

Addendum - 2 February 2006

Previously this project was named 'Harbour Bridge to City' project and there may be references in this document referring to this name or its abbreviation: HBTC.

The name of this project has since changed and is now referred to as 'Vic Park Tunnel'. Therefore, any reference to 'Harbour Bridge to City' or HBTC should now be taken to refer to Vic Park Tunnel or VPT.

**AN ARBORICULTURAL IMPLICATION REPORT FOR
THE PROPOSED HARBOUR BRIDGE TO CITY
PROJECT, AUCKLAND CITY.**

**THE SPECIMEN TREE COMPANY LTD
OCTOBER 2005**

AN ARBORICULTURAL IMPLICATION REPORT FOR THE PROPOSED HARBOUR BRIDGE TO CITY PROJECT, AUCKLAND CITY.

1.0 Introduction.

- 1.1 This report was commissioned by Phil Ison, a Senior Civil Engineer with Beca Infrastructure Ltd.
- 1.2 This report deals only with the trees that have been specified. It takes no account of any other trees or shrubs that have not been listed.
- 1.3 This report is to be used for the purpose of the Notice of Requirement application.
- 1.4 All assessments were made from ground level and the tree dimensions were estimated only.
- 1.5 This report has been prepared to identify the potential implications to the existing tree asset growing in the proximity of the following proposed Harbour Bridge to City Projects:
 - Northbound Tunnel Victoria Park
 - St Mary's Bay Sound Barrier.
 - Shelly Beach Road Over Bridge extension.
 - St Mary's Bay Lane Widening.
- 1.6 This report is to provide the following detail:
 - The identification and location of existing trees on the site.
 - The estimated height of the trees.
 - Protection status of the trees.
 - The transplanting potential of the trees.
 - An indication as to whether removal is required (as can be ascertained from the plans provided to us).
 - General comment on the individual trees as required.
 - A summary giving a general overview of the significant trees.

- 1.7 I was supplied with the following documentation:
- “Draft Only - Harbour Bridge to City 5 Lanes + Shoulder Bus Lane S/Bound, 4 Lanes + Peak Shoulder Lane N/Bound – Sheet 1” by Beca Infrastructure Ltd – undated
 - “Draft Only - Harbour Bridge to City 5 Lanes + Shoulder Bus Lane S/Bound, 4 Lanes + Peak Shoulder Lane N/Bound – Sheet 2” by Beca Infrastructure Ltd – undated

2.0 The Proposal

- 2.1 It is proposed that a tunnel is to be constructed to the west of the existing viaduct over Victoria Park. This tunnel will carry the northbound traffic for the motorway. The tunnel will be open cast and then capped. In conjunction with the tunnel it is proposed that a 5.0m high sound barrier is to be erected along the northbound motorway from approximately the Fanshawe Street on ramp to the Shelly Beach Road over bridge, the Shelly Beach Road over bridge is to be extended to the south, and lane widening from Shelly Beach Road to the Fanshawe Street off ramp is proposed.

2.0 The Implicated Vegetation.

- 2.1 The survey data is attached as appendix 1

2.2 Northbound tunnel

A construction zone beyond the extremities of the tunnel has been allowed for, and tree removal/pruning has allowed for a vertical clearance from the proposed tunnel to allow for construction machinery.

Summary

The total number of trees and groups of trees implicated is 86.

Of the 86

- 68 require removal of which:
 - 4 are scheduled trees,
 - 77 have general or coastal protection.
 - 9 have no protection.
 - Potentially up to 20 of these trees could be transplanted.
- 18 trees will be retained
 - 6 require pruning and have general or coastal protection
 - All 18 will require protective fencing.
 - 6 require excavation within the dripline and have general or coastal protection.

2.3 Sound Barrier

The proposed construction zone will be on the motorway shoulder.

Summary

The total number of trees or groups of trees implicated is 11.

Of the 11 trees

- All require pruning and have coastal protection. 2 also require pruning for the northbound tunnel.

