

McFETRIDGE LANE + AWAITI STORMWATER RESERVE



LANDSCAPE CONCEPT

OCTOBER 2020

DOCUMENT QUALITY ASSURANCE

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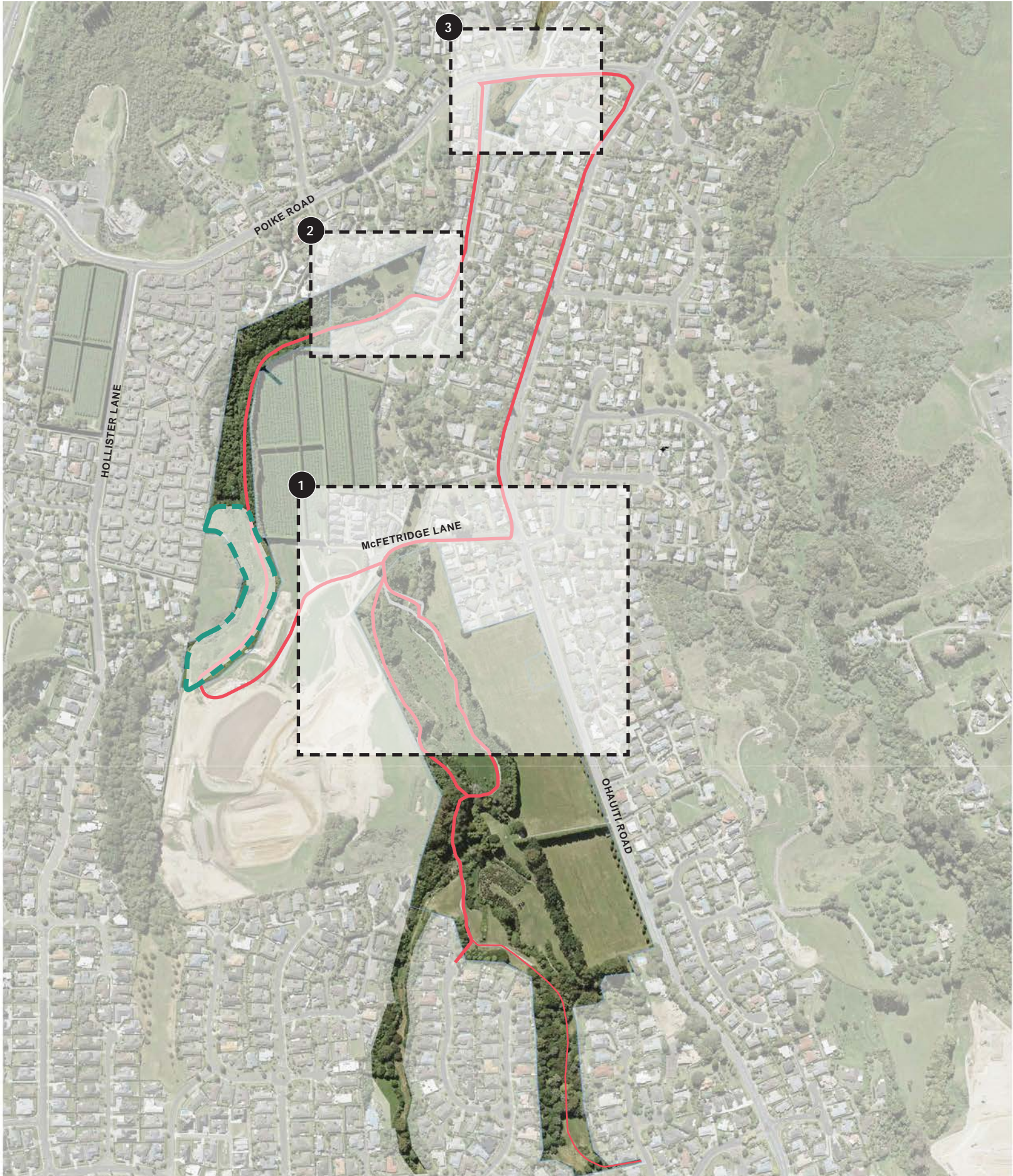
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Cover photograph: Awaiti Stormwater Pond, © Blair Clinch, 2020

SITE CONTEXT

- LEGEND**
- 1 MCFETRIDGE DAM SITE (PAGES 4-6)
 - 2 AWAITI POND SITE (PAGES 7-8)
 - 3 AWAITI PLACE SITE (PAGE 9)
 - POSSIBLE ECOLOGICAL OFFSET MITIGATION SITE
 - POSSIBLE WALKWAY CONNECTIONS



