BEFORE INDEPENDENT HEARING COMMISSIONERS
APPOINTED BY THE HAMILTON CITY COUNCIL

IN THE MATTER	of the Resource Management Act 1991 (**Act**)
AND	
IN THE MATTER	of an application for subdivision and land use consent for the Amberfield development pursuant to the Act.
APPLICANT	Weston Lea Limited
CONSENT AUTHORITY	Hamilton City Council

EVIDENCE-IN-REPLY OF ANDREW RUSSELL BLAYNEY FOR WESTON LEA LIMITED

Dated: 1 May 2019

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INTRODUCTION

1. My name is Andrew Russell Blayney.

2. I submitted a statement of evidence-in-chief (**EIC**) on terrestrial ecology on behalf of Weston Lea Limited dated 12 April 2019.

3. I have the qualifications and experience set out in my EIC. Additional to the experience stated in my EIC I have carried out post-graduate research on terrestrial invertebrate communities in native tussock grassland and scrubland communities and their response to pest plant control and vegetation changes.

4. I repeat the confirmation given in my EIC that I have read the 'Code of Conduct' for expert witnesses and that my evidence has been prepared in compliance with that Code.

5. In this statement of evidence-in-reply I use the same defined terms as in my EIC.

SCOPE OF EVIDENCE

6. I respond to matters raised in the expert evidence of Dr Bruce Clarkson and Dr Rebecca Stirnemann on behalf of Riverlea Environment Society Incorporated and by Ms Moira Pryde on behalf of the Director-General of Conservation.

7. The scope of this reply relates to non-bat terrestrial ecology and more generally the implementation of the proposed mitigation. My response in relation to the mitigation approach inevitably has a cross over with bat ecology and I defer to the EIC and evidence in reply of Ms Cummings and Dr Parsons in this regard.

RESPONSE TO EVIDENCE OF DR CLARKSON

Ecological context

8. Dr Clarkson's description of ecological context and evaluation of botanical values in paragraphs 4.1 to 4.5 of his evidence aligns largely with the terrestrial ecological effects assessment's (**TEEA**) description of the ecological context of the site. He adds context to opportunities of the site for

further restoration that could occur. The opportunities identified by Dr Clarkson are also discussed within section 10.1 of TEEA, however the TEEA also identifies and emphasises the need for caution in applying restoration methods such as large-scale removal of non-native vegetation without regard for its habitat value for native-fauna.

Ecological assessment approach

9. The ecological assessment approach taken within the TEEA is described as "reductionist" by Dr Clarkson[1]. However, it is my opinion that in an effects assessment and management context it is extremely important to identify the components of an area's ecological value that are present and impacted and subsequently what the goals and outcomes must be achieved. The TEEA's approach to assessment ensures the identification of specific value and impacts while also providing overall ecological assessment. This is consistent with best practice as outlined by EIANZ[2] guidance.

10. This approach ensures that mitigation is targeted and appropriate to manage effects and prevents default approaches to restoration, such as large-scale planting and "generic" restoration being inappropriately implemented where they are not the most effective management approach.

Mitigation approach

11. Dr Clarkson proposes a mitigation approach according to best practice for the restoration of forest ecosystems and describes in detail the methods and approaches that are consistent with this approach[3]. I agree with Dr Clarkson that the methods and approach described are best practice when the establishment of forest ecosystems is the goal. However, I consider that it is most important to tailor a mitigation approach to respond to actual and potential effects rather than default to a more general restoration approach.

12. Proposed mitigation measures in the riparian buffer and north-east terrace do not have a goal of restoring the area to a forest ecosystem. The purpose of

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1 Dr Clarkson's evidence paragraph 4.8.

2 Roper-Lindsay, J., S. A. Fuller, S. Hooson, M. D. Sanders, and G. T. Ussher. 2018. Ecological Impact Assessment (EcIA). EIANZ Guidelines for Use in New Zealand: Terrestrial and Freshwater Ecosystems. 2nd ed. Melbourne: EIANZ.