2.4 Shelly Beach Road over bridge extension.

The proposed construction zone will be 2m either side of the road boundary and extended 20m to the south of the existing bridge. The first 10m on the west side of the road approaching the bridge will be excavated and sheet piled.

Summary

The total number of trees is 23, all of which have coastal protection.

Of the 23

- 11 require removal.
- 2 require pruning.
- 10 require protective fencing one of which requires excavation within the dripline.

2.5 St Mary's Bay Lane Widening.

A construction zone to the kerb line of Westhaven Drive has been proposed.

Summary

All plants situated on the boundary require removal. All of the native plants have coastal protection (Approximately 200) and 3 of the exotics. All of the trees require removal.

3.0 Mitigation for the Removal of the Scheduled Trees.

3.1 It is proposed that as mitigation for the removal of the four Scheduled London Plane trees, twelve London Planes, 6.0m high, will be planted at the completion of the works within Victoria Park.

3.2 The final planting positions for the trees will be agreed in consultation with Auckland City Council.

3.3 This mitigation will be in conjunction with the landscape mitigation plan by LA4.

4.0 Recommendations for the Protection of the Trees.

4.1 A suitably experienced, Council approved arborist ('nominated arborist') shall be employed by the consent holder, at the consent holder's expense, to monitor, supervise and direct all works within the drip line or in the vicinity of those protected trees to be retained, for the duration of the works.

4.2 Prior to any site works commencing, a pre-commencement site meeting shall be held so that the conditions of consent that pertain to the retained vegetation

can be explained by the nominated arborist to all contractors or sub-contractors who will be working on site within the drip-line of, or adjacent to, any protected vegetation that is covered by the consent.

- 4.3 A copy of the Conditions of Consent pertaining to the protected trees shall be held on site at all times.
- 4.4 The following measures shall be taken in respect of the remaining Protected Trees within the designation area:
- (a) Temporary protective fencing shall be erected around the Protected Trees to be retained prior to the commencement of construction activity and shall remain in place for the duration of the HBTC Project. The purpose of the temporary protective fencing is to provide an area around the retained trees that will facilitate their successful retention during the construction process. The parameters of the enclosure shall be as directed by the Requiring Authority's arborist.
- (b) Except as provided for in 4.5 and 4.6, the area within the temporary protective fencing shall be considered a total exclusion zone. Transit and its agents shall not:
- Enter into the delineated area without prior consultation and agreement from the Requiring Authority's arborist.
 - Alter the dimensions of the delineated area without prior consultation and agreement from the Requiring Authority's arborist.
 - Store diesel, cement, building materials, site huts, spoil, equipment, or machinery within the delineated area.
 - Spill substances likely to be injurious to tree health within seepage distance of the delineated area.
- (c) The temporary protective fencing shall be constructed from a solid face (i.e. plywood or corrugated iron) attached to a sturdy framework of freestanding scaffolding or posts. It must be constructed to a minimum height of 1.8m and must remain in place for the duration of the project.
- 4.5 The Requiring Authority's arborist shall undertake all necessary trimming and pruning works, including the pruning of tree roots uncovered during excavations. Exposed roots shall be covered and kept moist.
- 4.6 The Requiring Authority's arborist shall undertake a tree monitoring programme throughout the construction phase, including monitoring of:
- (a) The condition repair and location of the temporary protective fencing;
- (b) Any excavation within the drip line of protected trees;
- (c) General tree health.
- (d) Compliance with the conditions of consent by way of fortnightly inspections during the construction period. A copy of the monitoring results from each

visit shall be sent to the Auckland City Environments arborist, with one copy being retained on site by the Project Manager, while a further copy is to be retained by the nominated arborist.

- 4.7 During the construction process the consent holder's nominated arborist may make recommendations on the installation of irrigation systems, mulch, or remedial pruning works, if they are required to improve tree health

For THE SPECIMEN TREE COMPANY

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17 October 2005

Appendix 1

Survey Protocols.

