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PLAN CHANGE 2
ADDITIONAL ARBORICULTURAL REVIEW

WAIPA DISTRICT COUNCIL

REPORT PREPARED BY: CRAIG WEBB

DATE: 16 JULY 2018

EXECUTIVE SUMMARY

STEM evaluation of three identified trees has been carried out to 'test' a possible shift in the method used for tree evaluation by Waipa District Council. The London plane tree at 102 Tennyson Street, Leamington scored 132 points. The rimu at 38 Princes Street, Cambridge scored 126 points. The English oak at 95 Victoria Street, Cambridge scored 96 points.

If a threshold of 120 points was applied, the London plane and rimu would make the grade for inclusion as protected trees, the English oak would not.

Two of the above trees were assessed against the proposed Plan Change 2 assessment criteria in 21.1.23.2 of the proposed rules, to 'test' if hypothetical consent applications could result in the trees being removed.

It was found that an application to remove the London plane at 102 Tennyson Street would not meet the criteria for removal, except if sufficient evidence of damage to property or significant hardship was provided.

In relation to the English oak at 95 Victoria Street, it was found that an application for removal would likely be successful, if supported by a detailed arboricultural assessment on the structural condition of the tree and evidence of damage to property and hardship were provided.



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1.0 INTRODUCTION

- 1.1 I, Craig Webb Consultant Arborist (CWCA Limited), have been commissioned by Waipa District Council (WDC) to provide a review of the proposed Plan Change 2 – Protected Trees. Further to an initial assessment of the proposed plan change, I have been engaged to provide an assessment of three trees to ‘test’ the proposed rule changes. Specifically, the assessment of three trees requests analysis using STEM and consideration of proposed District Plan assessment criteria for hypothetical consent applications for two trees.
- 1.2 The purpose of this report is to provide analysis relating to three trees detailed in the original brief I received by email from Chris Brockelbank, WDC Arborist. The three trees are:
- London plane at 102 Tennyson Street, Leamington
 - Rimu at 38 Princes Street, Cambridge
 - English oak at 95 Victoria Street, Cambridge
- 1.3 The assessment of the three trees was carried out during site visits on 9 July 2018.

BACKGROUND / PLANS PROVIDED

- 1.4 This report has been compiled with reference to the proposed plan change documents, which set out proposed assessment criteria applicable to the Discretionary Activity of tree removal of a protected tree. These are set out in Table 21.1.23 of the proposed plan change.
- 1.5 The Standard Tree Evaluation Method (STEM) has been used to evaluate the three trees.

SCOPE OF REPORT / METHODOLOGY

- 1.6 The scope of this report includes providing independent arboricultural assessment to ‘test’ the application of STEM to three trees and providing comments relating to hypothetical consent applications for removal of two specified trees (102 Tennyson Street and 95 Victoria Street).
- 1.7 STEM score sheets compiled from scores recorded during the site visit are provided in Appendix A of this report to show the findings of the evaluation using this method. These were based on visual assessment of the trees from public vantage points. Private property was not entered during the assessment.

LIMITATIONS

- 1.8 The assessment of the three trees was carried out from ground level only and involved a cursory inspection of the trees. No probing, sounding, testing or detailed analysis of the tree trunk, branch structure, root plate or growing environment has been carried out to inform the evaluation process. More detailed analysis is not warranted for the purposes of a STEM evaluation, however more detailed inspection techniques may be warranted to assess the trees where faults in their structure exist.



- 1.9 The STEM evaluation has been carried out using conservative inputs. Where any doubt existed to the awarding of a score in the ten STEM criteria (under Condition Evaluation and Amenity Valuation sections) the lower value has been recorded. Further detail that is not available to me at the time of writing may result in changes to the scores awarded.
- 1.10 My opinion of the three trees in terms of their relevant merit and detriment, when considered against the proposed Plan Change assessment criteria acknowledges the limitations of a one-off assessment. No details of potentially relevant matters relating to property owners, past maintenance requests, past consent applications or political history has been, nor should be, considered during a tree evaluation process. I am aware that nuisance, potential property damage and hardship applies to the rationale for considering the specific trees and this has been taken into consideration when applying the STEM method.

QUALIFICATIONS/EXPERIENCE

- 1.11 I confirm that I am a consultant arborist with experience and qualifications suitable to provide specialist assessment and advice in relation to arboricultural matters. I hold the New Zealand Diploma in Arboriculture (with distinction) from WINTEC and I have 17 years' experience as an arborist in the regulatory and commercial sectors. I have extensive experience with, and understanding of, with various District Plans and the fundamentals of the Resource Management Act (RMA) and processing of resource consents for removal of protected trees. My experience is principally in the Auckland Region.