3 Dr Clarkson's evidence paragraphs 6.3-6.7 and 6.15.

this mitigation is to establish the quickest and most effective landcover that will provide habitat for long-tailed bats. This establishment of bat habitat is intended to be achieved by specifically creating features preferred by this species. Ms Cummings' evidence-in-reply details these habitat requirements which focuses on edge habitats and linear features along which long-tailed bats forage and commute. I do not consider that a large area of contiguous of planting that is best practice for forest ecosystem restoration as proposed by Dr Clarkson would provide the preferred habitat features of long-tailed bats, or significantly less would be created. Furthermore, with contiguous planting, the preferred "edge habitat" would be pushed towards the urban environment and associated anthropomorphic disturbance[4]. In my opinion, this approach of contiguous planting would be considerably detrimental to the goals of protecting, creating, and/or enhancing long-tailed bat habitat.

13. I do agree, where appropriate, the best practice approaches and methodologies for forest ecosystem restoration will need to be incorporated into the "Gully and Esplanade Reserve Vegetation Management Plan"[5] that is to be prepared for this area, but this should be limited to where the goals of mitigation for long-tailed bats do not conflict with this approach (i.e. the majority of the southern gully revegetation). Where the goals of mitigation for long-tailed bats mean the establishment of a forest ecosystem is not appropriate, the habitat will need to be maintained, including periodic mowing and pest plant control. I do not consider that a meadow or exotic tree land cover will be difficult to maintain as stated by Dr Clarkson[6]. This type of land cover is common in the wider landscape on both private and public land. I also expect that an area of revegetation would require equal if not greater amounts of maintenance to prevent the colonisation of pest plants in this location which is subject to significant pest plant invasive pressure.

14. Dr Clarkson refers[7] to a minimum age of vegetation to perform a buffering function. However, like the mitigation approach Dr Clarkson outlines, this relates to forest ecosystems and the buffer plantings proposed do not have a

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4 In the circumstance of a solid and unbroken area of planting the only edge available will be that on the forest/road/urban interface.

5 Required by conditions 77 to 81 outlined in Mr Serjeant's EIC.

6 Dr Clarkson's evidence paragraph 6.13.

7 Dr Clarkson's evidence paragraph 6.3 III.

goal of protecting forest restoration plantings from edge effects. Rather they have a relatively simple structural function of blocking light and noise. In my opinion, this function can be achieved much faster than the 20-25 years detailed by Dr Clarkson. The conditions[8] preventing the development of areas adjacent to these require a minimum height (4m) and canopy closure percentage (80%) to be achieved ensure the buffer vegetation performs its structural function before development and occupation of houses occurs.

15. Dr Clarkson suggests the mitigation approach does not meet additionality criteria[9] defined by Brown et al. (2014)[10]. The definition from Brown et al. (2014) is: "The compensation action must be a new contribution to conservation that would not have otherwise occurred". In my opinion there is no uncertainty of additionality within this definition. If the proposed development did not go ahead the revegetation of the river margins and gully would not occur as there is no requirement to implement this restoration outside of the development context.

North-south corridor/southern gully and shelterbelt restoration

16. Dr Clarkson expresses concern that the southern gully is not sufficiently catered for under the proposed mitigation strategy[11]. However, the proposed mitigation involves the complete revegetation of this gully system all the way to the edge of the site. I agree this revegetation should be carried out following best practice revegetation techniques where it does not conflict with protecting, creating, and/or enhancing long-tailed bat habitat.

17. Dr Clarkson[12] appears to interpret the protection and enhancement of the east-west shelter as a trade-off against restoration of the southern gully. This is not the case and both approaches are to be implemented. The east-west shelter belt is prioritised in time as it currently has much higher bat use than

8 Condition 87 outlined in Mr Serjeant's EIC.

9 Dr Clarkson's evidence paragraph 6.16.

10 Brown, M.A.; Clarkson, B.D.; R.T.T. Stephens; Barton, B.J. 2014: Compensating for ecological harm – the state of play in New Zealand. New Zealand Journal of Ecology 38 (1): Published online 1 November 2013.

11 Dr Clarkson's evidence paragraph 6.4.

12 Dr Clarkson's evidence paragraphs 6.8 to 6.9.

the gully. Planting of the southern gully is required to be implemented two planting seasons before earthworks take place in the area[13].

18. I also consider the landform (such as steep sides) of the gully system, like that Dr Clarkson describes in Hammond Park[14], will similarly limit the intrusion of human impacts, including traffic and street lighting.