- Tree number – Each tree has a small numbered tag attached to the tree or one of the trees if they are part of a group. The approximate position of the trees is indicated on the attached plans.
- Species – The common name of the species of tree or group of trees is given.
- Height – The approximate height is visually estimated in metres.
- Protection status – Protection status of the trees under the Auckland City Council tree protection rules.
- Retain/Removal – Whether the tree will require removal or if the tree can be retained within the construction zone.
- Transplant Suitability – A Yes/No indication is given as to the suitability of the trees for potential transplanting. Further investigation would be necessary to positively identify the feasibility or financial practicality of undertaking a transplant operation.
- Detail – General comment on the trees or groups of trees is provided. This includes an indication as to whether removal, pruning or protection during the construction period is required and if the tree is situated on private land. (As can be ascertained from the plans provided). A tree or a group of trees that have a notable physical presence on the landscape are described as being significant.

The attached plans show the approximate positions of the trees.

1.0 Survey Data of the Trees implicated by the Northbound Tunnel.

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2500	Predominantly weed species. One group of Pohutukawa trees adjacent Freemans Bay Primary School Boundary	Variable	Within Transit NZ designation area	Remove	No	Band of trees adjacent the northbound lanes require removal.
2501	Silver Birch	8	General Protection	Remove	No	Poor condition. Growing adjacent to flyover corner Franklin Rd & Victoria St. Situated within the construction zone. Protective fencing required.
2502	Silver Birch	8	General Protection	Remove	No	Poor condition. Growing adjacent to flyover corner Franklin Rd & Victoria St. Situated within the construction zone. Protective fencing required.
2503	London Plane	8	General Protection	Retain	No	Growing adjacent to flyover corner Franklin Rd & Victoria St. Removal of adjacent trees 2501, 2502 and 2504 will allow this tree to become a fine specimen. Situated within the construction zone. Protective fencing required.
2504	Cabbage Tree	7	General Protection	Remove	No	Growing adjacent to flyover corner Franklin Rd & Victoria St. Situated within the construction zone. Protective fencing required.

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2505	London Plane	15	Scheduled	Remove	No	Very significant tree. This tree will not tolerate the excavation required for the tunnel which will be approximately two metres from the base of the tree. The large London Plane to the west of this tree will require protective fencing.
2506	Karaka	7	General Protection	Remove	Yes	Growing in garden bed adjacent to flyover in Victoria Park.
2506a	Pittosporum Acmena Various other species	5 5 – 10 Under 5m	None	Remove	Yes/No – some of the recently planted trees could be transplanted	Growing in garden bed adjacent to flyover in Victoria Park. Will be within the construction zone. Some of the vegetation could be retained. Located in this area are several non-protected natives including Cabbage trees, Pittosporum, Coprosma and Kauri tree.
2507 2508	Brush Box x 2	10	General Protection	Remove	No	Growing at approx 20m from existing flyover.
2509 2510	Mexican Pine x 2	12	General Protection	Remove	No	Growing at approx 20m from existing flyover.
2511	Fire Wheel tree	13	General Protection	Retain	No	Growing at approx 35m from existing flyover. Within the construction zone Protective fencing required.
2512	London Plane	20	Scheduled	Removal	No	Very significant tree. Trunk approximately 2m from proposed excavation. The London Plane tree to the west of this tree will be on the edge of the construction zone and will require protective fencing.
2513	Elm	20	General Protection	Remove	No	Trunk approximately 5m from proposed excavation. This tree is unlikely to survive this amount of root disturbance. Very significant tree.
2514	London Plane	20	Scheduled	Remove	No	Very significant tree.
2515	London Plane	20	Scheduled	Remove	No	Healthy tree which is decayed at the base. Decay not a hazard as yet. Very significant tree.