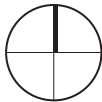
LANDSCAPE CONCEPT: MCFETRIDGE LANE DAM

KEY

- 1 PROPOSED DAM
- 2 PROPOSED SPILLWAY
- 3 SCRUFFY DOME MAINTENANCE ACCESS TERRACE
- 4 STORMWATER OUTLET TO OPEN SWALE (UNDER MCFETRIDGE LANE)
- 5 EXISTING TRACK RETAINED FOR MAINTENANCE ACCESS ONLY
- 6 PROPOSED REDIRECTED ACCESS TRACK / PUBLIC PATHWAY ALONG TOP OF SLOPE
- 7 PROPOSED PUBLIC PATHWAY ALONG TOP OF DAM TO RE-CONNECT EASTERN SIDE WITH MCFETRIDGE LANE
- 8 EXISTING PATHWAY ALONG WESTERN TERRACE
- 9 EXISTING RESERVE ACCESS (WITH ROADSIDE PARKING)
- 10 ENHANCE GRASS AREAS WITH PICNIC TABLES AND BENCH SEATING
- 11 ENHANCE / REMEDIATE EXISTING WETLAND WHERE EFFECTED BY DAM CONSTRUCTION TO IMPROVE ECOLOGICAL & AMENITY VALUES
- 12 ENHANCE / REMEDIATE EXISTING TERRESTRIAL PLANTING ALONG ESCARPMENTS WHERE EFFECTED BY DAM CONSTRUCTION TO IMPROVE ECOLOGICAL & AMENITY VALUES
- 13 EXPAND TERRESTRIAL PLANTING BETWEEN SPILLWAY & RESIDENTIAL PROPERTIES

LEGEND

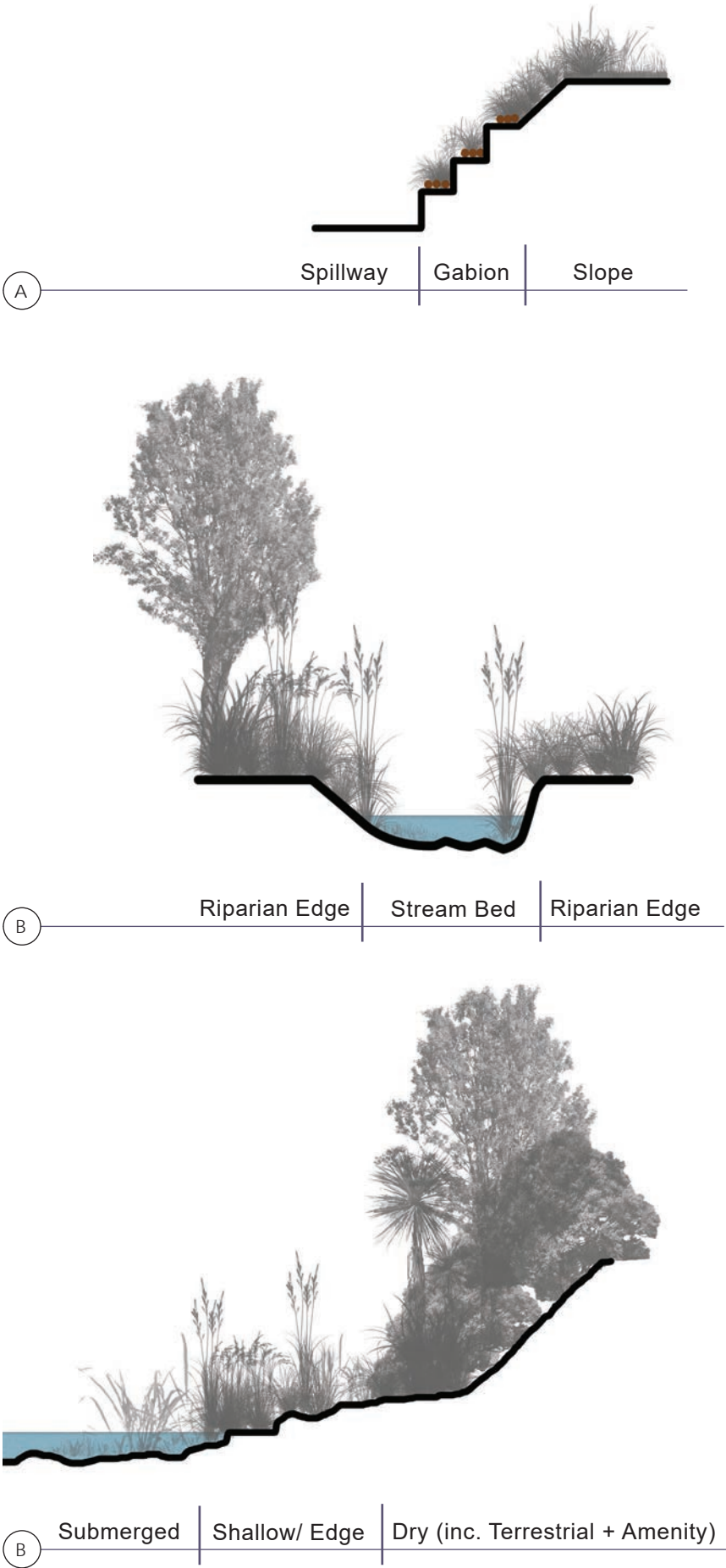
- WETLAND
- INFILL TERRESTRIAL PLANTING
- GRASSED PICNIC AREA
- PLANTED DAM SLOPE
- REINFORCED TURF SPILLWAY BASE
- PLANTED GABION BASKET WALL AND BATTERED SPILLWAY SLOPE
- CONCRETE SPILLWAY WEIR
- RIP-RAP / RENO MATTRESS
- FOOTPATH
- ROCK CULVERT OUTLET



