presented to the Planning & Regulatory Committee in April 2000 documenting the outcomes of the two studies. This information was also sent to all landowners within the Concept Plan area. Since that meeting, the catchment management plan to address stormwater issues has been completed and a final draft plan prepared.

A draft plan was sent to all landowners in the concept plan area as well as surrounding landowners within the Birdwood Structure Plan area and properties fronting the western and eastern sides of Don Buck Road bordering the concept plan area. Ten responses were received. These responses are summarised in Section 7 of this report.

#### **5 Existing Natural and Physical Constraints**

A number of technical studies have been undertaken to identify the existing natural and physical constraints to development within the Birdwood Urban Concept Plan Area. These include:

- A Landscape Assessment – LA4 Landscape Architects
- A Vegetation and Wildlife Study – Michelle Tyrell

- A Freshwater Habitat Study – Clinton McCollough
- A Land Stability Assessment – Beca Carter Hollings & Ferner
- A Stormwater Catchment Management and Ecological Study – Riley Consultants/Kingett Mitchell
- An Archaeological Study – Rod Clough & Associates
- A Phase I Contamination Study – Environmental & Earth Sciences Ltd

In addition, Council's Transport Assets Section, Landscape Development Section and Ecowater have provided technical input.

### 5.1 Landscape Study

The Landscape Assessment was commissioned in 1997 to address issues raised in submissions specific to the Birdwood Area. The study covered land identified in the District Plan as Birdwood Special Area, which also includes the entire Birdwood Structure Plan Area. The study divided the area into landscape units. The upper part of the Birdwood Urban Concept Plan Area was identified as Unit 2d. Landscape Unit 2 is described generally as:

*“the main characteristic of this landscape is that whilst being basically rural in character, this is being eroded or changed by a number of new activities or visually intrusive uses. Part of this landscape character area is backed by a significant and highly visible ridgeline, with views out across the character area and beyond...”*

*One unit which could absorb change without compromising the rest of the character area is the small landscape unit – Unit 2d – which is visually contained by the subsidiary ridge to the east.*

*Overall this landscape character area is in a ‘transition phase’ between completely rural uses, and rural residential and horticultural and other uses. As a result parts of the landscape lack coherence and structure. It has **limited** sensitivity.”*

The lower part of the Concept Plan area is identified as Unit 4 and 7. Landscape Unit 4 is described as follows:

*“This landscape character area has as a basis fairly steep sloping land, west of Don Buck Road and south of Chamberlain Road. Part of the adjacent landscape unit 2d also has this landform characteristic. The area comprises a mix of landuses including glasshouses, vineyards, houses, stud farm and schools. Though fairly disturbed in terms of mixed land uses, the existing trees (shelter belts, groups of trees, bush in the stream valley and the edge of the steep tree covered escarpment to the south) form a strong vegetative framework, which compensates and balances this mix of uses.*

*This Unit has a moderately high visual absorption capability because of the mixed land uses, proximity of residential development and the tree framework, though the higher parts of the character area near Don Buck Road are visible from areas to the south. The lower parts of the area are visually well concealed.”*

Landscape Unit 7 comprises the western side of the steep escarpment that is almost completely covered in a mix of Acacia, regenerating bush, and pines in some places. Unit 7 forms a backdrop to the Te Rangi Hiroa Park to the south and also for residential areas of Ranui. The majority of this area is designated as 'proposed reserve'.

The landscape differential across the Birdwood Special Area was reflected in the explanations to the objectives in policies in the District Plan that relate to peripheral urban development described in Section 3.2 of this report.

## 5.2 Vegetation and Wildlife Study

A Vegetation and Wildlife Study was also commissioned in 1997 to investigate the ecological values of the Birdwood Special Area in response to submissions on the Proposed Plan. This study identified a mix of vegetation, for the Birdwood Urban Concept Plan Area in close proximity to the Chamberlain Stream. This vegetation type is reflected in the Natural Area identification in the District Plan. The vegetation identification has been further defined recently in response to a District Plan reference specific to the Kostanich property at 104 Don Buck Road.

## 5.3 Freshwater Habitat Study

The Freshwater Habitat Study was completed in 1997. This study included all streams within the northeast Swanson stream catchment. Within the Birdwood Urban Concept Plan Area, fish sample sites included just below the Chamberlain Road culvert (Site 5) and just west of the confluence of the Swanson Stream and the Chamberlain Stream (Site 2). At Site 2, evidence of Common Bully, Long Finned Eel, Whitebait and Shrimp was found. Site 5 was virtually devoid of fish species. It was noted that at Site 5, a drop-culvert prevents upstream migration of fishes such as banded kokupu to the habitat above, whilst a general lack of riparian vegetation greatly reduces the quality of instream habitat.

