

Proposed Tree Removal from Maungarei (Mt Wellington)

Landscape and Visual Effects Assessment



Prepared for the Tupuna Taonga o Tamaki Makaurau Trust by:

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1 Introduction

- 1.1 RA Skidmore Urban Design Ltd. has been requested by Antony Yates Planning Ltd., on behalf of Tupuna Taonga o Tamaki Makaurau Trust (**Tupuna Taonga Trust**), to carry out a landscape and visual effects assessment of the proposal to remove vegetation from Maungarei (Mt Wellington).
- 1.2 Following the Nga Mana Whenua o Tamaki Makaurau Collective Redress Act (2014) being legislated in 2014, 14 of the region's volcanic cones were returned to Mana Whenua via the collective legal entity, the Tupuna Taonga Trust. The Maunga (mountains) are taonga (treasures). A key objective of the Tupuna Taonga Trust is to ensure no further degradation or permanent loss of these important sites with the aim of handing these taonga to the next generation in a better condition than they were received.
- 1.3 The following assessment is based on the removal plan and schedule prepared by Recreation Solutions Ltd., the removal methodology prepared by Treescape (dated 11/09/17) and the assessment and recommendations made in the Assessment of Vegetation Effects (Sarah Gibbs, Kaihautū Tiaki Koirora).
- 1.4 In carrying out the assessment, I have visited the site and surrounding environs.

2 The Site and its Context

[See Attachments 1 and 2 to view the site in its context]

- 2.1 The Auckland Volcanic Field encompasses has an approximate 20km radius in central Auckland and contains about 50 volcanoes¹ (see Attachment 3). The volcanic cones and associated features make a particular contribution to Auckland's distinctive character and sense of place. The volcanic field has erupted sporadically over the last 250,000 years. While it is currently dormant, Rangitoto was the last volcano to erupt, about 600 years ago. The field is considered to still be active.²
- 2.2 Maungarei (Mt Wellington) is the second youngest volcano within the Auckland Volcanic Field. It formed around 10,000 years ago. Being 100m high, it is the tallest scoria cone in the Field measured from base to crest. Its name, Maungarei, is translated as "the watchful mountain" or "the mountain of Reipae". Its English name,

¹ The exact number depends on how they are counted, as some cones and craters are clustered close together and can be tallied separately or in combination.

² B Hayward et al "Volcanoes of Auckland", 2011

Mt Wellington, was given by the colonial surveyor Felton Mathew in honour of the Duke of Wellington.

- 2.3 According to some historians, human occupation of Tamaki Makaurau goes back roughly 1000 years, when the arrival of Maori waka from the Pacific brought people who settled along the shores of the Manukau and Waitemata Harbours. The maunga were valued as highly strategic locations and, over time, were developed into an extensive network of settlements. The tuapapa (terraces) on the maunga slopes provided platforms for whare (houses), kauta (cooking shelters), and rua (roofed storage pits). Deep trenches were dug and fences erected above them to protect the tihi (summit) which was the most sacred part of the maunga. The tihi was occupied by the highest-ranging members of the iwi (tribe).
- 2.4 Today, the maunga are much changed. When Europeans arrived in Tamaki Makaurau, the maunga were immediately obvious as the highest places from which to survey and plan the city. Roads were eventually carved into the slopes, water reservoirs were sunk into the craters, farming infrastructure and grazing stock were introduced, and exotic trees were planting. Many of the maunga were quarried for building aggregate or to accommodate housing.
- 2.5 The historic use and habitation of Maungarei is described in the Archaeological report (Russell Foster and Assoc., Sept. 2017). Today, former occupation of the volcanic cone is readily evident. Its flanks, particularly on the eastern side, are covered in terraced house sites and food storage pits. The crater rim has three strongpoints, which were each defenced by transverse ditches.³
- 2.6 In the 1950s quarrying began on the steep southern slopes of the mountain and continued, on and off, until 1967. The quarrying altered the overall form of the Maunga and left a scar on its flanks. Pine trees were planted over the re-contoured slopes soon after quarrying ceased. Today, the mature pine trees form a thick forest on the southern flanks of the cone and the quarried face is not evident (see Attachment 5, Photograph 5). A council works depot is located at the base of the former quarry.
- 2.7 A one-way vehicular access is provided from Mountain Road to a carpark towards the summit of the mountain. An avenue of mature Pohutukawa trees mark the entry from Mountain Road. The road exits onto Gollan Road. Informal walking tracks are also located on the mountain.
- 2.8 The upper area of the volcanic cone is relatively sparsely vegetated. Stand-alone and small clusters of pine and macrocarpa trees provide a dramatic contrast to the landform and its grassed cover (see Attachment 4, Photographs 2 – 4).

