

PEERS BROWN MILLER LTD

Arboricultural & Environmental Consultants

BASELINE VEGETATION SURVEY – 48 ESMOND ROAD, TAKAPUNA

PREPARED FOR: Abu Hoque C/- Kingstone Property Ltd.

BY: Martin Göhns

DATE: 23 April 2019

1.0 Introduction

Peers Brown Miller Ltd has been commissioned by *Abu Hoque of Kingstone Properties Ltd* to undertake an initial survey of the trees and vegetation growing within 48 Esmond Road, Takapuna.

The site was surveyed between the 3rd and 4th April 2019. The following report is based upon the findings of the site visit and the conditions found. The extent of the survey area is defined in Figure 1 of this assessment.

The survey results provide information on tree parameters, species diversity within the area of survey, including a brief description of age health, condition and recommendations. Refer to the Tree Data Table in Appendix 1 for specific details pertaining to each surveyed tree.

2.0 Tree Inspector

The vegetation was inspected by a qualified arborist suitably experienced in tree risk assessment and holds a current Tree Risk Assessment qualification from the International Society of Arboriculture.

3.0 Survey Methodology

The extent of the area of survey, as detailed in the Auckland Unitary Plan Geomaps in Figure 1, covers the site as detailed. In addition, the Road reserve trees bordering the site have been recorded.

An assumption as to the extent of the vegetation within 20m of MHWS has been based on the information provided to date and the Indicative Coastline detailed in Figure 1 over the page.

The subject vegetation has been assessed, taking into account features such as general health, vigour, overall condition and mechanical defects which may affect structural stability.

The vegetation has been inspected from ground level only by a qualified arborist experienced in Visual Tree Assessment (VTA) and qualified in Tree Risk Assessment.

A large portion of the foreshore banks were inaccessible due to the steep gradient. Where access to the base of the trees was inhibited in this area, assessments have been made from the carpark edge.

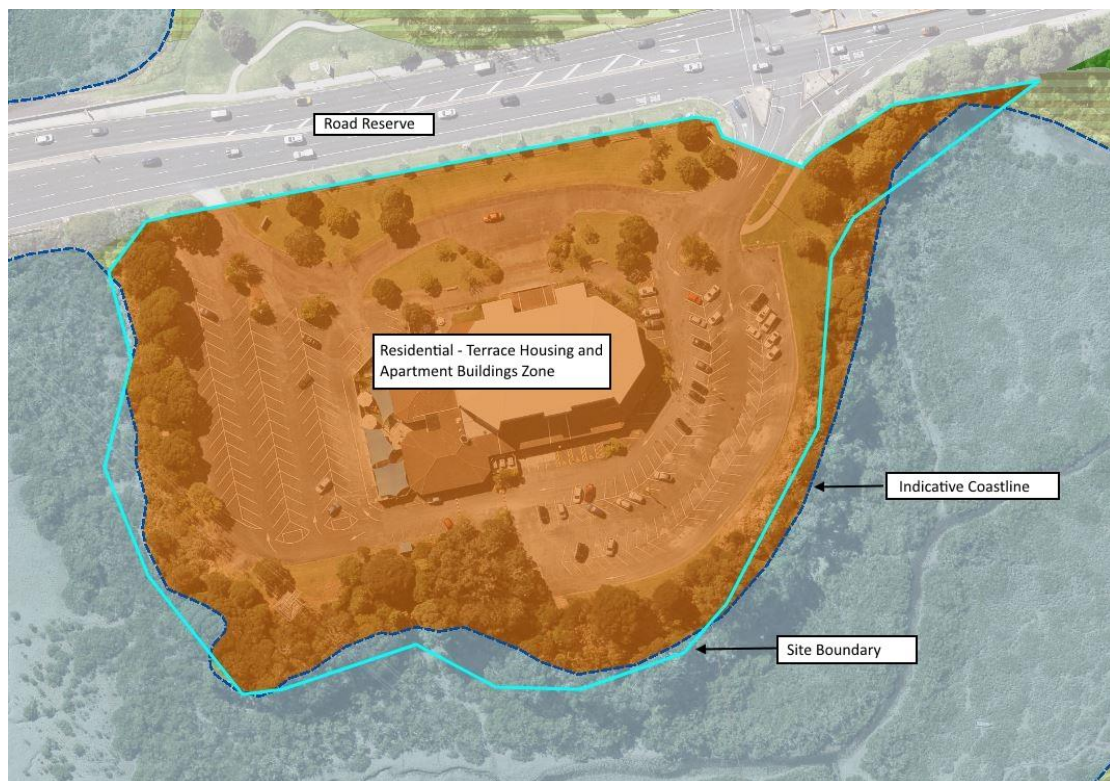


Fig 1: Extract from Auckland council's Geomaps detailing the site boundary, indicative coastline and Auckland Unitary Plan zones

4.0 Relevant Statutory Framework - Tree Protection

The relevant rules of the Auckland Unitary Plan (Operative in Part) pertaining to the subject trees is detailed below:

E15. Vegetation Management and Biodiversity

Table E15.4.1 Activity table

Activity	Description	Activity status
(A21)	Vegetation alteration or removal of greater than 25m ² of contiguous vegetation or tree alteration or tree removal of any indigenous tree over 3m in height within 20m of mean high water springs in all zones other than in a Rural – Rural Production Zone, Rural – Mixed Rural Zone, Rural – Rural Coastal Zone, Rural – Rural Conservation Zone and Rural – Countryside Living Zone or Future Urban Zone	RD
(A22)	Vegetation alteration or removal of greater than 25m ² of contiguous vegetation, or tree alteration or tree removal of any indigenous tree over 3m in height, that is within: <ul style="list-style-type: none"> (a) a horizontal distance of 20m from the top of any cliff with; (b) a slope angle steeper than 1 in 3 (18 degrees); and (c) within 150m of mean highwater springs 	RD

It is considered Rule E15.4.1 (A21 & A22) would apply to tree removal within 20m of MHWS.

E17. Trees in roads

Table E17.4.1 Activity table

Activity	Description	Activity status
(A5)	Tree trimming or alteration	P
(A6)	Tree trimming or alteration that does not comply with Standard D17.6.1	RD
(A7)	Works within the protected root zone	P
(A10)	Tree removal of any tree greater than 4m in height or greater than 400mm in girth	RD

Nine of the twelve trees recorded within the road reserve are greater than 4.0m in height and 400mm girth and are therefore protected under Rule E17.4.1 (A10).

5.0 Description of Vegetation

A total of one hundred and three (103) entries have been recorded within the area of survey. Where groups of trees or vegetation has been recorded a

single number has been used to identify the group and described in a single individual entry in the Tree Data Table. Details of the recorded vegetation are listed in the Tree Data Table in Appendix 1. Tree locations are shown on the tree location plans in Appendix 2. Protected trees have been highlighted in red in the Tree Data Table.

There are two distinct areas of vegetation within the site, these being (1) specimen and planted border planting around the church and within the grassed areas to the north and (2) heavily treed foreshore banks to the east, west and south of the church carpark.

Beyond the north boundary with Esmond Road young street trees are planted within the road reserve.

Trees within Road Reserve

Twelve (12) young Pohutukawa trees were recorded growing within the road reserve to the north of the site. These are single stemmed trees evenly spaced and of good form consistent with other Pohutukawa street tree planting in the immediate vicinity of the site.

Surface root activity was noted in the tree pits; however, this is not uncommon for the species.

Main portion of the site

The majority of the vegetation within the main portion of the site is located to the north of the church, between the front entrance and the Esmond Road boundary. The trees recorded comprise predominantly semi-mature exotic and native tree species within the grassed areas, with exotic tree species within the carpark islands, along with planted borders surrounding the church building to the east and south.

One tree was noted as worthy of retention (Tree 23 – Pohutukawa) which is located adjacent to the Esmond Road boundary in the north-west corner of the site.

With exception to the aforementioned (Tree 23 – Pohutukawa) located on the road boundary, none of the trees recorded in this area were considered to be outstanding specimens worthy of retention. Removal of these trees is likely to be required to facilitate those excavations likely required to maximise the future development potential of the site.

Trees within 20m of MHWS

The majority of the trees recoded in this area were semi-mature and mature native tree species comprising Karaka, Karo, Pohutukawa and Puriri growing within the foreshore bank and adjacent to the shore line.

Three semi-mature exotic specimen trees were also identified adjacent to the existing entrance, which are considered worthy of retention. These trees are identified as (Tree 49 – Atlas cedar) and (Trees 50 & 51 Pin oak).

In addition to the aforementioned trees, several exotic and weed tree species were identified. These specimens are also recorded in the Tree data table.

Limited access was available to the foreshore banks. From the available viewpoints the shrubby understorey comprised exotic weed species of Indian Hawthorn, Pampas grass and Tree privet.

5.1 Tree Data Table

The following categories have been used within the vegetation data in Appendix 1 and 2 and, where appropriate, the criterion used to define each category is defined.

Tree Data Table – Tree and Vegetation data capture categories

Tree No	Refers to the individual number assigned to a tree or group of trees/vegetation.
Species	Refers to the common and scientific name given to the tree
Height	Refers to the total height of the tree estimated in metres
Spread	Refers to the canopy radius of the crown spread estimated in metres.
Girth	Refers to the stem diameter or aggregate stem diameter of multi-stemmed trees, measured at 1.4m height.
Age	An estimation of the age of the tree, described as: J – Juvenile tree, recent planting. Y – Young established tree SM – Semi mature; up to one-third of total life expired M – Mature; fully grown, with only small annual increments. OM – Over Mature; trees reaching the end of their life, in decline and senescent.
Protected	Provided confirmation on whether the individual tree or tree group is protected under the relevant Unitary Plan rules.
Location	Refers to zoning of each tree and whether the tree is either in the Road Reserve, Residential – Terrace Housing and Apartment Buildings Zone or 20m of MHWs.

Form	Refers to the habit of the tree.
Health	Refers to the overall physiological condition of the tree, described as: Good – Fully foliated healthy canopy but possibly including some suppressed or damaged branches Moderate – Slightly reduced leaf cover, minor dead wood or isolated major dead wood Poor – Overall sparse leafing or extensive dead wood Dead – Trees in a severe state of decline or dead
Condition/ comments	Refers to the condition, structure and form of the tree in relation to the surrounds of the tree
Recommendations	Recommendations for tree retention/removal based on potential future use of the site, location, health, condition and status of the tree.

6.0 Assumptions and Limitations

This arboricultural assessment was carried out from ground level only. No invasive or destructive evaluation techniques were used.

Information contained within this report covers only those outlined in the brief and reflects the condition of the trees/vegetation noted at the time of the on-site assessments.

This report is intended solely for the benefit of the parties to whom it is addressed, and no responsibility is extended to any third party for the whole or any part of its contents.