Management recommendations to improve habitat values include minimising sediment runoff by the establishment of well maintained riparian vegetation and the use of sediment ponds.

## 5.4 Geotechnical Study

The geotechnical study was commissioned in 1999 after the completion of the community workshop in March. A copy of the draft concept plan along with a range of possible lots sizes was provided to Beca Carter.

The geotechnical study identified a range of 'geotechnical zones', Zone A being the most suitable for residential development and Zone C being the most difficult. A large part of the Birdwood Urban Concept Plan area was identified as Zone C. Areas identified as Zone A were limited to land with a flatter topography adjacent to the rear of existing residential lots fronting Don Buck Road and in the north-west corner of the Concept Plan area. In addition to describing the geology and identifying geotechnical zones, Beca Carter also recommended that the size of possible lot sizes be decreased to reflect the geotechnical constraints that had been identified. The report also recommended that there be no direct stormwater or wastewater discharges to ground that could destabilize land.

The identification of these 'geotechnical zones' was further confirmed by a study undertaken by Tonkin & Taylor for the Swanson and Birdwood catchments. However

a more detailed study commissioned from Soil & Rock Consultants by landowners for land above Chamberlain Road indicated that the degree of instability is not as severe for this part of the concept plan area as reported by Beca Carter.

#### 5.5 Stormwater Catchment Management and Instream Ecological Study

A stormwater catchment management and instream ecological study has been completed by Riley Consultants and Kingett Mitchell. The key stormwater issue identified for the Chamberlain catchment is the potential for stream erosion generated during a two-year storm event. The Chamberlain Stream and its headwaters is characterised by steep incised stream banks that contain soft sediment and is therefore vulnerable to erosion. For this reason, the study recommends that any development scenario be required to maintain two-year stormwater discharge rates to pre-development levels. This objective will be achieved by limiting creation of impermeable surfaces and through the establishment of riparian margins described in Section 9.

The stormwater study has modelled a development scenario (as shown on the Birdwood Urban Concept Plan map) and established a maximum impermeable surface area for the catchment. This is the maximum area of impermeable surface that can be established to ensure that the rate of stormwater discharge to streams is maintained at pre-development levels and assumes 60% impermeable surface for the area identified as Living 2 and 20% for the area identified as Living 4. The catchment management plan also assumes that the area of standard residential shown on the concept plan map will have reticulated stormwater and wastewater. The area of Living 4 will have reticulated wastewater only.

Based on this development scenario, in terms of stormwater volume, the study concludes that while there will be a small increase in stormwater volumes discharged from the Chamberlain catchment, this discharge will not coincide with peak flows in the Swanson Stream. For this reason it is considered that there will be no adverse flooding effect on the Swanson Stream.

The catchment management plan sets out a number of recommendations for managing stormwater within the Concept Plan area. These recommendations will form the basis of requirements for subdivision and impermeable surfaces in the Birdwood Urban Concept Plan area.

#### 5.6 Archaeological Study

An archaeological study has been undertaken by Rod Clough for the entire Birdwood Special Area. This study concludes that while there is a strong European and Maori history associated with this area, there are no archaeological sites evident. Consultation with Te Kawerau a Maki and Ngati Whatua has not revealed any waahi tapu sites or sites of special significance to iwi.

#### 5.7 Phase I Contamination Study

Due to the nature of historical land uses that include horticulture and agriculture within the Birdwood Urban Concept Plan area, a Phase I Contamination Study has been completed. The study included a review of Council property files and historical photographs dating back to 1940. The purpose of the study was to identify areas of land that have historically been used for horticultural or agricultural purposes and which may be contaminated due to the use of chemicals. Of the 16 properties investigated, only 3 were identified as having been used for any kind of intensive

horticultural or agricultural purpose. These included an ex-poultry farm, a vineyard and glasshouses.

The study simply identifies land uses that have been or can be associated with activities that lead to soil contamination. This study does not provide evidence that contamination currently exists. This report will form part of Council records for the area. Those sites that have been identified with potential for contamination should be investigated in more detail at the time of subdivision.

## **6 Governing Statutory Framework**

### **6.1 Resource Management Act (the Act)**

The purpose and principles of the Act are encompassed in Part II (Sections 5-8). Section 5 defines the purpose of the Act, which is to promote the sustainable management of natural and physical resources. The enabling provisions of the Act seek to manage the use and development of natural and physical resources within a sustainable management framework that includes those matters set out in S5 (2) (a-c).

Section 31 sets out the functions of territorial authorities for giving effect to the Act. Territorial Authorities are tasked with the establishment and implementation of objectives and policies to achieve the integrated management of the effects arising from the use and development of land as well as subdivision of land as set out in Section 11 of the Act.