³ p. 161, *ibid.*

- 2.9 Winifred Huggins Woodlands Reserve is located on the lower flanks of the eastern face of the mountain. The Reserve contains a diverse mix of native and exotic specimen trees (see Attachment 4, Photograph 1).
- 2.10 The mountain is a distinctive landscape feature that sits within an established urban environment. The surrounding area contains a mix of industrial, commercial, and residential environments. Stonefields is a predominantly residential environment that has established recently in the former Winstones Quarry immediately to the north of Maungarei. A more established residential environment extends to the south and up the lower flanks of the mountain. The Stonefields Reserve, accessed from Tidey Road, contains remnants of the formerly extensive stonefield gardens that once surrounded the volcanic cone.
- 2.11 As the name suggests, Maungarei has a presence that 'watches over' the surrounding urban environment, making a particular contribution to its character and 'sense of place' (see Attachments 5 - 7 that depict views to the Maunga from surrounding locations).

3 Statutory Context

- 3.1 A full description of the statutory framework for considering the application is set out in the AEE. Following is a brief summary of the key provisions used to guide the assessment of landscape and visual effects.

Auckland Unitary Plan (Operative in Part)

- 3.2 The Site is zoned Open Space – Conservation in the Auckland Unitary Plan (Operative in Part) (the **UP(OiP)**). It is subject to a number of overlays, including: Significant Ecological Area overlay; Notable Trees overlay (467 – Macrocarpa and 474 – Pohutukawa (2)); Outstanding Natural Feature overlay (ID101); Regionally Significant Volcanic Viewshafts and Height Sensitive Areas overlay; Locally Significant Volcanic Viewshafts overlay; Historic Heritage overlay (extent of place – 1582).
- 3.3 An overarching objective in the Regional Policy Statement (B4.2.1(3)) is:

The visual and physical integrity and the historic, archaeological and cultural values of Auckland's volcanic features that are of local, regional, national or international significance are protected and, where practicable, enhanced.

- 3.4 Of relevance is supporting Policy B4.2.2(8) which states:

Manage outstanding natural landscapes and outstanding natural features in an integrated manner to protect, and where practicable and appropriate, enhance their values.

- 3.5 The regional policy statement objectives and policies are given effect by the identification of the Outstanding Natural Feature (**ONF**) overlay that applies to the Site. Objectives D10.2(1) and (2) seek to protect Auckland's ONFs and to recognise and provide for the ancestral relationship of Mana Whenua with ONFs. Objective (3) promotes, where practicable, restoration and enhancement of ONFs. The supporting suite of policies includes Policy D10.3(3) which sets out how to protect the physical and visual integrity of ONFs, and Policy (4) which sets out the other matters that need to be taken into account while achieving this.

- 3.6 In terms of historic heritage, at the regional policy statement level, Objective B5.2.1(2) seeks to ensure that the protection, management and conservation of historic heritage places is encouraged. This includes retention, maintenance and adaptation.

- 3.7 Section D9 sets out the objectives and policies relating to the Significant Ecological Areas (**SEA**) overlay.

- 3.8 Section D14 sets out the objectives and policies relating to the Volcanic viewshafts and Height Sensitive Areas overlay. The objectives are:

D14.2(1) The regionally significant views to and between Auckland's maunga are protected.

D14.2(2) The locally significant views to Auckland's maunga are managed to maintain and enhance their visual character, identity and form of the maunga in the views.

- 3.9 These objectives are supported by a number of policies. Of particular relevance is Policy D14.3(2) which is to:

Manage subdivision, use and development to ensure that the overall contribution of the regionally significant volcanic maunga scheduled as outstanding natural features to the landscape of Auckland is maintained and where practicable enhanced, including by protecting physical and visual connections to and views between the volcanic maunga.

