

**HAMMOND PARK**  
**LANDSCAPE MANAGEMENT PLAN**  
**NOVEMBER 1997**

## **EXECUTIVE SUMMARY**

### **REFERENCE**

#### Hammond Park Landscape Plan

Council meeting April 1997 resolved to adopt the Riverside Reserves Management Plan being a strategic policy document which required Landscape Management Plans to be prepared for the individual parks within the river corridor.

Design Services, Hamilton City Council have prepared the first of these Landscape Management Plans.

### **PURPOSE**

The purpose of the Hammond Park Landscape Management Plan is to indicate how the strategic policies will be applied in the park. The proposed development and maintenance regimes are outlined after consultation with interested parties.

#### **Consultation**

The Plan has been prepared after review of all submissions made to the Riverside Reserves Management Plan and further consultation with those submitters with a particular interest in Hammond Park.

#### **Landscape Management Plan**

For purposes of management Hammond Park has been divided into Landscape Zones determined by particular site characteristics, issues and intended uses. Issues include erosion problems, vegetation management, relationships with adjoining neighbours and community aspirations.

The works planned for each zone to resolve these issues have determined a sequence of Implementation and Staging of Development within zones. The sequence of the works is indicated in the plan with the interrelationship between works. The Plan includes estimated costing of the works shown, both for new works and the consequential maintenance works.

#### **Estimated Costs**

The estimated costs (with the exception of the \$350,000 for the Steep Bank Walkway, which will be beyond the 20 year period) are provided for in the Approved Hamilton's Strategic Plan 1997-2017, 20 year Financial Plan. Although the beginning of works and subsequent programme may depend on the review of the Strategic Plan and public involvement in the Annual Planning process

### Financial Provision in Hamilton's Strategic Plan

1997/98	Walkway – Malcolm Street (unfunded)	\$400,000
1999/00	Community Environmental Planting	\$50,000
2000/01	Community Environmental Planting	\$50,000
2000/01	Neighbour Park Development	\$60,000
2001/02	Community Environmental Planting	\$50,000
2003/04	Riverbank Stability – erosion control	\$30,000
2004/05	Walkway – Riverlea Road	\$385,000
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		\$1,025,000

### RECOMMENDATION

That this report be received, and

that the Hammond park Landscape Plan November 1997 be adopted, and

that staff advise all interested parties, and

that the Plan be implemented as funds are made available.



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## **1.0 INTRODUCTION**

### **1.1 BACKGROUND**

Design Services have been retained by Community Assets Management Business Unit (CAMBU) to carry out preliminary and concept designs of areas along the river within Hamilton. The areas of interest are riverside reserves and are part of an overall strategy for development of the riverside reserves. The Landscape Management Plans were required as a result of a Council Resolution of April 1997, following acceptance of the Riverside Reserves Management Plan (Clause 2.4.3 (d) and 2.4.4 (h)).

The LMP provides further detailed information relating to the riverside reserves in particular areas. Each LMP supports the principles set out in the RRMP.

### **1.2 SCOPE**

The scope of this report covers Hammond Park (See Plans 1 – 3, Appendix 6.3)

This document covers concept design of structures, preliminary design of planting and a landscape management plan.

### **1.3 DESIGN INPUT**

Design inputs provided by CAMBU are:

- a) The Riverside Reserves Management Plan
- b) Community Consultation Submissions
- c) Site Visit Discussions

Available input provided by Design Services

- i) Base photos and Drawings
- ii) Cadastral Information

### **1.4 GENERAL METHODOLOGY**

In determining the methodology used in the design and determination process, Systems engineering principles were applied.

The methodology was to establish a document heirarchy, carry out a requirements analysis, identify key design issues for each plan, carry out confirmation of community involvement, carry out preliminary design, report back to the community and finalise preliminary design.

The majority of the work in developing the LMP was a desktop study of the areas and the requirements from the RRMP and community input.

The key to the public involvement in this stage of the process was for the design team to report back to the community and to gain some additional feed back from the community and other interested parties.

### **1.4.1 DOCUMENT HIERARCHY**

A document hierarchy has been established in order to develop the plans in a controlled manner. The top level document is the RRMP. This is defined as the "A" level document. Its inputs include the community submissions associated with that document. The next level document, described as a "B" level Document is the LMPs. Further Construction Level Documents (C) level documents will be required for engineering structures and other more detailed plans at a later time.

The Flow of information to establish the document hierarchy and traceability is as follows:-

- a) Community consultation and strategic direction was used to establish the RRMP.
- b) The RRMP was then the agreed direction for establishment and maintenance of the Riverside reserves.
- c) LMP for a designated area can be developed.
- d) Construction and detailed design will be required for engineering structures and associated works.

### **1.4.2 COMMUNITY CONSULTATION**

The Design team had no input to the process at the initial community consultation stage. As an independent review the design team used the existing documentation as a basis for the development of the LMP design.

A requirements analysis from the RRMP using the written submissions as supporting evidence identified key design areas. In addition to the RRMP and the submission consultation with the CAMBU team resulted in the definition of the key areas for attention during the design process. These documents provide the traceable path from design inputs to the final designs.

## **1.5 PURPOSE OF THE LANDSCAPE MANAGEMENT PLAN**

The LMP and this report will be able to be used for the development of landscape works, that is the functional layout, planting and structural facilities of the park. The engineering detail is sufficient with some additional supporting data to gain Resource and Building Consents for the engineering works within the park for the works in principle. Some additional detailed design will be required on specific structures such as the steep bank walkway and any bridges.

## **1.6 REQUIREMENTS ANALYSIS - KEY DESIGN AREAS**

The requirements analysis is used to determine the key design areas for the plans. These were determined on the basis of general issues and specific park issues.

General requirements:-

1. Vegetation - native plant selection
2. Removal of willows
3. Visual impacts - Views
4. Riverbank protection

5. Stormwater drainage
6. User access
7. Cultural aspects

Specific requirements identified for this plan:-

1. Identification of vegetation areas
2. Walkways
3. Riverbank protection
4. Removal of Willows
5. Delineation of park boundaries
6. Identification and protection areas of historical and Maori significance
7. Stormwater drainage
8. River Safety
9. Steep Bank Walkway, Bridge.

## **2.0 CONSULTATION PROCESS & RESULTS**

### **2.1 CONSULTATION METHODOLOGY**

#### **2.1.1 CONSULTATION PROCESS**

The process of consultation was as follows:-

- a) Send out initial letter to all client notified interest groups and individuals to:
  - i) provide opportunity for further comments relevant to the specific sites being developed;
  - ii) determine level of continuing involvement required by the interested parties;
  - iii) get a feel for possible areas of conflict.
- b) Collate responses and summarise according to site or other issues raised.
- c) Develop options to meet the concerns raised and incorporate them in the draft landscape plans and the management regimes as appropriate.
- d) Parties requiring further involvement invited to presentation meetings: The Councillor workshop was notified by the client as a variation to the brief's requirements for consultation. This was held first with other staff and Tangata Whenua invited. The staff and Nga Mana Toopu were also invited to further consultation and presentation meetings. The individual interested parties, the 'green' groups, local Maori groups and one sports group were invited to the public meeting at Hamilton Gardens. A list of attendees is attached in Appendix 6.2.

The presentation included:-

- i) The draft plans and cross sections.
- ii) Introduction to the issues by P. Duncan.
- iii) Discussion of the concept and zones by A. Pearson.
- iv) Discussion of the implementation and management regimes by B. Mackay.
- v) Discussion of any structural issues by P. Duncan.

vi) Fielding questions from interested parties. Issues raised were noted.

Generally the presentation was well received.

- e) Modify plans and management proposals based on consultation issues. Notify Maori representatives of exotic species to be used for river stabilisation works.

### 2.1.2 CONSULTATION ISSUES

Major consultation issues to arise during the process outlined were:-

- a) The level of popular misunderstanding of the process of consultation and outcomes from the previous Management Plan consultation gave rise to some debate at the public meetings. However in general careful listening to and dealing with the issues raised resulted in better understanding by submitters and consultants of the issues and better outcomes meeting client and submitters requirements in the majority of cases.
- b) Impact on cultural and historical areas: The concept plans were accepted as such by Maori consultees, but with the expectation of further consultation and archaeological work on the respective sites, prior to any works. Any planned structures and even some planting in some areas cannot be definitive as a consequence. The recommended course for future consultation was that Nga Mana Toopu (and other local Maori) be consulted and involved in any archaeological work earlier (prior to any concept planning). This would clearly identify critical sites and location of artifacts and obviate the need to modify plans later.

Specifically, Maori representatives expect to be further consulted on the detail of interpretative or commemorative features to be located close to pa sites or in relation to other identified artifacts, and of the location of paths and Totara groves in relation to these sites also.

In effect this constitutes a 'key implementation' area for Tangata Whenua, not identified in the Management Plan but implied by the Policy 3.1.2 (d) and (e): Park development cannot be sensitive to cultural sites without adequate investigation of the physical evidence.

- c) Engineering structures: Some engineering structures have been modified to more easily meet the aims of the community and the RRMP. In Particular the groyne structure was modified and it was determined only to use these structure where necessary. The proposal to link Hammond Park to the Gardens using a walkway was also revised.
- d) Removal of the willows: The meetings clearly indicated a preference for the removal of the willows as soon as possible.

## 2.2 SUMMARY OF SUBMISSIONS

### 2.2.1 ORIGINAL PUBLIC SUBMISSIONS

#### 2.2.1.1. HAMMOND PARK ISSUES

Submission No.	Issue		Covered in Final Version of Management Plan/Comment	Proposed Landscape Options
#28	Board walk in Hammond Bush		✓	Incorporate in plans
#12 & #11	Non native trees on Recreation area – removal for views and security		x	Selective removal and replanting. Limbing up trees.
#57	Fenced walkway in Hammond Bush – no bikes		✓	Incorporate in structural design and proposals
	Reclaim reserve areas (and removal of animals)		✓	Incorporate in plans
	Remove weeds		✓	Incorporate in proposals
	Walkway to Balfour		x	Incorporate link to Balfour Crescent
#59	Screening unsightly buildings		x	Incorporate in proposals as far as scope allows.
	Retain trees on Recreation area – don't remove or sparingly thin only.		x	Selective removal and replanting
#11 (Many)	Retain views across Reserve		x	Selective removal and replanting
#22	Remove willows		✓	Incorporate in proposals with some replanting

Submission No.	Issue	Covered in Final Version of Management Plan/Comment		Proposed Landscape Options
		✓	(In part)	
	Retain views	✓	(In part only)	Selective removal & replanting
	Keep natives/remove exotics	✓		Selective removal and replanting
	No jetty at Malcolm Street	✓		Noted. None proposed in plans.
	Security	✓	(In part, Park Rangers)	Outside scope of plans.
#41	Develop Walkway – no cyclists	✓		Incorporate in structural plans for walkway
	Security by fencing		(Park Rangers)	Incorporate in proposals
#44	Bikeway on East from Hungerford Terrace to Howell Avenue	✓	(Not Hammond Park however)	Noted: outside scope of brief
#55	Riverpath from Hungerford Terrace/Hamilton Gardens to Riverlea Road	✓		Incorporate in proposals as scope allows
#64	Walkways extensions through Hammond Park	✓		Incorporate in proposals as scope allows
#20	Oppose Cycleway through Hammond Bush	✓		Incorporate in walkway design
	Remove <i>Tradescantia</i> from remnant bush	✓		Incorporate in management proposals
	Replanting to protect Hammond Bush	✓		Incorporate in proposals

### 2.2.1.2 GREEN ISSUES

Submission No.	Issues		Covered in M.P. Comments	Proposed Landscape Options
#20	Caution against willow removal		(In part)	Propose replacement with approved species and/or structures
	Alternatives <i>S. pentandra</i> , Flax, <i>Alnus incana</i>			Incorporate in proposals
	Control of predators & Woolly Nightshade	✓		Incorporate in species selection where appropriate
	Planting themes not limiting to other factors	✓		Incorporate in species selection where appropriate
	Use of local provenance's	✓		Limb up trees plus some selective removal
	Pruning rather than tree removal for views	✓		Revegetate riparian zones with robust native and exotic species
#25	Control of water-skiers/wash damage to banks & aquatic habitat		➔ to District Plan	Incorporate in priorities for sequence of implementation
	Priorities criteria suggested	✓		Incorporate in species selection where appropriate
	Pohutakawa for Riverbank	✓		Incorporate in species selection where appropriate
#32	Red gum, <i>Jacaranda</i> , <i>Paulownias</i> , <i>Robinias</i> on River Banks	✓		Incorporate in proposals – selective removal & species selection
#36	Careful removal of willows if replaced with suitable species – native : <i>Kahikatea</i> , <i>Fuchsia</i> , <i>Cordyline</i> , <i>Phormium</i> , <i>Kunzea</i> , <i>Leptospermum</i> & <i>Pukatea</i> .	✓	(In part)	

Submission No.	Issues		Covered in M.P. Comments	Proposed Landscape Options
#36 cont.	Fluctuating water levels affecting stability		→ to District Plan	Outside scope of brief except selection of tolerant, stabilising riparian species.
	Suitable native species for birdlife.	✓		Incorporate in species selection
	Control of pests	✓		Incorporate in proposals
	Clear exotic weeds & use of local provenance species	✓		Incorporate in proposals
	Enhancing of Pa/Urupa. (See also #51)	✓		Incorporate in proposals
	Concern about cycle use of footpaths	✓		Design cycleways of adequate width according to MP requirements & discourage cycle access (Hammond Park) where not required by MP
	Support Gully linkages	✓		Incorporate in proposals
	Riverbank stability - suggest <i>Kowhai</i> & <i>Flax</i> plus other natives (besides <i>Alders</i> )	✓		Incorporate in proposals
	Ecotone plants – <i>Carex</i>	✓		Incorporate in species selections
	River Views – promotion of parking areas & viewing corridors for vehicles. (Kowhai good species as deciduous)	✓	(In part)	Incorporate in proposals
#42	Species – <i>Kahikatea</i> , Tawa, Karaka, Titoki, Nikau for Kereru, Miro) (for birds)	✓		Incorporate in species selection where appropriate
	Control of Possum, rabbit, mustelids, magpies, wasps (most relevant species), rats and wild or domestic cats	✓		Incorporate in management regimes
	Walkways/Cycleways – avoiding conflicts with stability, bush, Maori, Cycles/Peds.	✓		Design cycleways of adequate widths & discourage cycle access where not required.

Submission No.	Issues	Covered in M.P. Comments	Proposed Landscape Options
#60	Willow removal supported	✓	Incorporate in proposals with replacements
	Views from Roads – supported	✓	Incorporate in proposals with replacements
	Rubbish dumping – not supported	✓	Propose rubbish bin provision
	Nectar spp for birds & insects	✓	Incorporate in species selection
	Predator control – rats	✓	Incorporate in management regimes
	Bush protection – acquisition or covenants	✓	Incorporate in proposals
	Deterrence of tree felling	✓	Noted: selective removal of trees with replacements
	Jetties for private use – concern	✓	Outside scope of brief - not applicable to plans
	Wildlife enhancement priority should be greater	✓	Incorporate in proposals

### 2.2.1.3 RECREATION ISSUES

Submission No.	Issues	Covered in M.P. Comments	Proposed Landscape Options
#51	Design for prevention of Motorbike access (available from Roger Boulter)	✓	Incorporate motor bike prevention structures at walkway entries in Hammond Park
#55	Toilets location – Malcolm Street (support)	✓	Incorporate site at Hammond Park
#9	Council of Elders:		
	▪ support more signage and toilets	✓	Incorporate in proposals
	▪ safety issues.(monitoring and maintenance of paths)	✓	Incorporate in proposals
#10	Support access to river	✓	Incorporate in proposals

### 2.2.1.4 MAORI ISSUES

Submission No.	Issues	Covered in M.P. Comments	Proposed Landscape Options
#36	Enhancing of Pa/Urupa	✓	Incorporate in proposals
#64	Concern that Totara & Pou be located so as to avoid damage to Historic/Pa sites	✓	Noted: incorporate in proposal plans. Recommend consultation prior to final location/installation.
#47	Support for Tangata Whenua objectives	✓	Noted.
#6	Stormwater reticulation to land purification process	X	Allow for future development in consultation with Water, Drainage & Refuse.
	Replace unwanted vegetation with natural vegetation, and diversity promotion	✓	Incorporate in proposal
	Artistic themes depicting local Maori traditions and adding unique character.	✓	Incorporate in proposal Consult prior to development of interpretative features
	Replanting native species around significant historical/cultural sites including creative signage	✓	Incorporate in proposals
	Paths/walkways naming after traditional locations	✓	Incorporate information in interpretative signage
	No cycleways across cultural or historic sites	✓	Incorporate cycleways with walkways and consult on final location close to cultural sites, prior to installation.
	Many Urupa/Pa. – protect remaining	✓	Incorporate in proposals

Submission No.	Issues	Covered in M.P. Comments	Proposed Landscape Options
	Acquisition of Cultural & Historical sites of significance	✓	Incorporate in proposals
	Verbal: No 'pou' on specific sites	✓	Noted: consultation with local Maori prior to erection of interpretative and commemorative features.