VEGETATION FRAMEWORK: McFETRIDGE LANE DAM

KEY

- 1 REMOVE PEST VEGETATION AND INFILL PLANT
[SPECIES: TERRESTRIAL + AMENITY]
- 2 PLANT WITH MIXTURE OF TREES AND SHRUBS
[SPECIES: TERRESTRIAL + AMENITY]
- 3 REMOVE PEST VEGETATION AND INFILL PLANT
[SPECIES: WETLAND DRY + SHALLOW EDGE]
- 4 REMOVE PEST PLANT VEGETATION AND INFILL PLANT
[SPECIES: WETLAND SHALLOW EDGE + SUBMERGED]
- 5 PLANT INTO FORMED DAM SLOPE
[SPECIES: DAM SLOPE]
- 6 PLANT INTO RENO-MATTRESS WITH PLANTS ENCASED IN HESSIAN POCKETS.
[SPECIES: SHALLOW EDGE + DRY]
- 7 PLANT BIOCOIR LOGS ATTACHED TO GABIONS AND UPPER SPILLWAY SLOPES
[SPECIES: SPILLWAY GABION]









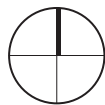
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LANDSCAPE MITIGATION OVERLAY: MCFETRIDGE LANE DAM

This plan illustrates how the recommended mitigation measures outlined in the Landscape & Visual Effects Assessment are integrated in the landscape design proposal.