- 3.10 The Open Space – Conservation zone is applied to open spaces with natural, ecological, landscape, and cultural and historic heritage values. The objectives for the zone (H7.4.2(1) and (2) seek to ensure that the natural, ecological, landscape and Mana Whenua values of the zone are enhanced and protected from the adverse effects of use and development, and that use and development complements and protects the conservation and natural qualities of the zone.

- 3.11 These objectives are supported by a number of policies. Of particular relevance to this proposal is Policy H7.4.3(3) which states:

Manage the use of open space to protect and enhance Mana Whenua values, and enable appropriate activities which support and re-establish the relationship of Mana Whenua and their culture and traditions to their ancestral lands, water, sites, wahi tapu and other taonga.

- 3.12 Section E16 relates to trees in open space zones. The objectives seek to protect trees in the open space zones that contribute to the cultural, amenity, landscape and ecological values (E16.2(1)) and to increase the quality and extent of tree cover in open space zones, particularly within areas identified for intensified living (E16.2(2)).

Tupuna Maunga Integrated Management Plan

- 3.13 The Tupuna Maunga (ancestral mountains) of Tamaki Makaurau (Auckland) were held in crown ownership with various reserve classifications and managed by Auckland Council and, in some cases, the Department of Conservation. In 2014 the Nga Mana Whenua o Tamaki Makaurau Collective Redress Act (2014) legislated a Collective deed of settlement. Under that Act, 14 Tupuna Maunga were transferred to the 13 iwi/hapu of Nga Mana Whenua o Tamaki Makaurau via the collective legal entity, the Tupuna Taonga Trust. The Tupuna Taonga Trust has developed the Tupuna Maunga Integrated Management Plan (the **IMP**) to set the foundations for how the Tupuna Maunga are valued, protected, restored, enhanced and managed in the future.⁴
- 3.14 The IMP identifies the values of the Maunga and pathways for their protection, restoration and enhancement. The values identified are: wairuatanga/spiritual value; mana aoturoa/cultural and heritage value; takotoranga whenua/landscape value; mauri punaha hauropi/ecological and biodiversity value; mana hononga tangata/living connection value; whai rawa whakauka/economic/ commercial value; mana whai a rehia/ recreational value.

⁴ Tupuna Maunga o Tamaki Makaurau Integrated Management Plan, Tupuna Maunga o Tamaki Makaurau Authority, 2016

4 Assessment of Effects

- 4.1 A full description of the proposed tree removal is set out in the AEE. The map by Recreation Solutions identifies the trees proposed for removal, with the accompanying schedule setting out the species proposed for removal, the removal priority, and the method proposed for removal.
- 4.2 Various removal methodologies are proposed including ringbarking, manual felling, use of a crane, and helicopter removal.
- 4.3 The Ecological Assessment recommends staged restoration planting of native species within the quarry area (see Appendix 3). The planting will provide erosion control and restore the critically endangered Puriri broadleaf ecosystem type.

Landscape Effects

- 4.4 The existing exotic vegetation starkly contrasts with the natural landform of the volcanic cone. The removal of much of this vegetation from the Tihi and upper flanks of the volcanic cone will better reveal the underlying landform. This will reinforce its character as a prominent landscape feature and will provide greater integrity to the natural landform together with its cultural associations.
- 4.5 The removal of the pine trees from the quarry face will expose the modification and scarring to this area of the cone. While it is the cultural preference of the Tupuna Taonga Trust to expose the Tihi of the volcanic cones, on this Maunga, the modification and scarring created by the former quarrying has altered the form and visual integrity of the Tihi. In this instance, planting is appropriate to integrate the quarry face with the overall form of the Maunga. Over time, as the restoration planting becomes established, a veil of vegetation will obscure the scars created through quarrying. The planting of native vegetation is more compatible with the natural characteristics of the landform than the exotic pine trees that will be removed.
- 4.6 The removal of the exotic vegetation will restore the integrity of the Maunga and enable its mana to be better recognised and uplifted. This is consistent with the values and pathways set out in the IMP. The replacement of exotic planting with native restoration planting within the former quarry area will also enhance the ecological and biodiversity value of the mountain, making a positive contribution to its landscape value.
- 4.7 The Winifred Huggins Woodland is located on the lower eastern flank of the volcanic cone. The woodland contains a diverse mix of native and exotic mature trees. Given the amenity and historic values of the woodland and its low profile in relation to the overall form of the volcanic cone, it is proposed to retain the woodland as largely intact. Only three trees that are in poor health are proposed for removal.