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2516 - 2520	Totara x 5	10	General Protection	Retain	No	Growing as tight group within the construction zone. Protective fencing required.
2521	Cabbage tree	8	General Protection	Retain	No	Protective fencing required as it is within the construction zone.
2522, 2523, 2525 - 2528	Cabbage tree x 6	6-8	General Protection	Remove	Yes/no	Some may be possible to transplant.
2524	Puriri	6	General Protection	Remove	No	
2527a	Pittosporum x 10	6 – 10	General Protection	Remove	No	Semi-mature plantings adjacent to the Newton Sports Club. Insignificant trees.
2529 - 2535	Pohutukawa x 7	15	General Protection	Remove	No	Significant group of trees. Trees 2529 and 2530 could be retained as they are further from the tunnel, however they will be very sparse and unattractive on two sides so it is recommended that they are removed.
2536 - 2537	Brush Box x 2	10	General Protection	Remove	No	Street trees.
2538	Liquidambar	11	General Protection	Retain	No	Protective fencing required. Adjacent to Newton Sports Club.
2539	Pohutukawa	6	General Protection	Retain	No	Within construction zone. Protective fencing required. Adjacent to Newton Sports Club.
2540 - 2542	Cabbage tree x 3	5	None	Remove	Yes	Removal required. Adjacent to Newton Sports Club. Tree 2542 is in severe decline.
2543	Liquidambar	15	General Protection	Retain	No	Protective fencing required. Adjacent to Newton Sports Club in a group.

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2544 - 2546	Silky Oak x 3	15	General Protection	Retain	No	Minor crown lift required on 2 x Silky Oak. Excavation on the edge of their dripline. Protective fencing required. Adjacent to Newton Sports Club in a group.
2547	Brush Box	10	General Protection	Remove	No	Street tree o/s Beaumont Centre.
2547a	Purple Plum, Cabbage tree, Brush Box	6	General Protection	Remove	No	Growing in Beaumont Centre Carpark. Other trees in the carpark to remain that are within the construction zone will require protective fencing.
2547b	Group planting x 81 trees approximately	6 – 10	General Protection	Remove	No	Mixed species including Pohutukawa, Crab apple, Prunus, Cabbage tree, Manuka, Griselinia, and Wattle. Serves as a screen between Beaumont Centre and motorway.
2548 - 2553	Pohutukawa	6-8	General Protection	Remove	Yes	Located between Beaumont Centre and motorway. These trees are located in amongst the group planting (2547b).
2554 2555	Cabbage tree x 2	6	General Protection	Remove	Yes	Growing in Beaumont Centre adjacent to the western boundary.
2556	Pohutukawa	10	Coastal Protection	Remove	No	Entire canopy will be growing over the motorway.
2557	Pohutukawa. Possibly more than one tree.	10	Coastal Protection	Retain	No	Severe pruning required to facilitate clearance. Removal of several large limbs required to ensure no growth is hanging over the motorway. Excavation within the dripline required.
2558	English Oak	10	Coastal Protection	Remove	No	Tree could be pruned to retain it, however, as it growing at 90° to the bank future stability is an issue. For this reason it is recommended this tree is removed. Excavation within the dripline required.

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2558a	Pohutukawa	8	Coastal protection	Retain	No	Situated within the construction zone. Minor crown lift required to facilitate construction vehicles. Protective fence required.
2559	Pohutukawa	7	Coastal protection	Remove	Yes	Growing immediately adjacent to Ngapona Naval Reserve Headquarters boundary fence with motorway.
2560	Norfolk Island Hibiscus	10	Coastal protection	Remove	No	Growing immediately adjacent to Ngapona Naval Reserve Headquarters boundary fence with motorway. Insignificant tree.
2560a	Bottlebrush x 5	4	Coastal protection	Remove	No	Growing immediately adjacent to Ngapona Naval Reserve Headquarters boundary fence with motorway. Insignificant trees.
2561	Agonis	5	Coastal protection	Remove	No	Growing immediately adjacent to Ngapona Naval Reserve Headquarters boundary fence with motorway. Insignificant tree.
2562	Liquidambar	13	Coastal protection	Remove	No	Growing immediately adjacent to Ngapona Naval Reserve Headquarters boundary fence with motorway. Insignificant tree.
2563	Pohutukawa	8	Coastal Protection	Retain	No	Tree lying down. To retain the tree sever pruning back to growth approximately 5m from base of tree. Excavation within the dripline required.
2564	Pohutukawa	8	Coastal Protection	Retain	No	Removal of one limb approximately 300 mm in diameter.