Section 32 requires that every territorial authority consider alternatives, and assess benefits and costs before adopting any objective, policy, rule or other method in relation to its District Plan.

### **6.2 Auckland Regional Policy Statement**

The Auckland Regional Policy Statement (RPS) provides a resource management framework for managing environmental effects within the region associated with land and resource use and development.

The Concept Plan area is within the metropolitan urban limit (MUL), which lies 2-3 km to the west. The Concept Plan area is not identified in the Regional Policy Statement as an outstanding landscape or natural area.

The strategic direction of the RPS is to consolidate urban development within a defined area identified by the MUL. For land within the MUL there is an expectation that urbanisation will occur subject to natural and physical constraints.

The RPS gives explicit recognition to issues such as water quality and quantity, and natural hazards.

Chapter 8 of the RPS contains policies about water quality. The RPS seeks to maintain water in water bodies, which have good water quality, and to enhance water quality, which is, degraded (RPS Objective 8.3). Within urban areas, policy 8.4.4.1 states that land use intensification shall only occur where adequate provision is made for control of sediment discharges, stormwater discharges, collection, transport, treatment, purification and disposal of sewerage, protection of the quality of groundwater and protection of water quality and riparian margins. Where land disturbance activities are required, RPS Policy 8.4.7 (3) seeks to ensure that adverse effects of sediment discharges are avoided, remedied or mitigated.

Chapter 11 of the RPS contains policies about natural hazards. Natural hazards are defined in the Act as “*any atmospheric or earth or water related occurrence (including earthquake, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire or flooding) the action of which adversely affects or may adversely affect human life, property or other aspects of the environment.*” In respect of natural hazards, RPS Objective 11.3 seeks to avoid, remedy or mitigate the adverse effects of natural hazards on human life, property and the environment. Accompanying policies require that before any provision is made enabling significant development of land any flood hazards and measures to avoid or mitigate their adverse effects is identified (RPS Policy 11.4.1.3). Also, that development is not permitted in areas subject to erosion/land instability unless it can be demonstrated that the adverse effects can be avoided, remedied or mitigated (RPS Policy 11.4.1.9).

### 6.3 Waitakere City District Plan

The provisions of the District Plan that apply to the Birdwood Urban Concept Plan area are set out in Section 3.2 of this report. The policy framework of the District Plan is based around Part II of the Act, which gives specific recognition to, amongst other things, matters such as effects on water quality and quantity, native vegetation and fauna habitat, land, air quality, ecosystem stability, outstanding natural features and landscapes, amenity values and heritage.

## 7. Consultation

Consultation has been undertaken with landowners both within and surrounding the Birdwood Urban Concept Plan area. Local landowners, Iwi and the Auckland Regional Council attended a Council workshop held in 1999 to discuss the future of the Concept Plan area. A draft plan was prepared and sent out to all attendees indicating that further work would need to be undertaken to understand stormwater and geotechnical issues.

Following the completion of the geotechnical study and the stormwater study, the results were summarised and sent to landowners within the concept plan area with an indication that a further concept plan would be developed having regard to these two studies.

A further draft plan was sent to all landowners within and surrounding the Concept Plan area. Nine responses were received raising a number of issues including:

- The distribution of density shown on the concept plan map;
- The location and implication of the indicative road;
- Potential traffic generation;
- Land stability and water supply;
- Access to Massey High School; and
- Potential soil contamination, protection of natural heritage and stormwater management.

### 7.1 Density

In terms of the distribution of density shown on the concept plan map, these have been determined on the basis of the natural and physical constraints that apply to the land. Council is obliged to adopt a conservative approach to subdivision and development in this area to reflect these constraints.

### 7.2 Indicative Roads

Indicative roads have been identified simply to indicate where road connections may be desirable and consistent with Council's District Plan policies. The exact location of these roads will need to be determined at the time of subdivision and will need to consider access and connection to adjacent properties.

### 7.3 Traffic Generation

Development within the Birdwood Urban Concept Plan area will lead to an increase in traffic generation. However, consultation with Council's Traffic Assets Section has indicated that this will not generate adverse effects on the capacity of Don Buck Road or surrounding roads. New roads will need to be designed in accordance with Council standards.

### 7.4 Land Stability and Water Supply

The Council is cognisant of land stability constraints within the Birdwood Urban Concept Plan area. Applications for subdivision in this area will need to provide detailed geotechnical assessments to demonstrate the suitability of the land. Subdivision is provided for as a "limited discretionary" activity that enables the Council to decline an application where a site is not suitable for development.