- 4.8 Stands of trees located outside the Site boundary will continue to provide a vegetated framework for the volcanic cone extending up the lower flanks of the mountain.
- 4.9 Overall, it is concluded that the proposed removal of exotic vegetation and the restoration planting in the area of the former quarry will result in positive landscape effects.

Visual Effects

- 4.10 Visual effects are somewhat different from many other environmental factors because their assessment requires information on perceptions as well as on resources. Because visual experience is a combination of physical stimulus and psychological response, some aspects of visual effects are undeniably subjective. To understand and assess the visual effects of a project, we must therefore understand not only the project and its context, but also anticipate the probable responses of the people who will see it.
- 4.11 This assessment analyses the potential visual effects that may be generated by the proposal and is based on:
- The background and context within which the vegetation removal will be viewed;
 - The proportion of the proposed removal that will be visible, determined by the observer's position relative to the area subject to change being viewed;
 - The number and type of viewers and their location in relation to the site; and
 - The ability to mitigate any identified adverse landscape and visual effects.
- 4.12 The magnitude of visual change resulting from the proposal will vary considerably for the different groups that comprise the viewing audience. Whether a view is transient or static influences the magnitude of change as well. While the magnitude of visual change may be high, the effect of that change may be viewed as positive or adverse depending on the perceptions of the viewer.
- 4.13 The primary viewing audience will comprise four groups:
- Visitors to Maungarei;
 - Users of the surrounding street network;
 - Users of the open space network; and
 - Residents and users of surrounding residential and commercial properties.

Visitors to Maungarei

- 4.14 Many visitors arrive at Maungarei by car and ascend to the carpark towards the Tihi. The arrival experience passing through the avenue of mature Pohutukawa trees will be maintained. From the road ascending the Maunga and from the carpark, it is the removal of *Macrocarpa* and *Radiata Pine* trees around the Tihi and on the northern flanks that will be most readily apparent. There are also a number of informal walking tracks that provide more extensive access around the feature. The extent of visual change resulting from the vegetation removal will be moderate. Given the location of a number of trees silhouetted against the sky extending above the Tihi, their removal will be readily apparent. However, these specimens are stand-alone and limited in number. The vegetation is visually incongruous in the context of the volcanic landform. The removal of the exotic vegetation will reinstate a more natural appearance to the volcanic feature and enhance the visitor experience. For some viewers, the existing trees will be perceived as providing some amenity and their loss will be perceived as negative. However, the extent of vegetation to be removed is limited.
- 4.15 It is concluded that the visual effect of the vegetation removal will range from positive through to low adverse.

Users of the surrounding street network

- 4.16 The Maunga is highly visible from many streets, both near and far in the surrounding context. In many instances, it is partially obscured or viewed with a foreground of urban development. Views are also generally fleeting as the viewer is moving. The magnitude of visual change will range from very low to moderate depending on the proximity to the Maunga and the face of the Maunga observed. From many viewpoints, the removal of vegetation, particularly from the vicinity of the crater, will enhance the profile and legibility of the volcanic feature. This will result in positive visual effects (see Attachment 5, Photographs 6 and 7). Dense stands of vegetation on the lower slopes outside the Reserve boundary will be retained, maintaining a vegetated containment to the Maunga feature. When viewed from streets to the south of the mountain (e.g. Mountain Road and the Panmure roundabout, see Attachment 5, Photograph 5 and Attachment 7, Photograph 10), the vegetation removal will expose the quarry face. While the overall Maunga profile will be better revealed by the proposed removal of vegetation, the modification to the Maunga form created by the quarry will also become more readily apparent. The re-vegetation within this area of scarring will take some time to establish. As it does, the adverse visual effects will reduce from low adverse to positive.
- 4.17 It is concluded that the visual effects of the vegetation removal will range from positive through to low adverse, changing to positive as mitigation planting within the former quarry area matures, depending on the location of the viewer.