#### 2.2.1.5 ACCESS ISSUES

Submission No.	Issues	Covered in M.P. Comments	Proposed Landscape Options
#6/23	- Parking and access for disabled	✓ Accessible where access can be accommodated.	Incorporate in walkway design

#### 2.2.2 RIVERSIDE LANDSCAPE MANAGEMENT PLANS SUBMISSIONS 2.2.2.1 HAMMOND PARK

Original Submission No.	This Submission No.	Issue	Proposed Landscape Option
20	101	<p>A. Value of this remnant in preserving whole region biodiversity of</p> <p>B. Micro climate and ecological conditions specific to this remnant</p> <p>C. Protection, restoration, long-term management of Hammond Bush</p> <p><u>Action</u></p> <p>1. Buffer of vegetation around bush</p> <p>2. Provenance spp used</p>	<p>Intention is to meet these concerns with:</p> <ul style="list-style-type: none"> <li>▪ Revegetation using locally sourced species</li> <li>▪ Provide only 1 formalised walkway through bush</li> <li>▪ Education of owners and users through plans and interpretation signage</li> </ul>

Original Submission No.	This Submission No.	Issue	Proposed Landscape Option
		3. Minimise disruption 4. Educate users about special bush	
-	102	1. 2 sections of open and piped drain, discharge to river through outfall which requires work. <u>Action</u> Require input to any change to drainage system	<ul style="list-style-type: none"> <li>Drainage to be addressed in design</li> <li>Consultation within process</li> </ul>
12	103	1. Previous detailed submission 2. Prior acceptance of his proposal to remove and prune some trees. 3. Expected work to start in Sept.	<ul style="list-style-type: none"> <li>Expect to remove willows in gradual process</li> <li>Not immediate removal</li> </ul>
11	104	1. Future communication only with Preston Matenga 2. Council gave prior agreement to fell trees in Sept 3. Residents will fell trees if Council can't 4. Loss of views 5. Remove all willows and half of other trees 6. This submission should be subsequent to felling. 7. Remaining trees require annual pruning 8. Council ignoring residents 9. Token removal of trees requested at least	<ul style="list-style-type: none"> <li>Not immediate removal</li> <li>Consultation process to explain Council is not ignoring residents</li> <li>Expect to remove willows in gradual process.</li> </ul>
	105	<ul style="list-style-type: none"> <li>Schick contractor's proposal filling and compacting of slope to remove lower terrace</li> </ul>	<ul style="list-style-type: none"> <li>Proposal not to receive consent</li> </ul>
-	106	1. Litter from users: propose instant fine 2. More public awareness of waterskiing bylaw 3. Signage to ban motorcycles & horses from park 4. Support of Park Warden	<ul style="list-style-type: none"> <li>Waterskiing issue outside of brief</li> <li>Park warden longterm (outside scope of brief)</li> </ul>

Original Submission No.	This Submission No.	Issue	Proposed Landscape Option
		5. Toilet location of interest	<ul style="list-style-type: none"> <li>Signage &amp; toilets to be addressed in management</li> </ul>
51	107	Prior to public consultation: 1. Involvement with the HEIRS/Riverlea project	<ul style="list-style-type: none"> <li>Discussion with HEIRS representative Alisdair Craig in staff consultation</li> </ul>

## 2.3 CONSULTATION MEETING ISSUES - SUMMARY

### 2.3.1 COUNCILLOR'S WORKSHOP

Issue	Proposed Landscape Option or Response
Resource Consent: <ul style="list-style-type: none"> <li>How long to get one from Environment Waikato?</li> </ul>	Not envisaged as a problem. Incorporated into implementation process.
Consultation with Tainui: <ul style="list-style-type: none"> <li>Especially Sir Robert Mahuta with regard to river claim.</li> </ul>	Consultation will be with Nga Mana Toopu as Council's contracted Maori representatives
Budgeting: <ul style="list-style-type: none"> <li>Implementation determined by annual budget and resource consents.</li> </ul>	Staging of implementation allows for the Council's budgetary processes
Overhead lines (Hamilton Gardens): <ul style="list-style-type: none"> <li>Consult power company to work with them for a future upgrading</li> </ul>	Outside scope of plan.

### 2.3.2 STAFF MEETING

Issue	Proposed Landscape Option or Response
Visual contact with water very important	Addressed in protection of private and public views on plans
Vistas (long stretch) of water	Addressed by planning lookout points especially in Hammond Park
Cycles: <ul style="list-style-type: none"> <li>▪ alternate routes</li> <li>▪ concurrent development of alternatives</li> </ul>	Cycleway not allowed for in Management Plan for Hammond Park. Alternatives outside scope of brief.
Stormwater: <ul style="list-style-type: none"> <li>▪ some outlets may be obsolete</li> <li>▪ no stormwater quality study yet</li> <li>▪ size of treatment area required?</li> <li>▪ volume output?</li> </ul>	Development of stormwater options depends on initiatives by Water, Drainage and Refuse Unit. Plans allow for future options and management of existing stormwater outfalls.
Groynes: <ul style="list-style-type: none"> <li>▪ Doubt expressed about their necessity</li> </ul>	Appropriate planting alternatives to groynes are integral to the plans while allowing for structures where necessary.
Recreation use: <ul style="list-style-type: none"> <li>▪ Trout fishing at Malcolm Street</li> </ul>	Beach areas are retained open wherever possible within the stability constraints.
Vegetation removal: <ul style="list-style-type: none"> <li>▪ Concern that providing resident's views is not reason enough to remove vegetation and decrease stability</li> </ul>	Stability and views are both addressed in proposals to selectively remove and replace Crack Willows.

### 2.3.3. HAMMOND PARK MEETING

Issue	Proposed Landscape Option
<b>Habitat:</b> <ul style="list-style-type: none"> <li>require recognition of fish movement up streams )</li> <li>will weirs remain sustainable/maintenance of silt buildup? )</li> </ul>	Waterways to be reinstated as naturally as possible
<b>Pest Control:</b> <ul style="list-style-type: none"> <li>possum control required continually )</li> <li>nurse species especially to be possum tolerant )</li> </ul>	Address in Management Regimes. Control will begin prior to planting.
<b>Toilets:</b> <ul style="list-style-type: none"> <li>at Malcolm St desired/rejected equally )</li> <li>screening from residents view necessary )</li> <li>further consultation over location )</li> </ul>	Possible site is shown on Hammond Park plan, but is to be subject to consultation before finalisation and construction.
<b>Mangaonua Stream:</b> <ul style="list-style-type: none"> <li>concern over dumping into waterway</li> </ul>	Outside scope of brief
<b>Vandalism:</b> <ul style="list-style-type: none"> <li>problem at Malcolm St in summer</li> </ul>	Possible future Ranger. Outside scope of brief except to enhance passive supervision by open views.
<ul style="list-style-type: none"> <li>supportive of fencing to reduce access into private property</li> <li>"no swimming" sign replacements</li> </ul>	Address in plans and Management Regimes. Address in Management Regime
<b>Peacocks Road:</b> <ul style="list-style-type: none"> <li>desire for river edge of western side to be reserved</li> </ul>	Outside scope of brief
<b>Play Structure:</b> <ul style="list-style-type: none"> <li>may disturb informal games which occur there</li> </ul>	Option left open as to future play equipment. Resite swings to fit into play area without disruption.

### 2.3.4 NGA MANA TOOPU MEETING

Issue		Proposed Landscape Option
Planting: <ul style="list-style-type: none"> <li>local plant sourcing</li> <li>culturally sensitive species use</li> <li>cultural harvest of species</li> <li>consultation over species number /size</li> </ul>		Address in proposals
		Address in proposals
		Outside scope of brief (future use by consultation?)
		Incorporated into consultation process
Archeological Sites: <ul style="list-style-type: none"> <li>management report by archeologist</li> <li>investigation into tomo (burial/storage)</li> <li>planting on pa damage earthworks or burial</li> <li>consultation required for resource consents</li> </ul>		Address in proposals (recommend investigation prior to works)
	No sites known to be tapu (waahi tapu)	Noted
Site Visit: <ul style="list-style-type: none"> <li>desire site visit with us</li> </ul>		Incorporate requirement for site investigations prior to works.
Process: <ul style="list-style-type: none"> <li>require establishment of a process to be followed for all riverside reserves on which work is occurring</li> </ul>		Recommend earlier future consultation with Tangata Whenua
Tangata whenua responsibility : <ul style="list-style-type: none"> <li>Identification of critical sites (proven scientifically)</li> <li>Clarification of site issues; site investigation</li> <li>Detail of site : enhance/mitigate</li> <li>Planting consultation</li> </ul>		Incorporate requirement for site investigation prior to works
Identification and investigation: <ul style="list-style-type: none"> <li>to take place prior to plans being contracted</li> <li>to be part of consents</li> </ul>		Incorporate requirement for site investigation prior to works

Issue	Proposed Landscape Option
Future consultation: <ul style="list-style-type: none"> <li>▪ totara/pou/signage location )</li> <li>▪ path materials )</li> </ul>	Incorporate requirement for site investigation prior to works
Status: <ul style="list-style-type: none"> <li>▪ Nga Mana Toopu has hapu authority/representation</li> <li>▪ contracted to HCC for District Plan Review and Resource Consents only</li> </ul>	Noted Noted
Naming: <ul style="list-style-type: none"> <li>▪ traditional naming of sites desired</li> </ul>	Incorporate into consultation on signage and interpretation
Recommendations: <ul style="list-style-type: none"> <li>▪ Further consultation prior to construction and planting – require identification and investigation</li> <li>▪ CAMIBU employ archeologists to identify sites</li> <li>▪ Copy of plant species plans to be provided to Nga Mana Toopu prior to report</li> </ul>	Recommend in report and proposals  To be addressed in permit and consent conditions Incorporated into consultation process.

### 2.3.5 TE KOTUKU WHENUA MEETING

Issue	Proposed Landscape Option
Interpretation Signage: <ul style="list-style-type: none"> <li>▪ require consultation over content and positioning</li> <li>▪ Hammond – northern pa site only (open site)</li> </ul>	Recommend in report on consultation Incorporate in proposal.
Planting: <ul style="list-style-type: none"> <li>▪ species lists to be forwarded to Te Kotuku Whenua. Include bank protection/alternative willow species information</li> </ul>	Incorporated into consultation process.
<ul style="list-style-type: none"> <li>▪ Height of boardwalk</li> </ul>	Incorporate 500-700mm high boardwalk

Issue	Proposed Landscape Option
<p>Archeologist:</p> <ul style="list-style-type: none"> <li>▪ to investigate pa layout )</li> <li>▪ determine totara location )</li> <li>▪ consultation after report )</li> </ul>	<p>Requirement to investigate prior to works &amp; consultation over interpretation.</p>
<p>Southern Pa:</p> <ul style="list-style-type: none"> <li>▪ suggest burial sites located there</li> <li>▪ Pa Sites more extensive than immediate locality</li> <li>▪ desire site walk through with staff</li> </ul>	<p>Investigation prior to implementation</p> <p>Noted: site investigations will identify problem areas/artifacts.</p> <p>Investigations proposed prior to any works.</p>
<p>Rubbish disposal provision to be made</p>	<p>Noted: incorporate into proposals and management regimes.</p>

### **3.0 LANDSCAPE MANAGEMENT**

#### **3.1 GOALS**

The goals for the Landscape Management Plans will directly reflect those of the Riverside Reserves Management Plan but in a more specific way or at a more detailed level. These are identified in section 3.2 below as Design Intent statements. Each of these can be related to the specific 'Objectives' of the Management Plan.

The desirable outcomes are:

- (a) Fulfillment of the Management Plan goals
- (b) A more functional and sustainable resource
- (c) Low maintenance facilities
- (d) Better public appreciation of the site history and uniqueness
- (e) Ongoing community involvement in use and management of the resource.

#### **3.2 DESCRIPTION OF LANDSCAPE ZONES**

##### **3.2.1. HAMMOND PARK (See Appendix 6.3, Plans 1 to 7)**

**Zone A: Balfour Gully** (from Riverlea Road to the Riverbank)

This zone is characterised by open spaces enclosed by well vegetated banks, poorly drained gully floor and moderate erosion potential especially along the river bank. It is suited to passive recreation uses. The gully is bordered by both residential and industrial areas, the latter of which has a negative visual impact on the zone. Fill at the heads of the gully has had an impact on the natural drainage and topography. Access in to the gully is steep and limited within the gully by boggy ground.

**A1. Cliff Face at River:**

Critical design factors: Stability, vegetation diversity, stormwater control.

Design intent: Stabilise erosion areas with exotic and native planting gradually increasing the native content and controlling weeds. (See A3 for stormwater control). Control pests.

**A2. Riverside Terrace:**

Critical design factors: Stability, views, access control and vegetation diversity.

Design intent: Construct walkway and viewing platform. Control edge stability by planting and revegetating with native shrub species between path and top of cliff. Fence edge of cliff to prevent access to erosion prone cliff areas.

**A3. Valley Floor:**

Critical design factors: Stormwater gully erosion from high peak flows, maintenance of boggy ground and open space use.

Design intent: Regrade to create more 'natural' open watercourse, reinforced where necessary and planted with native riparian species. In association with Water Drainage & Refuse Unit, create revegetated swampy basin and redesigned outflow to control erosion. Modify open spaces by appropriate planting and construct walkway. Provide picnic tables at river end. Provide good tractor access for mowing.

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**A4. Banks:**

Critical design factors: Industrial estate visibility, scale and mass of planting.

Design intent: Increase native content of vegetation and plant to control weeds and screen factory buildings.

**Zone B: River Terraces (from Balfour Gully to Hudson Gully.)**

This zone is characterised by semi-open woodland and glades of mixed exotic native trees except for the degraded native vegetation of the cliff faces. The views to the River are limited. The erosion potential is low provided the banks remain vegetated. There is also an old pa site close to the Hudson Street gully. Access is relatively easy along the terrace and within the gully, although the gully sides are steep.

**B1. River Cliff Face:**

Critical design factors: Access control, weeds and biodiversity in vegetation.

Design Intent: Replace exotic vegetation and weeds with native species. Fence to prevent access to steep banks. Control pest animals.

**B2. Open Terrace:**

Critical design factors: Access, vegetation diversity and ownership.

Design intent: Ideally purchase terrace and revegetate after removal of exotic trees and weeds. Alternatively work with residents towards cooperative means of revegetation. Fence boundaries and construct walkway.

**B3. Pa Site:**

Critical design factors: as for access, vegetation diversity and cultural aspects.

Design intent: Retain terrace in glade of open grass/fern to avoid obscuring pa. Provide interpretive signs and access around the terrace below the pa. Fence while establishing planting and clearing. Plant Totara grove.

**B4. Banks:**

Critical design factors: Ownership, vegetation diversity and weeds.

Design intent: Ideally acquire as reserve and increase species diversity. Alternatively work with landowners co-operation to increase species diversity. Fence boundaries.

**B5. Gully:**

Critical design factors: Access, weeds, biodiversity, stormwater.

Design intent: Set up stormwater filtering wetland in gully by modifying topography and stream design with weir. Remove exotic trees and weed species to revegetate with native forest species. Provide walkway connection to Hudson Street and Bridge Street at Riverside Terraces.

Management aspects: Modify waterway maintenance to encourage native vegetation naturalisation and wetland development. Control animal pests.

**Zone C. Hammond Bush (Hudson Gully to Hammond Pa site):**

This zone is characterised by the presence of swamp forest remnants and a highly sensitive environment. Clearing, drainage, uncontrolled access and weed growth are endangering its viability. It has low erosion potential. Large parts are in private ownership predominantly the upper scarp or banks.

**C1. Riverside Cliff Face:**

Critical design management factors: Weeds, pests and access control.

Design Management Intent: Control weeds and revegetate. Public access controlled by constructed, raised walkway and fences across bush edges. Control animal pests.

**C2. Terrace:**

Critical design/management factors: Pests, weeds, access, ownership and drainage. Design intent: Construct raised walkway which will control public access; fence boundaries and bush edges. Replace weeds with endemic species.

Management aspects: Work with adjacent landowners to prevent clearing and drainage. Control weeds and pests.

**C3. Banks (Upper Scarp):**

Critical design management factors: Weeds, clearing, and ownership.

Design Intent: Negotiate acquisition or landowner cooperation to facilitate a holistic management. Fence boundaries and bush edges. Replace weeds species with endemic species.

