

ArborAdvice Ltd

Arboricultural Consultancy Services

ARBORICULTURAL ASSESSMENT

1. Introduction.

Auckland Transport (AT) has issued a Notice of Requirement (NoR) for designation of land to enable the construction, operation and maintenance of the proposed City Rail Link (CRL).

Large parts of the alignment follow road corridors. These contain many established scheduled and generally protected ornamental trees and the designation and subsequent construction of the CRL will directly conflict with trees.

The main aspects of the proposed designation that will directly affect trees is as follows:

- Cut and cover construction methodology extending from Britomart Transport Centre to Mayoral Drive / Wellesley Street West intersection.
- Establishment of construction work site(s); construction of train stations; construction of ventilation vents.

2. Documents Considered

- (i) City Rail Link Tree Assessment prepared for Auckland Transport by Boffa Miskell dated 9 August 2012.
- (ii) City Rail Link: Proposed Draft Notice of Requirement Conditions prepared by Fiona Blight Technical Director - Planning Beca dated 30/04/2013.
- (iii) In addition to the aforementioned documents it was acknowledged at the time of the CRL route walkover and during subsequent conversation that all existing trees in the Beresford Street region (Karangahape Station) will require removal; and, a variation to the construction work site alignment that will encapsulate the northern end of Mayoral Drive may require the removal of sixteen (16) scheduled Tulip trees and three (3) Queensland Box.

3. Overview of Proposal and General Comments.

3.1 A survey and assessment of existing vegetation, predominantly being established specimen trees, has been undertaken on behalf of the applicant by Boffa Miskell Ltd.

3.2 The aforementioned assessment identified a total of 206 individual and or groups of trees. Based on the information provided the tree survey identified vegetation within the proposed designation corridor including areas to be established as construction work sites. The assessment concluded that potentially 42 trees and tree groups would require removal.

- 3.3 It has been concluded the number of trees potentially requiring removal do not include those additional trees within Beresford Street and Mayoral Drive respectively that could also be implicated and may require removal to facilitate the formation of construction work sites and the physical construction works.
- 3.4 For ease of reference and transparency it would have been preferable if the tree list scheduled included a column stating if the 'tree' is to be removed, retained and protected or works within the dripline and those trees earmarked for removal identified on the tree list maps with a red dot for example. For future reference for all relevant parties it is deemed important at this point in time to ensure those specific trees identified for removal are clearly depicted upon the relevant aerial maps.
- 3.5 The necessity to remove specific trees within the CRL surface designation area(s) should be considered further on a case by case basis and at the time detailed engineering designs are available. It is considered, in my opinion, premature to support the removal of specific trees within the NoR designation without first confirming the necessity. Furthermore, the additional trees that may require removal need to be confirmed in the first instance, identified and plotted on the relevant tree list aerial map and added to the tree list.
- 3.6 A transparent procedure should be established as part of the NoR notice that necessitates consultation with all relevant stakeholders pertaining to the need for tree removal and to assess the practicality of considering alternative options (i.e. tree relocation).
- 3.7 It is acknowledged the scope of construction works required specifically the cut and cover operation, may inevitably compromise and necessitate the removal of established trees located within the road berm. However, the actual alignment, width of cut required, relocation of services and/or installation of new services will ultimately determine which tree or group of trees will require removal. With reference to Albert Street specifically, where predominantly Evergreen Magnolia trees line both sides of the carriageway, the road is very wide consisting of four (4) lanes and subsequently it would need to be confirmed as to the need to remove the existing trees to facilitate the actual works.
- 3.8 With reference to the section of proposed designation specifically relevant to the northwestern section of Mayoral Drive and Vincent Street in its entirety with both streets containing scheduled trees. The respective road corridors contain an avenue of trees with their scheduled status defined as being notable as they (the trees) contribute to the amenity of the area by being part of a group or stand of trees that align the section of Mayoral Drive and Vincent Street respectively. Subsequently it could be determined the loss of any of the scheduled trees will have an adverse effect on local amenity values.
- 3.9 The respective scheduled trees are afforded the greatest level of protection provided by the District Plan and the rules surrounding the protection of scheduled trees in this instance should not be eroded.
- 3.10 The potential effects on the avenue of scheduled London Plane trees that line both sides of Vincent Street, as a consequence of the two (2) bored tunnels, is difficult to ascertain at this point in time. Further consultation would be necessary to clarify construction details.