LVA RECOMMENDATIONS

-  NATIVE PLANTING, OF APPROPRIATE SPECIES SELECTION TO BE IMPLEMENTED ON THE DETENTION DAM EMBANKMENTS. TO PROVIDE A MINIMUM 90% COVER BY THE END OF THE 24 MONTH MAINTENANCE PERIOD.
-  NATIVE PLANTING, OF APPROPRIATE SPECIES SELECTION TO BE IMPLEMENTED ON THE SPILLWAY EMBANKMENTS. TO PROVIDE A MINIMUM 90% COVER BY THE END OF THE MAINTENANCE PERIOD. WHERE GABION BASKETS ARE USED, BIORCOIR LOGS (OR SIMILAR) ARE TO BE USED AND FIXED TO THE TOP FACE OF THE GABION BASKETS AND PLANTED INTO. TO PROVIDE A MINIMUM 70% COVER OF GABION TOP AND FRONT FACES BY THE END OF THE 24-MONTH MAINTENANCE PERIOD.
-  NATIVE PLANTING, OF APPROPRIATE SPECIES SELECTION TO BE IMPLEMENTED AMONGST THE RENO MATTRESS EROSION PROTECTION AREAS POSITIONED ALONG THE TOE OF THE SLOPES OF THE WETLAND AREA TO THE NORTH OF THE DETENTION DAM. TO PROVIDE A MINIMUM 50% COVER BY THE END OF THE 24-MONTH MAINTENANCE PERIOD.
-  LARGE-SCALE EXOTIC TREES (EXCLUDING PEST SPECIES) AND NATIVE VEGETATION TO BE RETAINED OUTSIDE OF THE MINIMUM REQUIRED EXTENT OF WORKS AREA TO ESTABLISH THE STORMWATER DETENTION DAM AND SPILLWAY STRUCTURES AND ASSOCIATED WETLAND AREAS. TREES TO BE RETAINED TO BE SHOWN ON LANDSCAPE PLANS FOR CONSTRUCTION. SHOULD THE EXTENT OF VEGETATION TO BE RETAINED VARIES TO THOSE SHOWN ON THE MITIGATION PLAN FOR THIS APPLICATION (MITIGATION OVERLAY: MCFETRIDGE LANE DAM) THIS WILL BE REVIEWED BY A SUITABLY QUALIFIED LANDSCAPE ARCHITECT, TO ENSURE THAT THE LEVEL OF LANDSCAPE AND VISUAL EFFECTS MITIGATION IS MAINTAINED, OR IF ADDITIONAL MEASURES ARE REQUIRED TO BE IMPLEMENTED.
-  EXISTING WETLAND MARGINS AND BASE WITHIN THE EXTENT OF WORKS TO BE CLEARED OF EXOTIC PLANT SPECIES AND RE-PLANTED WITH NATIVE PLANTING, OF APPROPRIATE SPECIES SELECTION. THE EXTENT OF PLANTING IS TO BE FROM MCFETRIDGE LANE SOUTHWARD TO THE END OF THE SPILLWAY. TO PROVIDE A MINIMUM 90% COVER BY THE END OF THE MAINTENANCE PERIOD.
-  NATIVE PLANTING, OF APPROPRIATE SPECIES SELECTION TO BE IMPLEMENTED A MINIMUM OF 2 METRES SURROUNDING THE EXTENT OF THE STORMWATER OUTFALLS AND ENERGY DISSIPATION STRUCTURES AT MCFETRIDGE LANE & POIKE ROAD. TO PROVIDE A MINIMUM 90% COVER BY THE END OF THE MAINTENANCE PERIOD.



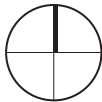
LANDSCAPE CONCEPT: AWAITI POND

KEY

- 1 EXISTING DAM
- 2 EXISTING SPILLWAY
- 3 SCRUFFY DOME MAINTENANCE ACCESS TRACK
- 4 ENHANCE / REMEDIATE EXISTING WETLAND WHERE EFFECTED BY DAM CONSTRUCTION TO IMPROVE ECOLOGICAL & AMENITY VALUES
- 5 ENHANCE / REMEDIATE EXISTING TERRESTRIAL PLANTING ALONG ESCARPMENTS WHERE EFFECTED BY DAM CONSTRUCTION TO IMPROVE ECOLOGICAL & AMENITY VALUES
- 6 POSSIBLE FUTURE PEDESTRIAN CONNECTION VIA WALKWAY / BOARDWALK ADJACENT TO STREAM UP TO SUBDIVISION ON MCFETRIDGE LANE

LEGEND

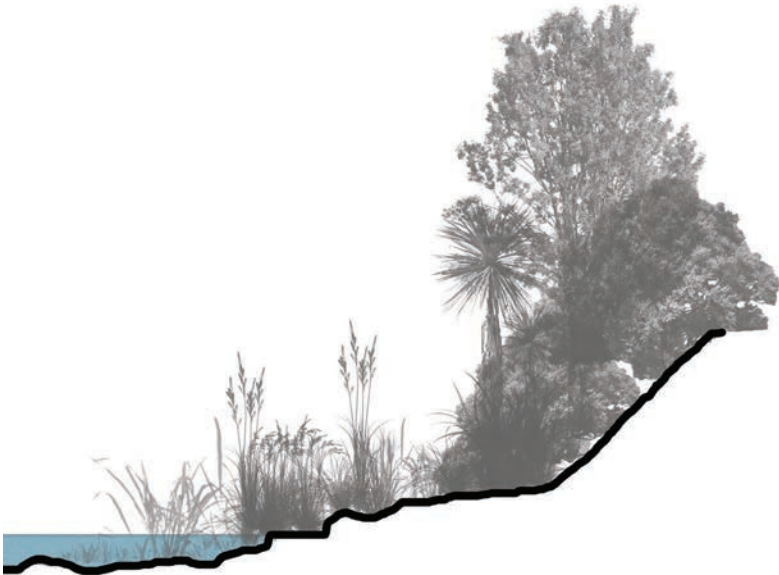
- WETLAND
- EXISTING TERRESTRIAL PLANTING
- GRASSED AREA
- EXISTING LARGE ROCK DAM FACE
- GRASSED MAINTENANCE VEHICLE ACCESS TRACK