Management aspects: Work with adjacent landowners to prevent clearing and drainage. Control weeds and pests.

**Zone D. Open Riverside Terraces (from the Pa site to the cliff at the North End.)**

The zone is characterised by grassed terraces separated by vegetated banks which create a series of linear open spaces and a central flat beach with low erosion potential where the river banks are protected. The pa site and cliffs at the south end are distinctive and warrant special interpretation and protection from erosion.

**D1. Riverside Cliff Face:**

Critical design factors: Access control, stability, vegetation cover, weeds, and ecotone habitat.

Design intent: Revegetate with small native tree/shrub species and temporarily fence to control access.

**D2. Beach & River Edge:**

Critical design factors: Stability, views, vegetation diversity in selected areas, recreational use and habitat. Stormwater discharge.

Design intent: Install stabilising structures and planting. Upright willows/native trees will be used, with lower growing native species where beach access is not required. Temporary fencing to protect planting. Provide picnic tables. In association with Water, Drainage & Refuse Unit screen and extend stormwater outflow structure.

**D3. Pa Site:**

Critical design factors: Cultural aspects, stability and access.

Design intent: Plant banks with native species (including Totara grove) but maintain open terrace. Install interpretative signage near pa site. Remove exotic trees from site.

**D4. Terrace:**

Critical design factors: Access, recreation and stormwater utilities.

Design intent: Retain open spaces for passive recreation. Install walkway to top terrace and rear of pa site. Develop swampy area with native species and fence off. Provide playground equipment. Define property boundaries with bollards or planting.

- D5. Banks:**  
Critical design factors: Views, habitat and vegetation diversity.  
Design intent: Replace exotic and weed species with diverse native planting. Use some lower growing species where views are important.
- D6. Geoffrey Place Reserve:**  
Critical design factors: Significant Oaks, stormwater drainage, open space and access.  
Design intent: Retain open space and Oaks. Regrade drain, and plant banks and under Oaks with mixed exotic/native species. Install a Walkway connection.  
Maintenance aspects: Institute maintenance programme for Oaks.

**Zone E: Steep Banks and Cliffs**

This zone is characterised by heavily vegetated, steep slopes (1:1) with low erosion potential where vegetation cover is retained. The views from the top of the banks up and down the river are panoramic where vegetation has been cleared. The vegetation is both native and exotic with some problem weed species. Access is difficult.

- E1. Beach and Cliffs:**  
Critical design factors: Access control, weeds and pests, vegetation biodiversity and stability.  
Design Management intent: Fence edge of bush at base of cliffs to control inappropriate pedestrian access. Control weeds and replant native species. Control animal pests.
- E2. Steep Banks:**  
Critical design factors: Access, weeds and pests, stability and vegetation biodiversity.  
Design intent: Construct raised walkways/bridges with rails. Control problem weeds and pests. Replant with native species.
- E3. Terrace Top:**  
Critical design factors: Weeds, views, stability, resident privacy versus public areas.  
Design intent: Construct walkway, where possible below ridgeline. Plant terrace with selected trees, to provide privacy, but retain openness of views with viewing platform and low groundcover species. Control weed species. Fence private boundaries where necessary.

### 3.3 SEQUENCE OF IMPLEMENTATION

There are two aspects to implementation. The first is the ordering of the general development of the zones over time and is dealt with here. The second is the staging of development within each zone and is covered in Section 3.4.1.

#### 3.3.1. SEQUENCE OF ZONES

The priorities to determine any sequence of implementation should be based on:

- (a) The relative values of the resources including the magnitude and immediacy of any threats to them. These values in rough order of priority are:
  - stability (if the river bank is lost, there is no possible development)
  - ecological sensitivity (protecting and enhancing habitat values)
  - cultural factors (historic and cultural sites protection)
  - public use and access (protection, enhancement and safety issues).
  - public/private views (protection and enhancement)
- (b) Achievability, i.e., overall ease of completion of the proposed programme including possible flow-on benefits or costs and available budget.

These factors are tabulated below against each zone with 1 being low priority and 5 being high priority (in addition the factors above are prioritised by multiplying each by the respective priority assigned).

Prioritising Value	Stability	Ecology	Cultural	Access & Use	Views	Cost (Budget)	Ease of Impl.	Total Priority (from 110)
Zone	x 6	x 5	x 4	x 3	x 2	x 1	x 1	
A	3	3	3	4	3	2	2	67
B	2	3	4	4	2	2	2	63
C	2	5	2	4	2	2	2	65
D (except D3)	2	2	1	5	5	3	3	57
D3	2	2	5	5	5	3	3	73
E	2	4	1	4	3	1	1	56

The recommended order is therefore:

1. Zone D3
2. Zone A
3. Zone C
4. Zone B
5. Zone D (except D3)
6. Zone E

### **3.4 LANDSCAPE MANAGEMENT REGIMES**

#### **3.4.1 STAGING OF DEVELOPMENT WITHIN ZONES**

In general there is a logical natural and ecological phasing of development as follows:  
The number of stages and timing will be particular to the zone and area as detailed in the proposed regimes which follow this section. Stages 1 – 7 constitute the Initial Implementation. Stage 8 constitutes all the ongoing management and maintenance requirements.

- Stage 1: (Year 1)  
(a) Obtain required resource consents and permits for works.  
(b) Carry out weed pest and risk assessment relating to revegetation works. Begin propagation of local native species.
- Stage 2: (Year 1)  
Carry out all drainage, stability and erosion control works including  
(a) removal of obstructing structures and vegetation (including pruning and removal of selected willows)  
(b) installation of gabions, groynes or geotextile reinforcing of banks and retaining structures.  
(c) installation of target vegetation supportive of structural works.
- Stage 3: (3 years; years 1 – 3)  
Removal of "non-target" vegetation unnecessary for stability (i.e. exotics and weed species) on site and immediate locality (determined by weed risk assessment). Begin pest control.
- Stage 4: (Year 2 or in some cases Year 1)  
Install access ways including  
(a) walkway retaining structures  
(b) walkways at grade  
(c) elevated walkways and bridges  
(d) viewing platforms  
(e) fences  
(f) signage as appropriate, rubbish bins, picnic tables and seats  
(g) other facilities: playgrounds and toilets
- Stage 5: (3 years; years 2 – 4)  
Install dense shrub and tree vegetation as "nurse" species (shelter) and to control large weed species (by shading). Add mulch and plant secondary succession species where possible. Control pests.
- Stage 6: (3 – 5 years; years 4 – 9)  
Control low growing weed spp (ground smothering) and pests.  
Remove non-target "stability" vegetation and exotic "nurse" species established at Stage 2 or 5 depending on stability and growth of vegetation. Install larger (climax or target) vegetation species.
- Stage 7 (2 years; years 5 – 10)  
Enrich ground cover layer to exclude light and prevent weed reinvasion and to enhance diversity.

Stage 8 Monitor and manage to maintain successional growth with replacements, weed control and pests.

### 3.4.2 HAMMOND PARK DEVELOPMENT

#### 3.4.2.1 INITIAL IMPLEMENTATION

Zone A: Balfour Gully

##### A1 Cliff Face:

##### (i) Staging

- (a) Begin propagation of local species.
- (b) Stabilise erosion areas with any structures required and appropriate native/exotic species. Begin pest control.
- (c) Control Privet, Ginger, Arum and replace with native species (mass planting).
- (d) Control groundcover weed species
- (e) Enrich species range and plant groundcover species.

##### (ii) Species Range

		<u>Form</u>
(b)	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Fuchsia excorticata</i>	Shrub/Tree
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Coprosma lucida</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Sophora microphylla</i>	Tree
	<i>Salix</i> 'Aokautere'	Tree
	<i>Salix</i> 'Moutere'	Tree
(c)	<i>Myrsine australis</i>	Shrub
	<i>Knightia excelsa</i>	Tree
	<i>Brachyglottis repanda</i>	Shrub
	<i>Cyathea dealbata</i>	Tree fern
	<i>Cyathea cunninghamii</i>	Tree fern
	<i>Cyathea medullaris</i>	Tree fern
	<i>Cordyline banksii</i>	Shrub
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
(e)	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Schefflera digitata</i>	Shrub
	<i>Macropiper excelsum</i> spp. <i>excelsum</i>	Shrub
	<i>Blechnum chambersii</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Climber
	<i>Machaerina sinclairii</i>	Groundcover

## A2 Riverside Terrace:

### (i) Staging

- (a) Check area for cultural artifacts before any works.
- (b) Obtain resource consent/permits for structures. Begin propagation of local species.
- (c) Stabilise slip areas adjacent to cliff with appropriate species. Begin pest control.
- (d) Build viewing-platform and walkway access (with motorbike preventative design). Install signage and rubbish bins.
- (e) Spot-spray weeds and grass on terrace prior to planting native 'nurse' species.
- (f) Remove Privet, gorse and other shrub or climbing weeds. Plant successional species.
- (g) Control groundcover weeds.
- (h) Enrich species range and plant groundcover species.

### (ii) Species Range

		<u>Form</u>
(c)(e)	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Cordyline australis</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Tree/Shrub
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Coprosma robusta</i>	Shrub
	<i>Coprosma grandifolia</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Hoheria sexstylosa</i>	Tree
(f)	<i>Sophora microphylla</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Aristotelia serrata</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Tree/Shrub
	<i>Mysine australis</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Geniostoma rupestra</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Fuchsia excorticata</i>	Tree/Shrub
	<i>Schefflera digitata</i>	Shrub
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Hedycarya arborea</i>	Tree
(h)	<i>Coprosma rhamnoides</i>	Shrub
	<i>Coprosma rigida</i>	Shrub
	<i>Cyathea medullaris</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Melicope simplex</i>	Shrub
	<i>Dicksonia squarrosa</i>	Treefern
	<i>Dicksonia fibrosa</i>	Treefern
	<i>Blechnum chambersii</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Pellaea rotundifolia</i>	Groundcover

### A3 Valley Floor:

#### (i) Staging

Check area for any cultural artifacts prior to any works.

- (a) Obtain resource consents/permits for stream bed stabilisation at River edge. Begin propagation of local native species.
- (b) Realign stream and drainage swale. Create low lying wetland/bog at existing manhole locality and new outflow. Reinforce swale and stream bed with engineering and plant materials as appropriate. Begin pest control.
- (c) Build walkway alongside new stream bed and regrass base of gully. Install bridging for tractor access. Install signage.
- (d) Enhance species diversity and plant tree groupings in gully open spaces.

#### (ii) Species range

		<u>Form</u>
(c) Swale:	<i>Cyathea cunninghamii</i>	Treefern
	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Cordyline australis</i>	Tree
	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Dicksonia squarrosa</i>	Treefern
Bog:	<i>Phormium tenax</i>	Shrub
	<i>Cordyline australis</i>	Tree
	<i>Leptospermum scoparium</i>	Shrub
	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Coprosma robusta</i>	Shrub
	<i>Carex secta</i>	Groundcover
	<i>Carex virgata</i>	Groundcover
	<i>Asplenium bulbiferum</i>	Groundcover
	<i>Streblus microphylla</i>	Shrub/tree
	<i>Carex dissita</i>	Groundcover
Open Space:	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Alnus cordata</i>	Tree

### A4 Banks:

#### (i) Staging

- (a) Begin propagation of local native species
- (b) Remove shrub weeds. Replant with native 'nurse' species. Begin pest control.
- (c) Remove exotic species especially weeds and replace with large native trees. (especially to screen industrial sites)
- (d) Construct walkway connections to Balfour and Riverlea Roads. Install signage.
- (e) Enrich species range and groundcover in understorey

#### (ii) Species Range

		<u>Form</u>
(b)	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Phormium cookianum</i>	Shrub

(ii) Species Range

		<u>Form</u>
(c)	<i>Dacrydium cupressinum</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Podocarpus totara</i>	Tree
	<i>Prumnopitys taxifolia</i>	Tree
(e)	<i>Coprosma rotundifolia</i>	Shrub
	<i>Coprosma propinqua</i>	Shrub
	<i>Coprosma tenuicaulis</i>	Shrub
	<i>Astelia grandis</i>	Groundcover
	<i>Isolepis reticularis</i>	Groundcover
	<i>Schoenus maschalinus</i>	Groundcover
	<i>Laurelia novae-zelandiae</i>	Tree
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Astelia grandis</i>	Groundcover
	<i>Syzigium maire</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/tree
	<i>Sophora microphylla</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/tree
	<i>Myrsine australis</i>	Shrub
	<i>Cyathea medullaris</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Schefflera digitata</i>	Shrub
	<i>Brachyglottis repanda</i>	Shrub
	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Blechnum chambersii</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Leucopogon fasciculatus</i>	Shrub

**Zone B: River Terraces**

**B1 Cliff Face:**

(i) Staging

- (a) Remove exotic trees, shrubs and weeds unnecessary for stabilisation. Begin pest control. Begin propagation of local native species.
- (b) Replant with appropriate nurse to suppress weeds.
- (c) Remove remaining exotic trees and replace with native successional tree and shrub species.
- (d) Control groundcover weeds especially *Tradescantia* and Ginger.
- (e) Enrich species diversity and groundcover natives.

(ii) Species Range

		<u>Form</u>
(b)	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub

(ii) Species Range

		<u>Form</u>
	<i>Coprosma lucida</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
(c)	<i>Sophora microphylla</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Myrsine australis</i>	Shrub
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea cunninghamii</i>	Treefern
(e)	<i>Brachyglottis repanda</i>	Shrub
	<i>Cordyline banksii</i>	Shrub
	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Schefflera digitata</i>	Shrub
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Macropiper excelsum</i> ssp. <i>excelsum</i>	Shrub
	<i>Blechnum chambersii</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Groundcover

**B2 Open Terraces:**

(i) Staging

- (a) Check site for cultural artifacts prior to any works especially along boundary lines for fences and proposed walkway alignment.
- (b) Obtain resource consents for construction of walkway and negotiate (longterm) covenants or purchase of the privately owned terraces. Begin propagation of local native species.
- (c) Fence private boundaries and construct boardwalk (with motorbike preventative design).
- (d) Remove exotic trees and shrubs and weeds. Begin pest control.
- (e) Replant with native 'nurse' or pioneer species and mulch where possible.
- (f) Introduce secondary successional or climax species. Control groundcover weeds.
- (g) Enrich species range and plant native groundcover species.

(ii) Species Range

		<u>Form</u>
(e)	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Coprosma robusta</i>	Shrub
	<i>Coprosma grandifolia</i>	Shrub
	<i>Hoheria sexstylosa</i>	Tree
	<i>Cordyline australis</i>	Tree
	<i>Phormium cookianum</i> spp. <i>hookeri</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub

(ii) Species Range

		<u>Form</u>
(f)	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Fuchsia excorticata</i>	Shrub/tree
	<i>Knightia excelsa</i>	Tree
	<i>Myrsine australis</i>	Shrub
	<i>Schefflera digitata</i>	Shrub
	<i>Sophora microphylla</i>	Tree
	<i>Podocarpus totara</i>	Tree
	<i>Aristotelia serrata</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/tree
	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Prumnopitys taxifolia</i>	Tree
	<i>Pseudopanax arboreus</i>	Shrub
	<i>Pseudopanax crassifolius</i>	Tree
	<i>Hedycarya arborescens</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
(g)	<i>Syzigium maire</i>	Tree
	<i>Laurelia novae-zelandiae</i>	Tree
	<i>Elaeocarpus dentatus</i>	Tree
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea medullaris</i>	Treefern
	<i>Dicksonia squarrosa</i>	Treefern
	<i>Dicksonia fibrosa</i>	Treefern
	<i>Blechnum chambersii</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Pellaea rotundifolia</i>	Groundcover
	<i>Melicope simplex</i>	Shrub
	<i>Coprosma rhamnoides</i>	Shrub
	<i>Coprosma rigida</i>	Shrub
	<i>Ripogonum scandens</i>	Climber
	<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Climber
	<i>Metrosideros fulgens</i>	Climber

**B3. Pa Site:**

(i) Staging

- (a) Check pa site for cultural artifacts especially where proposed walkway is to go and areas to be planted.
- (b) Obtain Historic Places Trust permission and Resource consents for walkway construction. Begin propagation of local native species.
- (c) Fence private boundaries. Construct walkway and seat(s). Temporarily fence pa site and maintain open areas in lawn.
- (d) Remove exotic trees, shrubs and weeds and spray grass in pa clearing. Begin pest control.
- (e) Establish from local seed, a mixed turf of native grasses and groundcover ferns. Establish stand of Totara nearby in consultation with local Maori. Replant native successional species where bush is to be reestablished using species specified for B2 (terraces) and B1 (gully sides/cliffs). Control groundcover weeds.

- (f) Enrich species range and plant groundcover species a specified in B2(g) and B1(e).
- (g) Remove temporary fence once planting is established and provide ongoing management and maintenance. Provide pa interpretative display signage close to path in consultation with local Maori.