Open Space Framework document

19. Dr Clarkson considers that the approach detailed within the Open Space Framework document (28 February 2019) is underpinned by landscape architectural philosophy[15]. I consider this document illustrates the areal extent of proposed mitigation and conceptually what these approaches would look like. The areal extent and concepts I consider are an appropriate ecological response to meet the goals of mitigation. Further detail is to be developed within the proposed Ecological Management and Monitoring Plan (**EMMP**)[16]. The concerns surrounding tall old trees not being included or being removed inappropriately[17] are addressed within the requirements of the EMMP. Dr Clarkson's assumption that tall trees will be limited due to views is contrary to the plan which shows continuous buffer vegetation along the Waikato River, which would almost entirely prohibit views.

20. The species list presented within the Open Space Framework document is also intended to be conceptual and not exhaustive in nature. Condition 79 (j)[18] outlines the requirements of the indigenous species that must be used within mitigation areas. I have provided in Annexure A to this evidence-in-reply a draft list of species, localities, and planting stages that would be appropriate for this site. This is not a complete list and will be further developed during the preparation of the EMMP. Nevertheless, it demonstrates the ecological concepts underpinning the conceptual depictions within the Open Space Framework.

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13 Condition 79(c) outlined in Mr Serjeant's EIC

14 Dr Clarkson's evidence paragraph 6.5.

15 Dr Clarkson's evidence paragraph 6.14.

16 Conditions 67 to 96 outlined in Mr Serjeant's EIC.

17 Dr Clarkson's evidence paragraph 6.14.

18 Condition set in Mr Serjeant's EIC

Correction to SNA clearance

21. Dr Clarkson refers to 0.18ha of SNA being removed[19]. This is incorrect. As I explain in paragraphs 40 & 68 of my EIC, clearance is limited to 0.0019 ha of river edge vegetation in the south of the proposed development site. The vegetation impacted is limited to the pest plant dominated edge of the vegetation and the clearance is temporary in nature (to be replaced by buffer planting[20]). The figure used by Dr Clarkson of 0.18 ha is the approximate areal extent of SNA 48 that is within the area surveyed as part of the TEEA. This is not impacted directly by the proposed development.

Conditions

22. I respond to each numbered condition discussed by Dr Clarkson (in section 7 of his evidence) rather than including direct reference to paragraphs with Dr Clarkson's evidence.

23. Condition 66 – it is my experience that territorial authorities where they lack the in-house capability to carry out reviews, engage suitably qualified reviewers for ecological management plans. Nothing within the proposed condition limits the ability of Hamilton City Council to carry out a review aligned with Dr Clarkson's suggestion.

24. Conditions 75 & 77 – I do not consider it necessary to condition the use of specific reference material. Instead I consider the wording provided by Condition 79 (j) in Mr Serjeant's EIC adequately covers this aspect with regards to eco-sourcing and planting the right plant in the right place.

25. Conditions 77 i (i), 78, and 79 – I consider the performance measure of canopy closure within 5 years to be an important milestone that should be conditioned. Dr Clarkson considers that the conditions as stated present a potential constraint to the continued requirement for enhancement planting and maintenance of restoration areas which would be part of a best practice restoration plan. In my view the details of the Gully and Esplanade Reserve

19 Dr Clarkson's evidence paragraph 6.10.

20 Open Space Framework document (28 February 2019)

Vegetation Management Plan anticipate maintenance, planting, and monitoring post the 5-year canopy closure milestone.

RESPONSE TO EVIDENCE OF DR STIRNEMANN

26. Many of the issues raised by Dr Stirnemann are addressed in reply to the analogous concerns of Dr. Clarkson, such as buffer vegetation efficacy and purpose and restoration approach. As such, I will not cover those issues again here.

27. Dr Stirnemann outlines concerns around the availability and abundance of invertebrates within the proposed mitigation areas. I respond to these concerns in general below.

28. The response of invertebrate communities to vegetative diversity is generally an increase in invertebrate taxon diversity[21]. However, this increase of diversity does not necessarily relate to an increase in abundance, and often areas of low plant diversity/ earlier successional stages have much higher invertebrate abundance than mature ecosystems. This is due to a high number of individuals present from a few common species[22]. It is my understanding abundance rather than diversity of invertebrates is key to the foraging success of long-tailed bats as they are opportunistic, generalist foragers and adjust their diet to eat the insects that are most abundant[23]. This is also demonstrated by the variability of long-tailed bat diets in different habitats [23].