Martin Göhns
Peers Brown Miller Ltd

Appendix 1 – Tree grid data

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
1	Pohutukawa <i>Metrosideros excelsa</i>	4	2.8	500	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
2	Pohutukawa <i>Metrosideros excelsa</i>	4	2.2	400	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
3	Pohutukawa <i>Metrosideros excelsa</i>	3.8	2.2	420	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted. Basal stem wound.	Street tree. Suitable for retention.
4	Pohutukawa <i>Metrosideros excelsa</i>	3.5	2.2	350	Y	No	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
5	Pohutukawa <i>Metrosideros excelsa</i>	3.5	2.2	350	Y	No	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
6	Pohutukawa <i>Metrosideros excelsa</i>	3.1	2.6	350	Y	No	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
7	Pohutukawa <i>Metrosideros excelsoa</i>	3.2	2.7	400	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
8	Pohutukawa <i>Metrosideros excelsa</i>	4	3.1	500	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
9	Pohutukawa <i>Metrosideros excelsa</i>	3.5	3	300	Y	No	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
10	Pohutukawa <i>Metrosideros excelsa</i>	4.5	3.8	500	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
11	Pohutukawa <i>Metrosideros excelsa</i>	4.2	3.4	500	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
12	Pohutukawa <i>Metrosideros excelsa</i>	4.2	3.6	400	Y	Yes	Road Reserve	Single stem	Good	Specimen planting. Surface roots noted.	Street tree. Suitable for retention.
13	Pohutukawa <i>Metrosideros excelsa</i>	4.6	7	2000	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Specimen planting. Minor deadwood.	Likely conflict with any future development - Remove.
14	Pohutukawa <i>Metrosideros excelsa</i>	4.5	7	1500	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Specimen planting. Minor deadwood. Surface root mower damage.	Likely conflict with any future development - Remove.
15	Red oak <i>Quercus rubra</i>	4	6.5	600	SM	No	Terrace & Apartment Zone	Single stem	Good	Irregular branch habit. Minor decay pocket.	Likely conflict with any future development - Remove.
16	Red oak <i>Quercus rubra</i>	3.5	5	500	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Co-dominant stems with weak union at base. Poor form,	Likely conflict with any future development - Remove.
17	Pohutukawa <i>Metrosideros excelsa</i>	3	6	2500	SM	No	Terrace & Apartment Zone	Multi-stem	Poor	Previous stem failures. Stunted growth.	Likely conflict with any future development - Remove.
18	Pohutukawa <i>Metrosideros excelsa</i>	7	6.2	1500	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Co-dominant stems. Basal decay pocket. Surface root damage.	Likely conflict with any future development - Remove.
19	Queensland brush box <i>Lophostemon confertus</i>	6.5	7	2000	SM	No	Terrace & Apartment Zone	Single stem	Poor	Partially suppressed canopy. Major deadwood present.	Likely conflict with any future development - Remove.
20	Camphor laurel <i>Cinnamomum camphora</i>	5.8	7	2500	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Typical of species. Exposed roots from historic planting pit washout.	Likely conflict with any future development - Remove.
21	Pohutukawa <i>Metrosideros excelsa</i>	6	7.5	2000	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Partially suppressed canopy. Minor surface root damage.	Likely conflict with any future development - Remove.
22	Pohutukawa <i>Metrosideros excelsa</i>	5	7.5	2000	SM	No	Terrace & Apartment Zone	Multi-stem	Poor	Stunted sparse foliage. Declining canopy.	Likely conflict with any future development - Remove.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
23	Pohutukawa <i>Metrosideros excelsa</i>	8	10	8000	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Typical of species. Minor deadwood present. Prominent tree on road boundary. Worthy of retention.	Good specimen worthy of retention within any future development.
24	Monterey cypress <i>Cupressus macrocarpa</i>	5	4	1800	SM	No	Terrace & Apartment Zone	Single stem	Poor	Moribund. Edge of planted island.	Likely conflict with any future development - Remove.
25	Pohutukawa <i>Metrosideros excelsa</i>	4.2	3	500	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Partially suppressed canopy. Within planted island.	Likely conflict with any future development - Remove.
26	Pohutukawa <i>Metrosideros excelsa</i>	3.2	4	500	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Within planted island.	Likely conflict with any future development - Remove.
27	Southern magnolia <i>Magnolia grandiflora</i>	4	4	900	SM	No	Terrace & Apartment Zone	Single stem	Moderate	Within planted island. Restricted root zone.	Likely conflict with any future development - Remove.
28	Red oak <i>Quercus rubra</i>	4	3	500	SM	No	Terrace & Apartment Zone	Single stem	Poor	Small asymmetrical canopy. Within traffic island.	Likely conflict with any future development - Remove.
29	Titoki <i>Alectryon excelsus</i>	3	1.5	200	Y	No	Terrace & Apartment Zone	Single stem	Poor	Within childcare centre. Basal wounds. Stunted growth.	Likely conflict with any future development - Remove.
30	Pohutukawa <i>Metrosideros excelsa</i>	4.7	6	1400	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Typical of species. Surface roots damaging concrete path.	Likely conflict with any future development - Remove.
31	Southern magnolia <i>Magnolia grandiflora</i>	4	4.5	500	SM	No	Terrace & Apartment Zone	Single stem	Moderate	Sparse canopy. Historic branch failure.	Likely conflict with any future development - Remove.
32	Southern magnolia <i>Magnolia grandiflora</i>	3	3	400	SM	No	Terrace & Apartment Zone	Single stem	Poor	Sparse canopy. Historic branch failure.	Likely conflict with any future development - Remove.
33	Ash <i>Fraxinus Sp.</i>	4.5	3.5	400	SM	No	Terrace & Apartment Zone	Single stem	Moderate	Co-dominant stems. Basal wounds and epicormic growth.	Likely conflict with any future development - Remove.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
34	Pohutukawa <i>Metrosideros excelsa</i>	6	7.5	6000	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Typical of species. Within courtyard area.	Likely conflict with any future development - Remove.
35	Mixed shrub planting Rhododendron Sp. Conifers	3	3	400	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Planted shrub border.	Likely conflict with any future development - Remove.
36	Mixed shrub planting Rhododendron Sp. Conifers	3	3	400	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Planted shrub border.	Likely conflict with any future development - Remove.
37	Ash <i>Fraxinus Sp.</i>	4	3.5	400	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Surface root damage.	Likely conflict with any future development - Remove.
38	Southern magnolia <i>Magnolia grandiflora</i>	3	3	450	SM	No	Terrace & Apartment Zone	Single stem	Moderate	Sparse stunted canopy.	Likely conflict with any future development - Remove.
39	Pohutukawa <i>Metrosideros excelsa</i>	5	7	4000	SM	No	Terrace & Apartment Zone	Multi-stem	Good	Typical of species.	Likely conflict with any future development - Remove.
40	Pohutukawa <i>Metrosideros excelsa</i>	5	6	4000	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Typical of species. Surface root mower damage.	Likely conflict with any future development - Remove.
41	Mixed exotic species. Cherry x 2, Australian frangipani x 2, shrubs	3	2	400	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Within planted border.	Likely conflict with any future development - Remove.
42	Australian frangipani <i>Hymenosporum flavum</i>	5	3	400	SM	No	Terrace & Apartment Zone	Single stem	Poor	Declining canopy.	Likely conflict with any future development - Remove.
43	Cherry <i>Prunus Sp.</i>	1.5	1	400	SM	No	Terrace & Apartment Zone	Single stem	Poor	Moribund.	Likely conflict with any future development - Remove.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
44	Mixed exotic species. Cherry x 3, Thugs x 2, shrub cover	3	2	400	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Within planted border.	Likely conflict with any future development - Remove.
45	Mixed ornamental conifers x 7	3	2	400	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Closely planted group.	Likely conflict with any future development - Remove.
46	Mixed exotic species. Pittosporum x 1, Rhododendron x 1, Lawson cypress x 1	3	2	400	SM	No	Terrace & Apartment Zone	Multi-stem	Moderate	Closely planted group.	Likely conflict with any future development - Remove.
47	Ash <i>Fraxinus Sp.</i>	7	6	650	SM	No	Terrace & Apartment Zone	Single stem	Moderate	Within planted island. Deadwood present.	Likely conflict with any future development - Remove.
48	Red oak <i>Quercus rubra</i>	3.5	2.8	300	SM	No	Terrace & Apartment Zone	Single stem	Poor	Stem defects. Tree tie strangulation.	Likely conflict with any future development - Remove.
49	Atlas cedar <i>Cedrus atlantica</i>	8	7	1300	SM	No	MHWS 20m	Single stem	Good	Typical of species. Good specimen within grassed area. Worthy of retention.	Good specimen worthy of retention within any future development.
50	Pin oak <i>Quercus palustris</i>	9	8	1300	SM	No	MHWS 20m	Single stem	Good	Typical of species. Good specimen within grassed area. Worthy of retention.	Good specimen worthy of retention within any future development.
51	Pin oak <i>Quercus palustris</i>	9	8	1400	SM	No	MHWS 20m	Single stem	Good	Typical of species. Good specimen within grassed area. Worthy of retention.	Good specimen worthy of retention within any future development.
52	Ngaio x 14 <i>Myoporum laetum</i>	8	5	600	SM	Yes	MHWS 20m	Multi-stem, Single stem	Good	Located on foreshore bank.	Within 20m MHWS – Retain.
53	Pohutukawa <i>Metrosideros excelsa</i>	12	15	2500	M	Yes	MHWS 20m	Multi-stem	Good	Full canopy. Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
54	Karo <i>Pittosporum crassifolium</i>	4	3	600	SM	Yes	MHWS 20m	Multi-stem	Good	Edge of grassed area at top of foreshore bank.	Within 20m MHWS - Potential development conflict - Remove/retain.
55	Pohutukawa <i>Metrosideros excelsa</i>	12	15	2500	M	Yes	MHWS 20m	Multi-stem	Moderate	Apical dieback and deadwood noted. Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
56	Pohutukawa <i>Metrosideros excelsa</i>	10	12	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
57	Pohutukawa <i>Metrosideros excelsa</i>	10	12	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
58	Pohutukawa <i>Metrosideros excelsa</i>	10	12	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Thinning of upper canopy noted.	Within 20m MHWS – Retain.
59	Pohutukawa <i>Metrosideros excelsa</i>	10	12	2000	M	Yes	MHWS 20m	Multi-stem	Good	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
60	Pohutukawa <i>Metrosideros excelsa</i>	10	12	2000	M	Yes	MHWS 20m	Multi-stem	Good	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
61	Pohutukawa <i>Metrosideros excelsa</i>	16	20	3000	M	Yes	MHWS 20m	Multi-stem	Good	Located in foreshore bank. Prominent specimen.	Within 20m MHWS - Retain
62	Sydney golden wattle x 4 <i>Acacia longifolia</i>	6	5	400	SM	No	MHWS 20m	Multi-stem	Good	Pest plant. Located at top of foreshore bank.	Within 20m MHWS - Weed species - Remove.
63	Sydney golden wattle X 20 <i>Acaia longifolia</i>	6	5	300	SM	No	MHWS 20m	Single stem	Good	Typical of species. Located at top of foreshore bank.	Within 20m MHWS - Weed species - Remove.
64	Pohutukawa <i>Metrosideros excelsa</i>	12	16	2500	M	Yes	MHWS 20m	Multi-stem	Good	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
65	Pohutukawa <i>Metrosideros excelsa</i>	12	16	2500	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Apical dieback noted.	Within 20m MHWS – Retain.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
66	Sydney golden wattle <i>Acacia longifolia</i>	5		800	SM	Yes	MHWS 20m	Single stem	Good	Pest plant. Located at top of foreshore bank.	Within 20m MHWS - Weed species - Remove.
67	Pohutukawa <i>Metrosideros excelsa</i>	12	16	2500	M	Yes	MHWS 20m	Multi-stem	Good	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
68	Pohutukawa <i>Metrosideros excelsa</i>	12	17	2500	M	Yes	MHWS 20m	Multi-stem	Good	Located in foreshore bank. Partially suppressed by adjacent tree.	Within 20m MHWS – Retain.
69	Pohutukawa <i>Metrosideros excelsa</i>	15	22	4500	M	Yes	MHWS 20m	Multi-stem	Good	Located on car park edge at top of foreshore bank. Thinning upper. Prominent tree which could be improved with pruning. Canopy opening up with stems on onset of laying down. Potential for retention with management.	Within 20m MHWS - Arminian tree - Pruning likely required if retained.
70	Karaka approx 30 <i>Coryocarpus leavigatus</i>	6	5	600	SM	Yes	MHWS 20m	Multi-stem, Single stem	Good	Typical of species. Located in foreshore bank.	Within 20m MHWS - Group on bank – Retain.
71	Pohutukawa <i>Metrosideros excelsa</i>	12	7	2000	M	Yes	MHWS 20m	Multi-stem	Good	Located at bottom of bank on foreshore edge.	Within 20m MHWS – Retain.
72	Pohutukawa <i>Metrosideros excelsa</i>	11	14	200	M	Yes	MHWS 20m	Multi-stem	Good	Located at top of bank on foreshore edge. Full canopy.	Within 20m MHWS – Retain.
73	Pohutukawa <i>Metrosideros excelsa</i>	15	17	2500	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Apical dieback and thinning canopy.	Within 20m MHWS – Retain.
74	Pohutukawa <i>Metrosideros excelsa</i>	15	17	2500	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Deadwood present.	Within 20m MHWS – Retain.
75	Pohutukawa hybrid	7	7	1800	SM	Yes	MHWS 20m	Multi-stem	Good	Located at top of bank adjacent to car park.	Within 20m MHWS – Retain.
76	Pohutukawa hybrid x 2	7	7	1800	SM	Yes	MHWS 20m	Multi-stem	Good	Located at top of bank adjacent to car park.	Within 20m MHWS – Retain.