(ii) Species Range

		<u>Form</u>
(e) Turf	<i>Ehrharta stipoides</i> ( <i>Microlaena stipoides</i> )	Groundcover
	<i>Osplimetus imbecillus</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
Other	Species specified in B2(e) & (f) & B1(b)&(c)	
(f)	Species specified in B2(g)&B1(e)	

**B4 Banks:**

(i) Staging

- (a) Alert owners to significance of area. Work through consultation towards co-operative agreements (purchase, covenant or easement) to enable revegetation of the banks and gully sides.
- (b) Check site for cultural artifacts especially along the proposed tracks and boundary lines for any proposed fencing. Begin propagation of local native species.
- (c) Remove exotic species of trees and shrubs (especially weeds). Begin pest control.
- (d) Replant with native 'nurse' and successional species. Remove groundcover weeds.
- (e) Enrich species range and plant native groundcover species.

(ii) Species Range

		<u>Form</u>
(d)	<i>Leucopogon fasciculatus</i> ) especially	Shrub
	<i>Kunzea ericoides</i> var. <i>ericoides</i> ) open areas	Tree
	<i>Olearia</i> var. <i>colorata</i> )	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub
	<i>Aristotelia serrata</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Myrsine australis</i>	Shrub
	<i>Sophora microphylla</i>	Tree
	<i>Podocarpus totara</i>	Tree
	<i>Dacrydium cupressinum</i>	Tree
	<i>Knightia excelsa</i>	Tree
(e)	<i>Prumnopitys taxifolia</i>	Tree
	<i>Metrosideros robusta</i>	Tree
	<i>Cyathea medullaris</i>	Treefern
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Schefflera digitata</i>	Shrub
	<i>Brachyglottis repanda</i>	Shrub

(ii) Species Range

	<u>Form</u>
<i>Rhodothamnus solandri</i>	Groundcover
<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
<i>Blechnum chambersii</i>	Groundcover
<i>Machaerina sinclairii</i>	Groundcover
<i>Polystichum richardii</i>	Groundcover

**B5 Gully:**

(i) Staging:

- (a) Check area for cultural artifacts prior to any works.
- (b) Obtain resource consents or permits for any structures. Begin propagation of local native species.
- (c) Construct 'naturalised' rock weirs on stream to assist stabilisation and riparian revegetation and diversity.  
Construct walkway and bridges to connect Riverside walkway to Hudson Street, (with motorbike preventative design). Install signage and rubbish bins as appropriate.  
Fence private boundaries where necessary.
- (d) Remove exotic species of trees and shrubs (especially *Cortaderia*, Walnuts, Privet and *Solanum*) except any trees required for stabilisation. Begin pest control.
- (e) Replant with native 'nurse' species and successional species where appropriate.
- (f) Remove groundcover weed species.
- (g) Enrich species range and plant native groundcover and riparian species.

(ii) Species Range

		<u>Form</u>
(e) Gullysides:	Species as for B4(d)	
Riparian:	<i>Phormium tenax</i>	Shrub
	<i>Hoheria sexstylosa</i>	Tree
	<i>Plagianthus regius</i>	Tree
	<i>Dianella nigra</i>	Groundcover
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Cordyline australis</i>	Tree
	<i>Dicksonia squarrosa</i>	Treefern
	<i>Cortaderia fulvida</i>	Shrub
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Coprosma robusta</i>	Shrub
(g) Gullysides:	Species as for B4(e)	
Riparian:	<i>Astelia grandis</i>	Groundcover
	<i>Elaeocarpus hookerianus</i>	Tree
	<i>Syzigium maire</i> (wet areas)	Tree
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Laurelia novae-zelandiae</i>	Tree
	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Streblus microphylla</i>	Tree
	<i>Carex dissita</i>	Groundcover
	<i>Asplenium bulbiferum</i>	Groundcover

## Zone C: Hammond Bush

### C1 Cliff Face:

- (i) Staging
  - (a) Begin propagation of local native species.
  - (b) Remove shrub and tree weed species. Initiate pest control.
  - (c) Replant to enrich existing bush with native successional and climax species.
  - (d) Control groundcover weeds (especially *Tradescantia* and *Selaginella*).
  - (e) Enrich groundcover planting with native species.

#### (ii) Species Range

		Form
(c)	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Brachyglottis repanda</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookerii</i>	Shrub
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Schefflera digitata</i>	Shrub
	<i>Sophora microphylla</i>	Tree
	<i>Coprosma lucida</i>	Shrub
	<i>Myrsine australis</i>	Shrub
	<i>Fuchsia excorticata</i>	Tree
	<i>Macropiper excelsum</i> ssp. <i>excelsum</i>	Shrub
	<i>Cordyline banksii</i>	Shrub
	<i>Knightia excelsa</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea medullaris</i>	Treefern
(e)	<i>Blechnum chambersii</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Climber
	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover

### C2 Riverside Terrace:

- (i) Staging
  - (a) Obtain permits for structures and negotiate easements or covenants with private owners to enable co-operative management of the bush.
  - (b) Check area for proposed walkway and fences for cultural artifacts prior to any works.
  - (c) Erect raised boardwalks with motorbike access prevention. Erect post and wire fences on boundaries and edge of bush. Erect signage and install rubbish bins. Begin propagation of local species.
  - (e) Work with residents to remove any planted exotic tree and shrub species and control exotic weeds (especially Ginger, Privet, Arum, Canna and Honeysuckle). Begin pest control. To facilitate swamp conditions remove any drainage modifications previously made by residents.

- (e) Replant bush and open areas with light excluding nurse species and selected successional species.
- (f) Remove Alders when nurse species have established.
- (g) Replant swamp forest trees and shrubs in gaps.
- (h) Control groundcover weeds (including *Tradescantia*, *Selaginella*, *Lamium*, *Iris*, *Nephrolepis cordifolia*, Onionweed, *Crocosmia*, *Galium* and *Primula*).
- (j) Enrich groundcover layer of planting when weed control is effective.

(ii) Species Range

		<u>Form</u>
(e)	<i>Coprosma robusta</i>	Shrub
	<i>Coprosma grandifolia</i>	Shrub
	<i>Cordyline australis</i>	Tree
	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Aristotelia serrata</i>	Tree
	<i>Fuchsia excorticata</i>	Shrub/tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/tree
	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Hoheria sexstylosa</i>	Tree
	<i>Myrsine australis</i>	Shrub
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Dicksonia squarrosa</i>	Treefern
	<i>Pseudopanax crassifolius</i>	Tree
(g)	<i>Syzigium maire</i>	Tree
	<i>Laurelia novae-zelandiae</i>	Tree
	<i>Hedycarya arborescens</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Schefflera digitata</i>	Shrub
	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Coprosma rotundifolia</i>	Shrub
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Astelia grandis</i>	Groundcover
	<i>Isolepis reticularis</i>	Groundcover
(j)	<i>Schoenus maschalinus</i>	Groundcover
	<i>Metrosideros fulgens</i>	Climber
	<i>Ripogonum scandens</i>	Climber
	<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Climber
	<i>Pneumatopteris pennigera</i>	Groundcover

**C3 Banks (Upper Scarp):**

(i) Staging

- (a) Negotiate residents' agreements to enable co-operative management of bush.
- (b) Check area of proposed fencelines for cultural artifacts prior to any works.
- (c) Post and wire fence private boundaries to prevent public access and define covenanted or easement areas. Begin propagation of local native species.
- (d) Work with residents to remove any planted exotic tree and shrub species and control exotic weeds (especially Ginger, Privet, *Solanum*). Begin pest control.
- (e) Replant bush and open areas with light-excluding 'nurse' species and successional species where possible.
- (f) Control groundcover weeds (including those identified in C2 above)

- (g) Enrich species diversity and groundcover layer of planting when weed control is effective.

(ii) Species Range

	Form
(e) <i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
<i>Fuchsia excorticata</i>	Shrub/Tree
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
<i>Olearia rani</i> var. <i>colorata</i>	Shrub
<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
<i>Aristotelia serrata</i>	Tree
<i>Alectryon excelsus</i> var. <i>excelsus</i>	Tree
<i>Beilschmiedia tawa</i>	Tree
<i>Podocarpus totara</i>	Tree
<i>Knightia excelsa</i>	Tree
<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/tree
<i>Hedycarya arborea</i>	Tree
<i>Prumnopitys taxifolia</i>	Tree
<i>Sophora microphylla</i>	Tree
<i>Dacrydium cupressinum</i>	Tree
<i>Metrosideros robusta</i>	Tree
<i>Cyathea medullaris</i>	Treefern
<i>Cyathea dealbata</i>	Treefern
<i>Cyathea cunninghamii</i>	Treefern
<i>Schefflera digitata</i>	Shrub
<i>Brachyglottis repanda</i>	Shrub
<i>Myrsine australis</i>	Shrub
<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
<i>Blechnum chambersii</i>	Groundcover
<i>Machaerina sinclairii</i>	Groundcover
<i>Polystichum richardii</i>	Groundcover
<i>Rhabdothamnus solandri</i>	Groundcover

**Zone D: Open Riverside Terraces – Northend**

**D1 Cliff Face:**

- (i) Staging
- (a) Obtain resource consents to remove exotic trees on river edge.
  - (b) Check area for cultural artifacts prior to any works.
  - (c) Erect temporary fence along cliff edge to control pedestrian access. Initiate pest control. Begin propagation of local native species.
  - (d) Replant bare areas on cliff with weed suppressing and stabilising shrubs and 'nurse' species.
  - (e) Remove exotic plants and weeds except Alders.
  - (f) Control groundcover weeds (especially *Selaginella* and *Tradescantia*). Remove Alders when other planting well established.
  - (h) Enrich species diversity especially groundcover layer.

(ii) Species Range

		<u>Form</u>
(d)	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Sophora microphylla</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Brachyglottis repanda</i>	Shrub
	<i>Coprosma lucida</i>	Shrub
(f)	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Fuchsia excorticata</i>	Shrub/Tree
	<i>Schefflera digitata</i>	Shrub
	<i>Macropiper excelsum</i> ssp. <i>excelsum</i>	Shrub
	<i>Cordyline banksii</i>	Shrub
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Knightia excelsa</i>	Tree
	<i>Cyathea</i> species	Treeferns
(h)	<i>Blechnum chambersii</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover

**D2 Beach:**

(i) Staging

- (a) Obtain resource consents to remove Willows.
- (b) Remove and prune selected Willows. Initiate pest control. Begin propagation of appropriate species.
- (c) Install any riverbed stabilisation structures required.
- (d) Replant upright-growing willows and other stabilisation planting around installed structures.
- (e) Remove remaining Willows.
- (f) Replace with upright-growing Willows in selected locations and plant other stabilising native and exotic species leaving open access to beach. Plant river edge by wetland (See D4) with riparian species.
- (g) Erect temporary fencing with interpretative signage to discourage pedestrian access to planted areas. Install swimming warning notice, and rubbish bins.
- (h) Enhance species diversity within planted areas.

(ii) Species Range

		<u>Form</u>
(d)/(f)	<i>Salix matsudana</i> x <i>alba</i> 'Aokautere'	Tree
	<i>Salix matsudana</i> x <i>alba</i> 'Moutere'	Tree
	<i>Phormium tenax</i>	Shrub
	<i>Cordyline australis</i>	Tree
	<i>Coprosma robusta</i>	Shrub
(h)	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Plagianthus regius</i>	Tree
	<i>Hoheria sexstylosa</i>	Tree
	<i>Coprosma propinqua</i>	Shrub
	<i>Leptospermum scoparium</i>	Shrub

(ii) Species Range

	Form
<i>Astelia grandis</i>	Groundcover
<i>Dianella nigra</i>	Groundcover
<i>Schoenoplectus validus</i>	Groundcover
<i>Carex virgata</i>	Groundcover
<i>Carex geminata</i> agg.	Groundcover
<i>Carex secta</i>	Groundcover
<i>Haloragis erecta</i> ssp. <i>erecta</i>	Groundcover
<i>Cyathea dealbata</i>	Treefern
<i>Dicksonia squarrosa</i>	Treefern
<i>Cyperus ustulatus</i> (River edge by wetland)	Groundcover

**D3 Pa Site:**

(i) Staging

- (a) Obtain permits and resource consents for planting and works on site.
- (b) Check whole area for cultural artifacts prior to any works.
- (c) Temporarily fence cliff edges and banks. Initiate pest control.  
In consultation with local Maori finalise walkway location and construct it.  
Begin propagation of local native species.
- (d) Plant banks and swale with native shrub species "nurse".
- (e) Remove all exotic trees from banks and top of pa platform.
- (f) In consultation with local Maori plant native tree species on banks and other areas and Totara stand in an appropriate location to mark the pa. In consultation develop interpretative signage or features.
- (g) Enhance species diversity especially groundcovers.

(ii) Species Range

		Form
(d) Banks:	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Myrsine australis</i>	Shrub
Swale:	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Coprosma lucida</i>	Shrub
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub
(f)	<i>Podocarpus totara</i>	Tree
	<i>Sophora microphylla</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Dacrycarpus dacrydioides</i>	Tree
	<i>Prumnopitys taxifolia</i>	Tree
	<i>Metrosideros robusta</i>	Tree
	<i>Cyathea medullaris</i>	Treefern
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Brachyglottis repanda</i>	Shrub
(g)	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Schefflera digitata</i>	Shrub

(ii) Species Range

*Blechnum chambersii*  
*Doodia media* ssp. *australe*

Form

Groundcover  
Groundcover

**D4 Terraces:**

(i) Staging

- (a) Obtain permits for planting works on terraces.
- (b) Check area for cultural artifacts prior to any works.
- (c) Temporarily fence banks, scarps and wetland. Initiate pest control.  
In consultation with local Maori, finalise walkway location in proximity to and around the back of main pa terrace. Construct walkways including connecting link from Geoffrey Place steps. Begin propagation of local native species.
- (d) Develop longterm strategy for stormwater management (in association with Water, Drainage and Refuse Unit.) Locate future toilet also in consultation with residents. Relocate swings to area marked for playground on plan.
- (e) Control weed species (especially Ginger, *Cyperus eragrostis*, *Tradescantia*.)
- (f) Revegetate wetland with swamp species. Plant in open spaces with groupings of exotic or native species as appropriate.
- (g) Enhance species diversity and especially groundcover species.

(ii) Species Range

(f) Wetland

*Leptospermum scoparium*  
*Leucopogon fasciculatus*  
*Cordyline australis*  
*Phormium tenax*  
*Coprosma robusta*  
*Coprosma grandifolia*  
*Coprosma propinqua*  
*Coprosma areolata*  
*Coprosma tenuicaulis*  
*Dacrycarpus dacrydioides*  
*Streblus microphylla*  
*Carex virgata*

Form

Shrub  
Shrub  
Tree  
Shrub  
Shrub  
Shrub  
Shrub  
Shrub  
Shrub  
Tree  
Shrub/Tree  
Groundcover

(f) Open spaces

*Nyssa sylvatica*  
*Kunzea ericoides* var. *ericoides*  
*Sophora microphylla*  
*Hoheria sexstylosa*  
*Podocarpus totara*  
*Knightia excelsa*  
*Dacrydium cupressinum*

Tree  
Tree  
Tree  
Tree  
Tree  
Tree

(g) Wetland

*Syzygium maire*  
*Prumnopitys taxifolia*  
*Laurelia novae-zelandiae*  
*Schefflera digitata*  
*Astelia grandis*  
*Freycinetia baueriana* ssp. *banksii*  
*Blechnum minus*  
*Pneumatopteris pennigera*  
*Hymenophyllum demissum*  
*Asplenium bulbiferum*

Tree  
Tree  
Tree  
Shrub  
Groundcover  
Climber  
Groundcover  
Groundcover  
Groundcover  
Groundcover

(ii) Species Range

		<u>Form</u>
(g) Open spaces	<i>Prumnopitys taxifolia</i>	Tree
	<i>Beilschmiedia tawa</i>	Tree
	<i>Metrosideros excelsa</i>	Tree
	<i>Coprosma rhamnoides</i>	Shrub
	<i>Coprosma rigida</i>	Shrub
	<i>Polystichum richardii</i>	Groundcover
	<i>Blechnum chambersii</i>	Groundcover

**D5 Banks:**

(i) Staging

- (a) Remove some exotic trees and shrubs not required for stability and exotic weed species. (Especially *Acacia*, *Solanum*, *Privet*, *Prunus* & *Pinus*). Initiate pest control. Begin propagation of local native species.
- (b) Replant with light-excluding native 'nurse' shrubs and where appropriate trees.
- (c) Remove more exotics and control groundcover weeds (*Ginger*, *Tradescantia*, *Ivy*, etc.)
- (d) Replant with native successional trees and shrubs, retaining significant views.
- (e) Enrich species range and plant native groundcover species when weed control is achieved.