29. Invertebrate prey abundance, therefore, does not rely on establishment of a large amount of native vegetation, or for that vegetation to reach a mature state. Additionally, best practice for restoration native forest through planting

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21 Crisp, P. N., Dickinson, K. J. M., & Gibbs, G. W. (1998). Does native invertebrate diversity reflect native plant diversity? A case study from New Zealand and implications for conservation. Biological Conservation, 83(2), 209–220.

Toft, R. J., Harris, R. J., & Williams, P. A. (2001). Impacts of the weed Tradescantia fluminensis on insect communities in fragmented forests in New Zealand. Biological Conservation, 102(1), 31–46.

22 Bromham, L., Cardillo, M., Bennett, A. F., & Elgar, M. A. (1999). Effects of stock grazing on the ground invertebrate fauna of woodland remnants. Australian Journal of Ecology, 24(3), 199–207.

Munro, V. M. W. "Terrestrial invertebrate communities: the effects of successional age, habitat structure and seasonality." *Unpublished M. Sc. Thesis, Massey University, New Zealand* (1995).

23 Gurau, A.L. (2014). The diet of the New Zealand long-tailed bat, *Chalinolobus tuberculatus*. Masters in Zoology thesis, Massey University

does not achieve restoration of invertebrate communities[24]. One of the primary reasons for this failure of invertebrate community restoration is the isolation from source populations, as well as unsuitability of restored habitats for edge sensitive forest invertebrates [25].

30. I consider that the key objective of mitigation for this project is the creation of a habitat that provides invertebrates as a food source (rather than ecological restoration of invertebrate communities *per se*), and accordingly the source of invertebrates in the local area available to colonise such a habitat is a primary consideration.

31. The Amberfield development site is surrounded by an agricultural environment largely depauperate of indigenous vegetation. Additionally, the proposed bat foraging areas (buffer vegetation and meadows) are already vegetated by exotic herbs and grasses which may have low invertebrate species diversity but high insect abundance. Therefore, they are a productive source of invertebrate prey. The intention within the meadow areas is to retain this already present community of vegetation and maintain it and the invertebrate prey communities present.

32. In my opinion, conventional forest ecosystem restoration could have a detrimental effect on invertebrate abundance over time compared to the proposed maintenance and expansion of "edge environment". Therefore, I consider Dr Stirnemann's assertion (in paragraph 8.4 of her evidence) that "the size of the buffer is also critical for maximising insect abundance as the habitat matures into an ecosystem that produces food for the bats." is not supported.

33. Dr Stirnemann expresses concern that *Polistes* wasps may increase in abundance and detrimentally impact invertebrate availability[26]. However, while paper wasps are more abundant in lower growth habitats the biomass of invertebrates preyed upon by paper wasps in low growth habitats is similar to that preyed upon by *Vespula* wasps (German/common wasp) in pasture

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24 Lövei, G. L., & Cartellieri, M. (2000). Ground beetles (Coleoptera, Carabidae) in forest fragments of the Manawatū, New Zealand: Collapsed assemblages? *Journal of Insect Conservation*, *4*(4), 239–244.

25 Keesing, V., & Wratten, S. D. (1998). Indigenous invertebrate components in ecological restoration in agricultural landscapes. *New Zealand Journal of Ecology*, 99-104.

26 Dr Stirnemann's evidence paragraph 13.

habitats, and significantly less than Vespid wasp in beech forest habitats. These wasp species also preferentially target larger invertebrate species[27]. I consider it unlikely *Polistes* wasps would have a meaningful impact on the smaller invertebrates preferred by long-tailed bats[28]. However, invasive wasp control would not be detrimental to invertebrate abundance and can have significant beneficial effects on many aspects of ecosystem restoration and I agree that wasp control could be ecologically beneficial overall.

RESPONSE TO EVIDENCE OF MS PRYDE

34. In paragraphs 7.8 & 8.6 Ms Pryde refers to a "low" value of vegetation in the TEEA. This valuation is specifically limited to vegetation/ botanical values only and does not reflect the value for bats. The TEEA (Section 9.1) explicitly clarifies that "This assessment reflects only the ecological values of the vegetation itself. However, its wider value as habitat for fauna is also considered in the following sections." The TEEA evaluates the habitats available onsite with regards to bats as very high following EIANZ guidance criteria, and the overall ecological effect assessment provided in the TEAA considers all factors assessed.