Users of the open space network

- 4.18 The Maunga is highly visible from a number of parks in the surrounding urban environment. The magnitude of visual change will range from low to high depending on the proximity to the Maunga. Of particular cultural importance is the visual connection between the Stonefields Reserve to the west and the Maunga (see Attachment 6, Photograph 9). From here the removal of exotic vegetation will be particularly positive.
- 4.19 The Maunga is a distinctive feature that is visible from the coastal environment of Panmure Basin (see Attachment 7, Photograph 11) and the Tamaki River to the south. From open spaces, both in close proximity and further afield, the removal of the exotic vegetation will better reveal the profile and volcanic characteristics of the landscape feature. This will result in a positive visual effect.
- 4.20 Visual connections between the cones that make up the Auckland Volcanic Field are important. From the look-out on Maungakiekie (see Attachment 7, Photograph 12) there is a clear sightline east to Maungarei. From this distance, the vegetation removal will marginally improve the visual qualities of the mountain profile, particularly the removal of the pine trees on the former quarry face.
- 4.21 It is concluded that the visual effects of the vegetation removal will be positive.

Residents and users of surrounding residential and commercial properties

- 4.22 The viewing distance from the Maunga and the obstruction of views by intervening buildings and vegetation varies considerably for residents and users of surrounding residential and commercial properties. From many locations, the mountain is a prominent landscape feature that contrasts markedly with the urban environment. A residential neighbourhood extends up the western flank of the volcano. The magnitude of visual change will vary considerably depending on the viewers proximity to the mountain and the face that is viewed. For residents in the neighbourhood immediately to the south of the former quarry, the removal of the pine trees from this face will result in high visual change (see Attachment 5, Photograph 5). From many viewpoints in the surrounding urban environment, the change will be perceived as positive, better revealing the volcanic form of the mountain. For residents in the neighbourhood to the south, the visual effect of the removal of vegetation will be perceived as positive by some; but it may also be perceived as having a moderate adverse effect by others, revealing the quarried face of the mountain and the scarring it has created. As the restoration planting in this area establishes, this perceived adverse effect will reduce and become positive in time.
- 4.23 It is concluded that the visual effects of the vegetation removal will be positive from many viewpoints. From the residential neighbourhood to the south, the effects will

vary from positive to moderately adverse, reducing and changing to positive as restoration planting within the former quarry is established.

Short Term Effects

- 4.24 The methodology statement by Treescape sets out the different methods proposed to remove the vegetation, including manual removal, MEWP assisted removal, crane assisted removal, and helicopter assisted removal. Structures such as platforms, cranes, and helicopters will introduce visual features that contrast with the natural character of the Maunga. However, their temporary use and their small size, relative to the overall scale of the mountain, means their introduction will result in only very low adverse visual effects for a limited time frame.

Summary of Visual Effects

- 4.25 Following is a summary of the magnitude of change and the resulting effect of that change when viewed by the various groups identified as comprising the viewing audience (see Appendix 1 for a list of factors that contribute to the magnitude of visual change and the effects arising from that change).

Magnitude of change: extreme, very high, high, moderate, low, very low, negligible.

Effect of change: very high adverse, high adverse, moderate adverse, low adverse, very low adverse, negligible, positive.

Viewing Group	Magnitude of Change	Visual Effect	Notes
Visitors to Maungarei	Moderate	From positive through to low adverse	Depends on viewers attitude towards existing trees and their contribution to amenity
Users of surrounding street network	Very low to moderate depending on proximity	Positive through to low adverse , changing to positive as mitigation planting within quarry area matures	Response depends on proximity and angle of view.
Users of open space network	Low to high	Positive	
Residents and users of surrounding residential and commercial properties	Negligible to High	From positive to moderately adverse reducing and changing to positive as mitigation planting within the quarry area establishes.	Magnitude of change depends on distance and intervening features.
Temporary effects	Low to moderate	Very low	Magnitude of change depends on distance and location of viewer