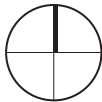
VEGETATION FRAMEWORK: AWAITI POND

KEY

- 1 REMOVE PEST VEGETATION AND INFILL PLANT
[SPECIES: TERRESTRIAL + AMENITY]
- 2 PLANT WITH MIXTURE OF TREES AND SHRUBS
[SPECIES: TERRESTRIAL + AMENITY]
- 3 REMOVE PEST VEGETATION AND INFILL PLANT
[SPECIES: WETLAND DRY + SHALLOW EDGE]
- 4 REMOVE PEST PLANT VEGETATION AND INFILL PLANT
[SPECIES: WETLAND SHALLOW EDGE + SUBMERGED]
- 5 OPEN WATER



A Submerged | Shallow/ Edge | Dry (inc. Terrestrial + Amenity)



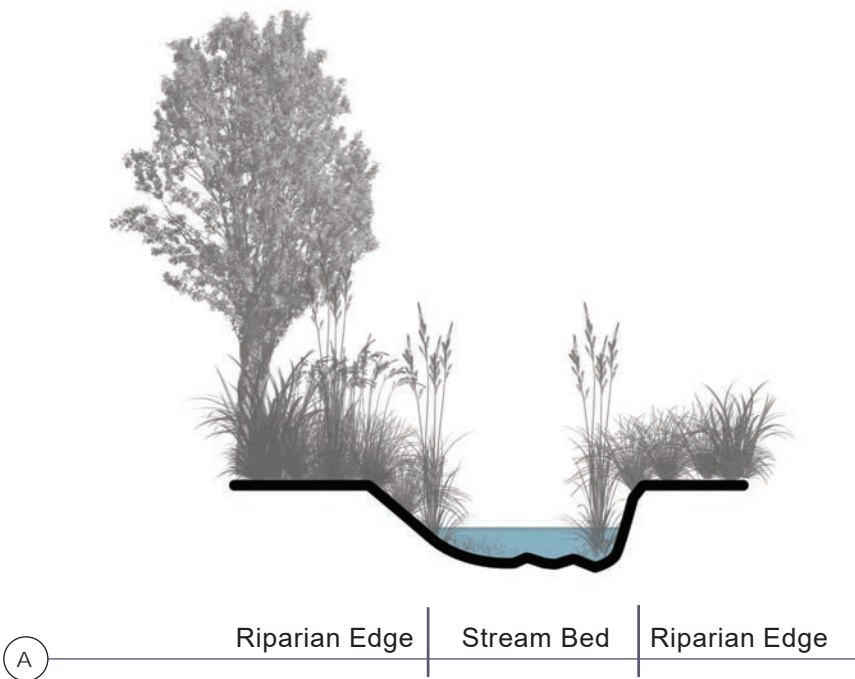
LANDSCAPE CONCEPT: AWAITI PLACE SWALE

KEY

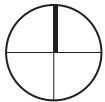
- 1 EXISTING STREAM
- 2 STORMWATER PIPE OUTLET WITH ENGINEERED EROSION PROTECTION
- 3 PROPOSED STREAM ENHANCEMENT WITH RIPARIAN PLANTING

LEGEND

- RIPARIAN MARGIN
- ENERGY DISSIPATION STRUCTURE
- PROPOSED GABION WALL
- PROPOSED PLANTED RIP-RAP
- EXISTING GRASSED SWALE






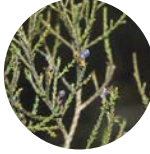








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PLANTING PALETTE

WETLAND

EXAMPLE / SAMPLE PHOTO		BOTANICAL NAME	COMMON NAME	EVERGREEN	DECIDUOUS	SUBMERGED	SHALLOW/ EDGE	DRY	FLOWERING/ FRUIT
		Apodasmia similis	Oioi	●			●	●	●
		Carex geminata	Rautahi	●			●		●
		Carex lessoniana	Cutty Grass	●			●		●
		Carex maorica	Maori Sedge	●			●		●
		Cyperus ustulatus	Giant Umbrella Sedge	●			●		●
		Dacrycarpus dacrydioides	Kahikatea	●			●	●	●
		Eleocharis acuta	Sharp Spike Sedge	●			●		●
		Juncus edgariae	Edgars Rush	●			●	●	●
		Machaerina articulata	Jointed Twig Rush	●		●			●
		Schoenoplectus tabernaemontani	Kuawa	●		●			●
		Syzygium maire*	Swamp Maire	●			●	●	●
		Typha orientalis**	Raupo	●	●	●			●
NOTES		*Can be tempermental so plant in low numbers. **Raupo will die off /brown over cooler months. All plants will have some form of seed and flower.							


