Dated this 1st day of May 2019

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Andrew Blayney

27 Clapperton, B. K. (1999). Abundance of wasps and prey consumption of paper wasps (Hymenoptera, Vespidae: Polistinae) in Northland, New Zealand. *New Zealand Journal of Ecology*, 11-19.

28 Gurau, A.L. (2014). The diet of the New Zealand long-tailed bat, *Chalinolobus tuberculatus*. Masters in Zoology thesis, Massey University.

Annexure A: Draft Species List

Planting lists for riverside and gully plantings and river side and gully side reserves.			**Planting stages**	1 = Plant in the open years.	2 = Plant in sheltered areas or among existing plants (2-3 years post planting) require protection from frost/shelter.		3 = Enrichment planted post canopy closure or within existing vegetation.		
River Buffer, Riparian, Bank, and Gully Planting									
Botanical Name	**Common Name**	**Zone**	**Planting stage**	**Notes**	**Buffer planting**	**Riparian planting**	**Gully Slope**	**Gully floor**	**Nikau & Fern minor gullies**
Aristotelia serrata	wineberry	Canopy (fast grower)	1	Fast growing height	✓	✓	✓		
Hoheria sexstylosa	lacebark	Canopy (fast grower)	1	Fast growing height	✓		✓		
Pittosporum eugenioides	lemonwood	Canopy (fast grower)	1	Fast growing height	✓	✓	✓		
Plagianthus regius	ribbonwood	Canopy (fast grower)	1	Fast growing height	✓	✓	✓		
Beilschmiedia tawa	tawa	Canopy	3		✓		✓		
Carpodetus serratus	marble leaf	Canopy	2		✓		✓	✓	
Dacrycarpus dacrydioides	kahikatea	Canopy	1		✓	✓	✓	✓	
Dacrydium cupressinum	Rimu	Canopy	1		✓		✓		
Knightia excelsa	rewarewa	Canopy	2	Prefers shelter when young	✓		✓		
Laurelia novae-zelandiae	pukatea	Canopy	3		✓		✓	✓	
Melicytus ramiflorus	mahoe	Canopy	1		✓	✓	✓		
Myrsine australis	mapou	Canopy	2		✓	✓	✓		
Phyllocladus trichomanoides	tanekaha	Canopy	2		✓		✓		
Pittosporum tenuifolium	kohuhu	Canopy	1		✓	✓	✓		
Podocarpus totara	totara	Canopy	1		✓		✓		
Prumnopitys taxifolia	matai	Canopy	2		✓		✓		
Pseudopanax crassifolius	lancewood	Canopy	1		✓		✓		✓
Sophora microphylla	kowhai	Canopy	1	Species naturally occuring in area. However S. chathamica was planted by maori and depnding on context could be appropriate.	✓	✓	✓		
Syzgium maire	swamp maire	Canopy	2					✓	
Weinmannia racemosa	kamahi	Canopy	2		✓		✓		✓
Alectryon excelsus	titoki	Canopy	2		✓		✓		
Cordyline australis	cabbage tree	Canopy	1		✓	✓	✓	✓	
Hedycarya arborea	pigeonwood	Canopy	2		✓		✓		
Coprosma robusta	karamu	Sub-Canopy	1		✓	✓	✓		
Fuchsia excorticata	tree fuchsia	Sub-Canopy	2	Drought intolerant - moist slopes only			✓	✓	✓
Kunzea robusta	kānuka	Sub-Canopy	1		✓		✓		
Leucopogon fasciculatus	tall mingimingi	Sub-Canopy	1		✓	✓	✓		
Pseudopanax arboreus	five-finger	Sub-Canopy	2		✓		✓		
Schefflera digitata	pate	Sub-Canopy	3					✓	
Veronica stricta var. stricta	koromiko	Sub-Canopy	1		✓	✓	✓	✓	
Astelia fragrans	kakaha	Understorey	3		✓		✓		
Astelia grandis	swamp Astelia	Understorey	2					✓	✓
Austroderia fulvida	toetoe	Understorey	1		✓	✓	✓		
Brachyglottis repanda	rangiora	Understorey	2				✓		✓
Carex geminata	rautahi	Understorey	1			✓	✓	✓	
Carex secta	purei	Understorey	1			✓		✓	
Carex solandri	forest sedge	Understorey	3				✓		✓
Carex virgata	swamp sedge	Understorey	1			✓		✓	
Coprosma propinqua	mingimingi	Understorey	1		✓	✓	✓	✓	✓
Coprosma rhamnoides	twiggy coprosma	Understorey	1		✓		✓		✓
Coprosma rigida	mikimiki	Understorey	1		✓		✓		✓
Coprosma tenuicaulis	swamp coprosma	Understorey	1					✓	
Dianella nigra	turutu	Understorey	1	Amenity areas/not needing to compete with grass		✓	✓		
Geniostoma ligustrifolium var. ligustrifolium	hangehange	Understorey	2		✓		✓		✓
Machaerina sinclairii	mapere	Understorey	1		✓	✓	✓	✓	✓
Melicytus micranthus	swamp mahoe	Understorey	2					✓	
Phormium cookianum subsp. hookeri	wharariki	Understorey	1		✓	✓	✓		
Phormium tenax	harakeke	Understorey	1		✓	✓	✓	✓	
Cyathea cunninghamii	gully tree fern	Fern & Nikau	1				✓		✓
Cyathea dealbata	silver fern	Fern & Nikau	1				✓	✓	✓
Cyathea medullaris	mamaku	Fern & Nikau	1				✓		✓
Dicksonia fibrosa	wheki-ponga	Fern & Nikau	1				✓		✓
Dicksonia squarrosa	wheki	Fern & Nikau	1			✓	✓		✓
Doodia australis	rasp fern	Fern & Nikau	1	Will likely colonise naturally - already present in riparian vegetation.			✓	✓	✓