District Plan Objectives and Policies

- 4.26 As set out in Section 3 above, the AUP(OiP) sets out a detailed and clear policy framework that recognises the landscape, archaeological and cultural values of the volcanic features of the Auckland volcanic field and seeks to protect and, where practicable, enhance these values. In my opinion, the proposal represents a practical measure to restore the landscape values of Maungarei (Mt Wellington). The removal of exotic vegetation will better reveal the distinctive form of the volcanic cone and evidence of former occupation by Mana Whenua.
- 4.27 In my opinion, the proposal is consistent with the overarching objectives contained in the Regional Policy Statement in relation to protecting and enhancing the visual, physical and cultural values of the volcanic feature, and will enhance the landscape values of the Maunga, identified as an ONF. Together with the removal of vegetation that is at odds with the values of the mountain, restoration planting within the former quarry area will obscure the scarring created by this modification, further enhancing the landscape values of the ONF.
- 4.28 The proposal is also consistent with the policy framework relating to volcanic viewshafts. The removal of incongruous vegetation will improve the visual integrity of the volcanic feature, enhancing the contribution it makes to the landscape of Auckland.
- 4.29 In relation to the Open Space – Conservation zone, it is considered that the proposal is consistent with the policy framework that also seeks to ensure that the natural, ecological, landscape, and Mana Whenua values of the zone are enhanced. In particular, the removal of exotic vegetation and the limited extent of restoration planting in the area of the former quarry will restore the landscape values of the Maunga, supporting and assisting to re-establish the relationship of Mana Whenua and their culture and traditions to their ancestral lands. In this respect, the proposal is consistent with the direction provided in the IMP.
- 4.30 Overall, it is concluded that the proposal will realise the outcomes sought by the policy framework in relation to landscape considerations as set out in various sections of the AUP(OiP).

5 Conclusions

- 5.1 The volcanic cones and associated features that comprise the Auckland Volcanic Field make a particular contribution to Auckland's distinctive character and sense of place. Maungarei (Mt Wellington) is the second youngest volcano and the tallest scoria cone within the Volcanic Field. As the name 'Maungarei' suggests, the

mountain is a distinctive feature that watches over the surrounding urban environment, making a particular contribution to its character and 'sense of place'.

- 5.2 Together with other maunga in the volcanic field, Maungarei (Mt Wellington) has special value as a taonga for Maori. This is reflected in the transference of the Tupuna Maunga to the Tupuna Taonga Trust. The IMP clearly sets out the values and pathways for protecting and enhancing those values.
- 5.3 The assessment set out above finds that the proposal to remove exotic vegetation from the volcanic cone, together with limited native restoration planting in the area of the former quarry that created a scarring of the Maunga, will result in positive landscape effects.
- 5.4 The assessment identifies four primary groups that comprise the viewing audience. The volcanic cone is a prominent feature that is highly visible from various locations in the surrounding environment. The magnitude of visual change will vary considerably. The effect resulting from this change in many instances will be perceived at positive. The removal of the pine trees from the former quarry area will expose the quarry face and the resulting modification and scarring of the Maunga. This change may be perceived as negative by some viewers to the south of the mountain. However, this adverse visual effect will be effectively mitigated by the restoration planting in the area of the former quarry, as it establishes and matures.
- 5.5 It is concluded that the proposal will realise the outcomes sought by the policy framework in relation to landscape considerations as set out in various sections of the AUP(OiP).