2.0 ANALYSIS

102 TENNYSON STREET, LEAMINGTON – LONDON PLANE

- 2.1 The London plane tree is one of five trees that grow in a row along the boundary between private properties and Tennyson Street. The tree is a typical example of this group, which are mature specimens. The trees are understood to be a remnant of historical land-use, where arable land has been converted to residential property.
- 2.2 The plane tree appears in good condition, with form and crown condition that is considered to be normal for the species. Apart from some pruning, the tree shows no signs of detriment as a result of the alteration that came with residential development within its root zone.
- 2.3 The London plane scored 132 points using STEM. This tree scores moderately to highly in Age, Stature and Proximity categories and I also consider it to have Recognition values as a Feature of the Local area, under the Notable Evaluation section. The London plane scores moderately to lowly in Occurrence, Function, Visibility, Role and Climate categories.



38 PRINCES STREET, CAMBRIDGE – RIMU

- 2.4 The rimu tree is a solitary tree growing within the front yard of this property. The tree is understood to also be a remnant from historical land-use, where arable land was converted to residential property. The dwelling has been constructed in relatively close proximity to the base of the tree in this instance.
- 2.5 The rimu is in good condition in terms of canopy coloration, density and apparent vitality. The tree's form is somewhat atypical for the species, being multi-stemmed from near ground level. This is a function of the openness of the growing situation, where, conversely, single-trunked trees of this species usually develop in forest situations. Apart from some historic pruning, the tree shows no signs of detriment as a result of the alteration that came with residential development within its root zone, however site modification is likely to reduce the long-term viability of the tree.
- 2.6 The rimu scored 126 points using STEM. The tree scores highly in the Age and Proximity categories, being an old, solitary tree. The rimu scores lowly in Role and Climate categories because of its position in the landscape and comparatively small crown.

95 VICTORIA STREET, CAMBRIDGE – ENGLISH OAK

- 2.7 The English oak tree is growing within a commercial property (car yard) within Cambridge town centre. The tree's crown combines with the crown of nearby street trees, making it part of a group. The tree is less visually prominent as a result of the dominance of the street trees when viewed from the main street.
- 2.8 The oak bears evidence of historical alteration of both crown and root zone. The car yard has a paved (brick cobbles) surface which extends to the trunk on all sides of the tree. The crown exhibits past pruning in the manner of historic pollarding and more recent crown-lifting. Canopy vitality appears to be reasonable, based on an assessment of crown condition (in its deciduous state at the time of assessment). The tree shows no signs of detriment as a result of the alteration to its root zone, but is likely to have a reduced vitality as a result of the modification and impermeability of the root zone.
- 2.9 The English oak scored 96 points using STEM. The tree scores moderately under Age, Stature and Proximity categories, but lowly for Form, Function, Visibility, Role and Climate.

ASSESSMENT CRITERIA

- 2.10 The proposed assessment criteria for removal of a protected tree are set out in 21.1.23 of the proposed plan change. These are copied below. An analysis of two 'hypothetical' consent applications against these criteria is provided in Appendix B of this report.

- (a) *Whether the tree or trees are causing, or likely to cause significant damage or harm to buildings, services or property, whether public or privately owned, or people.*



- (b) *The extent to which the tree has grown to the point of causing a significant hardship to nearby residents, including any significant loss of sunlight or extraordinary leaf and debris drop, and whether minor trimming or pruning will not or has not ameliorated the problem.*
- (c) *Whether there are any alternatives that would avoid the need for the trees removal.*
- (d) *The condition and RNZIH score of the Protected Tree.*
- (e) *The impact of the loss of amenity values that the tree provides for the surrounding environment.*
- (f) *Whether a replacement tree or trees can be established and maintained in an appropriate location.*

2.11 An application for removal of a protected tree is proposed (under Plan Change 2) to be a Discretionary Activity. Council therefore retains full discretion when considering an application for tree removal. Council may consider an application against the assessment criteria stated above, other relevant assessment criteria in 21.1.1, but has not limited its discretion to these matters. I have not carried out an assessment of potentially relevant criteria in 21.1.1 of the WDC District Plan as part of this exercise.