PLANTING PALETTE

DAM SLOPE + SPILLWAY GABION

EXAMPLE / SAMPLE PHOTO		BOTANICAL NAME	COMMON NAME	EVERGREEN	DECIDUOUS	UPRIGHT	SCRAMBLING	EDGE	FLOWERING/ FRUIT
DAM SLOPE									
		Apodasmia similis	Oioi	●		●			
		Carex dispacea	Teasel Sedge	●		●			
		Carex flagellifera	Glen Murray Tussock	●		●			
		Carex lessoniana	Cutty Grass	●		●			
		Carex maorica	Maori Sedge	●		●			
		Carex testacea	Speckled Sedge	●		●		●	
		Carex virgata	Swamp Sedge	●		●			
		Lomandra longifolia 'Tanika'	Tanika Lomandra	●		●		●	
		Poa cita	Silver Tussock	●		●		●	
SPILLWAY GABION									
		Carex testacea	Speckled Sedge	●		●			
		Coprosma acerosa 'Hawera'	Sand Coprosma	●			●		
		Lomandra 'Lime Tuff'	Lime Tuff Lomandra	●		●		●	
		Muehlenbeckia complexa	Pohuehue	●			●		
		Poa cita	Silver Tussock	●		●		●	









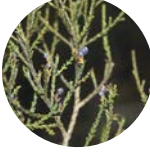

PLANTING PALETTE

TERRESTRIAL + AMENITY: SHRUB AND GROUNDCOVERS

EXAMPLE / SAMPLE PHOTO		BOTANICAL NAME	COMMON NAME	EVERGREEN	DECIDUOUS	SUN	PARTIAL SHADE	SHADE	FLOWERING/ FRUIT
		Austroderia fulvida	Toetoe	●		●			●
		Coprosma acerosa*	Sand Coprosma	●		●	●		
		Coprosma repens	Taupata	●		●	●		
		Coprosma robusta	Karamu	●			●		●
		Kunzea robusta	Kanuka	●		●	●		●
		Leptospermum scoparium	Manuka	●		●	●		●
		Lomandra ‘Lime Tuff’*	Lime Tuff Lomandra	●		●			
		Macropiper excelsum	Kawakawa	●			●	●	●
		Melicytus ramiflorus	Mahoe	●			●		●
		Muehlenbeckia complexa	Pohuehue	●		●	●		●
		Myoporum laetum	Ngaio	●		●			●
		Myrsine australis	Mapou	●			●	●	●
		Phormium cookianum	Mountain Flax	●		●	●		●
		Phormium tenax	Harakeke	●		●	●		●
		Pittosporum crassifolium	Karo	●		●			●
		Poa cita*	Silver Tussock	●		●			
		Pseudopanax arboreus	5 Finger	●			●	●	●
NOTES		*These plants are identified as being utilised along the edges of the planted areas for ensuring sightlines are kept open, low maintenance requirements and suitable for edge treatments to lawn and paths							