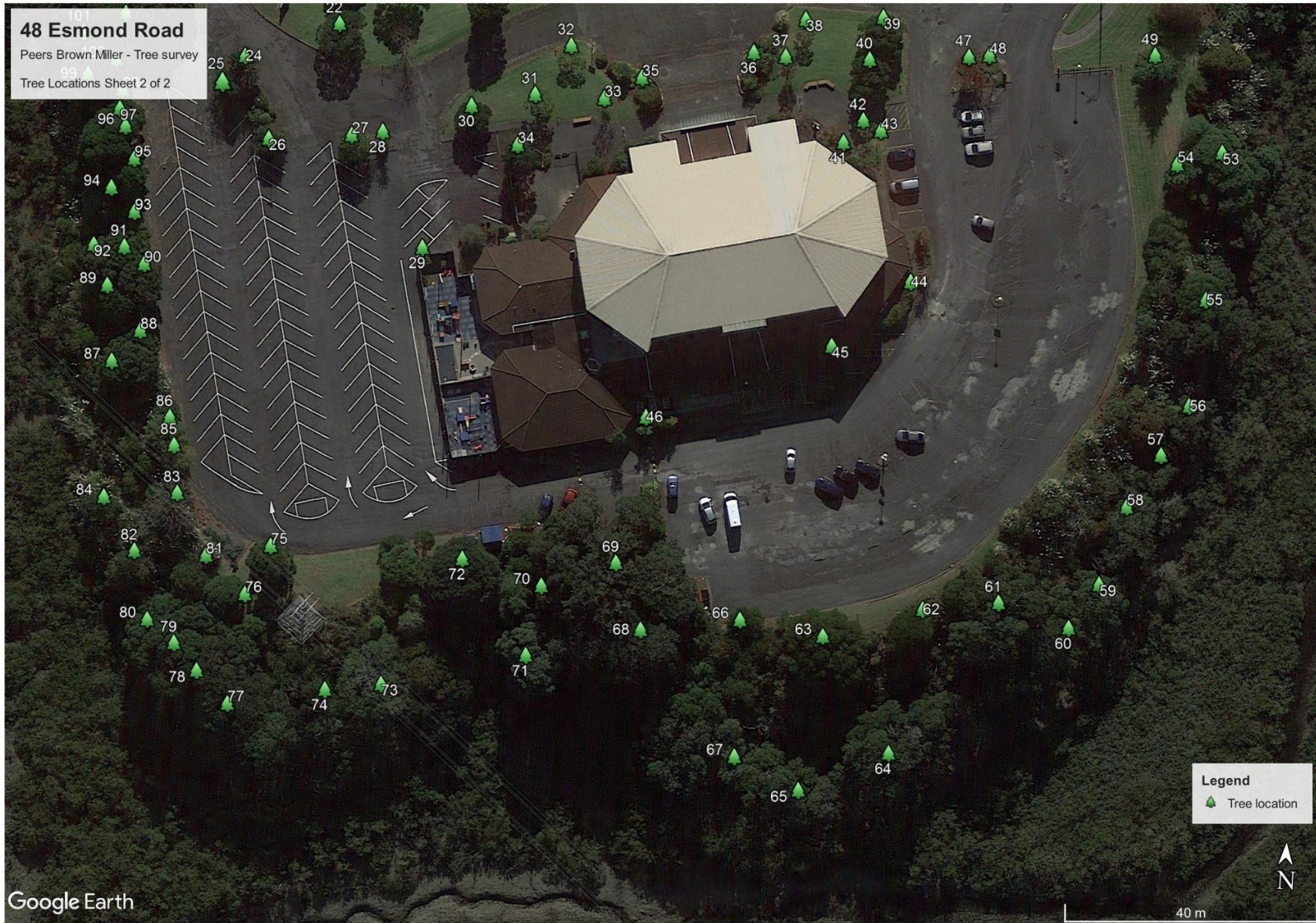
Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
77	Pohutukawa <i>Metrosideros excelsa</i>	9.5	8	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Forms part of a group of 4. Deadwood present.	Within 20m MHWS – Retain.
78	Pohutukawa <i>Metrosideros excelsa</i>	9.5	8	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Forms part of a group of 4. Deadwood present.	Within 20m MHWS – Retain.
79	Pohutukawa <i>Metrosideros excelsa</i>	9.5	8	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Forms part of a group of 4. Deadwood present.	Within 20m MHWS – Retain.
80	Pohutukawa <i>Metrosideros excelsa</i>	9.5	8	2000	M	Yes	MHWS 20m	Multi-stem	Moderate	Located at bottom of bank on foreshore edge. Forms part of a group of 4. Deadwood present.	Within 20m MHWS – Retain.
81	Pohutukawa <i>Metrosideros excelsa</i>	4	4	600	SM	Yes	MHWS 20m	Multi-stem	Good	Located at top of bank adjacent to car park.	Within 20m MHWS – Retain.
82	Pohutukawa <i>Metrosideros excelsa</i>	4	4	600	SM	Yes	MHWS 20m	Multi-stem	Good	Located in foreshore bank.	Within 20m MHWS – Retain.
83	Willow (dead)	6	6	1200	M	No	MHWS 20m	Single stem	Dead	Located at top of bank adjacent to car park.	Within 20m MHWS - Remove
84	Pohutukawa <i>Metrosideros excelsa</i>	6	6	1000	SM	Yes	MHWS 20m	Multi-stem	Good	Located at the bottom of the bank on the foreshore edge.	Within 20m MHWS – Retain.
85	Contorted Willow <i>Salix matsudana Tortuosa</i>	6	6	1000	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of bank adjacent to car park.	Within 20m MHWS – Remove.
86	Pohutukawa <i>Metrosideros excelsa</i>	6	6	1500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of bank adjacent to car park.	Within 20m MHWS – Retain.
87	Pohutukawa <i>Metrosideros excelsa</i>	8	8	2500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located in bank on foreshore edge. Partially suppressed canopy.	Within 20m MHWS – Retain.
88	Pohutukawa <i>Metrosideros excelsa</i>	6	5	1500	SM	Yes	MHWS 20m	Multi-stem	Poor	Located in bank on foreshore edge. Partially suppressed canopy.	Within 20m MHWS – Retain.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
89	Pohutukawa <i>Metrosideros excelsa</i>	7.5	6	1200	SM	Yes	MHWS 20m	Single stem	Moderate	Located in bank on foreshore edge. Partially suppressed canopy.	Within 20m MHWS – Retain.
90	Pohutukawa <i>Metrosideros excelsa</i>	7	6	1500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of bank on foreshore edge. Adjacent to car park. Partially suppressed canopy. Surface root damage.	Within 20m MHWS – Retain.
91	Pohutukawa <i>Metrosideros excelsa</i>	7	7	1500	SM	Yes	MHWS 20m	Multi-stem	Poor	Located in bank on foreshore edge. Partially suppressed canopy.	Within 20m MHWS – Retain.
92	Pohutukawa <i>Metrosideros excelsa</i>	7	5	1500	SM	Yes	MHWS 20m	Multi-stem	Poor	Located in bank on foreshore edge. Partially suppressed canopy.	Within 20m MHWS - Retain
93	Pohutukawa <i>Metrosideros excelsa</i>	4	4	800	SM	Yes	MHWS 20m	Multi-stem	Poor	Located at top of bank on foreshore edge. Adjacent to car park. Partially suppressed canopy. Thinning canopy.	Within 20m MHWS – Retain.
94	Pohutukawa <i>Metrosideros excelsa</i>	6	5	900	SM	Yes	MHWS 20m	Single stem	Moderate	Located in bank on foreshore edge. Partially suppressed canopy.	Within 20m MHWS – Retain.
95	Pohutukawa <i>Metrosideros excelsa</i>	9.5	7	1500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.
96	Pohutukawa <i>Metrosideros excelsa</i>	11	8	2500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.
97	Pohutukawa <i>Metrosideros excelsa</i>	10	8	2500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.
98	Puriri <i>Vitex lucens</i>	4	3	800	SM	Yes	MHWS 20m	Multi-stem	Poor	Located at top of foreshore bank adjacent to carpark. Suppressed thinning canopy.	Within 20m MHWS – Retain.
99	Pohutukawa <i>Metrosideros excelsa</i>	9	8	2500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located in foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.

Tree No	Species	Height (m)	Spread (m)	Girth (mm)	Age	Protected	Location	Form	Health	Condition/Comments	Recommendations
100	Pohutukawa <i>Metrosideros excelsa</i>	12	9	2500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located at top of foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.
101	Pohutukawa <i>Metrosideros excelsa</i>	7	7	2500	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located in foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.
102	Puriri <i>Vitex lucens</i>	7	8	1600	SM	Yes	MHWS 20m	Multi-stem	Moderate	Located in foreshore bank adjacent to carpark. Partially suppressed canopy.	Within 20m MHWS – Retain.
103	Indian Hawthorn, Pampas grass, Tree privet. Shrub understorey within 20m of MHWS	4	4	600	SM, M	Yes	MHWS 20m	Single stem, Multi-stem	Moderate	Understorey within 20m of MHWS predominantly weed species of moderate to poor quality	Within 20m MHWS. Weedy understorey – Remove.

Appendix 2 – Tree locations





PEERS BROWN MILLER LTD

Arboricultural & Environmental Consultants

ARBORICULTURAL ASSESSMENT OF PROPOSED DEVELOPMENT AT 48 ESMONDE ROAD IN TAKAPUNA

PREPARED FOR: Abu Hoque, C/- Kingstone Property Ltd
BY: Chris Scott-Dye
DATE: 18 December, 2020

1.0 The Proposal

Peers Brown Miller Ltd (PBM) has been commissioned by *Abu Hoque* of *Kingstone Properties Ltd* to prepare an arboricultural assessment of the proposed integrated residential development at 48 Esmonde Road in Takapuna.

This site contains an existing church, childcare centre and carpark. The redevelopment of the land would require removal of the existing buildings prior to regrading of the land, installation of new services, and construction of the proposed buildings and associated vehicle facilities.

A strip of coastal vegetation surrounds the east, south and western aspects of the site, where it borders the Waitemata Harbour. A number of these trees are protected under E15 of the Auckland Unitary Plan (AUP), due to their proximity to the mean high water springs and a coastal cliff. A level of root zone alteration is proposed in this area as part of the enabling works for the site, as well as removal of one small tree.

There is a row of young Pohutukawa trees growing on the road reserve adjacent to the site (northern aspect). These trees are Auckland Council assets and are protected under E17 of the AUP. A major change to the site's interface with the road is proposed - which involves alterations to the root zones of these trees and the removal of one.

This report is to serve as an assessment of the proposed works against the relevant AUP rules in relation to the protected trees growing around the site. This report will also accompany an application for Tree Owner Approval (TOA)

from the Auckland Council Urban Forest Specialist for this ward. Further assessment of the proposal is detailed in Section 4.0 of this report.

2.0 Plan References

A set of plans has been made available for the arboricultural assessment of the proposal. The proposed site plan, drainage plan and aerial photograph of the site are included as Appendices 2, 3 & 4 of this report. These plans are referenced as;

- Jasmx Landscape Site Plan & Demolition Plan, Integrated Residential Development. 48 Esmonde Rd, Takapuna, dated 16/12/2020
- Maven Engineering Plan sets, including the Proposed Roding Plan, Stormwater (Revision B), Wastewater (Revision B) and Earthworks plans (Revision C) – 48 Esmonde Road Takapuna, dated November, 2020

Tree location numbers have been added to the appended plans by PBM in order to assist with identifying the location of the subject trees/tree groups. These tree numbers have been adopted from an initial vegetation survey that was carried out for the site.

A Tree Schedule is included as Appendix 1. The numbers in this schedule correspond to the numbers on the above-referenced plans.

3.0 Relevant Statutory Framework

With reference to the Auckland Unitary Plan (AUP), the alteration or removal of trees in roads is subject to a set of rules listed in Activity Table E17.4.1. Alteration or removal of coastal vegetation is detailed in the E15.4.1 Activity Table.