3.0 DISCUSSION

- 3.1 If Waipa District Council adopts STEM as its method for tree evaluation and sets a threshold for tree inclusion at 120 points, two of the three trees assessed (London plane and rimu) would meet the standards for protection. The English oak at 95 Victoria Street would not meet the threshold.
- 3.2 With reconsideration of the assessment criteria as part of this exercise, I find that the assessment criteria provide a balanced and reasonable set of matters for consideration when assessing an application for the removal of a protected tree. This is because they address matters that are reasonable as reasons to justify tree removal, such as risk, significant hardship or poor tree condition. Furthermore, consideration of alternatives, mitigation and the benefits (amenity) that the tree provides ensures a balanced assessment of matters relevant to trees within human environments.
- 3.3 One possible addition to the assessment criteria is the recognition of other virtues of trees, in addition to amenity. The contribution of trees to the built environment, as natural infrastructure and for the ecological services that they provide, should also be considered when deciding the merit of an application to remove a protected tree.



4.0 RECOMMENDATIONS

- 4.1 Based on the assessment of three trees, a recommended threshold of 120 points for STEM evaluation of trees to be protected would seem reasonable.
- 4.2 It is recommended that further testing, moderation and/or peer review of the STEM threshold and my scoring be carried out.
- 4.3 Further testing could involve a representative sample of say 20 trees (currently protected or proposed to be considered for protection). This would give a clearer indication of the level of tree protection that may be gained or lost by a change to STEM and consequential reevaluation of all protected trees.
- 4.4 Alternatively, reevaluation of all trees could be carried out using STEM to provide a full picture of the range of scores, which would assist with determining a threshold that protects trees that are considered to be worthy of protection.
- 4.5 As recommended in my previous report, trees that are not worthy of protection status, due to elevated risk of damage to property, unreasonable levels of nuisance and/or hardship or significantly reduced life expectancy should be excluded from consideration as protected trees.



APPENDIX A – STEM SCORES

Full Tree Evaluation Score Sheet

102 TENNYSON STREET

LONDON PLANE

Condition Evaluation

Points	3	9	15	21	27	Score
Form	Poor	Moderate	Good	Very good	Specimen	15
Occurrence	Predominant	Common	Infrequent	Rare	Very Rare	3
Vigour & Vitality	Poor	Some	Good	Very good	Excellent	15
Function	Minor	Useful	Important	Significant	Major	9
Age (yr)	10yrs. +	20yrs. +	40yrs. +	80yrs. +	100yrs. +	21
Subtotal Points						63

Amenity Evaluation

Points	3	9	15	21	27	Score
Stature (m)	3 to 8	9 to 14	15 to 20	21 to 26	27+	27
Visibility (km)	0.5	1.0	2.0	4.0	8.0	9
Proximity	Forest	Parkland	Group 10+	Group 3+	Solitary	21
Role	Minor	Moderate	Important	Significant	Major	9
Climate	Minor	Moderate	Important	Significant	Major	9
Subtotal Points						69

Notable Evaluation

Recognition Points	Local 3	District 9	Regional 15	National 21	International 27	Score
Stature						3
• Feature						
• Form						
Historic						
• Age 100+						
• Association						
• Commemoration						
• Remnant						
• Relict						
Scientific						
• Source						
• Rarity						
• Endangered						
Subtotal Points						
Total Points						132

Comments

Multi-stemmed, slightly off-centre crown.

Very common species in Waipa District
Vigorous species, altered by past development?
Large tree, significant function.

Estimate 80+ years old.

Approx 30m tall, 28m crown spread (N-S)
Flat terrain and many trees reduce visibility.
Possibly visible beyond town limits but no audience

One of 5 trees in group
Good setting for tree, plays important role, down-graded due to nuisance.
Shade and sheltering effects on climate.
More important if considered as part of group.

Consider this group of trees to be a significant feature of the local area, due to stature and role in setting.



APPENDIX A – STEM SCORES

Full Tree Evaluation Score Sheet

38 PRINCES STREET

RIMU

Condition Evaluation						Score
Points	3	9	15	21	27	
Form	Poor	Moderate	Good	Very good	Specimen	9
Occurrence	Predominant	Common	Infrequent	Rare	Very Rare	15
Vigour & Vitality	Poor	Some	Good	Very good	Excellent	9
Function	Minor	Useful	Important	Significant	Major	15
Age (yr)	10yrs. +	20yrs. +	40yrs. +	80yrs. +	100yrs. +	21
Subtotal Points						69
Amenity Evaluation						Score
Points	3	9	15	21	27	
Stature (m)	3 to 8	9 to 14	15 to 20	21 to 26	27+	15
Visibility (km)	0.5	1.0	2.0	4.0	8.0	9
Proximity	Forest	Parkland	Group 10+	Group 3+	Solitary	27
Role	Minor	Moderate	Important	Significant	Major	3
Climate	Minor	Moderate	Important	Significant	Major	3
Subtotal Points						57
Notable Evaluation						Score
Recognition Points	Local 3	District 9	Regional 15	National 21	International 27	
Stature						
• Feature						
• Form						
Historic						
• Age 100+						
• Association						
• Commemoration						
• Remnant						
• Relict						
Scientific						
• Source						
• Rarity						
• Endangered						
Subtotal Points						
Total Points						126