Reticulated water supply will be available for the Birdwood Urban Concept Plan area.

### 7.5 Access to Massey High School

Massey High School has indicated a desire to see vehicle access to the school grounds upon subdivision. It is recommended that this be considered at the time of subdivision.

### 7.6 Potential Soil Contamination, Protection of Natural Heritage, and Stormwater Management

The Auckland Regional Council has raised issues of soil contamination, natural heritage and stormwater management. In response, the Council has completed a Phase I investigation of the Concept Plan area that sets out the historical land uses and areas of potential contamination. The results of the study show that there is limited potential for contamination in this area. Where potential was identified, ARC officers have agreed that this be investigated further at the time of subdivision.

Areas of significant native vegetation within the Concept Plan area are limited. Mostly, the vegetation is a mixture of weed species and regenerating bush. It is considered that the current Natural Area rules in the District Plan are sufficient to deal with land use activities that might impact on these bush areas.

In respect of stormwater management, this has been discussed extensively with the Auckland Regional Council officers, and an application for a comprehensive

discharge consent applied for. It is considered that these matters have been adequately addressed.

## **8. Environmental Outcomes Sought and Development Principles**

Guiding principles that give direction to environmental outcomes sought for the Birdwood Urban Concept Plan are encompassed within the governing statutory framework. The permissive nature of the Act is such that there is a general expectation the Council will initiate a process to investigate more thoroughly the development potential of land in Waitakere City within the MUL that could be suitable for urbanisation. Such areas are limited in the City and the Birdwood Urban Concept Plan Area represents a significant part.

The Birdwood Urban Concept Plan Area has long been identified as an area that may be suitable for urban development. This is reflected in previous “deferred residential” zoning, the location of the MUL and the identification of this land as a ‘special area’ that should be specifically planned for through a concept plan process.

Clearly, future development in this area must have regard to the purpose and principles of the Act as well as the expression of those principles in RPS and District Plan policy. Of significance is the potential effects of development on the water quality and habitat value of the Chamberlain Stream, the natural heritage features including regenerating native vegetation along stream margins, as well as avoiding natural hazards such as flooding and land instability. Consideration must also be given to the integration of the Birdwood Urban Concept Plan area with adjacent suburbs, its impact on existing infrastructure including roads as well as its role as a transition area to the Birdwood Structure Plan area.

Interface issues between existing residential areas are generally well catered for in the District Plan. This is reflected in a range of existing ‘Living’ Environments that reflect specific amenity values as well as bulk and location controls that are consistent across the City’s residential urban environment.

Natural heritage and ecosystem values are recognised through the adoption of a Natural Area layer and associated rules and assessment criteria. Whilst the majority of the Green Network is situated outside the MUL, it does infiltrate the urban area via streams and remnant native vegetation that provide a linkage to the Waitemata Harbour. The protection and enhancement of these features is seen as one of the key objectives to development of the Green Network and its integration with the urban environment.

The Council’s responsibility for managing natural hazards is recognised in policy and methods that seek to ensure that the health and safety of people and property is not placed at risk. Similarly, regional policy requires that areas identified for future urban development are comprehensively assessed to ensure that issues such as potential flooding or land instability have been addressed and planned for.

The concept planning process that has been undertaken identifies key environmental outcomes that should guide future development within the Birdwood Urban Concept Plan area including:

- Maximising opportunities for urban development subject to natural and physical constraints;
- Protecting the open, natural character of the Chamberlain Stream;

- Avoiding development that leads to a degradation of water quality in the Chamberlain Stream or its value as a fauna habitat;
- Enhancing the amenity and habitat value of the Chamberlain Stream through the provision of riparian planning and weed management;
- Ensuring that land modification to accommodate future development is minimised;
- Ensuring that development within stability sensitive areas does not lead to adverse effects on people or property; and
- Ensuring that the provision and extension of infrastructure is provided in a coordinated manner having regard to future development of surrounding land.

## **9. Options to Achieve Environmental Outcomes**

### **9.1 Policy and Assessment Criteria**

The District Plan objectives and policies are generally supportive of the environmental outcomes sought for the Birdwood Urban Concept Plan area. However, it is possible these policies could be made more robust by introducing area specific policies that highlight issues and outcomes for specific areas.

For example Policy 3.4 relates to activities being carried out in a way that does not exacerbate slipping, subsidence, and/or erosion of soils. However there are specific issues that relate to land stability in the Birdwood Urban Concept Plan area that could benefit from policy recognition. A policy that recognises the Birdwood Urban Concept Plan area as a 'stability sensitive' area and that various activities may have the potential to exacerbate instability such as the location of building platforms and driveways, would strengthen the more generic policy set out in Policy 3.4. Specific reference could also be made to the method adopted (site size) as a means of achieving this policy. Such a policy would also improve linkages between policies and methods in the District Plan as they apply to the Birdwood Urban Concept Plan area.