Potential changes to the existing water table is one matter of concern and the operation could invariably affect the volume and uptake of moisture available to the established trees and hence the trees could be put under stress to their detriment.

3.11 Ultimately the bore depth of the tunnels would determine what, if any, affects on the existing water table would be and to what extent. An expert in this field would need to provide detailed information to appease any concerns and this matter will need to be dealt with at resource consent stage.

3.12 With regard to '*Strata Designation*'.

Reference to NoR 3 and NoR 2 specifically to the section of Mayoral Drive and Vincent Street in its entirety.

In terms of protecting the avenue of established and the predominant species of 'scheduled' London Plane trees located along both sides of Vincent Street it is preferred no 'surface' activity works of any nature occurs within the Vincent Street section. The respective trees are currently afforded the greatest level of protection provided by the District Plan and it is considered paramount that level of protection is maintained.

It is considered essential the 'summary description of NoR' as per table 2 of the Beca AEE reflects what should be determined as a critical tree protection zone.

NoR 3 - Strata (Protection) confirms a protection designation commencing above NoR 2 and starting 5.0 metres below the ground surface will apply. The 5.0 metre deep protection zone is considered adequate but may not necessarily be sufficient if the tunnelling process will cause major changes to the existing water table levels.

No physical works are proposed in the strata (protection) designation, which should be deemed an adequate protection zone to ensure the growing environment should not be compromised, this being specific to Vincent Street. The preliminary design phase must take into consideration the requirement to preserve an acceptable depth of soil to provide assurance the growing environment of the scheduled London Planes are by no means compromised to the point their future health, vitality and stability could be jeopardised.

3.13 The Tulip trees situated on both sides of Mayoral Drive are scheduled items. With reference to Appendix 'B' - 'Scheduled Trees' of the Auckland Council District Plan - Auckland Central Area Section one hundred seventy-eight (178) Tulip trees have been recorded. The trees are included as category 'B', reasons for scheduling A, b, c, e, f, g, H, I, j, k, L, m, o. Map reference: 218.

As alluded to above in point 2 (iii) it was acknowledged during conversation that for the purpose of the formation of a construction work site and the TBM tunnel there is a variation to the construction boundary alignment and subsequently potentially sixteen (16) scheduled Tulip trees and three (3) Queensland Box may require removal. The need to remove the respective trees must be justified and alternative options should be considered in order to try and preserve the scheduled trees.

- 3.14 It must be noted that many of the aforementioned Tulip trees are growing within a purpose built underground concrete structure and if the specific trees do require removal there could be the potential to explore the option of extracting the tree and planter pit combined that could then be stored and following completion of the major infrastructure work reinstated back to within the road berm.
- 3.15 It has been confirmed the Karangahape Road station construction will necessitate the removal of all existing trees situated within Beresford Square. The predominant species being Plane trees do contribute to the ambience of the Square and overall visual amenity. The necessity to remove all existing trees to facilitate the construction of the station will need to be confirmed.

4. Submissions.

- 4.1 One submission has been received specific to vegetation. Submission reference number 61 refers to the property at 34 Nikau Street, Eden Terrace. The submission notes a Palm tree; two (2) Cabbage trees and a mature Pohutukawa tree have not been identified or included.
- 4.2 It is recommended the aforementioned vegetation and their relevant position within an area that could be defined as a potential construction work site area is confirmed by the applicant.

5. Conditions.

- 5.1 A raft of 'Proposed Draft Notice of Requirement Conditions' have been provided for perusal. Emphasis has been placed on the preparation of a Construction Environmental Management Plan (CEMP), which includes a condition specific to managing the adverse effects from the removal of trees and vegetation.
- 5.2 Proposed 'draft' condition number 24, points (a) to (e) inclusive are specific to trees / vegetation and cross reference to various other proposed conditions.