The following rules are relevant to this proposal;

- **E17.4.1 (A2) *Dead wood removal*** - to be assessed as a **Permitted Activity**
- **E17.4.1 (A5) *Tree trimming or alteration*** - to be assessed as a **Permitted Activity**

- **E17.4.1 (A7)** *Works within the protected root zone* - to be assessed as a **Permitted Activity**
- **E17.4.1 (A8)** *Works within the protected root zone that do not comply with Standard E17.6.3* - to be assessed as a **Restricted Discretionary Activity**
- **E17.4.1 (A10)** *Tree removal of any tree greater than 4m in height or greater than 400mm in girth* - to be assessed as a **Restricted Discretionary Activity**
- **E15.4.1 (A6)** *Pest plant removal* – to be assessed as a **Permitted Activity**
- **E15.4.1 (A21)** *Vegetation alteration or removal of greater than 25m² of contiguous vegetation or tree alteration or tree removal of any indigenous tree over 3m in height within 20m of mean high water springs* - to be assessed as a **Restricted Discretionary Activity**
- **E15.4.1 (A22)** *Vegetation alteration or removal of greater than 25m² of contiguous vegetation, or tree alteration or tree removal of any indigenous tree over 3m in height, that is within: (a) a horizontal distance of 20m from the top of any cliff with; (b) a slope angle steeper than 1 in 3 (18 degrees); and (c) within 150m of mean high water springs* - to be assessed as a **Restricted Discretionary Activity**

4.0 Arboricultural Assessment

4.1 – Subject Trees and proposed Works

The following tree location numbers have been added by PBM to a screenshot of the site proposal plan;

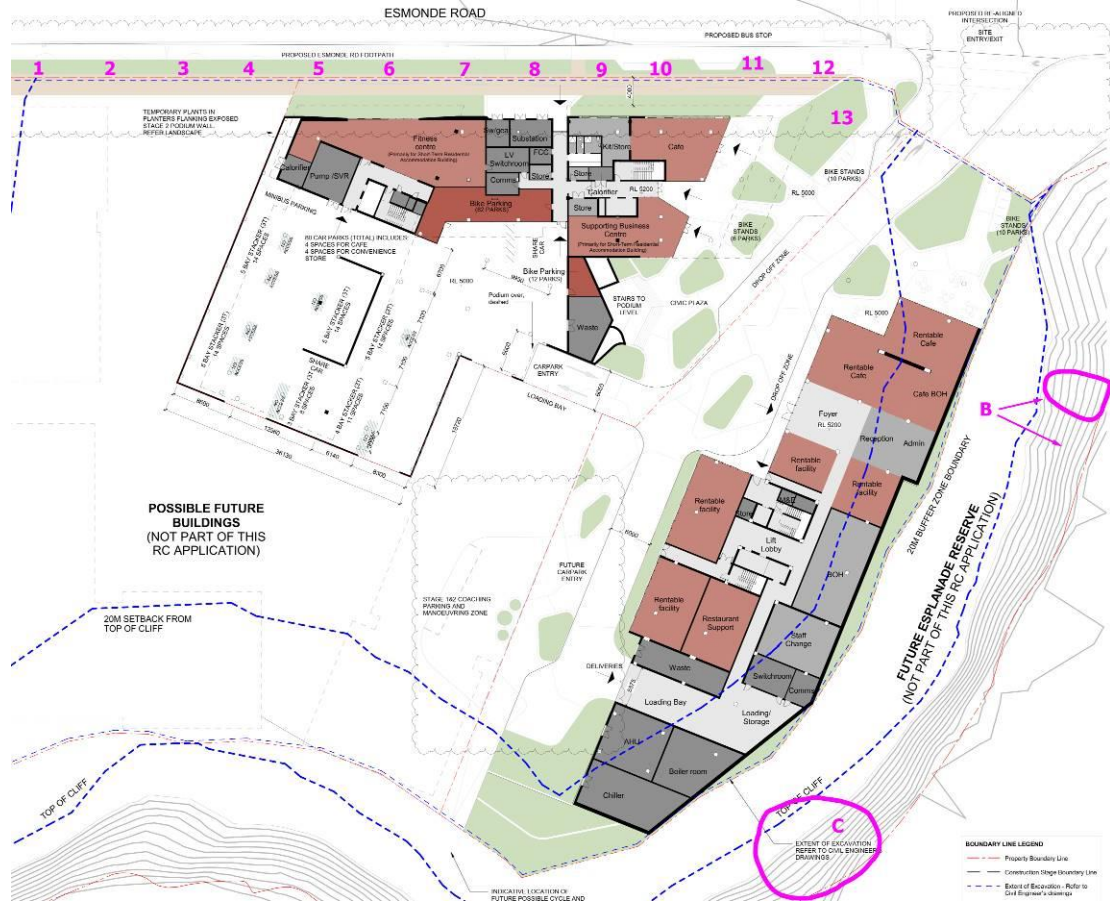


Figure 1 – tree locations overlaid onto a screenshot of the proposal plan. The complete plan is included as an appendix of this report

The following sub-sections of this report provide information on the individual trees indicated on the above plan, as well as detailing any proposed works within their vicinity. Note that tree Group A is located to the east of this plan screenshot. The location of this group is visible on Appendices 3 & 4.

4.2 Trees on the Road Reserve

Tree Owners Approval (TOA) for all works pertaining to trees on the road reserve is sought from the Council Urban Forest Specialist for this ward.

4.2.1 Trees 1-13

Trees 1-12 are a row of young Pohutukawa trees on the road reserve measuring between 4.5 to 5.5m in height. They are generally in good health, apart from Trees 2, 3 & 4, which have declined due to flooding issues associated with a leaking water pipe. Two of these trees (Trees 3 & 4) are now considered dead.

4.2.1.1 Trees 3 & 4

These two dead trees (as detailed in Section 4.2.1) are proposed for removal. If these two trees miraculously recover to a point where retention is considered worthwhile, then the trees should be retained. However, this is not considered likely, so removal of these trees forms part of this application. The removal of these trees is assessed as a **Permitted Activity** under **E17.4.1 (A2)**.



Figure 2 – base of Tree 4, with the location of the historic flowing water that was saturating the roots of Trees 2, 3 & 4 ringed in orange. This water leak was brought to the attention of the tenants within the property, and has since been fixed by a plumber



Figure 3 – Tree 3, considered dead. Photograph taken August 31, 2020

The removal of these trees shall be carried out in accordance with the Tree Protection Measures (Section 7.0), which includes a final inspection of the trees' condition to confirm that they have not recovered to a point that would practically enable their long term retention.

Provided these trees are removed, mitigation planting is to be carried out in these two locations, as detailed in Sections 4.2.1.4 & 6.0 of this report. If the trees have recovered, then the mitigation planting is to be carried out elsewhere on the road reserve, with confirmation on appropriate planting locations to be carried out with the Council Urban Forest Specialist.

4.2.1.2 Trees 1, 2, 5, 6, 7, 8, 9, 10 & 11



Figure 4 – panorama of Pohutukawa Trees 5-10 on the road reserve

Originally a new footpath that spanned the entire length of the site was proposed on the road reserve between these trees and Esmonde Road. Due to the increase in pedestrian activity in this area, and requirement to futureproof the design, Auckland Transport is requiring a 3m wide shared pathway. Therefore, in order to provide a pathway of this width, a wooden boardwalk within the site – on the southern side of the trees is proposed (instead of on the existing road reserve – due to the trees). This proposal requires the removal of the existing stone wall that spans the site frontage, and excavation/battering of the slope behind.

To facilitate the new integrated residential development, two new bus stops have been included on the road reserve. This requires a new footpath adjacent to Trees 9, 10 & 11, as is visible in the following figure;

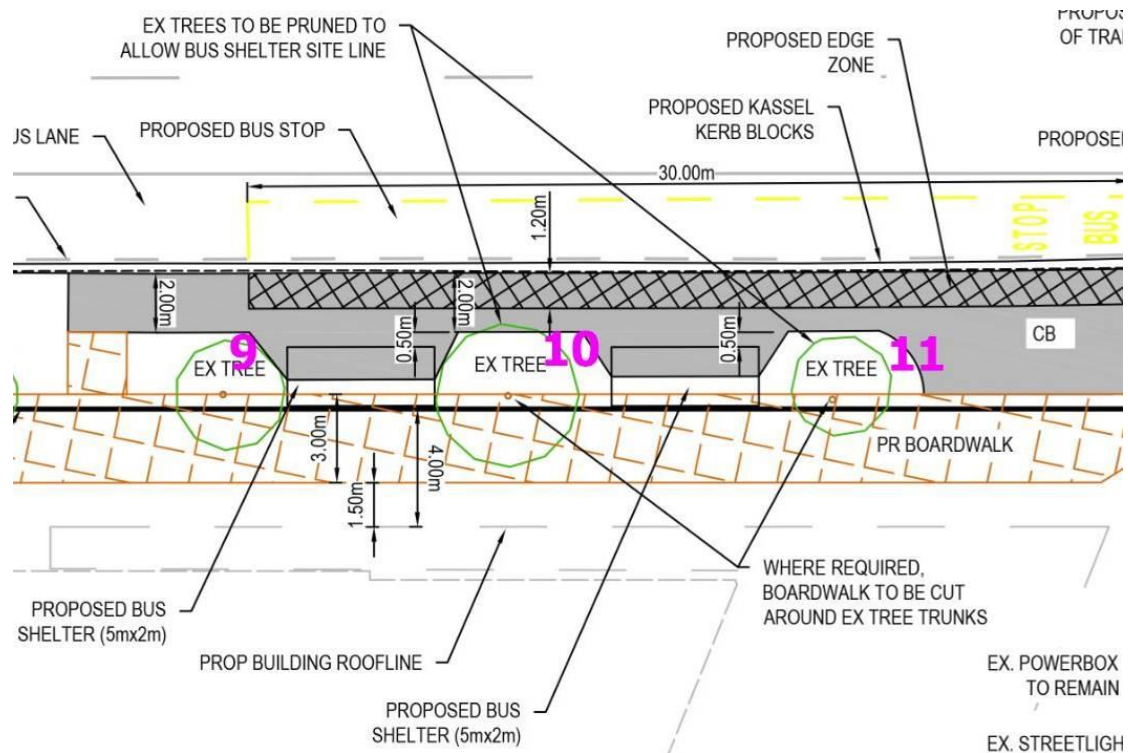


Figure 5 – screenshot from the proposed roading plan

As is detailed (but not depicted) on the above plan, the boardwalk will be cut/customised around the trees to provide an acceptable level of clearance (approximately 1m from their trunks). Due to planning constraints, this boardwalk cannot be shifted closer to the building because this section of land will be gifted to Council/AT. Some of the finer design details pertaining to this boardwalk are to be confirmed as this project progresses. Arboricultural advice will be sought for the works when within the root zones of these trees and all pile holes shall be located in order to avoid root severance – where practicable.

In total, the percentage of works within the protected root zones of the street trees (Trees 1, 2, 5, 6, 7, 8, 9, 10 & 11) varies from 20% (removal of existing stone wall + battering of slope), to 30% (removal of existing stone wall + battering of slope + concrete surfaces/excavations for the bus stop & associated footpath).

The concept of transplanting these trees was explored. However, this would involve a far greater level of root disturbance for the trees than that which is proposed. From an arboricultural perspective, it is better to leave the trees in the ground and design around them - such as wooden boardwalk within their root zones to maintain permeability. Therefore, the proposed works and resulting root disturbance levels are acceptable, provided they are carried out in accordance with the tree protection methodologies.

With regard to the AUP, these works are assessed as a **Restricted Discretionary Activity** under **E17.4.1 (A8)**.

It is anticipated that a minor level of pruning will be required on the lower canopies of these trees in order to provide a sufficiently raised canopy for pedestrians using the footpath/boardwalk. This pruning would be carried out by a Council-approved arborist under the guidance of the works arborist and in accordance with the Permitted Standards of E17, as detailed below;

E17.6.1. Tree trimming or alteration

- (1) The maximum diameter of any branch removed must be no greater than 100mm at severance.*
- (2) No more than 20 per cent of live growth of the tree may be removed in any one calendar year.*
- (3) All works must be carried out in accordance with best arboricultural practice.*
- (4) All trimming or alteration must retain the natural shape, form and branch habit of the tree.*
- (5) Any diseased tree material is to be treated in accordance with the Biosecurity Act 1993.*

This pruning is therefore assessed as a **Permitted Activity** under **E17.4.1 (A5)** of the AUP.