The assessment criteria from the District Plan that apply to the Living Environment are considered to be generally appropriate with some additions that enable specific consideration of features identified on urban concept plans that form part of the District Plan and assessment of stability issues.

Recommended policy and assessment criteria changes are set out in the attached documentation. It is considered that these changes are necessary in order to create a robust policy framework for development in the Birdwood Urban Concept Plan area.

### **9.2 Rules and Methods**

District Plan rules are a method to achieve objectives, and policies, and ultimately the environmental outcomes sought. For subdivision, rules are a necessary method as Section 11 of the Act states that no person may subdivide unless the subdivision is expressly allowed by a rule in a district plan or resource consent.

Bearing in mind that a desired outcome of this process is to determine the extent to which the Birdwood Urban Concept Plan area can be urbanised subject to natural and physical constraints, a number of options for enabling this to occur through the District Plan have been considered.

Clearly the status quo is not an option as this defers to the underlying Human Environment, which is Foothills. The minimum lot size for the Foothills Environment is 4 hectares. Subdivision below 4 hectares is a non-complying activity. Given that the work undertaken to date demonstrates that a residential density consistent with an urban environment is feasible, it is necessary to consider alternative subdivision and land use provisions that would enable urban development of occur.

### 9.2.1 Subdivision Rules

Possible options for subdivision that have been considered include:

- (i.) Existing Living Environment Rules (Living, L1, L2, Living Environment – Harbour View and L3);
- (ii.) Alternative Living Environment Rules;
- (iii.) A combination of Existing Living Environment and Alternative Living Environment Rules.

### **Existing Subdivision Rules**

The existing Living Environment rules have been considered. There are currently five categories of 'Living' Environment that have been identified to reflect differences in amenity and location throughout Waitakere City.

The 'Living' Environment covers the majority of the urban residential part of Waitakere City where infill subdivision (existing sites up to 1ha net site area or up to 9 new sites created) down to a minimum of 450m<sup>2</sup> is provided for as a controlled activity. For greenfield subdivision (existing sites over 1ha but less than 3ha or 10 or more new sites created) in the General Natural Area, existing provisions enable a minimum net site area of 450m<sup>2</sup> as a limited discretionary activity. Subdivision of land included within an urban concept plan incorporated into the District Plan is also a limited discretionary activity. The same minimum site area provisions apply to the Living 1 and 2 Environments as described above for the general Living Environment. The Living 1 Environment includes Kelston, Te Atatu South, and Te Atatu Peninsula. The Living 2 Environment includes Green Bay, New Lynn and Glen Eden.

The density provisions provide for a minimum net unit area for residential development in the Living Environment of 350m<sup>2</sup> as a 'limited discretionary activity'. Density provisions are more conservative to reflect the existing character and amenity of these suburban areas. As described above, in the Living, and Living Environment (Harbour View), there is a minimum net unit area of 350m<sup>2</sup> provided as a 'limited discretionary activity'. In the Living 1 Environment there is a minimum net unit area of 400m<sup>2</sup> provided for as a 'limited discretionary activity'. In the Living 2 Environment, further intensification below 450m<sup>2</sup> is a discretionary activity except in terms of providing for a minor household unit on sites greater than 600m<sup>2</sup> net unit area, which is a permitted activity.

The subdivision provisions for the Living 3 Environment reflect its character as a transition area between rural-urban interface. Examples of these areas include Philip

Avenue in Glen Eden abutting the Oratia Structure Plan Area and Birdwood Road in Massey abutting the Birdwood Structure Plan Area. For subdivision, the minimum net site area is a minimum of 650m<sup>2</sup> and an average minimum of 800m<sup>2</sup>. Further intensification in the Living 3 Environment below 650m<sup>2</sup> would be a discretionary activity and provision is made for minor household units on sites greater than or equal to 600m<sup>2</sup> net unit area.

### Options for Subdivision and Density Rules

For the Birdwood Urban Concept Plan Area, consideration has been given to the 'best fit' in terms of existing residential subdivision provisions. In order to achieve this 'best fit' it is not necessary to create entirely new subdivision rules for the Birdwood Urban Concept Plan area. Rather a combination of existing Living Environment and new Living Environment provisions can be used.

Given the constraints that have been identified, it is necessary that the subdivision and density controls reflect these constraints just as they currently reflect the existing character and amenity of the Living, and Living 1 and 2 Environments and the transition role of the Living 3 Environment.