(ii) Species Range

		<u>Form</u>
(b)	<i>Aristotelia serrata</i>	Tree
	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Myrsine australis</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>Hookeri</i>	Shrub
(d)	<i>Podocarpus totara</i>	Tree
	<i>Sophora microphylla</i>	Tree
	<i>Prumnopitys taxifolia</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Metrosideros rubusta</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Alectryon excelsus</i> var. <i>excelsus</i>	Tree
	<i>Beilschmiedia tawa</i>	Tree
	<i>Cyathea medullaris</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Fuchsia excorticata</i>	Shrub/Tree
	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Hedycarya arborea</i>	Tree
	<i>Dacrydium cupressinum</i>	Tree
	<i>Schefflera digitata</i>	Shrub
	<i>Brachyglottis repanda</i>	Shrub

(ii) Species Range

		<u>Form</u>
(e)	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Blechnum chambersii</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover

**D6 Geoffrey Place Reserve:**

(i) Staging

- (a) Regrade drain to more natural contour. Inspect oaks for possible health and safety problems. Propagate appropriate species.
- (b) Plant drain margins with shade tolerant exotic and native riparian shrub and groundcover species.
- (c) Construct walkway connection from road to steps, with appropriate signage.
- (d) Prune Oaks for health and safety as necessary. Instigate long term maintenance programme on large Oak trees.

(ii) Species Range

		<u>Form</u>
(a)	<i>Viburnum tinus</i> and other species	Shrub
	<i>Rhododendron</i> species (Small)	Shrub
	<i>Aucuba japonica</i> (male only)	Shrub
	<i>Hemerocallis</i> species	Groundcover
	<i>Hosta</i> species	Groundcover
	<i>Iris</i> species	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Dianella nigra</i>	Groundcover
	<i>Astelia grandis</i>	Groundcover
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub

**Zone E: Steep Banks & Cliffs**

**E1 Cliff Face & Edge of River:**

(i) Staging

- (a) Control pedestrian access by fencing edge of bush at base of cliff. Begin propagation of local native species.
- (b) Remove exotic trees and shrubs not required for stability and weeds (especially Privet, *Prunus*, Jasmine).
- (c) Replant with stabilising and light-excluding native 'nurse' and successional species.
- (d) Control groundcover weed species (*Tradescantia* and *Selaginella*). Remove other exotic species (*Eucalyptus*).
- (e) Enhance species diversity in native trees, shrubs and groundcover.

(ii) Species Range

		<u>Form</u>
(c)	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub

(ii) Species Range

		<u>Form</u>
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Coprosma lucida</i>	Shrub
	<i>Schefflera digitata</i>	Shrub
	<i>Brachyglottis repanda</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Myrsine australis</i>	Shrub
	<i>Fuchsia excorticata</i>	Shrub/Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Sophora microphylla</i>	Tree
(e)	<i>Macropiper excelsum</i> ssp. <i>excelsum</i>	Shrub
	<i>Cordyline banksii</i>	Shrub
	<i>Knightia excelsa</i>	Tree
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea medullaris</i>	Treefern
	<i>Blechnum chambersii</i>	Groundcover
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Climber
	<i>Rhabdothamnus solandri</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover

**E2 Steep Banks:**

(i) Staging

- (a) Obtain permits for walkway structures.
- (b) Fence private boundaries and work with residents to reduce dumping of garden waste. Begin propagation of local native species.
- (c) Control exotic weeds (*Prunus*, Jasmine, Privet and *Solanum*). Remove exotic trees and shrubs not required for stability.
- (d) Construct walkway and bridge structures with rails to discourage access to slopes, and motorbike preventative design at entry points.
- (e) Replant open areas with native 'nurse' species to exclude light.
- (f) Control regrowth Eucalypts and groundcover weeds (Especially Ginger, Ivy, *Selaginella* and *Tradescantia*).
- (g) Replant native tree and shrubs species.
- (h) Remove Eucalypts likely to destabilize slope in future.
- (i) Replant or enrich species diversity with native trees, shrubs and groundcover species.

(ii) Species Range

		<u>Form</u>
(e)/(g)	<i>Aristotelia serrata</i>	Tree
	<i>Kunzea ericoides</i> var. <i>ericoides</i>	Tree
	<i>Hebe stricta</i> var. <i>stricta</i>	Shrub
	<i>Olearia rani</i> var. <i>colorata</i>	Shrub
	<i>Cortaderia fulvida</i>	Shrub
	<i>Leucopogon fasciculatus</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Myrsine australis</i>	Shrub
	<i>Phormium cookianum</i> ssp. <i>hookeri</i>	Shrub

(ii) Species Range

		<u>Form</u>
(i)	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Alectryon excelsus</i> var. <i>excelsus</i>	Tree
	<i>Beilschmiedia tawa</i>	Tree
	<i>Podocarpus totara</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Prumnopitys taxifolia</i>	Tree
	<i>Dacrydium cupressinum</i>	Tree
	<i>Metrosideros robusta</i>	Tree
	<i>Sophora microphylla</i>	Tree
	<i>Hedycarya arborea</i>	Tree
	<i>Weinmannia racemosa</i> var. <i>racemosa</i>	Shrub/Tree
	<i>Cyathea medullaris</i>	Treefern
	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea cunninghamii</i>	Treefern
	<i>Schefflera digitata</i>	Shrub
	<i>Brachyglottis repanda</i>	Shrub
	<i>Doodia media</i> ssp. <i>australe</i>	Groundcover
	<i>Blechnum chambersii</i>	Groundcover
	<i>Machaerina sinclairii</i>	Groundcover
	<i>Polystichum richardii</i>	Groundcover
	<i>Rhabdothamnus solandri</i>	Groundcover

**E3 Top of Terrace:**

(i) Staging

- (a) Fence private boundaries where necessary to reduce resident encroachment on reserve and work with residents to reduce dumping of garden waste. Begin propagation of appropriate species.
- (b) Obtain any further permits required for walkway structures.
- (c) Control exotic weeds (including Jasmine, Privet, *Fatsia*, *Solanum*). remove exotic trees and shrubs not required for stability or residential amenity.
- (d) Construct any walkway structures required at the top of the terrace with motorbike preventative design and appropriate signage.
- (e) Replant with native 'nurse' species to exclude light and to stabilise bank edges in selected areas.
- (f) Control groundcover weeds (*Lamium*, Ivy, etc.)
- (g) Enhance diversity with native trees and groundcover species.

(ii) Species Range

		<u>Form</u>
(e)	<i>Cyathea dealbata</i>	Treefern
	<i>Cyathea grandifolia</i>	Shrub
	<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	Shrub/Tree
	<i>Schefflera digitata</i>	Shrub
	<i>Geniostoma rupestre</i> ssp. <i>ligustrifolium</i>	Shrub
	<i>Streblus microphylla</i>	Shrub/Tree
(g)	<i>Cordyline australis</i>	Tree
	<i>Knightia excelsa</i>	Tree
	<i>Podocarpus totara</i>	Tree
	<i>Dacrydium cupressinum</i>	Tree
	<i>Hedycarya arborea</i>	Tree
	<i>Asplenium bulbiferum</i>	Groundcover

(ii) Species Range

	<u>Form</u>
<i>Polystichum richardii</i>	Groundcover
<i>Microlaena avenacea</i>	Groundcover
<i>Oplismenus imbecillus</i>	Groundcover
<i>Blechnum filiforme</i>	Groundcover
<i>Freycinetia baueriana</i> ssp. <i>banksii</i>	Climber
<i>Myrsine australis</i>	Shrub

### 3.4.2.2 MANAGEMENT AND MAINTENANCE

Item	Zone	Regime	Frequency	Term	Season
1. Mulching in planting areas	A2, B2, B5, C2, D4, E3	Coarse grade Pine bark 50mm or suitable alternative	Once only after planting	-	Winter - Spring
2a. Inspections for weed and pest control, planting maintenance and tree maintenance	All zones	Check for problem weeds, dead plants, pest damage, pruning & replacement needs.	6 monthly	Up to 10 years	Late Spring - early Autumn
2b. "	"	"	Annually	10 + years	Early Autumn
3a. Weed control (in planting areas)	All	Removal or use systemic herbicide injected or applied to cut stumps of woody weeds. 'Knock-down' herbicide for others. Avoid spraying near waterways, swampy or wetland areas.	6 monthly	Up to 10 years	Late Spring and early Autumn if possible
3b. "	"	"	Annually	10+ years	Late Spring or early Autumn
4. Fertiliser (in planting areas)	All	'Nitrophoska Blue' at 100g/m <sup>2</sup> on shrub planted areas or 100g/tree.	Once only at start of second growing season	-	Late Spring

Item	Zone	Regime	Frequency	Term	Season
5. Restaking trees	A3, B3, D2, D3, D4, E3	Replace damaged stakes and retie where ties are damaged	Annually	Up to 3 years from planting	Autumn
6a. Plant replacements	All	As per the scheduled species range for each zone, generally from the successional or enrichment species unless conditions are unsuitable.	Annually	Up to 10 years	Winter
6b. "	"	"	Periodically as determined from inspections	10+ years	Winter
7a. Pruning plants for ecological reasons	All	Limb or trim only where necessary to allow better growth of successional species. Maintenance of full ground cover is essential.	Periodically as determined by inspections	After nurse species established	Spring
7b. Pruning plants for views	A2, A4, D2, D5, E3	"	"	"	"
7c. Pruning for health	D6	Prune large specimen trees according to good arboricultural practice	Annually as determined by inspections	-	-

Item	Zone	Regime	Frequency	Term	Season
8a. Plant "removal" for ecological reasons	All	Poison trees in preference to felling to reduce damage to other plants and retain shade, shelter & stability benefits of plants killed. Often useful for exotic or nurse species not required in the long term.	Periodically as determined by implementation programme or inspection	After nurse species have established or stability is achieved.	Autumn
8b. Plant removal for views	A2, A4, D2, D5, E3	Complete removal of trees preferred.	"	"	"
9. View protection monitoring	A2, A4, D2, D5, E3	Check for critical views, thinning or pruning options, need to replant, or additional planting for screening.	Annually	From 3 <sup>rd</sup> year after any planting	Autumn
10. Temporary fence removal	A2, A3, B3, D1, D2	Remove temporary fences	Once only at 2 <sup>nd</sup> or 3 <sup>rd</sup> yr after planting, depending on growth success	-	Winter
11. Cultural sites & signage inspection	Park entrances, benches, walkways & especially B3, D3, D2	Check condition of trees, signs or pou marking pa sites and other general park signage. Check for damage, graffiti and paint wear.	Annually	-	-
12. Walkways, retaining or bridge structures and associated furniture inspections.	A2, A3, B2, B5, C2, D3, D4, D6, E2, E3.	Check for general condition, structural integrity and need for repairs and renovation.	Annual	From 1 <sup>st</sup> year after installation	-

Item	Zone	Regime	Frequency	Term	Season
13. Drainage & riverbank reinforcement inspections	A3, B5, D2, D6	Check for erosion, integrity of structures and reinforcing vegetation, and need for repair or renovation.	Annual	From 1 <sup>st</sup> year after installation	-
14. Access inspection	A3, B2, B5, C2, D3, E2, E3	Check for continued accessibility of walkways to wheelchairs, etc and pedestrian access to beaches. Check for damaged which could result in inappropriate access to walkways or planted areas, especially by bikes or motorbikes.	Annual	"	-
15. Fence inspection	B2, B4, B5, C2, C3, D4, E3	Check for damage and general condition.	Annual	"	-
16. Repairs and maintenance of all structures and park furniture	A2, A3, B2, B3, B4, B5, C2, C3, D2, D3, D4, D6, E1, E2, E3	<ul style="list-style-type: none"> <li>Replace damaged materials or structures</li> </ul>	- Periodically as determined by inspections	From 1 <sup>st</sup> year after installation	-
		<ul style="list-style-type: none"> <li>Remove graffiti (by graffiti contractor)</li> </ul>	- As determined by Contract	-	-
		<ul style="list-style-type: none"> <li>Repaint painted structures or furniture</li> </ul>	- Periodically as determined by inspections.	From 3 <sup>rd</sup> year after installation	-

Item	Zone	Regime	Frequency	Term	Season
17. Drainage maintenance (by drainage maintenance contractors)	A3, B5, D2, D4, D6	<ul style="list-style-type: none"> <li>▪ In coordination with Water, Drainage &amp; Refuse Unit selectively thin &amp; trim riparian vegetation to maintain ecological diversity &amp; structural stability of drains or water courses.</li> <li>▪ Replace damaged structures &amp; reinforce newly eroded areas. Plant appropriate species for bank stability.</li> </ul>	<p>As determined by WDR Unit</p> <p>As determined from annual inspections (see Item 13)</p>	<p>From 1<sup>st</sup> year after planting</p> <p>From 1<sup>st</sup> year after installation</p>	-

### **3.5 ENGINEERING PROPOSALS**

#### **3.5.1 FENCING**

In order to better define the areas of the park, fencing of the private/reserve boundary or bush edge where necessary will be required. Three different styles of fencing may be used to define the reserve area. In areas of native bush a post and wire fence will generally be used. For temporary protection, a waratah and wire fence will be used as this will result in minimal disturbance to the environment. In areas where the private landholder may require more security a normal domestic style fencing will be permitted.

#### **3.5.2 WALKWAYS**

Walkways within each of the zones are designed to be consistent with the public access regime of the area.

In Hammond Park there is allowance for paved walkway, board walk and no walkway in accordance with the associated vegetation regime.

Paved walkway will be standard concrete block paving similar to the remainder of the paving through Hamilton Gardens and the CBD.

Boardwalk will be used to define the permitted access areas in the restricted vegetation area and will be a narrow board walk to restrict access to walkers and wheel chairs. Open spaces will allow rest places and prevent the tunnel effect of a board walk within the planted areas. A copy of the detail of the proposed walkway is included in the drawings.

The long term connection of the park to the Gardens is treated separately and requires a steep bank walkway again with access restricted to walkers and wheelchairs.

#### **3.5.3 REMOVAL OF RIVERBANK VEGETATION**

The removal of the willows on the riverbank is a significant issue. The willows provide shade and bank stability for the river. The willows in season restrict view to the water and can be a hazard to swimmers and those involved in water activities.

In removing the willows from the bank the stability of the bank needs to be addressed before the willows are removed. A combination of planting and engineering solutions may be used to ensure that the bank stability is maintained during the transition from cracked willows to other solutions.

Certain trees may be limbed to tidy the shape of trees within the reserve and permit better views.

The draft report recommended groyne structures to protect the riverbank from erosion during periods of high flow and during the establishment of vegetation. As a result of the public consultation most of the controversial engineering structures have been deleted from the design. The engineering structures proposed for the riverbank include groynes using gabions filled with sand and rocks and bank stabilisation using 'Enviromat' filled with sands from the river.

In each case the existing shape of the river bank is to be maintained as closely as possible to avoid erosion due to changes in the river bank shape. All structures will be constructed below the existing surface level and original surface reinstated.

Some parts of the willows will be allowed to remain in the water flow so that the impact on the river is gradual.

Two sections of bank failure already exist in the section and these may be protected by gabions.

Wholesale removal of vegetation and replacement with engineered structures is not appropriate as the impact of the natural river level variations will cause changes to the riverbank and will damage these structures in time.

#### **3.5.4 STORMWATER**

In the southern area of the park damage due to surface stormwater needs to be repaired. Eroded areas need to be protected with 'rip rap'. A stream design which allows for low flow and flood flow will be provided to ensure that water travels to the river with the minimum amount of damage to the environment. A cross section of the area is shown in the engineering structures drawings (Plan 8, Appendix 3.6).

The detail design will need to include pipes, rubble subsurface collection drains and the design of an energy dissipation structure at the river stream interface. These are beyond the scope of this report.

#### **3.5.5 CONNECTION FROM HAMMOND PARK TO HAMILTON GARDENS**

The connection between the two parks requires some major engineering structures for a city park. The bank shape and protection of the area known as 'Echo Bank' presents some difficulties not readily solved. It is anticipated that this connection will not be built for many years so that pedestrians will use Cobham Drive – Howell Avenue – Geoffrey Place as the connection in the shorter term.

The original concept included plans to provide a combination of bridge, built up embankment and cutting. Following the consultation stage and a review of the contours a steep bank walkway with minor bridge structure is proposed.