4.2.1.4 Trees 12 & 13

Tree 12 is another Pohutukawa tree growing on the road reserve. This tree is well-formed and in a good state of health. It has a slightly suppressed/uneven canopy spread due to the influence of an adjacent larger non-protected Pohutukawa tree within the site (Tree 13). The following image shows the two trees;



Figure 6 – Trees 12 & 13

Tree 12 is proposed for removal due to the proposed interface changes for the pedestrian interaction/access of the site and road reserve. The proposed bus stop and pedestrian crossing in this area require a well-designed pedestrian connection to the site, as this is an important design attribute for this development. Unfortunately, Tree 12 is located such that its retention is not feasible.

The adjacent Pohutukawa tree within the site (Tree 13) is not protected and was also proposed for removal. From an arboricultural perspective, the removal of Tree 12 was supported if Tree 13 could be retained. Following arboricultural recommendations to the project team and alterations to the design, Tree 13 is now proposed for retention, and will be incorporated as part of the future landscape in a raised planter.

Tree 13 is a larger and more prominent Pohutukawa tree, and is growing in close proximity to Tree 12. The retention of this tree is seen as a way of mitigating the removal of Tree 12, although two further trees are also offered as mitigation for the removal of this tree.

Works are required within the root zone of Tree 13 for the formation of the proposed raised planter that this tree is to be located within as part of the future landscape. The closest edge of proposed excavation is 2.8m from the tree. The tree is located 2.0m from a basalt wall, which will be carefully removed, with any exposed roots protected from drying out. This area is to be backfilled with soil following construction of the raised planter.

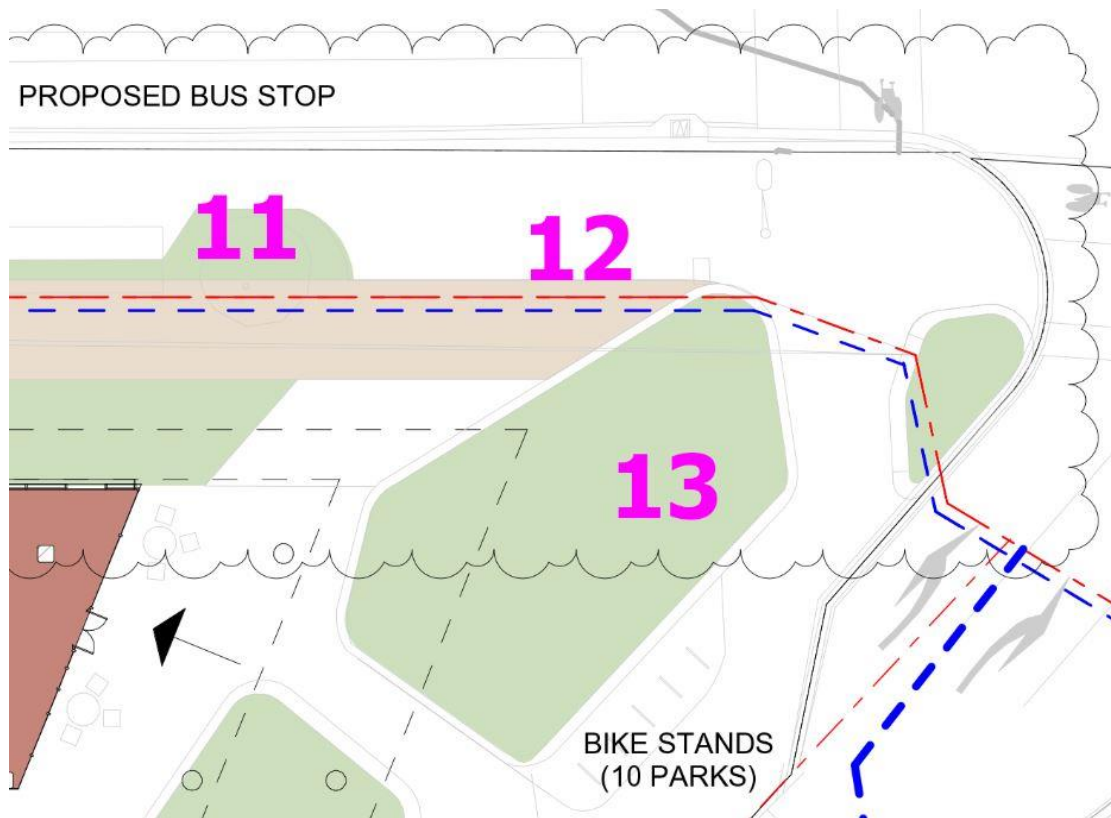


Figure 7 – proposed raised planter around Tree 13

The planter around Tree 13 has been customised by the landscape architect in order to minimise alterations to its root zone, and to provide a suitable long term growing environment for its roots. Providing the works are carried out in accordance with the Tree Protection Methodologies, the tree will continue to thrive into the future, and will contribute to a visually impressive entrance to the site.

The removal of Tree 12 is balanced against the retention and protection of Tree 13. The provision of mitigation planting is also proposed and is to be carried out on the road reserve in the local area. Further conditions pertaining to this are detailed in Section 6.0 and the TOA.

The removal of Tree 12 is assessed as a **Restricted Discretionary Activity** under **E17.4.1 (A10)** of the AUP. TOA is also sought for this activity.

4.2.2 Tree Group A

This group of trees is located within the road reserve that fronts the eastern extent of the site, so is therefore protected under E17 of the AUP. This portion of land is covered in predominantly native, regenerating vegetation.

Due to the proximity to the coast, and a coastal cliff, this vegetation is also protected by two rules in chapter E15 of the AUP.

A proposed wastewater connection connects from proposed WWMH1-2 within the site into an existing wastewater manhole identified as WWMH1-0, that is located just beyond the site boundary;

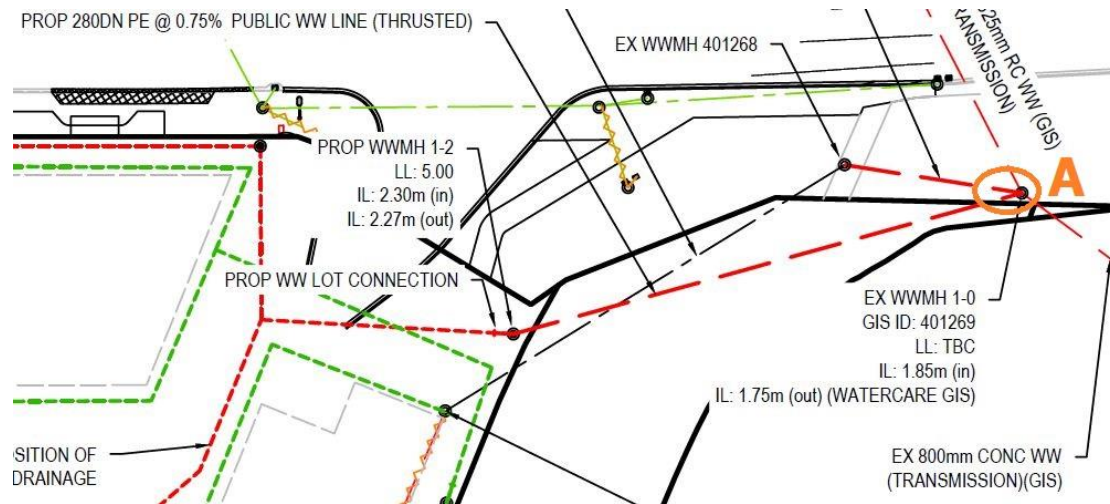


Figure 8 – proposed WW connection onto the road reserve, where Tree Group A (ringed in orange by PBM) is located

As detailed above, this line is to be thrust beneath the regenerating vegetation, and will connect into the WWMH. Due to the dense vegetation in this area and difficult terrain, no digger access is considered acceptable from an arboricultural perspective. Therefore, discussions with the project engineer have confirmed that there are to only be hand excavations used to enable the connection termination at the existing WWMH1-0. Even with hand excavations, some protected vegetation disturbance is inevitable.



Figure 9 – existing WWMH1-0 with the proposed area of excavation ringed in orange. This is the termination point for the directional drilling

The area ringed in orange in Figure 10 above will require some hand excavations for the connection. It is anticipated that one Mahoe tree (*Melicytus ramiflorus*) will require removal for this activity. This tree measures approximately 3.5m in height, and has a Diameter at 1.4m of 100mm. These excavations will also require works in the protected root zone of three other trees, being; a Pohutukawa (*Metrosideros excelsa*), Mahoe (*Melicytus ramiflorus*) and a Houpara (*Pseudopanax lessonii*). These trees are all 5-6m in height and the works will account for less than 10% alteration to their respective root zone areas.

These works are to be carried out under direct arboricultural supervision and in accordance with the Tree Protection Methodologies detailed in this report.

The Mahoe tree removal is assessed as a **Permitted Activity** under **E17.4.1 (A9)** and a **Restricted Discretionary Activity** under **E15.4.1 (A21) & (A22)** of the AUP, whilst the works within the protected root zones of the other trees within this group is assessed as a Permitted Activity under **E17.4.1 (A7)** and a **Restricted Discretionary Activity** under **E15.4.1 (A21) & (A22)** of the AUP.

4.2.3 Other coastal strip vegetation affected by the proposal

The site-wide enabling works form part of the Stage 1 consenting of this development. This includes a large amount of cut to reach the desired levels, and numerous underground stormwater and wastewater connections. Following arboricultural feedback to the engineering consultants, the site cut and underground services have been distanced from existing vegetation proposed for retention wherever practicable. However, two stormwater outfall connections are required, which are discussed in the following sub-sections.

4.2.3.1 Proposed Stormwater Outlet 1 & Tree Group B

Tree Group B consists of the vegetation surrounding the proposed Stormwater Outlet 1-0. A screenshot from the Council Unitary Plan Map Viewer overlaid with the proposed drainage plan has helped to locate the proposed works on the site, and therefore the vegetation impacted by the works - as visible in the following image;

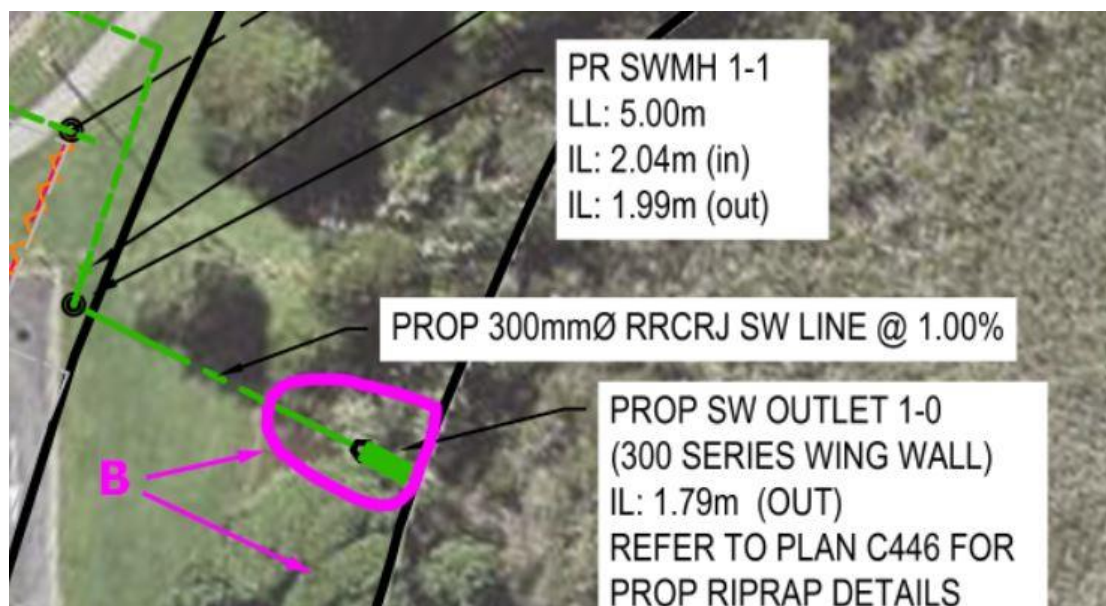


Figure 10 – proposed Stormwater Outlet 1 placed over aerial image of the site by PBM. Tree Group B is the combination of trees surrounding the outlet and pipe near the coastal edge

As is evident, a large tree is located to the south of this outlet. Initially, this proposed connection was to be located beneath this tree, but following arboricultural recommendations, the line has been relocated to the north of the tree in a location of the bank that is covered in weed species. This pipe is to be installed via open trench, so a number of weed species will be removed, as well as works being undertaken at the outer edge of the large Pohutukawa tree's root zone. The works will account for approximately 2% alteration to this tree's protected root zone.