In the Birdwood Urban Concept Plan Area, the existing constraints apply in terms of the natural constraints of the land. The stormwater study has identified that an increase in stormwater discharge rates above existing levels could have an adverse effect on the Chamberlain Stream by exacerbating erosion. Similarly, the geotechnical study indicates that parts of the steeper land in the Concept Plan area is marginally stable, therefore this should be reflected in site sizes to give future landowners the greatest flexibility in terms of establishing a suitable building platform and access for vehicles and services.

Table 1 below sets out the various sub-areas within the Birdwood Urban Concept Plan area along with corresponding percentage impermeable surface and lot yields that could be achieved using a variety of site sizes. Standard residential, (450m<sup>2</sup> sites), and large lot sizes ranging from 1500m<sup>2</sup> to 3000m<sup>2</sup> have been considered.

BIRDWOOD URBAN CONCEPT PLAN SUB-AREAS							
		A (std res above C'Blain Road)	B (large lot above C'Blain Road)	C (std res below C'Blain Rd)	D (large lot below C'Blain Rd)	Reserve	Total
<b>Sub-Area (m<sup>2</sup>)</b>		<b>37,000</b>	<b>200,000</b>	<b>99,000</b>	<b>178,000</b>	<b>138,600</b>	
<b>% impermeable surface of sub-area (m<sup>2</sup>)</b>	60%	22,200		59,400			81,600
	20%		40,000		35,600		75,600
<b>Number of lots per Area*</b>	3000m <sup>2</sup>		66		59		125
	2000m <sup>2</sup>		100		89		189
	1500m <sup>2</sup>		133		118		251
	450m <sup>2</sup>	82		220			302
* no provision has been made for roads or reserves in this calculation							

### Standard Residential Area (coloured yellow on the Birdwood Urban Concept Plan map)

The stormwater study has modelled development scenarios for residential land use within the Birdwood Urban Concept Plan Area. For the areas identified as either Zone A or B in the geotechnical study (coloured yellow on Concept Plan map – approximately 136,000 m<sup>2</sup>), it was assumed that these areas would be developed at a standard residential density of not less than 1 dwelling per 450m<sup>2</sup> having a maximum of 60% (270m<sup>2</sup>) impermeable surface per net site area or a total impermeable surface area of not more than 81,600m<sup>2</sup>. This is the maximum amount of impermeable surface that could be accommodated within the area (including roads) without increasing stormwater discharge rates above the two-year storm pre-development levels.

For these areas it is considered that the 'Living 2' Environment is the 'best fit' in that it provides for a residential density of not less than 450m<sup>2</sup>. Whilst this site size has not been chosen for amenity reasons, it has been chosen to reflect the stormwater and geotechnical constraints that have been identified and should be expressed as such in the District Plan explanation of the Living 2 Environment.

The recommendations made for Zones A & B in the geotechnical report are conservative as they reflect the constraints that apply to the more marginal geotechnical Zone B. However, the report notes that the recommended average density of 1000m<sup>2</sup> does not restrict smaller lot sizes providing the necessary level of investigation and design is carried out prior to consent approval. It is considered that a 'limited discretionary activity' status will provide the Council with sufficient ability to require amendments or to refuse consent where it is not satisfied that the stability constraints can be addressed. This is further reinforced in proposed policy and assessment criteria changes.

### Large Lot Residential Area (coloured brown on the Birdwood Urban Concept Plan map)

For the areas identified as geotechnical Zone C (coloured brown on Concept Plan map), a range of site sizes were considered along with a range of impermeable surface percentages per site area.

The key issue in terms of determining a suitable density and site size for the large lot residential area is the constraints that exist in respect of stormwater and land stability. In this regard, the subdivision and impermeable surface rules are the most relevant. The stormwater catchment management plan recommends a maximum of 20% impermeable surface over these areas. The rules controlling subdivision and impermeable surface should therefore achieve the purpose of enabling development to occur within this maximum.

The existing subdivision rules for the Living Environment apply to Infill and Greenfields subdivision. The rules are based on net site area. Net site area is defined as *"the total area of the site, less any area subject to proposed road widening, less any area within a driveway less than 6.0m in width leading to a rear site"*. Given the restriction on impermeable surface for the areas coloured brown on the Concept Plan map, the existing Living Environment rules for the Living, L1, L2 and L3 Environments would not enable the creation of sites sufficiently large enough to allow a reasonable amount of impermeable surface per site including any access to that site. Furthermore the site sizes permissible within these environments (between 450m<sup>2</sup> and 800m<sup>2</sup>) are not sufficiently large enough to accommodate

flexibility for locating a building platform given the possible land stability issues that may be associated with the new site.