The key structure is the ability to construct the walkway using manual labour and the accurate survey of the bank slope and accurate pegging of the column footings. The methodology is to cut two parallel goat tracks into the embankment and join these at 2.4 to 3 metre intervals with a concrete tie beam. Footings could be drilled using a portable post hole auger and then reinforced and filled with concrete. Steel columns are recommended for the structure. These are braced using bar stock. Allowance is made to tie the structure into the bank using "Manta ray" soil anchors. These provide additional resistance against sliding and will help to stabilise any weak soil planes. The prototype drawing is shown in the engineering details and allows for the use of a construction style power barrow as the means of moving men and equipment along the walkway during construction and maintenance (Appendix 6.3, Plan 8).

## 4.0 COST ESTIMATES

### 4.1 ESTABLISHMENT, MANAGEMENT AND MAINTENANCE COSTS

Zone	Trees/Shrubs Areas (m <sup>2</sup> )	Groundcover Riparian Areas (m <sup>2</sup> )	Number Spec. trees (no.)	Paving Area (m <sup>2</sup> )	Fencing (m)	Steep Bank Walkway	Boardwalk (m <sup>2</sup> )	Drainage & Gabions (m <sup>2</sup> )	Pest Control
A1 Cliff	350	-	-	-					
A2 Terrace	300	-	-	200					
A3 Valley	-	1200	20	2300	170				
A4 Banks	6000 (underplant)	-	-	200					
B1 Cliff	1000 (underplant)	-							
B2 Terraces	4375	-					400		
B3 Pa Terrace	-	625		-			400		
B4 Banks	1200	-	-	-					
B5 Gully	8000	500 (riparian)			90		400		
C1 Cliff	600	-							
C2 Terrace	600	2600 (Bush)	-	-	80		600		
C3 Banks	5000	-	-	-					
D1 Cliff	750	-	-						
D2 Beach	150	600	30					180	
D3 Pa site	-	250	25						

Zone	Trees/Shrubs Areas (m²)	Groundcover Riparian Areas (m²)	Number Spec. trees (no.)	Paving Area (m²)	Fencing (m)	Steep Bank Walkway	Boardwalk (m²)	Drainage & Gabions (m²)	Pest Control
D4 Terraces	-	500 (Wetland)	50	1375	90				
D5 Banks	2000	-	-						
D6 Geoffrey Pl.	-	150	150 (shrubs)						
E1 Cliffs	1000	-	-						
E2 Steep banks	2000	-	-		70				
E3 Terrace top						200m			
Area Sub-totals	38725m² @ \$10/m²	5375m² @ \$30/m²	285no. @ \$30ea.	4,075m² @ \$40/m²	500m @ \$12/lm	200m	1400m² @ \$200/m²	180m² @ \$100/m²	-
Cost Sub-totals	\$387,250	\$162,250	\$8,550	\$163,000 (excluding elevated walkway)	\$6,000	\$350,000	\$280,000	\$18,000	\$3,000
Total Cost	\$1,378,050								
Maintenance & Management		\$70,000 p.a. for 10 years							

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

- 5.1 That in future Landscape Management Planning, Tangata Whenua representatives be involved in early archaeological surveys of the areas prior to any detailed planning in order to simplify the consultation and implementation phases.
- 5.2 That previously consulted parties for the Management Plan consultation, be contacted and informed of Council's decisions in the Management Plan, specific to their submissions. This is to clarify the situation and prevent misunderstanding of the ongoing process of consultation.
- 5.3 That concerted efforts be made to:
- identify viable and accessible local seed sources for all the local Waikato native species listed for use
  - propagate stock for riverside use from these sources only.
- 5.4 That early risk assessment of weed and pest problems be carried out and control measures be instigated. These need to target buffer areas around the particular parks to achieve
- good public awareness of problem species
  - concerted Community and Council efforts, and
  - effective control
- 5.5 That development of Hammond Park proceed according to the Landscape Plans and the proposed sequence.
- 5.6 That implementation of Willow replacement proceeds as early as possible prior to further Riverbank areas being addressed. At Hammond and Roose Commerce Parks, this should allow the assessment of efficacy of the proposed planting versus structural options for ensuring bank and beach stability.
- 5.7 That for short-term budgetary purposes more detailed costings be prepared for the first 3 years of proposed development at Hammond Park.
- 5.8 That to ensure consistent availability of funds, the cost estimates be used for long term budget planning.
- 5.9 That discussions with Water Drainage and Refuse Unit proceed as soon as possible, on 'Grey Water' management options for Riverside areas, to ensure Resource Management Act requirements can be met in the long term.
- 5.10 Landcare be engaged to investigate long-term, effective, control measures for some of the worst problem weeds of native vegetation (in particular Tradescantia and Ginger).
- 5.11 That copies of this report and plans be made available at the Council offices to the stakeholders and they be notified of the same.

## 6.0 APPENDICES

### APPENDIX 6.1: TOTAL RANGE OF SPECIES PROPOSED

#### 6.1.1 NATIVE SPECIES

##### 6.1.1.1 TREES & TREEFERNS *Alectryon excelsus* var. *excelsus*

*Aristotelia serrata*  
*Beilschmiedia tawa*  
*Cyathea dealbata*  
*Cyathea cunninghamii*  
*Cyathea medullaris*  
*Cordyline australis*  
*Dacrycarpus dacrydioides*  
*Dacrydium cupressinum*  
*Dicksonia fibrosa*  
*Dicksonia squarrosa*  
*Elaeocarpus dentatus*  
*Fuchsia excorticata*  
*Hedycarya arborescens*  
*Hoheria sexstylosa*  
*Knightia excelsa*  
*Kunzea ericoides* var. *ericoides*  
*Laurelia novae-zelandiae*  
*Melicytus ramiflorus* ssp. *ramiflorus*  
*Metrosideros robusta*  
*Metrosideros excelsa*  
*Plagianthus regius*  
*Podocarpus totara*  
*Prumnopitys taxifolia*  
*Sophora microphylla*  
*Streblus microphylla*  
*Syzigium maire*  
*Weinmannia racemosa* var. *racemosa*

##### 6.1.1.2 SHRUBS

*Brachyglottis repanda*  
*Carpodetus serratus*  
*Coprosma grandifolia*  
*Coprosma rhamnoides*  
*Coprosma robusta*  
*Coprosma propinqua*  
*Coprosma x kirkii*  
*Coprosma tenuicaulis*  
*Coprosma lucida*  
*Coprosma rigida*  
*Coprosma rotundifolia*  
*Coprosma areolata*  
*Cordyline banksii*  
*Cortaderia fulvida*  
*Geniostoma rupestre* ssp. *ligustrifolium*  
*Hebe stricta* var. *stricta*  
*Leptospermum scoparium*  
*Leucopogon fasciculatus*  
*Macropiper excelsum* ssp. *excelsum*  
*Melicope simplex*

*Myrsine australis*  
*Olearia rani* var. *colorata*  
*Phormium cookianum* ssp. *hookeri*  
*Phormium tenax*  
*Pseudopanax arboreus*  
*Pseudopanax crassifolius*

#### **6.1.1.3 CLIMBERS/GROUNDCOVER:**

*Asplenium bulbiferum*  
*Astelia grandis*  
*Blechnum chambersii*  
*Blechnum filiforme*  
*Blechnum* spp. 'Black Spot'  
*Blechnum minus*  
*Carex dissita*  
*Carex geminata* agg.  
*Carex lambertiana*  
*Carex secta*  
*Carex virgata*  
*Cyperus ustulatus*  
*Doodia media* ssp. *australe*  
*Dianella nigra*  
*Ehrharta stipoides* (*Microlaena stipoides*)  
*Freycinetia baueriana* ssp. *banksii*  
*Haloragis erecta* ssp. *erecta*  
*Hymenophyllum demissum*  
*Isolepis reticularis*  
*Juncus gregiflorus*  
*Leptospermum 'Wairere'*  
*Libertia ixioides*  
*Machaerina sinclairii*  
*Metrosideros fulgens*  
*Microlaena avenacea*  
*Osplimetus imbecillus*  
*Pellaea rotundifolia*  
*Pneumatopteris pennigera*  
*Polystichum richardii*  
*Rhabdothamnus solandri*  
*Ripogonum scandens*  
*Schoenus maschalinus*  
*Schoenoplectus validus*

#### **6.1.2 EXOTIC SPECIES**

##### **6.1.2.1 TREES**

*Acer negundo*  
*Alnus cordata*  
*Fraxinus excelsior*  
*Salix matsudana* x *alba* 'Aokautere'  
*Salix matsudana* x *alba* 'Moutere'  
*Salix repens* x *purpurea* 'Kumeti'  
*Taxodium distichum*  
*Nyssa sylvatica*

##### **6.1.2.2 SHRUBS**

*Aucuba japonica* (male clone)  
*Rhododendron* species

*Viburnum tinus* + species

**6.1.2.3 GROUND COVER:**

*Correa 'Carmine bells'*

*Helleborus* species

*Hemerocallis* cvs.

*Iris* species

*Phalaris arundinacea*

## **APPENDIX 6.2: SUBMITTERS AND ATTENDEES INVOLVED IN CONSULTATIONS**

### **6.2.1 HAMMOND PARK**

Public Consultation Meeting held Wednesday, 15 October, 5.30 p.m.  
at Hamilton Gardens Pavillion.

<u>Name</u>	<u>Address/Group Representing</u>
Peter Duncan )	
Bruce MacKay )	Design Services staff
Anita Pearson )	
Lucas du Chatenier	20 Silva Crescent, Hamilton
Jacqui Amohanga	P.O. Box 124081, Hamilton Te Kotuku Whenua
Te Hou Pene	P.O. Box 14081 Hamilton Te Kotuku Whenua
Lindsay Cumberpatch	60 Malcolm Street Hamilton
Michael Hills	98 Howell Avenue Hamilton
Robert Welch	54 Malcolm Street Hamilton
Evan Morgan	58 Malcolm Street Hamilton
Claudia Morgan	58 Malcolm Street Hamilton
Bert Robinson	Hamilton Anglers Club

### **6.2.2 SUBMITTERS TO LANDSCAPE MANAGEMENT PLAN CONSULTATION**

<b>Submission No.</b>	<b>Name</b>	<b>Address</b>
101	Tui 2000 C/- Mairi Jay	24 Beech Crescent Hamilton
102	Water, Drainage & Refuse Unit, HCC, C/- Kevin McHugh	H.C.C
103	G.W. Lawson	41 Malcolm Street Hamilton
104	Keith Shiels L.J.L. Preston c/- Preston Matenga	47 Malcolm Street Hamilton P.O. Box 9440, Ham.
105	L.J.L. Preston	55 Malcolm Street Hamilton
106	C. & E. Morgan	58 Malcolm Street Hamilton
107	Strategic Unit C/- Sally Davis or Alisdair Craig	H.C.C
112	Roads & Traffic Unit C/- Robyn Denton	H.C.C.

<b>Submission No.</b> 113	<b>Name</b> Environment Waikato C/- W.A. Stace, Senior Planner	<b>Address</b> PO Box 4010, Hamilton East.
114	Nga Mana Toopu O Kirikiriroa C/- Rawiri Bidois	Po Box 13054, Hillcrest, Hamilton

### 6.2.3 OTHER CONSULTEES REQUIRING CONTINUING INVOLVEMENT

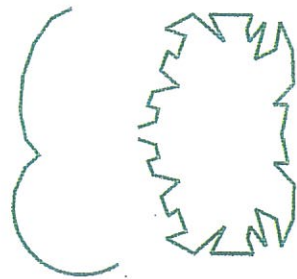
<b>Name</b>	<b>Address</b>
Waikato Rowing Club C/- The Secretary Ron Jensen	P.O. Box 19141, Hamilton
Hamilton Anglers Society C/- Bert Robinson	P.O. Box 16092, Hamilton
Huakina Development Trust C/- Mr R. Mahuta	P.O. Box 319 Pukekohe
Maruia Society C/- Tony Fraser	425 Loop Road Te Pahu Hamilton
Te Kotuku Whenua Consultants C/- Te Hou Pene	P.O. Box 14081 Hamilton.
The Waikato Conservator, Dept. of Conservation	Private Bag 3072, Hamilton
River Guardians C/- Gay Fraundorfer	37 Ann Street Hamilton

## **APPENDIX 6.3: PLANS & DETAILS**

### **Contents**

Plan 1	Zone A & B
Plan 2	Zone B, C, D1 & D2
Plan 3	Zone D3, D4 & Zone E
Plan 4	Cross Sections for Zone A & B
Plan 5	Cross Sections for Zone B & C
Plan 6	Cross Sections for Zone D
Plan 7	Cross Sections for Zone D & E
Plan 8	Elevation of Steep Slope Walkway
Plan 9	Section of Steep Slope Walkway
Plan 10	Section & Elevation of Boardwalk