Comments

Multi-stemmed with tight unions
 Not commonly observed species in Cambridge
 Historic rootzone alteration downgrades vitality
 Evergreen, indigenous specimen, uncommon and likely to contribute habitat values
 Conservatively estimated as 80+ years old.

Approx 18m tall, 14x16m crown spread
 Visible from local road only.
 Viewed as a solitary tree in an area with relatively few large tree.
 Proximity to building and potential nuisance.
 Not a significant contribution.



APPENDIX A – STEM SCORES

Full Tree Evaluation Score Sheet

95 VICTORIA STREET

ENGLISH OAK

Condition Evaluation

Points	3	9	15	21	27	Score
Form	Poor	Moderate	Good	Very good	Specimen	3
Occurrence	Predominant	Common	Infrequent	Rare	Very Rare	9
Vigour & Vitality	Poor	Some	Good	Very good	Excellent	9
Function	Minor	Useful	Important	Significant	Major	3
Age (yr)	10yrs. +	20yrs. +	40yrs. +	80yrs. +	100yrs. +	21
Subtotal Points						45

Amenity Evaluation

Points	3	9	15	21	27	Score
Stature (m)	3 to 8	9 to 14	15 to 20	21 to 26	27+	21
Visibility (km)	0.5	1.0	2.0	4.0	8.0	3
Proximity	Forest	Parkland	Group 10+	Group 3+	Solitary	21
Role	Minor	Moderate	Important	Significant	Major	3
Climate	Minor	Moderate	Important	Significant	Major	3
Subtotal Points						51

Notable Evaluation

Recognition Points	Local 3	District 9	Regional 15	National 21	International 27	Score
Stature						
• Feature						
• Form						
Historic						
• Age 100+						
• Association						
• Commemoration						
• Remnant						
• Relict						
Scientific						
• Source						
• Rarity						
• Endangered						
Subtotal Points						
Total Points						96

Comments

Ex-pollard, crowded, upright, multiple stems
 Frequent species in Waipa District
 Heavily modified growing environment
 Impermeable surface, nuisance values
 Estimate

Approx 22m tall, 18m crown spread
 Largely shielded from view by buildings and large trees
 Grouped with street trees
 Not particularly suited to site
 Some beneficial shade, but not significant



APPENDIX B – ASSESSMENT CRITERIA ANALYSIS

In this section the assessment criteria from 21.1.23 are stated in *italics*, with comments following each criterion providing an opinion on the relative merit or detriment of the tree in relation to aspects of each criteria.

LONDON PLANE - 102 TENNYSON STREET

- (a) *Whether the tree or trees are causing, or likely to cause significant damage or harm to buildings, services or property, whether public or privately owned, or people.*

During a cursory inspection, no damage to buildings, services or property was observed. The dwelling at 102 Tennyson Street is some distance (approx. 6m) from the tree. Water services, and street drainage infrastructure exist within the trees rootzone, however the potential for damage to these is minor, given that the new infrastructure will be in good condition. London plane are not prone to failure, so the potential for substantial damage to the dwelling or property from tree or branch failure is insignificant.

- (b) *The extent to which the tree has grown to the point of causing a significant hardship to nearby residents, including any significant loss of sunlight or extraordinary leaf and debris drop, and whether minor trimming or pruning will not or has not ameliorated the problem.*

Little weight should be given to this criterion in this instance because the tree existed before the dwelling, i.e. conflict was caused by construction of the dwelling, not growth of the tree. In the front yard, the tree shades the western aspect of the site, providing beneficial shade in summer and filtered light (through its leafless crown) in winter. This is not a significant hardship in my opinion, as the northern aspect of the dwelling and rear yard will receive ample direct sunlight. Copious leaves drop from plane trees in autumn and dead twigs and branches will fall from time to time, both of which may be a maintenance burden to residents. I do not consider this to be significant hardship where standard property maintenance can reasonably be expected of a tree/property owner. Minor trimming or pruning of the tree will make little difference to the situation, however more substantial pruning may alleviate the shading and leaf drop directly affecting the dwelling.