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Appendix 1

Factors informing Visual Assessment

Magnitude of Change

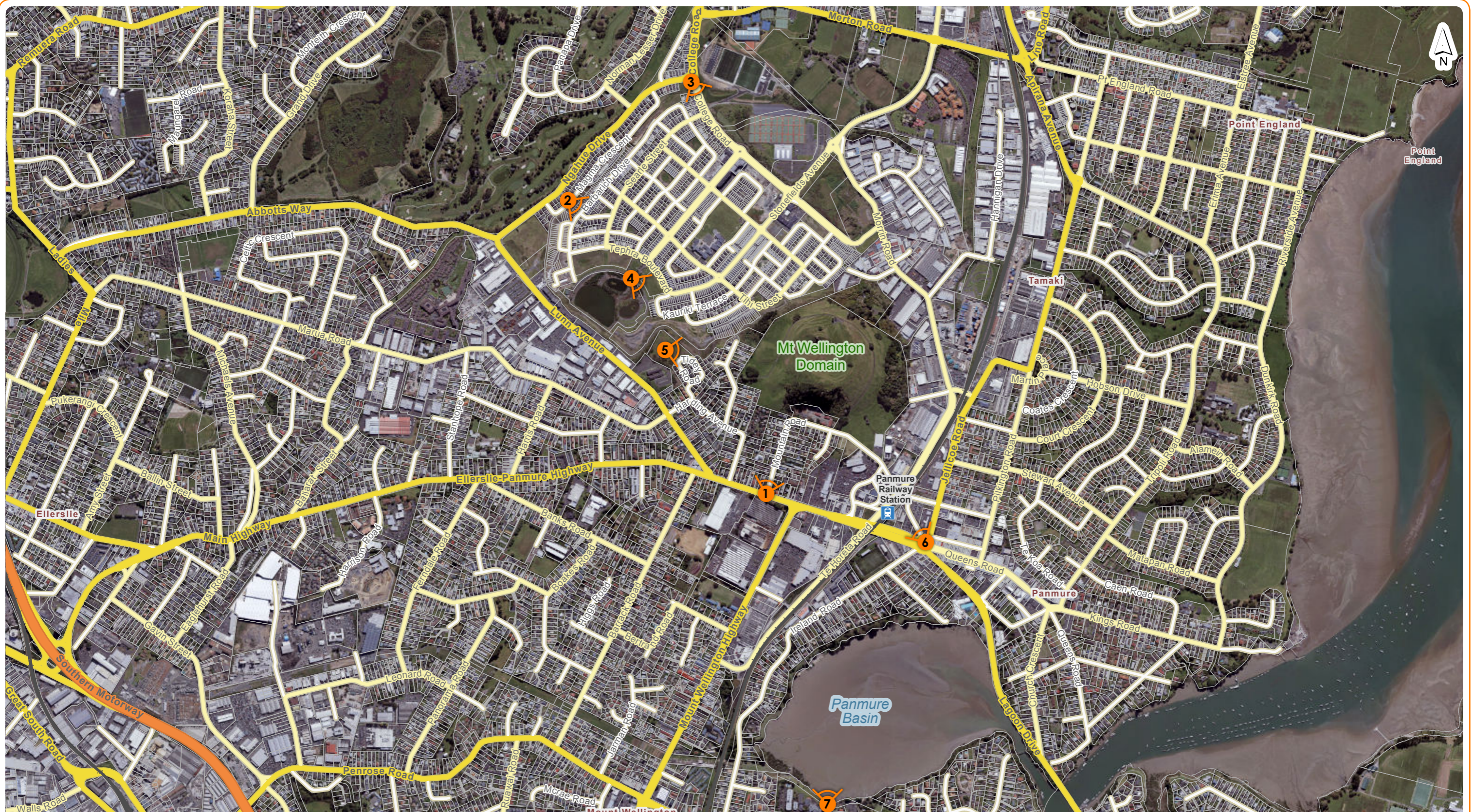
1. Geographical extent/proportion of view – from a small proportion of a wider view (low) to a high proportion of a view obtained (high).
2. Distance from viewer – far (low) to close (high).
3. Duration of view – transient and fleeting (low) to static (high).
4. Contrast between the proposal and the existing view from similar (low) to highly contrasting (high)

The assessment contained in Section 4 combines a consideration of these factors and the summary at the end of the section applies a 7-point scale of magnitude from negligible to extreme.

Effects of Change

1. Sensitivity of view to change including its visual quality, and visual absorption capability.
2. Number of viewers affected by the change.
3. Characteristics of the viewing group. For example, residents and people visiting an area to enjoy its visual characteristics will likely be more affected by visual change than people passing through an area or working in an area.
4. Viewer's values and attitudes towards the proposed activity (this may be negative, benign or positive).

The assessment contained in Section 4 considers these factors in combination and the summary at the end of the section applies a 7-point scale from very high adverse to positive.