# KEY:-



EXISTING  
VEGETATION TO  
BE RETAINED

PROPOSED VEGETATION



NUMBERED  
CROSS SECTIONS  
AND LOCATIONS



TOP OF BANK



PICNIC TABLES



DECK \ LOOKOUT

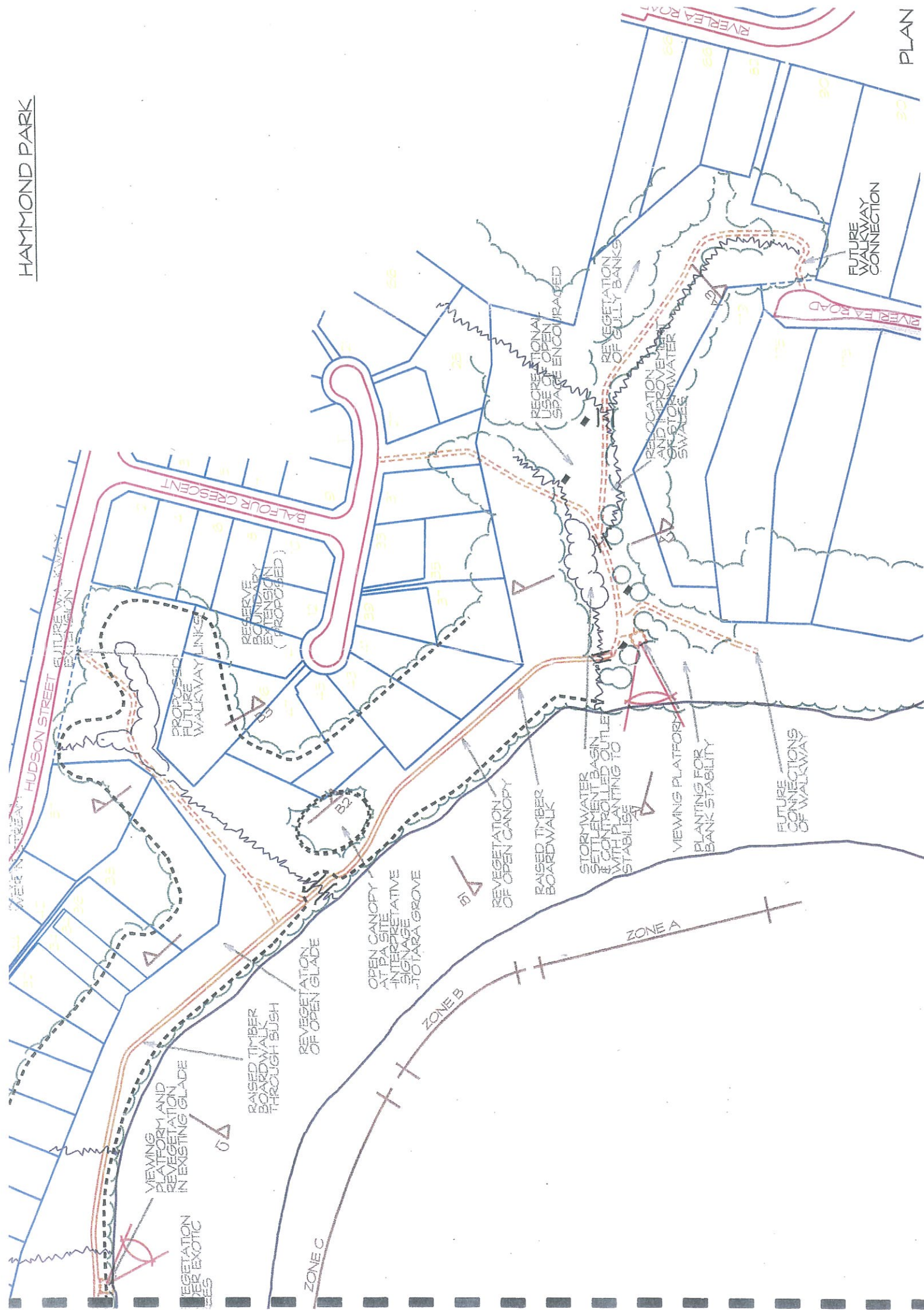


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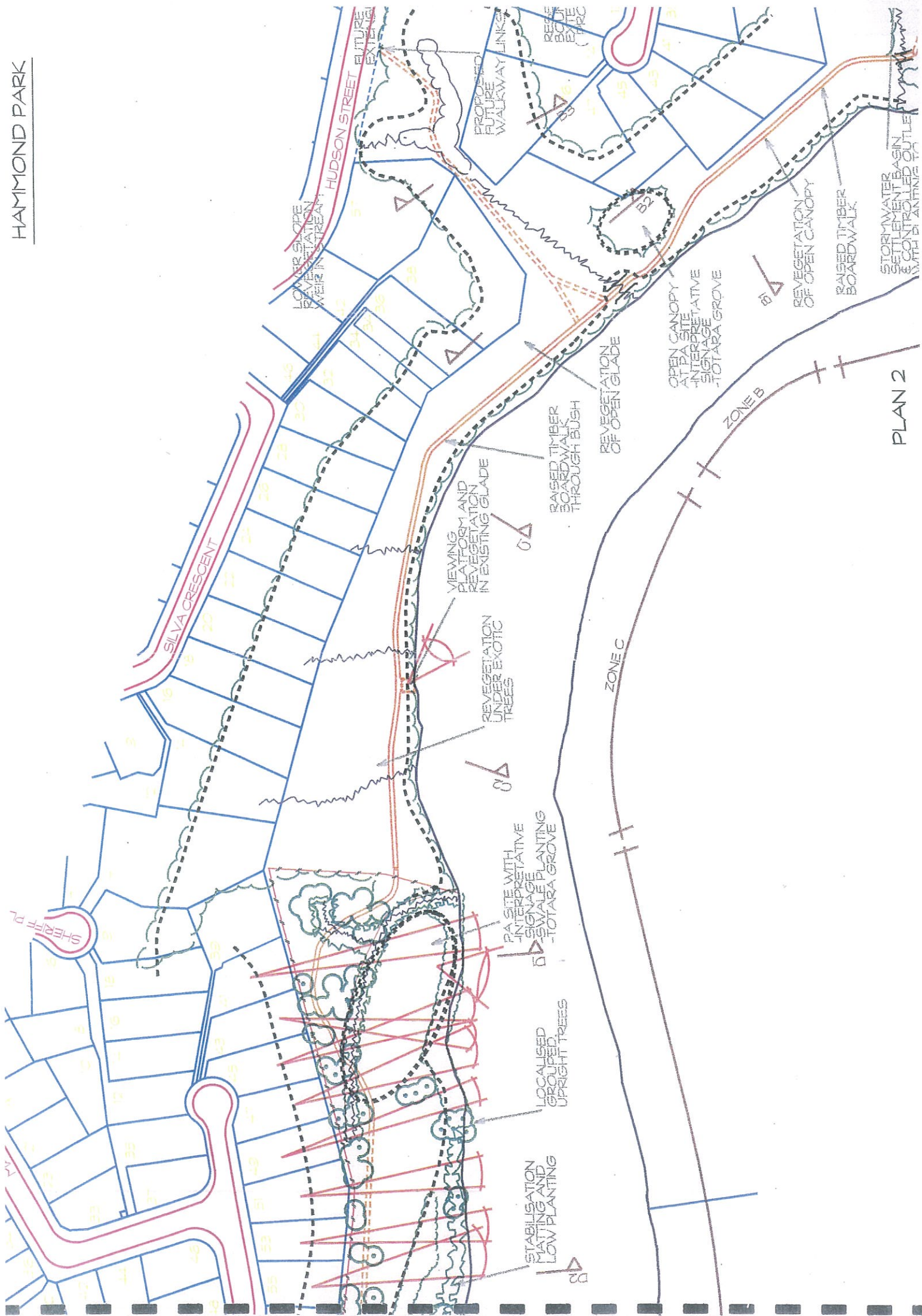


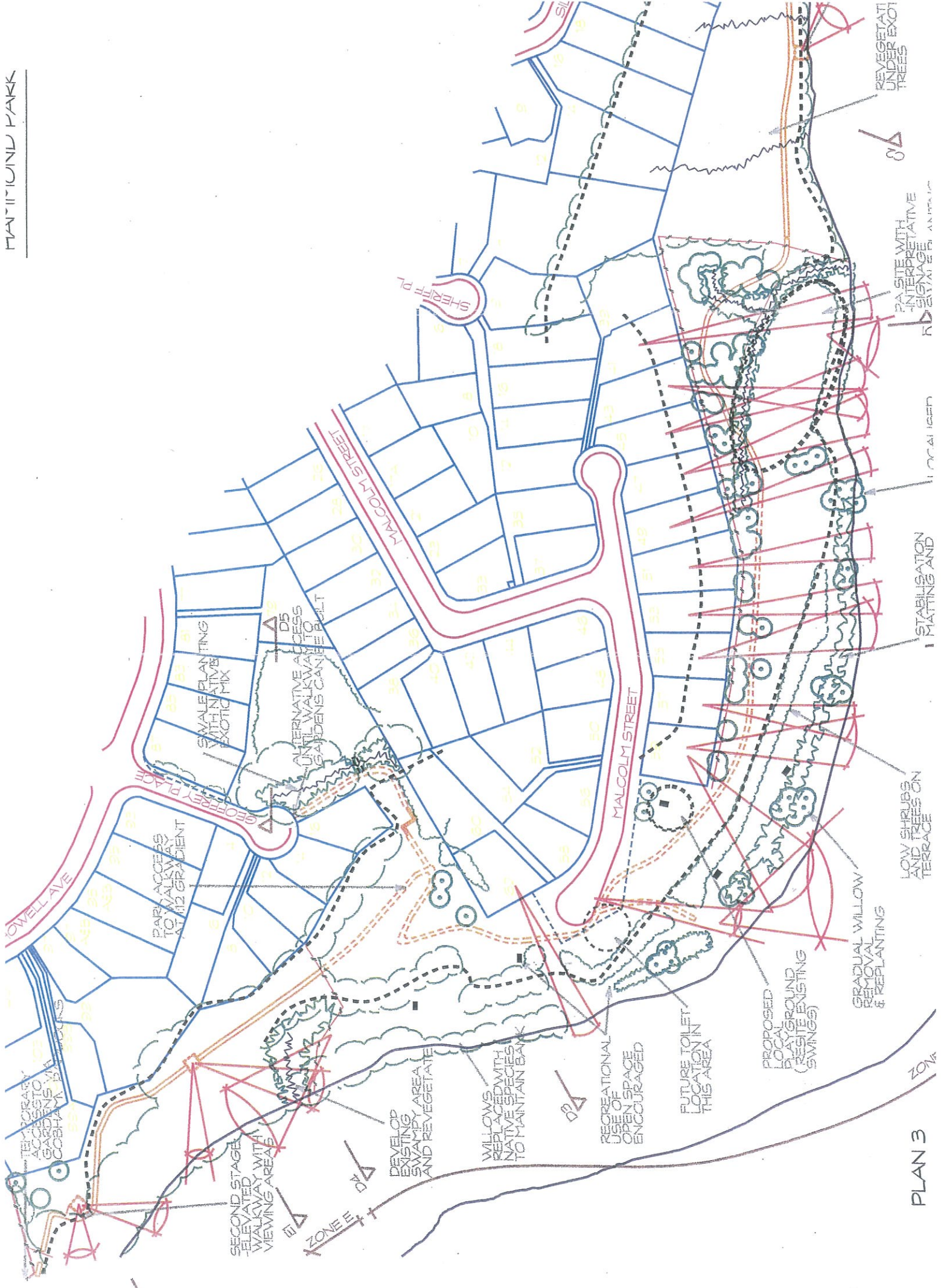
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# HAMMOND PARK

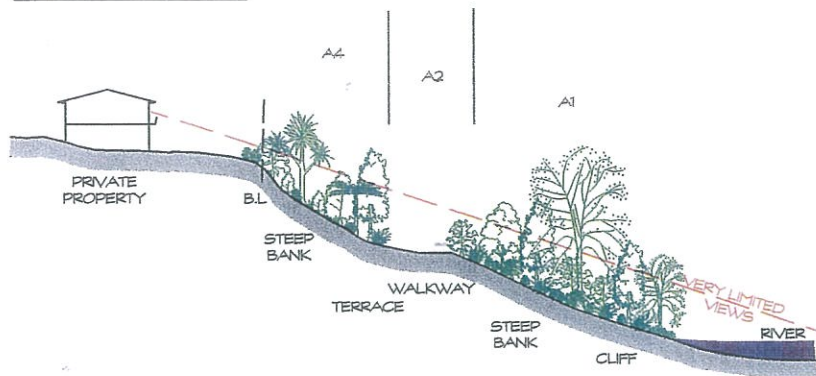


PLAN

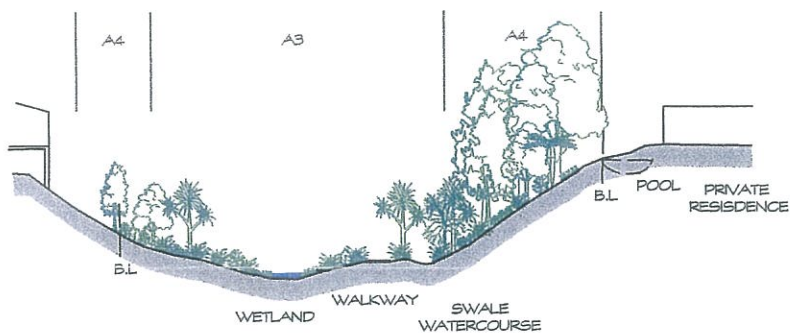




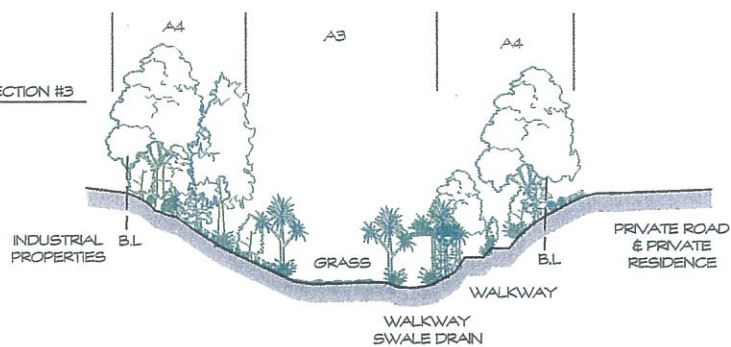
ZONE A: CROSS SECTION #1



ZONE A: CROSS SECTION #2



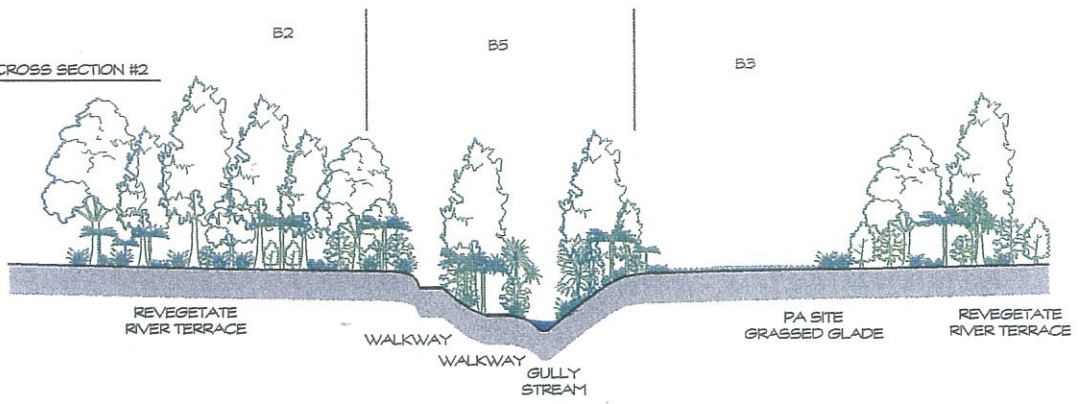
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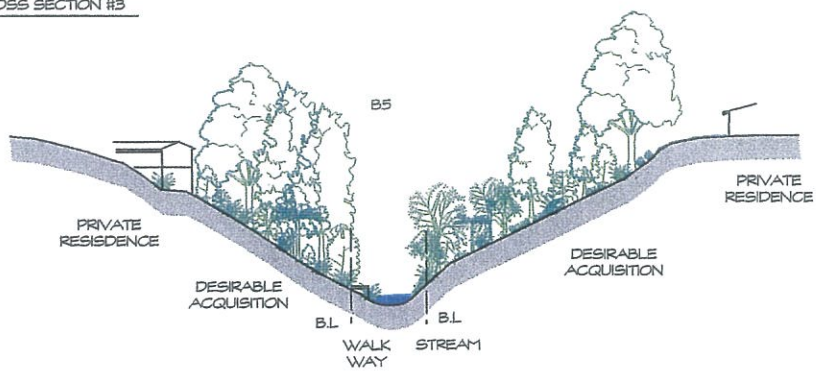
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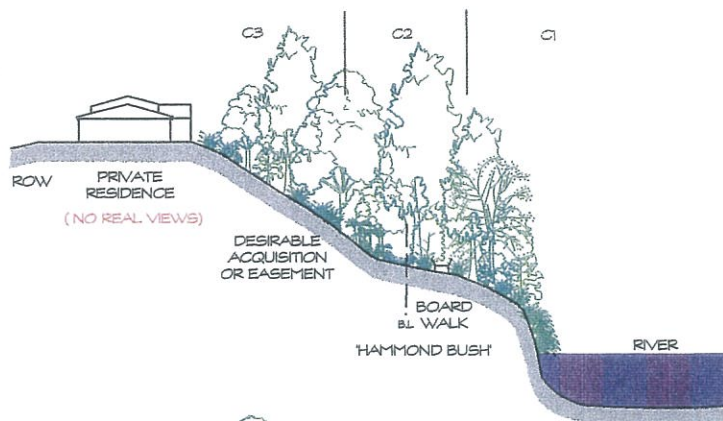
ZONE B: CROSS SECTION #2