Planting lists for riverside and gully plantings and river side and gully side reserves.			**Planting stages**	1 = Plant in the open years.	2 = Plant in sheltered areas or among existing plants (2-3 years post planting) require protection from frost/shelter.		3 = Enrichment planted post canopy closure or within existing vegetation.		
River Buffer, Riparian, Bank, and Gully Planting									
Botanical Name	**Common Name**	**Zone**	**Planting stage**	**Notes**	**Buffer planting**	**Riparian planting**	**Gully Slope**	**Gully floor**	**Nikau & Fern minor gullies**
Lomaria discolor	crown fern	Fern & Nikau	1						✓
Parablechnum novae-zelandiae	kiokio	Fern & Nikau	1			✓	✓		✓
Rhopalostylis sapida	nikau Palm	Fern & Nikau	1				✓		✓
Stormwater Infrastructure Planting									
Botanical Name	**Common Name**								
Cyperus ustulatus	giant umbrella sedge	stormwater	1						
Eleocharis acuta	sharp spike sedge	stormwater	1						
Juncus edgariae	wiwi	stormwater	1						
Juncus pallidus	giant rush wiwi	stormwater	1						
Machaerina rubiginosa	orange nut sedge	stormwater	1						
Austroderia fulvida	toetoe	stormwater	1						
Carex virgata	pukio / swamp sedge	stormwater	1						
Coprosma propinqua	mingimingi	stormwater	1						
Leptospermum scoparium	manuka	stormwater	1						
Machaerina sinclairii	mapere	stormwater	1						
Phormium tenax	harakeke	stormwater	1						
Shelterbelt Type Planting									
Botanical Name	**Common Name**								
Hoheria sexstylosa	lacebark	Canopy (fast grower)	1	Fast growing height					
Plagianthus regius	ribbonwood	Canopy (fast grower)	1	Fast growing height					
Knightia excelsa	rewarewa	Canopy	2	Prefers shelter when young - can be planted under existing shelter belts					
Pittosporum eugenioides	lemonwood	Canopy	1	Fast growing height					
Pittosporum tenuifolium	kohuhu	Canopy	1						
Additional native amenity plants found naturally in the Hamilton Ecological district									
Botanical Name	**Common Name**	**Notes**							
Lobelia angulata	Panakenake								
Gahnia xanthocarpa	Gahnia	Potentially hard to source and grow							
Asplenium bulbiferum	hen and chicken fern	Almost all nursery stock is Asplenium x lucrosum. A hybrid of A. bulbiferum and A. dimorphum (Norfolk Island). Do not plant this hybrid - ensure with supplier source and species and check before planting.							
Pellaea rotundifolia	button fern	Shady moist free draining soil							
Olearia rani	heketara								
Asplenium oblongifolium	shining spleenwort								
Acaena novae-zelandiae	red bidibid								
Melicope simplex	poataniwha								