Figure 11 – proposed location for open pit excavations to install Stormwater Outlet 1-0

The vegetation that will be removed during this excavation is; Pampas grass (*Cortaderia selloana*), Sextons bride (*Rhaphiolepis umbellata*), and Chinese Privet (*Ligustrum sinense*). These plants are all listed as weed species on the Auckland Council Pest Plant Search. This is therefore assessed as a **Permitted Activity** under **E15.4.1 (A6)** of the AUP.

This location for the pipe has been chosen as there are a number of non-protected trees within the site that are also proposed for retention – such as the Himalayan Cedar tree visible in Figure 12 above. The pipe needs to transect between this tree and the large Pohutukawa tree on the bank, so some root disturbance is inevitable. The proposed layout for the pipe is the better of explored options and is acceptable from an arboricultural perspective. Arboricultural supervision of the works will ensure that roots are treated and/or retained in accordance with best practice. Works within the rootzone of this Pohutukawa tree are assessed as a **Restricted Discretionary Activity** under **E15.4.1 (A21) & (A22)** of the AUP, due the tree's location on a coastal cliff and proximity to the MHWS.

It is recommended native trees should be planted on this slope following the installation of the pipe.

4.2.3.2 Existing Stormwater Outlet 2 & Tree Group C

The second proposed stormwater discharge point involves a connection being made to an existing outlet structure.

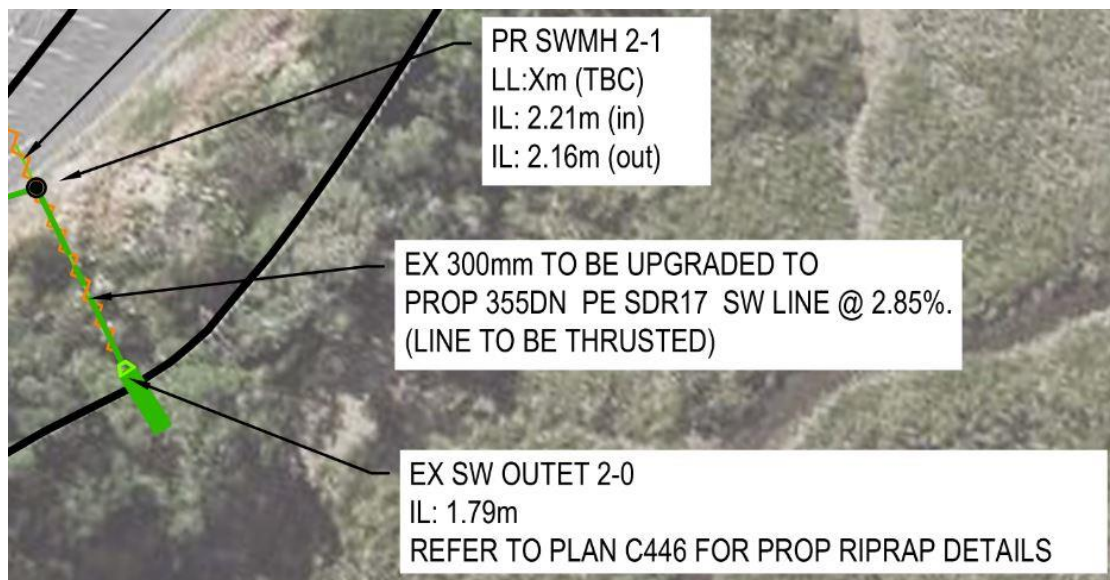


Figure 12 – proposed location for thrusting connection to connect to the existing Stormwater Outlet 2-0

The presence of a mature Pohutukawa tree within close proximity of this outlet structure was noted, as is visible in the following photograph;



Figure 13 – existing stormwater outlet 2-0

Following onsite discussions with the project engineer, the proposal involves directionally drilling directly to this structure, with the anticipation that no other form of excavation will be required to complete the connection into the outlet, as the new pipe can be externally sealed. Nevertheless, onsite arboricultural supervision of the activities shall take place, to ensure that the works are carried out in accordance with best practice. If any minor excavations are required near the outlet due to difficulties with the pipe's connection to the outlet, these shall be carried out by hand - with all tree roots retained where practicable, and no roots greater than 35mm in diameter being severed.

The indigenous vegetation growing within vicinity of these works is protected under E15 of the AUP, where there is no Permitted level of root disturbance. Therefore, these works are assessed as a **Restricted Discretionary Activity under E15.4.1 (A21) & (A22)** of the AUP, due to the proximity to a coastal cliff and the MHWS.

5.0 Assessment of Proposed Activities

The following sub-sections include an arboricultural assessment against the relevant AUP assessment criteria for the various activities included in this proposal.

5.1 Trees in Roads - E17 of the AUP

As detailed in Section 4.2.1 of this report, the proposed earthworks within the root zones of the street trees (Trees 1, 2, 5, 6, 7, 8, 9, 10 & 11) are a Restricted Discretionary Activity - E17.4.1 Activity Table (A8), of the AUP. In considering an application for this Restricted Discretionary Activity, the following set of assessment criteria provided under E17.8.2 is relevant. Assessment of the proposed root zone alterations is measured against that set of criteria in the left hand column, along with my responses detailed in the right hand column of the following table;

E17.8.2 Assessment criteria – E17 Trees in roads		
(a)	<i>the specific values of the trees including any functional values with respect to water and soil conservation, ecosystem services, stability, ecology, habitat for birds and amelioration of natural hazards;</i>	From an arboricultural perspective, the subject Pohutukawa trees are not significant in terms of water, and soil conservation, ecosystem services, stability or amelioration of natural disasters. They are young trees, approximately 5m in height and are growing in a modified road corridor environment. The retention of these trees in their current environment is seen as a better option than transplanting or removing them. Therefore, any of the listed values provided by the subject trees would continue into the future, and would be enhanced long term – regardless of the proposed works.
(b)	<i>the loss of amenity values that the tree or group of trees provided;</i>	The subject trees provide a level of positive amenity by virtue of their presence in the local streetscape and contribution to the urban forest canopy. These trees are proposed for retention and protection, and will continue to thrive in their new environment.
(c)	<i>the risk of actual damage to people and property from the tree or trees including the extent to which adverse effects on the health and safety of people have been addressed as required under health and safety legislation;</i>	The trees are not posing any inherent risk outside of extreme weather events. The proposed works will be supervised by the works arborist to ensure that root disturbance is minimised.
(d)	<i>any alternative methods that could result in retaining the tree or trees;</i>	The subject trees are proposed for retention. A suitable growing environment around these trees is being provided as part of the proposed works.

(e)	the degree to which any proposed mitigation adequately compensates for the values that trees provide;	Mitigation planting is not deemed relevant for the works within the root zones of these trees.
(f)	the degree to which the proposal is consistent with best practice guidelines for tree management;	As detailed, retention of these trees in their current locations is deemed as a better long term option than transplanting or removing the trees.
(g)	methods to contain and control plant pathogens and diseases including measures for preventing the spread of soil and the safe disposal of plant material;	No symptoms of Myrtle rust was observed at the time of inspection. If Myrtle rust is expected on this, or any tree at the site, then the correct biosecurity protocols will be followed.
(h)	the provision of a tree works plan to address the effects of the works on the tree or trees and outlining the proposed methods to be used;	A comprehensive Tree Protection Methodology is outlined in Section 7.0 of this report.
(i)	the need for the direction and supervision of an on-site monitoring arborist while the works are being carried out;	The Tree Protection Methodology outlined in Section 7.0 of this report includes a pre-start meeting with the works arborist and ongoing monitoring of the protective fence that is to be installed to isolate the retained trees from the site works.
(j)	the functional and operational needs of infrastructure; and	The works within the root zones of these trees will enable the proposed development and the required pedestrian access at the front of the site.
(k)	the benefits derived from infrastructure	This project is providing a new integrated residential development.

The following assessment against the E17.8.2 criteria is provided in regard to the proposed removal of Tree 12;

E17.8.2 Assessment criteria – E17 Trees in roads		
(a)	<i>the specific values of the trees including any functional values with respect to water and soil conservation, ecosystem services, stability, ecology, habitat for birds and amelioration of natural hazards;</i>	From an arboricultural perspective, the subject Pohutukawa tree (Tree 12) is not significant in terms of water, and soil conservation, ecosystem services, stability or amelioration of natural disasters. It is a young tree, only 5m in height and is growing in a modified urban environment. Mitigation planting would balance the removal of this tree by providing and enhancing (mid-long term) any potential values that this tree could be providing into the future.

(b)	<i>the loss of amenity values that the tree or group of trees provided;</i>	From an arboricultural perspective Tree 12 does provide some level of positive amenity by virtue of its presence in the local streetscape and contribution to the urban forest canopy. However, the protection and retention of the adjacent larger Pohutukawa tree within the site is seen as a better outcome in terms of amenity, as the larger tree is already beginning to suppress the form of Tree 12. The removal of the tree is offset against the recommended provision of mitigation planting – as detailed in Section 6.0. Over time, from an arboricultural perspective, any visual amenity considered to have been lost, would be regained.
(c)	<i>the risk of actual damage to people and property from the tree or trees including the extent to which adverse effects on the health and safety of people have been addressed as required under health and safety legislation;</i>	This tree is not posing any inherent risk outside of extreme weather events. The removal of this tree shall be carried out via consultation with the works arborist, and by a suitably qualified and Council-approved contractor.
(d)	any alternative methods that could result in retaining the tree or trees;	Due to the overall project ambition and site layout, the removal of the Pohutukawa tree has been deemed necessary in order to provide the required pedestrian access into the front of the site (particularly from the future bus stop and pedestrian road crossing). As detailed in section 4.2.1.4, the adjacent larger Pohutukawa tree was originally proposed for removal, but is now proposed for protection and retention.
(e)	the degree to which any proposed mitigation adequately compensates for the values that trees provide;	Mitigation planting forms part of the development proposal. From an arboricultural perspective, the proposed planting and retention of the larger adjacent Pohutukawa tree will adequately compensate for the values that the existing tree provides.
(f)	the degree to which the proposal is consistent with best practice guidelines for tree management;	The retention of Tree 12 is not practicable, given its location at the front of the site and the project's ambition to provide adequate and unrestricted pedestrian access to the bus stop and pedestrian crossing.
(g)	methods to contain and	No symptoms of Myrtle rust was observed at

	control plant pathogens and diseases including measures for preventing the spread of soil and the safe disposal of plant material;	the time of inspection. If Myrtle rust is expected on this, or any tree at the site, then the correct biosecurity protocols will be followed.
(h)	the provision of a tree works plan to address the effects of the works on the tree or trees and outlining the proposed methods to be used;	A comprehensive Tree Protection Methodology is outlined in Section 7.0 of this report.
(i)	the need for the direction and supervision of an on-site monitoring arborist while the works are being carried out;	The Tree Protection Methodology outlined in Section 7.0 of this report includes a pre-start meeting with the works arborist and ongoing monitoring of the protective fence that is to be installed to isolate the retained trees from the site works.
(j)	the functional and operational needs of infrastructure; and	The removal of this tree will enable the proposed development and the required pedestrian access at the front of the site.
(k)	the benefits derived from infrastructure	This project is providing a new integrated residential development.