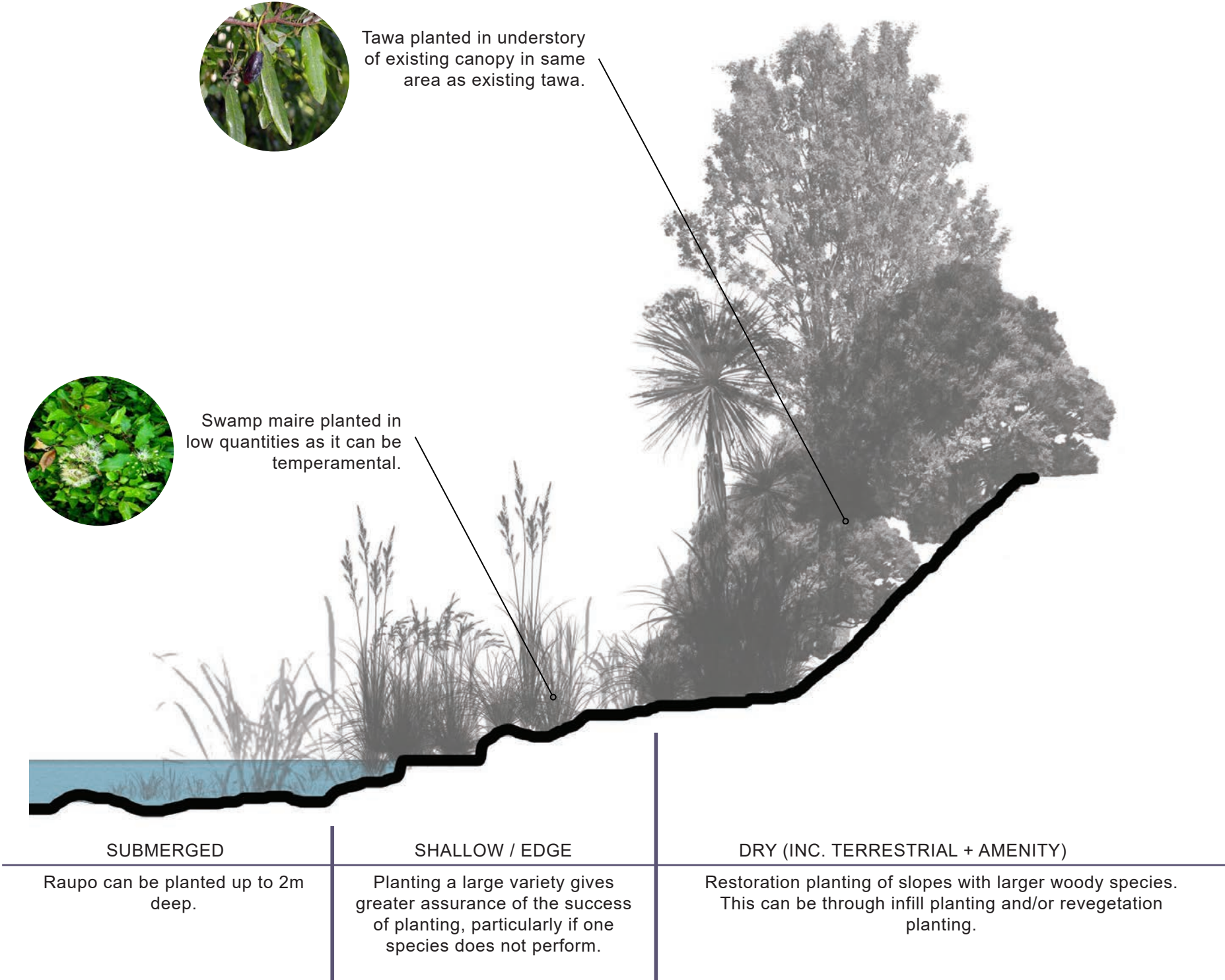
PLANTING PALETTE

TERRESTRIAL + AMENITY: SPECIMEN TREES

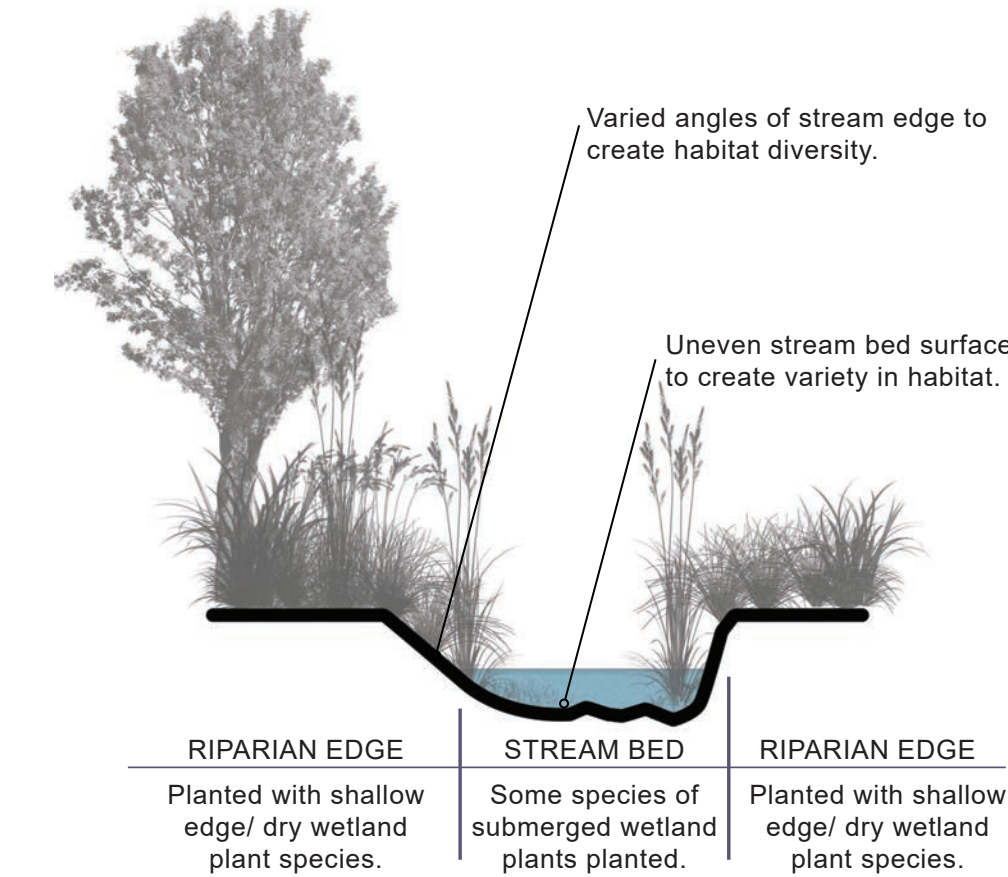
EXAMPLE / SAMPLE PHOTO		BOTANICAL NAME	COMMON NAME	EVERGREEN	DECIDUOUS	FLOWERING/ FRUIT
		Taxodium distichum	Swamp Cypress		●	
		Ginkgo biloba**	Ginkgo		●	
		Liquidambar styraciflua	Sweetgum		●	
		Beilschmiedia tawa*	Tawa	●		●
		Knightia excelsa	Rewarewa	●		●
		Spohora microphylla	Small Leaved Kowhai	●		●
		Hoheria sexstylosa	Ribbonwood	●		●