In order to determine the appropriate size of site that reflects the constraints described above, a range of site sizes have been considered. Table 2 sets out these site sizes along with corresponding areas of impermeable surface resulting from lot yields. It is assumed that roads and accessways will form a component of the area of impermeable surface.

Table 2:

		<b>B (large lot above C'Blain Road)</b>	<b>D (large lot below C'Blain Rd)</b>	<b>Total Impermeable Surface Area</b>
<b>Total Impermeable Surface Area x No. of Lots</b>	3000m <sup>2</sup> @ 25% (750m <sup>2</sup> /lot)	49,500	44,250	<b>93,750</b>
	2000m <sup>2</sup> @ 20% (400m <sup>2</sup> /lot)	40,000	35,600	<b>75,600</b>
	2000m <sup>2</sup> @ 15% (300m <sup>2</sup> /lot)	30,000	35,600	<b>65,600</b>
	1500m <sup>2</sup> @ 20% (300m <sup>2</sup> /lot)	39,900	35,400	<b>75,300</b>

The above table sets out a range of site sizes and the percentage of impermeable surface areas multiplied by the lot yield for each larger lot sub area set out in Table 1. A lot size of 3000m<sup>2</sup> at 25% impermeable surface will generate 93,750m<sup>2</sup> of impermeable surface for these areas on the Concept Plan map. This figure is greater than the maximum 20% impermeable surface (75,600m<sup>2</sup>) set out in Table 1. For this reason it has been discounted.

25% impermeable surface on a 3000m<sup>2</sup> site would provide for 750m<sup>2</sup> of impermeable surface. For what would essentially be a suburban lot, this level of impermeable surface is considered to be excessive, even allowing for access to rear lots. This figure is even greater than that anticipated for a rural-residential lot in a structure plan area i.e. a nominal 600m<sup>2</sup> in accordance with the Countryside and Foothills Stormwater Code of Practice. It is considered that smaller lots are achievable that still allow for a reasonable area of impermeable surface.

Lot sizes between 1500m<sup>2</sup> and 2000m<sup>2</sup> having 20% impermeable surface would generate a total area of impermeable surface equal to or below the maximum 20% threshold set out in Table 1. 20% impermeable surface on a 2000m<sup>2</sup> would yield 75,600m<sup>2</sup> of impermeable surface, which is the maximum 20% threshold. A 1500m<sup>2</sup> site having a 20% (300m<sup>2</sup>) area of impermeable surface would be below the maximum 20% impermeable surface.

In terms of site size, consideration must be given to determining what would be a reasonable amount of impermeable surface allowable (including accessways) that would not trigger a further resource consent to depart from this rule. The existing impermeable surface rules for the General Natural Area, where there is no

connection to a reticulated stormwater system allow for 15% of the 'site area', which includes any accessways to be covered in impermeable surfaces. The 2000m<sup>2</sup> site option with 15% impermeable surface would allow 300m<sup>2</sup>. This site size and area of impermeable surface could easily be accommodated into the District Plan without any amendments to the impermeable surface rule. However, it is questionable whether 300m<sup>2</sup> would provide sufficient area of impermeable surface, particularly where rear sites are served by a single accessway. A complying carriageway width of 2.5 metres would cover 125m<sup>2</sup> of impermeable surface on a 2000m<sup>2</sup> site that has a relatively square configuration (e.g.40m x 50m). This would only leave 175m<sup>2</sup> of impermeable surface for the dwelling and any outdoor parking, turning areas or living areas. It is considered unlikely that this would be sufficient impermeable surface to accommodate the reasonable impermeable surface requirements of a large rear site. Similarly a 1500m<sup>2</sup> site, while providing a greater yield in terms of lots, is also unlikely to provide sufficient impermeable surface for rear sites.

For these reasons, it is considered the site size option of 2000m<sup>2</sup> with 400m<sup>2</sup> (20%) impermeable surface is the most appropriate given the constraints that apply to this part of the Concept Plan area. This option would require additions to the subdivision and impermeable surface rules.

When considering possible site sizes, consideration must also be given to the extent to which the rules provide flexibility for a range of site sizes while maintaining an overall average site size of 2000m<sup>2</sup> that is within the maximum area of impermeable surface. Averaging of site sizes may benefit an applicant where greater flexibility is needed to accommodate development in a certain part of the site, thereby avoiding, for example, areas of land instability.