For ease of reference I make the following comments with regard to the specific points.

- 5.3 It is considered point (a) is appropriate and acceptable with the exception to add to the requirement. The aforementioned point requires the CEMP to confirm and list the trees to be removed due to surface construction works and consider the feasibility to relocate or store the trees for replanting. The practicality and feasibility to retain a tree(s) *in-situ* should also be considered as part of point (a).

It is paramount direct consultation during the aforementioned procedure is undertaken with the Auckland Council Parks Department - Central. It is noted point (e) refers to cross reference to condition 8 pertaining to communication and liaison with Auckland Council Parks. It is recommended Auckland Council Parks Department - Central be specifically included and listed as a party that shall be directly consulted with.

- 5.4 Point (b) is considered appropriate and acceptable. The aforementioned point refers to identifying trees in proximity to construction works and how the respective trees will be protected.

The compilation of a tree protection management plan (TPMP) would suffice to outline protection and work methodologies to be adopted to protect 'retained' trees from damage during the construction phase.

5.5 Point (c) cross references to condition 30 pertaining to Urban Design and Landscape plans and the proposed mitigation of any tree removal / vegetation removal, re-instatement of areas, maintenance and monitoring of any replacement planting. It is paramount direct consultation is undertaken with Auckland Council Parks Department - Central pertaining to the aforementioned matters seeking their input in the first instance and approval with regard to tree species / vegetation selection, tree pit construction where deemed necessary and positioning of replacement trees.

An important matter that should be taken into consideration at the initial project design stage is where existing underground utility services require relocation such services are not repositioned to within the road berm for example, that would impede or prevent entirely replacement planting.

5.6 Point (d) and (e) respectively are deemed applicable.

6. Conclusion.

It is considered emphasis needs to be placed on determining the necessity to remove trees, groups of trees and other vegetation to facilitate the construction of the proposed CRL.

Minimising the tree removals in the first instance is encouraged as given the construction commencement date has not been confirmed and the time lapse of the NoR being 20 years many of the existing trees currently afforded scheduled and generally protected status will have further established and subsequently may significantly contribute to the amenity of the streetscape.

The necessity to remove scheduled trees from upon Mayoral Drive needs to be confirmed. The preference would be to preserve the specific scheduled Tulip trees and the proposed construction work site established adjacent the road corridor and specific trees respectively.

Minimising the number of tree removals will ultimately contribute to the management of the adverse effects as a consequence of potential wholesale tree removals.

Mitigating the removal of established trees that have existed within a relatively hostile growing environment for many years but have subsequently adapted to the conditions is challenging. Hence, the preference to preserve existing trees where at all possible that are of generally good condition and overall form is encouraged.

It is acknowledged the building footprint necessary and overall scope of works required to construct the CRL will require the removal of specific trees. Mitigating the removal of those individual trees, group of trees and vegetation is proposed. It is proposed to plant a 45-litre (PB95) grade replacement tree on a one-for-one basis. The replacement tree planting mitigation proposed is deemed acceptable. The species selection and positioning of new trees will need to be determined in direct consultation with the Auckland Council Parks Department.

Vincent Street, containing an avenue of scheduled Plane trees should, in my opinion, be considered an entire exclusion zone where no surface activities occur and the NoR 3 - Strata (protection), to a minimum depth of no less than 5.0 metres below the ground surface, is strictly applied.

A greater depth of protection if achievable would be encouraged to provide assurance the scheduled Plane trees will not be affected. The future design of the CRL should take this matter into consideration.

Various matters will need to be addressed at Resource Consent stage and with greater construction and detailed design plans anticipated to be provided at that time clarification on specific components of the project in relation to potential effects on trees / vegetation can be addressed.

It is concluded imperative that an open and transparent communication avenue be established between the Auckland Council Parks and Heritage Units respectively to ensure all matters pertaining to the generally protected and scheduled trees, predominantly located within the Council road berm, are discussed and issues addressed as deemed necessary.



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