		Podocarpus totara	Totara	●		●
		Dacrycarpus dacrydioides	Kahikatea	●		●
		Alectryon excelsus	Titoki	●		●
NOTES		*Infill revegetation planting within area near the dam slope which already has regenerating Tawa growing. **Male variant of Ginkgo biloba to be used only				

HABITAT TYPOLOGIES

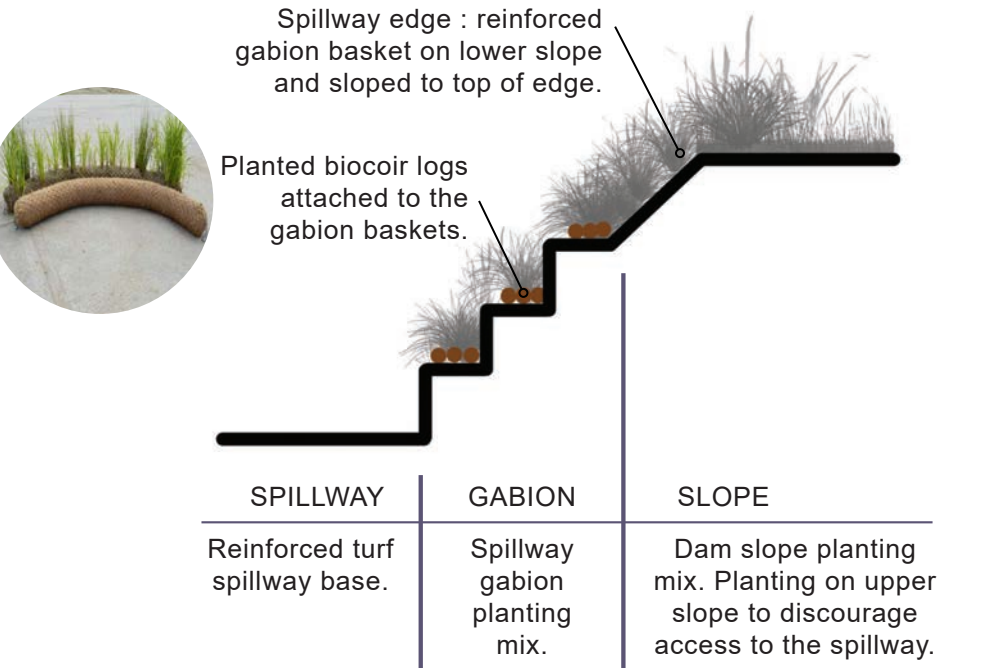
1 WETLAND HABITAT



2 STREAM HABITAT



3 SPILLWAY WALLS



About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.

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