- (c) *Whether there are any alternatives that would avoid the need for the trees removal.*

As mentioned above, pruning of the tree may be considered as an alternative to removal, however this will not address perceived problems with the tree and would require on-going work. A moderate to heavy reduction of the tree crown may go some way towards reducing the canopy height and spread and thereby reduce shading and leaf fall, without significant effects on the tree's health and longevity. This practice may prove to be unsustainable in the long-term where budgetary constraints are concerned.

- (d) *The condition and RNZIH score of the Protected Tree.*

The tree is in good condition and scores highly (132 points) using STEM.



APPENDIX B – ASSESSMENT CRITERIA ANALYSIS

- (e) *The impact of the loss of amenity values that the tree provides for the surrounding environment.*

The loss of this tree would be significant to the amenity of the surrounding residential environment in my opinion. As a central specimen of five trees in a row, removal will create a gap in the significant feature that adorns Tennyson Street.

- (f) *Whether a replacement tree or trees can be established and maintained in an appropriate location.*

Replacement planting could be established to mitigate the effects of tree removal. It will take 80-100 years for a replacement tree to reach the scale of the existing tree.

In summary, it is my opinion that without evidence to the contrary, on balance of the relevant criteria, the removal of the London plane tree at 102 Tennyson Street does not satisfy the criteria for removal.

ENGLISH OAK - 95 VICTORIA STREET

- (a) *Whether the tree or trees are causing, or likely to cause significant damage or harm to buildings, services or property, whether public or privately owned, or people.*

The English oak tree has structural condition that may increase the likelihood of substantial limb failure. A detailed assessment of the tree would be required to assess any loss of structural strength due to decay in the main trunk, stem unions and branches. Given the current land use of the area around the tree (as a car yard), vehicles contribute a constant occupation target to a large proportion of the rootzone area of the tree. In the event of limb failure, damage is likely to occur. Small branches and acorns will fall from the tree on a frequent and seasonal basis, which may also result in minor property (vehicles) damage from time to time.

- (b) *The extent to which the tree has grown to the point of causing a significant hardship to nearby residents, including any significant loss of sunlight or extraordinary leaf and debris drop, and whether minor trimming or pruning will not or has not ameliorated the problem.*

Regular property maintenance of sites that contain mature trees is not significant hardship in my opinion. Leaves and acorns that drop from the oak tree in autumn and summer may be a maintenance burden to the property occupier, who enjoys the benefits of the mature tree. Damage to property (vehicles) may also create a level of hardship. Minor trimming or pruning of the tree will make little difference to the situation.

- (c) *Whether there are any alternatives that would avoid the need for the trees removal.*

Pruning of the tree is an alternative to removal of it, however this will not address perceived problems with the tree and would require on-going work. A moderate to heavy reduction of the tree



APPENDIX B – ASSESSMENT CRITERIA ANALYSIS

crown may go some way towards reducing the canopy height and spread and reduce the likelihood of branch failure. Again, a detailed arboricultural assessment of the tree is required before prescribing any corrective actions to address any identified structural weaknesses in the tree.

(d) The condition and RNZIH score of the Protected Tree.

The tree is in fair to poor condition and scores relatively low using STEM. The tree is in the lower range of scores under the current RNZIH method of tree evaluation and may not make the threshold if re-evaluated.

(e) The impact of the loss of amenity values that the tree provides for the surrounding environment.

The loss of this tree would not be significant to the amenity of the surrounding environment in my opinion. This is largely due to the presence of other large trees in Victoria Street, which screen the oak from view from many public vantage points. Some loss of amenity to the site would result, particularly in terms of the shade, shelter and other benefits the tree provides.

(f) Whether a replacement tree or trees can be established and maintained in an appropriate location.

Replacement planting could be established to mitigate the effects of tree removal; however this would require space being allocated for tree growth, which may not be practical within the current land use pattern. It will take 80-100 years for a replacement tree to reach the scale of the existing tree.

In summary, it is my opinion that further evidence in the form of a detailed arboricultural inspection and risk assessment may add significant weight to consideration of the removal of the English oak tree at 95 Victoria Street, due to criterion a). A report from a Qualified Arborist would be required to be submitted with any application that seeks tree removal, according to proposed 21.2.23.1 of Plan Change 2.