2.0 Survey data of the trees implicated by the Sound Barrier Construction.

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2563	Pohutukawa	8	Coastal Protection	Retain	No	Pruning required for construction of motorway will also facilitate the erection of the sound barrier.
2564	Pohutukawa	8	Coastal Protection	Retain	No	Removal of one limb approximately 300 mm in diameter.
2565	Pohutukawa	15	Coastal Protection	Retain	No	Possibly 2 trees. Severely topped recently. Removal of 1 limb required approximately 350mm diameter. Probably a private tree.
2566	Pohutukawa	20	Coastal Protection	Retain	No	Significant tree. Removal of sucker growth from roots required approximately 150mm diameter. Will not significantly alter the form of the tree. Probably a private tree.
2567	Pohutukawa	15	Coastal Protection	Retain	No	Crown lifting of several branches less than 100-150mm diameter required. Probably a private tree.
2568	Pohutukawa	20	Coastal Protection	Retain	No	Foliage on edge of Barrier. The removal of minor secondary braches approximately 50-60mm in diameter. Probably a private tree.
2569	Pohutukawa	20	Coastal Protection	Retain	No	Significant tree. Removal of one branch 250mm diameter required. Probably a private tree.
2570	Pohutukawa	20	Coastal Protection	Retain	No	Significant tree. Removal of several minor branches required. Probably a private tree.
2571	Pohutukawa	20	Coastal Protection	Retain	No	Significant tree. Removal of secondary branches approximately 100-150mm diameter required. Probably a private tree.
2573	Pohutukawa	16	Coastal Protection	Retain	No	Minor crown lift required of several branches less than 100mm diameter.
2574	Group of trees. Robinia Pohutukawa x 12	8	Coastal Protection	Retain	No	This is a group of juvenile trees located in close proximity to each other. This group will require the removal of secondary braches 50-100 in diameter. The eastern most Pohutukawa has been tagged.

3.0 Survey Data of the Trees Implicated by the Shelly Beach Road Over Bridge Extension

Tree No.	Species	Approx height (m)	Protection status	Retain/Remove	Transplant Suitability	Detail
2575 2576	Pohutukawa x 2	12	Coastal Protection	Remove	No	Insignificant trees. Situated on the embankment under the eastern edge of the bridge.
2577 - 2580	Pohutukawa x 4	12	Coastal Protection	Remove	No	Insignificant trees. Situated on the embankment under the western edge of the bridge. The western tree has been severely damaged by a limb failure from an adjacent tree.
2581 2582	Pohutukawa x 2	15	Coastal Protection	Retain	No	3m crown lift required to allow for vehicle access. Removal of approximately 7 branches 50 – 120mm diameter.
2583	Pohutukawa	5	Coastal Protection	Remove	No	Insignificant tree within the construction zone.
2584	Karo	4.5	Coastal Protection	Remove	No	Insignificant tree within the construction zone.
2584a	Pohutukawa	4.5	Coastal Protection	Remove	No	Insignificant tree within the construction zone
2585 2586	Pohutukawa x 2	7	Coastal Protection	Remove	No	Situated along side Shelly Beach Road on the bank between the curb and Point Erin Park fence.
2587	Pohutukawa	9	Coastal protection	Retain	No	Protective fencing required.
2588 - 2591	Radiata Pines x 4	18	Coastal protection	Retain	No	Protective fencing required.
2592 - 2595	Macrocarpa x 4	18	Coastal protection	Retain	No	Protective fencing required.
2596	Pohutukawa	20	Coastal Protection	Retain	No	First of a line of significant trees along the cliff line of Point Erin Park. Excavation required on the edge of the dripline. Monitoring of excavation required. Protective fencing required.

4.0 Survey of the trees implicated by the St Mary's Bay Lane Widening

The strip of planting situated between the boundary of the southbound motorway and Westhaven Drive is planted with various trees and shrubs primarily as a screen. The majority are growing in a restricted planter and are under 4m high. All of the natives are protected as are all exotic trees over 6m. All of the trees in this area will require removal.