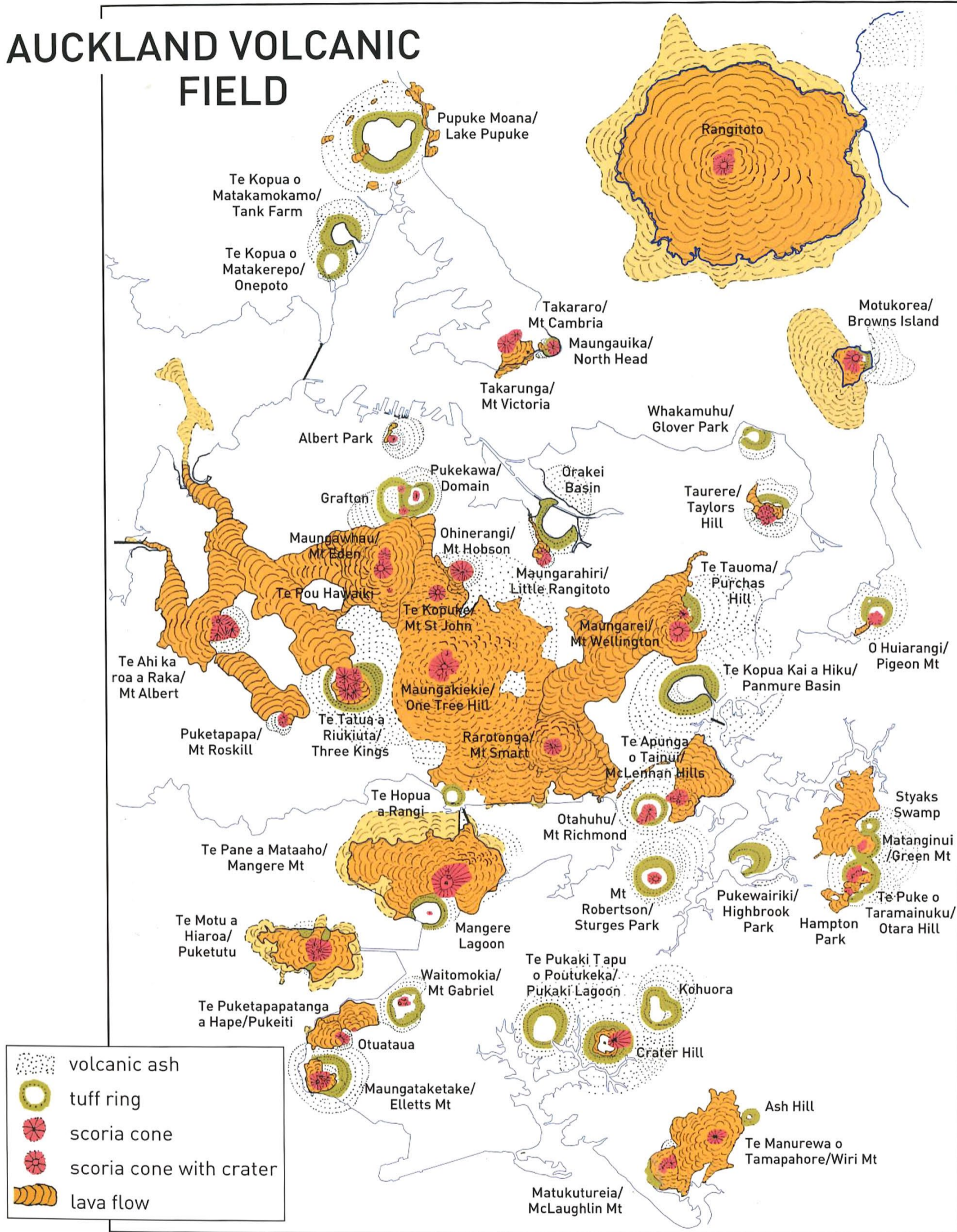


Source: Auckland Council GeoMaps
<https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html>
 Scale @ A3 1:15,000



Source: Auckland Council GeoMaps
<https://geomapspublic.aucklandcouncil.govt.nz/viewer/index.html>
Scale @ A3 1:5,000

AUCKLAND VOLCANIC FIELD



Hayward (2011), updated after Kermode (1983)



PHOTOGRAPH 1: Trees in Winifred Huggins Woodland



PHOTOGRAPHS 2-4: Trees in the vicinity of the Crater Rim





PHOTOGRAPH 5: Looking towards Quarry Face from Mountain Road (Viewpoint 1)



PHOTOGRAPH 6: View from Magma Crescent (Viewpoint 2)



PHOTOGRAPH 7: View from Intersection of Ngahue Drive and College Road (Viewpoint 3)



PHOTOGRAPH 8: View from Reserve at end of Blue Grey Avenue (Viewpoint 4)



PHOTOGRAPH 9: View from Stonefield Reserve (Viewpoint 5)



PHOTOGRAPH 10: View from Panmure Roundabout (Viewpoint 6)



PHOTOGRAPH 11: View from Southern Side of Panmure Basin (Viewpoint 7)



PHOTOGRAPH 12: View from Maungakiekie (One Tree Hill) summit