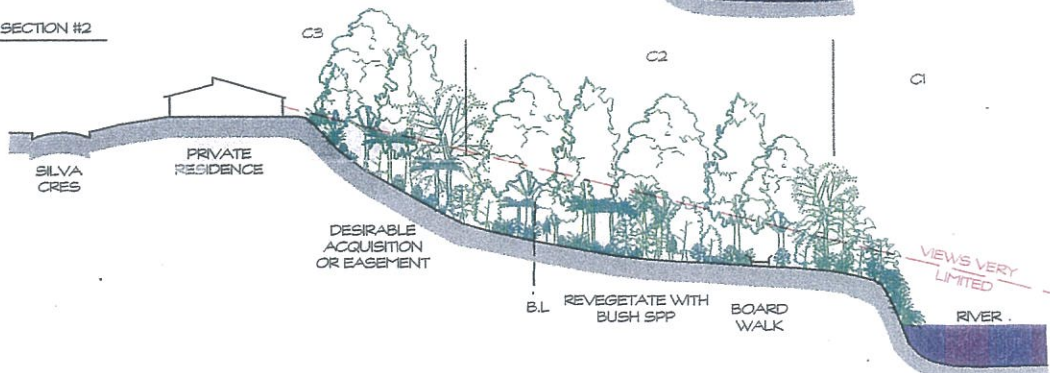
ZONE B: CROSS SECTION #3



ZONE C: CROSS SECTION #1

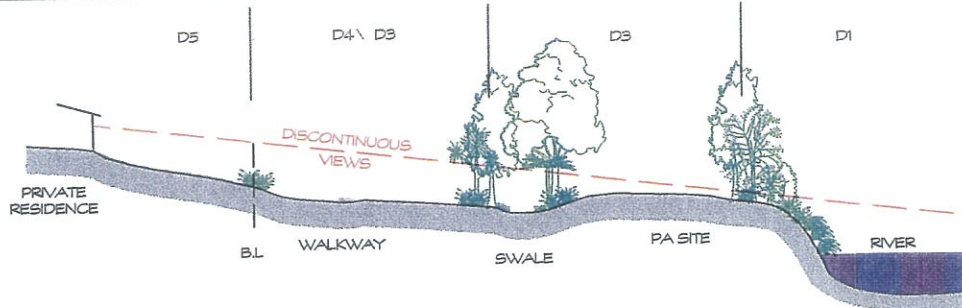


ZONE C: CROSS SECTION #2

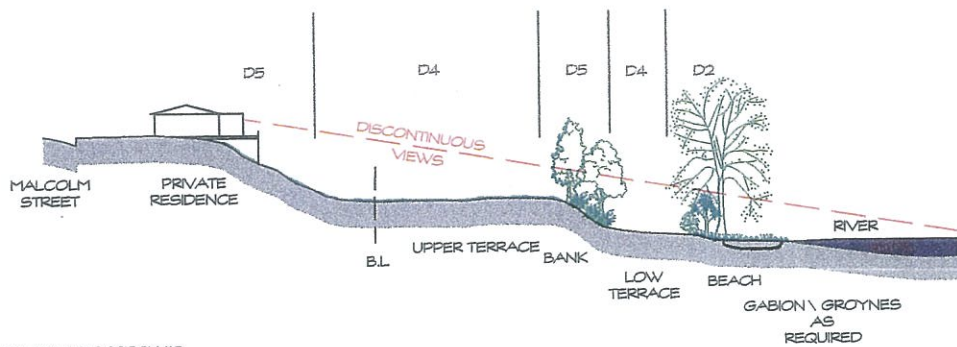


HAMMOND PARK

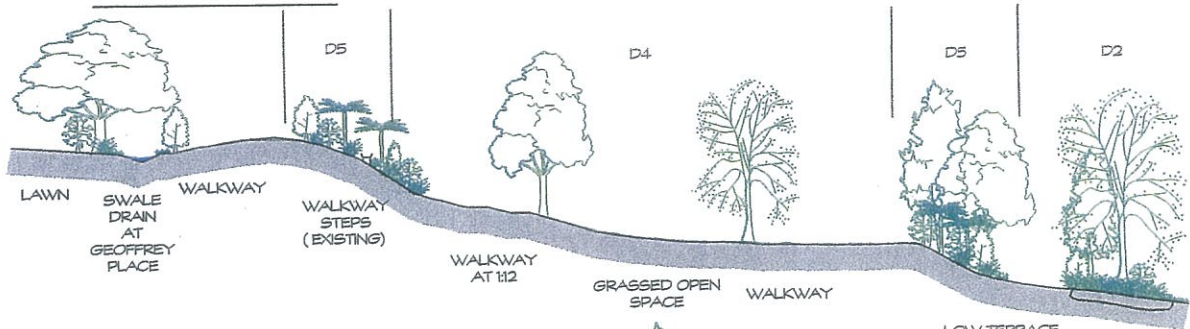
ZONE D: CROSS SECTION #1



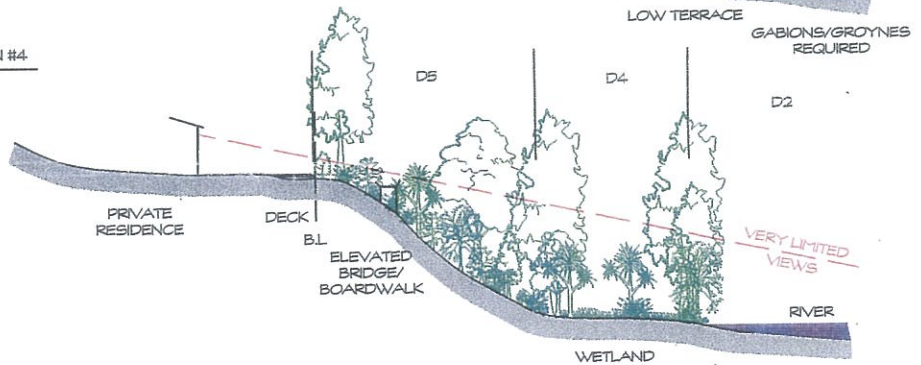
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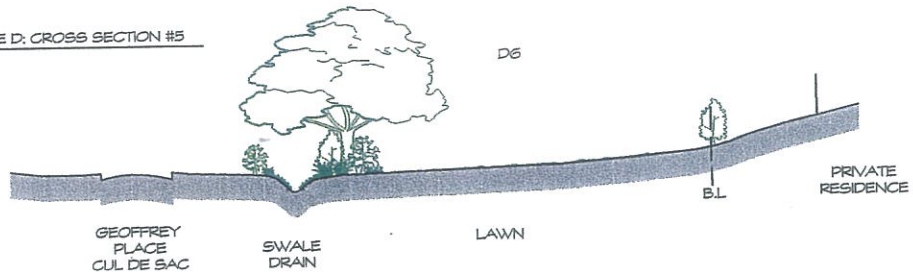
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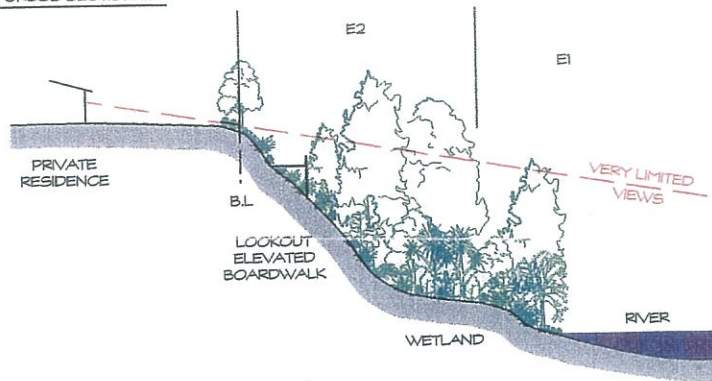
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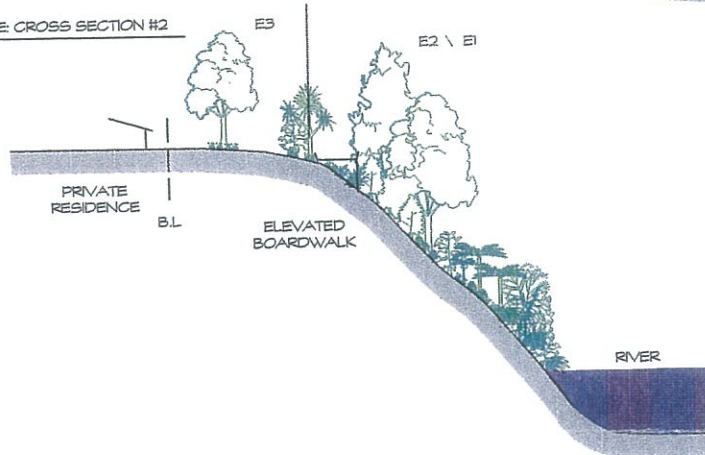
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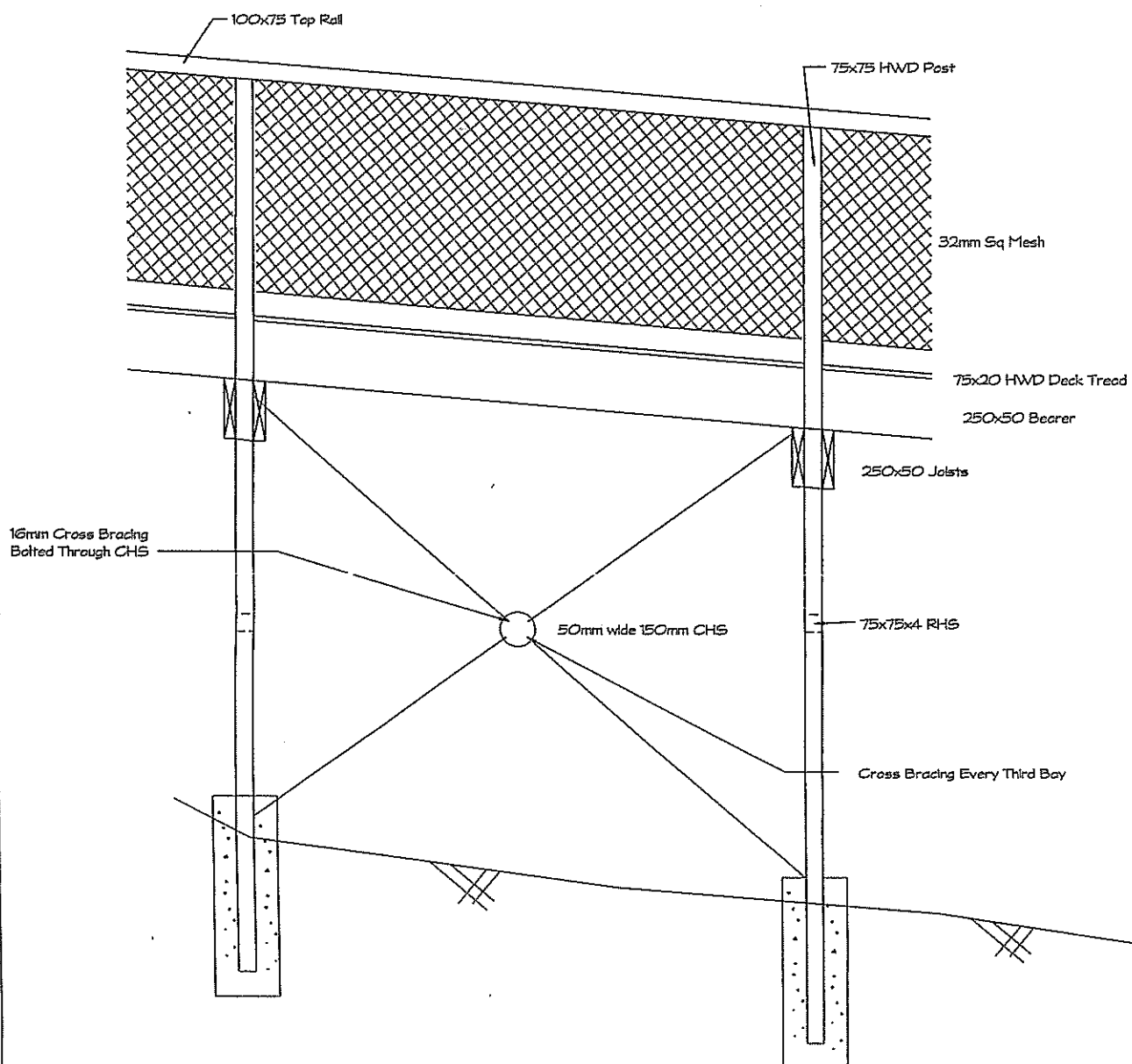


ZONE E: CROSS SECTION #1

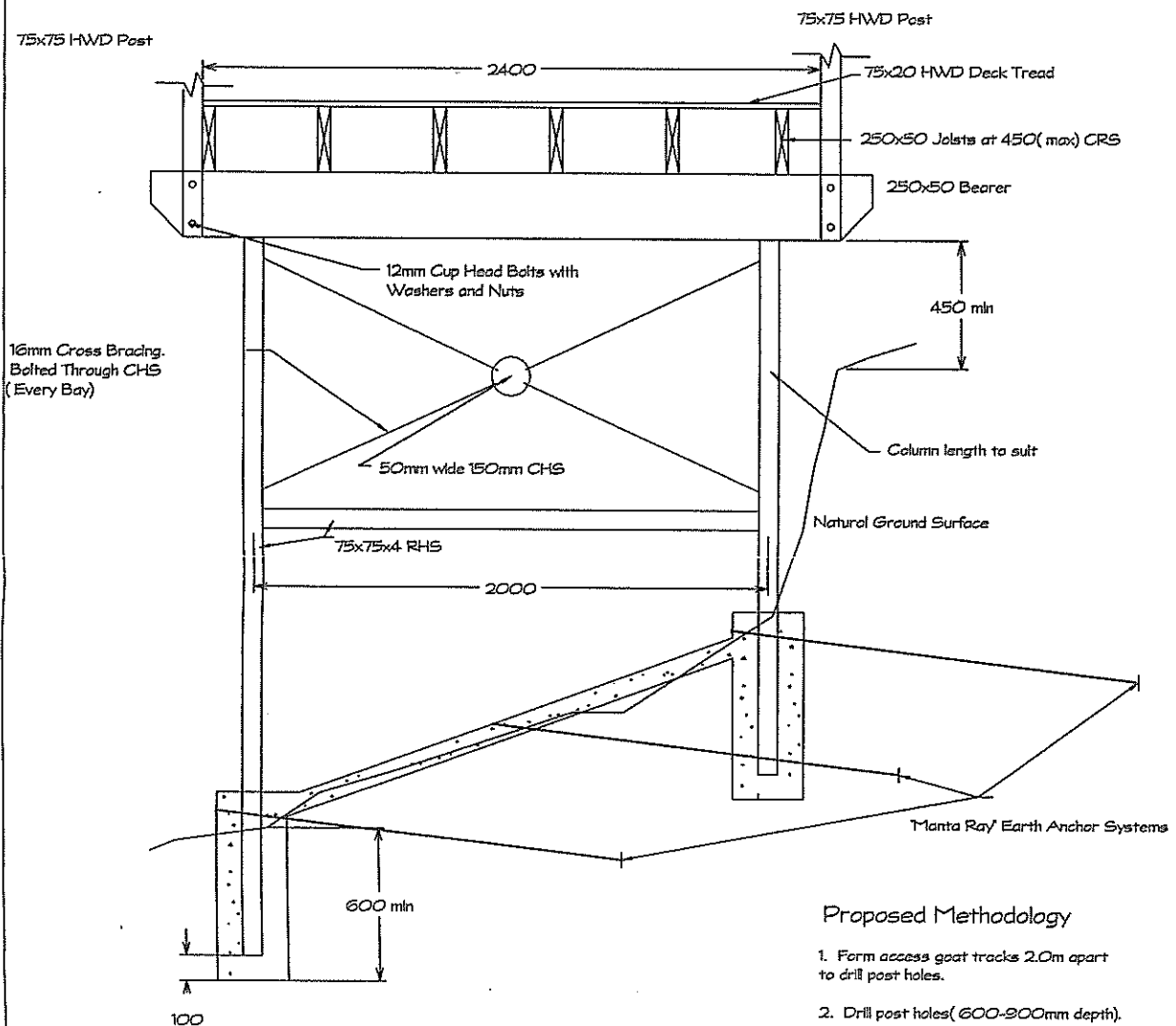


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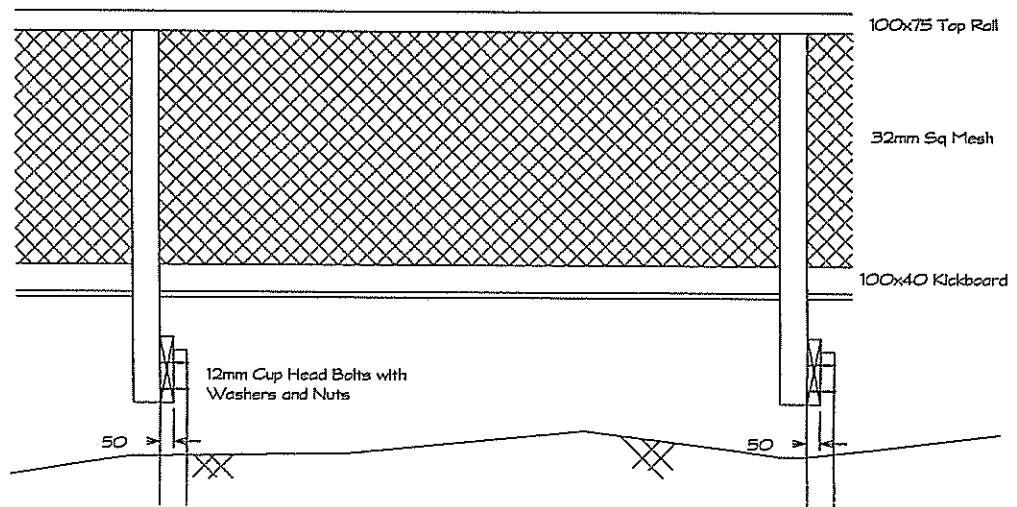
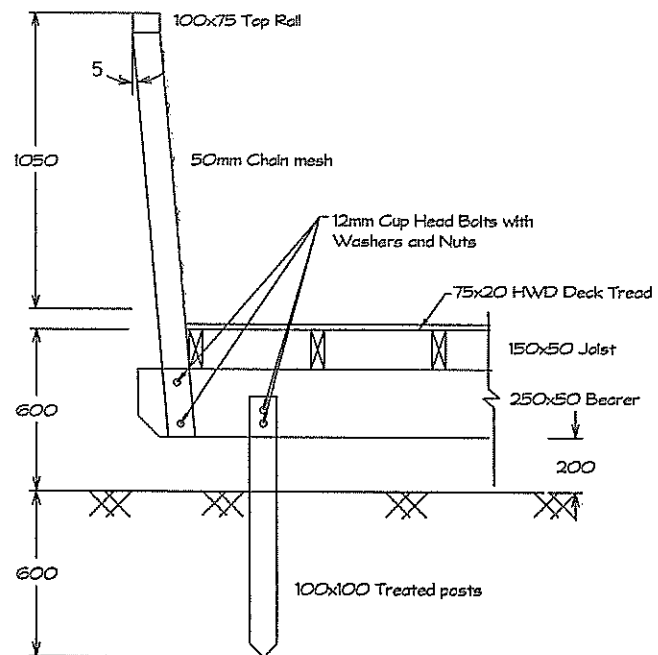


STEEP SLOPE WALKWAY  
ELEVATION



## STEEP SLOPE WALKWAY SECTION

Plan 9



PROPOSED BOARDWALK

Plan 10