5.2 Removal of Mahoe Tree (Tree Group A) - E15 of the AUP

As detailed in Section 4.2.2 of this report, the removal of the Mahoe tree that forms part of Tree Group A is assessed as a **Restricted Discretionary Activity** under **E15.4.1 (A21) & (A22)** of the AUP. In considering an application for this Restricted Discretionary Activity, the following set of assessment criteria provided under E15.8.2 is relevant. Assessment of the proposed tree removal is measured against that set of criteria in the left hand column, along with my responses detailed in the right hand column of the following table;

E15.8.2 Assessment criteria – E15 Vegetation management and biodiversity (tree removal)		
(a)	ecological values: (i) the extent to which the vegetation alteration or removal is minimised and adverse effects on the ecological and indigenous biodiversity values of the vegetation are able to be avoided, remedied or mitigated; (ii) whether vegetation removal will have an adverse effect on threatened species or ecosystems; and	From an arboricultural perspective, the subject Mahoe tree (part of Tree Group A) is the only tree proposed for removal in order to enable the installation of this new wastewater connection. Further tree removals have been avoided by installing this line via trenchless methods, but the removal of the Mahoe tree is unavoidable because it is growing at a close proximity to the existing manhole – the termination point

	<p>(iii) the extent to which the proposal for vegetation alteration or removal has taken into account relevant objectives and policies in Chapter B7.2 Indigenous biodiversity, B4. Natural heritage, Chapter E15 Vegetation Management and biodiversity, E18 Natural character of the coastal environment and E19 Natural features and natural landscapes in the coastal environment.</p>	<p>for the new pipe. Mahoe as a species is very common in the Auckland Isthmus in regenerating forests/coastal areas, and the subject species is of average condition and is small in stature. The effects of the removal of this tree will be mitigated via the proposed mitigation planting detailed in Section 6.0</p>
(b)	<p>hazard mitigation: (i) the extent to which the vegetation serves to avoid or mitigate natural hazards and the amount of vegetation to be retained or enhanced; (ii) the extent to which the vegetation alteration or removal will increase natural hazard risks; and (iii) whether the vegetation alteration or removal is necessary to mitigate an identified bushfire risk.</p>	<p>As detailed above, only one small tree is proposed for removal. Further removals have been avoided by directionally drilling this pipe and thus avoiding extensive open trenching. The subject tree is small in stature and is surrounded by other vegetation, so the tree will not be currently providing any significant level of hazard mitigation.</p>
(c)	<p>sediment, water quality and hydrology: (i) the extent to which vegetation alteration or removal will adversely affect soil conservation, water quality and the hydrological function of the catchment and measures to avoid remedy or mitigate any adverse effects.</p>	<p>As detailed above, there is thick vegetation cover in this area. It will not take long for the surrounding vegetation that is proposed for retention to fill in any void created by the removal of this tree. Mitigation planting is also provided.</p>
(d)	<p>landscape, natural features and natural character values: (i) the extent to which vegetation alteration or removal will have adverse effects on the values identified for scheduled outstanding natural E15 Vegetation management and biodiversity Auckland Unitary Plan Operative in part 17 landscape, outstanding natural features, outstanding natural character and high natural character areas; and (ii) the extent to which</p>	<p>The removal of this tree will not be noticed, as it is not visible from any easily accessible public or private areas, and the tree is surrounded by dense vegetation.</p>

	vegetation alteration or removal adversely affects landscape, natural features and natural character values particularly on adjacent public space including the coast, reserves and walkways and measures to avoid, remedy or mitigate any adverse effects.	
(e)	amenity values: (i) the extent to which the vegetation alteration or removal will have adverse effects on the amenity values of any adjacent open space including the coast, parks, reserves and walkways and measures to avoid, remedy or mitigate any adverse effects.	As detailed above, the removal of this one small tree is insignificant given its location in the surrounding bush. The tree is of average condition, and is small in stature. Mitigation planting is provided.
(f)	Use: (i) whether the vegetation alteration or removal is necessary to enable reasonable use of a site for a building platform and associated access, services and living areas, and existing activities on the site; (ii) the extent to which the vegetation alteration removal is necessary taking into account the need for, or purpose of, the proposed building or structure; (iii) the extent to which the vegetation alteration or removal is necessary to enable reasonable use of the site for farming purposes; (iv) whether the vegetation alteration or removal will improve the reliance and security of the network utility, or road network; (v) whether the vegetation alteration or removal is necessary for a structure that has a functional or operational need to be in the proposed location; and (vi) the extent of the benefits derived from infrastructure and the road network.	The retention of this tree is not practicable, given its location – growing at a close proximity to the existing manhole. The removal of this tree is the better of explored options for this sanitary sewer connection (from an arboricultural perspective).
(g)	methods and location: (i) whether there are practicable alternative locations and	Please refer to comment for criterion (f) above

	<p>methods including consideration of an application to infringe development control where this would result in retention and enhancement of vegetation on the site; and</p> <p>(ii) whether the effects from the alteration or removal of vegetation and land disturbance can be minimised through works being undertaken on an alternative location on the site, and/or method of undertaking the works.</p>	
(h)	<p>mitigation measures:</p> <p>(i) the extent to which revegetation can remedy or mitigate adverse effects, including eco-sourcing and the ongoing maintenance of revegetation measures.</p>	<p>Mitigation planting is proposed as part of the development proposal. From an arboricultural perspective, the proposed planting and retention/protection of the adjacent bush will adequately compensate for the values that the existing tree provides. The new plants shall be eco-sourced.</p>
(i)	<p>bonds and covenants:</p> <p>(i) whether conditions of consent can avoid remedy or mitigate adverse effects including the imposition of bonds, covenants or similar instruments.</p>	<p>No bond or covenant is considered relevant with regard to the removal of this tree or for the installation of this sanitary sewer line. Much of the vegetation surrounding this development is already protected under E15 of the AUP.</p>
(j)	<p>Mana Whenua values:</p> <p>(i) the extent to which any adverse effects on Mana Whenua values can be avoided, remedied or mitigated, and having regard to the objectives and policies in E20 Māori Land whether the proposed works are appropriate to provide for Mana Whenua, mātauranga and tikanga values.</p>	<p>This one small tree is insignificant, and is not of a species or stature that would deem it significant in terms of any of the listed values.</p>

5.2 Works within the Root Zones of Tree Groups A, B & C - E15 of the AUP

There is no Permitted level of works within the root zones of indigenous trees greater than 3m in height that are growing within 20m of the MHWS, or within 20m of a coastal cliff. Therefore, the proposed works within the root zones of Tree Groups A, B & C are assessed as **Restricted Discretionary Activities** under **E15.4.1 (A21) & (A22)** of the AUP.

Further discussions regarding these activities are provided in Sections 4.2.2, 4.2.3.1 and 4.2.3.2, respectively.

In considering an application for these Restricted Discretionary Activities, the following set of assessment criteria provided under E15.8.2 is relevant. Assessment of the proposed works is measured against that set of criteria in the left hand column, along with my responses detailed in the right hand column of the following table;

E15.8.2 Assessment criteria – E15 Vegetation management and biodiversity (works within protected root zone)		
(a)	<p>ecological values:</p> <p>(i) the extent to which the vegetation alteration or removal is minimised and adverse effects on the ecological and indigenous biodiversity values of the vegetation are able to be avoided, remedied or mitigated;</p> <p>(ii) whether vegetation removal will have an adverse effect on threatened species or ecosystems; and</p> <p>(iii) the extent to which the proposal for vegetation alteration or removal has taken into account relevant objectives and policies in Chapter B7.2 Indigenous biodiversity, B4. Natural heritage, Chapter E15 Vegetation Management and biodiversity, E18 Natural character of the coastal environment and E19 Natural features and natural landscapes in the coastal environment.</p>	<p>As detailed in the respective sections of this report, the three underground service connections that trigger this activity status (of the AUP) have all been altered following arboricultural feedback to the project engineers, in order to minimise the level of root zone alterations for the subject vegetation. This includes alterations to the locations of the connections, as well as the installation techniques. Therefore, the impact on vegetation from the proposal has been minimised as much as is practicable, and is now acceptable from an arboricultural perspective.</p>
(b)	<p>hazard mitigation:</p> <p>(i) the extent to which the vegetation serves to avoid or mitigate natural hazards and the amount of vegetation to be retained or enhanced;</p> <p>(ii) the extent to which the vegetation alteration or removal will increase natural hazard risks; and</p> <p>(iii) whether the vegetation alteration or removal is necessary to mitigate an identified bushfire risk.</p>	<p>As detailed above, vegetation disturbance has been minimised by altering the proposal. A list of tree protection measures (Section 7.0) will further ensure that the subject vegetation is protected during the works so that any hazard mitigation that the existing vegetation is providing will continue into the future.</p>

(c)	<p>sediment, water quality and hydrology: (i) the extent to which vegetation alteration or removal will adversely affect soil conservation, water quality and the hydrological function of the catchment and measures to avoid remedy or mitigate any adverse effects.</p>	<p>There is existing dense vegetation cover in two of the works areas (Tree Group A & C). Planting around Tree Group B is recommended following the installation of this pipe. This will increase the number of native trees in this area, which will improve the long term soil stabilisation and will decrease the runoff from the slopes.</p>
(d)	<p>landscape, natural features and natural character values: (i) the extent to which vegetation alteration or removal will have adverse effects on the values identified for scheduled outstanding natural E15 Vegetation management and biodiversity Auckland Unitary Plan Operative in part 17 landscape, outstanding natural features, outstanding natural character and high natural character areas; and (ii) the extent to which vegetation alteration or removal adversely affects landscape, natural features and natural character values particularly on adjacent public space including the coast, reserves and walkways and measures to avoid, remedy or mitigate any adverse effects.</p>	<p>The root zone alterations will be carried out under arboricultural supervision and will not adversely affect the subject vegetation. Therefore, the vegetation will continue to thrive into the future.</p>
(e)	<p>amenity values: (i) the extent to which the vegetation alteration or removal will have adverse effects on the amenity values of any adjacent open space including the coast, parks, reserves and walkways and measures to avoid, remedy or mitigate any adverse effects.</p>	<p>Please refer to comment for criterion (d) above</p>
(f)	<p>Use: (i) whether the vegetation alteration or removal is necessary to enable reasonable use of a site for a building platform and associated access, services and living areas, and existing activities on the site; (ii) the extent to which the</p>	<p>The proposed works have been designed following arboricultural recommendations about location and installation techniques. The works are now acceptable from an arboricultural perspective. The works will enable the development of this site, which will provide long term residential and commercial opportunities.</p>

	<p>vegetation alteration removal is necessary taking into account the need for, or purpose of, the proposed building or structure;</p> <p>(iii) the extent to which the vegetation alteration or removal is necessary to enable reasonable use of the site for farming purposes;</p> <p>(iv) whether the vegetation alteration or removal will improve the reliance and security of the network utility, or road network;</p> <p>(v) whether the vegetation alteration or removal is necessary for a structure that has a functional or operational need to be in the proposed location; and</p> <p>(vi) the extent of the benefits derived from infrastructure and the road network.</p>	
(g)	<p>methods and location:</p> <p>(i) whether there are practicable alternative locations and methods including consideration of an application to infringe development control where this would result in retention and enhancement of vegetation on the site; and</p> <p>(ii) whether the effects from the alteration or removal of vegetation and land disturbance can be minimised through works being undertaken on an alternative location on the site, and/or method of undertaking the works.</p>	Please refer to comment for criterion (f) above
(h)	<p>mitigation measures:</p> <p>(i) the extent to which revegetation can remedy or mitigate adverse effects, including eco-sourcing and the ongoing maintenance of revegetation measures.</p>	Mitigation planting is proposed as part of the development proposal. From an arboricultural perspective, the proposed planting and retention/protection of the adjacent bush will improve the long term values that the subject vegetation is providing.
(i)	<p>bonds and covenants:</p> <p>(i) whether conditions of consent can avoid remedy or mitigate adverse effects including the imposition of</p>	No bond or covenant is considered relevant with regard to the proposed works. Much of the vegetation surrounding this development is already protected under E15

	bonds, covenants or similar instruments.	of the AUP.
(j)	Mana Whenua values: (i) the extent to which any adverse effects on Mana Whenua values can be avoided, remedied or mitigated, and having regard to the objectives and policies in E20 Māori Land whether the proposed works are appropriate to provide for Mana Whenua, mātauranga and tikanga values.	All significant protected trees are to be retained and protected as part of this proposal. There will be an esplanade reserve created, which will enable the future residents and people using this space to have a greater sense of place/connectivity to the large native coastal trees and coastline in this area.