The extent to which averaging can be achieved will be dependent on whether a sufficient complying area of impermeable surface can be accommodated. For example, a rule may specify an average site size of 2000m<sup>2</sup> and a minimum site size of 450m<sup>2</sup>. However, a site size of 450m<sup>2</sup> restricted to 20% impermeable surface would only allow 90m<sup>2</sup> of impermeable surface. This is not a sufficient area of impermeable surface to accommodate a dwelling and associated areas of access, parking and outdoor living space. A minimum site size of 1250m<sup>2</sup> would allow 250m<sup>2</sup> of impermeable surface. If such sites did not require extensive areas of impermeable surface to provide access, it is considered that this is sufficient to accommodate a reasonable development area and provide some flexibility in the creation of new sites.

### Subdivision Rules

For the area coloured yellow on the Birdwood Urban Concept Plan, it is proposed that Living 2 be the underlying Human Environment. Additions will need to be made to the District Plan's explanation of Living 2 to reflect the Birdwood Concept Plan area.

For the area coloured brown on the Birdwood Urban Concept Plan, there are no existing Plan provisions that would enable an appropriate level of subdivision that reflects the stormwater and geotechnical constraints that have been identified. For this reason, a new 'Living 4' is proposed that will enable subdivision to occur in a manner that reflects the existing natural constraints. These constraints include the limited ability of the catchment to deal with additional runoff that causes stream erosion and land instability.

The proposed 'Living 4' Environment would have a minimum average site area of 2000m<sup>2</sup> and a minimum site area of 1250m<sup>2</sup>. For infill and greenfield subdivision, applications in accordance with these provisions would be a 'limited discretionary activity'. No provision is made within the Residential Density rule to enable more than one dwelling and one Minor Household Unit. The stormwater and geotechnical constraints that apply to this land require that the maximum area of impermeable surface be controlled over the total area of a site rather than a net unit area or a net site area.

Proposed changes to the District Plan are set out in the attached document.

### 9.2.2 Landuse Rules

#### **Human Environment**

For the most part, it is proposed that the existing Human Environment rules for the Living Environment remain unchanged. It is entirely appropriate that controls such as building location, building height, height in relation to boundary, front yards, traffic generation, requirements for carparking and driveways etc remain consistent with those for the surrounding residential environment. The distinguishing features between the surrounding residential area and the Birdwood Urban Concept Plan area do not include effects on such things as private and public amenity value and infrastructure, but rather natural and physical constraints such as stormwater and land stability.

It is envisaged that changes to the residential density rules will be required. These have been discussed above and will involve restricting development to one dwelling and one minor household unit (on sites greater than or equal to 600m<sup>2</sup> net unit area).

#### **Natural Areas**

With respect to the Natural Area rules, changes are required to the existing impermeable surface rules to reflect the existing stormwater constraints. The District Plan's impermeable surface rules are linked to the Natural Area Maps. For the General Natural Area a distinction is made between areas that are reticulated and non-reticulated with stormwater.

For areas with connection to reticulated stormwater, the maximum impermeable surface is 60% of the site area. Where there is no connection to reticulated stormwater, the maximum impermeable surface is 15% of the site area.

For the Birdwood Urban Concept Plan area, the maximum amount of impermeable surface is directly linked to changes in the rate of stormwater discharge from the Chamberlain Stream catchment regardless of whether stormwater is reticulated or not. As described above, the stormwater modelling has assumed a maximum 60% impermeable surface area per site for areas coloured yellow on the Concept Plan map and 20% for land coloured brown. Based on a 2000m<sup>2</sup> site area, this would enable 400m<sup>2</sup> of impermeable surface, which is considered sufficient to accommodate a dwelling, access and accessory features such as outdoor paved areas and garden sheds including access to rear sites. It is likely that due to the topography of the land and existing bush areas, dwellings will tend to be located closer to the road frontage and will not result in exceptionally long driveways or access lots.

In order to reflect this constraint, it is necessary to link the impermeable surface rules to the Birdwood Urban Concept Plan map rather than the General Natural Area rules. A similar change is required for the Restoration Area. With respect to the Managed Natural Area, the impermeable surface rule is linked to net site area. Under this rule it is considered that 10% or 200m<sup>2</sup> is sufficient to accommodate a dwelling, turning area, parking, outdoor living areas etc. However this should be capped when considering the total site area so that there is a limit on impermeable surfaces associated with accessways. This maximum could be 20% of the site area.

Proposed changes to the District Plan are set out in the attached document.

### 9.3 District Plan Maps

Changes to the District Plan maps includes changes to the Human Environment map to identify the boundary of the Birdwood Urban Concept Plan area, and the boundaries of the Living 2 and Living 4 Environments. Changes to the Natural Area maps will include changes to the existing riparian margins. It is proposed that a 5 metre riparian margin be applied to all tributaries of the Chamberlain Stream within the Concept Plan area. A Birdwood Urban Concept Plan will be introduced to the appendices of the District Plan maps.

Proposed changes to the District Plan Maps are set out in the attached maps.