6.0 Mitigation of Effects of Tree Removal

As detailed in Section 4.2.1.4 of this report, Tree 12 is proposed for removal as part of the works. Mitigation planting in the local road reserve is proposed. Following the removal of Trees 3 & 4 (dead trees, see section 4.2.1.1), an opportunity to plant two new street trees in these locations will arise. It is therefore recommended that 2 x 160 litre Pohutukawa (*Metrosideros excelsa*) trees should be planted in these locations.

Surplus to this, one Mahoe (*Melicytus ramiflorus*) is proposed for removal (as detailed in Section 4.2.2.). Mitigation planting for the removal of this tree is recommended to be carried out on the road reserve within this section of bush, in locations where the new plants will have good long term prospects. It is recommended to plant 5 x 10 litre Mahoe (*Melicytus ramiflorus*) to mitigate the effects of the removal.

All planting shall be carried out in accordance with best practice, including staking, mulching and aftercare of the trees.

Further conditions pertaining to the mitigation planting is detailed in the Tree Owner's Approval document.

7.0 Recommended Tree Protection Measures

The following set of tree protection measures would be appropriate to ensure that all vegetation proposed for retention is adequately protected during the site works and that the removal of Tree 12 and the Mahoe in Tree Group A, is carried out in accordance with modern arboricultural standards;

- a) The consent holder should engage the services of a qualified and experienced arborist (works arborist) to assist with and overseeing that

the tree protection measures are implemented. It is recommended that the arborist meet with the site manager at the outset of the project in order to discuss the conditions of consent relating to the protection of the trees and to agree on the key activities that would require the arborist's input.

- b) Prior to any works commencing at the site, a protective fence consisting of orange mesh attached between steel Waratah standards or 1.8 metre high steel mesh fence panels should be erected at the outside extent of the dripline (where possible) of all trees proposed for retention. The precise location of the protective fences should be discussed and agreed upon at the required pre-commencement meeting.
- c) All excavations within the root zones of the subject trees (including removal of hard surfaces) shall be supervised by the works arborist. Roots shall be retained where practicable, and treated in accordance with modern arboricultural practice. This includes covering exposed roots with hessian and protecting retained roots from new concrete or asphalt surfaces with a layer of sand and polythene.
- d) All care should be taken to avoid striking with machinery any part of any tree proposed for retention.
- e) No storage of materials, spoil, equipment, fuels and oils, passage of vehicles or machinery, or contaminated washings, should encroach upon or be disposed of within the root zones of the subject trees.
- f) All tree works and mitigation planting shall be carried out in consultation with the works arborist, and by a Council-approved contractor - or as is specified in the TOA document. Prior to removal, a final inspection of Trees 3 & 4 shall be carried out by the works arborist, confirming that the trees have not recovered. These trees shall not be removed if they are showing signs of recovery.
- g) An onsite monitoring log shall be kept by the works arborist, logging the tree protection consent conditions and the details of any site visits.
- h) Conditions outlined in the Tree Owner's Approval form shall also be complied with.

8.0 Conclusion

This report details works in relation to a proposed integrated residential development at 48 Esmonde Road in Takapuna. The development is surrounded on all sides by protected trees.

Predominantly, the proposed tree alterations/removals detailed in this report arise from the underground service enabling works for the proposed development, as well as for the subsequent requirement to provide appropriate pedestrian access/flow with the street interface.

The arboricultural component of the proposal (as detailed in Section 4.0) of which this report seeks Resource Consent for, is;

- Works within the protected root zones of Trees 1, 2, 5, 6, 7, 8, 9, 10 & 11, that are growing on the road reserve - to be assessed as a **Restricted Discretionary Activity** under E17.4.1 (A8) of the AUP
- Removal of a Pohutukawa tree (Tree 12) growing on the road reserve - to be assessed as a **Restricted Discretionary Activity** under E17.4.1 (A10) of the AUP
- Removal of a Mahoe tree (Part of Tree Group A) growing within 20m of a coastal cliff and the MHWS - to be assessed as a **Restricted Discretionary Activity** under **E15.4.1 (A21) & (A22)** of the AUP
- Works within the root zones of Tree Groups A, B & C, growing within 20m of a coastal cliff and the MHWS - to be assessed as a **Restricted Discretionary Activity** under **E15.4.1 (A21) & (A22)** of the AUP

The two tree removals are balanced against the retention of the other vegetation identified in this assessment, as well as the provision of mitigation planting.

Tree Owner's Approval has been sought from the Council Urban Forest Specialist for the works pertaining to trees located on the road reserve. However, the specialist has not been able to respond to requests for engagement. Therefore, due to time constraints around the need to respond to the Section 92 request to which this assessment relates, this report is being furnished to Council without the TOA. Nonetheless, we are confident that a comprehensive and robust assessment of all the identified tree protection issues has been provided in the report.

Please feel free to contact Peers Brown Miller Ltd if any further arboricultural input is required.



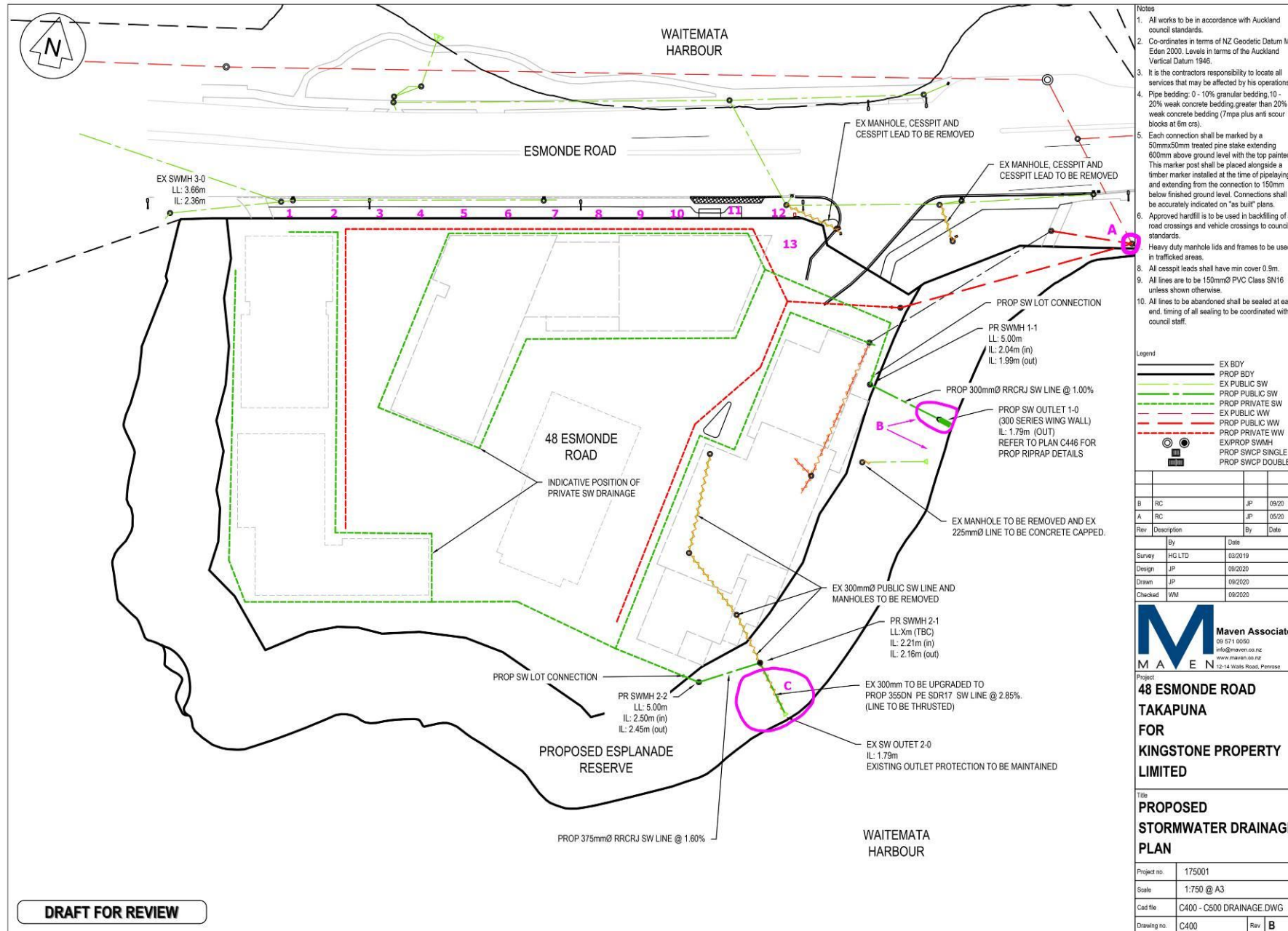
Christopher Scott-Dye
Consultant Arborist
Peers Brown Miller Ltd

Appendix 1 – Tree schedule

Tree No	Species	Height (m)	Spread (m)	Diameter at 1.4m (mm)	Diameter above root ball (mm)	Form	Health	Condition/Comments
1	Pohutukawa <i>Metrosideros excelsa</i>	5.5	2.2	235	235	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
2	Pohutukawa <i>Metrosideros excelsa</i>	4.5	2	180	180	Single stem	Poor	Poor health due to historic water leak saturating roots and preventing respiration. The leak has since been fixed.
3	Pohutukawa <i>Metrosideros excelsa</i>	4	2	180	180	Single stem	Dead	Dead due to historic water leak saturating roots and preventing respiration. The leak has since been fixed.
4	Pohutukawa <i>Metrosideros excelsa</i>	4	2	180	180	Single stem	Dead	Dead due to historic water leak saturating roots and preventing respiration. The leak has since been fixed.
5	Pohutukawa <i>Metrosideros excelsa</i>	5	2	170	120	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
6	Pohutukawa <i>Metrosideros excelsa</i>	4.5	2	130	180	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
7	Pohutukawa <i>Metrosideros excelsa</i>	4.5	2.2	150	185	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
8	Pohutukawa <i>Metrosideros excelsa</i>	5	2	170	230	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
9	Pohutukawa <i>Metrosideros excelsa</i>	4.5	2	140	180	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
10	Pohutukawa <i>Metrosideros excelsa</i>	5.5	2.5	250	250	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.

Tree No	Species	Height (m)	Spread (m)	Diameter at 1.4m (mm)	Diameter above root ball (mm)	Form	Health	Condition/Comments
11	Pohutukawa <i>Metrosideros excelsa</i>	5	2.2	210	230	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
12	Pohutukawa <i>Metrosideros excelsa</i>	5	2.2	130	230	Single stem	Good	Specimen planting, growing on the road reserve. Surface roots noted.
13	Pohutukawa <i>Metrosideros excelsa</i>	5	4	470 (over 8 leaders)	400	Multi stem	Good	Specimen planting. Surface roots noted. Good structural condition and vigour. Some minor internal deadwood.
Group A	Various, refer to comments column	3.5-6	2-3	100-200	NA	Various	Good	2 x Mahoe (<i>Melicytus ramiflorus</i>), Pohutukawa (<i>Metrosideros excelsa</i>), and a Houpara (<i>Pseudopanax lessonii</i>). One of the Mahoe is proposed for removal to enable the installation of the proposed sanitary sewer connection into the existing WWMH1-0
Group B	Various, refer to comments column	12	15	800	NA	Multi stem	Good	Species include; Pohutukawa (<i>Metrosideros excelsa</i>), Pampas grass (<i>Cortaderia selloana</i>), Sextons bride (<i>Rhaphiolepis umbellata</i>), and Chinese Privet (<i>Ligustrum sinense</i>). The pohutukawa tree is in a good condition and is proposed for retention. The other species are small pest plants and are proposed for removal, to enable the installation of the SW outlet 1-0.
Group C	3 x Pohutukawa <i>Metrosideros excelsa</i>	10-16	12-20	600-1000	NA	Multi stem	Good	Prominent trees growing on the coastal strip. Two trees are near the foreshore bank. Works proposed within the root zone of these trees for the installation of the SW connection to the existing stormwater outlet 2-0

Appendix 3 – Proposed Drainage Plan with tree numbers overlaid by PBM



DRAFT FOR REVIEW

Appendix 4 – Aerial photograph of the site with tree numbers overlaid by PBM

